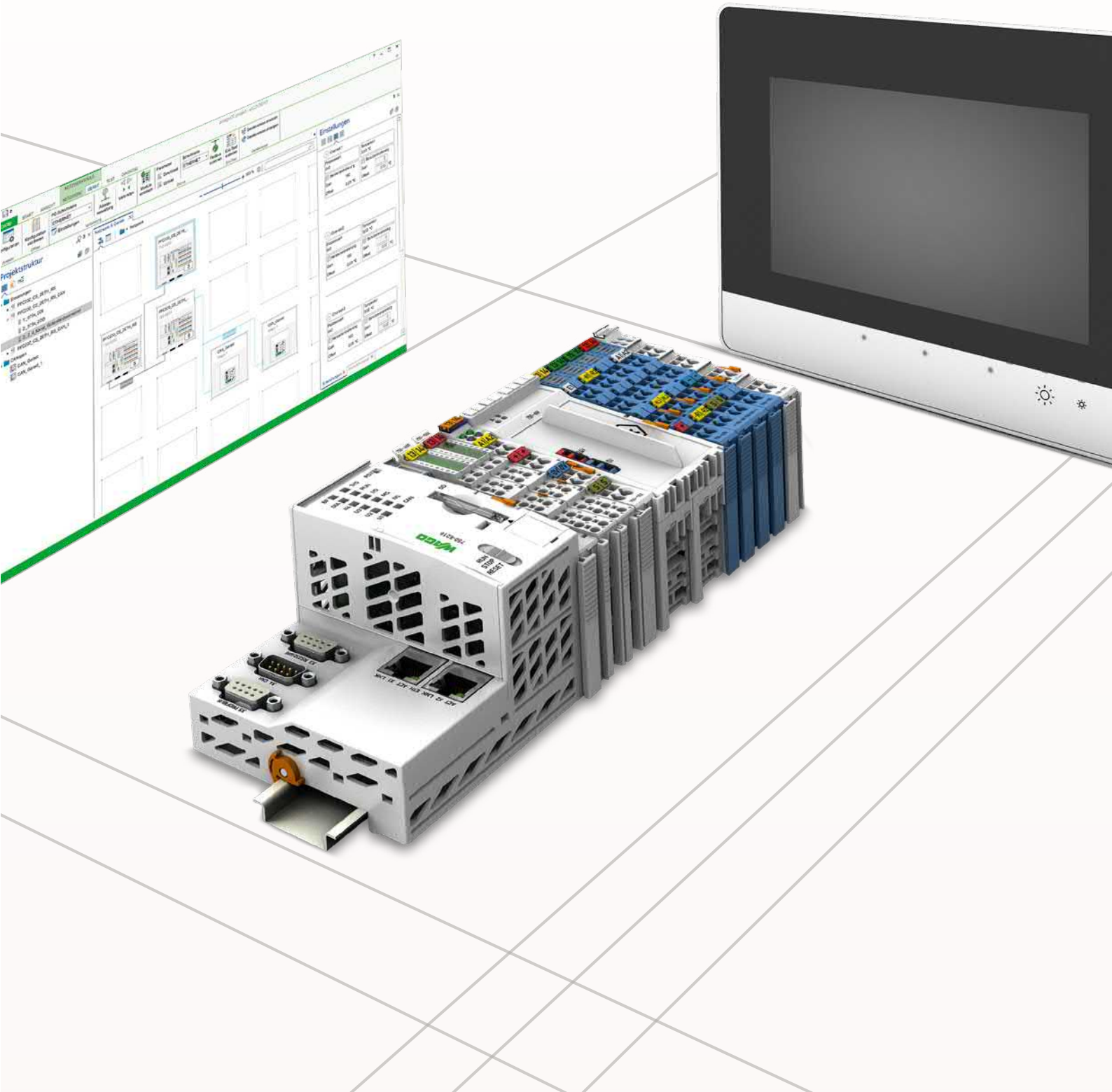
Automation Technology

Full Line Catalog, Volume 3 – Edition 2019/2020

3



WAGO Full Line Catalogs



Volume 1, WAGO Rail-Mount Terminal Block Systems

- Rail-Mount Terminal Blocks
- Rail-Mount Terminal Blocks with Pluggable Connector (X-COM®-SYSTEM)
- Patchboard Systems
- Terminal Strips
- PUSH WIRE® Connectors for Junction Boxes
- Lighting Connectors
- Shield Connecting System



Volume 2, WAGO PCB Terminal Blocks and WAGO Connectors

- PCB Terminal Blocks
- THR/SMD PCB Terminal Blocks
- *MULTI CONNECTION SYSTEM (MCS)*
- Pluggable PCB Terminal Blocks
- Feedthrough Terminal Blocks
- Specialty Connectors
- Empty Housings



Volume 3, Automation Technology

- Solutions & Software
- Operating & Monitoring
- Controllers
- Modular I/O-SYSTEM, IP20
- Industrial Switches
- Radio Technology
- IP67 Sensor/Actuator Boxes, IP67 Cables and Connectors



Volume 4, WAGO Interface Electronic

- Relay and Optocoupler Modules
- Signal Conditioners and Isolation Amplifiers
- Current and Energy Measurement Technology
- Power Supplies
- Interface Modules and System Wiring
- Overvoltage Protection
- Empty Housings



Volume 5, WAGO Pluggable Connection System *WINSTA*®

- Pluggable Connectors
- Snap-In Device Connectors
- Pluggable PCB Connectors
- Distribution Connectors
- Cable Assemblies
- Flat Cable Systems
- Distribution Boxes



Volume 6, WAGO Marking

- Printer
- Software
- Terminal Block Marking
- Cable and Conductor Marking
- Device Marking
- Marker Carriers

Volume 3, Automation Technology

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Software	 **Software** Engineering Software, Runtime Software, Mobile Software (Apps)	22	2
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WAGO Automation Technology

Solutions & Software

Solutions



1

- Cloud solutions
- Reusable, customizable software applications

Engineering Software



- PC-based software
- Customized tools for every automation task

Runtime Software



- Standard machine component
- Comprehensive, tested software modules for control, regulation, operation & monitoring

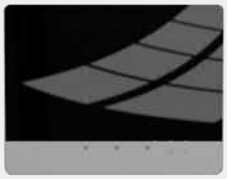
Operation & Monitoring

Touch Panels 600 Standard Line



- High-performance touch panels with resistive touch-screens
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Control, Visu or Web Panel for display of visualizations

Touch Panels 600 Advanced Line



- High-performance touch panels with capacitive touch-screens and glass surfaces
- 18 … 25.7 cm (7 … 10.1")
- Models include Control or Visu Panel

Touch Panels 600 Marine Line



- High-performance touch panels with resistive touch-screens
- Ideal for marine applications
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Visu Panel

Controllers

Controllers PFC100/PFC200

4.1



- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

Controllers PFC200 XTR

4.2



- The advantages of WAGO's PFC Controllers combined with the capabilities for extreme environments:
- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Controllers 750

4.3



- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

I/O Systems

I/O System – 750 and 753 Series



5

- Highly versatile
- More than 500 modules available
- Functional Safety
- Ex i

I/O System – 750 XTR Series



6

For demanding applications where the following are critical:
- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Infrastructure

Industrial Switches



7

- Copper cables
- Fiber optic cables
- Ring redundancy

Radio Technology



8

- *Bluetooth*®
- WLAN
- EnOcean®

Sensor/Actuator Boxes



9

- M8 and M12 sensor/actuator boxes
- Passive signal acquisition and output at the machine level
- Fully encapsulated

Mobile Software (Apps)



- Machine operation and monitoring on tablet and smartphone

2

Touch Panels *e!DISPLAY 7300T*



- Touch panels with resistive touchscreens
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Web Panel for display of CODESYS V2 or *e!COCKPIT* visualizations

3

Controllers 750 XTR

4.4



For demanding applications where the following are critical:
- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Starter Kits

4.5



To get you up and running quickly, we offer starter kits to suit the most diverse applications:
- with Controller PFC100
- with Controller PFC200
- with Controller 750 ETHERNET
- with Controller 750 KNX IP or BACnet/IP

4

Accessories Tools





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Solutions

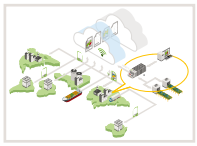
Cloud Solutions

- "Internet of Things" (IoT) applications

Software Applications

- Reusable, customizable solutions

Solutions
Cloud Solutions, Software Applications





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Solutions
General Product Information

1

We Make It Simple!

WAGO products are at home in many industries. Tailored solutions make it easy for the customer to accomplish the task using WAGO products – in the form of libraries and complete products, regardless of industry.

Cloud Solutions

Digitization and networking offer great opportunities for every company. To use them, every company has to do its homework – in fact, the challenges are just as varied and diverse as the companies themselves. While there is no such thing as an all-in-one solution, smart products, methods, and partners will help you advance digitization in your business in a way that benefits all involved.

WAGO shapes the digital future with you. Cloud solutions have become popular industry staples. They link the real and digital worlds, allow efficient use of production-related data and simplify cross-site networking of global communication structures. This creates many new opportunities for the manufacturing industry – especially with an eye to plant availability and process optimization.

Scalable Solution Thanks to Our Reliable Partner

SOFTWARE M&M
BY PEOPLE WITH PASSION
Member of WAGO Group

With M&M as a member of the WAGO Group, WAGO has a partner for integrated development of industrial and technical software solutions. We collaborate closely with Microsoft to implement corresponding solutions in the cloud and IoT, primarily using Azure.

Application Software

Prepared applications make it easy to use the WAGO products. We offer a range of complete industry-specific solutions such as ***flex***ROOM®, dramatically shorten time to completion. But also industry-independent universally usable solutions are available (closed or adaptable) and are optimally adapted to the respective hardware.

Standardized Applications

The more prepared, the easier it gets. For many applications, we offer configuration via web browser, with a standard PC without special software. Thanks to a flexible software architecture, it is also possible to realize individual configurations. Here we combine the advantage of reusing a standardized and field-proven solution with customization via parameterization instead of individual programming. This saves costs by shortening the time required and makes commissioning easy!

Tailor-Made Applications

If a standard solution does not fit, we can create a highly tailored, customer-specific approach that's as unique as your application. If necessary, just contact us. We are happy to assist you!

Advantages:

- **Solutions for digitization**
- **Support for Industry 4.0/Internet of Things (IoT)**
- **Prepared field-tested applications for solving standard requirements in various industries**
- **Support with individual adjustments**

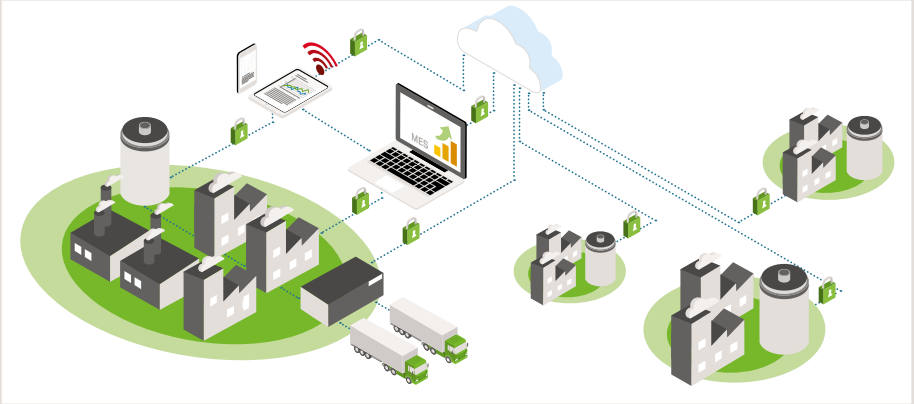
Solutions
General Product Information

Cloud Solutions

The universal cloud solution from WAGO is suitable for a wide variety of applications. This solution offers:

WAGO Cloud:
- Capture and save data
- Setting up individual dashboards
- Central condition monitoring and alarm handling
- Central data visualization via location-independent access

Cloud Connectivity:
- Establishing connections
- Secure communication



Application Software – Industry-Independent Solutions

Many solutions can be used regardless of industry, such as our energy management. With our modular energy data collection, we rely on an open and flexible system that you can easily install and extend. It doesn't matter if you are looking for an individual solution or want to use our standard solution.



Building Automation

Whether you are planning lighting installations and automation in your office building, retrofitting a heating, ventilation and air-conditioning system or involved with room automation, WAGO helps implement your requirements in buildings, both in office and administrative buildings, as well as in production and warehouses, retail or infrastructure buildings.



Power Engineering

Energy suppliers need to change the way they think. Instead of merely selling green energy, they also need to organize and market the flexibility that is required for maintaining stability on the electrical grid. This means that the energy system needs to be controllable from production to consumption using intelligent communication networks. WAGO supports digitizing the energy sector and design of smart grids with state-of-the-art control and measurement technology, along with software solutions that enable a simple and secure connection to the cloud.



WAGO Cloud

1

Collect, Analyze and Manage Data Centrally

The WAGO Cloud gives you the option of collecting data from various machines and managing it centrally.

The WAGO Cloud makes it possible to manage and monitor WAGO's controllers, including their data and applications. It is hosted on Microsoft's Azure Cloud. With simple, user-friendly operation, it was developed so that even people without IT experience can use it.

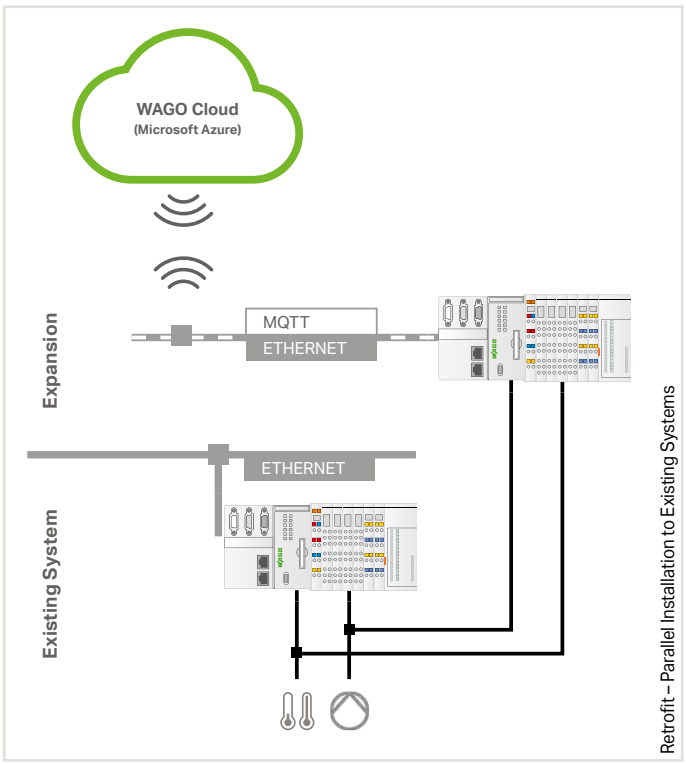
The cloud service is available online at https://cloud.wago.com/. After registering for free and linking to the WAGO Controllers, you can get started in just a few a few minutes.

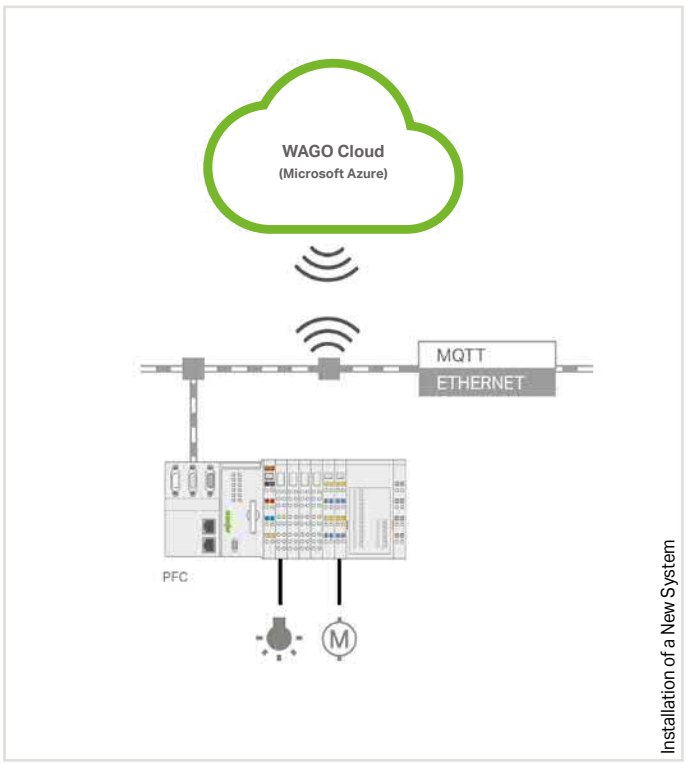
How does machine data get to the WAGO Cloud?

A WAGO PFC Controller serves as a gateway, collects the data and then sends it to the WAGO Cloud. Users log into their user interface on the Web portal, where they can use various applications: They have access to functions like visualizations, controller and user management, as well as controller status monitoring. They can also activate alarm functions and use them to automatically send email notifications if defined limit values are exceeded, for example. Data can be graphically visualized, evaluated and exported as needed.

Do you need to restrict the data you send to the cloud?

No problem! You decide yourself by configuring the WAGO PFC Controller, specifying what data to send to the cloud or not via IEC program.





Figures: Data Transfer to the WAGO Cloud
The WAGO PFC Controller functions as a gateway for existing systems. It extends existing systems easily. It collects the data through various protocols and transports this data to the WAGO Cloud via the TSL-encrypted MQTT connection. If the system is newly installed and the WAGO PFC Controller is used, it can send the data directly to the cloud.

What advantages does the WAGO Cloud offer?

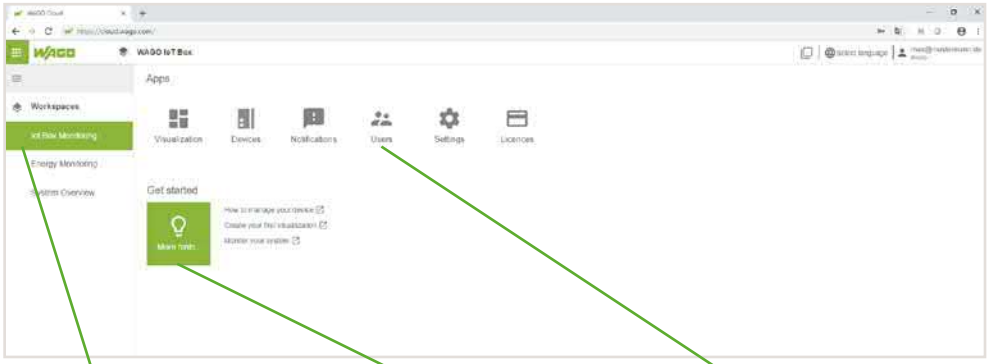
- **Simplicity**
  The solution is intuitive thanks to a clear functional scope. Within minutes, you can send data to the cloud, without extensive IT expertise.

- **Flexibility**
  Customize your cloud solution at any time, and do so virtually whenever or wherever. For instance, double your number of controllers from one day to the next without affecting performance and availability. Would you like a special expansion? We can do that through customized cloud-expansions as a project service.

- **Everything from a single source**
  Take advantage of the benefits of the WAGO Cloud, software as a service. Save time by passing the work of infrastructures and security platform and application management on to WAGO.

WAGO Cloud

App Overview:
All functions at a glance thanks to an intuitive app structure

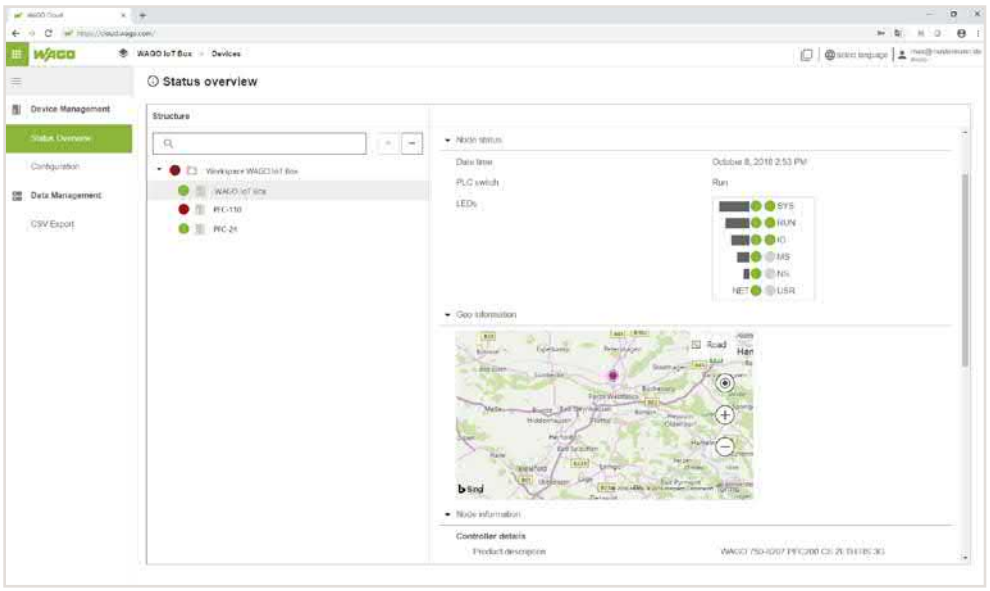


Quick Access:
- Quickly discover what you are looking for, you have all your workspaces in view.

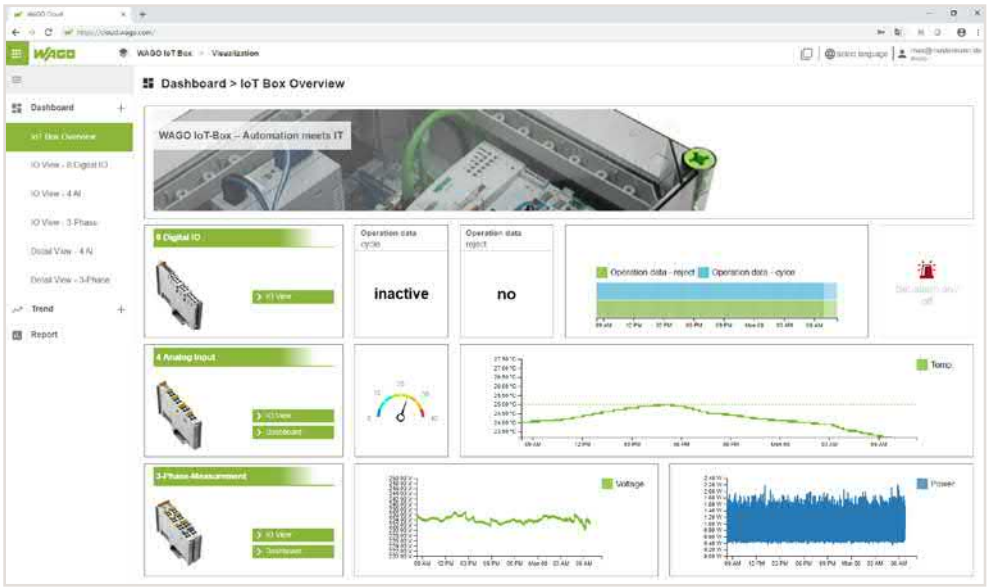
Simple Application:
- Let us guide you in creating cloud projects.

Relevant Functions:
- Only see the features that are immediately available.

Controller Status Overview:
See your connected and disconnected controllers, as well as relevant connection details.



Dashboard:
Create your own dashboard according to your needs and use graphics and trends.



WAGO Cloud

1

What kind of services can I use on the WAGO Cloud?

The WAGO Cloud is a universal industrial-strength data logger with data visualization. It allows customizable dashboards and analyses to be created quickly and easily in the cloud. Use interfaces via REST and CSV data export for further processing of data, or use them as a data supplier in order to perform detailed analyses in other systems, for example. Monitor controller statuses and receive notifications if specified limit values are exceeded.

How can I use the functions?

Test the WAGO Cloud for 30 days with no commitment to see if it's right for you.

The cloud service is available online at https://cloud.wago.com/. After registering for free and linking to the WAGO controllers, you can get started in just a few minutes.

After that, you book licence points with a prepaid model, via our WAGO eShop for example, and simply redeem them in the cloud. Transparent billing management in the cloud allows you to fully monitor the current and anticipated scope of the functions used. When your licence points are almost used up, you receive a notice that you'll need to reload your points account soon.

You can find an overview of the functions we currently offer in the following table. For each individual function, there are various graduations, depending on how many components you need (e.g., number of connected controllers).

Test Phase	• WAGO Cloud 30-day free trial (limited test points). • Points account may be exceeded after the test phase.	

	Functions		
Data Management	Data Package	• Connect WAGO PFC Controller to the cloud. • Transfer data from the controller to the cloud. • Mount devices and data. • Visualize data.	• Basic package, necessary to use the WAGO Cloud • At least 50 license points/month • Volume-dependent, decreasing license point consumption
	Restful API	• Provide data for other cloud services and customer systems.	• Volume-dependent, decreasing license point consumption
Device Management	Firmware & Application Update	• Select/download firmware catalog. • Manage your own firmware application catalog. • Replace firmware on the device. • Install application updates.	• 1 license point/update
	Remote Visu Access	• Access local configurations and visualizations remotely (diagnostics, monitoring, remote maintenance).	• 10 license points/hour
	User Management	• In a customer area, up to 10 users have free access. More can be booked upon request.	

Item Description	
	Item No.
WAGO Cloud; 100 license points	2759-1061/651-010
WAGO Cloud; 500 license points	2759-1061/651-050
WAGO Cloud; 1000 license points	2759-1061/651-100

Redeem license points at: https://cloud.wago.com/

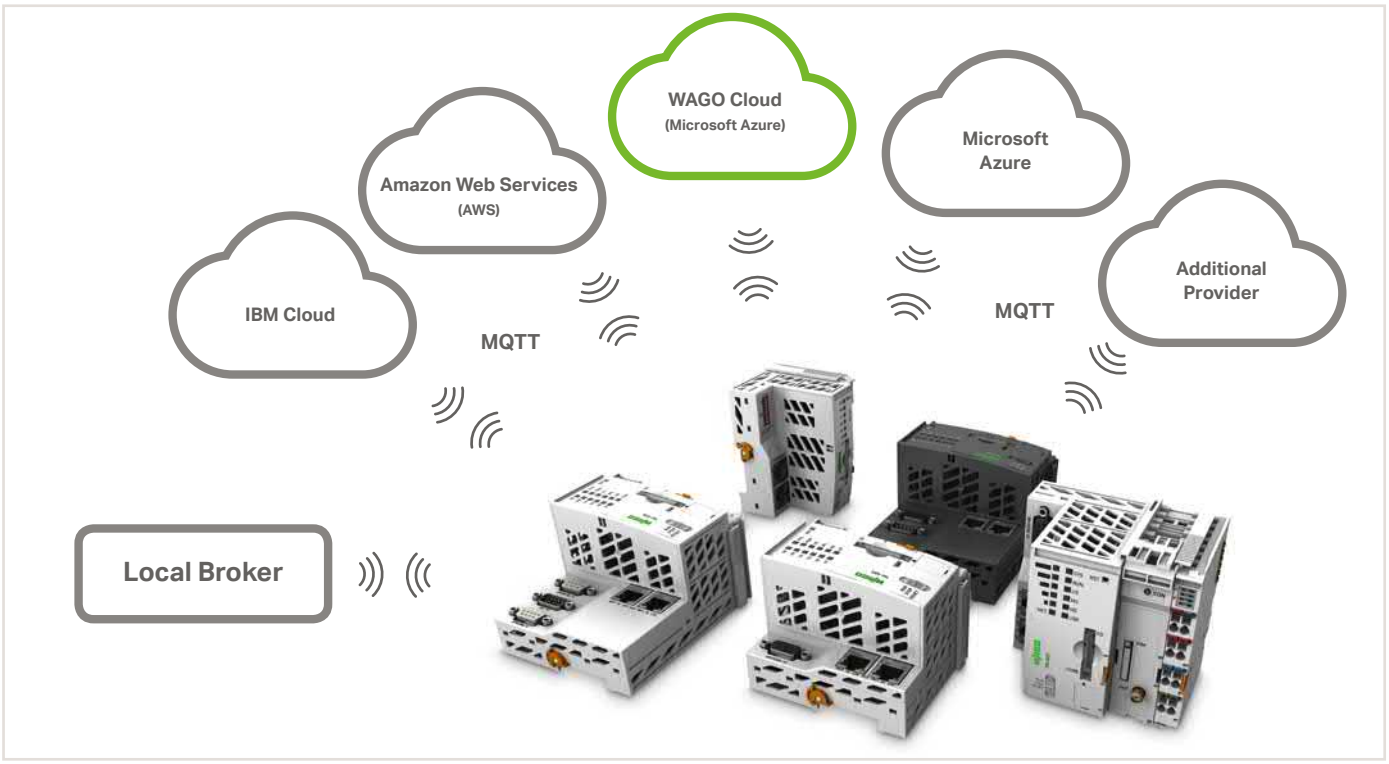
Cloud Connectivity via MQTT

Recording, digitizing and linking data profitably...

...this is the core concept behind Industry 4.0. The field level connection is established with the open WAGO-I/O-SYSTEM 750 or 750 XTR; the data is sent to the cloud or a local MQTT broker by a PFC Controller where it can be aggregated and used for analysis. This creates true added value for your company – be it for increasing the efficiency of in-house production, implementing energy management in buildings or developing additional end-customer services. Existing systems also become IoT-ready, making them sustainable into the future.
Communication between PFCs and cloud suppliers is conducted via the MQTT protocol and encrypted via TLS 1.2.

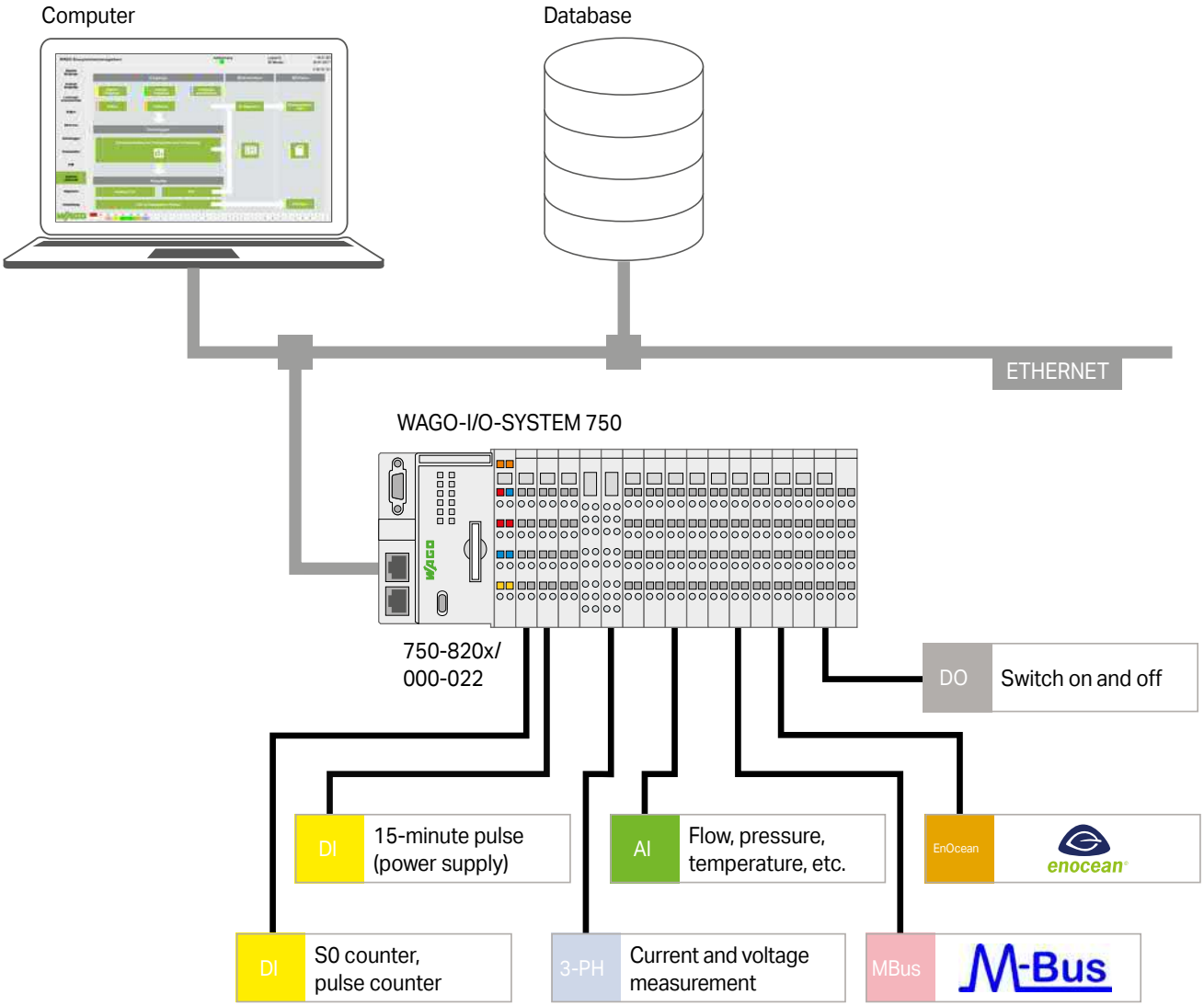
The cloud connection data is configured via Web-based Management (WBM). By default, ***e!COCKPIT*** contains appropriate libraries for defining the variables to transfer to the cloud in the IEC program. Thus the IEC programmer maintains complete control. Controller information, such as run/stop, connection status and device information can also be transferred to a cloud solution with cloud connectivity or distributed via MQTT broker.

With their wide variety of interfaces, the WAGO Controllers are the perfect foundation for an IoT gateway.
They can collect numerous field signals, communicate in a large number of industrial protocols and even enable cloud connection of sensors and actuators that themselves lack a Web interface. Thanks to the standard MQTT protocol, it is possible to connect to cloud providers such as Microsoft Azure, Amazon Web Services or IBM Cloud or SAP Cloud. Of course, other MQTT brokers or solutions such as the WAGO Cloud can also be connected. Cloud connectivity is included by default with PFC Controller Firmware 11 and above, and the required library has been included in ***e!COCKPIT*** since Version 1.4.



Cloud connectivity is possible with all PFC100 and PFC200 Controllers.

WAGO Energy Data Management



WAGO Energy Data Management seamlessly records, visualizes and manages energy data without any programming and can be upgraded at any time.
The energy data management system provides energy flow monitoring via user-friendly Web visualization. The connected I/O modules (see table) are automatically detected and can be configured via user interface. In addition to energy-specific values like electrical currents or voltages, the networked WAGO Controller can record other measurement variables relevant for industrial and process technologies or building applications – for example, gas, heat, water, compressed air and temperature.
With the integrated visualization tool, collected data is easily displayed and evaluated in various forms.

The data is transferred to higher level energy management software via Modbus TCP/IP or as a CSV file via FTPS. In addition, it is possible to store the history on an SD card integrated into the controller. Because it is so easy to integrate the versatile new WAGO solution into existing systems, increasing measurement point depth is also a simple matter.

WAGO Energy Data Management			
	Components	**Item No.**	**Number of Modules (Max.)**
Base unit	Energy Data Management – Controller		
	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485	**750-8202/000-022**	1
	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485; Mobile radio module	**750-8207/000-022**	1
	Energy Data Management – Software	**Download: wago.com/applicationcontroller**	1
	End Module	**750-600**	1
	Power Supply to I/O Node; 230 VAC/24 VDC; 2.5 A	**787-1012**	1
	Power Supply to I/O Node; 230 VAC/24 VDC; 2 A	**787-1606**	1
Recording real power pulse EVU	4-Channel Digital Input; 24 VDC; 3 ms	**750-402**	1
Button connection for starting and stopping the data logging	8-Channel Digital Input/Output; 24 VDC; 0.5 A	**750-1506**	1
Recording S0 and pulse counter	2 Up/Down Counters; 16 bits; 500 Hz	**750-638**	4
Switching of outputs via MODBUS Master Displaying the logging status	8-Channel Digital Output; 24 VDC; 0.5 A	**750-530**	1
3-Phase Power Measurement	3-Phase Power Measurement; 690 VAC 1 A	**750-495**	Total: 18
	3-Phase Power Measurement; 690 VAC 5 A	**750-495/000-001**	
	3-Phase Power Measurement; 690 VAC Rogowski coils	**750-495/000-002**	
Temperature, pressure, flow meters and other analog signals	2-Channel Analog Input; 0 … 20 mA; Differential input	**750-452**	1
	8-Channel Analog Input; 0/4 … 20 mA; Single-ended	**750-496**	2
	8-Channel Analog Input; 0 … 10 VDC/±10 V; Single-ended	**750-497**	2
Resistance sensors	8-Channel Analog Input; Resistance measurement; Adjustable	**750-451**	2
Extension for connecting the M-Bus level converter	M-Bus Master	**753-649**	1
Extension for connecting the EnOcean Gateway	Serial Interface RS-232/-485	**750-652**	1
	EnOcean Receiver/Transmitter with RS-485 EVC Interface	**2852-7101**	1
Components for decentralized measurements	End Module for Bus Extension	**750-627**	1
	Coupler Module for Bus Extension	**750-628**	1 … 10
	System Power Supply; 24 VDC	**750-613**	1 … 10
	End Module	**750-600**	1 … 10
	Switched-Mode Power Supply; 24 VDC/2.5 A	**787-1012**	1 … 10



750-8202/000-022 or 750-8207/000-022

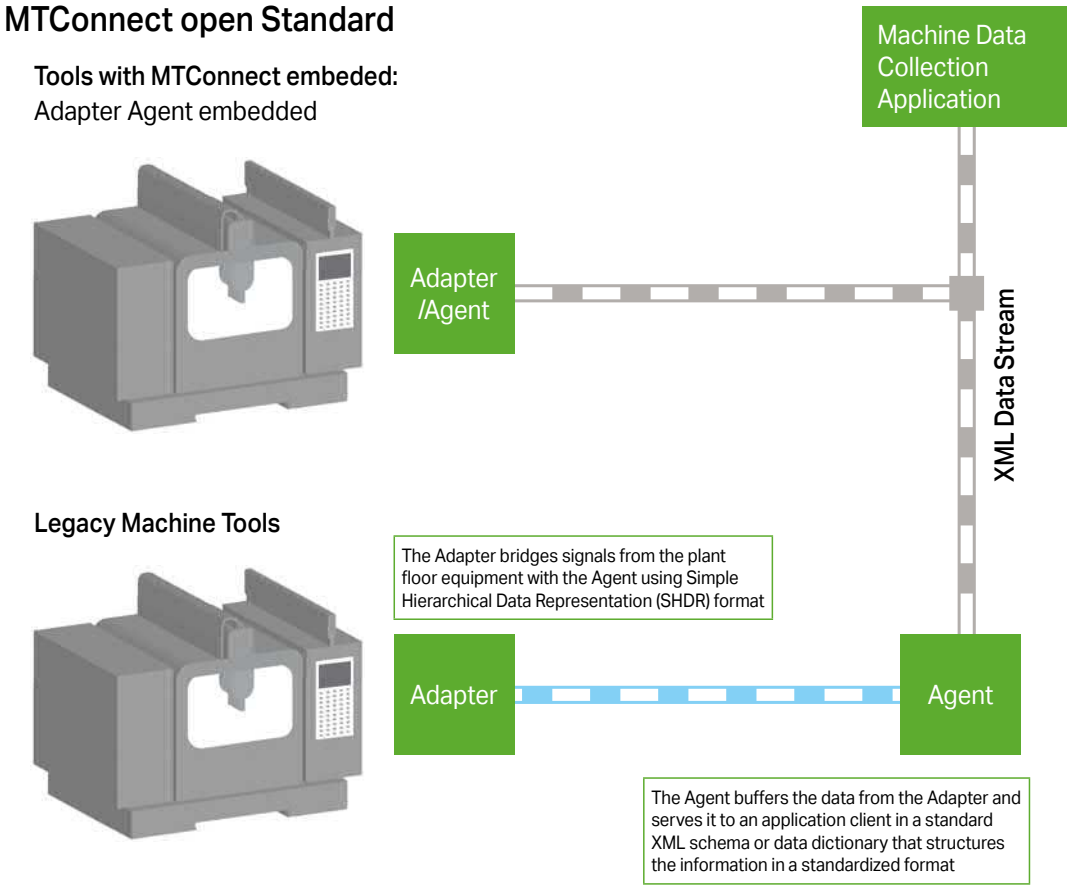


Energy Data Management

Combine a high-performance controller with software that automatically detects the different signals from connected meters and sensors – energy monitoring simple and flexible.

Machine Data Collection with the digitalTAP™ Software, Powered by MTConnect

1



WAGO offers an economical solution for integrating the machine data of existing systems into higher-level analytic software applications.
DigitalTAP™ from WAGO captures your machine's information and converts it into digital signals that can be used by analytic and data logger applications. The solution provides real-time device data in a standardized format for every machine type. This solution requires no programming. The user merely needs to configure the wired inputs via web visualization tool. Each input can be assigned a unique name individually with its own parameters, such as units and scaling range. These configuration parameters are stored automatically in the WAGO controller and are available immediately.

Through use of the open, licence-free MTConnect® standard, the machine information is formatted in a standardized table and uses proven Internet protocols for the data transport.

Machine Data Collection with MTConnect			
	Components		**Item No.**
Application Controller	Controller PFC100; FG0; 2 x ETHERNET		**750-8101/000-010**
	digitalTAP™ Application Software		**Download: wago.com/applicationcontroller**
Supported Modules	**Digital Modules**	8-Channel Digital Input; 24 VDC; 3 ms	**750-430**
		4-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection	**750-432**
		4-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection	**750-433**
		8-Channel Digital Input; 24 VDC; 3 ms; Low-side switching	**750-436**
		16-Channel Digital Input; 24 VDC; 3 ms	**750-1405**
		8-Channel Digital Output; 24 VDC; 0.5 A	**750-530**
	Analog Modules	2-Channel Analog Input; 0 … 20 mA; Differential input	**750-452**
		2-Channel Analog Input; 4 … 20 mA; Single-ended	**750-466**
		4-Channel Analog Input; 4 … 20 mA; Single-ended	**750-455**
		8-Channel Analog Input; 0/4 … 20 mA; Single-ended	**750-496**
		2-Channel Analog Input; 0 … 10 VDC; Single-ended	**750-467**
		8-Channel Analog Input; 0 … 10 VDC/±10 V; Single-ended	**750-497**
		4-Channel Analog Input; Resistance measurement; Adjustable	**750-450**
		8-Channel Analog Input; Resistance measurement; Adjustable	**750-451**
		2-Channel Analog Input; Thermocouple K; Diagnostics; Adjustable	**750-469/003-000**
		8-Channel Analog Input; Thermocouple; Adjustable	**750-458**
		3-Phase Power Measurement; 480 VAC 1 A	**750-494**
	Function and Technology Modules	2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O Module	**750-645**
Other Modules	End Module		**750-600**



750-8101/000-010



MTConnect

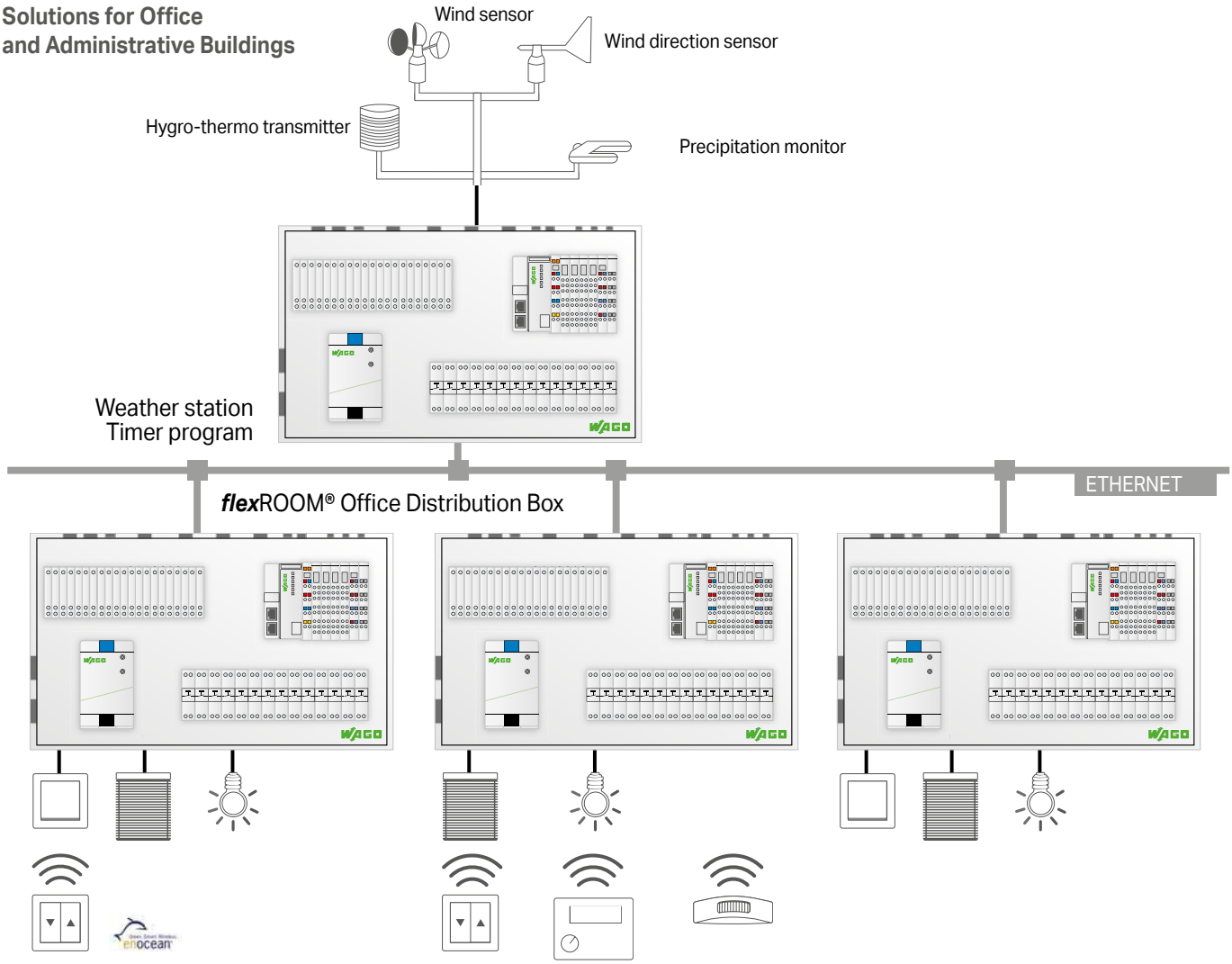
Get started with the Smart Factory comfortably and efficiently with digitalTAP(tm) – Powered by MTConnect.

Room Management with WAGO *flex*ROOM®

1

*flex*ROOM®

Solutions for Office and Administrative Buildings



flexROOM® is ideal for automating industrial and functional buildings (office buildings). This solution automates both lighting and sun protection, while performing single-room control (heating/cooling) for up to 24 room segments. A room segment is the smallest common denominator.
A wide range of 750/753 Series Digital Input/Output Modules are supported. The number of components can be planned and customized to meet individual requirements. For detailed information about supported hardware components, see the manual at www.wago.com/flexROOM.
Each WAGO ***flex***ROOM® Controller has a Web interface. Both the commissioning technician and end-user can configure the controls for each room via Web browser, regardless of their location or distribution box. Entire floor plans (setting and deleting walls) and room parameter settings, such as lighting and shading groups, can be changed from the parameter interface. No additional software is required.

WAGO *flex*ROOM®			
	Components		**Item No.**
Application Controller	PFC200 Controller; FG1; 2 x ETHERNET, RS-232/-485		**750-8202/000-011**
	***flex*ROOM® Application Software**		**Download: wago.com/ applicationcontroller**
Additional Modules (Examples)	16-Channel Digital Input; 24 VDC; 3 ms		**750-1405**
	16-Channel Digital Output; 24 VDC; 0.5 A		**750-1504**
	Serial Interface RS-232/-485		**750-652**
	DALI Multi-Master		**753-647**
	DALI Multi-Master DC/DC Converter		**753-620**
	End Module		**750-600**
DALI Accessories	DALI Sensors	WAGO DALI Multi-Sensor Kit • DALI Sensor Coupler • Eco-CI Kit • MULTI-3-CL Sensor	**2851-8201**
		DALI Sensor Coupler	**2851-8202**
		WAGO DALI MSensor-02 5DPI 41rc (ceiling installation)	**2851-8301**
		WAGO DALI MSensor-02 5DPI 41w (box installation)	**2851-8302**
		WAGO DALI MSensor-02 5DPI 41rs (surface mounting)	**2851-8303**
EnOcean Accessories	EnOcean Radio Transmitters	EnOcean easyfit PTM 250 2-Channel Lighting Control 2-Channel Blind Control 4-Channel Lighting Control 4-Channel Blind Control	 **758-940/001-000** **758-940/003-000** **758-940/002-000** **758-940/004-000**
	Room Control Unit	SR04-P Room Control Unit, radio, wall, EnOcean	**2852-7112**
		SR06 LCD Room Control Unit, radio, in-wall, EnOcean, 2 buttons	**2852-7113**
***WINSTA*® Accessories**	Connector Set	Predefined Connector Sets	
	Couplers/Distribution Connectors	h-Distribution Connectors	
	Distribution Boxes	Distribution Connectors with Phase Selection	
	Connecting Cables	Pre-Assembled with Various Connectors	
		Various Cable Types/Cross Sections	
	Tools	Operating Tools	
		Wiring Tools	



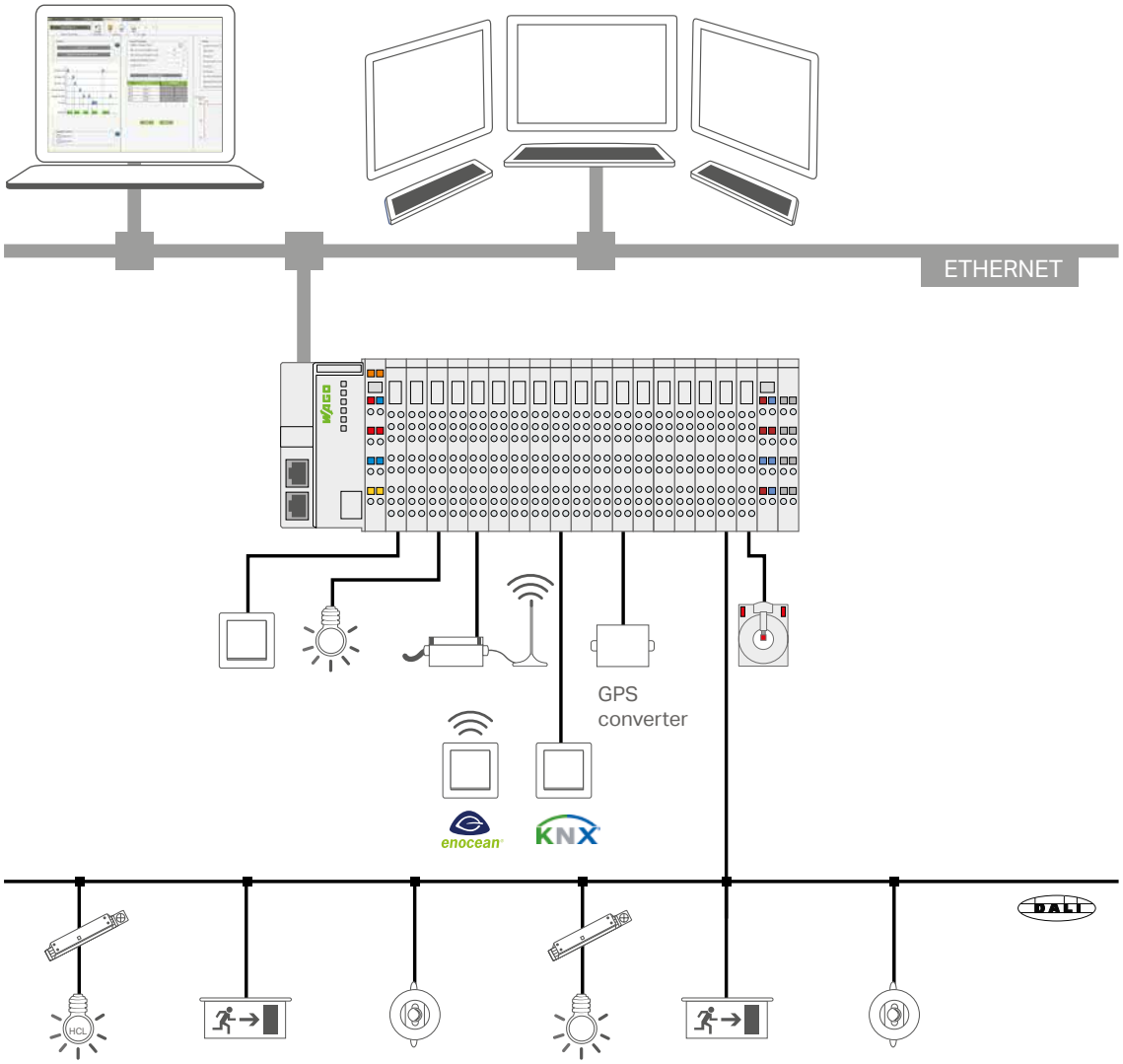
750-8202/000-011 or 750-8202/000-012



Room Management

In order to use the full capability of the application controller, you need the ***flex*ROOM®** Software. The software is available after registration. By registering, we make the latest version of the software available to you by e-mail and can help you with any questions at any time.

WAGO Lighting Management



WAGO Lighting Management is a proven concept based on predefined hardware and preconfigured software, which greatly simplifies planning, commissioning and operation. The basic idea: WAGO Lighting Management is based on the different lighting requirements in warehouses and production facilities. For example, a production facility is divided into virtual rooms in which the light can be flexibly adapted. Each virtual room receives signals from sensors and actuators in order to automatically set the appropriate light intensity. By using the virtual rooms, conversions and room remodeling can be implemented quickly and simply via Web configuration.

WAGO Lighting Management			
	Components	**Item No.**	**Note**
Base unit	Lighting Management – Controllers		The controllers can communicate with each other.
	Controller PFC200; FG2; 2 x ETHERNET; RS-232/-485	**750-8202/000-012**	
	Lighting Management – Software	**Free of charge**	Download: wago.com/applicationcontroller
	DALI Multi-Master	**753-647**	In addition to 64 DALI actuators (ECGs), a DALI Multi-Master Module supports up to 16 DALI Multi-sensors (max. 64 sensor addresses); max. 10 DALI modules per base package.
	End Module	**750-600**	An end module must be snapped onto the assembly at the end of a fieldbus node.
	Power Supply to I/O Node	**787-1012**	24 VDC supply voltage for controllers and additional modules
	Power Supply to DALI Multi-Master	**787-1007**	Power supply to max. 5 DALI Multi-Master Modules
Extension for inputs/buttons	16-Channel Digital Input; 24 VDC; 3 ms	**750-1405**	For 1–16 light push-buttons/switch inputs; max. 4 extensions per base package
Extension for outputs/ actuators	16-Channel Digital Output; 24 VDC; 0.5 A	**750-1504**	For 1–16 actuators/lamps/relays/ECG control; max. 2 extensions per base package
	Socket with Relay and Status; Display; 1 make contact; 24 VDC	**788-357**	Light switching via relay
Extension for EnOcean radio	Serial Interface RS-232/-485	**750-652**	Serial interface connects to STC65-RS485 EVC EnOcean Radio Transmitter/Receiver (for 1–64 rocker switches)
	EnOcean Receiver/Transmitter	**2852-7101**	EnOcean radio signal recording and transmission to the I/O node
	EnOcean Repeater	**2852-7102**	Extends the transmission range (for more planning information, visit the EnOcean website).
	Radio Transmitter; EnOcean easyfit PTM 250; 2-channel lighting control	**758-940/001-000**	1–2 or 1–4 signals; range of 30 meters in buildings to the radio receiver
	Radio Transmitter; EnOcean easyfit PTM 250; 4-channel lighting control	**758-940/003-000**	
Extension for external time request	Real-Time Clock Module	**750-640**	Time synchronization module, if no time server connection is possible
	GPS DCF Converter	**2852-7901**	Converter/external receiver for time synchronization
Extension for energy data measurement	3-Phase Power Measurement; 690 VAC	**750-495/xxx-xxx**	
	Current and Voltage Connections	**2007-8874, 2007-8877**	Pre-assembled terminal block assemblies for easy connection and short-circuiting of current transformers (current transformers, see Full Line Catalog Volume 4)
Extension for KNX buttons	KNX/EIB/TP1 Interface	**753-646**	Connects KNX buttons to the I/O node
Extension for sensors	DALI Multi-Sensor Kit	**2851-8201**	Brightness measurement and motion sensor: kit connects to a DALI bus system
	DALI Sensor Coupler	**2851-8202**	Sensor coupler for connecting MULTI-3-CI sensors to DALI Max. 16 DALI sensor couplers per DALI Multi Master Module (753-647)
	DALI HIGHBAY ADAPTER + HIGH BAY	**2852-7207, 2852-7201**	Brightness measurement and motion sensor for large installation heights (3–13 meters)
	DALI HIGHBAY ADAPTER + VISION	**2852-7207, 2852-7202**	Motion sensor for large areas, open offices, hallways or warehouses
	DALI LS/PD LI	**2852-7203**	Motion sensor for office lighting (1 … 5 meters)
	DALI Sensor Coupler HF LS LI + Radar Sensor HF LS LI 4p4c Connecting Cable, 50 cm,	**2852-7205 2852-7206 2852-7208**	Light and recessed ceiling sensor: combined daylight and motion detection, motion detection via radar
	DALI XC	**2852-7301**	Push-button coupler connects 4 conventional push-buttons to DALI.
	DALI Sensor Coupler E	**2852-7204**	Sensor coupler connects standard sensors to DALI.



750-8202/000-012



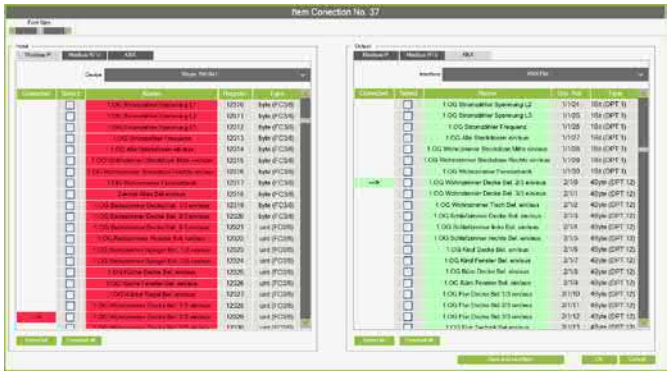
Lighting Management

Using a combination of predefined hardware and user-friendly software, WAGO Lighting Management facilitates the design and commissioning of new lighting systems while providing numerous advantages for their operation.

WAGO Gateway Application

1

With the new WAGO Gateway Application, it is possible to implement information exchange between different bus systems. This is supported by a user-friendly interface, so no programming is necessary – nothing but configuring connections.

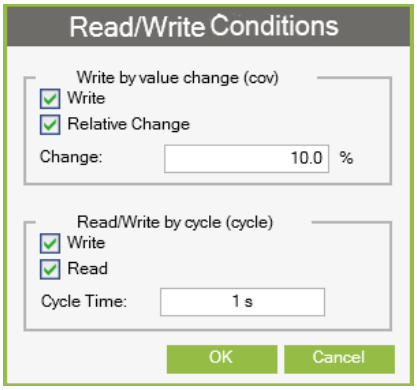


Advantages:

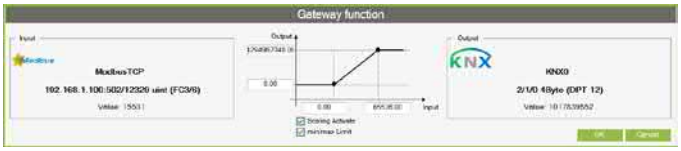
- Exchange of information between the bus systems:
  - Modbus TCP
  - Modbus UDP
  - Modbus RTU
  - KNX
- Commissioning time reduced through interface-supported configuration instead of programming
- Easily manage up to 255 KNX data points per KNX module via ETS import and export

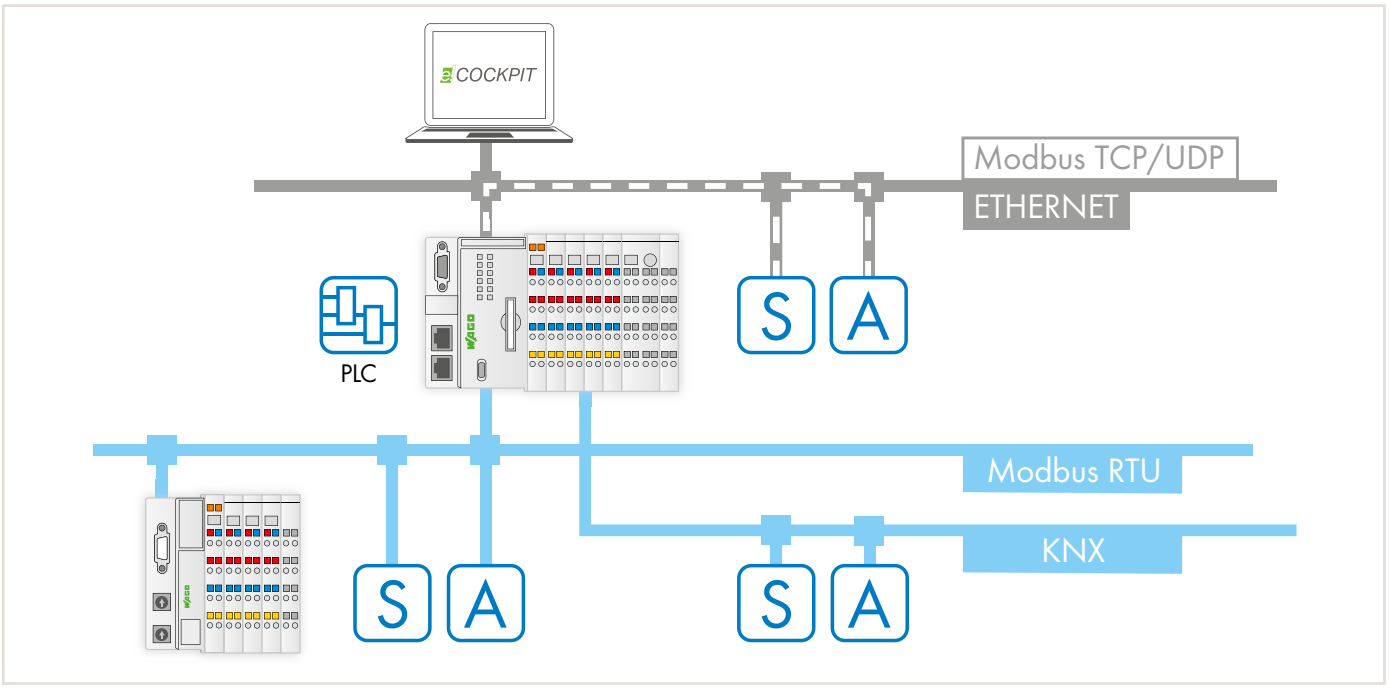
Function in Detail:

- Automatic detection of station structure
- Display of the available interfaces
- Creation of data points
- Import/export of ETS files (KNX)
- Linking of data points
- Conditional reading/writing



- Functional coupling





Item Description	Item No.
WAGO Gateway Application	Download

Delivery type	Closed Application Download at www.wago.com
Compatible Controller	
PFC200; G2; 2ETH RS	**750-8212**

You can find detailed information on the controllers in Section 4.1.



Software

Engineering Software

- PC-based software
- Customized tools for every automation task

Runtime Software

- Standard machine component
- Comprehensive, tested software modules for control, regulation, operation & monitoring

Mobile Software (Apps)

- Machine operation and monitoring via tablet and smartphone

Solutions

- Cloud solutions
- Reusable, customizable software applications

◂ Section 1

Software
Engineering Software, Runtime Software and Mobile Software

				Page
General Product Information				24
	Description		Item No.	
Engineering Software				
Designing and marking	***smart***DATA Engineering		Online	
Programming and configuration software	***e!COCKPIT***		**2759-0101**	26
	Add On	***e!COCKPIT*** UML	**2759-402/1420-1000**	28
		e!COCKPIT Static Analysis	**2759-403/1420-1000**	29
		e!COCKPIT Profiler	**2759-404/1420-1000**	30
	WAGO-I/O-*PRO*		**759-333**	32
	WAGO-I/O-*CHECK*		**759-302**	33
	IEC 60870/IEC 61850 Configurator		Download	34
	DNP3 Configurator		Download	36
	SMI Configurator		Download	37
	BACnet Configurator		Download	38
	DALI Configurator		Download	39
	LON® Configurator		Download	40
Plug-ins	Device- and Industry-Specific Configurators			
	WAGO ETS Plug-In		Download	41
Runtime Software				
Libraries	***e!COCKPIT*** (based on CODESYS V3)		Download	42
	WAGO-I/O-*PRO* (based on CODESYS V2.3)		Download	43
e!RUNTIME	EtherCAT Master 300, single license		**2759-263/210-1000**	45
Mobile Software (Apps)				
	WAGO WebVisu App		Download	46
Accessories				
Configuration Cable, USB Communication Cable, *Bluetooth*® Adapter				48

Software
General Product Information

Software Factors into Success

Projects in production, process and building automation are characterized by shorter and shorter implementation times, ever more complex structures and the increasing role of software as part of the overall solution. In fact, software is becoming an essential factor that influences the success of a project.

Engineering software is used for both machine and system development, as well as the implementation of building automation projects. Runtime software controls the devices at operating time.

Customized Software Tools

Significant challenges must be overcome to develop, operate and maintain modern machines and systems, as well as program, configure and commission building automation applications. Customized software tools are available as needed for every task – embedded within integrated engineering processes or as stand-alone tools for a set of dedicated functions.

CODESYS as an Integrated Environment

All WAGO Controllers are equipped with the high-performing CODESYS industry-standard development environment. This enables software development in the IEC 61131-3 PLC programming languages (ST, FBD, LD, IL, SFC and CFC). As a trusted programming environment, CODESYS guides developers, enabling them to reuse and further develop existing projects without relearning software. This means that modern paradigms are available, such as Object-Oriented Programming (OOP) and modern visualization technologies.

Pre-Made Software Solutions

Pre-made software solutions and applications simplify automation. Such solutions involve reusable software that can be used for a specific application by making simple adjustments. This approach saves time and money.
Pre-made software solutions can be found in Section 1.

Open to Proven Standards

The software is open to well-established standards, making it an investment in the future. The software supports all prominent fieldbuses, for example. This allows WAGO components to be seamlessly integrated into engineering software via standardized device description files. In addition, connecting controllers to fieldbus systems via WAGO Engineering Software is incredibly simple, opening up all the advantages of existing field devices.
Finally, WAGO Software is based on modern IT standards and development methods for long-term viability.

Extensive Import and Export Functionality

The software tools demonstrate an impressive ability to exchange project data with the external software tools involved in the development process – preventing costly, error-prone double entry.

Industry-Specific Configurators

Whether industry, process or building automation, every sector and industry has specific requirements. Therefore, plug-ins specifically customized for the needs of individual industries are available in addition to the common software base. For example, these plug-ins can be used to measure energy or easily configure a DALI network.

Advantages:

- Customized software for every automation task
- Extensive import functions from external design tools
- Plug-ins for industry-specific development environments
- Comprehensive software solutions for various industries
- Simple and secure licensing

Software
General Product Information

Software for Mechanical Engineering

Software is used in every phase of machine and system automation – from design to successful machine operation.

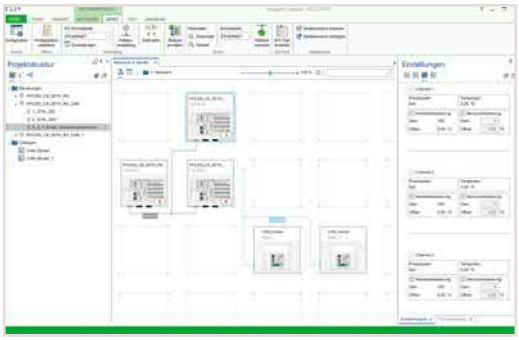
Design	Software Development	Commissioning	Machine Operation
• CAD and ECAD • Component selection	• Configuration • Parameterization • Programming • Simulation • Visualization	• Testing • Diagnostics	• Updating • (Remote) maintenance • Monitoring • Controlling, regulating, operating and monitoring

Engineering Software

Quickly implementing complex machine functions is critical in modern mechanical engineering applications. PC-based engineering software supports all development activities. The focus is on simple configuration, timely programming and efficient commissioning of automation network components.

Engineering tools are typically not permanently linked to the machine – they only communicate with the machine during startup and maintenance.

Design | Software Development | Commissioning | Machine Operation





eCOCKPIT

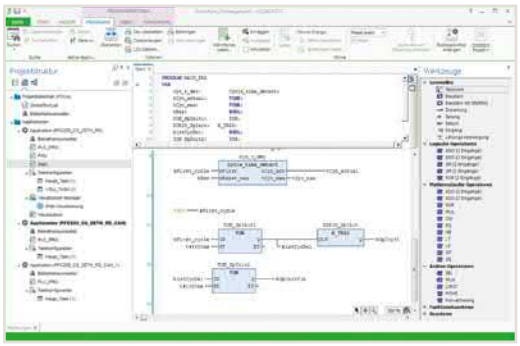
Runtime Software

The machine is controlled by runtime software that determines behavior, while enabling both operation and current status monitoring for the user. It also transmits operating data to higher-level systems. With comprehensive, tried-and-tested software function blocks (IEC libraries), development goals are reached more quickly.

Unlike engineering software, runtime software operates continuously – it is a part of the machine and ensures correct operation.

Design | Software Development | Commissioning | Machine Operation





Mobile Software (Apps)

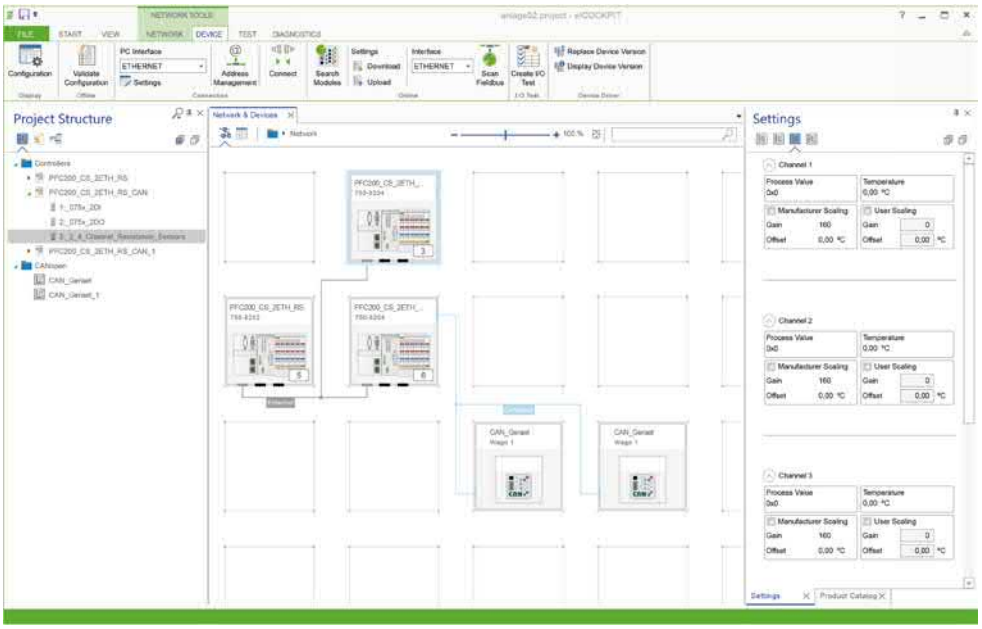
Software on mobile devices offers productivity advantages in an industrial environment as well. This integration enables users to quickly and easily operate and monitor automation processes via smartphone or tablet – from virtually anywhere.

Mobile software typically communicates only with the machine's controller for a specific application.

Design | Software Development | Commissioning | Machine Operation



e!COCKPIT
Engineering Software Based on CODESYS V3



e!COCKPIT automation software for faster machine and system startup: WAGO's new engineering software shortens development time for automation projects while impressing with a modern and clearly laid out user interface. At the software's core is CODESYS V3 for simple and versatile creation of applications.

Ensuring a project's long-term viability through sustainable cost savings hinges on a user's ability to quickly adapt to new software that offers a high degree of reusability.

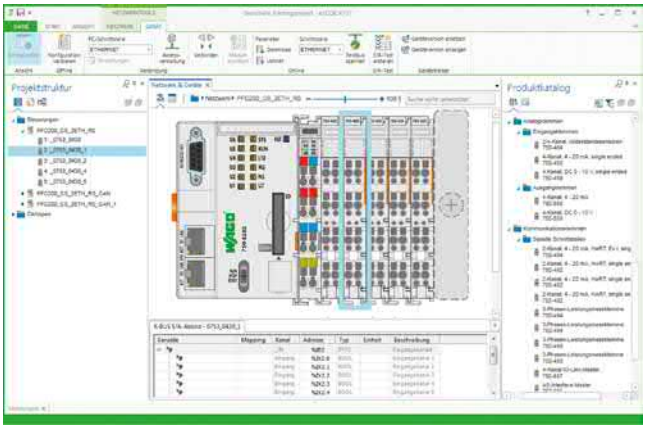
WAGO set out to fulfill these exact requirements by developing its own engineering software: ***e!COCKPIT***. This integrated development environment supports every automation task, from hardware configuration, programming, simulation and visualization up to commissioning – all in one software package.

Use the programming tool to cover all important automation bases while simultaneously engineering particularly complex projects quickly and easily.

e!COCKPIT				
License Type	Number of PCs	**Item No.**	**Order Text**	
Workplace license	2	**2759-0101/1110-2002**	***e!COCKPIT***; Workstation license	Can be installed on up to two PCs (e.g., notebook & desktop)
Multi-user license	5	**2759-0101/1110-2005**	***e!COCKPIT***; Multi-user license; 5	Multiple installations up to specified number
Multi-user license	10	**2759-0101/1110-2010**	***e!COCKPIT***; Multi-user license; 10	
Multi-user license	15	**2759-0101/1110-2015**	***e!COCKPIT***; Multi-user license; 15	
Multi-user license	20	**2759-0101/1110-2020**	***e!COCKPIT***; Multi-user license; 20	
Site license	unlimited	**2759-0101/1110-3000**	***e!COCKPIT***; Site license	Unlimited installations at a company location
Buy-out license	unlimited	**2759-0101/1110-4000**	***e!COCKPIT***; Buy-out license	Unlimited installations within a company at all locations in a country; in addition, the software may be used in company products that contain WAGO's automation technology to form a functional unit.

Supported operating systems	Windows 7 (32- and 64-bit), Windows 8, Windows 8.1 (32- and 64-bit), Windows 10
System Requirements	
Processor	Dual-core
Memory	4 GB
Hard disk space	10 GB
Graphics resolution	1,366 x 768 px
Supported devices	Controllers based on CODESYS V3, I/O modules (750/753)
Supported fieldbuses	CANopen; Modbus TCP/UDP; Modbus RTU; PROFIBUS
Supported device descriptions	DTP; EDS; GSD
Connectivity	TCP; USB; OPC; CODESYS network variables; CODESYS DataServer
Programming languages per IEC 61131-3	ST; LD; FBD; IL; FC; CFC
Import/export formats	CODESYS V3 project files (*.project)
Delivery type	Installation file (download)
For data sheet and further information, see:	wago.com/ecockpit

Internet connection may be required for license activation.
Windows® is a registered trademark of Microsoft Corporation.



Configuration and Parameterization

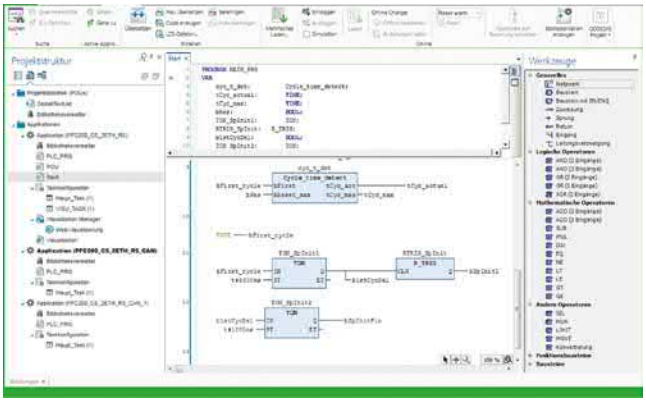
The integrated ***e!COCKPIT*** configurators provide modern operating tools and workspaces, such as:
Examples:

- Graphical network topology: Complex relationships between network devices and their current states can be identified easily and intuitively.
- Drag & Drop: Simplifies device interaction.
- Copy & Paste: Individual devices or whole network branches can be duplicated quickly.
- Batch processing: Parameter values are set simultaneously for several devices.

Programming

e!COCKPIT offers multiple software development options:

- IEC 61131-3 PLC programming languages: Structured Text (ST), Ladder Diagram (LD), Function Block Diagram (FBD), Instruction List (IL), Sequential Function Chart (SFC), Continuous Function Chart (CFC)
- For flexibility, all programming languages can be combined with one another.
- Created programs can be easily debugged on the engineering PC via simulation.
- New paradigms such as object-oriented programming are included.





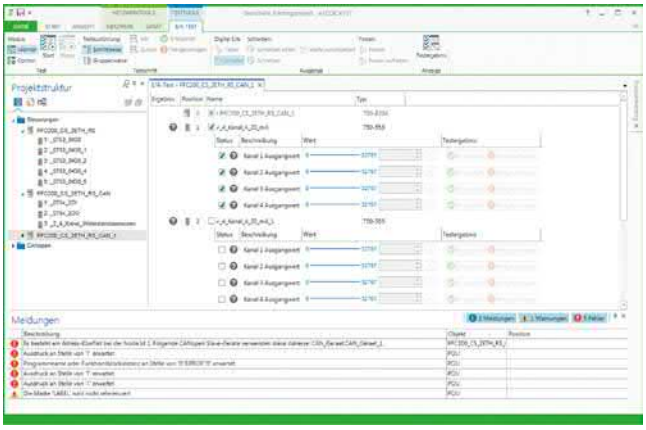
Visualization

Advanced user interfaces for operating and monitoring machines are standard. Today, HMI-based design is a critical factor that influences the purchase of an entire automation line. ***e!COCKPIT*** employs Drag & Drop to streamline the design of modern user interfaces. The integrated visualization editor provides:

- Access to IEC program variables
- Closed simulation of HMI and PLC programs on the engineering PC
- Guaranteed language independence via Unicode character set
- Current standards such as HTML 5 or CSS

Diagnostics

Being acutely aware of the automation network's current status is an absolute must for the rapid detection and elimination of errors – be it during development in the office or directly on the machine during commissioning. ***e!COCKPIT*** provides comprehensive diagnostic capabilities:
Individual views, for example, always display the controllers' status information both graphically and in tabular form
To keep the project on time, error messages are transmitted directly and clearly.
The structured wiring test function systematically identifies wiring errors.



e!COCKPIT UML
Software Modeling in UML

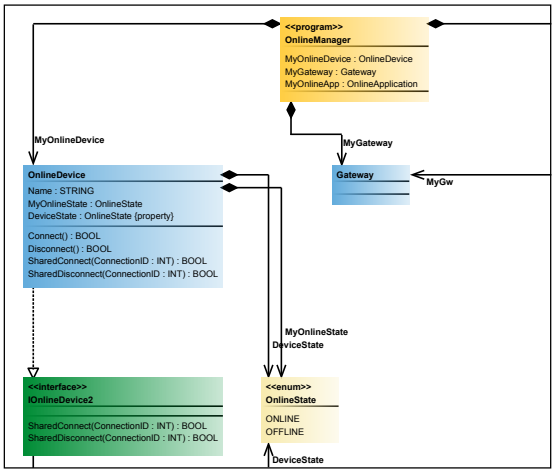
UML (Unified Modeling Language) is a graphical language for specifying, designing and documenting object-oriented software. It clearly facilitates discussions between programming and other disciplines within system development. The ***e!****COCKPIT* UML add-on extends the ***e!****COCKPIT* Engineering Software with two languages of the "Unified Modeling Language": the class diagram and the status diagram.

Advantages:
- Improved readability of the program code via clear class and behavior diagrams in standardized form
- Reduce programming errors by generating program code from UML diagrams
- Easier debugging through online data in the state diagram

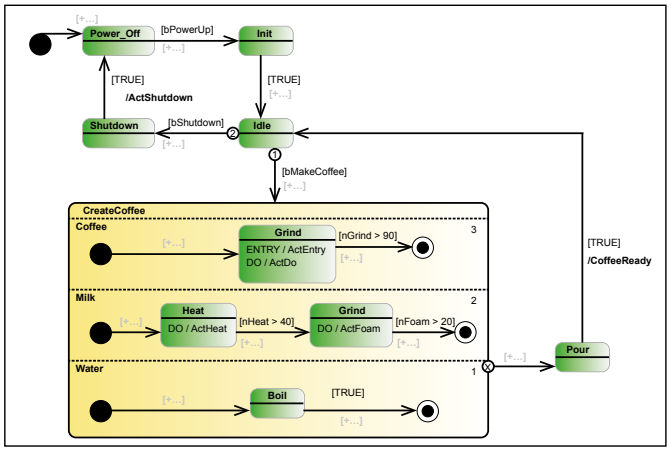
Class Diagram:
The class diagram belongs to the group of UML structure diagrams. With the additional graphic editor, the object-oriented structure of ***e!****COCKPIT* projects can be mapped or designed. The various object classes (e.g., function blocks or interfaces), including the variables and methods used in them, and their relationships are clearly displayed.
The existing project structure can be imported directly from the device structure when creating a class diagram. However, a project structure can also be rebuilt using the following available class and relationship elements:

- Class (POU)
- Interface
- Variable declaration
- Property
- Method
- Generalization
- Realization relationship
- Association
- Composition

New objects in the class diagram editor are automatically inserted into the device structure.



State Diagram:
The state diagram belongs to the group of UML behavior diagrams. It is a graphical language for specifying and designing the sequence of event-discrete systems. Unlike with the class diagram, executable application code is generated when compiling a state diagram.



The state diagram editor includes a selection of step and transition elements:

- Start state
- End state
- State
- Composite state
- Junction/connection
- Selection
- Transition
- End transition
- Exception transition

When the application is running, the status diagram is switched according to the clock cycle. In addition, an independent switching behavior can be realized via cyclic internal state diagrams. In online mode, the state diagram is animated so that the current status of the process can be tracked at any time.

Item Description	
	Item No.
e!*COCKPIT* UML; Single-user license	**2759-402/1420-1000**

Minimum ***e!****COCKPIT* version	V1.3.0
Hard disk space	20 MB
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/2759-402/1420-1000

Single license allows installation on one computer.

Internet connection may be required for license activation.

e!COCKPIT Static Analysis
Static Code Analysis

In addition to the compiler check, the ***e!COCKPIT*** Static Analysis add-on checks the source code based on defined rules and naming conventions. This add-on displays potential development problems, allowing errors to be detected and corrected before field testing. More than 100 partly parameterizable rules have already been implemented that can be combined into individual rule sets. The add-on functions are seamlessly integrated into the ***e!COCKPIT*** development environment.



Advantages:
- Avoid errors during program creation
- Save time-consuming troubleshooting during application development
- Ensure that the program code conforms to the defined rules and is easily readable

Main Functions:
- Check the application explicitly via menu command
- Alternatively: automatic verification during code generation
- Control pre-processor instructions, and determine which parts of the code will be analyzed

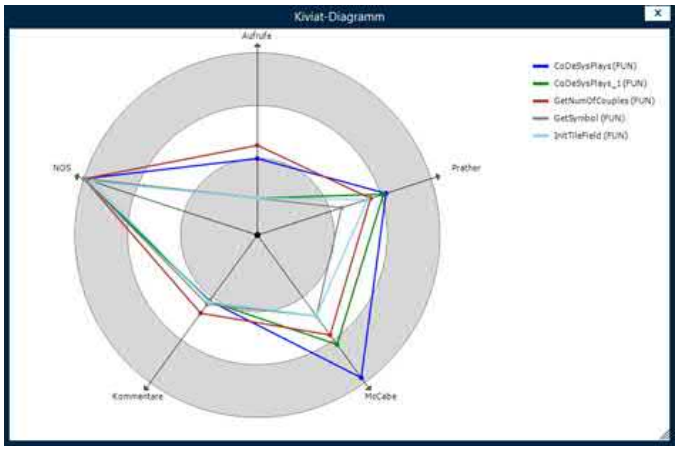
Rules and Naming Conventions:
Within the ***e!COCKPIT*** project settings, a standard set of programming rules and naming conventions can be configured in the standard version:
- Unused variables
- Overlapping memory areas
- Simultaneous access
- Multiple write access to output
- Multiple use of the name

Additionally, the following analytics can be performed with ***e!COCKPIT*** Static Analysis:
- Discover unreachable parts of the code
- Find empty objects
- Find empty instructions
- Find useless declarations
- Conversions
- Write access to input variables
- Rules for operators
- Rules for FOR and CASE instructions
- Strict testing of IEC rules

Result of the Analysis:
The result of the analysis is displayed in the message window. Each violation has a unique number and can be uniquely associated with the configured rules and naming conventions.



Metrics:
Various metrics, such as the number of code lines, memory consumption or the evaluation of software complexity, as well as the upper and lower limits to be observed, can be configured for evaluation of the code quality.
The results of the applied metrics can be displayed in tabular and graphical form as a Kiviat diagram.



Item Description	
	Item No.
e!COCKPIT Static Analysis; Single License	**2759-403/1420-1000**

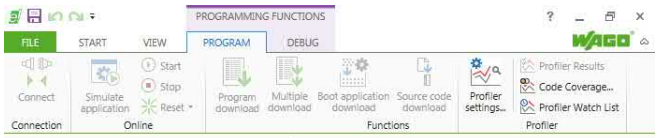
Single license allows installation on one computer.

Minimum *e!COCKPIT* version	V1.4.0
Hard disk space	30 MB
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/2759-403/1420-1000

Internet connection may be required for license activation.

e!COCKPIT Profiler
Runtime Behavior Analysis

The *e!COCKPIT* Profiler add-on allows programmers and application developers to measure and evaluate the processing times and code coverage of different blocks in an IEC 61131-3 application at an early stage. This add-on can be seamlessly integrated into the *e!COCKPIT* Engineering Software. Measurement may be performed parallel to the application development in the standard development environment.



Advantages:
- Measure both machine code's runtime behavior and code coverage right at the beginning of the development phase
- Early detection of runtime problems
- Identify both time-consuming program parts and unused programming blocks
- Overall and individual measurement of all application blocks
- Identify the code efficiency by comparing historical and current measurements
- Increase the software quality

Main Functions:
- Implicit binary code extension during translation, without changing the program code of a project
- Dynamic measurement via code instrumentation at each function entry and exit
- Only during measurement: temporary code enlargement and runtime extension of 10 to 50%
- Measurement start via variable or command
- Overview of the measurement results in the development environment

Functions:
- Control the runtime measurement via freely selectable Boolean variable
- Measure the runtime of individual programming blocks and function block instances within the "profiler watch list"
- Measure the percentage of missed instructions per block via code coverage
- Measurement results show the time-critical path

- **Setting Options:**
  - Select the task to be measured
  - Select the unit base (tick, milliseconds or microseconds)
  - Define the memory size required for the measurement
  - Adjust the measurement behavior (next or maximum cycle)
  - Select the calls to be measured in the monitoring list
  - Select the program blocks to be measured to determine the code coverage

- **Detailed Results:**
  - Percentage of time spent in the call
  - Total time spent in call
  - Average time of all POU calls in a single cycle
  - Minimum and maximum processing time over multiple cycles
  - Number of calls
  - Time spent for each call
  - Standard deviation of average measured time
  - Percentage of the iterated code

- **Display the Results as:**
  - Summary table
  - Call tree (time- or process-oriented)
  - Tables
  - Watch list



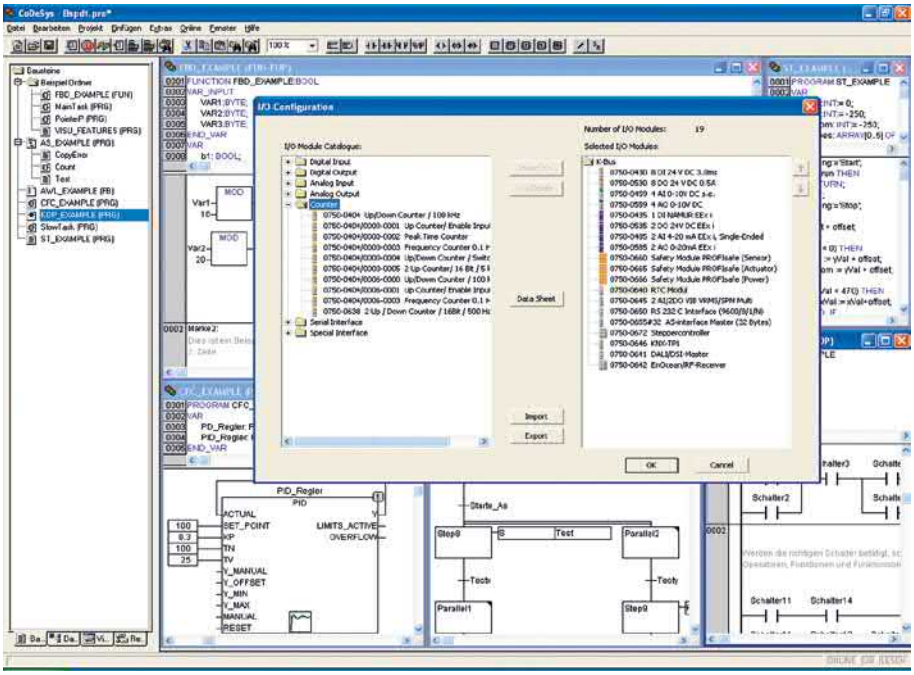
Item Description	
	Item No.
e!COCKPIT Profiler, Single License	2759-404/1420-1000

Single license allows installation on one computer.

Minimum *e!COCKPIT* version	V1.4.0
Hard disk space	30 MB
Delivery type	Installation file (download)
Data sheet and further information, see:	wago.com/2759-404/1420-1000

Internet connection may be required for license activation.

WAGO-I/O-*PRO*
Engineering Software Based on CODESYS V2.3



WAGO-I/O-*PRO* is a programming and visualization tool for control programs. This software is used to develop PLC applications for WAGO-I/O-SYSTEM 750 Controllers.

WAGO-I/O-*PRO* runs in line with the IEC 61131-3 standard, which specifies the requirements for a programming system. The IL, SFC, LD, FBD and ST programming languages are supported. The optimal programming language can be chosen for each application.

With extensive programming functions, the software readily meets the increasing requirements of control program development (e.g., reusability and modularization).
- Efficiently translate between programming languages
- Automatic variable declaration
- Library management

Integrated test and diagnostic functions also streamline and accelerate the implementation of processes for PLC projects.
- Online status display using the program code
- Offline simulation
- Integrated process visualization
- Record and graphically display project variables

WAGO-I/O-*PRO* also offers the option of programming your existing products from other manufacturers within the CODESYS automation alliance in addition to the standard programmable CODESYS automation alliance products from WAGO.

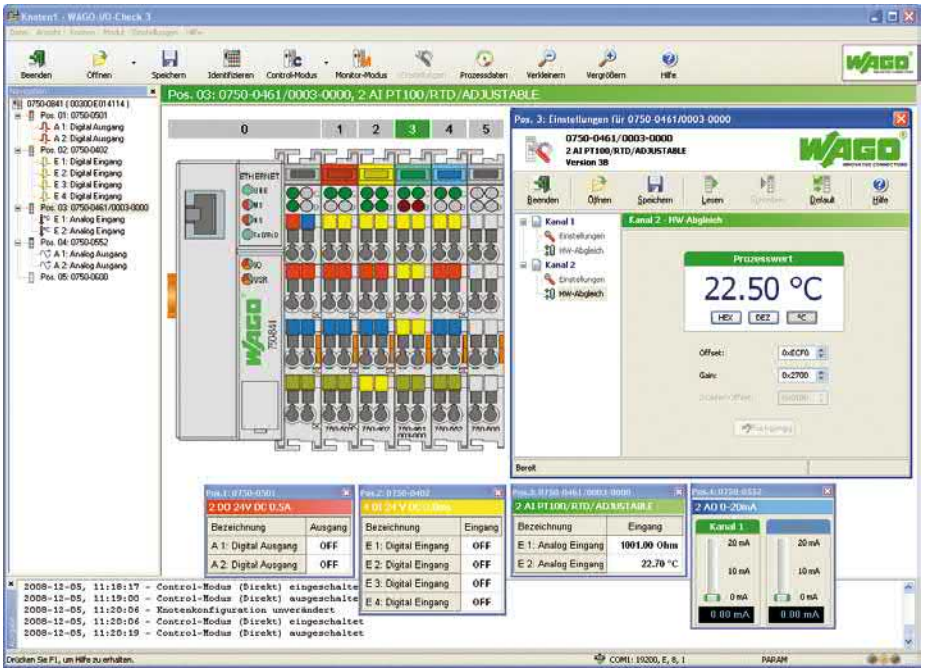
WAGO-I/O-*PRO*		
Version	Delivery type	Item No.
RS-232 Set	CD-ROM and serial communication cable	759-333
USB Set	CD-ROM and USB communication cable	759-333/000-923

Supported operating systems	Windows 7; Windows 10
System Requirements	
Processor	1 GHz or higher; with 32 bits (x86) or 64 bits (x64)
Memory	1 GB RAM (min.)
Hard disk space	300 MB (min.)
Graphics resolution	1024 x 786 (min.)
Other system requirements	Open serial interface, CD-ROM and mouse required
Delivery type	Installation file (CD-ROM)
Data sheet and further information, see:	wago.com/759-333

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„ Serial/USB communication cables, see page 48

WAGO-I/O-*CHECK*



WAGO-I/O-*CHECK* is an easy-to-use Windows application for checking inputs and outputs and the display of a WAGO-I/O-SYSTEM 750 node, which does not have to be connected to the fieldbus system at the time.
The software reads the configuration from the node and displays itas a graphic on the screen. The graphic can be printed together with a configuration list as documentation.

With WAGO-I/O-*CHECK*, it is possible to display and determine the process data of the I/O modules. The field wiring, including all sensors and actuators, can thus be checked before startup.

Application-specific settings, such as the baud rate or type of sensors, can be made with certain interface, Pt100 and thermocouple modules.

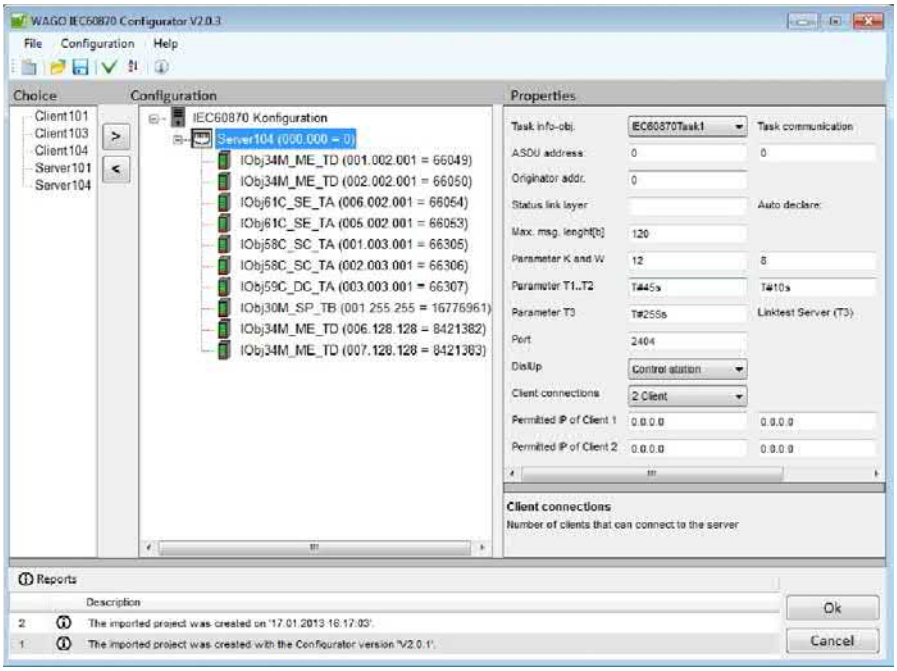
The coupler must be connected at a vacant serial or USB port of the PC using the communication cable supplied in the set with the system to enable communication between WAGO-I/O-*CHECK* and the coupler.

WAGO-I/O-*CHECK*		
Version	Delivery type	Item No.
RS-232 Set	CD-ROM and serial communication cable	759-302
USB Set	CD-ROM and USB communication cable	759-302/000-923
CD	CD-ROM	759-920

Supported operating systems	Windows 7; Windows 10
System Requirements	
Processor	1 GHz or higher; with 32 bits (x86) or 64 bits (x64)
Memory	1 GB RAM (min.)
Hard disk space	150 MB (min.)
Graphics resolution	1024 x 786 (min.)
Other system requirements	CD-ROM and mouse required
Delivery type	Installation file (CD-ROM)
Data sheet and further information, see:	wago.com/759-302

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IEC 60870 Configurator



The IEC 60870 Configurator is part of the WAGO-I/O-*PRO* V2.3 Software. The configurator fully supports the IEC 60870-5-101/103/104 specific functions of all WAGO telecontrollers.

The configurator sets up IEC 60870 objects, while configuring data exchange to the PLC application or I/O modules.
Import and export functions in CSV format allow configured data to be transmitted to other engineering tools.

The IEC 60870-5-101 and 104 protocols are supported on both client and server sides, while the IEC 60870-5-103 protocol is exclusively supported on the client side. This permits the creation of gateways that convert one protocol into another, e.g., allowing protection devices to be read out via IEC 60870-5-103 and data to be transmitted to the network control system via IEC 60870-5-104.

Various options are available for the time synchronization of telecontrol substations (server). Time can be synchronized either via the IEC 60870 protocol with object 103 or via (S)NTP. With the WAGO 750-640 Module, clock time can also be synchronized via DCF77 or GPS.

IEC 60870-5-101/104 information objects can be used to monitor the direction of single, double and step messages. Bit patterns, counter values, as well as normalized, scaled and floating-point measurement values can also be used. All information objects can be transmitted with or without a time stamp. This also applies to information objects in control direction.

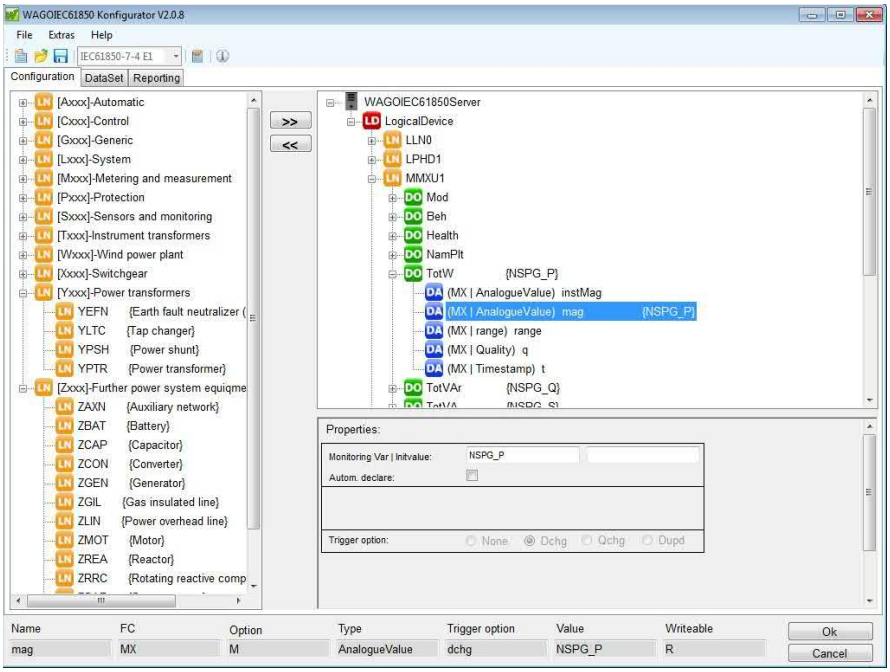
An IEC 60870-5-104 server can simultaneously maintain up to four connections to the control system (client).

IEC 60870 Configurator
Integrated in WAGO-I/O-*PRO* V2.3

System requirements	WAGO-I/O-*PRO* Version 2.3.9.40 or higher
Function	IEC 60870-5-101 server and client IEC 60870-5-103 client IEC 60870-5-104 server and client
Supported Controllers	
Controllers PFC200	750-8202/025-001 750-8206/025-001
Controllers PFC200 XTR	750-8202/040-001 750-8206/040-001
Controllers 750	750-872 750-880/025-001 750-880/025-002
Controllers 750 XTR	750-880/040-001

„ Software WAGO-I/O-*PRO* V2.3, see page 32

IEC 61850 Configurator



The IEC 61850 Configurator is part of the WAGO-I/O-*PRO* V2.3 Software. The configurator fully supports the IEC-61850-specific functions of the WAGO telecontrollers.

The configurator sets up IEC 61850 objects, while configuring data exchange to the PLC application or I/O modules.
Import and export functions in IEC 61850 SCL exchange format allow configured data to be transmitted to other engineering tools.

On the server side, the IEC 61850 protocol is supported for MMS* communication to the control system. The controllers can also be operated as a GOOSE publisher or subscriber. This permits the creation of gateways that convert one protocol into another, e.g., allowing data from protection devices to be received via the IEC 61850 client and transmitted to the network control system via IEC 60870-5-104 protocol.
Time synchronization is performed via SNTP, NTP, DCF77 and GPS (750-640 Module is also required for GPS).

Various options are available for the time synchronization of telecontrol substations (server): It can either be done via (S)NTP or synchronized with the WAGO 750-640 Module via DCF77 or GPS.
The IEC 61850 MMS server can simultaneously maintain up to five connections to the control system (client).

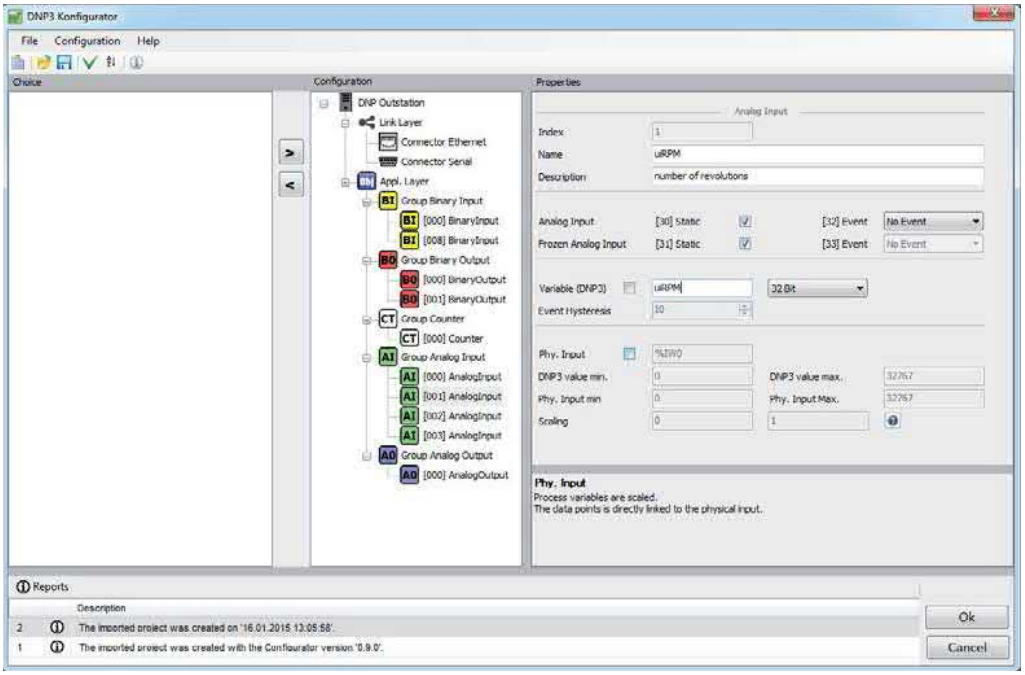
The IEC 61850 client processes data from up to 10 servers with each 32 requests.

*MMS = Manufacturing Messaging Specification

IEC 61850 Configurator
Integrated in WAGO-I/O-*PRO* V2.3

System requirements	WAGO-I/O-*PRO* Version 2.3.9.47 or higher
Function	IEC 61850 server and client
Object types	IEC 61850-7-4 and IEC 61400-25
Data sets	Static and dynamic
Reporting	Buffered and unbuffered
Supported Controllers IEC 61850 Server	
Controllers 750	750-872
Supported Controllers IEC 61850 Server and Client	
Controllers PFC200	750-8202/025-001 750-8202/025-002 750-8206/025-001 750-8207/025-001
Controllers PFC200 XTR	750-8202/040-001 750-8206/040-001
Controllers 750	750-880/025-001 750-880/025-002
Controllers 750 XTR	750-880/040-001

DNP3 Configurator



The DNP3 Configurator is part of the WAGO-I/O-*PRO* V2.3. Software. The configurator fully supports the DNP3 specific functions of all WAGO telecontrollers.

The configurator sets up DNP3 objects, while configuring data exchange to the PLC application or I/O modules. The settings can be imported and exported in DNP3 XML device profile format.

WAGO's telecontrollers can work as TCP, UDP and serial DNP3 slave.

Cyclical time synchronization of the telecontrol outstation (slave) can be performed by the master according to DNP3 Device Profile 1.7.2.

In the monitoring direction, the WAGO DNP3 slave can send digital, analog and count values to the master. Both digital and analog values can be received in control direction. Analog values can be processed in 16-bit, 32-bit or FLOAT format. Count values can be processed in 16-bit or 32-bit format.

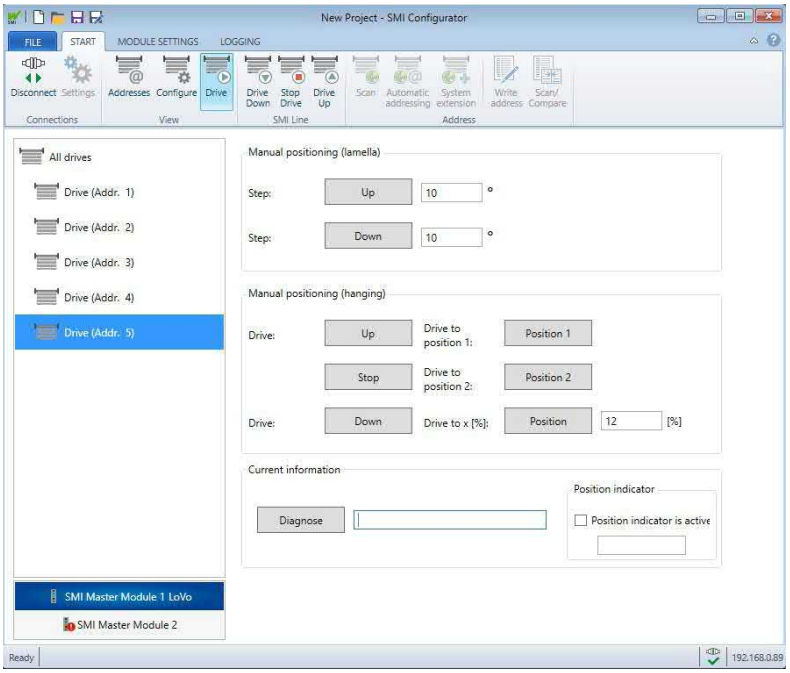
WAGO's DNP3 slave can simultaneously maintain connections to up four DNP3 masters.

DNP3 Configurator
Integrated in WAGO-I/O-*PRO* V2.3

System requirements	WAGO-I/O-*PRO* Version 2.3.9.48 or higher
Function	Serial DNP3 Slave (RS-232), DNP3 TCP/IP Slave
Supported Controllers	
Controllers PFC200	750-8202/025-001 750-8202/025-002 750-8206/025-001 750-8207/025-001
Controllers PFC200 XTR	750-8202/040-001 750-8206/040-001
Controllers 750	750-872 750-880/025-001 750-880/025-002
Controllers 750 XTR	750-880/040-001
Baud rates	300; 600; 1200; 2400; 4800; 9600; 19200; 38400
Number of control stations	Max. 4

„ Software WAGO-I/O-*PRO* V2.3, see page 32

WAGO SMI Configurator



The SMI Configurator is parameterization software for SMI master modules. You can use the software to commission SMI drives that are connected to SMI master modules.

The SMI Configurator offers functions for commissioning and configuring SMI drives. Besides the online mode, in which you can control the SMI drives directly, you have the option of using the SMI Configurator in offline mode. This includes offline configuration of all SMI drives connected to available SMI master modules within a node, as well as saving and restoring SMI drive configurations from existing CSV addressing files.

You can directly transfer all module settings of an SMI master module to any number of additional SMI master modules with the "Transfer settings" function. Furthermore, you have the option of using the SMI Configurator to generate project documentation and display the log data of a selected SMI master module.

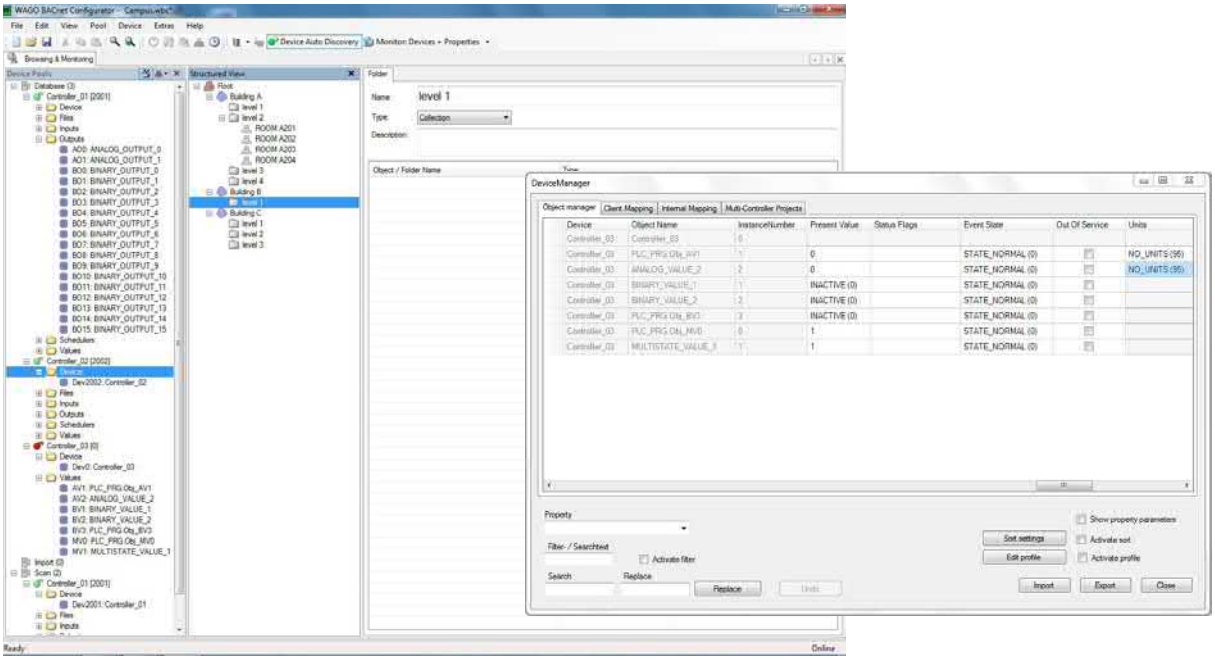
A scan function makes it possible to identify the SMI drives connected to an SMI master module and display the settings in the SMI Configurator. If SMI addresses are missing or there is an address conflict, you can use automatic addressing to assign a new SMI address to all drives automatically, or alternatively use system extension to resolve the address conflict and delete any missing SMI drives.

WAGO SMI Configurator
Download: www.wago.com

Supported operating systems	Windows 7; Windows 10
System Requirements	
Processor	1 GHz (min.)
Memory	1 GB (min.)
Hard disk space	20 MB (min.) for the SMI Configurator and 60 MB for the .NET Framework4.0
Other system requirements	.NET Framework 4.0
Delivery type	Download

Windows® is a registered trademark of Microsoft Corporation.

WAGO BACnet Configurator



The BACnet Configurator is an independent commissioning, configuration and management software program. The configurator fully supports the BACnet-specific functions of WAGO's 750-829, 750-830 and 750-831 BACnet Controllers.

The configurator creates and configures WAGO BACnet Controllers and sets up data exchange between the IEC application and BACnet objects. Import and export functions allow further processing of the configuration data.

For integration into existing BACnet networks, the BACnet devices available can be scanned and displayed in a browser; also, data exchange can be implemented for WAGO devices.

Among the configurator's capabilities are the logical structuring of the project and network, addressing of the controller and client/server configuration in every WAGO BACnet Controller.
The devices, objects and configuration data are displayed in a logical, structured network and browser view.

Depending on the function used, both online and offline operation is possible.

The configurator displays all configuration data. To edit BACnet objects, the configurator offers specific table views in which the corresponding properties of the object can be modified. Typical table editing functions, e.g., search/replace, sort, filter and show/hide, are available. The user can upload the updated configuration data to one or more controllers and save as a project.

The configurator provides a browser to view the BACnet object properties and modify current parameters (communicate value changes, write property values, utilize BACnet services, etc.). Additionally, a transaction log window is available for client services.

BACnet Configurator
The BACnet Configurator can be downloaded for free at: see: www.wago.com

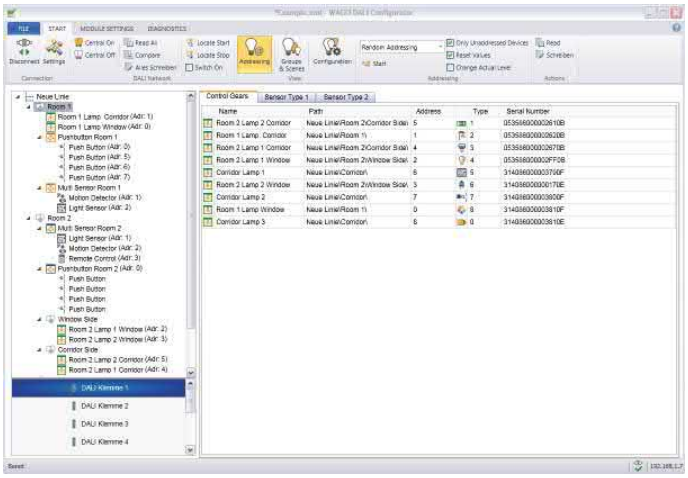
Supported operating systems	Windows 7; Windows 10

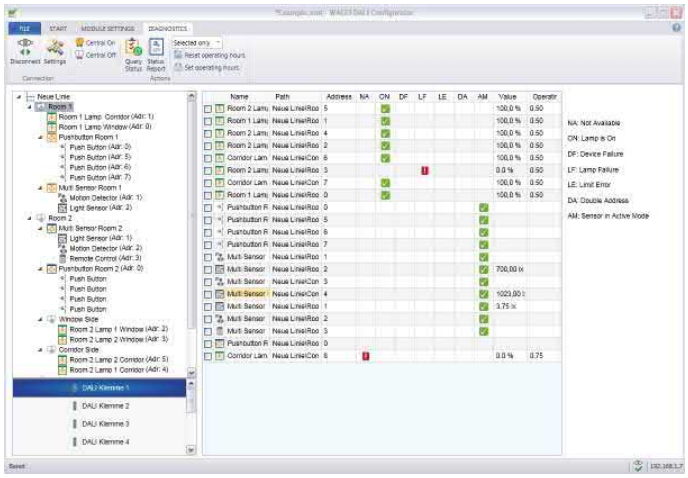
Windows® is a registered trademark of Microsoft Corporation.

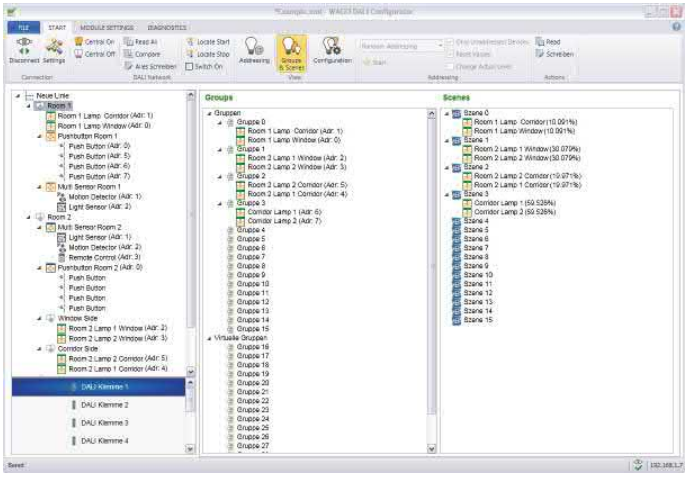
„ Software WAGO-I/O-*CHECK*,
see page 33

„ Software WAGO-I/O-*PRO* V2.3,
see page 32

WAGO DALI Configurator







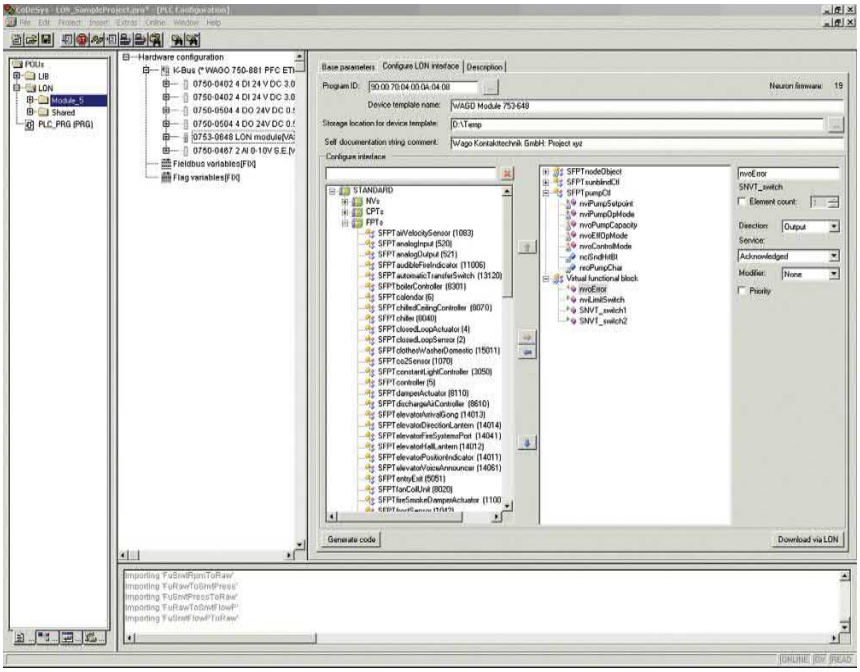
The DALI Configurator simplifies commissioning of a DALI network via 753-647 DALI Multi-Master. The configurator is available as a stand-alone Windows application or for use with WAGO-I/O-*CHECK* Software.

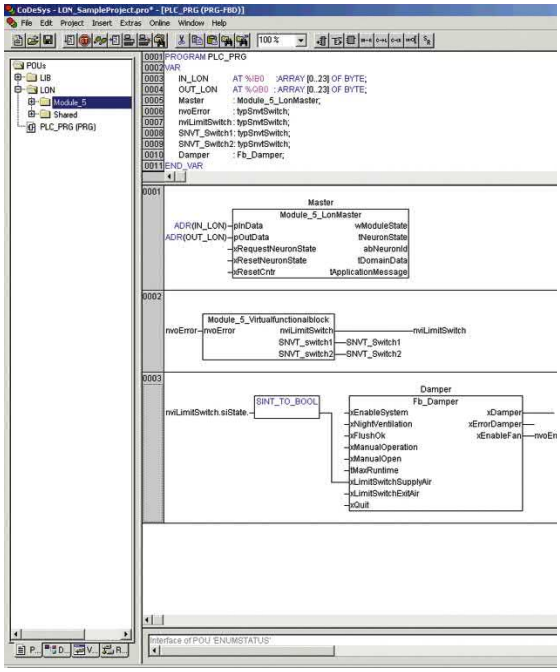
It provides the following functions: easy commissioning, configuration, service, support and maintenance of a DALI network.
Comprehensive backup & restore features, as well as an offline configuration option for the entire DALI network (including ECGs and sensors) are available.

DALI Configurator
The DALI Configurator is available as part of WAGO-I/O-*CHECK* (Version 3.5.1 or higher) or as a stand-alone version (www.wago.com).

Features	Stand-alone software or for use with WAGO-I/O-*CHECK*
Commissioning function	Addressing, scenes and group formation; control gear configuration, optional offline configuration, import and export functions, project documentation
Service, support and maintenance functions	Backup & restore, reporting ECG illuminant failures, identification of doubled addresses, diagnostics report
Windows-compliant user interface	Multiple selection for time-optimized configuration and a clearly organized network display with tree structure support different commissioning workflows

WAGO LON® Configurator





The LON® Configurator is an integral part of the WAGO-I/O-*PRO* IEC-61131-3 programming environment. The configurator supports both the 753-648 LON® Module's LonWorks® network interface configuration and WAGO-I/O-PRO project integration.

Network variables of any type can be defined. In addition to standard network variable types (SNVTs) and standard configuration property types (SCPTs), user-defined types (UNVTs/UCPTs) and LonMark® functional profiles (FPTs) are also supported. Network variables are defined using the types and objects of the LonMark® resources installed on your computer.

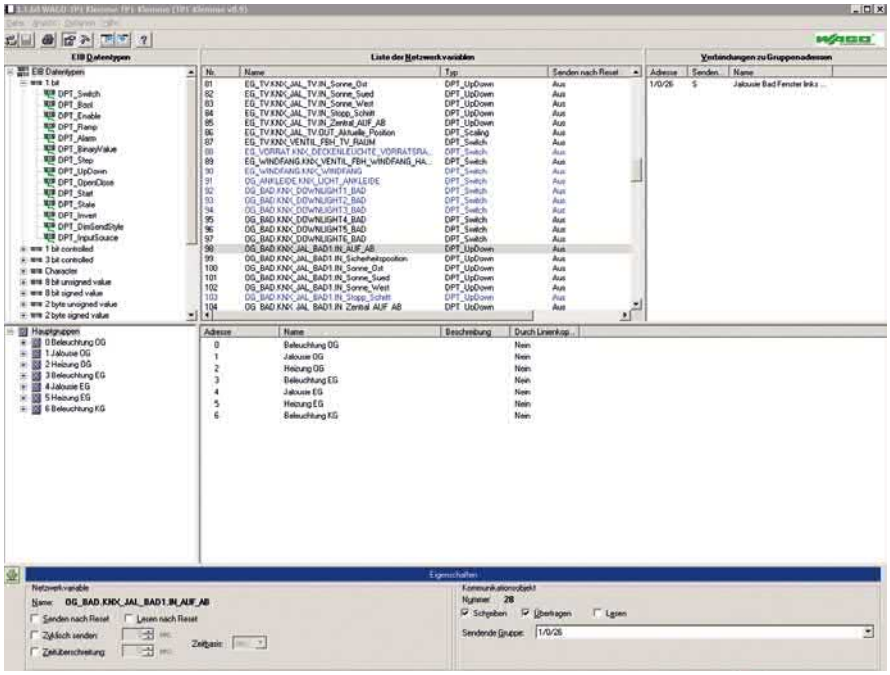
IEC-61131-3 function blocks are automatically created in the IEC application, simplifying operation. The function blocks represent the LON® network interface in the IEC application. When starting the control unit, both network variable interface and configuration data are automatically downloaded into the I/O module.
An external interface file (XIF) is created for offline configuration in a network management tool.

LON® Configurator
The LON® Configurator is available as part of WAGO-I/O-*PRO* (Version 2.3.9.34 or higher)

- Integral part of WAGO-I/O-*PRO* programming software
- Defines and implements a LON® network interface
- Automatically generates IEC 61131-3 function blocks to represent the LON® network interface within an IEC application
- Downloads both network interfaces and configuration data when controller is started
- Configuration check and test
- Generates XIF files

„ Software WAGO-I/O-*PRO* V2.3, see page 32

WAGO ETS Plug-In



The WAGO ETS Plug-In is a WAGO ETS product database extension that allows the use of WAGO devices, such as the 753-646 KNX/EIB/TP1 Interface, 750-889 KNX IP Controller and KNXnet/IP Router (consisting of KNX/EIB/TP1 Interface and KNX IP Controller).

The software's enhanced structure offers intuitive navigation – providing both new and experienced ETS users with exceptional usability.

The WAGO ETS Plug-In provides three clearly structured user interfaces for the various devices. Depending on the mode selected, either the KNX/EIB/TP1 Module, KNX IP Controller or the KNXnet/IP Router (IP Controller with KNX/EIB/TP1 Module in first position) are supported.

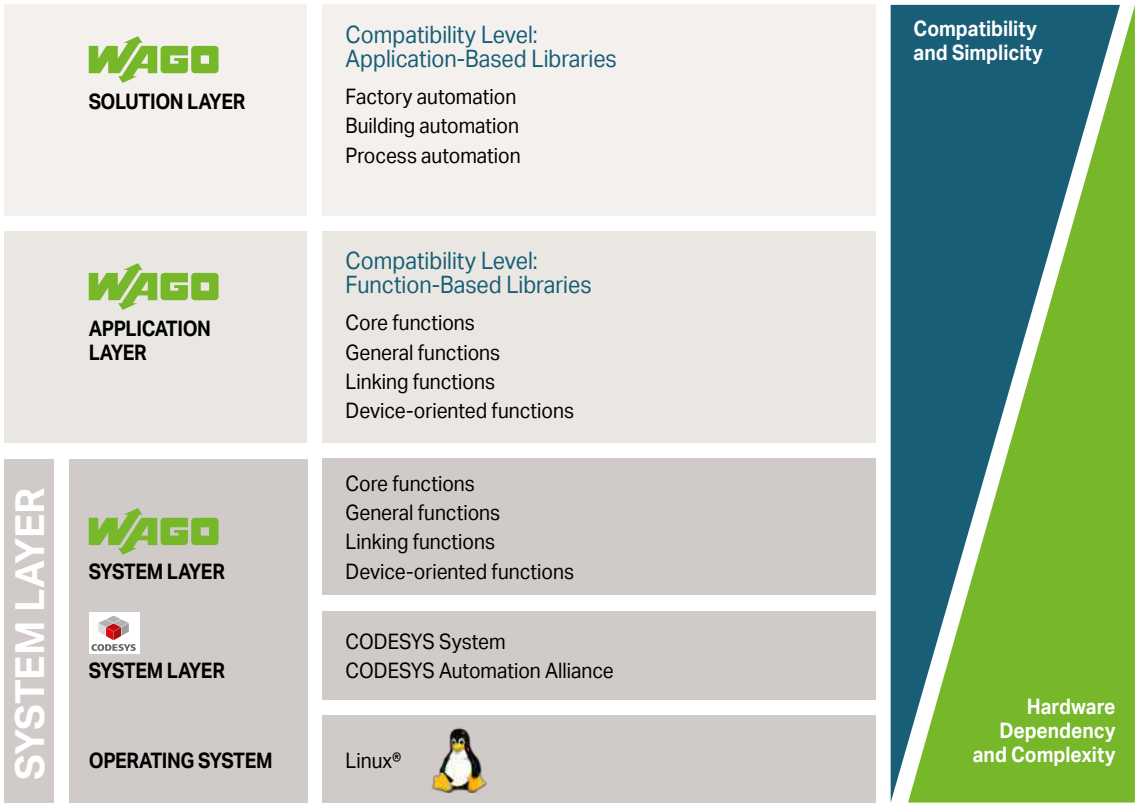
In the graphical interfaces, device parameters are easy to configure. Only the options pertaining to the selected device are displayed.
During software development, creating a convenient and time-saving graphical user interface was heavily emphasized – and this is beneficial when assigning communication objects to group addresses. Two different drag-and-drop options and a context menu with automatic filter function are available allowing the user to select his favorite procedure.

WAGO ETS Plug-In
The WAGO ETS Plug-In can be downloaded for free at: see: www.wago.com

Supported operating systems	Windows 7; Windows 10
Other	The plug-in requires the ETS product database.
Configuration	
KNX/EIB/TP1 Module	Load/assign IEC variables (communication objects); Create/configure group addresses
KNX IP Controller	Allocate IP addresses; Download IEC application to controller; Load/assign IEC variables (communication objects); Create/configure group addresses
KNXnet/IP Router	Allocate IP addresses; Set routing multicast addresses; Filter/transmit telegrams

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Runtime Software – Libraries
e!COCKPIT (Based on CODESYS V3)



Runtime Software Controls the Machine
Machines and systems are controlled by runtime software that determines behavior, while enabling both operation and current status monitoring for the user. It also transmits operating data to higher-level systems. Unlike engineering software, runtime software operates continuously – it is a part of the machine and ensures correct operation.

Ready-to-Use Function Blocks Save Development Time
Comprehensive, tried-and-tested software function blocks (IEC libraries) expedite development. Thus, ***e!COCKPIT*** is supplemented with comprehensive IEC libraries.

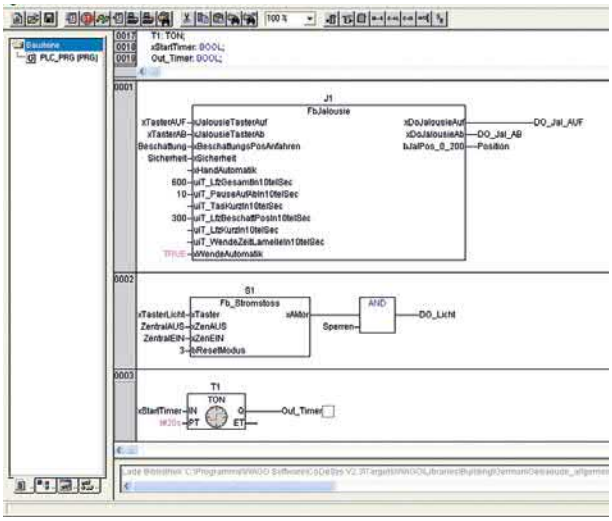
Essentially, the libraries are divided into three abstraction layers:
The solution layer primarily contains complete, easy-to-use software solutions for production, building and process automation.
The application layer contains technology functions, e.g., for communication, that are ideal for convenient, easy application. The system layer provides experts with complete system access.

The upper layers are separated by compatibility levels. Essentially, this enables software to be developed independently of the hardware it will be used on. This provides the greatest degree of flexibility in selecting the right device for the right application, while retaining a uniform software base. It also provides investment security.

Function Modules and Libraries
Integrated into the ***e!COCKPIT*** Software

„ Software ***e!COCKPIT***, see page 26

Runtime Software – Libraries
WAGO-I/O-*PRO* (Based on CODESYS V2.3)



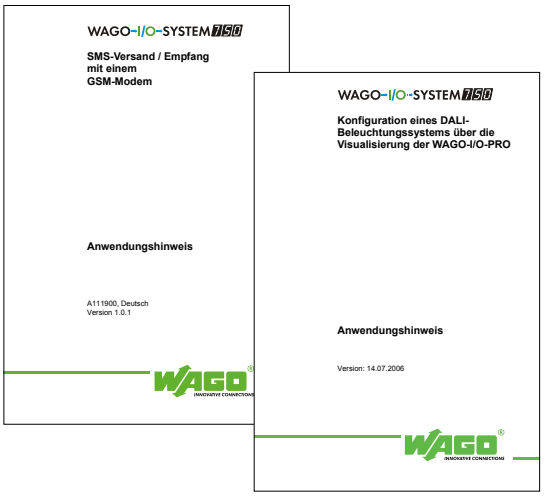


Room Applications

Integrated into WAGO-I/O-*PRO* Software

The library contains custom function blocks for building automation, which accelerate the programming of building applications.

- Lighting
- Only addressing Control Gears (ECG) without short address
- Lighting scenes
- Constant light control
- Sun protection
- Shading
- Other applications



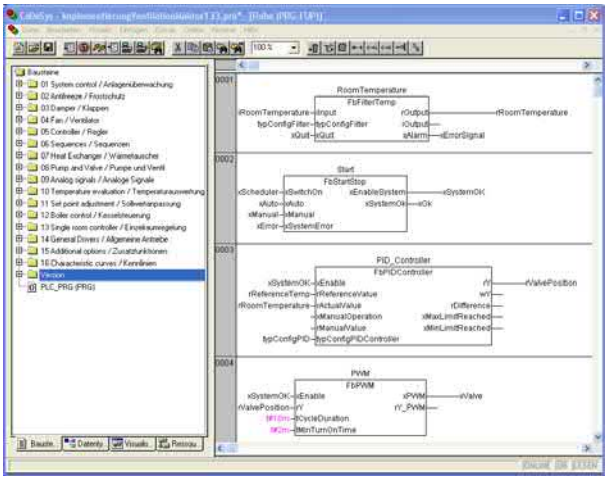
Application Notes

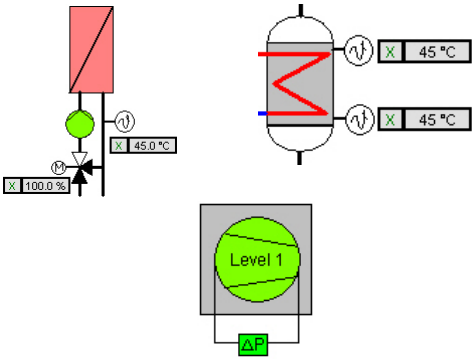
Download: Current application notes can be downloaded at:
see: www.wago.com

The application notes contain function blocks (FB) for communication applications.

- KNX/EIB
- DALI
- EnOcean Radio Technology
- MODBUS
- M-Bus
- MP-Bus
- SMI
- LonWorks®
- Email
- SMS
- Other applications

Runtime Software – Libraries
WAGO-I/O-*PRO* (Based on CODESYS V2.3)





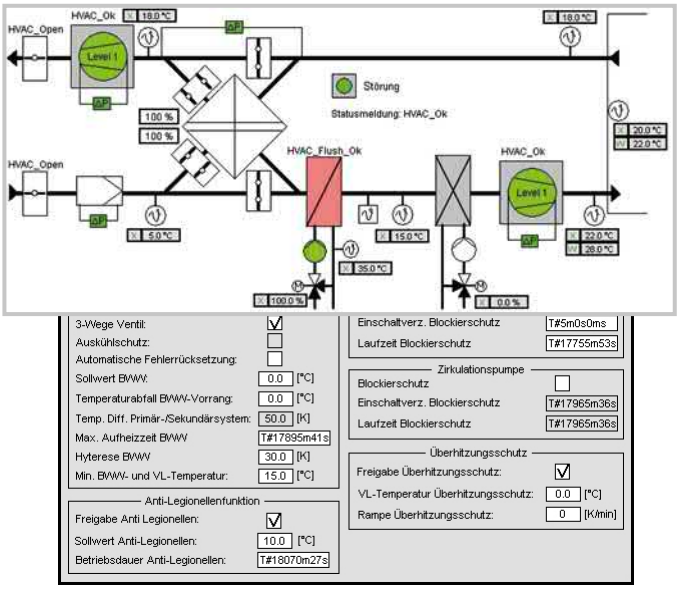
Graphical elements for HVAC applications

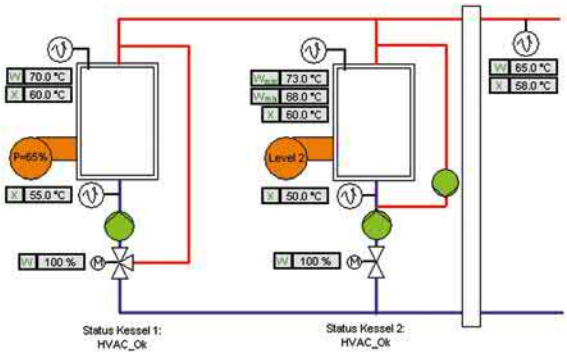
HVAC

Integrated into WAGO-I/O-*PRO* Software

The library contains function blocks (FB) to create automation applications for complex heating, ventilation and air-conditioning systems (HVAC).

These include: fault monitoring, starter circuits, monitoring frost protection systems, fan control (stepped/continuous), air mixture valve control, air heater/cooler control, cascade control of room/feed air temperature, free night cooling, summer/winter compensators, enthalpy calculations, PID controllers, filter monitoring, blockage protection, heating circuit control, heat recovery control, boiler control (stepped/continuous), boiler sequence, domestic hot water control, start/stop optimization, humidification and dehumidification (climate) and more.





Boiler sequence control

System Macros

Download: Current application notes can be downloaded at:
see: www.wago.com

- District heating transfer station macros
- Boiler macros
- Heating circuit macros
- Drinking water heating macros
- Ventilation macros

„ Software WAGO-I/O-*PRO* V2.3,
see page 32

Runtime Software
e!RUNTIME EtherCAT Master 300

Function:

EtherCAT is a powerful real-time ETHERNET fieldbus system that has become standard in many industrial automation applications. The PFC200 controller (2nd generation) can run as an EtherCAT master. This requires a licence.

The EtherCAT system is configured via special configuration dialogs in the *e!COCKPIT* Engineering Software. These specify:
- That the controller should function as an EtherCAT master
- What field devices should be addressed
- What form the topology of the network takes
- What parameter values should be sent to the slaves upon startup

Besides the protocol stack in the form of a library, the run-time system also provides components for direct access to the ETHERNET interface and diagnostics.

Advantages:

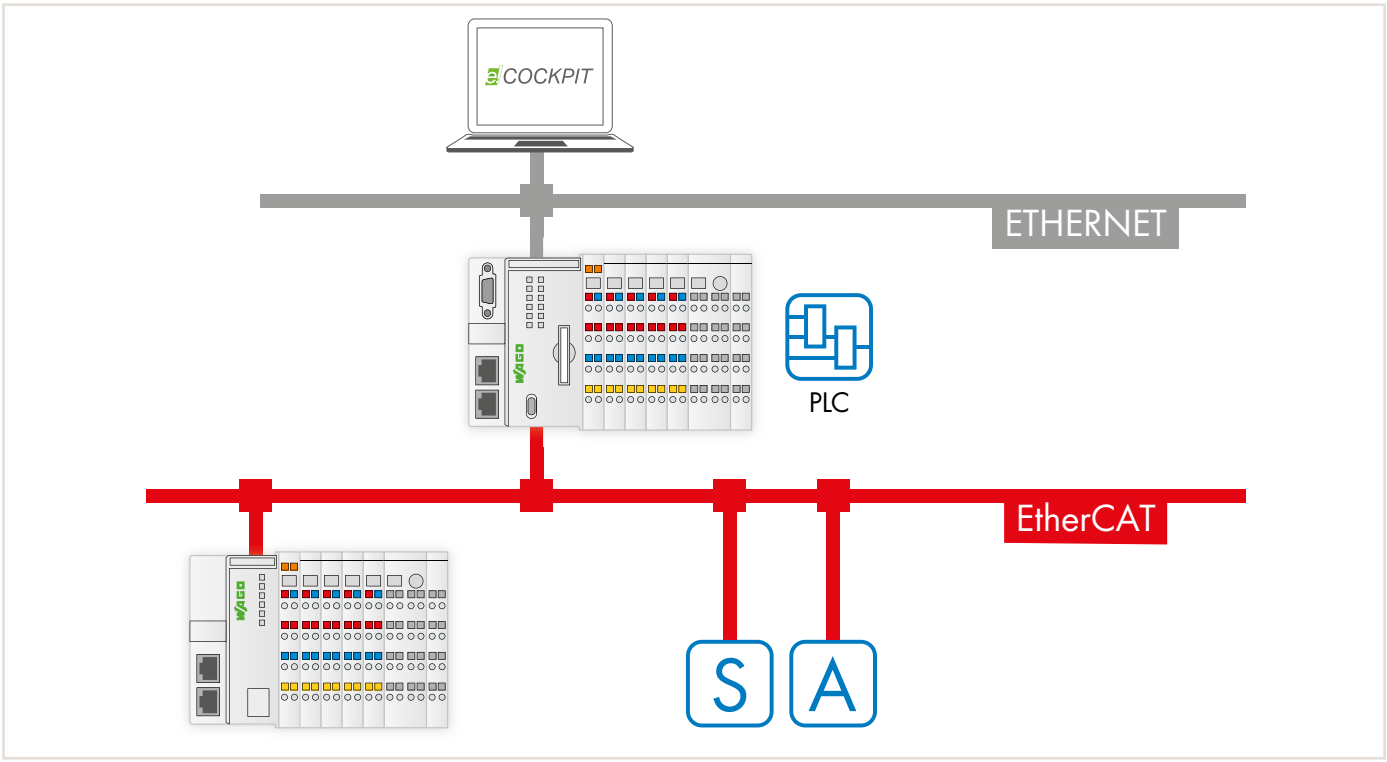
- Using the PFC200 as an EtherCAT Master
- Controlling WAGO slaves with the EtherCAT fieldbus system, e.g., the EtherCAT fieldbus coupler of the WAGO-I/O-SYSTEM 750
- Controlling additional field devices, which can be declared in ***e!COCKPIT*** via a standardized device description

Use:

The licence is acquired in ***e!COCKPIT***, assigned to a controller and loaded into the controller together with the project. No other installation steps are required.

Technical Data:

Distributed clocks
Hot connect
Bus diagnostics: In the configurator and with the PLC application
Supported layer 7 protocols:
- CoE (CANopen / CAN over EtherCAT)
- FoE (File over EtherCAT),
- VoE (Vendor over EtherCAT)



Item Description	
e!RUNTIME **EtherCAT Master 300**	**Item No.**
Single license	2759-263/210-1000
Compatible Controllers	
PFC200; G2; 2ETH RS	750-8212
PFC200; G2; 2ETH CAN	750-8213
PFC200; G2; 2ETH RS CAN	750-8214
PFC200; G2; 4ETH CAN USB	750-8215
PFC200; G2; 2ETH RS CAN DPS	750-8216

Besides the basic controller variants listed here, the licence can also be used on these controllers' variants. For details, see the product information of the corresponding controller.
You can find detailed information on the controllers in Section 4.1.

Minimum *e!COCKPIT* version	V1.5.0
Delivery type	Licence certificate via email (*e!COCKPIT* already contains the software itself)
Data sheet and further information, see:	wago.com/2759-263/210-1000

An Internet connection to the PC with the ***e!COCKPIT*** installation may be required for licence activation.
The single license allows installation on one controller.
One licence per controller is required.

WAGO WebVisu App
For Mobile System Operation/Monitoring



With the WebVisu App, you can visualize web pages created for WAGO Controllers via ***e!****COCKPIT* or CODESYS V2. The app features both automated management and routing capabilities, allowing the website to be simply accessed via URL entry. The system or machine to be monitored can then be operated and monitored at any time on the go. You can define up to 100 controllers for direct and quick access via the URL.

The free WAGO WebVisu App is available in iOS for iPhones and iPads in the "Apple Store," and in Android for smartphones and tablets in the "Google Store."

Note: An overview of the supported WAGO controllers, operating manuals and application notes can be found on our website.

QR Code for WebVisu App

Simply scan the QR code with your mobile device and you will automatically be directed to the WebVisu App in "App Store" or "Google PlayTM."

Trademarks

Apple, the Apple logo, iPhone, iPad and iPod touch are registered trademarks of Apple Inc. registered in the USA and other countries. "App Store" is a service mark of Apple Inc.

Google PlayTM is a registered trademark of Google Inc.

WAGO WebVisu App
Download: Apple Store or Google Store

System Requirements	
Operating system	iOS version 10.2 or later, Android version 4.2 or later
Compatibility	iPhone; iPad and iPad Air; Android smartphones and tablets
For additional information, see:	wago.com/webvisu

Accessories



USB Communication Cable; USB-A; Service Interface WAGO-I/O-SYSTEM 750		
Length	Item No.	Pack. Unit
2.5 m	750-923	1
5 m	750-923/000-001	1



RS-232 Communication Cable; RS-232 (D-Sub 9-pole); Service Interface WAGO-I/O-SYSTEM 750		
Length	Item No.	Pack. Unit
1 m	750-920	1



Bluetooth® Adapter; Service Interface WAGO-I/O-SYSTEM 750		
	Item No.	Pack. Unit
	750-921	1



Operation and Monitoring

Touch Panels 600 Standard Line

- High-performance touch panels with resistive touch-screens
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Control, Visu or Web Panel for display of ***e!COCKPIT*** visualizations

Touch Panels 600 Advanced Line

- High-performance touch panels with capacitive touch-screens and glass surfaces
- 18 … 25.7 cm (7 … 10.1")
- Models include Control or Visu Panel

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

Section 4.1 ►

Touch Panels 600 Marine Line

- High-performance touch panels with resistive touch-screens
- Ideal for marine applications
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Visu Panel

Touch Panels *e!DISPLAY 7300T*

- Touch panels with resistive touchscreens
- 10.9 … 25.7 cm (4.3 … 10.1")
- Models include Web Panel for display of CODESYS V2 or ***e!COCKPIT*** visualizations

Controllers PFC200 XTR

The advantages of WAGO's PFC Controllers combined with the capabilities for extreme environments:

- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Section 4.2 ►►

Operation and Monitoring
Contents

	Page
General Product Information	52
Functional Variants	53
Interfaces and Types	54
Application and Installation Instructions	56
Item Number Key	57
Standards and Rated Conditions	57
Approvals	57

3

	CPU	Web Browser	Modbus (TCP, UDP)	EtherNet/IP	CANopen	IoT Protocols	Description	Hardware	Item No.	
 **Touch Panels 600 Standard Line**	Cortex A9	x	M/S	S	M/S	x	Control Panel; 10.9 cm (4.3"); Resistive touchscreen	PIO3	**762-4301/8000-002**	58
		x	M/S	S	M/S	x	Control Panel; 14.5 cm (5.7"); Resistive touchscreen	PIO3	**762-4302/8000-002**	59
		x	M/S	S	M/S	x	Control Panel; 18 cm (7.0"); Resistive touchscreen	PIO3	**762-4303/8000-002**	60
		x	M/S	S	M/S	x	Control Panel; 25.7 cm (10.1"); Resistive touchscreen	PIO3	**762-4304/8000-002**	61
		x	M				Visu Panel; 10.9 cm (4.3"); Resistive touchscreen	PIO2	**762-4201/8000-001**	58
		x	M				Visu Panel; 14.5 cm (5.7"); Resistive touchscreen	PIO2	**762-4202/8000-001**	59
		x	M				Visu Panel; 18 cm (7.0"); Resistive touch-screen	PIO2	**762-4203/8000-001**	60
		x	M				Visu Panel; 25.7 cm (10.1"); Resistive touchscreen	PIO2	**762-4204/8000-001**	61
		x					Web Panel; 10.9 cm (4.3"); Resistive touchscreen	PIO1	**762-4101**	58
		x					Web Panel; 14.5 cm (5.7"); Resistive touchscreen	PIO1	**762-4102**	59
		x					Web Panel; 18 cm (7.0"); Resistive touch-screen	PIO1	**762-4103**	60
		x					Web Panel; 25.7 cm (10.1"); Resistive touchscreen	PIO1	**762-4104**	61
 **Touch Panels 600 Advanced Line**	Cortex A9	x	M/S	S	M/S	x	Control Panel; 18 cm (7.0"); Capacitive touchscreen with glass surface	PIO3	**762-5303/8000-002**	62
		x	M/S	S	M/S	x	Control Panel; 25.7 cm (10.1"); Capacitive touchscreen with glass surface	PIO3	**762-5304/8000-002**	63
		x	M				Visu Panel; 18 cm (7.0"); Capacitive touch-screen with glass surface	PIO2	**762-5203/8000-001**	62
		x	M				Visu Panel; 25.7 cm (10.1"); Capacitive touchscreen with glass surface	PIO2	**762-5204/8000-001**	63
 **Touch Panels 600 Marine Line**	Cortex A9	x	M				Visu Panel; 10.9 cm (4.3"); Resistive touch-screen, marine version	PIO2	**762-6201/8000-001**	64
		x	M				Visu Panel; 14.5 cm (5.7"); Resistive touch-screen, marine version	PIO2	**762-6202/8000-001**	64
		x	M				Visu Panel; 18 cm (7.0"); Resistive touch-screen, marine version	PIO2	**762-6203/8000-001**	65
		x	M				Visu Panel; 25.7 cm (10.1"); Resistive touchscreen, marine version	PIO2	**762-6204/8000-001**	65
 **Touch Panels *e!DISPLAY 7300T***	Cortex A8	x					Web Panel; 10.9 cm (4.3"); Resistive touchscreen	PIO1	**762-3000**	66
		x					Web Panel; 14.5 cm (5.7"); Resistive touchscreen	PIO1	**762-3001**	66
		x					Web Panel; 18 cm (7.0"); Resistive touch-screen	PIO1	**762-3002**	67
		x					Web Panel; 25.7 cm (10.1"); Resistive touchscreen	PIO1	**762-3003**	67



Accessories

Memory cards; Mounting sets

68

M: Master; S: Slave

Operation and Monitoring
General Product Information

Operate, observe, visualize and diagnose in production and the process industry: WAGO's Touch Panels with various hardware configurations are available for small- to mid-sized control and visualization tasks. Focus on saving time with perfect usability and quickly created visualizations.

Adapted Versions

The right version is available for every application:
- Devices with resistive touchscreens for standard control cabinet applications
- Multi-touch devices with a glass surface for more extensive requirements
- Devices for marine applications

Touch Panels that Merge Aesthetics with High Performance

Underneath a contemporary design, WAGO's Touch Panels pack some of the industry's most powerful equipment, allowing you to solidify the high-tech image of your machine or through high-quality visualizations from both ***e!****COCKPIT* (CODESYS V3) and CODESYS V2 Engineering Software. The Web-based management feature of WAGO's controllers may also be operated using the stylish Web Panels. When configuring with ***e!****COCKPIT*, visualizations are created based on modern technologies such as HTML5.

Industry 4.0/IoT

Recording, digitizing and linking data profitably – this is the core concept behind Industry 4.0. Using a dedicated library, control panels become IoT controllers that send data from the field level to the cloud, where it can be aggregated and used for analysis. This creates true added value for your company – whether for increasing the efficiency of in-house production, implementing energy management in buildings or developing additional end-customer services. Existing systems also become IoT-ready, making them sustainable into the future.

Quick Installation via Unique Mounting Design

WAGO's Touch Panel directly latches onto the control cabinet via mounting clips for quick and easy tool-free installation. With specially developed clamps, the high IP65 degree of protection can be achieved for the front of the display. This design flexibility makes the display extremely versatile and suitable for a wide variety of applications. Furthermore, the VESA mount allows installation on a swivel arm or stand outside of the control cabinet.

Easy to Use – Directly on the Display

All touch panels have status LEDs that indicate operating status and provide operational feedback. A customized configuration interface is available for configuring and commissioning the touch panels. All important settings are made here via Web-based management. For quick and easy custom settings, the display brightness can also be manually adjusted via front-mount button.

Energy-Saving Sensors Ensure Safety

WAGO Touch Panel's integrated proximity sensor allows the visualization to be automatically re-displayed from the energy-saving screensaver. An integrated sensor simultaneously detects ambient lighting levels for brightness control.

Integrated Controller

In the Control Panel function, the devices offer an integrated PLC function, which is configured via ***e!****COCKPIT*, based on IEC 61131-compatible CODESYS. This makes them programmable in five standardized languages. In addition to pure programming, ***e!****COCKPIT* is also used for offline simulation, fieldbus configuration, recipe management and much more.

Scaled Visualization Functions

Displaying a visualization in a Web browser makes flexible options available. In addition to the Web Panels, visualizations can be displayed on nearly any device with a browser including smartphones and tablets by using the WebVisu app.

When greater performance is required, devices are used as Visu Panels. In the process, all operating functions are evaluated within the device without a delay and can affect the visualization directly. The data to be displayed are read in via standardized bus systems, e.g. via Modbus TCP.

Open-Source Software and Linux®

We unite what belongs together: WAGO's high-performance hardware and the future-ready Linux® operating system.
For complex tasks, you have the choice between programming in either IEC 61131 or directly in Linux®. WAGO's "Embedded Linux" Controllers impress with base images that are expandable via open-source packages. As a "Gold Member" of the Open Source Automation Development Lab (OSADL), WAGO supports both financing and further development of Linux® in the industrial sector. The controller firmware itself is available as a "Board Support Package" (BSP).
If you are interested, simply contact our *AUTOMATION* technical support.

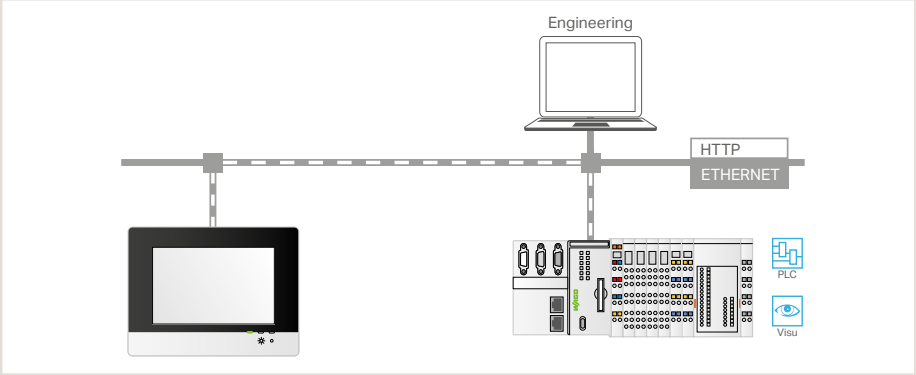
Advantages:

- An aesthetic design meets high performance
- Scaled portfolio in design and functionality
- Easy to use – directly on the display
- Quick installation via unique mounting design
- IoT ready

Operation and Monitoring
Functional Variants

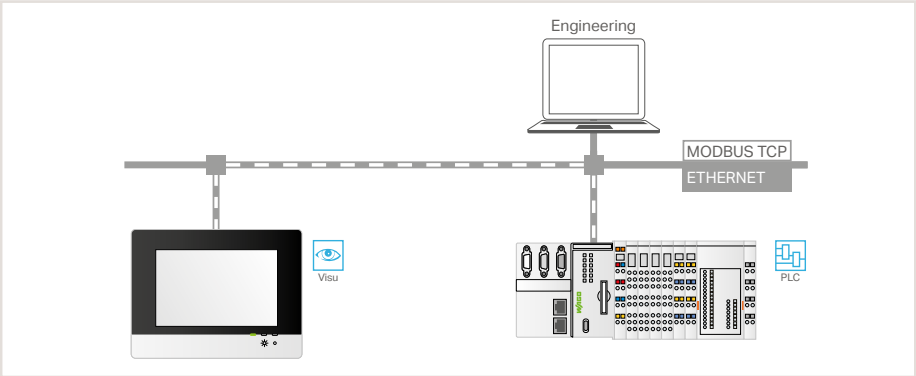
Web Panels

The operating and display devices in the Web Panel software configuration are provided with a Web browser for accessing WAGO Controllers via standard Web protocols with integrated Web visualization for display. Depending on the type of execution, Web visualizations that are created with ***e!****COCKPIT* (based on CODESYS V3) and/or with CODESYS V2 can be displayed. Web visualizations have the advantage of being displayed not only on special Visu Panels, but also on standard commercial mobile devices.



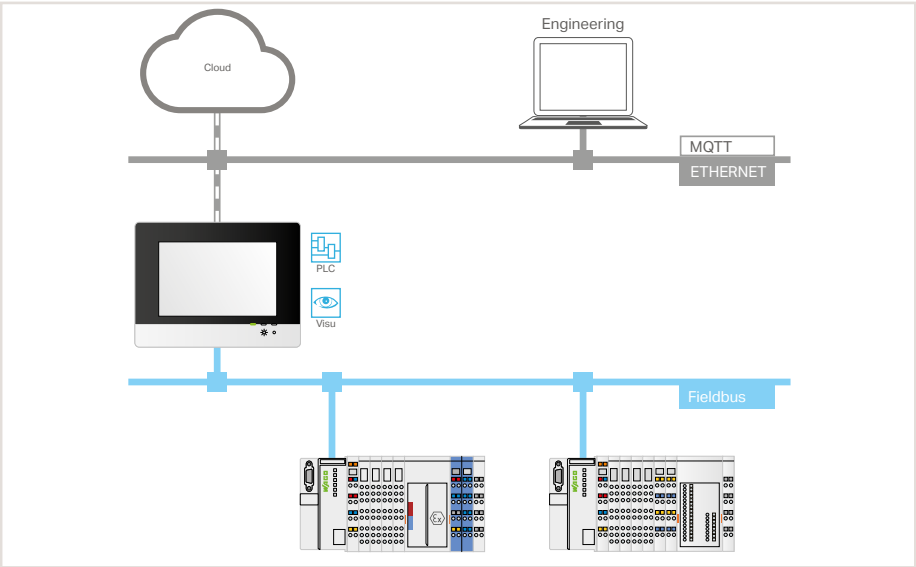
Visu Panels

Operating and display devices in the Visu Panel software configuration are suitable for displaying a visualization generated with ***e!****COCKPIT* and obtaining the data referenced in it from any field devices via TCP, e.g., from PFC200-type controllers. In contrast to Web Panels, the computing power required here is divided between two devices, so the computing necessary for displaying the visualization is basically performed by the Visu Panel, offloading the controller. The Visu Panel can also provide a Web visualization via the integrated Webserver.



Control Panels

Operating and display devices in the Control Panel software configuration allow control and visualization to be performed simultaneously, representing a very compact form for an automation solution.
WAGO's Control Panels handle all the usual tasks that would otherwise be performed by a separate controller, including establishing a connection to the cloud, for example.

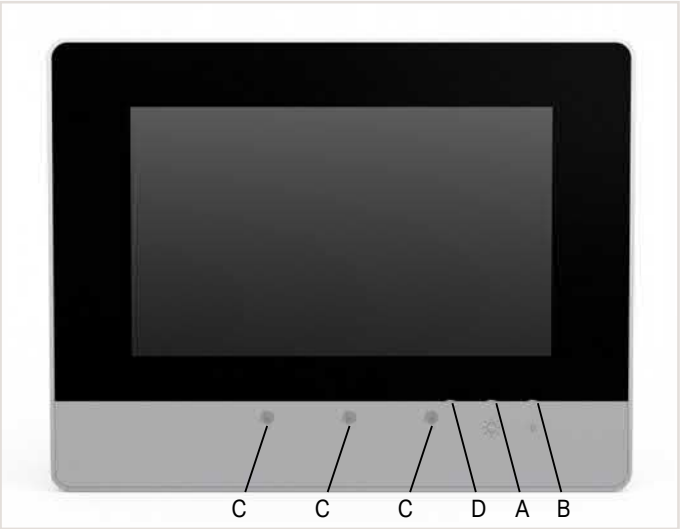


Operation and Monitoring
Interfaces and Types

Touch Panels Standard Line

By default, the WAGO Touch Panels are equipped with resistive touch. In addition, they have two capacitive buttons (A), (B) for on-device brightness settings. A 3-color status LED (D) indicates the device status. An integrated motion and brightness sensor (C) detects when a person is approaching and automatically turns off the screensaver. In addition, it can be used for automatic brightness change (day/night).

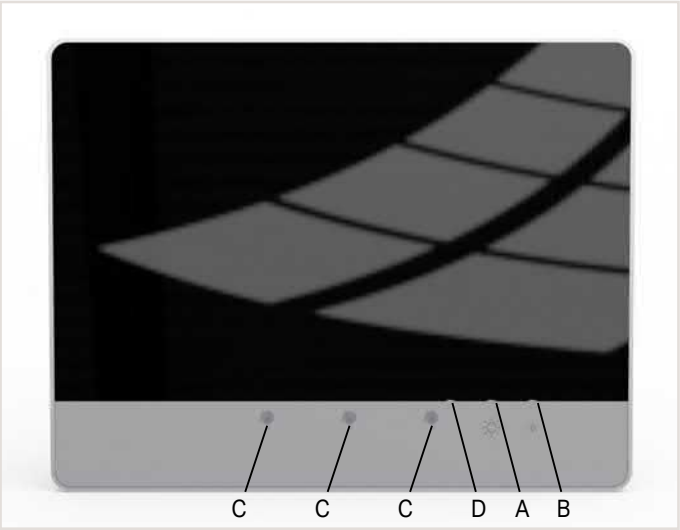
Available sizes:
- 10.9 cm (4.3″)
- 14.5 cm (5.7″)
- 18 cm (7.0″)
- 25.7 cm (10.1″)



Touch Panels Advanced Line

In contrast to the standard version, these devices are equipped with a capacitive touch and a glass surface. This allows gesture recognition, e.g., to swipe for turning pages or to enlarge. In addition, the glass front is characterized by a stronger mechanical and chemical resistance. Glove operation is also possible.

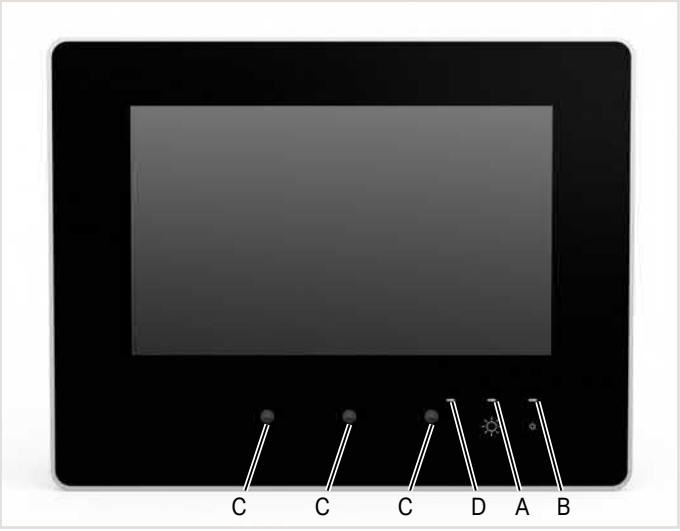
Available sizes:
- 18 cm (7.0″)
- 25.7 cm (10.1″)



Touch Panels Marine Line

In this version, WAGO's Touch Panels are ideal for marine applications. They have special marine approvals. The matt black surface prevents disturbing reflections.

Available sizes:
- 10.9 cm (4.3″)
- 14.5 cm (5.7″)
- 18 cm (7.0″)
- 25.7 cm (10.1″)

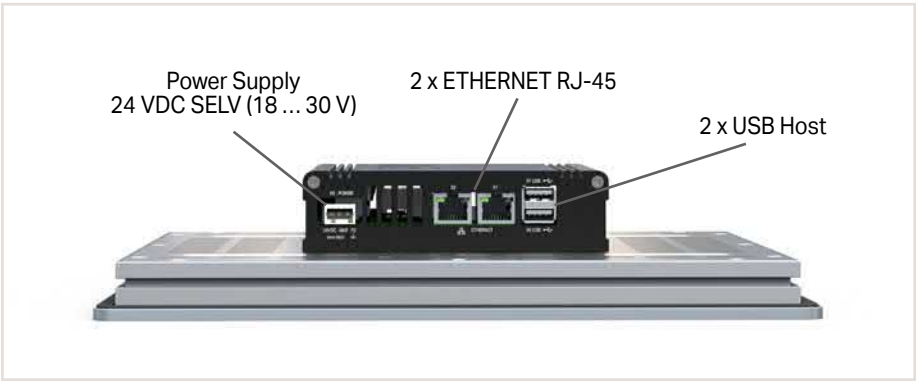


Operation and Monitoring
Interfaces and Types

Hardware Configuration PIO1

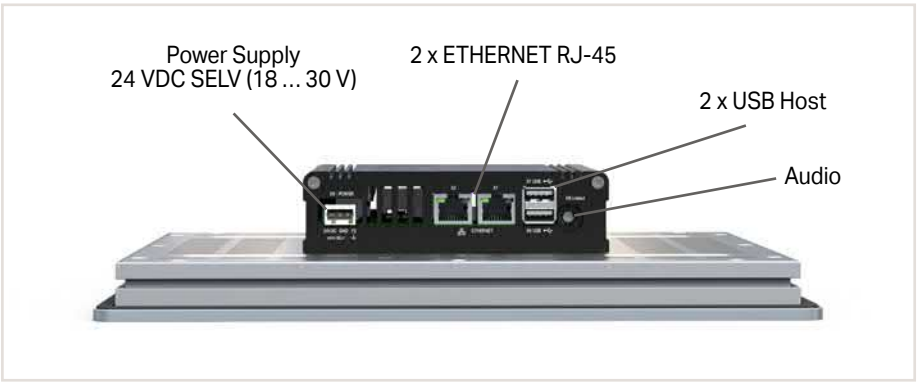
Besides the power supply connection, devices with the PIO1 hardware configuration provide:
- Two ETHERNET ports for connecting to field devices and the engineering tool
- Two USB ports for optional connection of a USB stick, mouse or keyboard

Devices of this type are primarily used as Web Panels.



Hardware Configuration PIO2

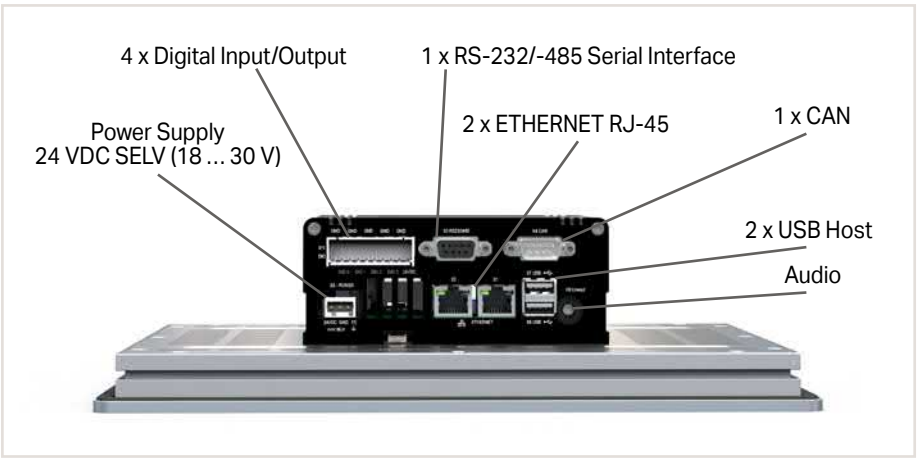
The PIO2 hardware configuration contains the same connections as PIO1 hardware. In addition, the devices are equipped with an audio interface for connecting headphones or a loudspeaker. Devices of this type are primarily used as Visu Panels.



Hardware Configuration PIO3

Devices of this type are primarily used as Control Panels. Besides the interfaces of the PIO2 configuration, they also have the following interfaces:
- CAN for controlling field devices
- RS-232/-485 interface for controlling field devices with a serial interface
- Four digital inputs/outputs for reading/triggering digital signals

In addition, this hardware configuration has a rapid, power-failure-proof storage component that can back up retain variables of the controller without additional UPS measures.



Common Control Elements

The following control elements are provided on the side of the devices:

Touch Panels 600:
- Run/Stop switch (only relevant for Control Panels)
- Service Switch
- Five LEDs for signaling:
  - General device states
  - Special states of the PLC runtime environment
  - States of the fieldbus connections
- One microSD card for data exchange

Touch Panels *e!DISPLAY*:
- One microSD card for data exchange



Operation and Monitoring
Application and Installation Instructions

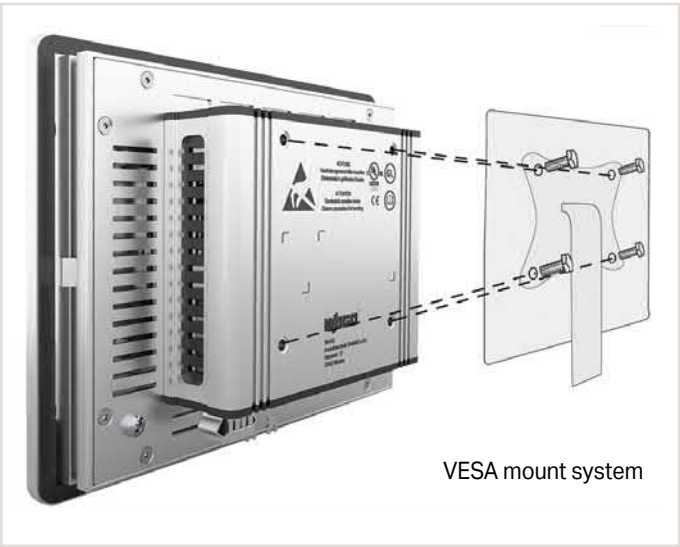


Two brightness adjustment keys are located directly on the front of the device, along with three diagnostics LEDs.

Mounting

WAGO's Touch Panel directly latches onto the control cabinet via mounting spring clips for quick and easy tool-free installation. IP65 levels of protection can be achieved for the front of the display via additional clamping screws. This design flexibility makes the display extremely versatile and suitable for a wide variety of applications.



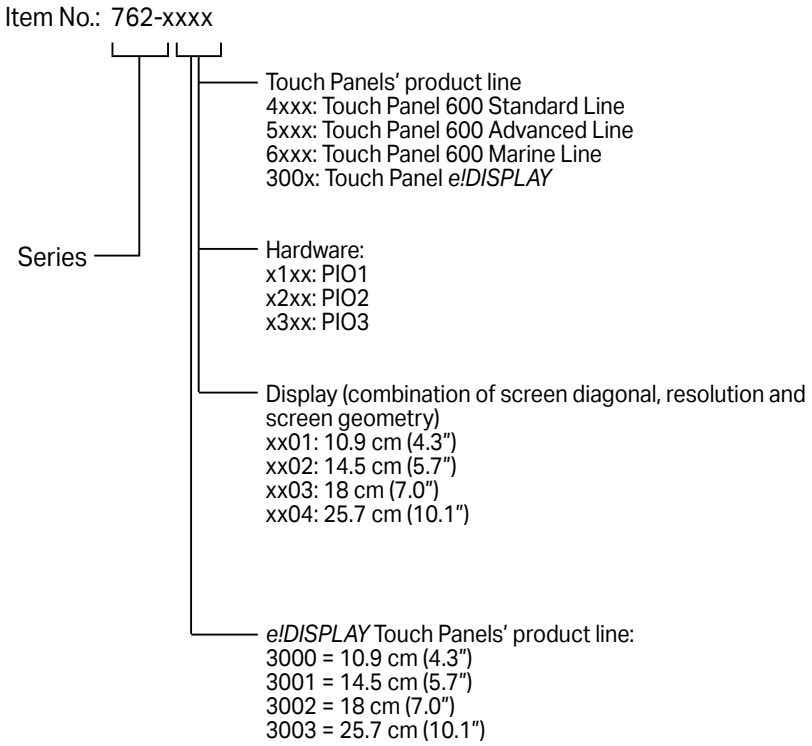


VESA mount system

The VESA mount (VESA 75 standard, 75 mm hole spacing) allows universal mounting accessories to be conveniently used outside of the control cabinet.

Operation and Monitoring
Item Number Key

Explanation of item number key's components



Standards and Rated Conditions

General Specifications	
Operating system	Linux®
Control elements	Resistive touch panel; Two capacitive keys; Proximity switch
Durability	100,000 activations with touch pen
Power Supply	24 VDC, SELV (-25 … +30 %) with reverse voltage protection
Indicators	Diagnostic indication (LED)
Surrounding air temperature (operation)	0 … +55 °C
Surrounding air temperature (storage)	–20 … +80 °C
Relative humidity	10 … 90 %; non-condensing
Protection type	IP65 (front side); IP20 (rear side)

Approvals

Overview of the approvals in the article comparison in Section 11, Technical Appendix, or online at www.wago.com

Touch Panel 600 Standard Line; Resistive Touchscreen; 10.9 cm (4.3″)



3

Item Description	Touch Panel; 10.9 cm (4.3″); 480 x 272 pixels; Resistive touchscreen		
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-4301/8000-002**	**762-4201/8000-001**	**762-4101**
Order Text	TP600; 4.3; 480x272; PIO3; CP	TP600; 4.3; 480x272; PIO2; VP	TP600; 4.3; 480x272; PIO1; WP
Technical Data			
Display/front view	Resistive touchscreen		
Screen size (diagonal)	10.9 cm (4.3″)		
Aspect	16:9		
Display colors	16 million		
Graphics resolution	480 x 272		
Operating elements	Two brightness settings (Up and Down) on the front		
Communication	Modbus® (TCP)		
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT		
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH		
Programming environment	*e!COCKPIT* (based on CODESYS V3)		
Operating system	Real-time Linux (with RT-Preempt patch)		
Processor	Cortex A9		
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB		
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -	
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)		
Interfaces (USB)	2 x USB host 2.0 (type A)		
Onboard I/Os	Audio; 4 x DIO, configurable	Audio	
Dimensions (W x H x D)	155 x 135 x 78 mm	155 x 135 x 58 mm	
Panel cutout (W x H)	140 x 120 mm		
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)		
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection		
Surrounding air temperature (operation)	0 … +55 °C		
Approvals	CE; cULus OrdLoc**		
Data sheet and further information, see:	wago.com/762-4301/8000-002	wago.com/762-4201/8000-001	wago.com/762-4101

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

„ Software *e!COCKPIT*, see page 26

Touch Panel 600 Standard Line; Resistive Touchscreen; 14.5 cm (5.7")



Item Description	Touch Panel; 14.5 cm (5.7"); 640 x 480 pixels; Resistive touchscreen		
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-4302/8000-002**	**762-4202/8000-001**	**762-4102**
Order Text	TP600; 5.7; 640x480; PIO3; CP	TP600; 5.7; 640x480; PIO2; VP	TP600; 5.7; 640x480; PIO1; WP

Technical Data			
Display/front view	Resistive touchscreen		
Screen size (diagonal)	14.5 cm (5.7")		
Aspect	4:3		
Display colors	262.000		
Graphics resolution	640 x 480		
Operating elements	Two brightness settings (Up and Down) on the front		
Communication	Modbus® (TCP)		
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT		
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH		
Programming environment	*e!COCKPIT* (based on CODESYS V3)		
Operating system	Real-time Linux (with RT-Preempt patch)		
Processor	Cortex A9		
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB		
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -	
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)		
Interfaces (USB)	2 x USB host 2.0 (type A)		
Onboard I/Os	Audio; 4 x DIO, configurable	Audio	
Dimensions (W x H x D)	172 x 163 x 78 mm	172 x 163 x 58 mm	
Panel cutout (W x H)	157 x 148 mm		
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)		
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection		
Surrounding air temperature (operation)	0 … +55 °C		
Approvals	CE; cULus OrdLoc**		
Data sheet and further information, see:	wago.com/762-4302/8000-002	wago.com/762-4202/8000-001	wago.com/762-4102

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Touch Panel 600 Standard Line; Resistive Touchscreen; 17.8 cm (7.0″)



3

Item Description	Touch Panel; 17.8 cm (7.0″); 800 x 480 pixels; Resistive touchscreen		
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-4303/8000-002**	**762-4203/8000-001**	**762-4103**
Order Text	TP600; 7.0; 800x480; PIO3; CP	TP600; 7.0; 800x480; PIO2; VP	TP600; 7.0; 800x480; PIO1; WP
Technical Data			
Display/front view	Resistive touchscreen		
Screen size (diagonal)	18 cm (7.0″)		
Aspect	16:9		
Display colors	16 million		
Graphics resolution	800 x 480		
Operating elements	Two brightness settings (Up and Down) on the front		
Communication	Modbus® (TCP)		
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT		
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH		
Programming environment	*e!COCKPIT* (based on CODESYS V3)		
Operating system	Real-time Linux (with RT-Preempt patch)		
Processor	Cortex A9		
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB		
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -	
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)		
Interfaces (USB)	2 x USB host 2.0 (type A)		
Onboard I/Os	Audio; 4 x DIO, configurable	Audio	
Dimensions (W x H x D)	213 x 167 x 78 mm	213 x 167 x 58 mm	
Panel cutout (W x H)	198 x 152 mm		
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)		
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection		
Surrounding air temperature (operation)	0 … +55 °C		
Approvals	CE; cULus OrdLoc**		
Data sheet and further information, see:	wago.com/762-4303/8000-002	wago.com/762-4203/8000-001	wago.com/762-4103

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

„ Software *e!COCKPIT*, see page 26

Touch Panel 600 Standard Line; Resistive Touchscreen; 25.7 cm (10.1")



Item Description	Touch Panel; 25.7 cm (10.1"); 1280 x 800 pixels; Resistive touchscreen		
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-4304/8000-002**	**762-4204/8000-001**	**762-4104**
Order Text	TP600; 10.1; 1280x800; PIO3; CP	TP600; 10.1; 1280x800; PIO2; VP	TP600; 10.1; 1280x800; PIO1; WP

Technical Data			
Display/front view	Resistive touchscreen		
Screen size (diagonal)	25.7 cm (10.1")		
Aspect	16:9		
Display colors	16 million		
Graphics resolution	1280 x 800		
Operating elements	Two brightness settings (Up and Down) on the front		
Communication	Modbus® (TCP)		
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT		
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH		
Programming environment	*e!COCKPIT* (based on CODESYS V3)		
Operating system	Real-time Linux (with RT-Preempt patch)		
Processor	Cortex A9		
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB		
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -	
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)		
Interfaces (USB)	2 x USB host 2.0 (type A)		
Onboard I/Os	Audio; 4 x DIO, configurable	Audio	
Dimensions (W x H x D)	293 x 223 x 78 mm	293 x 223 x 58 mm	
Panel cutout (W x H)	278 x 208 mm		
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)		
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection		
Surrounding air temperature (operation)	0 … +55 °C		
Approvals	CE; ; cULus OrdLoc**		
Data sheet and further information, see:	wago.com/762-4304/8000-002	wago.com/762-4204/8000-001	wago.com/762-4104

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Touch Panel 600 Advanced Line; Capacitive Touchscreen with a Glass Surface; 17.8 cm (7.0")



Item Description	Touch Panel; 17.8 cm (7.0"); 800 x 480 pixels; Capacitive touchscreen with a glass surface	
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**
Item No.	**762-5303/8000-002**	**762-5203/8000-001**
Order Text	TP600; 7.0; 800x480; PIO3; CP	TP600; 7.0; 800x480; PIO2; VP
Technical Data		
Display/front view	Multitouch glass front; Capacitive touchscreen with a glass surface	
Screen size (diagonal)	18 cm (7.0")	
Aspect	16:9	
Display colors	16 million	
Graphics resolution	800 x 480	
Operating elements	Two brightness settings (Up and Down) on the front	
Communication	Modbus® (TCP)	
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT	
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	
Programming environment	*e!COCKPIT* (based on CODESYS V3)	
Operating system	Real-time Linux (with RT-Preempt patch)	
Processor	Cortex A9	
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB	
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	
Interfaces (USB)	2 x USB host 2.0 (type A)	
Onboard I/Os	Audio; 4 x DIO, configurable	Audio
Dimensions (W x H x D)	213 x 167 x 78 mm	213 x 167 x 58 mm
Panel cutout (W x H)	198 x 152 mm	
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection	
Surrounding air temperature (operation)	0 … +55 °C	
Approvals	CE; cULus OrdLoc**	
Data sheet and further information, see:	wago.com/762-5303/8000-002	wago.com/762-5203/8000-001

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*

*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

**Pending

„ Software *e!COCKPIT*, see page 26

Touch Panel 600 Advanced Line; Capacitive Touchscreen with a Glass Surface; 25.7 cm (10.1")



Item Description	Touch Panel; 25.7 cm (10.1"); 1280 x 800 pixels; Capacitive touchscreen with a glass surface	
Version	**Hardware configuration PIO3; Control Panel**	**Hardware configuration PIO2; Visu Panel**
Item No.	**762-5304/8000-002**	**762-5204/8000-001**
Order Text	TP600; 10.1; 1280x800; PIO3; CP	TP600; 10.1; 1280x800; PIO2; VP

Technical Data		
Display/front view	Multitouch glass front; Capacitive touchscreen with a glass surface	
Screen size (diagonal)	25.7 cm (10.1")	
Aspect	16:9	
Display colors	16 million	
Graphics resolution	1280 x 800	
Operating elements	Two brightness settings (Up and Down) on the front	
Communication	Modbus® (TCP)	
	EtherNet/IP adapter (slave)[1]; CANopen; Modbus® (UDP); RS-232/485 interface; MQTT	
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	
Programming environment	*e!COCKPIT* (based on CODESYS V3)	
Operating system	Real-time Linux (with RT-Preempt patch)	
Processor	Cortex A9	
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB	
Program memory/data memory/non-volatile memory (software)	60 MB* / 60 MB* / 128 KB	60 MB* / 60 MB* / -
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	
Interfaces (USB)	2 x USB host 2.0 (type A)	
Onboard I/Os	Audio; 4 x DIO, configurable	Audio
Dimensions (W x H x D)	293 x 223 x 78 mm	293 x 223 x 58 mm
Panel cutout (W x H)	278 x 208 mm	
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	
Supply voltage	24 VDC, SELV (−25 … +30 %) with reverse voltage protection	
Surrounding air temperature (operation)	0 … +55 °C	
Approvals	CE; cULus OrdLoc**	
Data sheet and further information, see:	wago.com/762-5304/8000-002	wago.com/762-5204/8000-001

Accessories	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68

[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Touch Panel 600 Marine Line; Resistive Touchscreen; 10.9 cm (4.3") or 14.5 cm (5.7")





Item Description	Touch Panel; 10.9 cm (4.3"); 480 x 272 pixels; Resistive touchscreen, marine version	Touch Panel; 14.5 cm (5.7"); 640 x 480 pixels; Resistive touchscreen, marine version
Version	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO2; Visu Panel**
Item No.	**762-6201/8000-001**	**762-6202/8000-001**
Order Text	TP600; 4.3; 480x272; PIO2; VP	TP600; 5.7; 640x480; PIO2; VP
Technical Data		
Display/front view	Resistive touchscreen; Black front	Resistive touchscreen; Black front
Screen size (diagonal)	10.9 cm (4.3")	14.5 cm (5.7")
Aspect	16:9	4:3
Display colors	16 million	262.000
Graphics resolution	480 x 272	640 x 480
Operating elements	Two brightness settings (Up and Down) on the front	Two brightness settings (Up and Down) on the front
Communication	Modbus® (TCP)	Modbus® (TCP)
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH
Programming environment	*e!COCKPIT* (based on CODESYS V3)	*e!COCKPIT* (based on CODESYS V3)
Operating system	Real-time Linux (with RT-Preempt patch)	Real-time Linux (with RT-Preempt patch)
Processor	Cortex A9	Cortex A9
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB	2 GB / 4 GB
Program memory/data memory	60 MB* / 60 MB*	60 MB* / 60 MB*
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	microSD (max. 2 GB); microSDHC (max. 32 GB)
Interfaces (USB)	2 x USB host 2.0 (type A)	2 x USB host 2.0 (type A)
Onboard I/Os	Audio	Audio
Dimensions (W x H x D)	155 x 135 x 58 mm	172 x 163 x 58 mm
Panel cutout (W x H)	140 x 120 mm	157 x 148 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (−25 … +30 %); with reverse voltage protection	24 VDC, SELV (−25 … +30 %); with reverse voltage protection
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Approvals	CE; cULus OrdLoc**; DNV GL**	CE; cULus OrdLoc**; DNV GL**
Data sheet and further information, see:	wago.com/762-6201/8000-001	wago.com/762-6202/8000-001

Accessories	Item No.	Page	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68	**762-9001**	68

*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

„ Software *e!COCKPIT*, see page 26

„ Approvals and corresponding ratings, see page 528 or www.wago.com

Touch Panel 600 Marine Line; Resistive Touchscreen; 17.8 cm (7.0") or 25.7 cm (10.1")





Item Description	Touch Panel; 17.8 cm (7.0"); 800 x 480 pixels; Resistive touchscreen, marine version	Touch Panel; 25.7 cm (10.1"); 1280 x 800 pixels; Resistive touchscreen, marine version
Version	**Hardware configuration PIO2; Visu Panel**	**Hardware configuration PIO2; Visu Panel**
Item No.	**762-6203/8000-001**	**762-6204/8000-001**
Order Text	TP600; 7.0; 800x480; PIO2; VP	TP600; 10.1; 1280x800; PIO2; VP
Technical Data		
Display/front view	Resistive touchscreen; Black front	Resistive touchscreen; Black front
Screen size (diagonal)	18 cm (7.0")	25.7 cm (10.1")
Aspect	16:9	16:9
Display colors	16 million	16 million
Graphics resolution	800 x 480	1280 x 800
Operating elements	Two brightness settings (Up and Down) on the front	Two brightness settings (Up and Down) on the front
Communication	Modbus® (TCP)	Modbus® (TCP)
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH
Programming environment	***e!COCKPIT*** (based on CODESYS V3)	***e!COCKPIT*** (based on CODESYS V3)
Operating system	Real-time Linux (with RT-Preempt patch)	Real-time Linux (with RT-Preempt patch)
Processor	Cortex A9	Cortex A9
Main memory (RAM)/internal memory (flash)	2 GB / 4 GB	2 GB / 4 GB
Program memory/data memory	60 MB* / 60 MB*	60 MB* / 60 MB*
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	microSD (max. 2 GB); microSDHC (max. 32 GB)
Interfaces (USB)	2 x USB host 2.0 (type A)	2 x USB host 2.0 (type A)
Onboard I/Os	Audio	Audio
Dimensions (W x H x D)	213 x 167 x 58 mm	293 x 223 x 58 mm
Panel cutout (W x H)	198 x 152 mm	278 x 208 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (−25 … +30 %); with reverse voltage protection	24 VDC, SELV (−25 … +30 %); with reverse voltage protection
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Approvals	CE; cULus OrdLoc**; DNV GL**	CE; cULus OrdLoc**; DNV GL**
Data sheet and further information, see:	wago.com/762-6203/8000-001	wago.com/762-6204/8000-001

Accessories	Item No.	Page	Item No.	Page
Memory card; 2 GB	758-879/000-3102	68	758-879/000-3102	68
Clamping elements (included)	762-9001	68	762-9001	68

*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Touch Panel *e!DISPLAY 3000T*; Resistive Touchscreen; 10.9 cm (4.3″) or 14.5 cm (5.7″)





Item Description	Touch Panel; 10.9 cm (4.3″); 480 x 272 pixels; Resistive touchscreen	Touch Panel; 14.5 cm (5.7″); 640 x 480 pixels; Resistive touchscreen
Version	**Hardware configuration PIO1; Web Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-3000**	**762-3001**
Order Text	WP; 4.3; 480x272; PIO1	WP; 5.7; 640x480; PIO1
Technical Data		
Display/front view	Resistive touchscreen	Resistive touchscreen
Screen size (diagonal)	10.9 cm (4.3″)	14.5 cm (5.7″)
Aspect	16:9	4:3
Display colors	16 million	262.000
Graphics resolution	480 x 272	640 x 480
Operating elements	Two brightness settings (Up and Down) on the front	Two brightness settings (Up and Down) on the front
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH
Operating system	Real-time Linux (with RT-Preempt patch)	Real-time Linux (with RT-Preempt patch)
Processor	Cortex A8	Cortex A8
Main memory (RAM)/internal memory (flash)	512 Mb / 1024 Mb	512 Mb / 1024 Mb
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	microSD (max. 2 GB); microSDHC (max. 32 GB)
Interfaces (USB)	2 x USB host 2.0 (type A)	2 x USB host 2.0 (type A)
Dimensions (W x H x D)	155 x 135 x 58 mm	172 x 163 x 58 mm
Panel cutout (W x H)	140 x 120 mm	157 x 148 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (−25 … +30 %); with reverse voltage protection	24 VDC, SELV (−25 … +30 %); with reverse voltage protection
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Approvals	CE; KC; cULus OrdLoc; DNV GL	CE; KC; cULus OrdLoc; DNV GL
Data sheet and further information, see:	wago.com/762-3000	wago.com/762-3001

Accessories	Item No.	Page	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	68	**762-9001**	68

„ Approvals and corresponding ratings, see page 528 or www.wago.com

Touch Panel *e!DISPLAY 300T*; Resistive Touchscreen; 17.8 cm (7.0") or 25.7 cm (10.1")





Item Description	Touch Panel; 17.8 cm (7.0"); 800 x 480 pixels; Resistive touchscreen	Touch Panel; 25.7 cm (10.1"); 1280 x 800 pixels; Resistive touchscreen
Version	**Hardware configuration PIO1; Web Panel**	**Hardware configuration PIO1; Web Panel**
Item No.	**762-3002**	**762-3003**
Order Text	WP; 7.0; 800x480; PIO1	WP 10.1 1280x800 PIO1
Technical Data		
Display/front view	Resistive touchscreen	Resistive touchscreen
Screen size (diagonal)	18 cm (7.0")	25.7 cm (10.1")
Aspect	16:9	16:9
Display colors	16 million	16 million
Graphics resolution	800 x 480	1280 x 800
Operating elements	Two brightness settings (Up and Down) on the front	Two brightness settings (Up and Down) on the front
ETHERNET protocols	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH	DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH
Operating system	Real-time Linux (with RT-Preempt patch)	Real-time Linux (with RT-Preempt patch)
Processor	Cortex A8	Cortex A8
Main memory (RAM)/internal memory (flash)	512 Mb / 1024 Mb	512 Mb / 1024 Mb
Memory expansion	microSD (max. 2 GB); microSDHC (max. 32 GB)	microSD (max. 2 GB); microSDHC (max. 32 GB)
Interfaces (USB)	2 x USB host 2.0 (type A)	2 x USB host 2.0 (type A)
Dimensions (W x H x D)	213 x 167 x 58 mm	293 x 223 x 58 mm
Panel cutout (W x H)	198 x 152 mm	278 x 208 mm
Mounting	Clamping elements (included) or VESA mount (4 x M4x8)	Clamping elements (included) or VESA mount (4 x M4x8)
Supply voltage	24 VDC, SELV (−25 … +30 %); with reverse voltage protection	24 VDC, SELV (−25 … +30 %); with reverse voltage protection
Surrounding air temperature (operation)	0 … +55 °C	0 … +50 °C, 0 … +55 °C (vertical mounting position)
Approvals	CE; KC; UL OrdLoc; DNV GL	CE; KC; UL OrdLoc; DNV GL
Data sheet and further information, see:	wago.com/762-3002	wago.com/762-3003

Accessories	Item No.	Page	Item No.	Page
Memory card; 2 GB	**758-879/000-3102**	68	**758-879/000-3102**	68
Clamping elements (included)	**762-9001**	69	**762-9001**	68

Accessories



3

Item Description	Memory Card microSD; SLC-NAND; 2 GB; Temperature range: −40 … +90 °C
Item No.	758-879/000-3102

Technical Data

Memory	2 GB (SLC)
Read/write cycles (max.)	17 MB/s / 20 MB/s
MTBF	4,000,000 hrs.
Service life	2,000,000 program/operating cycles
Surrounding air temperature (operation)	−40 … +90 °C
Surrounding air temperature (storage)	−40 … +90 °C
Relative humidity	95 % non-condensing
Dimensions W x H x D	15 x 11 x 1 mm
Vibration resistance	15 g
Shock resistance	50 g
Data transmission rate	Up to 20 Mb/s



Connecting Cable		
USB A-B	Item No.	Pack. Unit
3 m	758-879/000-101	1



Clamping Element; for Touch Panels		
	Item No.	Pack. Unit
4 pcs	762-9001	1



Controllers

Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel

- Merging of control and visualization
- 10.9 … 25.7 cm (4.3 … 10.1")

◄ Section 3

Controllers PFC200 XTR

The advantages of the PFC Controller combined with the capabilities for extreme environments:

- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Section 4.2 ►►

Controllers 750 XTR

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 4.4 ►►►►

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

Section 4.1 ►

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

Section 4.3 ►►►

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

Section 4.5 ►►►►►

Controllers
Overview

		Section	Page
	**Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel** Combining controller and visualization into one device	3	58
	**Controllers PFC100 and PFC200** Scalable IP20 controller family with various interfaces	4.1	72
	**Controllers PFC200 XTR** Scalable IP20 controllers with various interfaces for eXTReme environmental conditions	4.2	94
	**Controllers 750** IP20 microcontrollers	4.3	102
	**Controllers 750 XTR** IP20 microcontrollers for eXTReme environments	4.4	120
	**Starter Kits** To get you up and running quickly, we offer starter kits to suit the most diverse applications.	4.5	128

Advantages:

- Fieldbus-independent – Support all standard fieldbus protocols and ETHERNET standards
- Scalable performance – Controllers, Control Panels, PFC100 and PFC200
- Programming per IEC 61131-3
- Flexible platform adapts to diverse applications and environments
- Combinable with the WAGO-I/O-SYSTEM 750 – Modular, compact, versatile



Controllers PFC100/PFC200

Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel

- Merging of control and visualization
- 10.9 … 25.7 cm (4.3 … 10.1")

◄ Section 3

Controllers PFC200 XTR

The advantages of the PFC Controller combined with the capabilities for extreme environments:

- High processing speed
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Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

Section 4.3 ►►

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

Section 4.5 ►►►►

Controllers PFC100/PFC200
Contents

	Page
General Product Information	74
Versions	75
Interfaces and Types	75
Installation Instructions	76
Item Number Key	76
Standards and Rated Conditions	77
Approvals	77

	CPU	Modbus (TCP, UDP)	EtherNet/IP	EtherCAT	PROFINET	PROFIBUS	CANopen	Modbus RTU	Telecontrol protocols	IoT Protocols	Description	Item No. Default	Item No. Ext. Temperature	Page
	Cortex A8; 600 MHz	M/S	S							x	Controller PFC100; 2 x ETHERNET; Eco	750-8100		78
	Cortex A8; 600 MHz	M/S	S							x	Controller PFC100; 2 x ETHERNET	750-8101	750-8101/025-000	79
		M/S	S					x		x	Controller PFC100; 2 x ETHERNET, RS-232/-485	750-8102	750-8102/025-000	79
	Cortex A8; 1 GHz	M/S	S	M*				x		x	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485	750-8212	750-8212/025-000	80
		M/S						x	x	x	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485; Telecontrol technology		750-8212/025-001 750-8212/025-002	80
	Cortex A8; 1 GHz	M/S	S	M*			M/S			x	Controller PFC200; 2nd generation; 2 x ETHERNET, CAN, CANopen	750-8213		81
	Cortex A8; 1 GHz	M/S	S	M*			M/S	x		x	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen	750-8214		82
	Cortex A8; 1 GHz	M/S	S	M*	S		M/S			x	Controller PFC200; 2nd generation; 4 x ETHERNET, CAN, CANopen, USB	750-8215		83
	Cortex A8; 1 GHz	M/S	S	M*		S	M/S	x		x	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave	750-8216	750-8216/025-000	84
		M/S				S	M/S	x	x	x	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave; Telecontrol technology		750-8216/025-001	84
	Cortex A8; 600 MHz	M/S	S					x		x	Controller PFC200; 2 x ETHERNET, RS-232/-485, Mobile radio module	750-8207	750-8207/025-000	85
		M/S						x	x	x	Controller PFC200; 2 x ETHERNET, RS-232/-485, Mobile radio module; Telecontrol technology; Ext. temperature		750-8207/025-001	85
	Cortex A8; 600 MHz	M/S	S			M		x		x	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Master	750-8208	750-8208/025-000	86
		M/S				M		x	x	x	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Master; Telecontrol technology		750-8208/025-001	86
	Cortex A8; 600 MHz	M/S	S							x	Controller PFC100; FG0; 2 x ETHERNET	750-8101/000-010		89
	Cortex A8; 600 MHz	M/S	S					x		x	Controller PFC200; FG1; 2 x ETHERNET, RS-232/-485	750-8202/000-011		90
		M/S	S					x		x	Controller PFC200; FG2; 2 x ETHERNET, RS-232/-485	750-8202/000-012		91
		M/S	S					x		x	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485	750-8202/000-022		92
	Cortex A8; 600 MHz	M/S	S					x		x	Controller PFC200; Energy data management application; 2 x ETHERNET, RS-232/-485; Mobile radio module	750-8207/000-022		93

M: Master, S: Slave; *requires an additional license

Controllers PFC100/PFC200
General Product Information

PFC100/PFC200: Maximum Performance in a Minimum Space

As a member of the WAGO control family, the PFC100 and PFC200 Controllers with ***e!RUNTIME*** excel with high processing speed and multiple interfaces for parallel communication. They offer at least two ETHERNET connections in all variants and, depending on the version, additional interfaces. The CANopen, PROFIBUS DP, Modbus TCP/UPD/RTU, PROFINET, EtherNet/IP and EtherCAT protocols provide a flexible connection to fieldbus systems and external input/output devices. These fieldbus systems can be easily configured directly in WAGO's easy-to-use e!COCKPIT development environment.
The ETHERNET interfaces with an integrated switch also support all major IT protocols. In addition to multiple interfaces, the PFC100/PFC200 offers ample memory for your applications thanks to the internal Flash memory and an integrated interface for memory cards.

Industry 4.0 / IoT

Recording, digitizing and linking data profitably – this is the core concept behind Industry 4.0. Using a dedicated library, the WAGO PFC100 and PFC200 Controllers become IoT controllers that send data from the field level to the cloud. Here, they can be aggregated and used for analysis. This creates true added value for your company – be it for increasing the efficiency of in-house production, implementing energy management in buildings, or developing further end customer services. Existing systems also become IoT-ready, making them sustainable into the future. The WAGO PFC family of controllers thus forms the basis for a sustainable corporate world.

Telecontrol Technology

Standardized telecontrol protocols according to IEC 60870-5, IEC 61850, IEC 61400-25 or DNP3 ensure use of the PFC Controllers in telecontrol technology.

Starter Kits

For a quick start, WAGO offers every customer the unique opportunity to purchase a starter kit that already contains all the components needed to begin programming and getting to know the controllers. For starter kits, see Section 4.5.

Link between Process Data and IT Application

The PFC100/PFC200 ideally combines real-time requirements with IT functionality. It supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNTP, SNMP, FTP, BootP, DHCP, DNS, Telnet, SSH and other protocols simplify integration into IT environments.
Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the 750 Series Controllers incorporate library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Security on Board

The topics of ETHERNET communication and security are closely linked. To provide PFC Controller users with a high level of security, mechanisms for secure connections such as VPN, integrated firewall, HTTPS, FTPS, SSH and SSL/TLS are standard.

Demand-Oriented Extensibility

Some controllers offer the option of activating functions that go beyond the standard via runtime licenses, making it possible to price as needed. This also offers the advantage that with the same exact controller, different functions can be realized and also combined, which otherwise would only be replicated via additional variants. The licenses are simply loaded into the controller together with the project. The additional licenses available for each controller are specified by the controller and described in detail in the "Software" section.

Application Controllers

For some specific solutions, variants of standard controllers are available that must be paired with the appropriate solutions. You will find these solutions in Section 1.

Modular and Expandable

With the WAGO-I/O-SYSTEM 750, the PFC100/PFC200 can be expanded to almost any input/output interface. A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O node without tools. The straightforward design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field levels can be directly wired using 1-, 2-, 3- or 4-wire technology.

Maximum Reliability and Ruggedness

The PFC100/PFC200 is engineered and tested for use in the most demanding environments (e.g., temperature cycling, shock/vibration loading and ESD) according to the highest standards. Spring pressure connection technology guarantees continuous operation. Integrated QA measures in the production process and 100% function testing ensure consistent quality.

Open-Source Software and Linux®

We unite what belongs together: High-performance WAGO hardware and the future-ready Linux® operating system. WAGO's controllers offer programming in either IEC 61131 or directly in Linux® to create complex tasks. WAGO's "Embedded Linux" Controllers impress with base images that are expandable via open-source packages. As a "Gold Member" of the Open Source Automation Development Lab (OSADL), WAGO supports both financing and further development of Linux® in the industrial sector. The controller firmware itself is available as a "Board Support Package" (BSP).
If you are interested, simply contact our Technical Support *AUTOMATION*.

Advantages:

- Programming per IEC 61131-3
- Applications with higher-level languages
- Linux® real-time operating system
- Robust and maintenance-free
- Integrated cybersecurity packages
- IoT ready

Controllers PFC100/PFC200
Versions

Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0°C to 55°C. However, there are applications like telecontrol technology that require an extended temperature range. These versions are available in an extended temperature range of –20°C to +60°C.



Eco

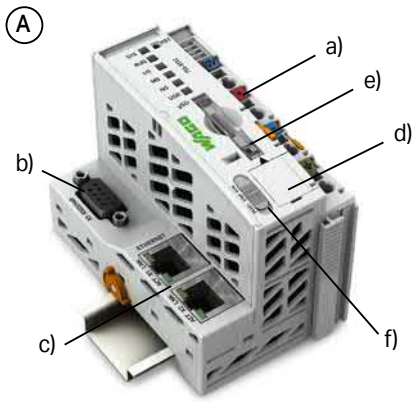
The Eco version of the PFC200 limits the number of stackable I/O modules to four.

Telecontrol Technology

The telecontrol technology versions of the PFC200 are distinguished by their integrated, standardized telecontrol technology:

- IEC 60870-5
- IEC 61850
- IEC 61400-25
- DNP3

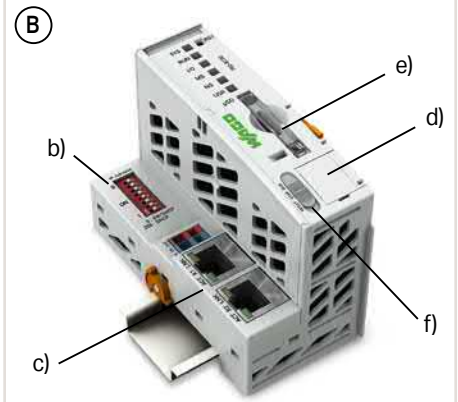
Interfaces and Types



- Including supply module to power downstream I/O modules (a)
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service interface (d)

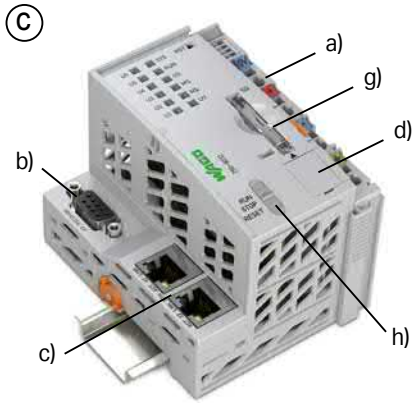
Housing design (A)

- microSD card slot for external storage media (e)
- Start/stop switch (f)
- W x H x D (mm) 61.5 x 71.9 x 100
- Connection technology (system/field supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 2.5 mm²/28 … 14 AWG



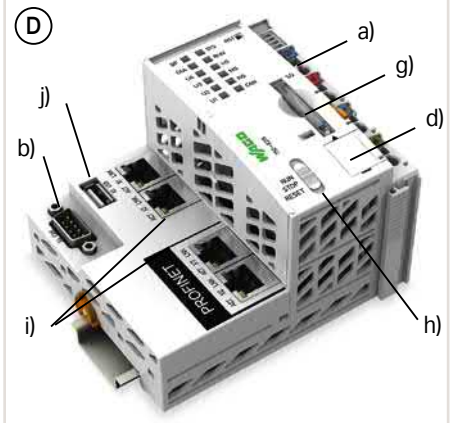
Housing design (B)

- microSD card slot for external storage media (e)
- Start/stop switch (f)
- W x H x D (mm) 49.5 x 71.9 x 96.8
- Connection technology (system supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 1.5 mm²/28 … 16 AWG



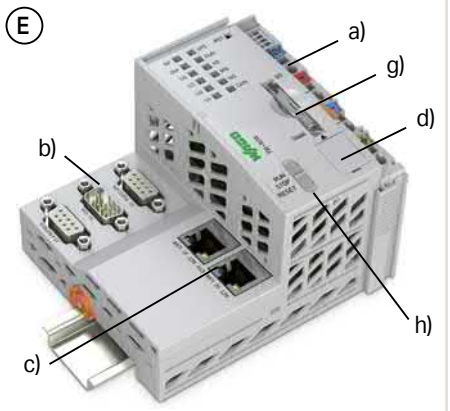
Housing design (C)

- SD card slot for external storage media (g)
- Start/stop switch (h)
- W x H x D (mm) 78.6 x 71.9 x 100
- Connection technology (system/field supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 2.5 mm²/28 … 14 AWG



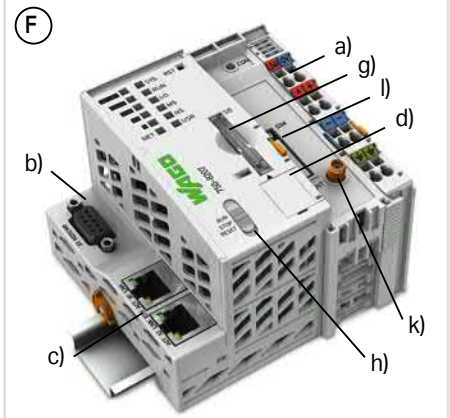
Housing design (D)

- SD card slot for external storage media (g)
- Start/stop switch (h)
- ETHERNET 4 x RJ-45 (i)
- USB interface (j)
- W x H x D (mm) 112 x 71.9 x 100
- Connection technology (system/field supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 2.5 mm²/28 … 14 AWG



Housing design (E)

- SD card slot for external storage media (g)
- Start/stop switch (h)
- W x H x D (mm) 112 x 71.9 x 100
- Connection technology (system/field supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 2.5 mm²/28 … 14 AWG



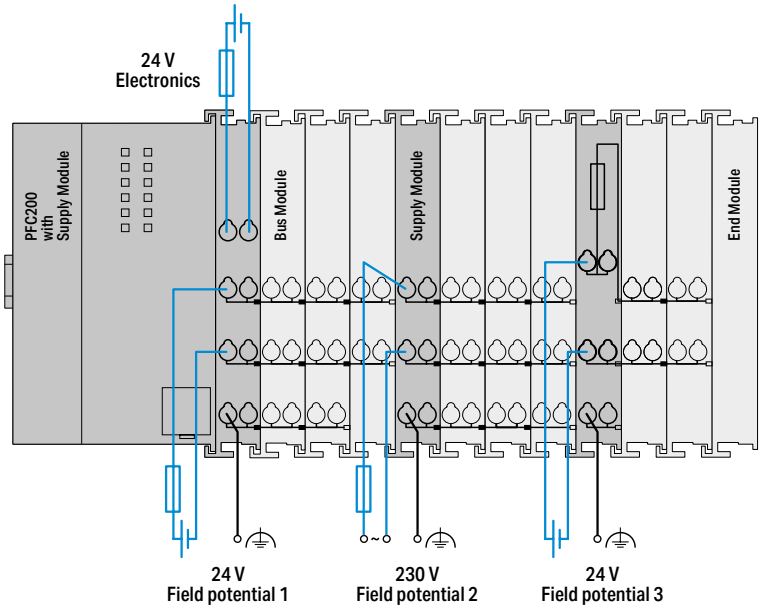
Housing design (F)

- SD card slot for external storage media (g)
- Start/stop switch (h)
- GSM antenna connection(k)
- SIM card slot (l)
- W x H x D (mm) 102.5 x 71.9 x 100
- Connection technology (system/field supply): CAGE CLAMP®
- Conductor cross section: 0.08 … 2.5 mm²/28 … 14 AWG

Controllers PFC100/PFC200
Installation Instructions

Power Supply

The internal electronics are powered by the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages. Supply modules with diagnostics enable additional monitoring of the power supply. This configuration ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



Notes

Additional steps must be implemented based on where the I/O system is installed:

Specific power and field-side power supply filters (750-624 or 750-626) are required for marine and onshore/offshore applications.
A specific supply module (750-606) is required to operate intrinsically safe Ex i modules.

Additionally, both a supply module and a field-side power supply filter are recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.
As part of operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. In addition, specific power and field-side power supply filters must be provided (750-626).

Please refer to the manual for details about the power supply's design.

Item Number Key

Explanation of the components of an item number key

Item No.: 750-81xx = PFC100
- 00: 2 x ETHERNET, Eco
- 01: 2 x ETHERNET
- 02: 2 x ETHERNET, RS-232/-485

Item No.: 750-82xy = PFC200
- 0y: Generation 1
- 1y: Generation 2
  - x2: 2 x ETHERNET, RS-232/-485
  - x3: 2 x ETHERNET, CAN
  - x4: 2 x ETHERNET, RS-232/-485, CAN
  - x5: 4 x ETHERNET, CAN, CANopen, USB
  - x6: 2 x ETHERNET, RS-232/-485, CAN, PROFIBUS-DP slave
  - x7: 2 x ETHERNET, RS-232/-485, mobile radio module
  - x8: 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS master

.../025-yyy: Extended temperature range of −20 … +60 °C
- 000: Standard
- 001: Telecontrol technology
- 002: Telecontrol Eco

Controllers PFC100/PFC200
Standards and Rated Conditions

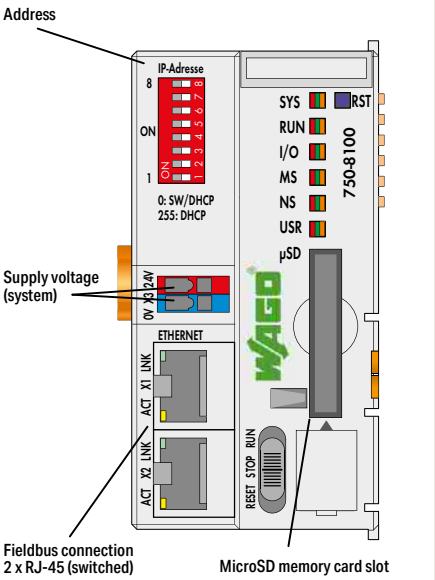
General Specifications	
Supply voltage (system)	24 VDC (−25 … +30 %)*; *for all marine-certified controllers
Isolation	500 V (system/supply)
Surrounding air temperature (operation)	0 … +55 °C
Surrounding air temperature (operation) for versions with an extended temperature range	−20 … +60 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	95 % (non condensing)
Relative humidity for versions with an extended temperature range	Max. 95 %, short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of −20 … +60 °C into consideration (except wind-driven precipitation, water and ice formation)
Operating altitude	0 … 2000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5g (4g for all marine-certified controllers) per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2
EMC emission of interference	Per EN 61000-6-3
Protection type	IP20
Mounting type	DIN-35 rail
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross sections; strip length Standard PFC100/200	0.08 … 2.5 mm²/28 … 14 AWG; 8 … 9 mm / 0.31 … 0.35 inch
Conductor cross sections; strip length PFC100 Eco	0.08 … 1.5 mm²/28 … 16 AWG; 5 … 6 mm / 0.2 … 0.24 inch
Current carrying capacity (power jumper contacts)	10 A

Approvals

Overview of the approvals in the article comparison in Section 11, Technical Appendix, or online at www.wago.com

Controller PFC100; 2 x ETHERNET; Eco





4.1

Item description	Controller PFC100; 2 x ETHERNET; Eco
Version	Default
Item No.	750-8100
Order text	PFC100; 2ETH; Eco

Technical Data	
Communication	Modbus (TCP, UDP); EtherNet/IP adapter (slave)[1]; MQTT
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Visualization	Web-Visu
Programming	*e!COCKPIT* (based on CODESYS V3)
CPU	Cortex A8; 600 MHz
Operating system	Real-time Linux (with RT-Preempt patch)
Non-volatile memory (hardware)	64 KB
Program memory/data memory/non-volatile memory (software)	10 MB* / 10 MB* / 64 KB
Number of modules per node (max.)	250
Input and output process image (internal) max.	1000 words
Input and output process image (MODBUS) max.	32000 words
Supply voltage (system)	24 VDC (–25 … +30 %), via wiring level
Input current (typ.) at nominal load (24 V)	300 mA
Total current (system supply)	700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-8100

Accessories	Item No.	Page
microSD memory card; 2 GB	758-879/000-3102	470

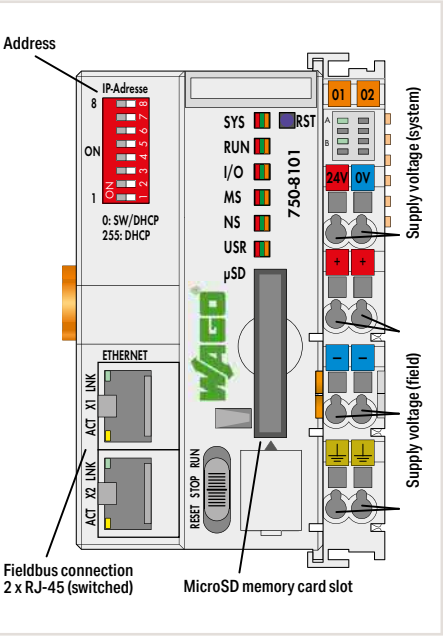
[1] Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 10 MB and can be distributed dynamically.

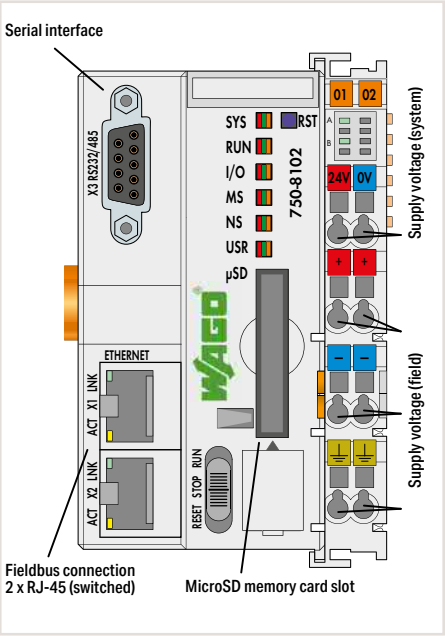
- Software *e!COCKPIT*, WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32
- Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"
- Approvals and corresponding ratings, see page 516 or www.wago.com

Controller PFC100; 2 x ETHERNET or 2 x ETHERNET; RS-232/-485



Figure: 750-8102





4.1

Item description	Controller PFC100; 2 x ETHERNET		PFC100 Controller; 2 x ETHERNET; RS-232/-485	
Version	Default	Ext. temperature	Default	Ext. temperature
Item No.	750-8101	750-8101/025-000	750-8102	750-8102/025-000
Order text	PFC100; 2ETH	PFC100; 2ETH; T	PFC100; 2ETH RS	PFC100; 2ETH RS; T
Technical Data				
Communication	Modbus (TCP, UDP); EtherNet/IP adapter (slave)[1]; MQTT		Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; MQTT; RS-232/-485 interface	
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH		DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH	
Visualization	Web-Visu		Web-Visu	
Programming	*e!COCKPIT* (based on CODESYS V3)		*e!COCKPIT* (based on CODESYS V3)	
CPU	Cortex A8; 600 MHz		Cortex A8; 600 MHz	
Operating system	Real-time Linux 3.18 (with RT-Preempt patch)		Real-time Linux 3.18 (with RT-Preempt patch)	
Non-volatile memory (hardware)	64 KB		128 KB	
Program memory/data memory/non-volatile memory (software)	12 MB* / 12 MB* / 64 KB		12 MB* / 12 MB* / 128 KB	
Number of modules per node (max.)	250		250	
Input and output process image (internal) max.	1000 words		1000 words	
Input and output process image (MODBUS) max.	32000 words		32000 words	
Supply voltage (system)	24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)		24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts		24 VDC (−25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	550 mA		550 mA	
Total current (system supply)	1700 mA		1700 mA	
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	−20 … +60 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm		61.5 x 71.9 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-8101		wago.com/750-8102	

Accessories	Item No.	Page	Item No.	Page
microSD memory card; 2 GB	758-879/000-3102	470	758-879/000-3102	470

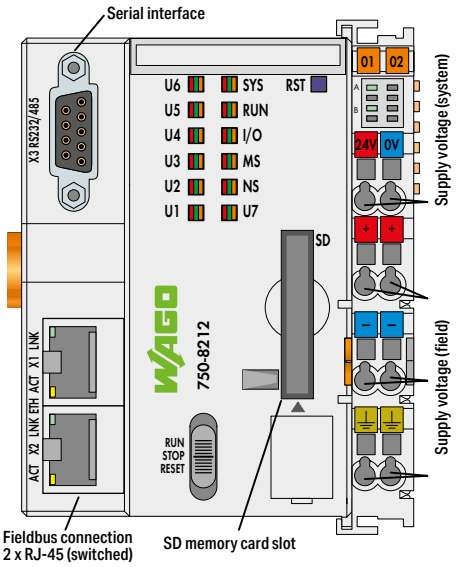
[1]Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 12 MB and can be distributed dynamically.

[1]Library for *e!RUNTIME*
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 12 MB and can be distributed dynamically.

Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485



Figure: 750-8212



4.1

Item description	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485			
Version	Default	Ext. temperature	Telecontrol technology; ext. temperature	Telecontrol technology; ext. temperature; Eco
Item No.	750-8212	750-8212/025-000	750-8212/025-001	750-8212/025-002
Order text	PFC200; G2; 2ETH RS	PFC200; G2; 2ETH RS; T	PFC200; G2; 2ETH RS; Tele; T	PFC200; G2; 2ETH RS; Tele; T; Eco

Technical Data				
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)1); MQTT; RS-232/-485 interface; EtherCAT-Master[2)]		Modbus (TCP, UDP, RTU); MQTT; Telecontrol protocols; RS-232/-485 interface	
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH			
Telecontrol protocols			IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3	
Visualization	Web-Visu			
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); *e!COCKPIT* (based on CODESYS V3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	
CPU	Cortex A8; 1 GHz			
Operating system	Real-time Linux (with RT-Preempt patch)			
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	512 MB / 4 GB / 128 KB			
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB		
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB		
Number of modules per node (max.)	250			4
Input and output process image (internal) max.	1000 words			
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words		
	e!RUNTIME:	32000 words		
Supply voltage (system)	24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)			
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts			
Input current (typ.) at nominal load (24 V)	550 mA			
Total current (system supply)	1700 mA			
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C		
Dimensions W x H x D	78.6 x 71.9 x 100 mm			
Approvals	CE; KC; Marine; cULus OrdLoc**/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-8212			

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
e!RUNTIME; EtherCAT Master 300; Single license	2759-263/210-1000	45

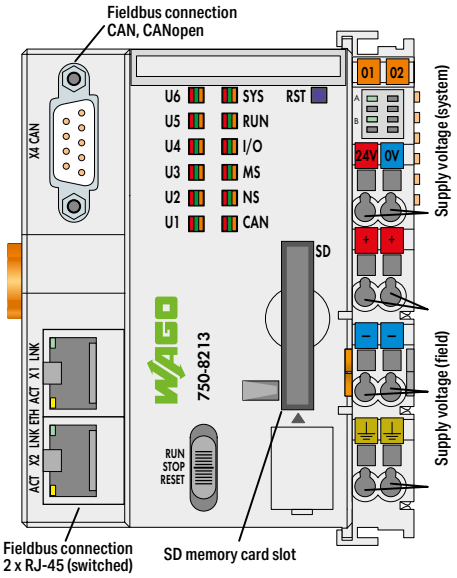
„ Software *e!COCKPIT* , WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32

„ Approvals and corresponding ratings, see page 516 or www.wago.com

[1)]Library for *e!RUNTIME*
[2)]for *e!RUNTIME*; requires an additional license
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Controller PFC200; 2nd Generation; 2 x ETHERNET, CAN, CANopen





4.1

Item description	Controller PFC200; 2nd generation; 2 x ETHERNET, CAN, CANopen
Version	Default
Item No.	750-8213
Order text	PFC200; G2; 2ETH CAN

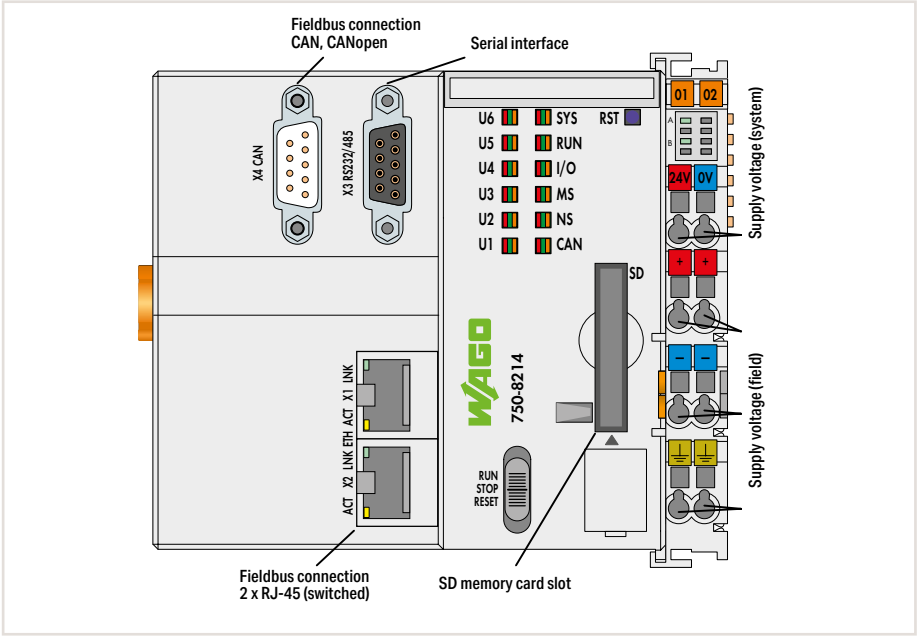
Technical Data		
Communication		Modbus (TCP, UDP); EtherNet/IP adapter (slave)[1]; MQTT; CANopen; EtherCAT Master[2]
ETHERNET protocols		DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Visualization		Web-Visu
Programming		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); *e!COCKPIT* (based on CODESYS V3)
CPU		Cortex A8; 1 GHz
Operating system		Real-time Linux (with RT-Preempt patch)
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)		512 MB / 4 GB / 128 KB
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB
Number of modules per node (max.)		250
Input and output process image (internal) max.		1000 words
Input and output process image (MODBUS)/(CAN) max.	CODESYS V2:	1000 words / 2000 words
	e!RUNTIME:	32000 words / 2000 words
Supply voltage (system)		24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)		24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)		550 mA
Total current (system supply)		1700 mA
Surrounding air temperature (operation)		0 … +55 °C
Dimensions W x H x D		78.6 x 71.9 x 100 mm
Approvals		CE; KC; Marine; cULus OrdLoc**/HazLoc; ATEX/IECEx
Data sheet and further information, see:		wago.com/750-8213

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
e!RUNTIME; EtherCAT Master 300; Single license	2759-263/210-1000	45

[1] Library for *e!RUNTIME*
[2] for *e!RUNTIME*; requires an additional license
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen





4.1

Item description	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen
Version	Default
Item No.	750-8214
Order text	PFC200; G2; 2ETH RS CAN

Technical Data		
Communication		Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)1); MQTT; CANopen; RS-232/-485 interface; EtherCAT Master[2)]
ETHERNET protocols		DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Visualization		Web-Visu
Programming		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); ***e!COCKPIT*** (based on CODESYS V3)
CPU		Cortex A8; 1 GHz
Operating system		Real-time Linux (with RT-Preempt patch)
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)		512 MB / 4 GB / 128 KB
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB
Number of modules per node (max.)		250
Input and output process image (internal) max.		1000 words
Input and output process image (MODBUS)/(CAN) max.	CODESYS V2:	1000 words / 2000 words
	e!RUNTIME:	32000 words / 2000 words
Supply voltage (system)		24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)		24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)		550 mA
Total current (system supply)		1700 mA
Surrounding air temperature (operation)		0 … +55 °C
Dimensions W x H x D		78.6 x 71.9 x 100 mm
Approvals		CE; KC; Marine; UL OrdLoc**/HazLoc; ATEX/IECEx
Data sheet and further information, see:		wago.com/750-8214

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
e!RUNTIME; EtherCAT Master 300; Single license	2759-263/210-1000	45

[1)]Library for ***e!RUNTIME***
[2)]for ***e!RUNTIME***; requires an additional license
*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

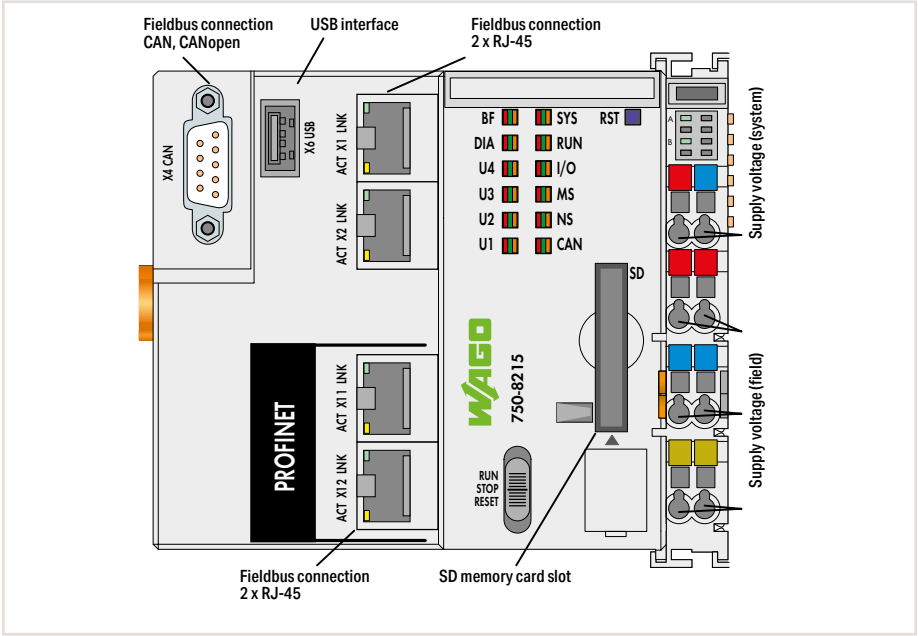
„ Software ***e!COCKPIT*** , WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 516 or www.wago.com

Controller PFC200; 2nd Generation; 4 x ETHERNET, CAN, CANopen, USB





4.1

Item description	Controller PFC200; 2nd generation; 4 x ETHERNET, CAN, CANopen, USB
Version	Default
Item No.	750-8215
Order text	PFC200; G2; 4ETH CAN USB

Technical Data	
Communication	PROFINET RT (Slave); Modbus (TCP, UDP); CANopen, EtherNet/IP adapter (slave)[1]; MQTT; EtherCAT Master[2]
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
PROFINET IO features	PROFINET IO V2.3; Media redundancy (MRP); Shared device
Visualization	Web-Visu
Programming	*e!COCKPIT* (based on CODESYS V3)
CPU	Cortex A8; 1 GHz
Operating system	Real-time Linux (with RT-Preempt patch)
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	512 MB / 4 GB / 128 KB
Program memory/data memory/non-volatile memory (software)	16 MB* / 64 MB* / 128 KB
Number of modules per node (max.)	250
Input and output process image (internal) max.	1000 words
Input and output process image (MODBUS)/ (PROFINET)/(CAN) max.	1000 words / 1024 bytes** / 2000 words
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	550 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	112 x 71.9 x 100 mm
Approvals	CE; Marine***; OrdLoc***/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-8215

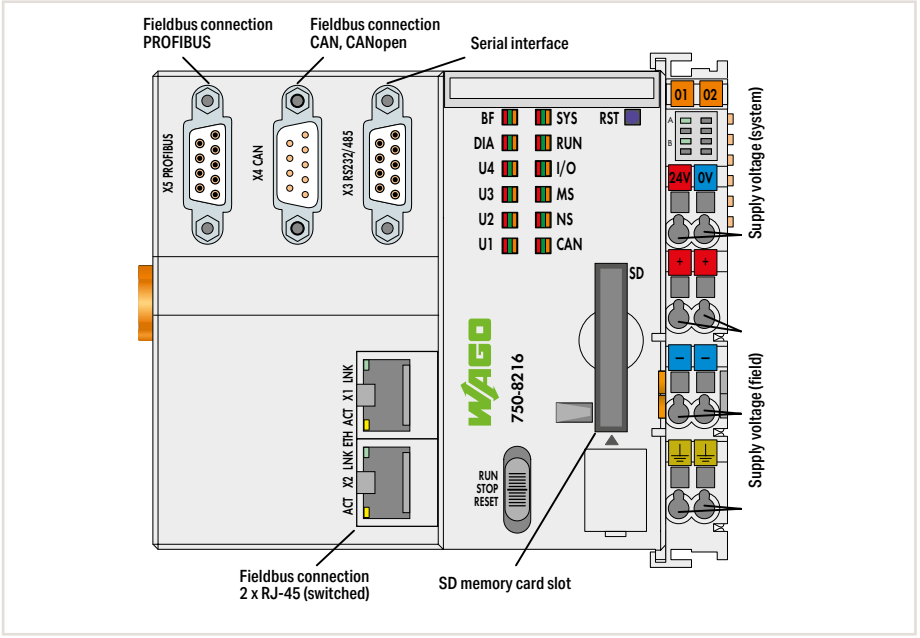
Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
e!RUNTIME; EtherCAT Master 300; Single license	2759-263/210-1000	45

[1] Library for *e!RUNTIME*
[2] for *e!RUNTIME*; requires an additional license
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**per application relation (AR)
***Pending

Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave



Figure: 750-8216



4.1

Item description	Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave		
Version	**Default**	**Ext. temperature**	**Telecontrol technology; ext. temperature**
Item No.	**750-8216**	**750-8216/025-000**	**750-8216/025-001**
Order text	PFC200; G2; 2ETH RS CAN DPS	PFC200; G2; 2ETH RS CAN DPS; T	PFC200; G2; 2ETH RS CAN DPS; Tele; T
Technical Data			
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; MQTT; PROFIBUS; CANopen; RS-232/-485 interface; EtherCAT-Master[2]		Modbus (TCP, UDP, RTU); MQTT; PROFIBUS; CANopen; Telecontrol protocols; RS-232/-485 interface
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH		
Telecontrol protocols			IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3
Visualization	Web-Visu		
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); *e!COCKPIT* (based on CODESYS V3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
CPU	Cortex A8; 1 GHz		
Operating system	Real-time Linux (with RT-Preempt patch)		
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	512 MB / 4 GB / 128 KB		
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB	
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB	
Number of modules per node (max.)	250		
Input and output process image (internal) max.	1000 words		
Input and output process image (MODBUS)/ (PROFIBUS)/(CAN) max.	CODESYS V2:	1000 words / 244 bytes / 2000 words	
	e!RUNTIME:	32000 words / 244 bytes / 2000 words	
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts		
Input current (typ.) at nominal load (24 V)	550 mA		
Total current (system supply)	1700 mA		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	
Dimensions W x H x D	112 x 71.9 x 100 mm		
Approvals	CE; KC; Marine; cULus OrdLoc**/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-8216		

Accessories	Item No.	Page
SD memory card; 2 GB	**758-879/000-001**	470
e!RUNTIME; EtherCAT Master 300; Single license	**2759-263/210-1000**	45

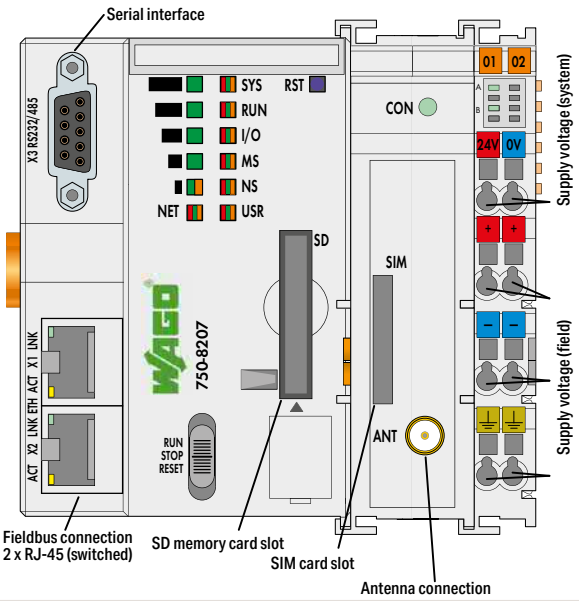
„ Approvals and corresponding ratings, see page 516 or www.wago.com

[1]Library for *e!RUNTIME*; [2]for *e!RUNTIME*; requires an additional license
*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Controller PFC200; 2 x ETHERNET, RS-232/-485, Mobile Radio Module



Figure: 750-8207



4.1

Item description	Controller PFC200; 2 x ETHERNET, RS-232/-485, Mobile radio module		
Version	**Default**	**Ext. temperature**	**Telecontrol technology; ext. temperature**
Item No.	**750-8207**	**750-8207/025-000**	**750-8207/025-001**
Order text	PFC200; 2ETH RS 3G	PFC200; 2ETH RS 3G; T	PFC200; 2ETH RS 3G; Tele; T
Technical Data			
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; MQTT; RS-232/-485 interface		Modbus (TCP, UDP, RTU); MQTT; Telecontrol protocols; RS-232/-485 interface
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH		
Telecontrol protocols			IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3
Radio technology	GSM/Edge/UMTS/HSPA+		
Frequency band	GSM quad-band		
Services	SMS (bidirectional); GPRS connection to Internet		
Security encryption	OpenVPN; IPsec; firewall		
Visualization	Web-Visu		
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); *e!COCKPIT* (based on CODESYS V3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
CPU	Cortex A8; 600 MHz		
Operating system	Real-time Linux (with RT-Preempt patch)		
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB		
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB	
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB	
Number of modules per node (max.)	250		
Input and output process image (internal) max.	1000 words		
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words	
	e!RUNTIME:	32000 words	
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts		
Input current (typ.) at nominal load (24 V)	550 mA		
Total current (system supply)	700 mA		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	
Dimensions W x H x D	102.5 x 71.9 x 100 mm		
Approvals	CE; EAC; cULus OrdLoc**		
Data sheet and further information, see:	wago.com/750-8207		

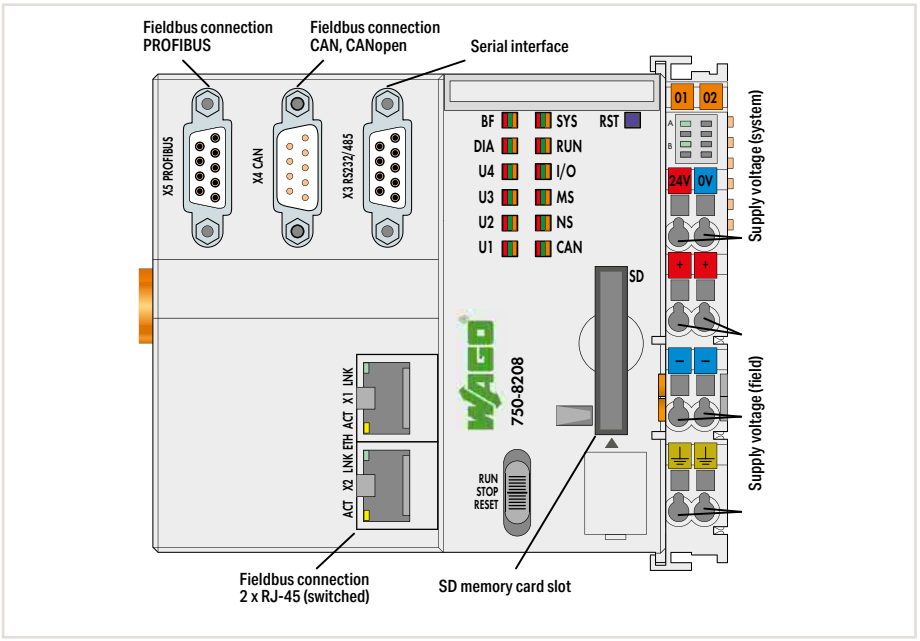
Accessories	Item No.	Page
SD memory card; 2 GB	**758-879/000-001**	470
Antenna, GSM	**758-965**	471

[1]Library for *e!RUNTIME*; *For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.
**Pending

Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Master



Figure: 750-8208



4.1

Item description	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Master		
Version	Default	Ext. temperature	Telecontrol technology; ext. temperature
Item No.	750-8208	750-8208/025-000	750-8208/025-001
Order text	PFC200; 2ETH RS CAN DPM	PFC200; 2ETH RS CAN DPM; T	PFC200; 2ETH RS CAN DPM; Tele; T

Technical Data			
Communication	PROFIBUS DP Master; CAN; CANopen; Modbus (TCP, UDP, RTU); MQTT; RS-232-/485 interface		PROFIBUS DP Master; CAN; CANopen; Modbus (TCP, UDP, RTU); MQTT; Telecontrol protocols; RS-232/-485 interface
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH		
Telecontrol protocols			IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3
Visualization	Web-Visu		
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)		
CPU	Cortex A8; 600 MHz		
Operating system	Real-time Linux (with RT-Preempt patch)		
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB		
Program memory/data memory/non-volatile memory (software)	16 MB / 64 MB / 128 KB		
Number of modules per node (max.)	250		
Input and output process image (internal) max.	1000 words		
Input and output process image (MODBUS)/ (PROFIBUS)/(CAN) max.	1000 words / 5000 bytes* / 2000 words		
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts		
Input current (typ.) at nominal load (24 V)	550 mA		
Total current (system supply)	1700 mA		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	
Dimensions W x H x D (mm)	112 x 71.9 x 100 mm		
Approvals	CE; Marine; OrdLoc**; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-8208		

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470

„ Software WAGO-I/O-*PRO* V2.3, see Section 2, page 32

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 516 or www.wago.com

*Input and output process image (PROFIBUS) max.: 5000 bytes (a maximum 125 slaves are supported, because a slave's process image can have up to 244 bytes/244 bytes)
**Pending

WAGO Application Controllers

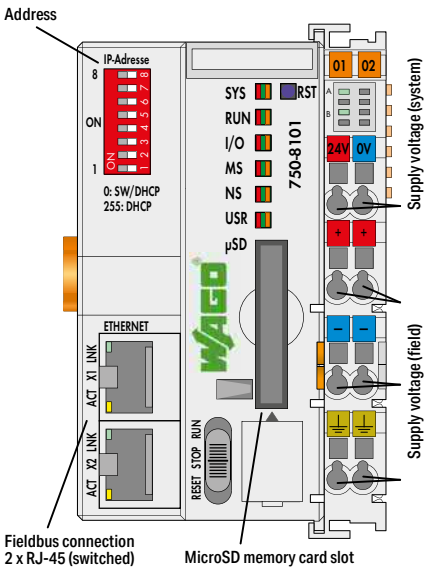
Machine Data Collection with MTConnect		Item No.
Application Controllers	Controller PFC100; FG0; 2 x ETHERNET	750-8101/000-010
Software	digitalTAP™ Application Software	Download: wago.com/applicationcontroller
Room Management with *flex*ROOM®		
Application Controllers	Controller PFC200; FG1; 2 x ETHERNET; RS-232/-485	750-8202/000-011
Software	***flex*ROOM®** Application Software	Download: wago.com/applicationcontroller
Lighting Management		
Application Controllers	Controller PFC200; FG2; 2 x ETHERNET; RS-232/-485	750-8202/000-012
Software	Lighting Management	Download: wago.com/applicationcontroller
Energy Data Management		
Application Controllers	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485	750-8202/000-022
	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485; Mobile radio module	750-8207/000-022
Software	Energy Data Management	Download: wago.com/applicationcontroller

Application controllers are designed for special solutions and must be paired appropriately. You will find the appropriate solutions in Section 1.

Controller PFC100; FG0; 2 x ETHERNET



Figure: 750-8101



4.1

Item description	Controller PFC100; FG0; 2 x ETHERNET
Item No.	750-8101/000-010
Order text	PFC100; FG0; 2ETH

Technical Data	
Communication	Modbus (TCP, UDP); EtherNet/IP adapter (slave)[1)]
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Visualization	Web-Visu
Programming	*e!COCKPIT* (based on CODESYS V3)
CPU	Cortex A8; 600 MHz
Operating system	Real-time Linux 3.18 (with RT-Preempt patch)
Non-volatile memory (hardware)	64 KB
Program memory/data memory/non-volatile memory (software)	12 MB* / 12 MB* / 64 KB
Number of modules per node (max.)	250
Input and output process image (internal) max.	1000 words
Input and output process image (MODBUS) max.	32000 words
Supply voltage (system)	24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	550 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-8101/000-010

Accessories	Item No.	Page
microSD memory card; 2 GB	758-879/000-3102	470

[1)] Library for ***e!RUNTIME***
*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 12 MB and can be distributed dynamically.

Suitable software application:
- Machine Data Collection with MTConnect
see Section 1

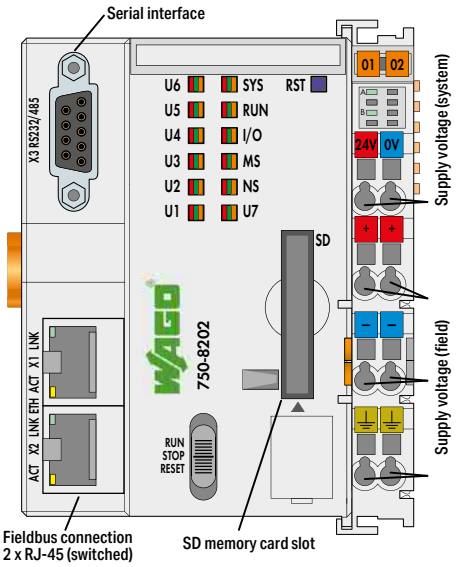
„ *e!COCKPIT* Software, see Section 2, page 26

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

Controller PFC200; FG1; 2 x ETHERNET; RS-232/-485



Figure: 750-8202



4.1

Item description	Controller PFC200; FG1; 2 x ETHERNET; RS-232/-485	
Item No.	750-8202/000-011	
Order text	PFC200; FG1; 2ETH RS	
Technical Data		
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; RS-232/-485 interface	
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH	
Visualization	Web-Visu	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3), ***e!COCKPIT*** (based on CODESYS V3)	
CPU	Cortex A8; 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB	
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB
Number of I/O modules per node (max.)	250	
Input and output process image (internal) max.	1000 words	
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words
	e!RUNTIME:	32000 words
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	550 mA	
Total current (system supply)	1700 mA	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	78.6 x 71.9 x 100 mm	
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-8202/000-011	

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
WAGO Communication Cable	750-923	469

[1]Library for ***e!RUNTIME***

*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

Suitable software application:
- Machine Data Collection with MTConnect
- Room Management with ***flex***ROOM®

see Section 1

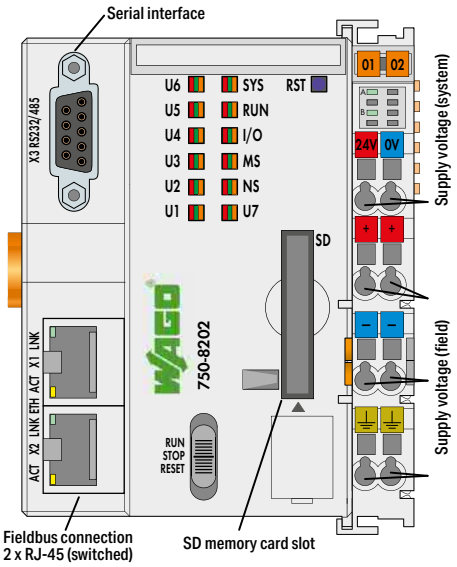
„ Software ***e!COCKPIT*** , WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32

„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

Controller PFC200; FG2; 2 x ETHERNET; RS-232/-485



Figure: 750-8202



4.1

Item description	Controller PFC200; FG2; 2 x ETHERNET; RS-232/-485	
Item No.	750-8202/000-012	
Order text	PFC200; FG2; 2ETH RS	
Technical Data		
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; RS-232/-485 interface	
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH	
Visualization	Web-Visu	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); ***e!COCKPIT*** (based on CODESYS V3)	
CPU	Cortex A8; 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB	
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB
Number of I/O modules per node (max.)	250	
Input and output process image (internal) max.	1000 words	
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words
	e!RUNTIME:	32000 words
Supply voltage (system)	24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	550 mA	
Total current (system supply)	1700 mA	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	78.6 x 71.9 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-8202/000-012	

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
WAGO Communication Cable	750-923	469

[1]Library for ***e!RUNTIME***
*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

Suitable software application:
- Machine Data Collection with MTConnect
- Lighting Management

see Section 1

Controller PFC200; Energy Data Management Application; 2 x ETHERNET; RS-232/-485



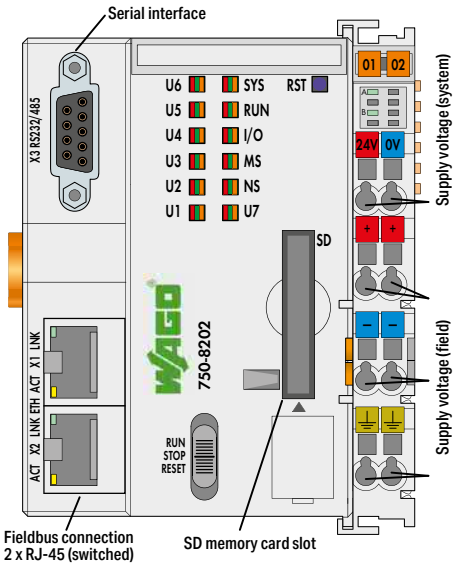


Figure: 750-8202

4.1

Item description	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485
Item No.	750-8202/000-022
Order text	PFC200; FGE; 2ETH RS

Technical Data		
Communication		Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; RS-232/-485 interface
ETHERNET protocols		DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Visualization		Web-Visu
Programming		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); ***e!COCKPIT*** (based on CODESYS V3)
CPU		Cortex A8; 600 MHz
Operating system		Real-time Linux (with RT-Preempt patch)
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)		256 MB / 256 MB / 128 KB
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!RUNTIME:	60 MB* / 60 MB* / 128 KB
Number of I/O modules per node (max.)		250
Input and output process image (internal) max.		1000 words
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words
	e!RUNTIME:	32000 words
Supply voltage (system)		24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)		24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)		550 mA
Total current (system supply)		1700 mA
Surrounding air temperature (operation)		0 … +55 °C
Dimensions W x H x D		78.6 x 71.9 x 100 mm
Approvals		CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:		wago.com/750-8202/000-022

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
WAGO Communication Cable	750-923	469

[1]Library for ***e!RUNTIME***
*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

Suitable software application:
- Energy Data Management

see Section 1

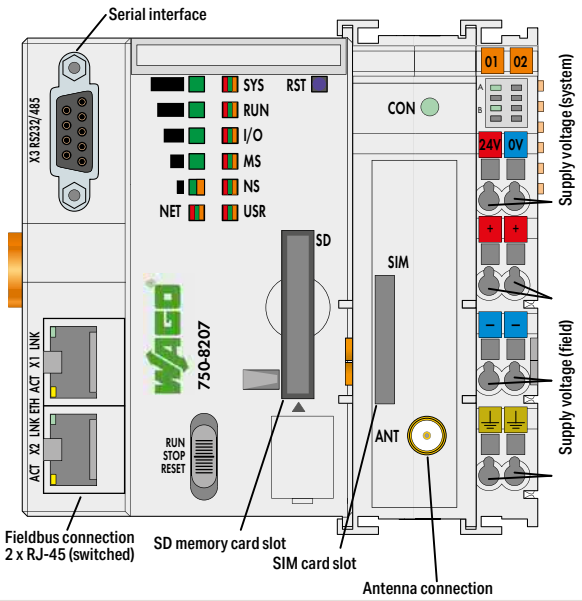
„ Software ***e!COCKPIT***, WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

Controller PFC200; Energy Data Management Application; 2 x ETHERNET; RS-232/-485; Mobile Radio Module



Figure: 750-8207



4.1

Item description	Controller PFC200; Energy data management application; 2 x ETHERNET; RS-232/-485; Mobile radio module
Item No.	750-8207/000-022
Order text	PFC200; FGE; 2ETH RS 3G

Technical Data		
Communication		Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; RS-232/-485 interface
ETHERNET protocols		DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH
Radio technology		GSM/Edge/UMTS/HSPA+
Frequency band		GSM quad-band
Services		SMS (bidirectional); GPRS connection to Internet
Security encryption		OpenVPN; IPsec; firewall
Visualization		Web-Visu
Programming		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); ***e!****COCKPIT* (based on CODESYS V3)
CPU		Cortex A8; 600 MHz
Operating system		Real-time Linux (with RT-Preempt patch)
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)		256 MB / 256 MB / 128 KB
Program memory/data memory/non-volatile memory (software)	CODESYS V2:	16 MB / 64 MB / 128 KB
	e!*RUNTIME*:	60 MB* / 60 MB* / 128 KB
Number of I/O modules per node (max.)		250
Input and output process image (internal) max.		1000 words
Input and output process image (MODBUS) max.	CODESYS V2:	1000 words
	e!*RUNTIME*:	32000 words
Supply voltage (system)		24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)		24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)		550 mA
Total current (system supply)		700 mA
Surrounding air temperature (operation)		0 … +55 °C
Dimensions W x H x D		102.5 x 71.9 x 100 mm
Approvals		CE; cULus OrdLoc
Data sheet and further information, see:		wago.com/750-8207/000-022

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
WAGO Communication Cable	750-923	469
Antenna; GSM	758-965	471

[1]Library for ***e!****RUNTIME*
*For memory configuration via ***e!****RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

Suitable software application:
- Energy Data Management
see Section 1



Controllers PFC200 XTR

Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel

- Merging of control and visualization
- 10.9 … 25.7 cm (4.3 … 10.1")

◄◄ Section 3

Controllers PFC200 XTR

The advantages of the PFC Controller combined with the capabilities for extreme environments:

- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Controllers 750 XTR

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 4.4 ►►

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

◄ Section 4.1

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

Section 4.3 ►

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

Section 4.5 ►►►

Controllers PFC200 XTR
Contents

	Page
General Product Information	96
Versions	97
Interfaces and Types	97
Item Number Key	97
Installation Instructions	98
Standards and Rated Conditions for Rail Applications (EN 50155)	98
Standards and Rated Conditions	99
Approvals	99

	CPU	Modbus (TCP, UDP)	EtherNet/IP	PROFIBUS	CANopen	Modbus RTU	Telecontrol Protocols: IEC 60870, IEC 61850/61400, DNP3	IoT Protocols: MQTT	Description	Item No.	
	Cortex A8; 600 MHz	M/S	S			x		x	Controller PFC200; 2 x ETHERNET, RS-232/-485; extreme	**750-8202/040-000**	100
	Cortex A8; 600 MHz	M/S	S			x	x	x	Controller PFC200; 2 x ETHERNET, RS-232/485; Telecontrol technology; extreme	**750-8202/040-001**	100
	Cortex A8; 600 MHz	M/S	S	S	M/S	x		x	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave; extreme	**750-8206/040-000**	101
	Cortex A8; 600 MHz	M/S	S	S	M/S	x	x	x	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave; Telecontrol technology; extreme	**750-8206/040-001**	101

M: Master, S: Slave

Controllers PFC200 XTR
General Product Information

PFC200 XTR:

Taking It to the eXTReme – The Standard for 750 XTR

With the dark gray XTR version of the PFC200 Controller, you will benefit from the unique added value of this fast and highly communicative multi-talented controller for applications that are subjected to extreme environments.

The PFC200 XTR Controller excels with high processing speed and multiple interfaces for parallel communication. All variants of this controller feature two ETHERNET ports and – depending on the model – additional interfaces. The CANopen, PROFIBUS DP and MODBUS TCP/UDP/RTU protocols provide a flexible connection to fieldbus systems and external input/output devices. These fieldbus systems can be easily configured directly in WAGO's easy-to-use e!COCKPIT development environment. The ETHERNET interfaces with an integrated switch also support all major IT protocols. In addition to multiple interfaces, the PFC200 XTR offers ample memory for your applications, provided by the internal flash memory and an integrated interface for SD/SDHC cards.

Extremely temperature-resistant, immune to interference, as well as unfazed by vibrations and impulse voltages – WAGO's 750 XTR is the first choice for demanding applications including:

- Marine systems and onshore/offshore industry
- Renewable energy systems (wind turbines, solar systems and biogas plants)
- Transformer stations and power distribution systems
- Petrochemical processing
- Water and wastewater treatment systems
- Custom machines
- Railway applications

Industry 4.0 / IoT

Recording, digitizing and linking data profitably – this is the core concept behind Industry 4.0. Using a dedicated library, the WAGO PFC100 and PFC200 Controllers now become IoT controllers that send data from the field level to the cloud. Here, they can be aggregated and used for analysis. This creates true added value for your company – be it for increasing the efficiency of in-house production, implementing energy management in buildings, or developing further end customer services. Existing systems also become IoT-ready, making them sustainable into the future. The WAGO PFC family of controllers thus forms the basis for a sustainable corporate world.

Link between Process Data and IT Application — Even under eXTReme Conditions

The PFC200 XTR ideally combines real-time requirements with IT functionality. It supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNTP, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the 750 Series Controllers incorporate library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Security on Board

The topics of ETHERNET communication and security are closely linked. To provide PFC Controller users with a high level of security, mechanisms for secure connections such as HTTPS, FTPS, SSH and SSL/TLS are standard.

Worldwide Approvals

International approvals for industrial automation, building technology, shipbuilding and onshore/offshore applications guarantee worldwide use even under harsh operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale and Polski Rejestr Stratkow.

Superior Reliability in Extreme Climates

Engineered for freezing cold, extreme heat and high humidity, the WAGO-I/O-SYSTEM 750 XTR provides absolute dependability in virtually any weather. The XTR version of the PFC200 is unfazed by both freezing cold down to –40°C and scorching heat up to +70°C. And this applies equally for both start-up and ongoing operation. The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

Additional Protection Against Interference Pulses

The WAGO-I/O-SYSTEM 750 XTR provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths add up to trouble-free operation.

High Mechanical Performance

Automation systems must be incredibly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications that can stress automation systems. The WAGO-I/O-SYSTEM 750 XTR continues to set new standards here. Count on long-lasting, trouble-free operation and industry-topping levels of safety – even in the most severe applications, such as tunnel boring machines.

Modular and Expandable

With the WAGO-I/O-SYSTEM 750 XTR, the PFC200 can be expanded to almost any input/output interface. Using an industry-leading platform, the 750 XTR boasts the same proven benefits.

Open-Source Software and Linux®

We unite what belongs together: High-performance WAGO hardware and the future-ready Linux® operating system. WAGO's controllers offer programming in either IEC 61131 or directly in Linux® to create complex tasks. WAGO's "Embedded Linux" Controllers impress with base images that are expandable via open-source packages. As a "Gold Member" of the Open Source Automation Development Lab (OSADL), WAGO supports both financing and further development of Linux® in the industrial sector. The controller firmware itself is available as a "Board Support Package" (BSP).
If you are interested, simply contact our Technical Support *AUTOMATION*.

Advantages:

- Controllers for eXTReme environmental conditions
  - No air conditioning required
  - Can be used in unshielded areas
  - Install close to vibrating and shock-generating system components
- Programming per IEC 61131-3
- Can be combined with high-level languages
- Linux® real-time operating system
- Robust and maintenance-free
- Integrated IT security standards
- IoT ready

Controllers PFC200 XTR
Versions

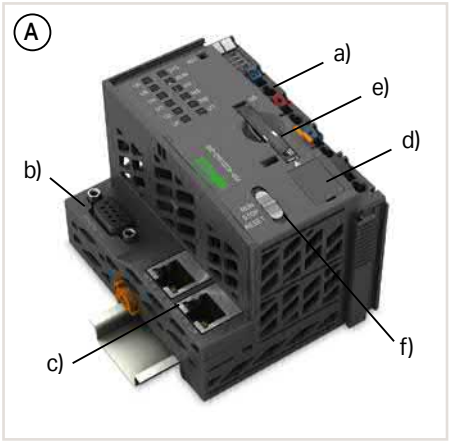
Telecontrol Technology

The telecontrol technology versions of the PFC200 are distinguished by their integrated, standardized telecontrol technology:
- IEC 60870-5
- IEC 61850
- IEC 61400-25
- DNP3

The increased requirements for dielectric strength and interference immunity according to EN 60870-2-1 are also completely fulfilled.



Interfaces and Types



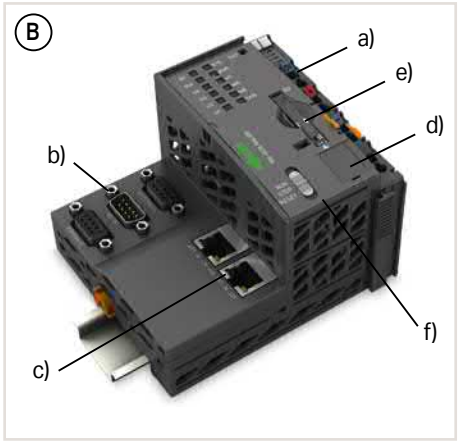
- Including supply module to power downstream I/O modules (a)
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service interface (d)
- SD card slot for external storage media (e)
- Start/stop switch (f)

Housing design (A)

- W x H x D (mm) 78.6 x 71.9 x 100

Housing design (B)

- W x H x D (mm) 112 x 71.9 x 100



Item Number Key

Explanation of the components of an item number key

Item No. : 750-82xx/040-000

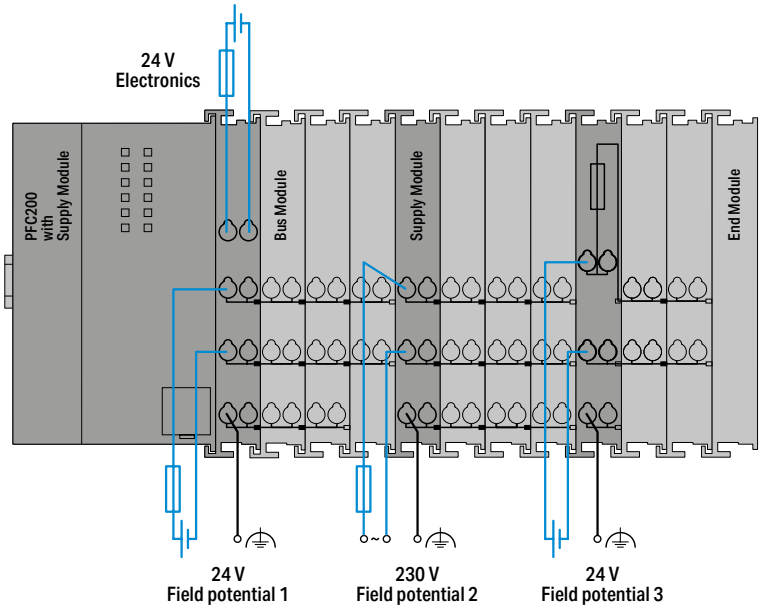
02: 2 x ETHERNET, RS-232/-485
06: 2 x ETHERNET, RS-232/-485, CAN, PROFIBUS-DP slave

.../040-000: Standard
.../040-001: Telecontrol technology

Controllers PFC200 XTR
Installation Instructions

Power Supply

The internal electronics are powered by the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages. Supply modules with diagnostics enable additional monitoring of the power supply. This configuration ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



4.2

Notes

Additional steps must be implemented based on where the I/O system is installed:

Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are ready for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

Please refer to the manual for details about the power supply's design.

Mixed Operation

Mixed operation (standard/XTR modules) within a node is possible when groups of I/O modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the surrounding air temperature is not critical.

Standards and Rated Conditions for Rail Applications (EN 50155)

Railway Applications (EN 50155)	Class/Standard Compliance
4.1 Rated operating conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Surrounding air temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95 % (coated PCBs)
5.1 Power supply	
5.1.1.1 Master voltage fluctuations	
Minimum voltage	0.725 x Un
Maximum voltage	1.3 x Un
5.1.1.2 Power interruptions	S1
5.4 Surge, ESD, burst tests	EN 50121-3-2
5.5 EMC (emission of interference, immunity to interference)	EN 50121-3-2, EN 50121-4, -5
Fire behavior: per EN 45545-2 hazard level HL3	

WAGO is certified in accordance with the **IRIS** quality standard.

Controllers PFC200 XTR
Standards and Rated Conditions

General Specifications	
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Input current (typ.) at nominal load (24 V)	550 mA
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	Max. 95 %; Short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0 … 2000 m; With temperature derating: 2000 … 5000 m (0.5 K/100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Immunity to impulse voltages	Per EN 60870-2-1 510 VAC/775 VDC Isolation: rated surge voltage 1 kV (Class VW1 per EN 60870-2-1) Surge: 1 kV (L - L) / 2 kV (L - E)
Vibration resistance	Per IEC 60068-2-6 (acceleration: 5g); EN 60870-2-2; IEC 60721-3-1, -3; EN 50155; EN 61373
Shock resistance	Per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks); EN 50155; EN 61373
EMC immunity to interference	Per EN 61000-6-1, -2; EN 61131-2; Marine applications; EN 50121-3-2, -4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	Per EN 61000-6-3, -4; EN 61131-2; EN 60255-26; Marine applications; EN 60870-2-1; EN 61850-3; EN 50121-3-2; -4, -5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	DIN-35 rail
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross sections Strip length	0.25 … 2.5 mm²/24 … 14 AWG 8 … 9 mm / 0.31 … 0.35 inch
Current carrying capacity (power jumper contacts)	10 A

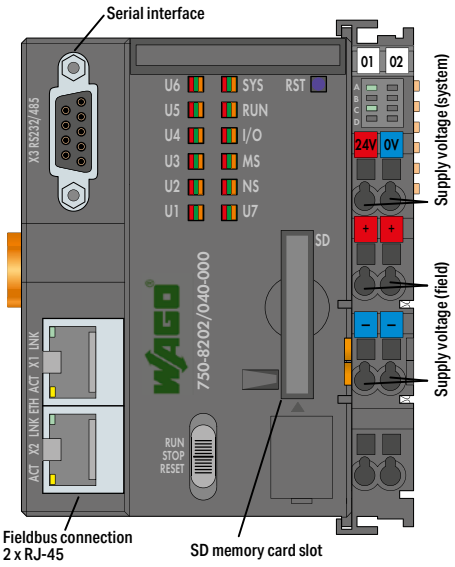
Approvals

Overview of the approvals in the article comparison in Section 11, Technical Appendix, or online at www.wago.com

Controller PFC200; 2 x ETHERNET, RS-232/-485; Extreme



Figure: 750-8202/040-000



Item description	Controller PFC200; 2 x ETHERNET; RS-232/-485	
Version	Extreme	Telecontrol technology; extreme
Item No.	750-8202/040-000	750-8202/040-001
Order text	PFC200; 2ETH RS; XTR	PFC200; 2ETH RS; Tele; XTR

4.2

Technical Data		
Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)[1]; MQTT; RS-232/-485 interface	Modbus (TCP, UDP, RTU); MQTT; Telecontrol protocols; RS-232/-485 interface
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH	
Telecontrol protocols		IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3
Visualization	Web-Visu	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); *e!COCKPIT* (based on CODESYS V3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
CPU	Cortex A8; 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB	
Program memory/data memory/non-volatile memory (software)	CODESYS V2: 16 MB / 64 MB / 128 KB	
	e!RUNTIME: 60 MB* / 60 MB* / 128 KB	
Number of modules per node (max.)	64	
Input and output process image (internal) max.	1000 words	
Input and output process image (MODBUS) max.	CODESYS V2: 1000 words	
	e!RUNTIME: 32000 words	
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C; For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	
Supply voltage (field)	24 VDC; via power jumper contacts	
Input current (typ.) at nominal load (24 V)	550 mA	
Current consumption – system supply (5 V)	510 mA	
Total current (system supply)	1700 mA	
Surrounding air temperature (operation)	−40 … +70 °C	
Dimensions W x H x D	78.6 x 71.9 x 100 mm	
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-8202/040-000	wago.com/750-8202/040-001

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470

„ Software *e!COCKPIT*, WAGO-I/O-*PRO* V2.3, see Section 2, page 26 and 32

„ Approvals and corresponding ratings, see page 516 or www.wago.com

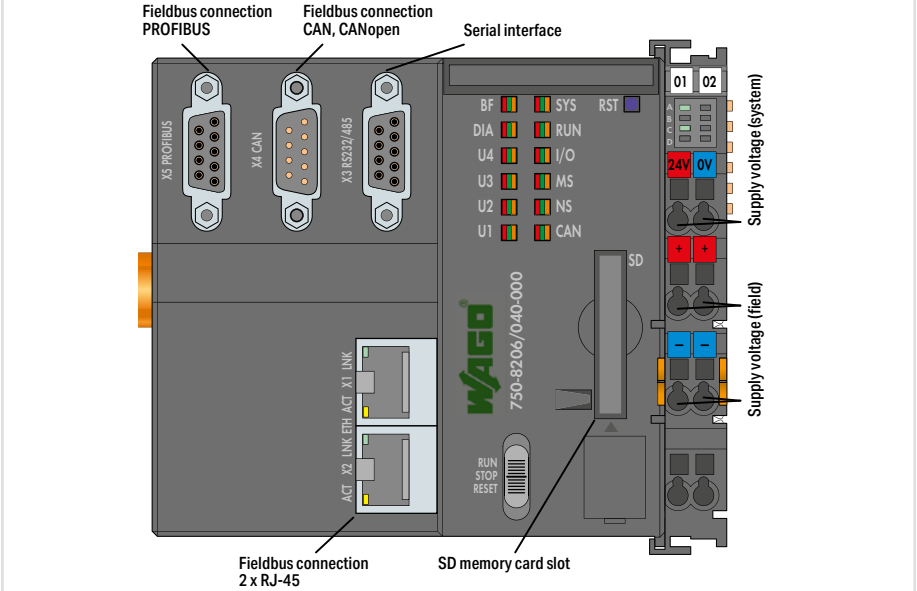
[1] Library for *e!RUNTIME*

*For memory configuration via *e!RUNTIME*, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.

Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave; Extreme



Figure: 750-8206/040-000



Item description	Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave	
Version	**Extreme**	**Telecontrol technology; extreme**
Item No.	**750-8206/040-000**	**750-8206/040-001**
Order text	PFC200; 2ETH RS CAN DPS; XTR	PFC200; 2ETH RS CAN DPS; Tele; XTR

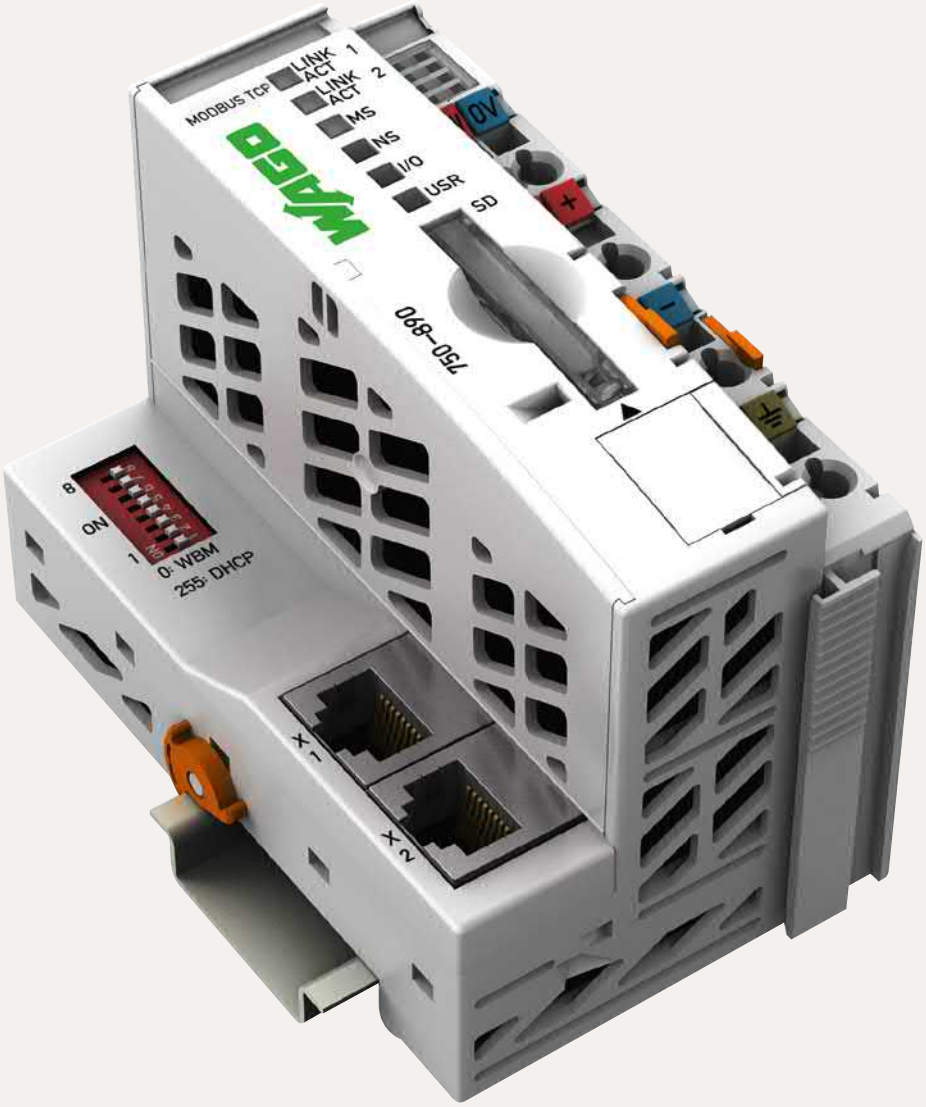
Technical Data

Communication	Modbus (TCP, UDP, RTU); EtherNet/IP adapter (slave)1); MQTT; PROFIBUS; CANopen; RS-232/-485 interface	Modbus (TCP, UDP, RTU); MQTT; PROFIBUS; CAN; CANopen; Telecontrol protocols; RS-232/-485 interface
ETHERNET protocols	DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH	
Telecontrol protocols		IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3
Visualization	Web-Visu	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3); ***e!COCKPIT*** (based on CODESYS V3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
CPU	Cortex A8; 600 MHz	
Operating system	Real-time Linux (with RT-Preempt patch)	
Main memory (RAM)/internal memory (flash)/ non-volatile memory (hardware)	256 MB / 256 MB / 128 KB	
Program memory/data memory/non-volatile memory (software)	CODESYS V2: 16 MB / 64 MB / 128 KB	
	e!RUNTIME: 60 MB* / 60 MB* / 128 KB	
Number of modules per node (max.)	64	
Input and output process image (internal) max.	1000 words	
Input and output process image (MODBUS)/ (PROFIBUS)/(CAN) max.	CODESYS V2: 1000 words / 244 bytes / 2000 words	
	e!RUNTIME: 32000 words / 244 bytes / 2000 words	
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C; For –40 … +55 °C: 24 V (–25 … +20 %); For +55 … +70 °C: 24 V (–25 … +10 %); Lower limit in all temperature ranges: –27.5 % (including 15 % residual ripple)	
Supply voltage (field)	24 VDC; via power jumper contacts	
Input current (typ.) at nominal load (24 V)	550 mA	
Current consumption – system supply (5 V)	600 mA	
Total current (system supply)	1700 mA	
Surrounding air temperature (operation)	–40 … +70 °C	
Dimensions W x H x D	112 x 71.9 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-8206/040-000	wago.com/750-8206/040-001

Accessories	Item No.	Page
SD memory card; 2 GB	**758-879/000-001**	470

[1)] Library for ***e!RUNTIME***

*For memory configuration via ***e!RUNTIME***, the program and data memory together have a maximum size of 60 MB and can be distributed dynamically.



Controllers 750

Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel

- Merging of control and visualization
- 10.9 … 25.7 cm (4.3 … 10.1")

Controllers PFC200 XTR

The advantages of the PFC Controller combined with the capabilities for extreme environments:

- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

Controllers 750 XTR

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

◄◄◄ Section 3

◄ Section 4.2

Section 4.4 ►

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

◄◄ Section 4.1

Section 4.5 ►►

Controllers 750
Contents

	Page
General Product Information	104
Versions	105
Interfaces and Types	105
Item Number Key	105
Installation Instructions	106
Standards and Rated Conditions	107
Approvals	107

	CPU	ETHERNET: Modbus (TCP, UDP)	ETHERNET: EtherNet/IP	ETHERNET: BACnet/IP	ETHERNET: KNX IP	Modbus RTU	Telecontrol Protocols: IEC 60870, IEC 61850/61400, DNP3	BACnet MS/TP	DeviceNet	PROFIBUS	CANopen	Description	Item No. Default	Item No. Ext. Temperature	Page
	32 bits	M/S	S									Controller ETHERNET; 3rd generation; SD card slot	**750-880**	**750-880/025-000**	108
		M/S	S				x					Controller ETHERNET; 3rd generation; SD card slot; Telecontrol technology; Ext. temperature		**750-880/025-001**	108
		M/S	S				x					Controller ETHERNET; 3rd generation; SD card slot; Telecontrol technology; Ext. temperature; Eco		**750-880/025-002**	108
		M/S										Controller Modbus TCP; 4th generation; SD card slot	**750-890**		109
		M/S	S									Controller ETHERNET; 3rd generation	**750-881**		109
		M/S										Controller Modbus TCP; 4th generation	**750-891**		109
		M/S	S									Controller ETHERNET; 3rd generation; SD card slot; Media redundancy	**750-885**	**750-885/025-000**	110
		M/S	S									Controller ETHERNET; 3rd generation; Media redundancy	**750-882**		110
	32 bits	M/S	S									Controller ETHERNET; 3rd generation; Eco	**750-852**		111
		M/S										Controller Modbus TCP; 4th generation; Eco	**750-862**		111
	16 bits	M/S										Controller ETHERNET; 1st generation	**750-842**		112
		M/S										Controller ETHERNET; 1st generation; Eco	**750-843**		112
	32 bits	M/S			x							Controller KNX/IP	**750-889**		113
	32 bits	M/S		x								Controller BACnet/IP	**750-831**		114
		M/S		x								Controller BACnet/IP; Eco	**750-831/000-002**		114
	32 bits	M/S						x				Controller BACnet MS/TP	**750-829**		115
	16 bits								x			Controller DeviceNet	**750-806**		116
	16 bits					x						Controller MODBUS; RS-485; 115.2 kBd	**750-815/300-000**	**750-815/325-000**	117
						x						Controller MODBUS; RS-232; 115.2 kBd	**750-816/300-000**		117
	16 bits									S		Controller PROFIBUS Slave	**750-833**	**750-833/025-000**	118
	16 bits										M/S	Controller CANopen; 128/64 KB Program/RAM; *MCS*	**750-837**		119
											M/S	Controller CANopen; 640/832 KB Program/RAM; *MCS*	**750-837/021-000**		119
											M/S	Controller CANopen; 128/64 KB Program/RAM; D-Sub	**750-838**		119
											M/S	Controller CANopen; 640/832 KB Program/RAM; D-Sub	**750-838/021-000**		119

M: Master, S: Slave

Controllers 750
General Product Information

Controllers 750:

Open – Flexible – Compact

WAGO's controllers are ideal for a wide variety of applications ranging from industrial, process and building automation to measurement and data collection. Based on the fieldbus couplers for all standard fieldbus systems, they are programmable to IEC 61131-3. Direct connection to a wide range of I/O modules from the WAGO-I/O-SYSTEM 750 optimizes adaptation to the application.

Building Automation

Thanks to specific characteristics, controllers for the BACnet/IP and KNX IP bus systems are optimized for building automation. The diverse product range of stackable I/O modules allows integration of external systems such as lighting control (DALI), sun protection (SMI), wireless switches (EnOcean) and much more.

Marine Systems and Onshore/Offshore Industry

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements inherent in specific industries and operating environments has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference, along with superior mechanical performance in these sensitive areas, the WAGO-I/O-SYSTEM can readily meet the needs of other industries.

Telecontrol Technology

Standardized IEC 60870-5, IEC 61850 or IEC 61400-25 telecontrol protocols allow the 750 Series Controllers to be used in telecontrol applications.

Starter Kits

For a quick start, WAGO offers every customer the unique opportunity to purchase a starter kit that already contains all the components needed to begin programming and getting to know the controllers. For starter kits, see Section 4.5.

Link between Process Data and IT Application

The controllers ideally combine real-time requirements with IT functionality. They support Modbus/TCP and EtherNet/IP for use in industrial environments. HTTP, HTTPS, SNTP, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the 750 Series Controllers incorporate library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Worldwide Approvals

International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use – even under harsh operating conditions. These recognitions include: ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA, AEx and numerous marine certifications.

Modular and Expandable

With the WAGO-I/O-SYSTEM 750, the 750 Series Controllers can be expanded to almost any input/output interface. A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O node without tools.
The straightforward design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field levels can be directly wired using 1-, 2-, 3- or 4-wire technology.

Maximum Reliability and Ruggedness

The WAGO-I/O-SYSTEM is engineered and tested for use in the most demanding environments (e.g., temperature cycling, shock/vibration loading and ESD) according to the highest standards. Spring pressure connection technology guarantees continuous operation. Integrated QA measures in the production process and 100% function testing ensure consistent quality.

Advantages:

- Controllers for all prominent fieldbus systems
- Industry-specific features
- Programmable via CODESYS per IEC 61131-3
- Expandable with the comprehensive WAGO-I/O-SYSTEM 750 product range
- Extensive IT integration possibilities
- Tested and approved worldwide
- Maintenance-free

Controllers 750
Versions

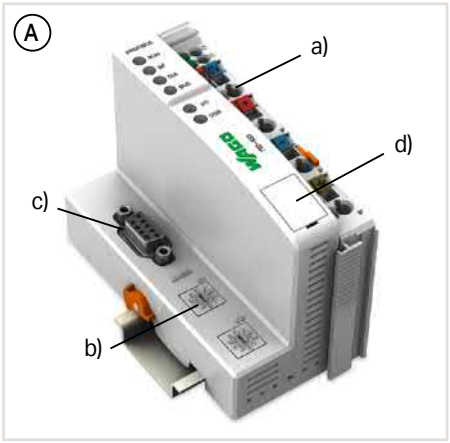
Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0°C to 55°C. However, there are applications that require an extended temperature range. Select controllers are available in an extended temperature range of –20°C to +60°C.



For extreme applications, where even this extended temperature range is not sufficient, the WAGO- I/O-SYSTEM 750 XTR is available.

Interfaces and Types



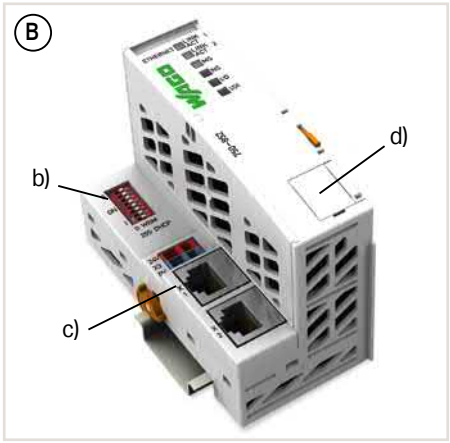
- Technical differences on the connection level; optional addressing switch (b) and fieldbus interface (c)
- Service interface (d)

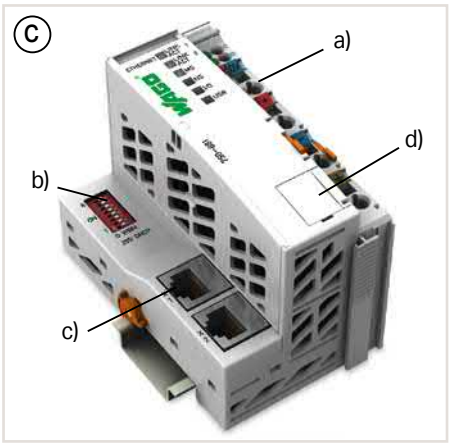
Housing design (A)

- Including supply module to power downstream I/O modules (a)
- W x H x D (mm) 50.5 x 71.1 x 100

Housing design Eco (B)

- W x H x D (mm) 49.5 x 71.9 x 96.8



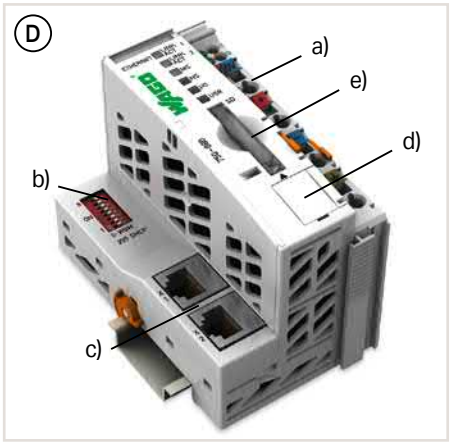


Housing design (C)

- Including supply module to power downstream I/O modules (a)
- W x H x D (mm) 61.5 x 71.9 x 100

Housing design (D)

- Including supply module to power downstream I/O modules (a)
- SD card slot for external storage media (e)
- W x H x D (mm) 61.5 x 71.9 x 100



Item Number Key

Explanation of the components of an item number key

Item No.: 750-8xx

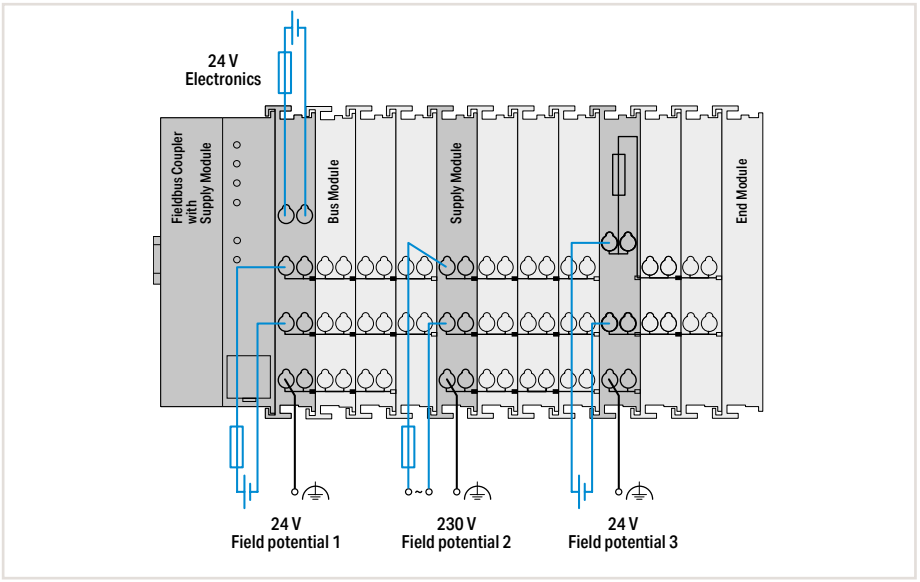
0x, 1x: 16-bit CPU	INTERBUS, DeviceNet, MODBUS
2x, 3x:	BACnet, PROFIBUS, CANopen
4x:	ETHERNET
5x, 6x: 32 bits	ETHERNET Eco
7x, 8x: 32-bit multitasking	ETHERNET, telecontrol technology, media redundancy, KNX IP

.../025–000: Extended temperature range of –20 ... +60 °C

Controllers 750
Installation Instructions

Power Supply

The internal electronics are powered by the controller. The field-side power supply is electrically isolated via the supply module on the controller or a separate power supply module. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages (system power supply 5 VDC via the data contacts and field supply via the optional power jumper contacts). Supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station.
The current supply to the electronics is limited by a maximum value. This value is dependent on the controller used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



Interference-Free in Safety-Related Applications

4.3

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.
In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.

Notice:

WAGO's interference-free I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

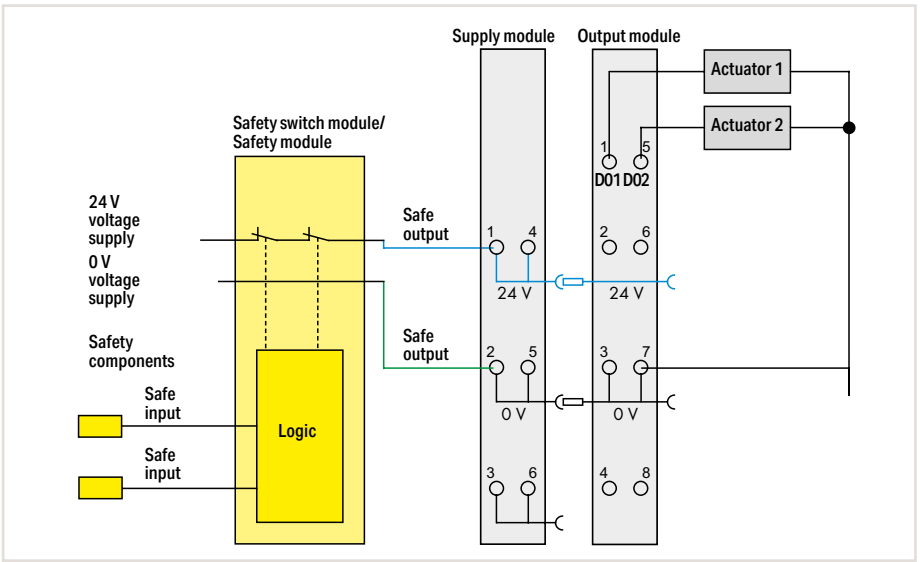
Notes

Additional steps must be implemented based on where the I/O system is installed:

- Specific power and field-side power supply filters (750-624 or 750-626) are required for marine and onshore/offshore applications.
- A specific supply module (750-606) is required to operate intrinsically safe Ex i modules.

Additionally, both a supply module and a field-side power supply filter are recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.
As part of operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. In addition, specific power and field-side power supply filters must be provided (750-626).

Please refer to the manual for details about the power supply's design.



Example: 2-channel, double-pole power supply disconnection

Controllers 750
Standards and Rated Conditions

General Specifications	
Supply voltage (system)	24 VDC (−25 … +30 %)*; *for all marine-certified controllers
Isolation	500 V (system/supply)
Surrounding air temperature (operation)	0 … +55 °C
Surrounding air temperature (operation) for versions with an extended temperature range	−20 … +60 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	95 % (non condensing)
Relative humidity for versions with an extended temperature range	Max. 95 %, short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of −20 to +60 °C into consideration (except wind-driven precipitation, water and ice formation)
Operating altitude	0 … 2000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5g (4g for all marine-certified controllers) per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2
EMC emission of interference	Per EN 61000-6-3, EN 61000-6-4
Protection type	IP20
Mounting type	DIN-35 rail mounting
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross sections; strip length for standard controllers: Eco Controllers:	0.08 … 2.5 mm²/28 … 14 AWG; 8 … 9 mm / 0.31 … 0.35 inch 0.08 … 1.5 mm²/28 … 16 AWG; 5 … 6 mm / 0.2 … 0.24 inch
Current carrying capacity (power jumper contacts)	10 A

Approvals

Overview of the approvals in the article comparison in Section 11, Technical Appendix, or online at www.wago.com

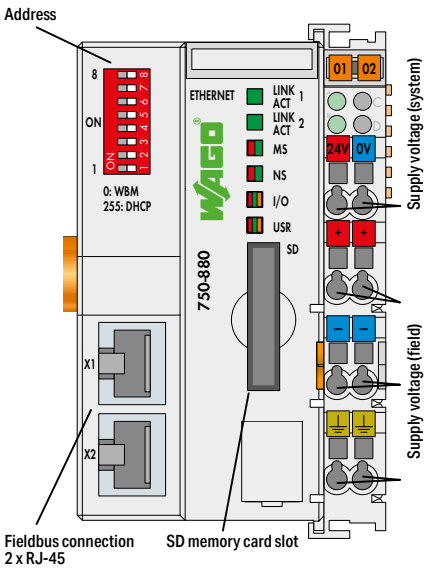
Controller ETHERNET; Modbus TCP



Figure: 750-880



Figure: 750-881



Item description	Controller ETHERNET; 3rd generation; SD card slot			
Version	**Default**	**Ext. temperature**	**Telecontrol technology; ext. temperature**	**Telecontrol technology; ext. temperature; Eco**
Item No.	**750-880**	**750-880/025-000**	**750-880/025-001**	**750-880/025-002**
Order text	Controller ETHERNET; G3; SD	Controller ETHERNET; G3; SD; T	Controller ETHERNET; G3; SD; Tele; T	Controller ETHERNET; G3; SD; Tele; T; Eco

For new installations, please consider the 750-890 Controller with extended functionality.

4.3

Technical Data

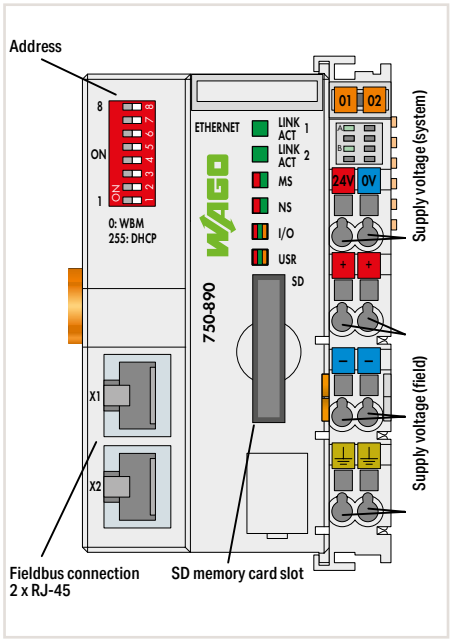
Communication	EtherNet/IP; Modbus (TCP, UDP)	EtherNet/IP; Modbus (TCP, UDP); Telecontrol protocols	
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP		
Telecontrol protocols		IEC 60870-5-101/-103/-104; IEC 61850-7-4; IEC 61400-25; DNP3	
Connection technology: Fieldbus input/output	2 x RJ-45		
Baud rate	10/100 Mbit/s		
Visualization	Web-Visu		
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)		
Type of memory card	SD and SDHC to 32 GB*		
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 32 KB		
Number of modules per node (max.)	250	4	
Input and output process image (internal) max.	1020 words		
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)		
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts		
Input current (typ.) at nominal load (24 V)	500 mA		
Current consumption – system supply (5 V)	450 mA		
Total current (system supply)	1700 mA		
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	
Dimensions W x H x D	61.5 x 71.9 x 100 mm		
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-880		

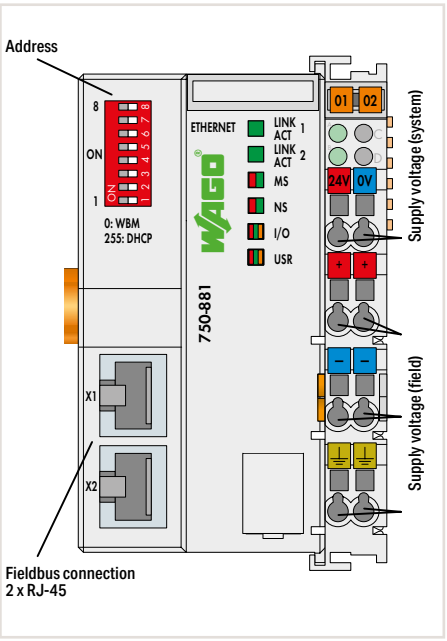
Accessories	Item No.	Page
SD memory card; 2 GB	**758-879/000-001**	470

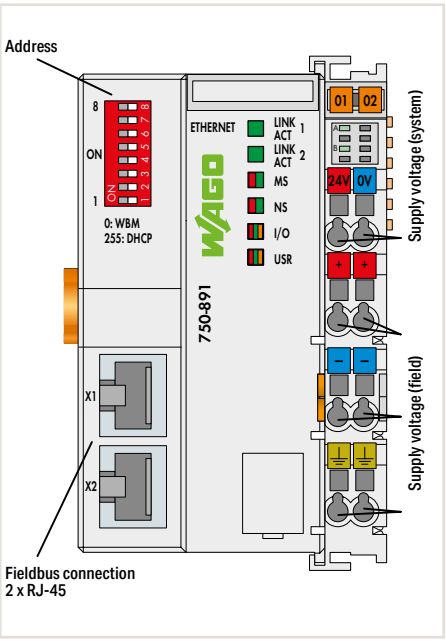
*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

„ WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32

„ Approvals and corresponding ratings, see page 516 or www.wago.com







Controller Modbus TCP; 4th generation; SD card slot	Controller ETHERNET; 3rd generation	Controller Modbus TCP; 4th generation
Default	Default	Default
750-890	750-881	750-891
Controller Modbus TCP; G4; SD	Controller ETHERNET; G3	Controller Modbus TCP; G4
	For new installations, please consider the 750-891 Controller with extended functionality.	
Modbus (TCP, UDP)	EtherNet/IP; Modbus (TCP, UDP)	Modbus (TCP, UDP)
HTTP(S); BootP; DHCP; DNS; SNTP; (S)FTP; SNMP	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP	HTTP(S); BootP; DHCP; DNS; SNTP; (S)FTP; SNMP
2 x RJ-45	2 x RJ-45	2 x RJ-45
10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s
Web-Visu	Web-Visu	Web-Visu
WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
SD and SDHC to 32 GB*		
8192 KB / 8192 KB / 32 KB	1024 KB / 512 KB / 32 KB	4096 KB / 4096 KB / 32 KB
250	250	250
1020 words	1020 words	1020 words
24 VDC (−25 … 30 %); via wiring level (CAGE CLAMP® connection)	24 VDC (−25 … 30 %), via wiring level (CAGE CLAMP® connection)	24 VDC (−25 … 30 %), via wiring level (CAGE CLAMP® connection)
24 VDC (−25 … +30 %); via power jumper contacts	24 VDC (−25 … +30 %); via power jumper contacts	24 VDC (−25 … +30 %); via power jumper contacts
500 mA	500 mA	500 mA
440 mA	450 mA	390 mA
1700 mA	1700 mA	1700 mA
0 … +55 °C	0 … +55 °C	0 … +55 °C
61.5 x 71.9 x 100 mm	61.5 x 71.9 x 100 mm	61.5 x 71.9 x 100 mm
CE; Marine; OrdLoc**/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc*/HazLoc; ATEX/IECEx
wago.com/750-890	wago.com/750-881	wago.com/750-891

Item No.	Page
758-879/000-001	470

*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.
**Pending

*Pending

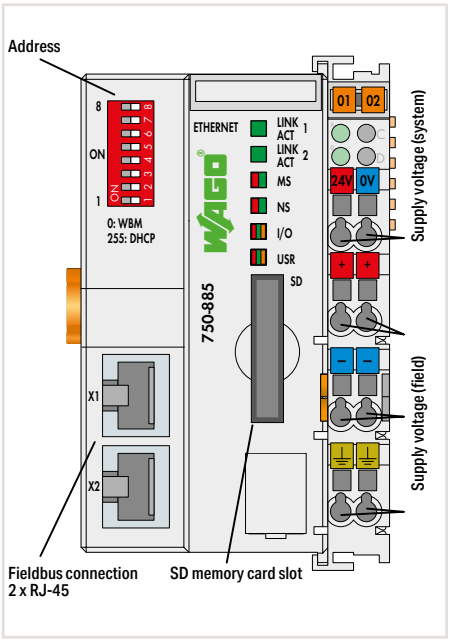
Controller ETHERNET; Media Redundancy

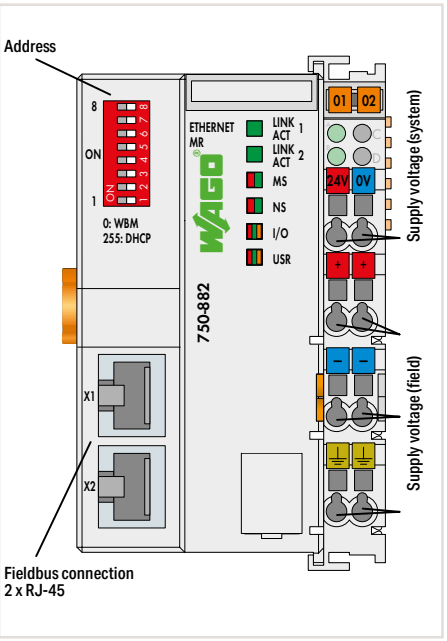


Figure: 750-885



Figure: 750-882





Item description	Controller ETHERNET; 3rd generation; SD card slot; Media redundancy		Controller ETHERNET; 3rd generation; Media redundancy
Version	**Default**	**Ext. temperature**	**Default**
Item No.	**750-885**	**750-885/025-000**	**750-882**
Order text	Controller ETHERNET; G3; SD; MR	Controller ETHERNET; G3; SD; MR; T	Controller ETHERNET; G3; MR
Technical Data			
Communication	EtherNet/IP; Modbus (TCP, UDP)		EtherNet/IP; Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP		HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP
Connection technology: Fieldbus input/output	2 x RJ-45		2 x RJ-45
Baud rate	10/100 Mbit/s		10/100 Mbit/s
Redundancy function	Application-based communication redundancy		Application-based communication redundancy
Visualization	Web-Visu		Web-Visu
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Type of memory card	SD and SDHC to 32 GB*		
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 32 KB		1024 KB / 512 KB / 32 KB
Number of modules per node (max.)	250		250
Input and output process image (internal) max.	1020 words		1020 words
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)		24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts		24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA		500 mA
Current consumption – system supply (5 V)	450 mA		450 mA
Total current (system supply)	1700 mA		1700 mA
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm		61.5 x 71.9 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-885		wago.com/750-882

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470

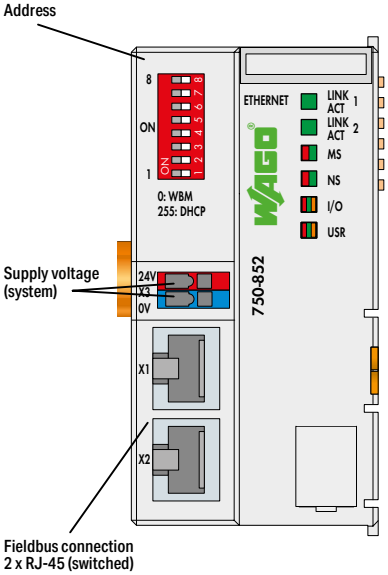
*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

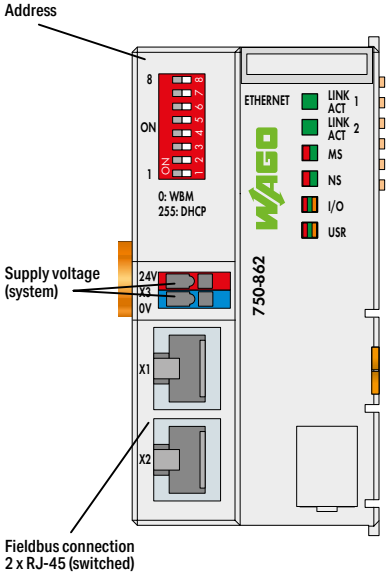
- WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32
- Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"
- Approvals and corresponding ratings, see page 516 or www.wago.com

Controller ETHERNET; Modbus TCP; Eco



Figure: 750-852





Item description	Controller ETHERNET; 3rd generation; Eco	Controller Modbus TCP; 4th generation; Eco
Item No.	**750-852**	**750-862**
Order text	Controller ETHERNET; G3; Eco For new installations, please consider the 750-862 Controller with extended functionality.	Controller Modbus TCP; G4; Eco
Technical Data		
Communication	EtherNet/IP; Modbus (TCP, UDP)	Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP	HTTP(S); BootP; DHCP; DNS; SNTP; (S)FTP; SNMP
Connection technology: Fieldbus input/output	2 x RJ-45	2 x RJ-45
Baud rate	10/100 Mbit/s	10/100 Mbit/s
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Program memory/data memory/non-volatile memory (software)	512 KB / 256 KB / 8 KB	2048 KB / 2048 KB / 16 KB
Number of modules per node (max.)	250	250
Input and output process image (internal) max.	1020 words	1020 words
Supply voltage (system)	24 VDC (–25 … +30 %), via wiring level	24 VDC (–25 … +30 %), via wiring level
Input current (typ.) at nominal load (24 V)	300 mA	300 mA
Current consumption – system supply (5 V)	400 mA	390 mA
Total current (system supply)	700 mA	700 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm	49.5 x 71.9 x 96.8 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc*/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-852	wago.com/750-862

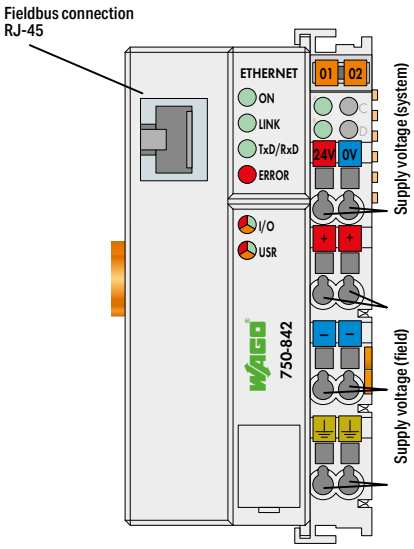
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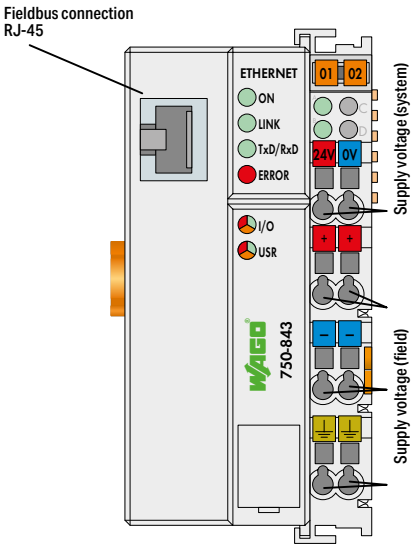
4.3

Controller ETHERNET



Figure: 750-842





Item description	Controller ETHERNET; 1st generation	Controller ETHERNET; 1st generation; Eco
Item No.	750-842	750-843
Order text	Controller ETHERNET; G1	Controller ETHERNET; G1; Eco
Technical Data		
Communication	Modbus (TCP, UDP)	Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP	HTTP; BootP
Connection technology: Fieldbus input/output	RJ-45	RJ-45
Baud rate	10 Mbit/s	10 Mbit/s
Visualization	Without	Without
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Program memory/data memory/non-volatile memory (software)	128 KB / 64 KB / 8 KB	64 KB / 64 KB / 8 KB
Number of modules per node (max.)	64	64
Input and output process image (internal) max.	512 bytes	512 bytes
Memory for fieldbus input and output variables (max.)	512 bytes	512 bytes
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA	500 mA
Current consumption – system supply (5 V)	200 mA	200 mA
Total current (system supply)	1800 mA	1800 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-842	wago.com/750-843

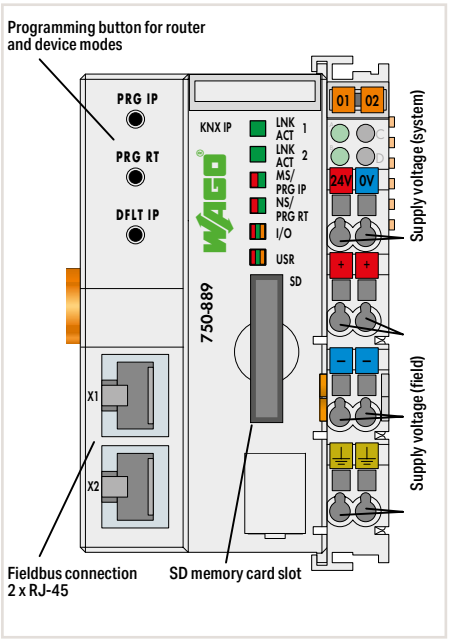
„ WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 516 or www.wago.com

Controller KNX/IP





Item description	Controller KNX/IP
Item No.	**750-889**
Order text	Controller KNX/IP
Technical Data	
Communication	KNXnet/IP; Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP; DHCP; DNS; AutoIP; SNTP; FTP; SNMP V3; SMTP
Connection technology: Fieldbus input/output	2 x RJ-45
Baud rate	10/100 Mbit/s
Visualization	Web-Visu
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Type of memory card	SD and SDHC to 32 GB*
KNX/TP1 bus specification	1.0
Number of group addresses	254
Number of communication objects	253
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 32 KB
Number of modules per node (max.)	250
Input and output process image (internal) max.	2 KB
Memory for fieldbus input and output variables (max.)	512 bytes
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	450 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc
KNX certified	IP Controller: 61/8316/08; IP Router: 61/8317/08
Data sheet and further information, see:	wago.com/750-889

Accessories	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470
WAGO ETS Plug-In	Download	see Section 2

*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

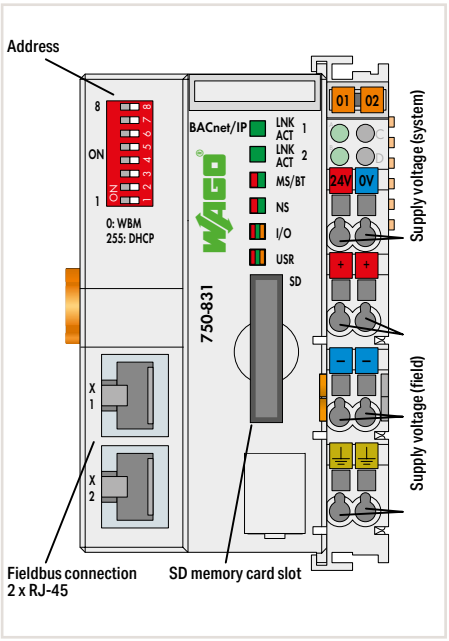
This controller can accommodate two KNX logic devices at the same time:
- Programmable controller
- KNX Router in connection with KNX/EIB/TP1 Module

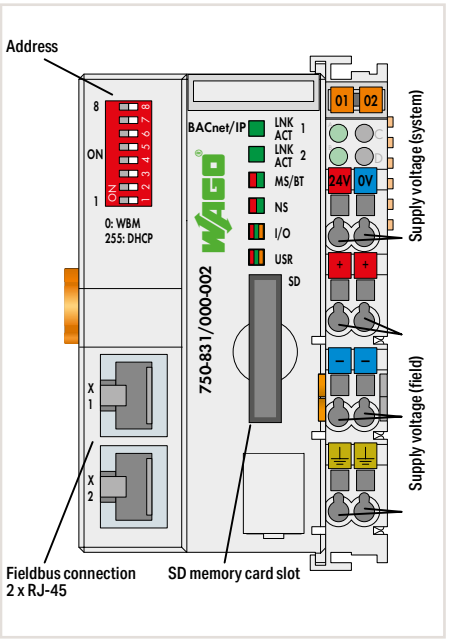
Commissioning (KNX-side):
via ETS plug-in, 2 programming buttons

Controller BACnet/IP



Figure: 750-831





Item description	Controller BACnet/IP	Controller BACnet/IP
Version		Eco
Item No.	750-831	750-831/000-002
Order text	Controller BACnet/IP	Controller BACnet/IP; Eco
		750-831/000-002 Controllers support a maximum of 256 BACnet objects.
Technical Data		
Communication	BACnet/IP; Modbus (TCP, UDP)	BACnet/IP; Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP
Connection technology: Fieldbus input/output	2 x RJ-45	2 x RJ-45
Baud rate	10/100 Mbit/s	10/100 Mbit/s
Visualization	Web-Visu	Web-Visu
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Type of memory card	SD and SDHC to 32 GB*	SD and SDHC to 32 GB*
BACnet device profile	B-BC (BACnet Building Controller)	B-BC (BACnet Building Controller)
BACnet revision	1.7	1.7
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 28 KB	1024 KB / 1024 KB / 28 KB
Number of modules per node (max.)	99	99
Input and output process image (internal) max.	1020 words	1020 words
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts	24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA	500 mA
Current consumption – system supply (5 V)	450 mA	450 mA
Total current (system supply)	1700 mA	1700 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm	61.5 x 71.9 x 100 mm
Approvals	CE; Marine; OrdLoc	CE; Marine; OrdLoc
BACnet approvals	WSPCert certification: ISO 16484-5:2012; BTL listing: BTL (BACnet® Testing Labs Product Listing) AMEV certificate: AMEV profile AS-A	
Data sheet and further information, see:	wago.com/750-831	wago.com/750-831/000-002

Accessories	Item No.	Page	Item No.	Page
SD memory card; 2 GB	758-879/000-001	470	758-879/000-001	470
BACnet Configurator	Download	see Section 2	Download	see Section 2

*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

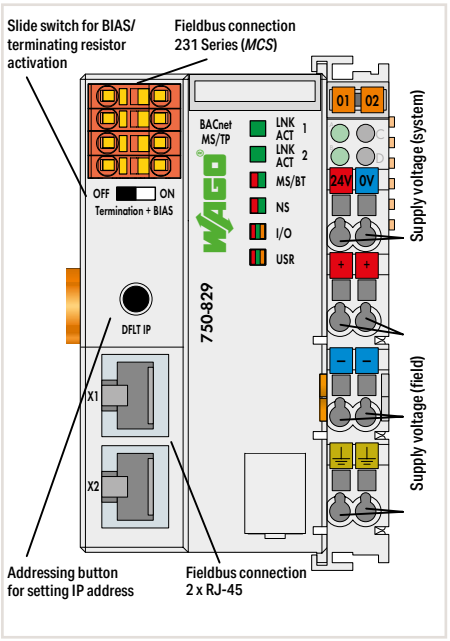
*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

„ WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32

„ Approvals and corresponding ratings, see page 516 or www.wago.com

Controller BACnet MS/TP



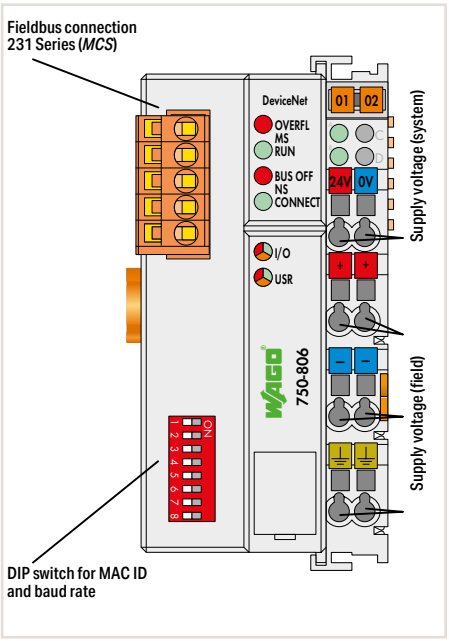


Item description	Controller BACnet MS/TP
Item No.	750-829
Order text	Controller BACnet MS/TP
Technical Data	
Communication	BACnet MS/TP; Modbus (TCP, UDP)
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP; SMTP
Connection technology: Fieldbus input/output	4-pole male connector
Baud rate	9600, 19200, 38400*, 57600, 76800, 115200 Bd (per BACnet standard); *Factory setting
Connection technology: Fieldbus input/output (2)	2 x RJ-45
Baud rate (2)	10/100 Mbit/s
Visualization	Web-Visu
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
BACnet device profile	B-BC (BACnet Building Controller)
BACnet revision	1.7
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 32 KB
Number of modules per node (max.)	99
Input and output process image (internal) max.	2 KB
Memory for fieldbus input and output variables (max.)	512 bytes
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	450 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc
BACnet approvals	WSPCert certification: Pending BTL listing: Pending
Data sheet and further information, see:	wago.com/750-829

Accessories	Item No.	Page
BACnet Configurator	**Download**	**see Section 2**

Controller DeviceNet





Item description	Controller DeviceNet
Item No.	750-806
Order text	Controller DeviceNet
Technical Data	
Communication	DeviceNet
Connection technology: Fieldbus input/output	5-pole male connector
Baud rate	125 kBd; 250 kBd; 500 kBd
Number of fieldbus nodes on master (max.)	64
Visualization	Without
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Program memory/data memory/non-volatile memory (software)	128 KB / 64 KB / 8 KB
Number of modules per node (max.)	64
Input and output process image (internal) max.	1024 bytes
Memory for fieldbus input and output variables (max.)	512 bytes
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	350 mA
Input current via DeviceNet interface at 11 V	120 mA
Total current (system supply)	1650 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-806

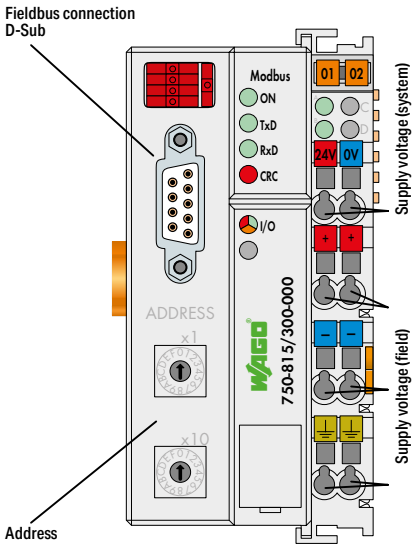
4.3

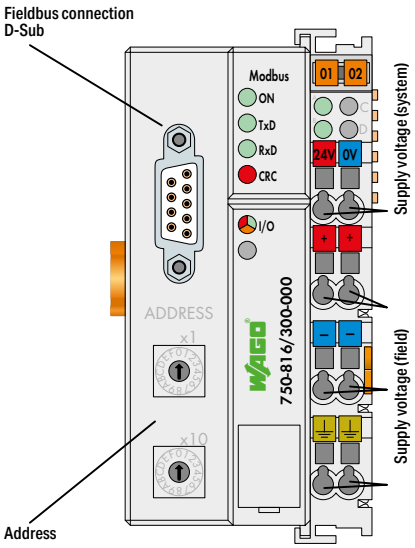
- WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32
- Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"
- Approvals and corresponding ratings, see page 516 or www.wago.com

Controller MODBUS



Figure: 750-815/300-000



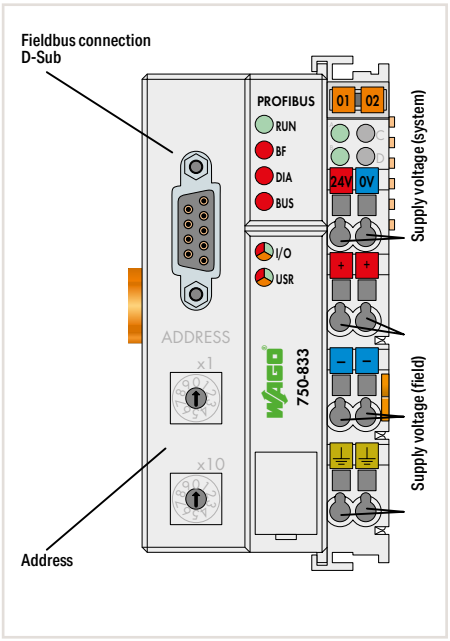


Item description	Controller MODBUS; RS-485; 115.2 kBd		Controller MODBUS; RS-232; 115.2 kBd
Version	Default	Ext. temperature	Default
Item No.	750-815/300-000	750-815/325-000	750-816/300-000
Order text	Controller MODBUS; RS-485; 115.2 kBd	Controller MODBUS; RS-485; 115.2 kBd; T	Controller MODBUS; RS-232; 115.2 kBd
Technical Data			
Communication	MODBUS		MODBUS
Connection technology: Fieldbus input/output	D-sub 9 socket		D-sub 9 socket
Baud rate	150 Bd ... 115.2 KBd		150 Bd ... 115.2 KBd
Number of fieldbus nodes on master (max.)	247		247
Visualization	Without		Without
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Program memory/data memory/non-volatile memory (software)	32 KB / 32 KB / 8 KB		32 KB / 32 KB / 8 KB
Number of modules per node (max.)	64		64
Input and output process image (internal) max.	1024 bytes		1024 bytes
Memory for fieldbus input and output variables (max.)	512 bytes		512 bytes
Supply voltage (system)	24 VDC (−25 ... +30 %); via wiring level (CAGE CLAMP® connection)		24 VDC (−25 ... +30 %); via wiring level (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (−25 ... +30 %); via power jumper contacts		24 VDC (−25 ... +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA		500 mA
Current consumption – system supply (5 V)	350 mA		350 mA
Total current (system supply)	1650 mA		1650 mA
Surrounding air temperature (operation)	0 ... +55 °C	−20 ... +60 °C	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm		50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-815/300-000		wago.com/750-816/300-000

Controller PROFIBUS Slave



Figure: 750-833



Item description	Controller PROFIBUS Slave	
Version		Ext. temperature
Item No.	750-833	750-833/025-000
Order text	Controller PROFIBUS Slave	Controller PROFIBUS Slave; T
Technical Data		
Communication	PROFIBUS	
Connection technology: Fieldbus input/output	D-sub 9 socket	
Baud rate	9.6 KBd ... 12 MBd	
Number of fieldbus nodes on master (max.)	99	
Visualization	Without	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	
Program memory/data memory/non-volatile memory (software)	128 KB / 64 KB / 8 KB	
Number of modules per node (max.)	63	
Input and output process image (internal) max.	244 bytes	
Memory for fieldbus input and output variables (max.)	244 bytes	
Supply voltage (system)	24 VDC (–25 ... +30 %); via wiring level (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (–25 ... +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	
Current consumption – system supply (5 V)	200 mA	
Total current (system supply)	1800 mA	
Surrounding air temperature (operation)	0 ... +55 °C	–20 ... +60 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-833	

4.3

„ WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 516 or www.wago.com

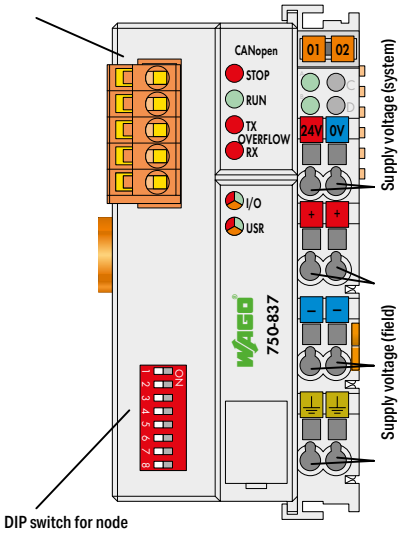
Controller CANopen

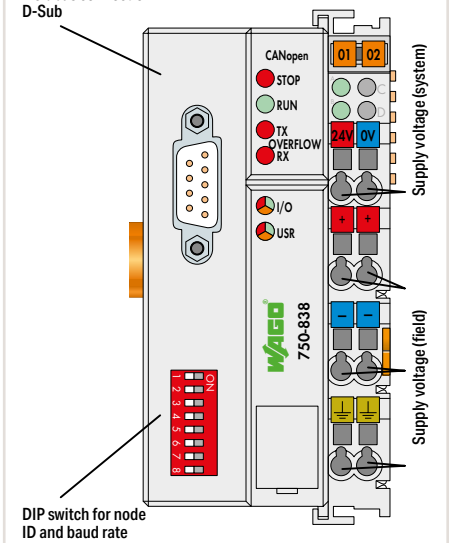


Figure: 750-837

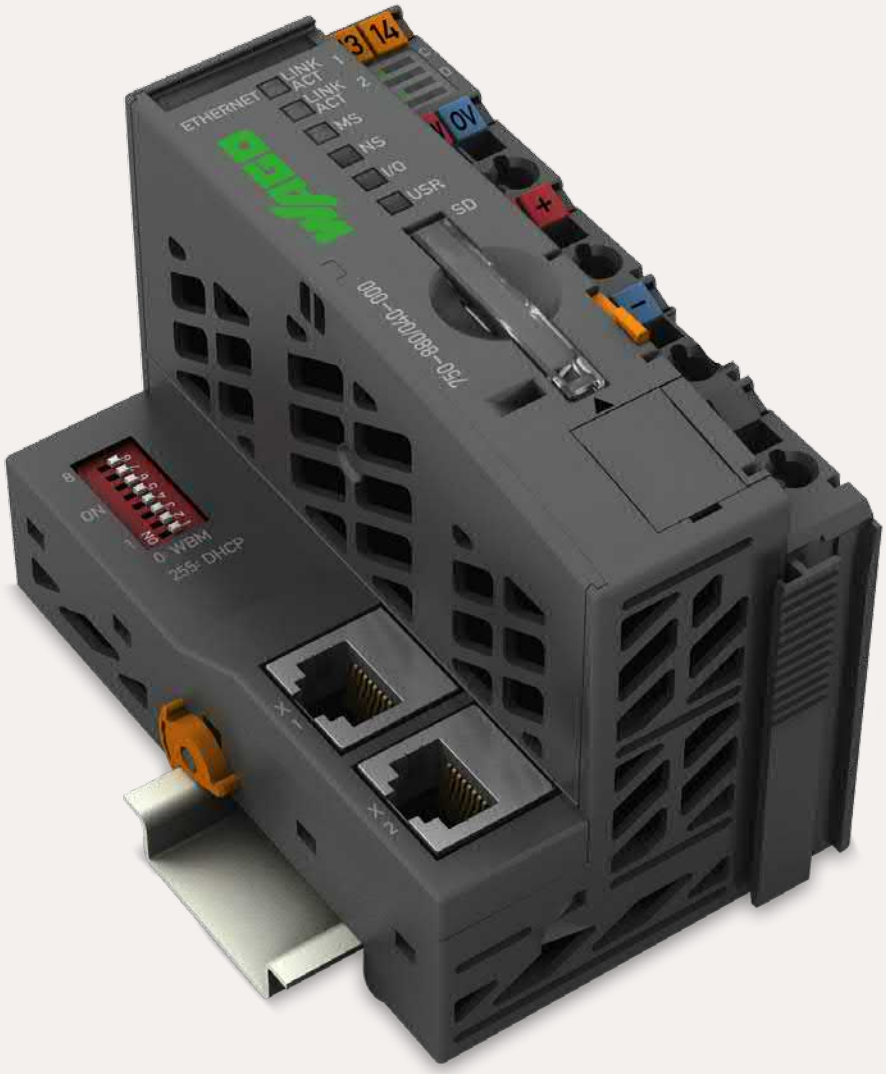


Figure: 750-838





Item description	Controller CANopen; 128/64 KB Program/RAM; *MCS*		Controller CANopen; 128/64 KB Program/RAM; D-Sub	
Version	**Default**	**640/832 KB Program/ RAM**	**Default**	**640/832 KB Program/ RAM**
Item No.	**750-837**	**750-837/021-000**	**750-838**	**750-838/021-000**
Order text	Controller CANopen; M1; MCS	Controller CANopen; M3; MCS	Controller CANopen; M1; D-Sub	Controller CANopen; M3; D-Sub
Technical Data				
Communication	CANopen		CANopen	
Connection technology: Fieldbus input/output	5-pole male connector		D-Sub 9 connector	
Baud rate	10 KBd … 1 MBd		10 KBd … 1 MBd	
Number of fieldbus nodes on master (max.)	110		110	
Visualization	Without		Without	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)		WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	
Program memory	128 KB	640 KB	128 KB	640 KB
Data memory	64 KB	832 KB	64 KB	832 KB
Non-volatile memory (software)	8 KB		8 KB	
Number of modules per node (max.)	64		64	
Input and output process image (internal) max.	512 bytes		512 bytes	
Memory for fieldbus input and output variables (max.)	512 bytes		512 bytes	
Communication profile	DS-301 V4.01		DS-301 V4.01	
Device profile	DS-401 V2.0		DS-401 V2.0	
Number of PDOs	32 Tx / 32 Rx		32 Tx / 32 Rx	
Number of SDOs	2 servers SDO / 16 clients SDO		2 servers SDO / 16 clients SDO	
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)		24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts		24 VDC (–25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA		500 mA	
Current consumption – system supply (5 V)	500 mA		500 mA	
Total current (system supply)	1650 mA		1650 mA	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	50.5 x 71.1 x 100 mm		50.5 x 71.1 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-837		wago.com/750-838	



Controllers 750 XTR

Touch-Panel 600 Standard/Advanced Line; Hardware configuration Control Panel

- Merging of control and visualization
- 10.9 … 25.7 cm (4.3 … 10.1")

◄◄◄◄ Section 3

Controllers PFC200 XTR

The advantages of the PFC Controller combined with the capabilities for extreme environments:

- High processing speed
- Multiple interfaces
- eXTRemely robust and maintenance-free

◄◄ Section 4.2

Controllers 750 XTR

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

◄◄◄ Section 4.1

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

◄ Section 4.3

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

Section 4.5 ►

Controllers 750 XTR
Contents

	Page
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Interfaces and Types	123
Item Number Key	123
Standards and Rated Conditions for Rail Applications (EN 50155)	123
Installation Instructions	124
Standards and Rated Conditions	125
Approvals	125

	CPU	ETHERNET				Description	Item No.	
		Modbus (TCP, UDP)	EtherNet/IP	CANopen	Telecontrol Protocols: IEC 60870, IEC 61850/61400, DNP3			
	32 bits	M/S	S			Controller ETHERNET; 3rd generation; SD card slot; extreme	**750-880/040-000**	126
	32 bits	M/S	S		x	Controller ETHERNET; 3rd generation; SD card slot; Telecontrol technology; extreme	**750-880/040-001**	126
	32 bits			M/S		Controller CANopen; 640/832 KB Program/RAM; D-Sub; extreme	**750-838/040-000**	127

M: Master, S: Slave

Controllers 750 XTR
General Product Information

**Controllers 750 XTR:
From Standard to eXTReme — Standard for 750 XTR**

The Controllers 750 XTR are easily recognized by their dark gray housings. Take advantage of the WAGO-I/O-SYSTEM 750 XTR's unique features, which make it ideal for extreme environments or applications.

Extremely temperature-resistant, immune to interference, as well as unfazed by vibrations and impulse voltages – these are impressive features of the WAGO-I/O-SYSTEM 750 XTR. WAGO's 750 XTR is the first choice for demanding applications including:

- Marine systems and onshore/offshore installations
- Renewable energy systems (wind turbines, solar systems and biogas plants)
- Transformer stations and power distribution systems
- Petrochemical processing
- Water and wastewater treatment systems
- Custom machines
- Railway applications

Marine Systems and Onshore/Offshore Industry

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements inherent in specific industries and operating environments has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference, along with superior mechanical performance in these sensitive areas, the WAGO-I/O-SYSTEM can readily meet the needs of other industries.

Telecontrol Technology

Standardized Telecontrol protocols according to IEC 60870-5, IEC 61850 or IEC 61400-25 and DNP3 ensure use of the Controllers 750 XTR in telecontrol technology. They also meet increased impulse-voltage withstand requirements per EN 60870-2-1.
The result is a tailor-made solution for demanding telecontrol applications that readily meets all requirements.

Link between Process Data and IT Application — Even under eXTReme Conditions

The controllers ideally combine real-time requirements with IT functionality. They support Modbus/TCP and EtherNet/IP for use in industrial environments. HTTP, SNTP, SNMP, FTP, BootP, DHCP, DNS and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the 750 Series Controllers incorporate library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Modular and Expandable

With the WAGO-I/O-SYSTEM 750 XTR, the controllers can be expanded to almost any input/output interface. Using an industry-leading platform, the 750 XTR boasts the same proven benefits.

Worldwide Approvals

International approvals for industrial automation, building technology, shipbuilding and onshore/offshore applications guarantee worldwide use – even under harsh operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale and Polski Rejestr Stratkow.

Superior Reliability in Extreme Climates

Engineered for freezing cold, extreme heat and high humidity, the WAGO-I/O-SYSTEM 750 XTR provides absolute dependability in virtually any weather. The XTR version of the 750 Series Controllers is unfazed by both freezing cold down to −40°C and scorching heat up to +70°C. And this applies equally for both start-up and ongoing operation. The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

Additional Protection Against Interference Pulses

The WAGO-I/O-SYSTEM 750 XTR provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths add up to trouble-free operation.

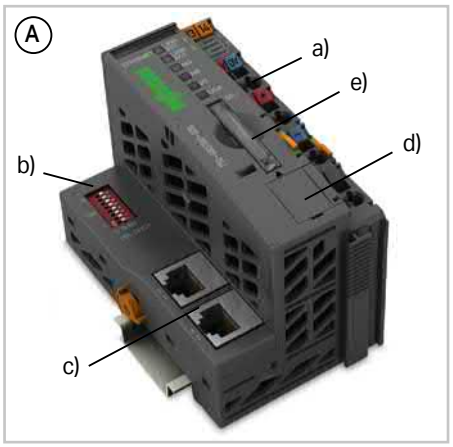
High Mechanical Performance

Automation systems must be incredibly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications that can stress automation systems. The WAGO-I/O-SYSTEM 750 XTR continues to set new standards here. Count on long-lasting, trouble-free operation and industry-topping levels of safety – even in the most severe applications, such as tunnel boring machines.

Advantages:

- Controllers for eXTReme environmental conditions
  - No air conditioning required
  - Can be used in unshielded areas
  - Install close to vibrating and shock-generating system components
- Extensive IT integration possibilities
- Expandable with the WAGO-I/O-SYSTEM 750 XTR's comprehensive product range
- Maintenance-free
- Vibration-proof, fast and maintenance-free CAGE CLAMP® spring connections

Controllers 750 XTR
Interfaces and Types



- Including supply module to power downstream I/O modules (a)
- Technical differences on the connection level;
  addressing switch (b)
  and fieldbus interface (c)
- Service interface (d)

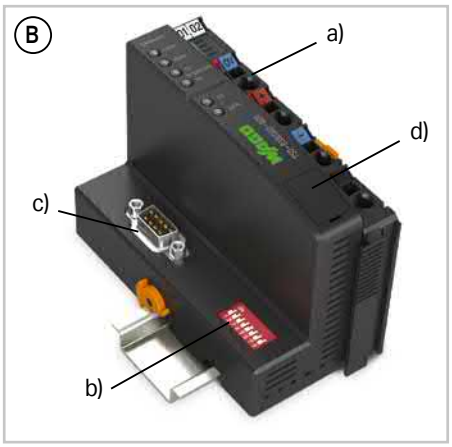
Housing design (A)

- SD card slot for external storage media (e)
- W x H x D (mm) 61.5 x 71.9 x 100

Housing design Eco (B)

- W x H x D (mm) 50.5 x 71.1 x 100

*Height from upper edge of DIN-rail



Item Number Key

Explanation of the components of an item number key

Item No.: 750-8xx/040-00y

3x: 16-bit	CANopen
8x: 32-bit multitasking	ETHERNET
001:	Telecontrol Technology

4.4

Standards and Rated Conditions for Rail Applications (EN 50155)

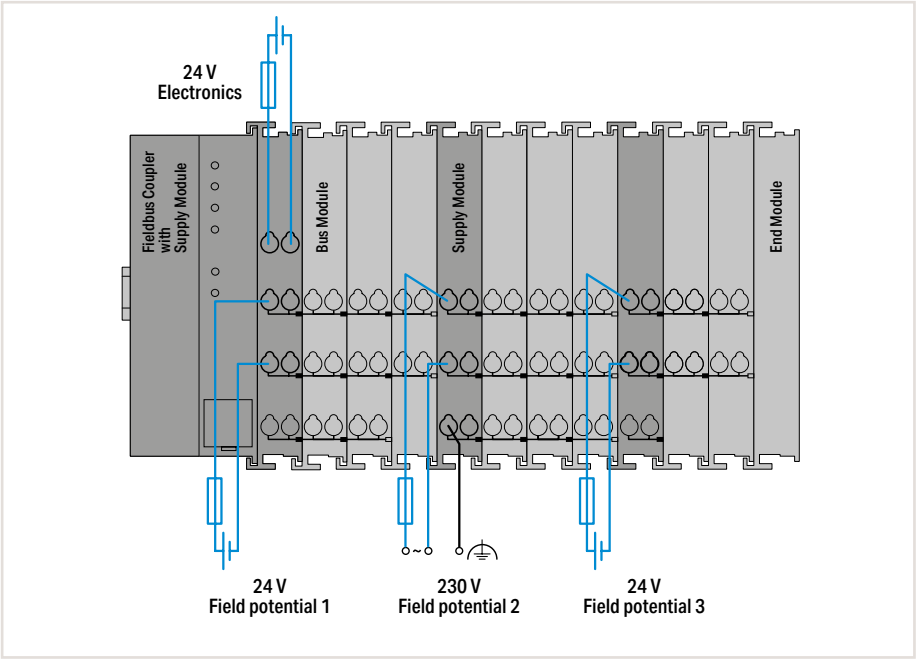
Railway Applications (EN 50155)	Class/Standard Compliance
4.1 Rated operating conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Surrounding air temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95 % (coated PCBs)
5.1 Power supply	
5.1.1.1 Master voltage fluctuations	
Minimum voltage	0.725 x Un
Maximum voltage	1.3 x Un
5.1.1.2 Power interruptions	S1
5.4 Surge, ESD, burst tests	EN 50121-3-2
5.5 EMC (emission of interference, immunity to interference)	EN 50121-3-2, EN 50121-4, -5
Fire behavior: per EN 45545-2 hazard level HL3	

WAGO is certified in accordance with the **IRIS** quality standard.

Controllers 750 XTR
Installation Instructions

Power Supply

The internal electronics are powered by the controller. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages. Supply modules with diagnostics enable additional monitoring of the power supply. This ensures a flexible, user-specific supply design for a station.
The current supply to the electronics is limited by a maximum value. This value is dependent on the controller used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



Interference-Free in Safety-Related Applications

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.
In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

All 750 XTR Series Digital Output Modules provide interference-free safety functionality. The modules can be used in safety applications up to category 4 per DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.

Notice:

WAGO's interference-free I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes

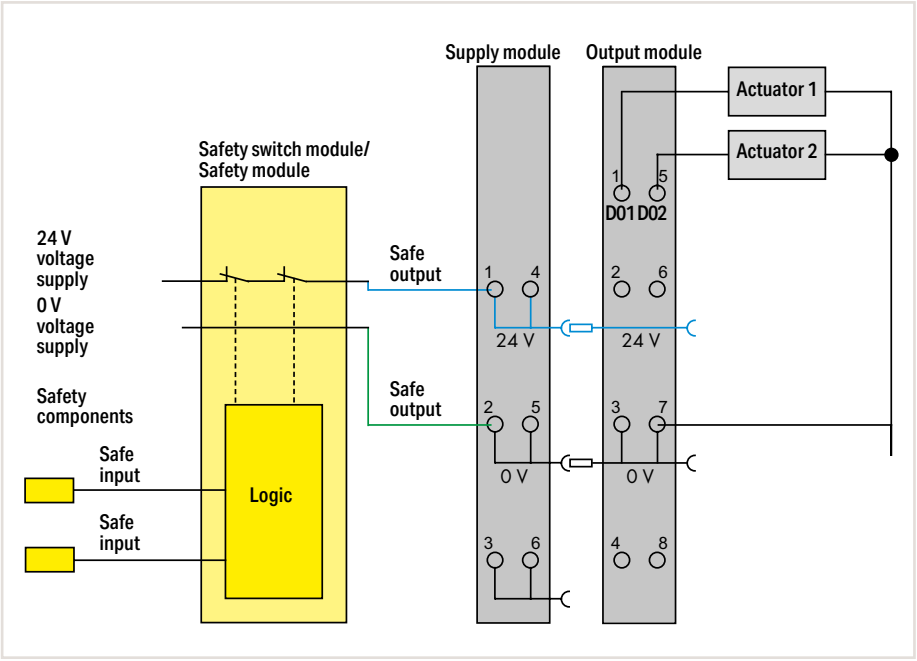
Additional steps must be implemented based on where the I/O system is installed:

Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are required for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

Please refer to the manual for details about the power supply's design.

Mixed Operation

Mixed operation (standard/XTR modules) within a node is possible when groups of I/O modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the surrounding air temperature is not critical.



Controllers 750 XTR
Standards and Rated Conditions

General Specifications	
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	Max. 95 %; Short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0 … 2000 m; With temperature derating: 2000 … 5000 m (0.5 K/100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Immunity to impulse voltages	Per EN 60870-2-1 510 VAC/775 VDC Isolation: rated surge voltage (EN 60079-11) 1 kV (Class VW1 per EN 60870-2-1) Surge: 1 kV (L - L) / 2 kV (L - E)
Vibration resistance	Per IEC 60068-2-6 (acceleration: 5g); EN 60870-2-2; IEC 60721-3-1, -3; EN 50155; EN 61373
Shock resistance	Per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks); EN 50155; EN 61373
EMC immunity to interference	Per EN 61000-6-1, -2; EN 61131-2; Marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	Per EN 61000-6-3, -4; EN 61131-2; EN 60255-26; Marine applications; EN 60870-2-1 (industrial and residential areas); EN 61850-3 (industrial and residential areas); EN 50121-3-2; EN 50121-4, -5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	DIN-35 rail mounting
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross sections; Strip length	0.25 … 2.5 mm²/AWG 24 … 14; 8 … 9 mm / 0.31 … 0.35 inch
Current carrying capacity (power jumper contacts)	10 A

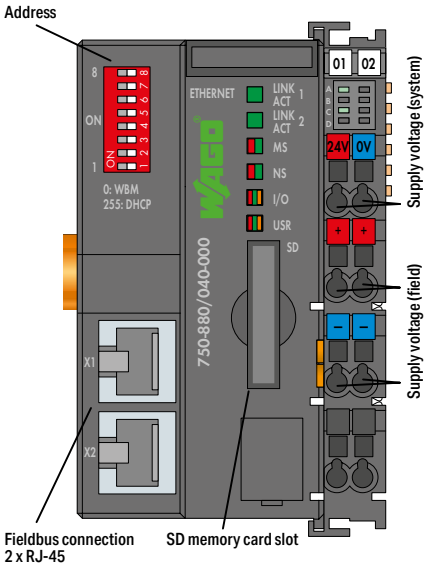
Approvals

Overview of the approvals in the article comparison in Section 11, Technical Appendix, or online at www.wago.com

Controller ETHERNET



Figure: 750-880/040-000



Item description	Controller ETHERNET; 3rd generation; SD card slot	
Version	**Extreme**	**Telecontrol technology; extreme**
Item No.	**750-880/040-000**	**750-880/040-001**
Order text	Controller ETHERNET; G3; SD; XTR	Controller ETHERNET; G3; SD; Tele; XTR
Technical Data		
Communication	EtherNet/IP; Modbus (TCP, UDP)	EtherNet/IP; Modbus (TCP, UDP); Telecontrol protocols
ETHERNET protocols	HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP	
Telecontrol protocols		IEC 60870-5-101/-103/-104; IEC 61850-7; IEC 61400-25; DNP3
Connection technology: Fieldbus input/output	2 x RJ-45	
Baud rate	10/100 Mbit/s	
Visualization	Web-Visu	
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)	
Type of memory card	SD and SDHC to 32 GB*	
Program memory/data memory/non-volatile memory (software)	1024 KB / 1024 KB / 32 KB	
Number of modules per node (max.)	64	
Input and output process image (internal) max.	1020 words	
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C; For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	
Supply voltage (field)	24 VDC; via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	
Current consumption – system supply (5 V)	450 mA	
Total current (system supply)	1700 mA (surrounding air (operating) temperature < 60 °C), 1500 mA (surrounding air (operating) temperature: 60 … 70 °C)	
Surrounding air temperature (operation)	−40 … +70 °C	
Dimensions W x H x D	61.5 x 71.9 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-880/040-000	wago.com/750-880/040-001

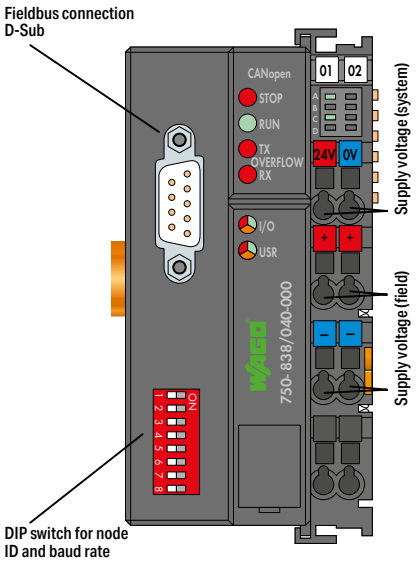
Accessories	Item No.	Page
SD memory card; 2 GB	**758-879/000-001**	470

*All guaranteed specifications are only valid with the WAGO memory card listed as an accessory.

- WAGO-I/O-*PRO* V2.3 Software, see Section 2, page 32
- Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"
- Approvals and corresponding ratings, see page 516 or www.wago.com

Controller CANopen





Item description	**Controller CANopen; 640/832 KB Program/RAM; D-Sub**
Version	**Extreme**
Item No.	**750-838/040-000**
Order text	Controller CANopen; M3; DSub; XTR

Technical Data	
Communication	CANopen
Connection technology: Fieldbus input/output	D-Sub 9 connector
Bus segment length (max.)	1000 m
Baud rate	10 KBd … 1 MBd
Number of fieldbus nodes on master (max.)	110
Visualization	Without
Programming	WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3)
Program memory/data memory/non-volatile memory (software)	640 KB / 832 KB / 8 KB
Number of modules per node (max.)	64
Input and output process image (internal) max.	512 bytes
Memory for fieldbus input and output variables (max.)	512 bytes
Communication profile	DS-301 V4.01
Device profile	DS-401 V2.0
Number of PDOs	32 Tx / 32 Rx
Number of SDOs	2 servers SDO / 16 clients SDO
Supply voltage (system)	24 VDC (−25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C; For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Supply voltage (field)	24 VDC; via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	350 mA
Total current (system supply)	1650 mA (surrounding air (operating) temperature < 60 °C), 1250 mA (surrounding air (operating) temperature: 60 … 70 °C)
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-838/040-000



Starter Kits

Controllers PFC100/PFC200

- Maximum performance in a minimum space
- Also programmable in high-level languages based on Linux®
- Security packages with SSH and SSL/TLS
- Runtime system for CODESYS V2 (only PFC200) and V3

◄◄◄◄ Section 4.1

Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable to IEC 61131-3
- Combinable with the modules of the WAGO-I/O-SYSTEM 750

◄◄ Section 4.3

I/O System – 750 and 753 Series

- Highly versatile
- More than 500 modules available
- Functional safety
- Ex i

Section 5 ►

Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:

- With Controller PFC100
- With Controller PFC200
- With Controller 750 ETHERNET
- With Controller 750 KNX IP or BACnet/IP

WAGO Starter Kits
Contents

	Modbus (TCP, UDP)	EtherNet/IP	BACnet/IP	KNX IP	Description	Item No.	Page
	M/S	S			Starter Kit; *e!COCKPIT* with Controller PFC100; 2 x ETHERNET; Eco	8003-099/750-8100	130
	M/S	S			Starter Kit; Linux® with Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485	807-099/750-8212	131
	M/S	S			Starter Kit; ETHERNET 880 with Controller ETHERNET; 3rd generation; SD card slot	8003-001/K999-9999/000-1700	132
					Starter Kit; ETHERNET 881 with Controller ETHERNET; 3rd generation	8003-001/K999-9999/000-1600	133
	M/S		x		Starter Kit; BACnet/IP with Controller BACnet/IP; Eco	8003-099/750-831	134
	M/S			x	Starter Kit; KNX IP with Controller KNX IP	8003-001/K999-9999/000-901	135

M: Master, S: Slave

Starter Kit; *e!COCKPIT* with Controller PFC100; 2 x ETHERNET; Eco



The PFC100 Controller can be seamlessly integrated into WAGO's *e!*COCKPIT Engineering Software, which can be used for hardware configuration, programming, simulation and visualization of complex control tasks.

Tightly integrated automation software and controller hardware provide the ideal platform for advanced and intuitive CODESYS V3-based engineering.

4.5

Item Description	Item No.
Starter Kit; *e!COCKPIT*	**8003-099/750-8100**
The *e!COCKPIT* Starter Kit includes:	
Controller PFC100; 2 x ETHERNET; Eco	750-8100
Supply Module; 24 VDC	750-602
2-Channel Digital Input; 24 VDC; 3 ms	750-400
2-Channel Digital Output; 24 VDC; 0.5 A	750-501
End Module	750-600
Power Supply "Classic"; 24 VDC output voltage; 1 A	787-1602
Switching Module; 2-way DI simulator	288-863
Development Environment *e!COCKPIT*; Licence for 1 PC	2759-0101/1111-5000
USB Communication Cable; 2.5 m	750-923
microSD Memory Card; 2 Gbytes	758-879/000-3102
Operating Tool; Type 1; (3.5 x 0.5) mm blade	210-720
Operating Tool; Type 1; (2.5 x 0.4) mm blade	210-719
Patch Cable; 1.0 m	

Starter Kit; Linux®
with Controller PFC200



With the PFC200 Controller as its central component, the Linux® Starter Kit provides an entry to the world of open programming. In addition to its scalability through the open-source community, the primary advantage of having a controller with an open-source operating system is that it is continually being developed further and maintained.

Besides the PFC200, other components of the starter kit include input and output modules, a power supply, a switching module and the accessories needed to start programming immediately with Linux®.

Additional information on Linux® is available at:
wago.com/linux

Item Description	Item No.
Starter Kit; Linux®	**807-099/750-8212**
The Linux® advanced Starter Kit includes:	
Controller PFC200; 2nd generation; 2 x ETHERNET, RS-232/-485	750-8212
2-Channel Digital Input; 24 VDC; 3 ms	750-400
2-Channel Digital Output; 24 VDC; 0.5 A	750-501
End Module	750-600
Power Supply “Classic”; 24 VDC output voltage; 1 A	787-1602
Switching Module; 2-way DI simulator	288-863
Operating Tool; Type 1; (3.5 x 0.5) mm blade	210-720
Operating Tool; Type 1; (2.5 x 0.4) mm blade	210-719
Patch Cable; 1.0 m	

Starter Kit; ETHERNET 880
with Controller ETHERNET; 3rd Generation; SD card slot



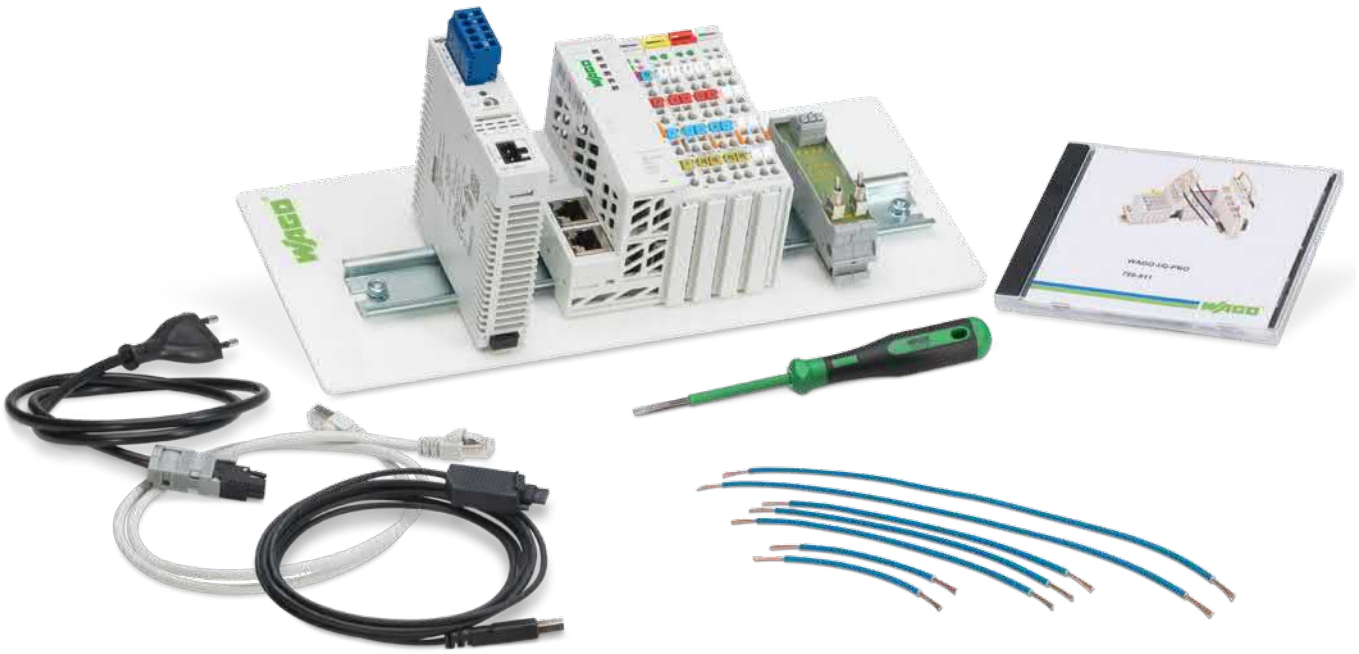
This ETHERNET Starter Kit includes: 750-880 Controller, 2-channel input module and 2-channel output module. A power supply and the required programming software are also included in the scope of delivery. An application program designed for the starter kit and written in IEC 61131 demonstrates both hardware and software possibilities.

4.5

Item Description	Item No.
Starter Kit; ETHERNET 880	**8003-001/K999-9999/000-1700**

The ETHERNET Starter Kit includes:	
Controller ETHERNET; 3rd generation; SD card slot	750-880
2-Channel Digital Input; 24 VDC; 3 ms	750-400
2-Channel Digital Output; 24 VDC; 0.5 A	750-501
End Module	750-600
Power Supply "Classic"; 24 VDC output voltage; 1 A	787-1602
Switching Module; 2-way DI simulator	288-863
Development Environment, incl. USB Communication Cable; WAGO-I/O-*PRO*; USB Kit	759-333/000-923
SD Memory Card; 1 GB	758-879/000-001
Patch Cable; 1 m	110-8006
Operating Tool; Type 1; (3.5 x 0.5) mm blade	210-720

Starter Kit; ETHERNET 881 with Controller ETHERNET; 3rd Generation

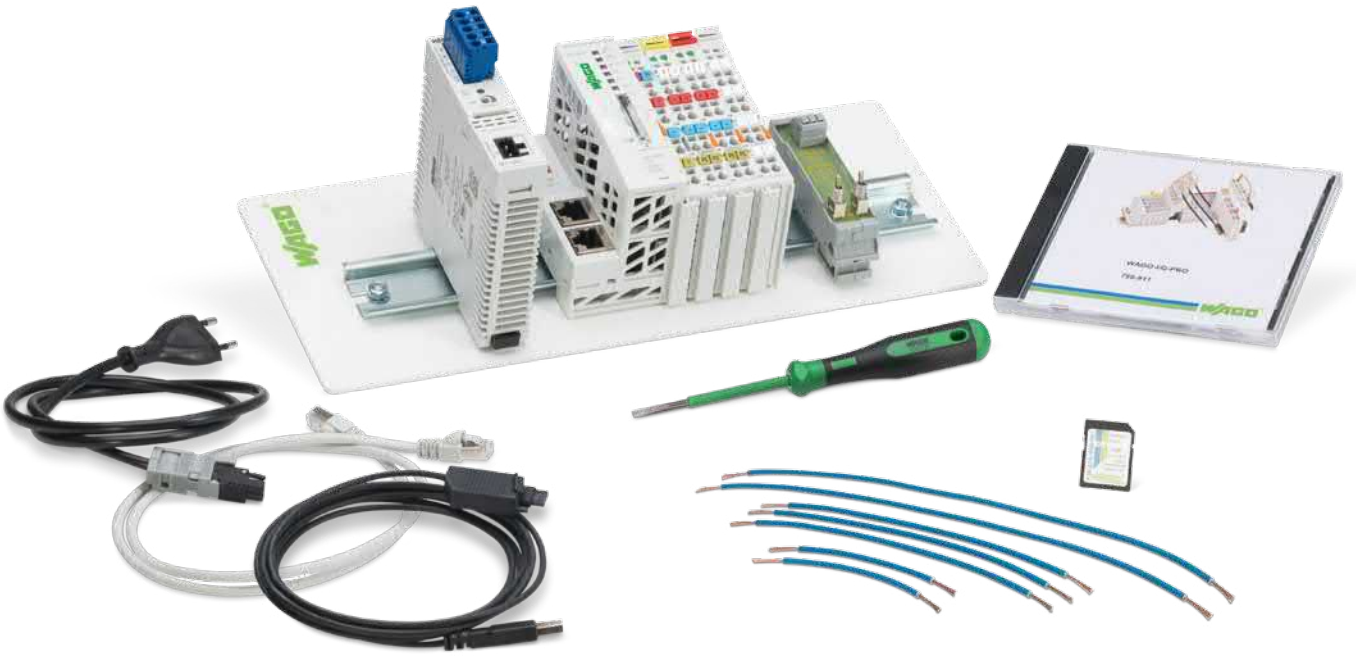


This ETHERNET Starter Kit includes: 750-881 Controller, 2-channel input module and 2-channel output module. A power supply and the required programming software are also included in the scope of delivery. An application program designed for the starter kit and written in IEC 61131 demonstrates both hardware and software possibilities.

Item Description	Item No.
Starter Kit; ETHERNET 881	**8003-001/K999-9999/000-1600**

The ETHERNET Starter Kit includes:	
Controller ETHERNET; 3rd generation	**750-881**
2-Channel Digital Input; 24 VDC; 3 ms	**750-400**
2-Channel Digital Output; 24 VDC; 0.5 A	**750-501**
End Module	**750-600**
Power Supply “Classic”; 24 VDC output voltage; 1 A	**787-1602**
Switching Module; 2-way DI simulator	**288-863**
Development Environment, incl. USB Communication Cable; WAGO-I/O-*PRO*; USB Kit	**759-333/000-923**
SD Memory Card; 1 GB	**758-879/000-001**
Patch Cable; 1 m	**110-8006**
Operating Tool; Type 1; (3.5 x 0.5) mm blade	**210-720**

Starter Kit; BACnet/IP with Controller BACnet/IP; Eco



The BACnet/IP Starter Kit is perfect for anyone seeking flexibility. Whether for rooms, lighting control systems or HVAC systems, the high-performance BACnet/IP Eco Controller is always the right choice for building automation applications.

Advantages of the BACnet/IP Eco Controller:

- This controller supports the device profile of a BACnet Building Controller (B-BC) with all major BACnet objects and interoperability building blocks (BIBBs).
- With 256 BACnet objects, the BACnet/IP Eco Controller is an economical alternative for building automation applications requiring a small number of BACnet objects.
- This permits smaller building automation control tasks to be implemented much more cost-effectively.

4.5

Item Description	Item No.
Starter Kit; BACnet/IP	**8003-099/750-831**

The BACnet/IP Starter Kit includes:	
Controller BACnet/IP; Eco	**750-831/000-002**
2-Channel Digital Input; 24 VDC; 3 ms	**750-400**
2-Channel Digital Output; 24 VDC; 0.5 A	**750-501**
End Module	**750-600**
Power Supply "Classic"; 24 VDC output voltage; 1 A	**787-1602**
Switching Module; 2-way DI simulator	**288-863**
Development Environment, incl. USB Communication Cable; WAGO-I/O-*PRO*; USB Kit	**759-333/000-923**
Operating Tool; Type 1; (3.5 x 0.5) mm blade	**210-720**
Patch Cable; 1.0 m	

Starter Kit; KNX IP with Controller KNX IP



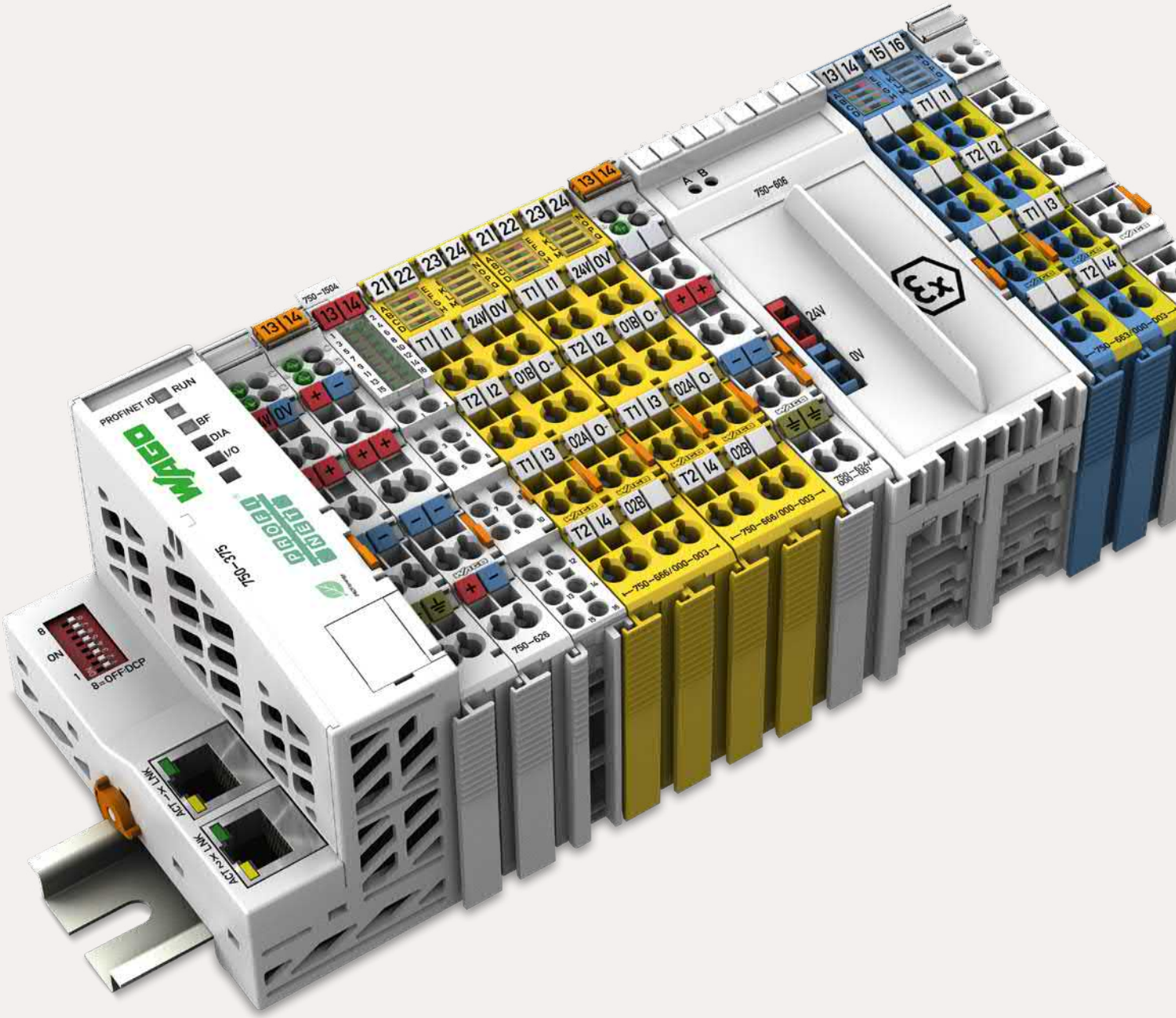
The WAGO Starter Kit KNX IP is available for those new to KNX IP. This starter kit is particularly well-suited to users seeking to:

- Expand existing KNX/EIB networks with the KNX/EIB/TP1 interface to include the functionality of the modular WAGO-I/O-SYSTEM and program applications themselves (IEC 61131-3)
- Have remote access to their KNX/EIB/TP1 network with the router
- Exploit the advantages of an ETHERNET network with KNX/EIB projects via the IP controller

4.5

Item Description	Item No.
Starter Kit; KNX IP	**8003-001/K999-9999/000-901**

The KNX IP Starter Kit includes:	
Controller KNX IP	**750-889**
4-Channel Digital Input; 24 VDC; 3 ms	**750-402**
4-Channel Digital Output; 24 VDC; 0.5 A	**750-504**
End Module	**750-600**
KNX/EIB/TP1 Interface	**753-646**
Switched-Mode Power Supply; 24 VDC output voltage; 1.3 A	**787-602**
Development Environment, incl. USB Communication Cable; WAGO-I/O-*PRO*; USB Kit	**759-333/000-923**
Patch Cable; Cross-Over	



I/O System – 750 and 753 Series

I/O System – 750 and 753 Series

- Highly versatile
- More than 500 modules available
- Functional Safety
- Ex i

I/O System – 750 XTR Series

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 6 ▸

I/O System – 750 and 753 Series
Contents

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I/O System – 750 and 753 Series – One System for Every Application
General Product Information

One System for Every Application

The WAGO-I/O-SYSTEM 750/753 is characterized by its universal application scope and extensive product portfolio. With more than 500 different modules, the versatility and flexibility is so great that virtually every requirement in a wide range of industries is covered.

Industrial Automation

The comprehensive selection of I/O modules for different potentials and signal types saves time and money because the sensors/actuators can be wired directly – even in safety-related applications.

Building Automation

The broad portfolio enables flexible, cellar-to-ceiling solutions with conventional I/O modules, standardized industry-specific fieldbus protocols and subsystems for typical applications in lighting, shading, heating, HVAC and much more.

Marine and Onshore/Offshore Automation

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements inherent in specific industries and operating environments has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference, along with superior mechanical performance in these sensitive areas, the WAGO-I/O-SYSTEM can readily meet the needs of other industries.

Process Automation

Even under the harshest environmental conditions, use is possible with special approvals. Potential hazardous area applications include oil and gas production, the chemical industry and power generation. The WAGO-I/O-SYSTEM can be installed in Zone 2/22 with its intrinsically safe I/O modules, making it possible to connect sensors/actuators in Zones 1/21 and 0/20.

Maximum Fieldbus Independence

The system's modularity is also reflected in its support for numerous fieldbus systems and ETHERNET standards. Depending on the application, it is possible to choose between fieldbus couplers and communication modules for different protocols.

Easy to Use

A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O node without tools. The streamlined design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

Worldwide Approvals

International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use – even under more rigorous operating conditions including ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA, AEx and numerous marine certifications.

Extremely Compact

WAGO's patented mechanical design leads to extremely compact I/O nodes. In fact, it can accommodate up to 16 channels in a module width of 12 mm (1/2").

- Finely granular I/O modules provide node customization.
- Space-saving design permits high integration density and direct connection.

Maximum Reliability and Ruggedness

The WAGO-I/O-SYSTEM is engineered and tested for use in the most demanding environments in accordance with the highest standards, e.g., those required in marine applications. The system is distinguished from other products that are solely intended for industrial use because of:

- Greatly increased vibration rating
- Significantly greater immunity to interference (ESD)
- Lower emission of interference
- Larger voltage fluctuation range
- Greater durability for continuous operation in upper temperature ranges

In addition, CAGE CLAMP® spring pressure connections ensure superior reliability. Integrated QA measures in the production process and 100% function testing ensure consistent quality.

Clear Identification

Module functionality is identified via integrated or pluggable marker carriers. Terminal assignment and technical data are printed onto the side of the I/O module. WAGO's WSB Marking System also allows for module- and channel-related identification.

Advantages:

- Fieldbus-independent – support all standard fieldbus protocols and ETHERNET standards
- Flexible platform adapts to diverse applications and environments
- Tested and approved worldwide
- Extensive range of accessories for marking systems and connection technologies
- Vibration-proof, fast and maintenance-free CAGE CLAMP® connections

5

I/O System – 750 and 753 Series
Variants

Pluggable Connector



The pluggable connections of the WAGO-I/O-SYSTEM 753 allow quick and safe replacement. Optional coding pins prevent inserting the pluggable connector in the wrong I/O module. Replacing and connecting the I/O module requires no further action and eliminates possible errors – essentially serving as permanent wiring. Alternatively, field wiring is possible via interface modules that can be connected to the I/O system using a ribbon cable (see "Types").

Extended Temperature Range



Industrial automation technology is typically operated in temperatures ranging from 0 °C to 55 °C. However, there are applications that require an extended temperature range.
For these applications, WAGO offers a line of WAGO-I/O-SYSTEM 750 products for temperatures ranging from –20°C to +60°C.
For extreme applications, where even this extended temperature range is not sufficient, the WAGO-I/O-SYSTEM 750 XTR is available.

Functional Safety



In the European Union, the machinery directive defines the requirements for machine and system safety. This ensures a uniform standard for the protection of "life and limb" for people within a machine's operating area.

The required risk assessment is based on harmonized standards (e.g., EN 13849) that identify existing risks and required risk reduction (SIL or PL quality). Based on the risk assessment, safety functionality can be implemented, e.g., by presence detection or protection zone violations using secure switches or light arrays to immediately shut down the "risk." For this purpose, the safety signals are detected by the "yellow" safety modules and transmitted via "PROFIsafe" to the fail-safe PLC for further processing. The result is then executed via safe actuator (e.g., output module or controller).

The uniquely characteristic safety values of the WAGO modules facilitate calculation of the final safety function up to Cat. 4/PLe according to EN 13849, or SIL3 according to EN 62061 or IEC 61511.

The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased electromagnetic immunity (EMC standard), WAGO offers compact power supply filter modules. Specific power supply features must be considered, which are described in detail in the corresponding manuals.

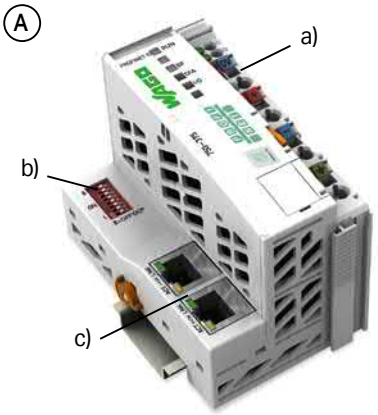
Use in Hazardous Areas



In many plants across the chemical and petrochemical industries, as well as in the production and process automation sectors, installations are operated that process explosive gas- or dust-air mixtures. This is why electrical equipment must be explosion-proof in order to avoid injuries to personnel and damage to facilities.
The modules within the WAGO-I/O-SYSTEM 750 are designed for use in both non-hazardous and hazardous areas.
The direct application of fieldbus technology in hazardous areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the WAGO-I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. The "blue" Ex i I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard fieldbus node, offering all the advantages of state-of-the-art fieldbus technology. The WAGO-I/O-SYSTEM 750 is also approved for mining applications.

I/O System – 750 and 753 Series
Interfaces and Types

A



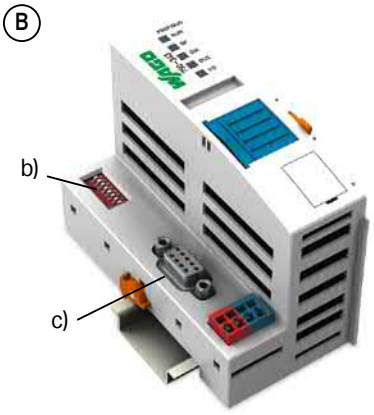
Housing design: fieldbus coupler (A)

- Including supply module (a) to power downstream I/O modules
- Technical differences on the connection level; optional addressing switch (b) and fieldbus interface (c)
- W x H x D (mm) 50.5 x 71.1 x 100 or
- W x H x D (mm) 61.5 x 71.9 x 100

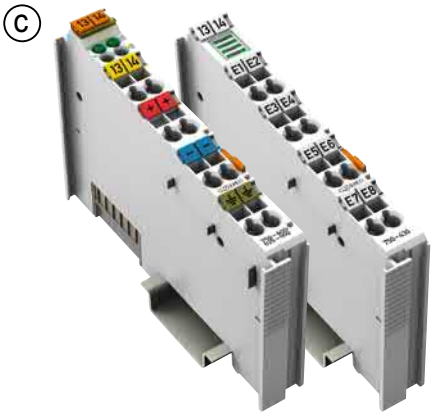
Housing design: fieldbus coupler ECO (B)

- Restriction on power supply and data width
- W x H x D (mm) 49.5 x 71.9 x 96.8

B



C



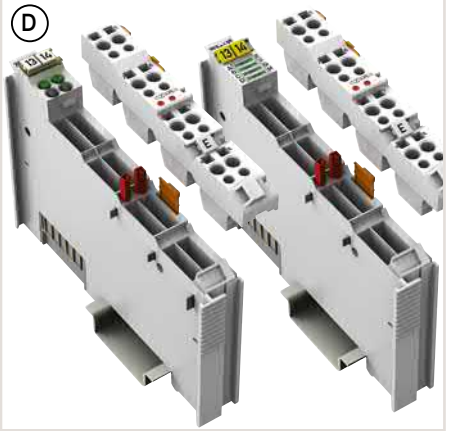
Housing design: 750 (C)

- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 69.8 x 100 (4 LEDs)
- W x H x D (mm) 12 x 67.8 x 100 (8 LEDs)

Housing design: 753 (D)

- Pluggable Connector
- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 69.8 x 100 (4 LEDs)
- W x H x D (mm) 12 x 69 x 100 (8 LEDs)
- Pluggable connectors and coding fingers are not included.

D



E



Housing design: 750 (E)

- 16 connection points (Push-in CAGE CLAMP®)
- W x H x D (mm) 12 x 69 x 100

Housing design (F)

- For time-saving wiring between I/O system and interface modules
- Ribbon cable connection to interface modules (289 and 704 Series) and interface adapter
- W x H x D (mm) 12 x 74.1 x 100

F



G



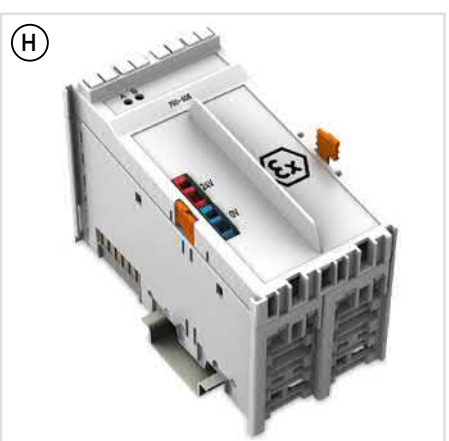
Housing design: double width (G)

- Some modules are integrated into a double housing to address specific technological needs. Despite utilizing the same standardized housing, these modules are twice as wide.
- W x H x D (mm) 24 x 69.8 x 100

Special housing design (H)

- Some modules are integrated into a specialized housing with a specific width and pluggable connectors. The dimensions are specified on the respective catalog page.

H



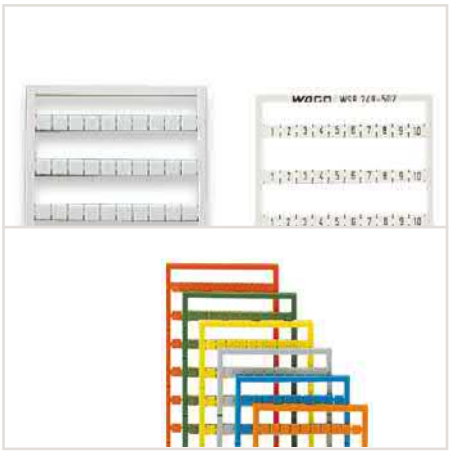
I/O System – 750 and 753 Series
Marking and Mounting Accessories



Transparent group marker carriers indicate module type by color.



Removable group marker carriers are available for all 750 and 753 Series I/O Modules with a maximum of four LEDs, as well as all fieldbus couplers with a supply module.



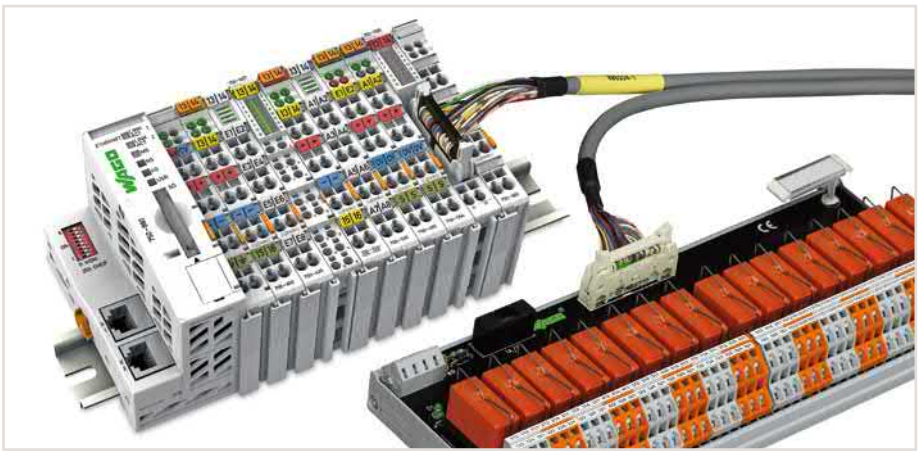
Mini-WSB Quick Marking System, blank, premarked and colored; suitable for all 750 and 753 Series I/O Modules.



Marker carrier for one single I/O module (suitable for all 750 and 753 Series I/O Modules); the marker carrier can be accommodated in the upper Mini-WSB marker slot.



Marker carrier for one I/O node; both carrier models (750-106 and 750-107) permit continuous marking regardless of the I/O module housing used.



Interface modules for system wiring



Interface cables

I/O System – 750 and 753 Series
Application and Installation Instructions

Power Supply

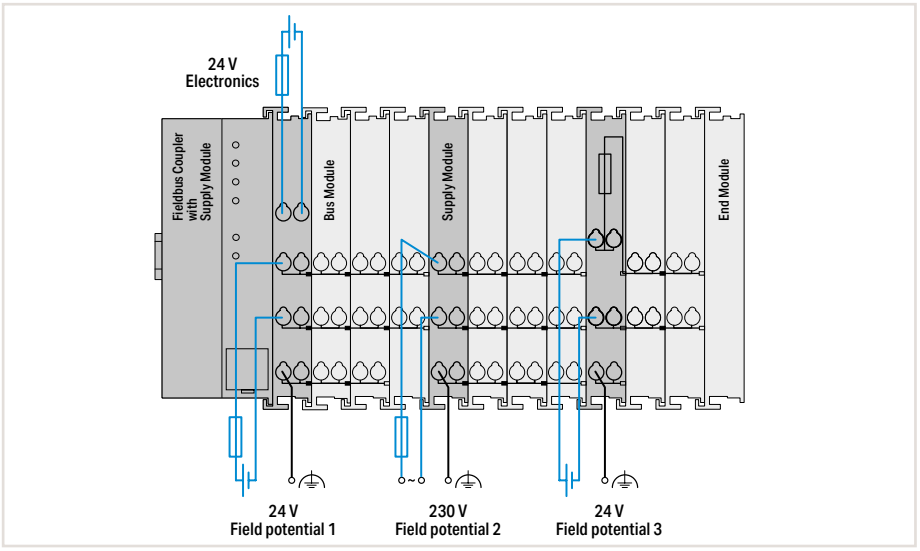
The internal electronics are powered by the fieldbus coupler. The field-side power supply is electrically isolated via the supply module on the coupler or a separate power supply module. This division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages (system power supply 5 VDC via the data contacts and field supply via the optional power jumper contacts). Supply modules with diagnostics also enable power supply monitoring. This ensures a flexible, user-specific supply design for a station.

Power supply to the electronics is limited by a maximum value. This value depends on the fieldbus coupler used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stop concepts.

Interference-Free in Safety-Related Applications

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.



Notice:

WAGO's interference-free I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes:

Additional steps must be implemented based on where the I/O system is installed:

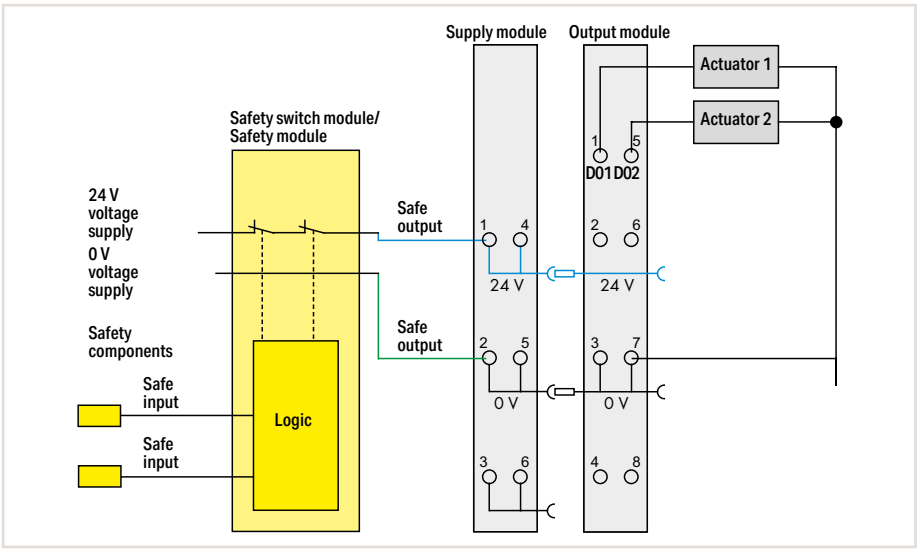
Specific field-side power supply filters (750-624) or power supply filters (750-626) are required for marine and onshore/offshore applications.

A specific supply module (750-606) is required to operate intrinsically safe Ex i modules.

Additionally, both supply modules and field-side power supply filters are recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.

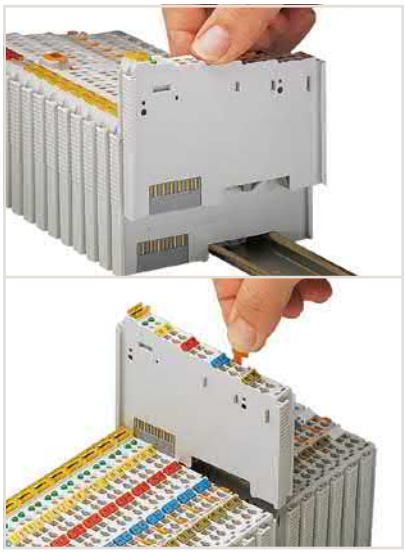
For the 24 VDC power supply of electronics and field, PELV/SELV power supply units are recommended. As part of safety-related applications, they are mandatory. The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased electromagnetic immunity (EMC standard), WAGO offers compact power supply filter modules.

Please refer to the manual for details about the power supply's design.

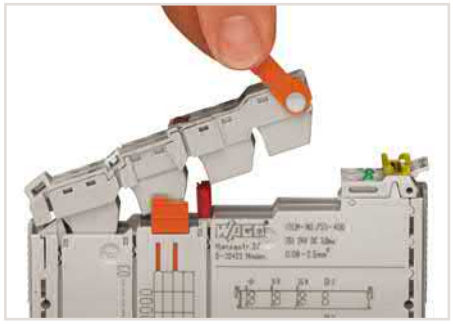


Example: 2-channel, double-pole power supply disconnection

I/O System – 750 and 753 Series
Application and Installation Instructions



Securing/removing a module from the mounting rail.



Releasing a pluggable connector.



Optional protection against mismating of pluggable connectors via coding elements



Service interface for configuring the fieldbus coupler; connectivity via configuration cable or radio adapter

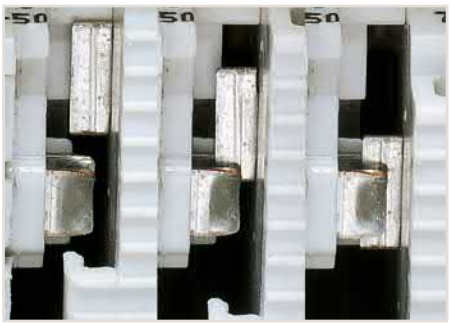
Notice:

For some I/O modules, not all power jumper contacts are made! A module with three power jumper contacts (e.g., 2-channel digital input) cannot be snapped into place behind a module in which not every contact is made.

To increase electromagnetic compatibility (EMC), some components are connected to the DIN-rail by a discharge contact. The DIN-rail must always have a low-resistance connection to the ground potential.



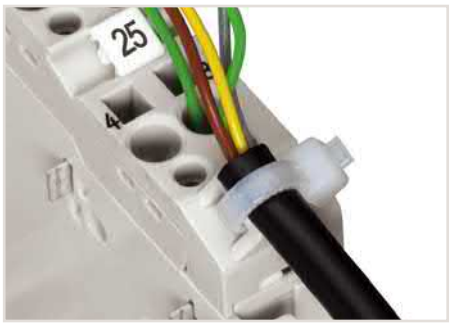
Wide range of accessories available for EMC-compliant installation, including shield connection



Secure, automatic power supply connection via self-cleaning blade contacts



Secure, automatic data and electronics power supply connection via gold-plated pressure contacts

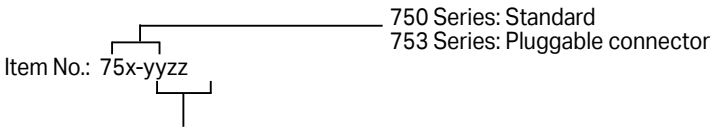


Securing a cable to the connector.

5

I/O System – 750 and 753 Series
Item Number Key

Explanation of item number key's components



01zz: Marker
03zz: Fieldbus coupler
zz: Consecutive number

1yzz: 16 connection points or ribbon cable
y4zz: Input
00 ... 49 = Digital input
50 ... 99 = Analog input
04: Counter
y5zz: Output
00 ... 49 = Digital output
50 ... 99 = Analog input
11: PWM
y6zz: Function/technology/communication/system module
0z: Power supply, field-side connection, end module
1z: Power supply, field-side connection, spacer module
2z: Power supply, bus extension, filter, spacer module
3z: Distance and angle measurement, DC drive controller, counter
4z: Communication (building), radio, RTC, vibration monitoring
5z: Serial interfaces, communication
6z: Functional safety
.../000-001: PROFIsafe V1.3
.../000-002: PROFIsafe V2
.../000-003: PROFIsafe V2 iPar
7z: Stepper

09zz: Accessories

.../025-000: Extended temperature range of –20 to +60 °C
.../000-800: Interference-free
.../040-000: 750 XTR Series, see Section 6

I/O System – 750 and 753 Series
Standards and Rated Conditions

General Specifications	
Supply voltage (system)	24 VDC (−25 % ... +30 %)*; *for all marine-certified fieldbus couplers and I/O modules
Isolation	500 V (system/supply)
Surrounding air temperature (operation)	0 ... +55 °C
Surrounding air temperature (operation) for versions with an extended temperature range	−20 ... +60 °C
Surrounding air temperature (storage)	−40 ... +85 °C
Relative humidity	95 % (non-condensing)
Relative humidity for versions with an extended temperature range	Max. 95 %; short-term condensation per Class 3K6 / IEC EN 60721-3-3 and E DIN 40046-721-3, taking a temperature range of −20 to +60 °C into consideration (except wind-driven precipitation, water and ice formation)
Operating altitude	0 ... 2000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5g (4g for all marine-certified fieldbus couplers and I/O modules) per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2
EMC emission of interference	Per EN 61000-6-3; EN 61000-6-4
Protection type	IP20
Mounting type	DIN-35 rail mounting
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross section; strip length for Standard modules and couplers: I/O modules, 753 Series: ECO fieldbus couplers:	0.08 ... 2.5 mm²/28 ... 14 AWG; 8 ... 9 mm/0.31 ... 0.35 inch 0.08 ... 2.5 mm²/28 ... 14 AWG; 9 ... 10 mm/0.35 ... 0.39 inch 0.08 ... 1.5 mm²/28 ... 16 AWG; 5 ... 6 mm/0.2 ... 0.24 inch
Connection technology	Push-in CAGE CLAMP®
Conductor cross section; strip length for I/O modules with 16 connection points:	Solid: 0.08 ... 1.5 mm²/28 ... 16 AWG, Fine-stranded: 0.25 ... 1.5 mm²/22 ... 16 AWG; 8 ... 9 mm/0.31 ... 0.35 inch
Current carrying capacity (power jumper contacts)	10 A

Approvals

Overview of the approvals in the item comparison in Section 11, Technical Section, or online under www.wago.com

5

Fieldbus Couplers

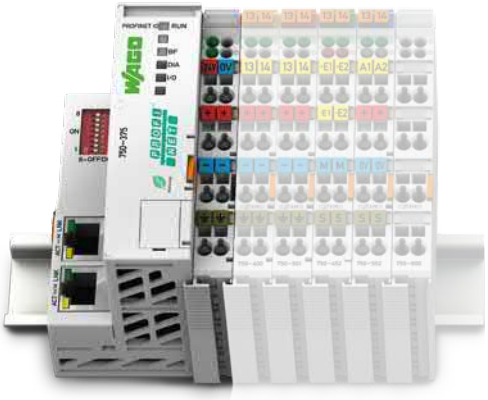
Housing design I with field supply

Dimensions W x H x D	50.5 x 71.1 x 100 mm
Height from upper-edge of DIN-rail	63.9 mm
Connection technology: System supply and field supply	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch



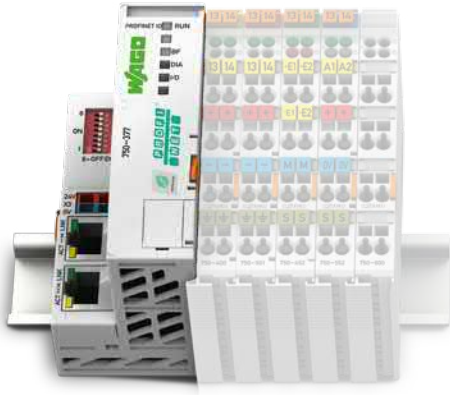
Housing design II with field supply

Dimensions W x H x D	61.5 x 71.9 x 100 mm
Height from upper-edge of DIN-rail	64.7 mm
Connection technology: System supply and field supply	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch



Housing design without field supply

Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Height from upper-edge of DIN-rail	64.7 mm
Connection technology: System supply	CAGE CLAMP®
Conductor cross section	0.08 … 1.5 mm² / 28 … 16 AWG
Strip length	5 … 6 mm / 0.22 inch



Housing design "Eco" (without field supply)

Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Height from upper-edge of DIN-rail	64.7 mm
Connection technology: System supply	CAGE CLAMP®
Conductor cross section	0.08 … 1.5 mm² / 28 … 16 AWG
Strip length	5 … 6 mm / 0.22 inch



I/O System – 750 and 753 Series, Fieldbus Couplers
Contents

Fieldbus System	Housing Design: With Field Supply		Housing Design: Without Field Supply	Housing Design: Eco	Description	Item No.	Page
							
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		☐			PROFINET IO; 3rd generation; Extended temperature; Advanced	750-375/025-000	148
			☐		PROFINET IO; 3rd generation; Eco Advanced	750-377	148
			☐		PROFINET IO; 3rd generation; Extended temperature; Eco Advanced	750-377/025-000	148
PROFIBUS	☐				PROFIBUS DP; 1st generation; 12 MBd	750-303	149
	☐				PROFIBUS DP; 2nd generation; 12 MBd	750-333*	149
	☐				PROFIBUS DP; 2nd generation; 12 MBd; Extended temperature	750-333/025-000	149
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	☐				ETHERNET; 1st generation	750-342	152
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				☐	CANopen; *MCS*; Eco	750-347	157
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sercos the automation bus	☐				Sercos®	750-351	158
MODBUS	☐				MODBUS; RS-485; 115.2 kBd	750-315/300-000	159
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CC-Link	☐				CC-Link	750-310	161
		☐			CC-Link; 156 kBaud ... 10 MBaud	750-325	161
*This coupler is also available as a 750 XTR Series variant.						See Section 6	

5.1 FC

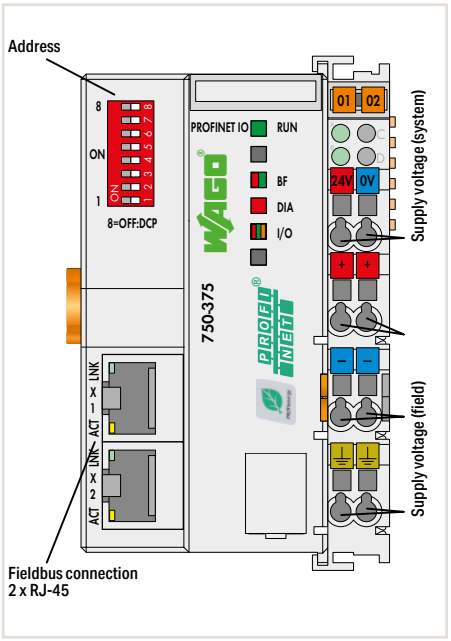
Fieldbus Coupler PROFINET IO

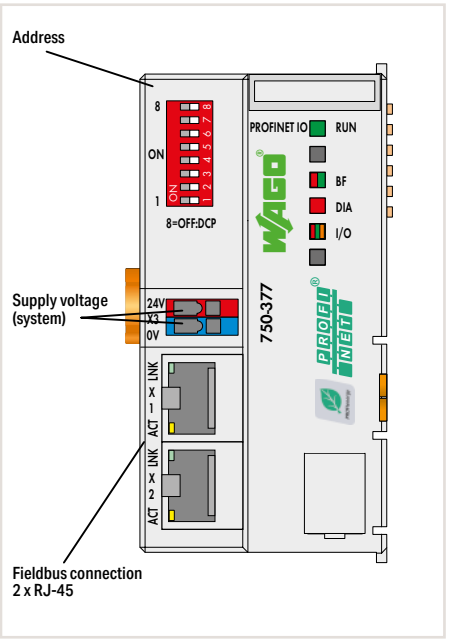


Figure: 750-375



Figure: 750-377





Item Description	Fieldbus Coupler PROFINET IO; 3rd generation; Advanced		Fieldbus Coupler PROFINET IO; 3rd generation; Eco Advanced	
Version	**Standard**	**Extended Temperature**	**Standard**	**Extended Temperature**
Item No.	**750-375**	**750-375/025-000**	**750-377**	**750-377/025-000**
Order Text	FC PROFINET; G3; Adv	FC PROFINET; G3; T; Adv	FC PROFINET; G3; Eco Adv	FC PROFINET; G3; T; Eco Adv
Technical Data				
Fieldbus	PROFINET IO		PROFINET IO	
Protocols	PROFINET IO V2.3 (conformity class C); Topology detection / LLDP; Network diagnostics / SNMP / MIB-2; Media redundancy / MRP; Webserver / HTTP; Shared device		PROFINET IO V2.3 (conformity class C); Topology detection / LLDP; Network diagnostics / SNMP / MIB-2; Media redundancy / MRP; Webserver / HTTP	
Supported profiles	PROFIsafe V2; PROFIenergy V1.0		PROFIsafe V2; PROFIenergy V1.0	
PROFINET IO features	Integrated 2-port switch; Auto-negotiation; Auto-MDIX; Isochronous real-time communication; Transmission clock: 1 ms (RT); 1, 2, 4 ms (IRT); Device replacement without programming tool		Integrated 2-port switch; Auto-negotiation; Auto-MDIX; Isochronous real-time communication; Transmission clock: 1 ms (RT); 1, 2, 4 ms (IRT); Device replacement without programming tool	
Connection technology: Fieldbus input/output	2 x RJ-45		2 x RJ-45	
Baud rate	10 Mbit/s (ETHERNET protocols); 100 Mbit/s full duplex (PROFINET IO)		10 Mbit/s (ETHERNET protocols); 100 Mbit/s full duplex (PROFINET IO)	
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5		Twisted Pair S-UTP; 100 Ω; Cat. 5	
Number of modules per node (max.)	250		64	
Input and output (internal) process image (max.)	512 bytes		256 bytes	
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)		24 VDC (–25 … +30 %); via wiring interface	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts			
Input current (typ.) at nominal load (24 V)	500 mA		280 mA	
Current consumption – system supply (5 V)	450 mA		450 mA	
Total current (system supply)	1700 mA		700 mA	
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C	–20 … +60 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm		49.5 x 71.9 x 96.8 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-375		wago.com/750-377	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com

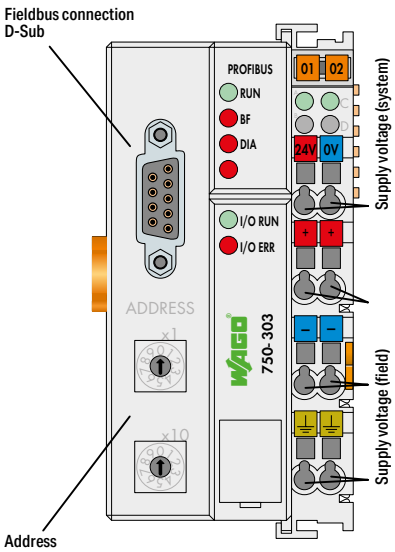
Fieldbus Coupler PROFIBUS DP

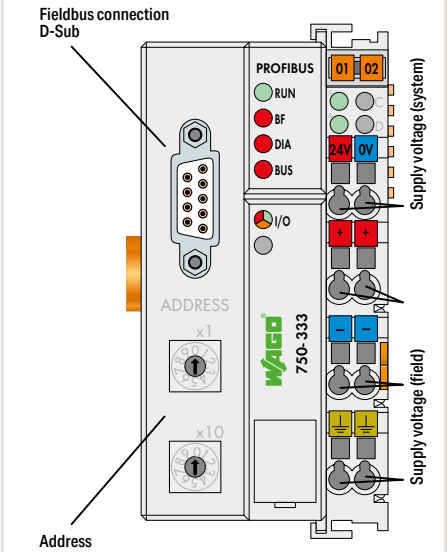


Figure: 750-303



Figure: 750-333





Item Description	Fieldbus Coupler PROFIBUS DP; 1st generation; 12 MBd	Fieldbus Coupler PROFIBUS DP; 2nd generation; 12 MBd	
Version	**Standard**	**Standard**	**Extended Temperature**
Item No.	**750-303**	**750-333**	**750-333/025-000**
Order Text	FC PROFIBUS; G1; 12MBd	FC PROFIBUS; G2; 12MBd	FC PROFIBUS; G2; 12MBd; T
Technical Data			
Fieldbus	PROFIBUS	PROFIBUS	
Protocols	PROFIBUS DP/FMS	PROFIBUS DP/V1	
Connection technology: Fieldbus input/output	Socket D-Sub 9	Socket D-Sub 9	
Number of fieldbus nodes on master (max.)	96 with repeater	96 with repeater	
Baud rate	9.6 kBd ... 12 MBd	9.6 kBd ... 12 MBd	
Transmission medium	Copper cable per EN 50170	Copper cable per EN 50170	
Number of modules per node (max.)	64	63	
Input and output (internal) process image (max.)	128 bytes	244 bytes	
Supply voltage (system)	24 VDC (–25 ... +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 ... +30 %); via wiring interface (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (–25 ... +30 %); via power jumper contacts	24 VDC (–25 ... +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	500 mA	
Current consumption – system supply (5 V)	350 mA	200 mA	
Total current (system supply)	1650 mA	1800 mA	
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C	–20 ... +60 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	50.5 x 71.1 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-303	wago.com/750-333	

Accessories	Item No.	Item No.
GSD files	Download: www.wago.com	Download: www.wago.com

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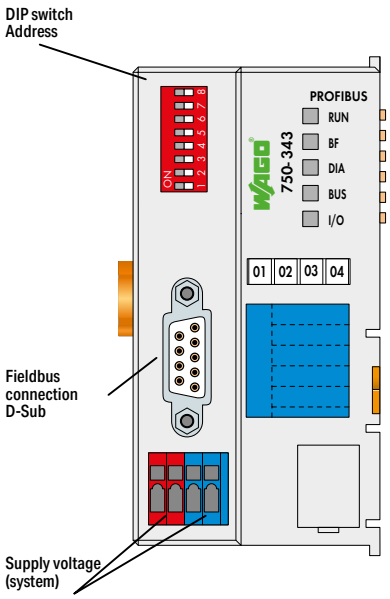
Fieldbus Coupler PROFIBUS DP

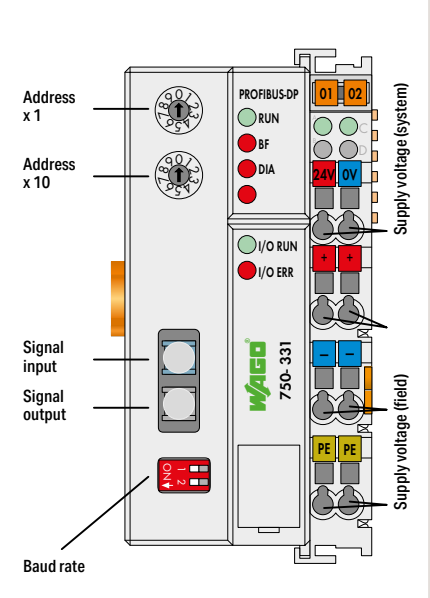


Figure: 750-343



Figure: 750-331





Item Description	Fieldbus Coupler PROFIBUS DP; 12 MBd; Eco	Fieldbus Coupler PROFIBUS DP; Fiber-optic connection; 1.5 MBd
Item No.	**750-343**	**750-331**
Order Text	FC PROFIBUS; 12MBd; Eco	FC PROFIBUS; FOC; 1.5MBd
Technical Data		
Fieldbus	PROFIBUS	PROFIBUS
Protocols	PROFIBUS DP	PROFIBUS DP
Connection technology: Fieldbus input/output	Socket D-Sub 9	HP Simplex; Fiber optic plug (included)
Number of fieldbus nodes on master (max.)	125 with repeater	10 in subring
Transmission medium	Copper cable per EN 50170	Fiber optic cable (All Plastic Fiber)
Baud rate	9.6 kBd ... 12 MBd	93.75 kBd ... 1500 kBd
Number of modules per node (max.)	63	64
Input and output (internal) process image (max.)	32 bytes	128 bytes
Supply voltage (system)	24 VDC (–25 ... +30 %); via wiring interface	24 VDC (–15 ... +20 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)		24 VDC (–15 ... +20 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	260 mA	500 mA
Current consumption – system supply (5 V)	350 mA	350 mA
Total current (system supply)	650 mA	1650 mA
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; OrdLoc
Data sheet and further information, see:	wago.com/750-343	wago.com/750-331

Accessories	Item No.	Item No.
GSD files	Download: www.wago.com	Download: www.wago.com

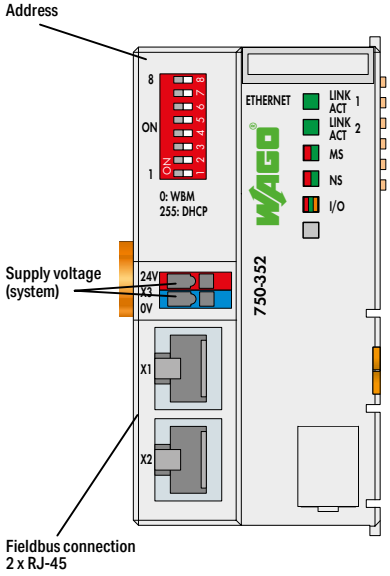
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

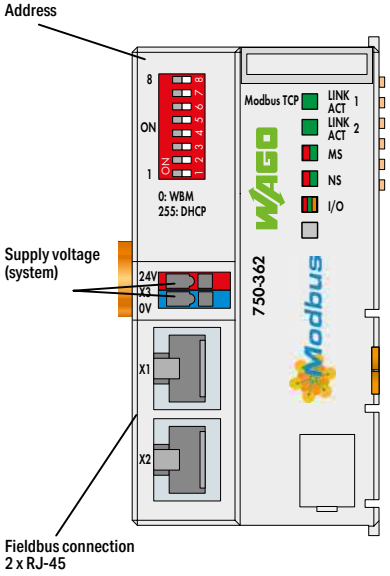
„ Approvals and corresponding ratings, see page 517 or www.wago.com

Fieldbus Coupler ETHERNET; Modbus TCP



Figure: 750-352



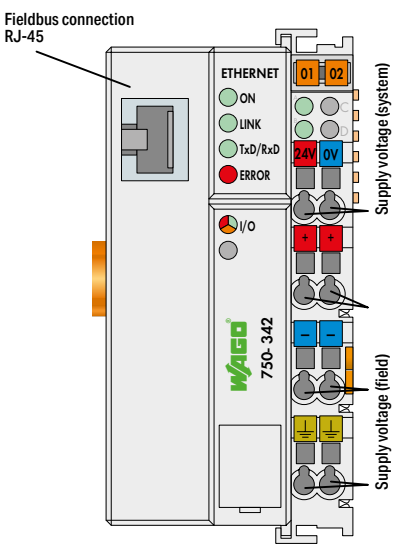


Item Description	Fieldbus Coupler ETHERNET; 3rd generation		Fieldbus Coupler Modbus TCP; 4th generation
Version	Standard	Eco	Standard
Item No.	750-352	750-352/000-001	750-362
Order Text	FC ETHERNET; G3	FC ETHERNET; G3; Eco	FC Modbus TCP; G4
	For new installations, please consider the 750-362 Fieldbus Coupler with extended functionality.		
Technical Data			
Fieldbus	EtherNet/IP*; Modbus (TCP, UDP)		Modbus (TCP, UDP)
Protocols	HTTP; BootP; DHCP; DNS; FTP; SNMP		HTTP(S), BootP, DHCP, DNS, (S)FTP, SNMP
Connection technology: Fieldbus input/output	2 x RJ-45		RJ-45
Bus segment length (max.)	100 m		100 m
Baud rate	10/100 Mbit/s		10/100 Mbit/s
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5		Twisted Pair S-UTP; 100 Ω; Cat. 5
Number of modules per node (max.)	250		250
Input and output (internal) process image (max.)	1020 words		1020 words
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface		24 VDC (–25 … +30 %); via wiring interface
Input current (typ.) at nominal load (24 V)	280 mA		280 mA
Current consumption – system supply (5 V)	450 mA		350 mA
Total current (system supply)	700 mA		700 mA
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm		49.5 x 71.9 x 96.8 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; Marine; OrdLoc*/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-352		wago.com/750-362
	*For variant 750-352/000-001, EtherNet/IP is activated as a standard protocol.		*Pending

5.1

Fieldbus Coupler ETHERNET





Item Description	Fieldbus Coupler ETHERNET; 1st generation
Item No.	750-342
Order Text	FC ETHERNET; G1

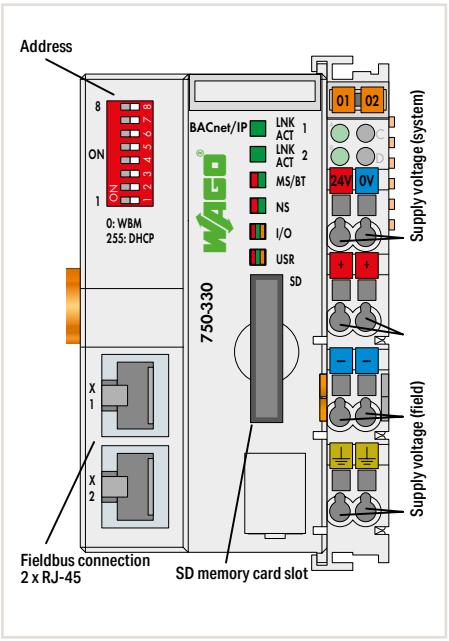
Technical Data	
Fieldbus	Modbus (TCP, UDP)
Protocols	HTTP; BootP
Connection technology: Fieldbus input/output	RJ-45
Bus segment length (max.)	100 m
Baud rate	10 Mbit/s
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5
Number of modules per node (max.)	64
Input and output (internal) process image (max.)	512 bytes
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	200 mA
Total current (system supply)	1800 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-342

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com

Fieldbus Coupler BACnet/IP





Item Description	Fieldbus Coupler BACnet/IP
Item No.	750-330
Order Text	FC BACnet/IP

Technical Data	
Fieldbus	BACnet/IP; Modbus (TCP, UDP)
Protocols	HTTPS; BootP; DHCP, DNS; FTP; SNMP
Connection technology: Fieldbus input/output	2 x RJ-45
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5; Line length (max.): 100 m
Baud rate	10/100 Mbit/s
Transmission performance	Class D per EN 50173
Type of memory card	SD and SDHC to 32 GB*
BACnet device profile	B-BC (BACnet Building Controller)
BACnet revision	1.12
Number of modules per node (max.)	99
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	450 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	61.5 x 71.9 x 100 mm
Approvals	CE; KC
Data sheet and further information, see:	wago.com/750-330

Accessories	Item No.	Page
SD memory card, 2 GB	758-879/000-001	470
BACnet Configurator	Download	See Section 2

*All guaranteed specifications are only valid with the WAGO Memory Card listed as an accessory.

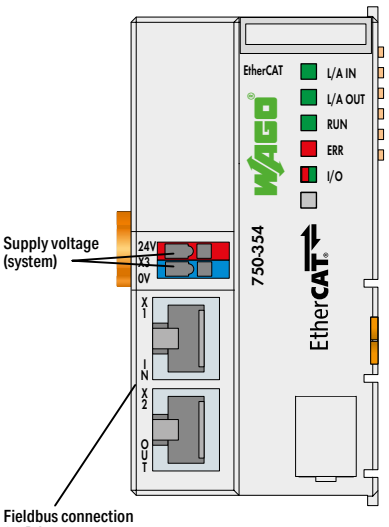
Fieldbus Coupler EtherCAT®

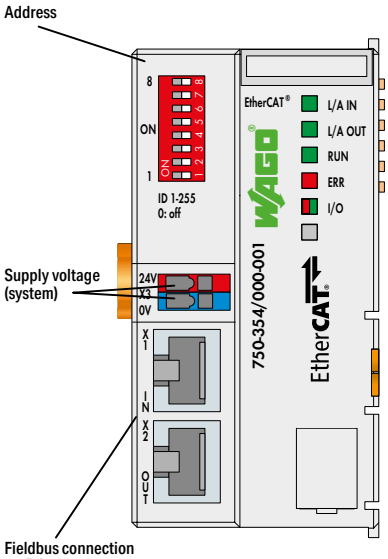


Figure: 750-354



Figure: 750-354/000-001





Item Description	Fieldbus Coupler EtherCAT	Fieldbus Coupler EtherCAT	
Version	Standard	ID Switch	ID Switch; Diagnostics
Item No.	750-354	750-354/000-001	750-354/000-002
Order Text	FC EtherCAT	FC EtherCAT; ID Switch	FC EtherCAT; ID Switch; Diagn
Technical Data			
Fieldbus	EtherCAT	EtherCAT	
Protocols	EtherCAT (direct mode)	EtherCAT (direct mode)	
Connection technology: Fieldbus input/output	2 x RJ-45	2 x RJ-45	
Baud rate	100 Mbit/s	100 Mbit/s	
Transmission medium	Shielded Twisted Pair S/FTP, F/FTP or SF/FTP; 100 Ω; Cat. 6	Shielded Twisted Pair S/FTP, F/FTP or SF/FTP; 100 Ω; Cat. 6	
Number of modules per node (max.)	64	64	
Input and output (internal) process image (max.)	1024 bytes	1024 bytes	
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface	24 VDC (–25 … +30 %); via wiring interface	
Input current (typ.) at nominal load (24 V)	250 mA	250 mA	
Current consumption – system supply (5 V)	300 mA	300 mA	
Total current (system supply)	700 mA	700 mA	
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C	
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm	49.5 x 71.9 x 96.8 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	
		Marine	
Data sheet and further information, see:	wago.com/750-354	wago.com/750-354/000-001	

EtherCAT® is a registered trademark and patented technology of Beckhoff Automation GmbH.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com

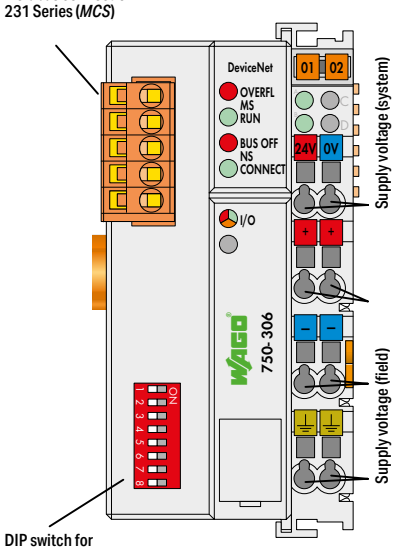
Fieldbus Coupler DeviceNet®

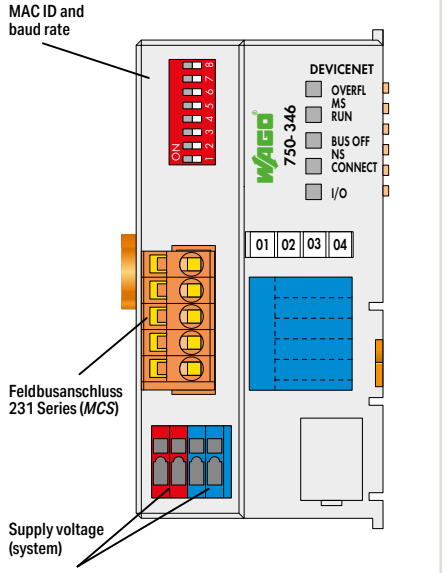


Figure: 750-306



Figure: 750-346





Item Description	Fieldbus Coupler DeviceNet®	Fieldbus Coupler DeviceNet®
Version	**Standard**	**Eco**
Item No.	**750-306**	**750-346**
Order Text	FC DeviceNet®	FC DeviceNet®; Eco
Technical Data		
Fieldbus	DeviceNet®	DeviceNet®
Connection technology: Fieldbus input/output	5-pole male connector	5-pole male connector
Number of fieldbus nodes on master (max.)	64 with scanner	64 with scanner
Number of I/O points	Approx. 6000 (dependent on master)	Approx. 6000 (dependent on master)
Baud rate	125 kBd; 250 kBd; 500 kBd	125 kBd; 250 kBd; 500 kBd
Transmission medium	Shielded Cu cable; Remote bus cable: 2 x 0.82 mm² + 2 x 1.7 mm²; Drop cable: 2 x 0.2 mm² + 2 x 0.32 mm²	Shielded Cu cable; Remote bus cable: 2 x 0.82 mm² + 2 x 1.7 mm²; Drop cable: 2 x 0.2 mm² + 2 x 0.32 mm²
Number of modules per node (max.)	64	64
Input and output (internal) process image (max.)	512 bytes	32 bytes
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–15 … +20 %); via wiring interface
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	260 mA
Input current via DeviceNet interface at 11 V	120 mA	120 mA
Current consumption – system supply (5 V)	350 mA	350 mA
Total current (system supply)	1650 mA	650 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	49.5 x 71.9 x 96.8 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; OrdLoc/HazLoc; ATEX/IECEx
Certification	ODVA	
Data sheet and further information, see:	wago.com/750-306	wago.com/750-346

Accessories	Item No.	Item No.
EDS files	Download: www.wago.com	Download: www.wago.com

5.1

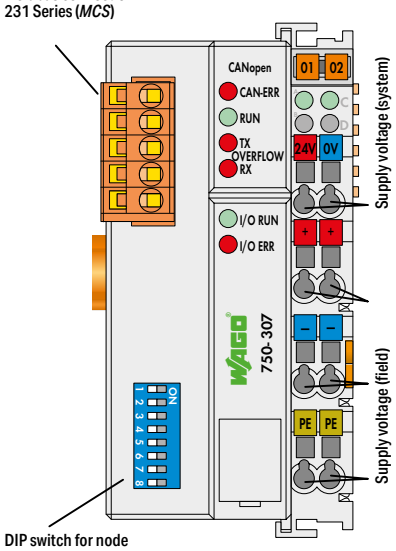
Fieldbus Coupler CANopen

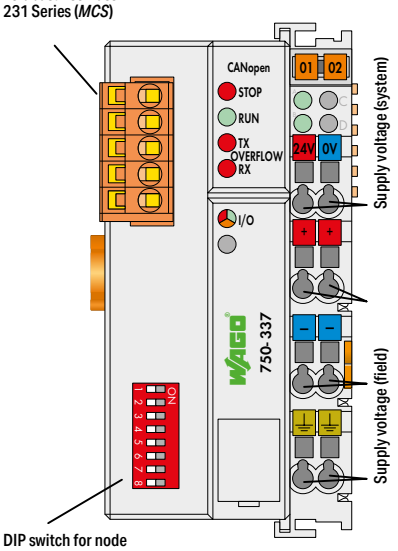


Figure: 750-337



Figure: 750-347

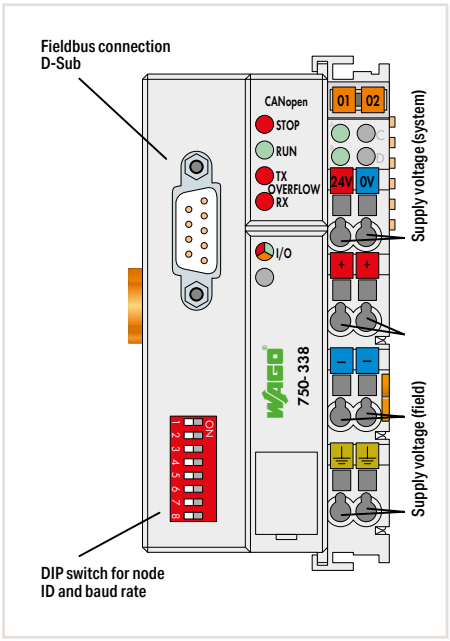


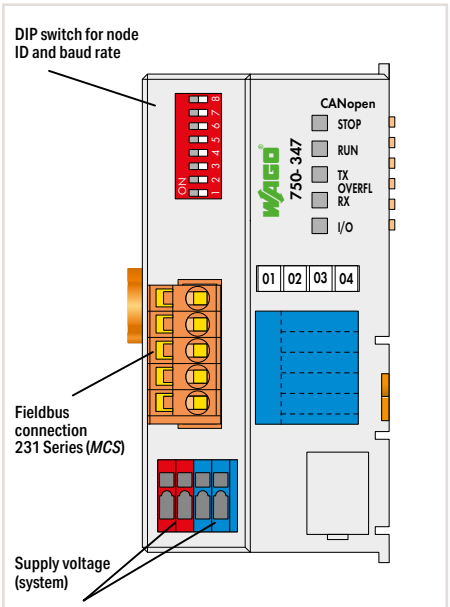


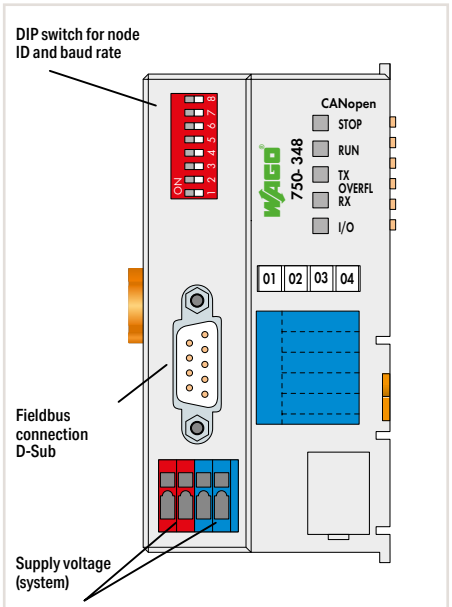
Item Description	Fieldbus Coupler CANopen	Fieldbus Coupler CANopen *MCS*	
Version	**Standard**	**Standard**	**Extended Temperature**
Item No.	**750-307**	**750-337**	**750-337/025-000**
Order Text	FC CANopen	FC CANopen; *MCS*	FC CANopen; *MCS*; T
Technical Data			
Fieldbus	CANopen	CANopen	
Connection technology: Fieldbus input/output	5-pole male connector	5-pole male connector	
Number of fieldbus nodes on master (max.)	110	110	
Bus segment length (max.)	30 … 1000 m (depends on baud rate/cable)	30 … 1000 m (depends on baud rate/cable)	
Transmission medium	Shielded Cu cable 3 x 0.25 mm²	Shielded Cu cable 3 x 0.25 mm²	
Baud rate	10 kBd … 1 MBd	10 kBd … 1 MBd	
Number of modules per node (max.)	64	64	
Input and output (internal) process image (max.)	512 bytes	512 bytes	
Number of PDOs	5 Tx / 5 Rx	32 Tx / 32 Rx	
Number of SDOs	2 SDO servers	2 SDO servers	
Communication profile	DS-301 V3.0	DS-301 V4.01	
Device profile	DS-401 V1.4	DS-401 V2.0; Additional functions: limit monitoring; flank-triggered PDOs; configurable response in the event of an error	
Supply voltage (system)	24 VDC (−15 … +20 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (−25 … +30 %); via wiring interface (CAGE CLAMP® connection)	
Supply voltage (field)	24 VDC (−15 … +20 %); via power jumper contacts	24 VDC (−25 … +30 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	500 mA	
Current consumption – system supply (5 V)	350 mA	350 mA	
Total current (system supply)	1650 mA	1650 mA	
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C	−20 … +60 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	50.5 x 71.1 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-307	wago.com/750-337	
Accessories	**Item No.**	**Item No.**	
EDS files	Download: www.wago.com	Download: www.wago.com	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com



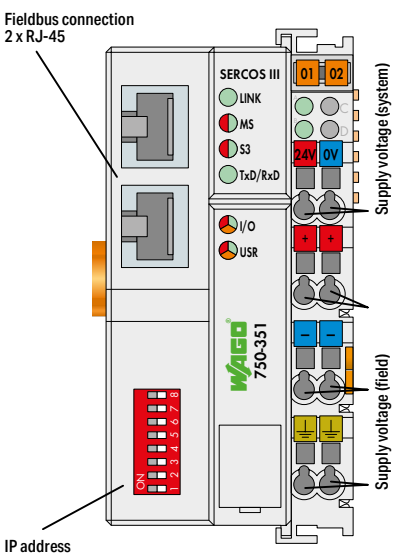




Fieldbus Coupler CANopen D-Sub	Fieldbus Coupler CANopen *MCS*	Fieldbus Coupler CANopen D-Sub
Standard	Eco	Eco
750-338	750-347	750-348
FC CANopen; DSub	FC CANopen; *MCS*; Eco	FC CANopen; DSub; Eco
CANopen	CANopen	CANopen
Plug D-Sub 9	5-pole male connector	Plug D-Sub 9
110	110	110
30 … 1000 m (depends on baud rate/cable)	30 … 1000 m (depends on baud rate/cable)	30 … 1000 m (depends on baud rate/cable)
Shielded Cu cable 3 x 0.25 mm²	Shielded Cu cable 3 x 0.25 mm²	Shielded Cu cable 3 x 0.25 mm²
10 kBd … 1 MBd	10 kBd … 1 MBd	10 kBd … 1 MBd
64	64	64
512 bytes	32 bytes	32 bytes
32 Tx / 32 Rx	5 Tx / 5 Rx	5 Tx / 5 Rx
2 SDO servers	1 SDO server	1 SDO server
DS-301 V4.01	DS-301 V4.01	DS-301 V4.01
DS-401 V2.0; Additional functions: limit monitoring; flank-triggered PDOs; configurable response in the event of an error	DS-401 V2.0; Additional functions: configurable response in the event of an error	DS-401 V2.0; Additional functions: configurable response in the event of an error
24 VDC (−25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (−25 … +30 %); via wiring interface	24 VDC (−25 … +30 %); via wiring interface
24 VDC (−25 … +30 %); via power jumper contacts		
500 mA	260 mA	260 mA
350 mA	350 mA	350 mA
1650 mA	650 mA	650 mA
0 … +55 °C	0 … +55 °C	0 … +55 °C
50.5 x 71.1 x 100 mm	49.5 x 71.9 x 96.8 mm	49.5 x 71.9 x 96.8 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-338	wago.com/750-347	wago.com/750-348
Item No.	**Item No.**	**Item No.**
Download: www.wago.com	Download: www.wago.com	Download: www.wago.com

Fieldbus Coupler Sercos®





Item Description	Fieldbus Coupler Sercos®
Item No.	750-351
Order Text	FC Sercos®
Technical Data	
Fieldbus	Sercos®
Protocols	Sercos; FSP-IO; TCP/IP; FTP; HTTP; BootP; DHCP; SNTP
Supported services	SVC; RTC; CC; IP; Ring break (GDP_Basic; SCP_VarCFG; SCP_Sync)
Connection technology: Fieldbus input/output	2 x RJ-45
Sercos® version	V1.1.1
IO profile	V1.1.1
Number of couplers (slaves) in Sercos® ring	512
Baud rate	100 Mbit/s; Full duplex
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5
Number of modules per node (max.)	250
Input and output (internal) process image (max.)	2 KB (RTC and SVC)
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	300 mA
Total current (system supply)	1700 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-351

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com

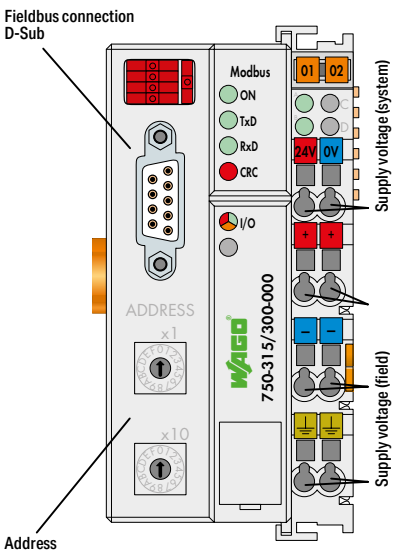
Fieldbus Coupler Modbus®

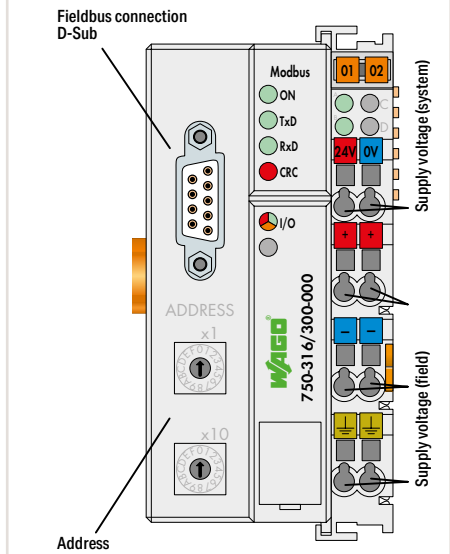


Figure: 750-315/300-000



Figure: 750-316/300-000





Item Description	Fieldbus Coupler Modbus®	Fieldbus Coupler Modbus®
Version	RS-485; 115.2 kBd	RS-232; 115.2 kBd
Item No.	750-315/300-000	750-316/300-000
Order Text	FC Modbus; RS485; 115.2kBd	FC Modbus; RS232; 115.2kBd
Technical Data		
Fieldbus	Modbus®	Modbus®
Connection technology: Fieldbus input/output	Socket D-Sub 9	Socket D-Sub 9
Number of fieldbus nodes on master (max.)	247 with repeater	247 with repeater
Interface standard	RS-485	RS-232
Baud rate	150 Bd ... 115.2 KBd	150 Bd ... 115.2 KBd
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm²	Shielded Cu cable 2 (4) x 0.25 mm²
Number of modules per node (max.)	64	64
Input and output (internal) process image (max.)	512 bytes	512 bytes
Supply voltage (system)	24 VDC (–25 ... +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 ... +30 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 ... +30 %); via power jumper contacts	24 VDC (–25 ... +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA	500 mA
Current consumption – system supply (5 V)	350 mA	350 mA
Total current (system supply)	1650 mA	1650 mA
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-315/300-000	wago.com/750-316/300-000

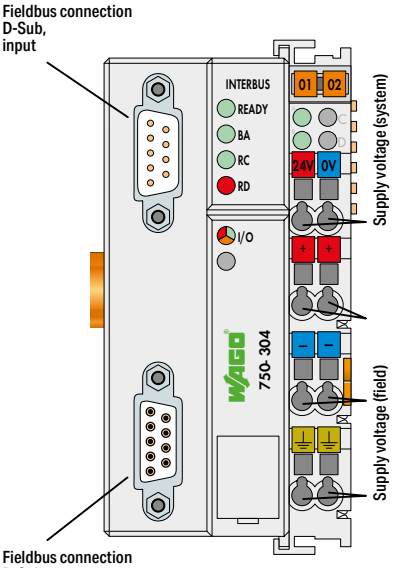
Fieldbus Coupler INTERBUS

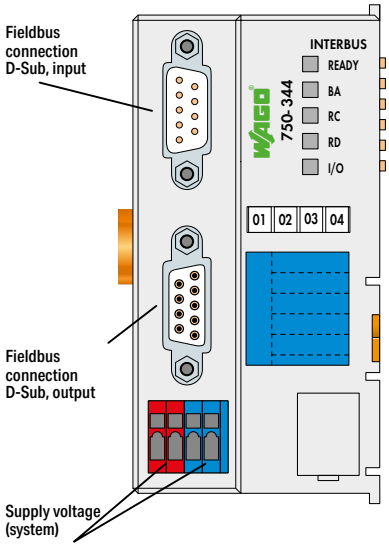


Figure: 750-304



Figure: 750-344





Item Description	Fieldbus Coupler INTERBUS	Fieldbus Coupler INTERBUS; 500 kBit/s; Eco
Item No.	750-304	750-344
Order Text	FC INTERBUS	FC INTERBUS; 500kbit/s; Eco
Technical Data		
Fieldbus	INTERBUS	INTERBUS
Connection technology: Fieldbus input/output	D-Sub 9 plug / D-Sub 9 socket	D-Sub 9 plug / D-Sub 9 socket
Number of fieldbus nodes on master (max.)	256	256
Bus segment length (max.)	400 m	400 m
Transmission medium	Copper cable	Copper cable
Baud rate	500 kBd	500 kBd
Number of modules per node (max.)	64	64
Input and output (internal) process image (max.)	64 bytes	20 bytes
Supply voltage (system)	24 VDC (–15 … +20 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–15 … +20 %); via wiring interface
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts	
Input current (typ.) at nominal load (24 V)	500 mA	260 mA
Current consumption – system supply (5 V)	300 mA	350 mA
Total current (system supply)	1700 mA	650 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	49.5 x 71.9 x 96.8 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Standard	EN 50254	EN 50254
Certification	INTERBUS CLUB	
Data sheet and further information, see:	wago.com/750-304	wago.com/750-344

Accessories	Item No.	Item No.
INTERBUS files	Download: www.wago.com	Download: www.wago.com

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 517 or www.wago.com

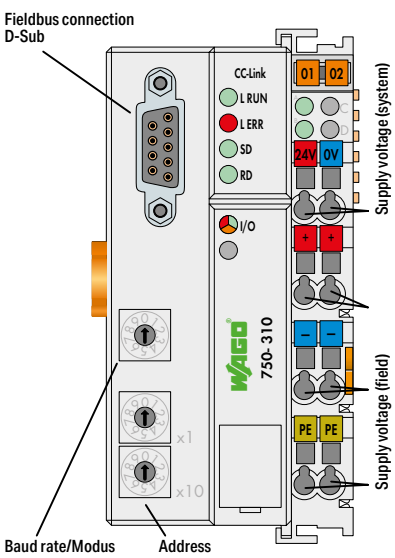
Fieldbus Coupler CC-Link

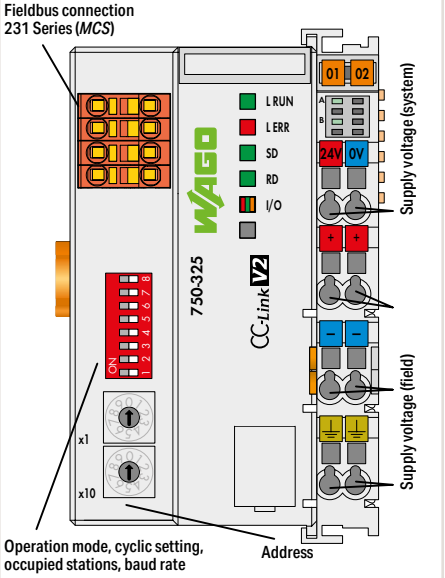


Figure: 750-310



Figure: 750-325



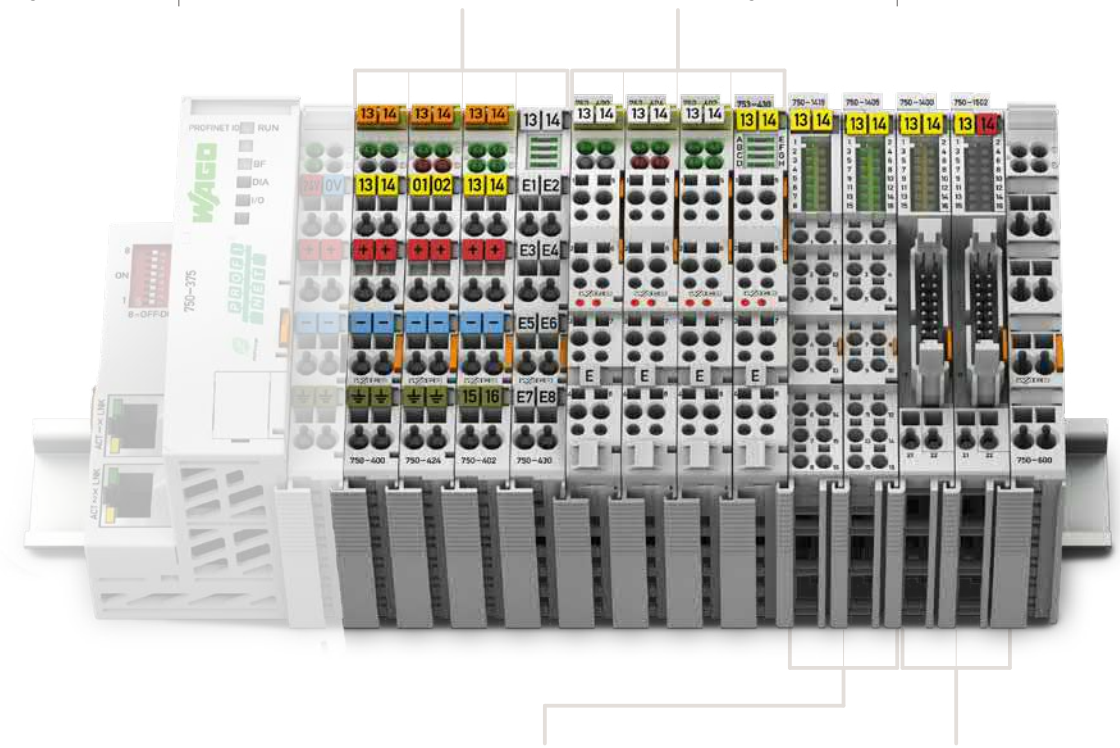


Item Description	Fieldbus Coupler CC-Link	Fieldbus Coupler CC-Link
Item No.	**750-310**	**750-325**
Order Text	FC CC-Link	FC CC-Link
Technical Data		
Fieldbus	CC-Link	CC-Link
Connection technology: Fieldbus input/output	Socket D-Sub 9	MCS pluggable connectors (included)
Number of fieldbus nodes on master (max.)	64	64
Baud rate	156 kBd … 10 MBd	156 kBd … 10 MBd
Transmission medium	Shielded Cu cable 2/3 x 0.5 mm²	Shielded Cu cable 2/3 x 0.5 mm²
Number of modules per node (max.)	64	64
Operating mode		CC-Link V2.0 (default setting)/V1.1
Assigned station addresses	4/1 … 4	1 … 4 / 4 (default setting)
Advanced cycle setting		1, 2, 4 (default setting); 8 cycles
Input (internal) process image (max.)	14-byte digital; 2-byte system; 32-byte analog	RX (digital inputs): V1.1: 16, 48, 80, 112 bits; V2.0: 16, 48, 80, 112 bits (1 cycle); V2.0: 16, 80, 144, 208 bits (2 cycles); V2.0: 48, 176, 304, 432 bits (4 cycles); V2.0: 112, 368, 624, 880 bits (8 cycles) and for each 16-bit system area; RWr (analog inputs): V1.1: 4, 8, 12, 16 words (16 bits); V2.0: 4, 8, 12, 16 words (1 cycle); V2.0: 8, 16, 24, 32 words (2 cycles); V2.0: 16, 32, 48, 64 words (4 cycles); V2.0: 32, 64, 96, 128 words (8 cycles)
Output (internal) process image (max.)	14-byte digital; 2-byte system; 32-byte analog	RY (digital outputs): V1.1: 16, 48, 80, 112 bits; V2.0: 16, 48, 80, 112 bits (1 cycle); V2.0: 16, 80, 144, 208 bits (2 cycles); V2.0: 48, 176, 304, 432 bits (4 cycles); V2.0: 112, 368, 624, 880 bits (8 cycles) and for each 16-bit system area RWw (analog outputs): V1.1: 4, 8, 12, 16 words (16 bits); V2.0: 4, 8, 12, 16 words (1 cycle); V2.0: 8, 16, 24, 32 words (2 cycles); V2.0: 16, 32, 48, 64 words (4 cycles); V2.0: 32, 64, 96, 128 words (8 cycles)
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts	24 VDC (–25 … +30 %); via power jumper contacts
Input current (typ.) at nominal load (24 V)	500 mA	500 mA
Current consumption – system supply (5 V)	300 mA	200 mA
Total current (system supply)	1700 mA	1800 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm	61.5 x 71.9 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC
Data sheet and further information, see:	wago.com/750-310	wago.com/750-325

Digital Input Modules

Housing design (750 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25 … 1.5 mm² / 22 … 16 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (750 Series), with ribbon cable connection	
Dimensions W x H x D	12 x 74.1 x 100 mm
Height from upper-edge of DIN-rail	66.9 mm
Connection technology	20-pole male connector + 2 x CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch











I/O System –
750 XTR Series

I/O System – 750 and 753 Series, Digital Input Modules
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PTC			☐			8-Channel Digital Input; PTC	750-1425			189
Functional Safety							See Section 5.8			
Ex i							See Section 5.9			
*This module is also available as a 750 XTR Series variant.							See Section 6			

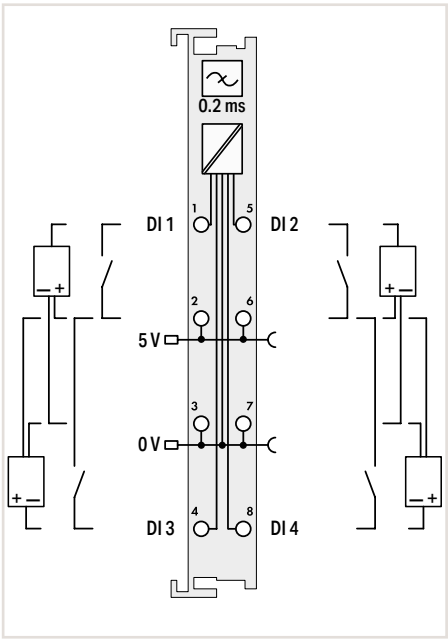
Digital Input; 5 (12) VDC; 0.2 ms

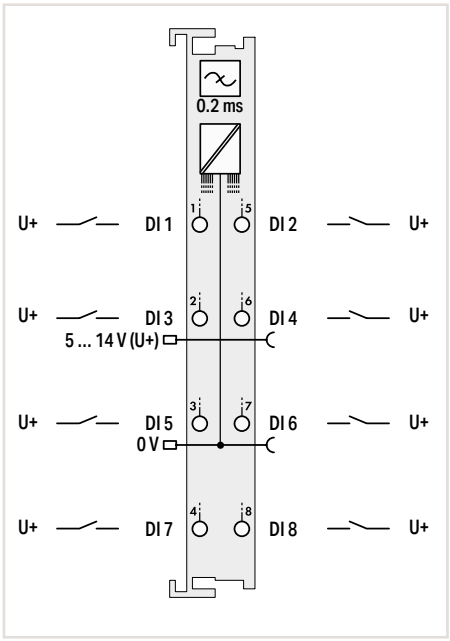


Figure: 750-414



Figure: 753-434





Item Description	4-Channel Digital Input; 5 VDC; 0.2 ms	8-Channel Digital Input; 5/12 VDC; 0.2 ms
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-414**	**753-434**
Order Text	4DI; 5 VDC; 0.2ms	8DI; 5/12 VDC; 0.2ms
Technical Data		
Pluggable connector		•
Number of digital inputs	4	8
Signal type	5 VDC	5 ... 14 VDC
Voltage range for signal (0)	0 ... 0.8 VDC	−3 VDC ... 0.2 x U_V
Voltage range for signal (1)	2.4 ... 5 VDC	0.5 U_V ... 1.1 U_V DC
Sensor connection	2 x (2-wire; 3-wire)*	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	0.2 ms	0.2 ms
Input current per channel for signal (1) typ.	0.05 mA	0.06 mA
Supply voltage (sensor)	5 VDC	
Supply voltage (field)	5 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	5 ... 14 VDC (−15 ... +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5 mA	4 mA
Data width (internal)	4 bits	8 bits
Isolation	500 V system/field	500 V system/field
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-414	wago.com/753-434

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

Notice:
An additional supply module must be added for operation with 5 VDC!

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

Notice:
An additional supply module must be added for 5–14 VDC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

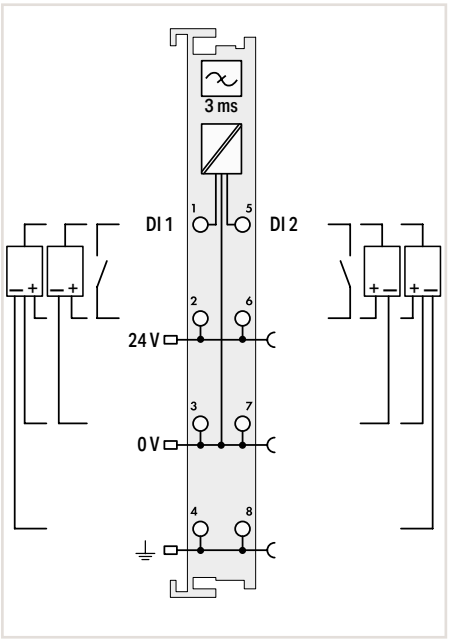
Digital Input; 24 VDC; 3 ms

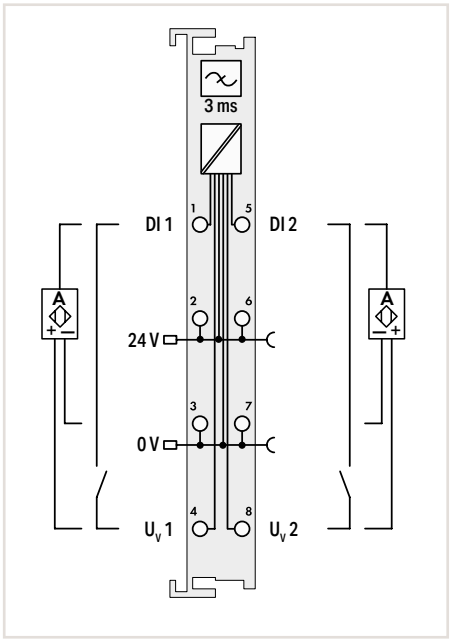


Figure: 750-400



Figure: 753-400





Item Description	2-Channel Digital Input; 24 VDC; 3 ms			2-Channel Digital Input; 24 VDC; 3 ms; Acknowledgement; Diagnostics	
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-400**	**750-400/025-000**	**753-400**	**750-418**	**753-418**
Order Text	2DI; 24 VDC; 3ms	2DI; 24 VDC; 3ms; T	2DI; 24 VDC; 3ms	2DI; 24 VDC; 3ms; Acknol; Diagn	2DI; 24 VDC; 3ms; Acknol; Diagn
Technical Data					
Pluggable connector			•		•
Number of digital inputs	2			2	
Signal type	24 VDC			24 VDC	
Voltage range for signal (0)	−3 … +5 VDC			−3 … +5 VDC	
Voltage range for signal (1)	15 … 30 VDC			15 … 30 VDC	
Sensor connection	2-wire; 3-wire; 4-wire			2-wire; 3-wire	
Input characteristic	High-side switching			High-side switching	
Input filter (digital)	3 ms			3 ms	
Input current per channel for signal (1) typ.	4.5 mA			3.7 mA	
Supply voltage (sensor)	24 VDC			24 VDC; short-circuit-protected; isolated channels	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	3.7 mA			12 mA	
Data width (internal)	2 bits			4 bits	
Diagnostics				Short circuit; active acknowledgement after error rectified	
Isolation	500 V system/field			500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-400		wago.com/753-400	wago.com/750-418	wago.com/753-418

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

5.2

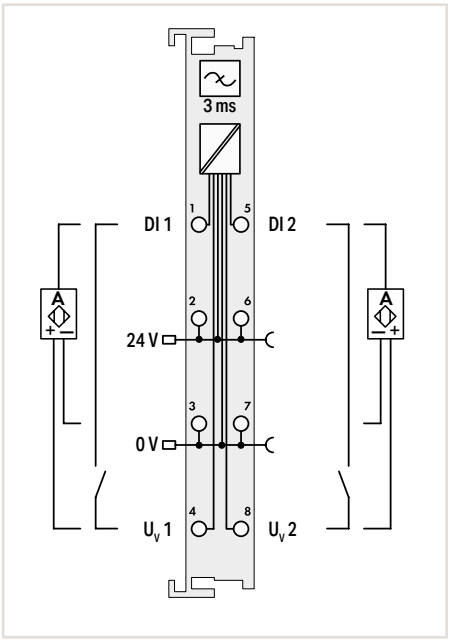
Digital Input; 24 VDC; 3 ms

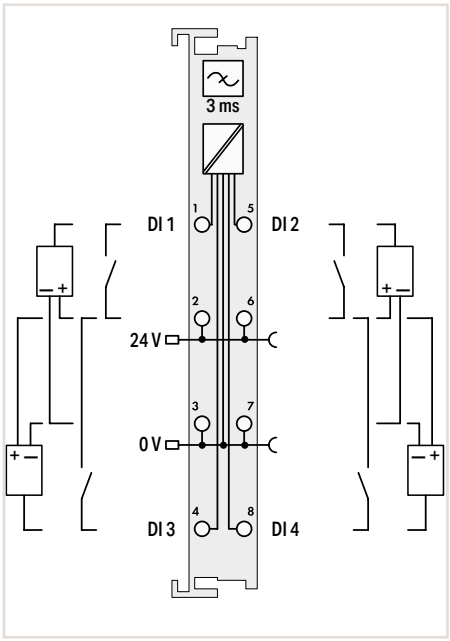


Figure: 750-421



Figure: 750-402





Item Description	2-Channel Digital Input; 24 VDC; 3 ms; Diagnostics		4-Channel Digital Input; 24 VDC; 3 ms		
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)
Item No.	**750-421**	**753-421**	**750-402**	**750-402/025-000**	**753-402**
Order Text	2DI; 24 VDC; 3ms; Diagn	2DI; 24 VDC; 3ms; Diagn	4DI; 24 VDC; 3ms	4DI; 24 VDC; 3ms; T	4DI; 24 VDC; 3ms
Technical Data					
Pluggable connector		•			•
Number of digital inputs	2		4		
Signal type	24 VDC		24 VDC		
Voltage range for signal (0)	−3 … +5 VDC		−3 … +5 VDC		
Voltage range for signal (1)	15 … 30 VDC		15 … 30 VDC		
Sensor connection	2-wire; 3-wire		2 x (2-wire; 3-wire)*		
Input characteristic	High-side switching		High-side switching		
Input filter (digital)	3 ms		3 ms		
Input current per channel for signal (1) typ.	3.7 mA		4.5 mA		
Supply voltage (sensor)	24 VDC; short-circuit-protected; isolated channels		24 VDC		
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	12 mA		7.5 mA		
Data width (internal)	4 bits		4 bits		
Diagnostics	Short circuit; automatic acknowledgement after error rectified				
Isolation	500 V system/field		500 V system/field		
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	−20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm		
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-421	wago.com/753-421	wago.com/750-402		wago.com/753-402

Accessories		Item No.			Item No.
Pluggable connector		**753-110**			**753-110**
Coding keys		**753-150**			**753-150**

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

5.2

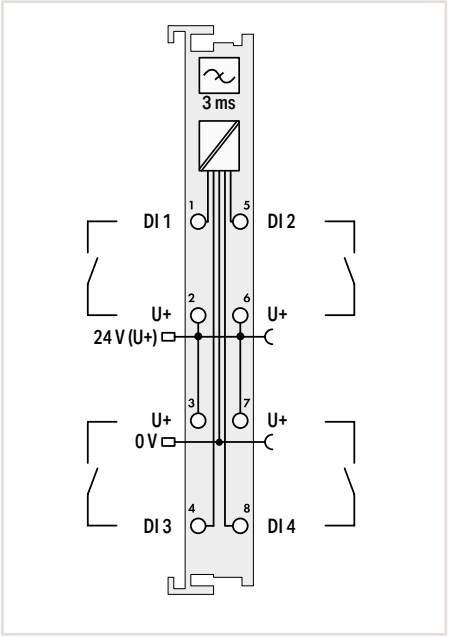
Digital Input; 24 VDC; 3 ms

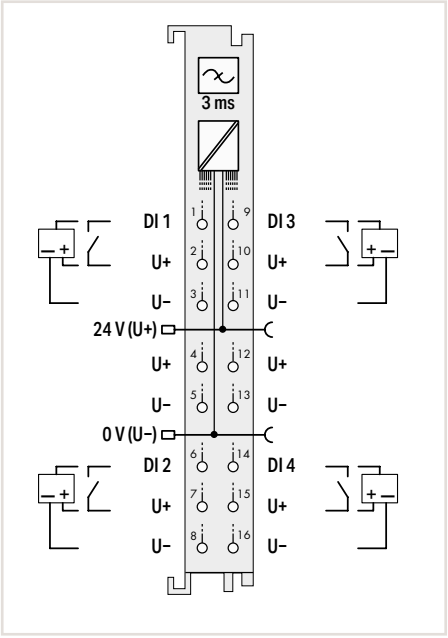


Figure: 750-432



Figure: 750-1420





Item Description	4-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection		4-Channel Digital Input; 24 VDC; 3 ms; 3-wire connection
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-432**	**753-432**	**750-1420**
Order Text	4DI; 24 VDC; 3ms; 2-wire	4DI; 24 VDC; 3ms; 2-wire	4DI; 24 VDC; 3ms; 3-wire
Technical Data			
Pluggable connector		•	
Number of digital inputs	4		4
Signal type	24 VDC		24 VDC
Voltage range for signal (0)	–3 … +5 VDC		–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC		11 … 30 VDC
Sensor connection	2-wire		3-wire
Input characteristic	High-side switching		High-side switching
Input filter (digital)	3 ms		3 ms
Input current per channel for signal (1) typ.	4.5 mA		4.5 mA
Supply voltage (sensor)	24 VDC		24 VDC
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5.5 mA		4 mA
Data width (internal)	4 bits		4 bits
Isolation	500 V system/field		500 V system/field
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-432	wago.com/753-432	wago.com/750-1420

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

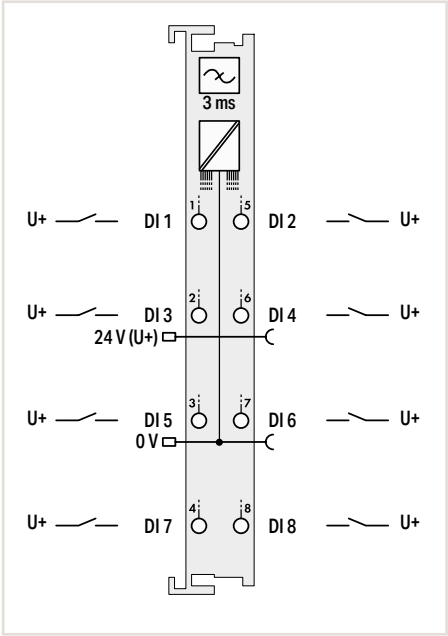
Digital Input; 24 VDC; 3 ms

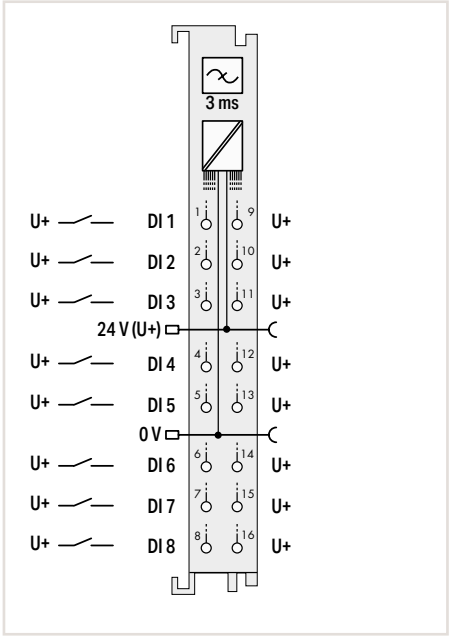


Figure: 750-430



Figure: 750-1415





Item Description	8-Channel Digital Input; 24 VDC; 3 ms			8-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-430**	**750-430/025-000**	**753-430**	**750-1415**
Order Text	8DI; 24 VDC; 3ms	8DI; 24 VDC; 3ms; T	8DI; 24 VDC; 3ms	8DI; 24 VDC; 3ms; 2-wire
Technical Data				
Pluggable connector			•	
Number of digital inputs	8			8
Signal type	24 VDC			24 VDC
Voltage range for signal (0)	−3 … +5 VDC			−3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC			11 … 30 VDC
Sensor connection	1-wire			2-wire
Input characteristic	High-side switching			High-side switching
Input filter (digital)	3 ms			3 ms
Input current per channel for signal (1) typ.	2.8 mA			4.5 mA
Supply voltage (sensor)				24 VDC
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	17 mA			6 mA
Data width (internal)	8 bits			8 bits
Isolation	500 V system/field			500 V system/field
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm		12 x 69 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-430		wago.com/753-430	wago.com/750-1415

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

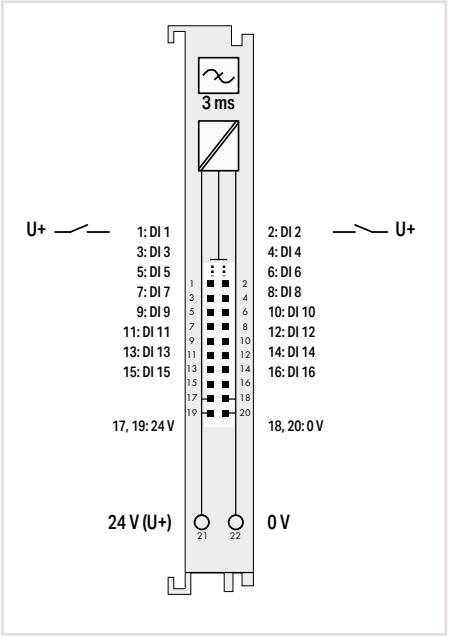
Digital Input; 24 VDC; 3 ms

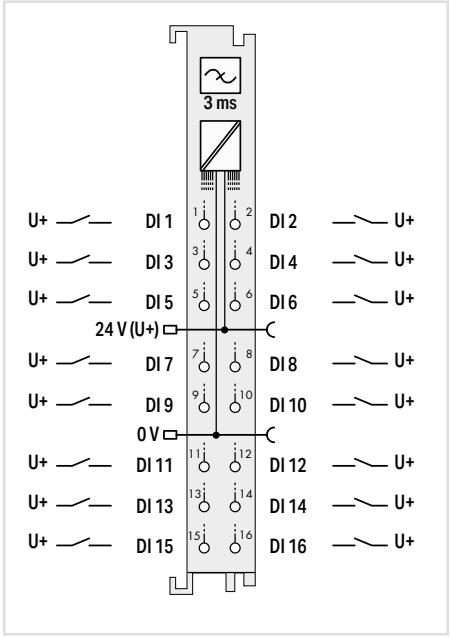


Figure: 750-1400



Figure: 750-1405





Item Description	16-Channel Digital Input; 24 VDC; 3 ms; Ribbon cable	16-Channel Digital Input; 24 VDC; 3 ms
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1400**	**750-1405**
Order Text	16DI; 24 VDC; 3ms; Ribbon Cable	16DI; 24 VDC; 3ms
Technical Data		
Number of digital inputs	16	16
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	−3 … +5 VDC	−3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC	15 … 30 VDC
Sensor connection	1-wire	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.3 mA	2.3 mA
Supply voltage (sensor)	24 VDC	
Supply voltage (field)	24 VDC (−25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA	25 mA
Data width (internal)	16 bits	16 bits
Isolation	500 V system/field	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1400	wago.com/750-1405

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

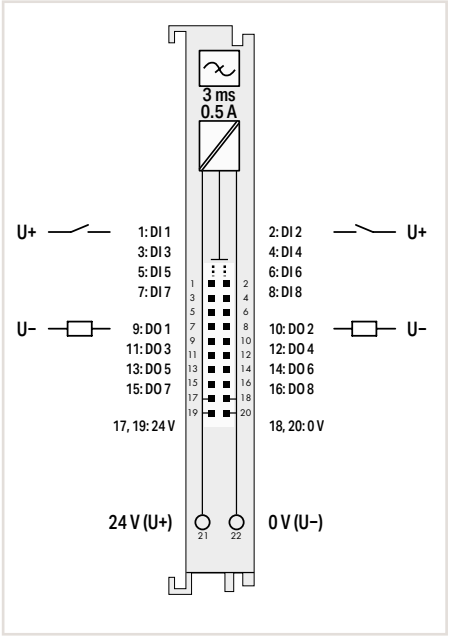
Digital Input/Output; 24 VDC

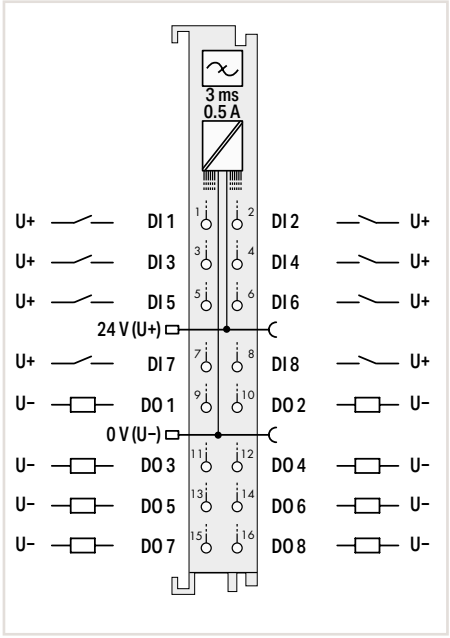


Figure: 750-1502



Figure: 750-1506





Item Description	8-Channel Digital Input/Output; 24 VDC; 0.5 A; Ribbon cable	8-Channel Digital Input/Output; 24 VDC; 0.5 A
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1502**	**750-1506**
Order Text	8DIO; 24 VDC; 0.5A; Ribbon Cable	8DIO; 24 VDC; 0.5A
Technical Data		
Number of digital inputs	8	8
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	–3 … +5 VDC	–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC	15 … 30 VDC
Sensor connection	1-wire	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.4 mA	2.4 mA
Number of digital outputs	8	8
Output characteristic	High-side switching	High-side switching
Output current per channel	0.5 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	1-wire	1-wire
Switching frequency (max.)	1 kHz	1 kHz
Current consumption, field supply (module with no external load)	16 mA	16 mA
Supply voltage (field)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	30 mA	30 mA
Data width (internal)	8-bit input and 8-bit output	8-bit input and 8-bit output
Isolation	500 V system/field	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1502	wago.com/750-1506

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

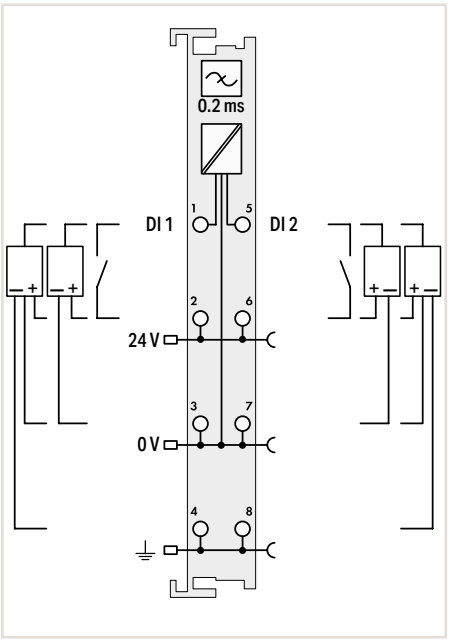
Digital Input; 24 VDC; 0.2 ms

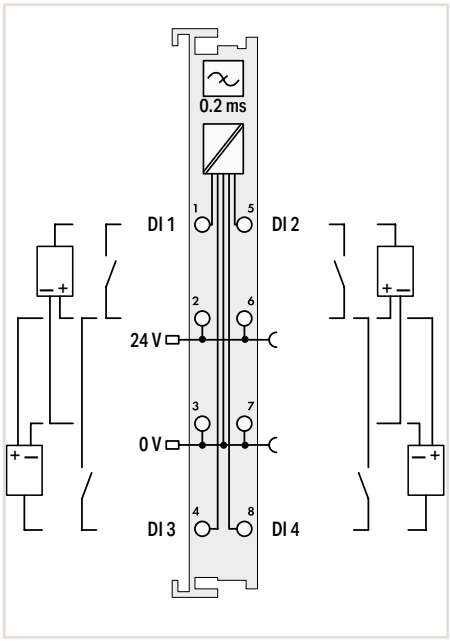


Figure: 750-401



Figure: 753-401





Item Description	2-Channel Digital Input; 24 VDC; 0.2 ms		4-Channel Digital Input; 24 VDC; 0.2 ms	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-401**	**753-401**	**750-403**	**753-403**
Order Text	2DI; 24 VDC; 0.2ms	2DI; 24 VDC; 0.2ms	4DI; 24 VDC; 0.2ms	4DI; 24 VDC; 0.2ms

Technical Data				
Pluggable connector		•		•
Number of digital inputs	2		4	
Signal type	24 VDC		24 VDC	
Voltage range for signal (0)	−3 … +5 VDC		−3 … +5 VDC	
Voltage range for signal (1)	15 … 30 VDC		15 … 30 VDC	
Sensor connection	2-wire; 3-wire; 4-wire		2 x (2-wire; 3-wire)*	
Input characteristic	High-side switching		High-side switching	
Input filter (digital)	0.2 ms		0.2 ms	
Input current per channel for signal (1) typ.	4.5 mA		4.5 mA	
Supply voltage (sensor)	24 VDC		24 VDC	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	3.7 mA		7.5 mA	
Data width (internal)	2 bits		4 bits	
Isolation	500 V system/field		500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-401	wago.com/753-401	wago.com/750-403	wago.com/753-403

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

5.2

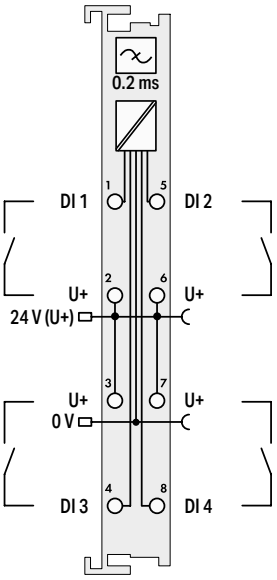
Digital Input; 24 VDC; 0.2 ms

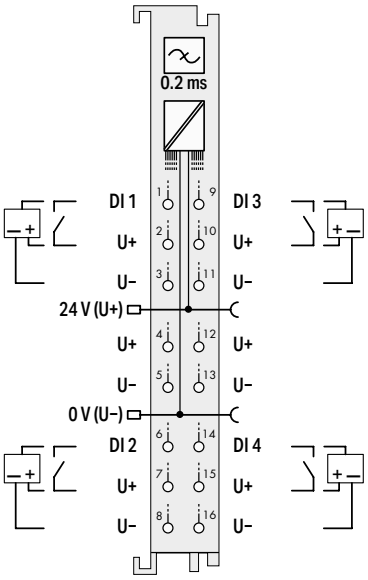


Figure: 750-433



Figure: 750-1421



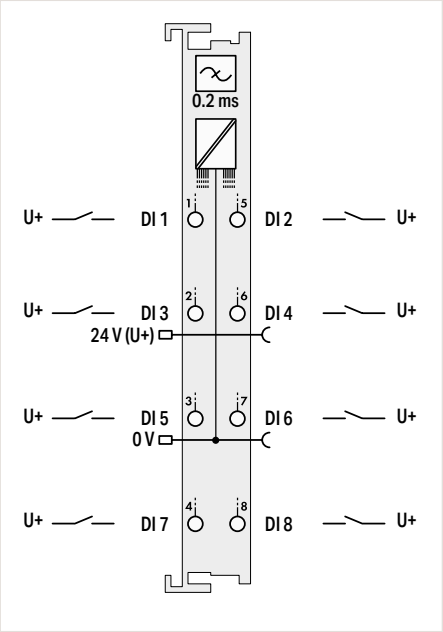


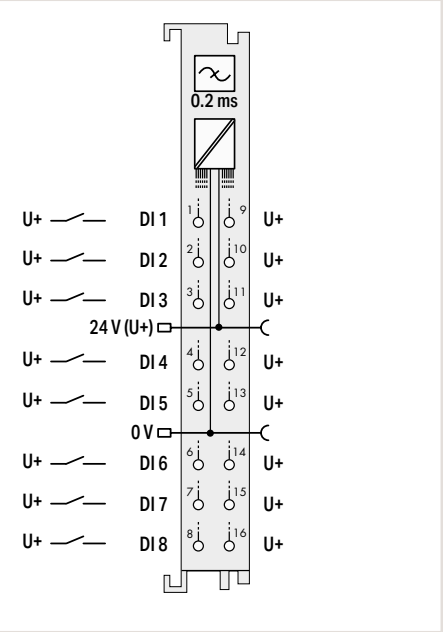
Item Description	4-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection		4-Channel Digital Input; 24 VDC; 0.2 ms; 3-wire connection
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-433**	**753-433**	**750-1421**
Order Text	4DI; 24 VDC; 0.2ms	4DI; 24 VDC; 0.2ms	4DI; 24 VDC; 0.2ms; 3-wire
Technical Data			
Pluggable connector		•	
Number of digital inputs	4		4
Signal type	24 VDC		24 VDC
Voltage range for signal (0)	–3 … +5 VDC		–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC		11 … 30 VDC
Sensor connection	2-wire		3-wire
Input characteristic	High-side switching		High-side switching
Input filter (digital)	0.2 ms		0.2 ms
Input current per channel for signal (1) typ.	4.5 mA		4.5 mA
Supply voltage (sensor)	24 VDC		24 VDC
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5.5 mA		4 mA
Data width (internal)	4 bits		4 bits
Isolation	500 V system/field		500 V system/field
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-433	wago.com/753-433	wago.com/750-1421

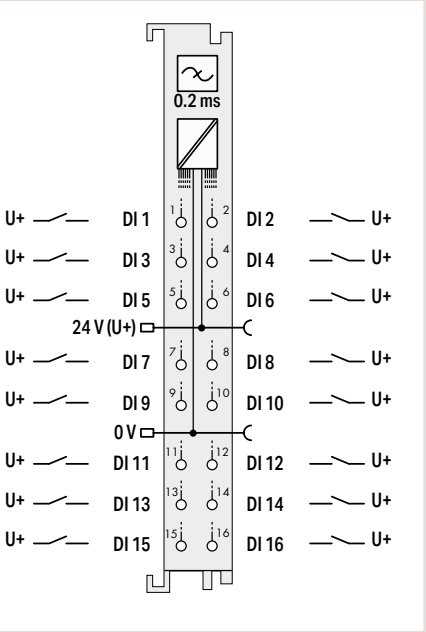
Accessories		Item No.	
Pluggable connector		**753-110**	
Coding keys		**753-150**	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com







8-Channel Digital Input; 24 VDC; 0.2 ms		8-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection	16-Channel Digital Input; 24 VDC; 0.2 ms
Standard	**Pluggable** (delivery without connector)	**Standard with 16 connectors**	**Standard with 16 connectors**
750-431	**753-431**	**750-1416**	**750-1406**
8DI; 24 VDC; 0.2ms	8DI; 24 VDC; 0.2ms	8DI; 24 VDC; 0.2ms; 2-wire	16DI; 24 VDC; 0.2ms
	•		
8		8	16
24 VDC		24 VDC	24 VDC
–3 … +5 VDC		–3 … +5 VDC	–3 … +5 VDC
15 … 30 VDC		11 … 30 VDC	15 … 30 VDC
1-wire		2-wire	1-wire
High-side switching		High-side switching	High-side switching
0.2 ms		0.2 ms	0.2 ms
2.8 mA		4.5 mA	2.3 mA
		24 VDC	
24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
17 mA		6 mA	25 mA
8 bits		8 bits	16 bits
500 V system/field		500 V system/field	500 V system/field
0 … +55 °C		0 … +55 °C	0 … +55 °C
12 x 67.8 x 100 mm	12 x 69 x 100 mm	12 x 69 x 100 mm	12 x 69 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-431	wago.com/753-431	wago.com/750-1416	wago.com/750-1406
	Item No.		
	753-110		
	753-150		

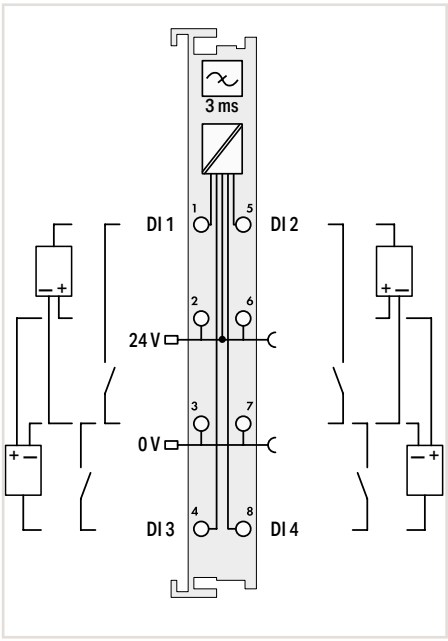
Digital Input; 24 VDC; 3 ms; Low-Side Switching

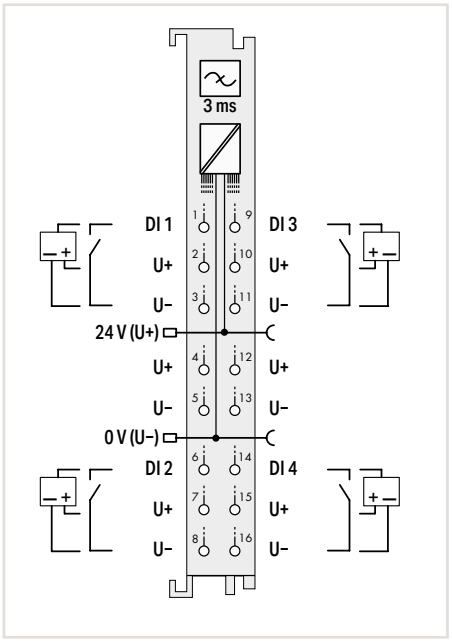


Figure: 750-408



Figure: 750-1422





Item Description	4-Channel Digital Input; 24 VDC; 3 ms; Low-side switching			4-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; 3-wire connection
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-408**	**750-408/025-000**	**753-408**	**750-1422**
Order Text	4DI; 24 VDC; 3ms; LSS	4DI; 24 VDC; 3ms; LSS; T	4DI; 24 VDC; 3ms; LSS	4DI; 24 VDC; 3ms; LSS; 3-wire
Technical Data				
Pluggable connector			•	
Number of digital inputs	4			4
Signal type	24 VDC			24 VDC
Voltage range for signal (0)	(U_V - 5 V) ... U_V DC			(U_V - 5 V) ... U_V DC
Voltage range for signal (1)	–3 VDC ... (U_V - 15 V)			–3 VDC ... (U_V - 15 V)
Sensor connection	2 x (2-wire; 3-wire)*			3-wire
Input characteristic	Low-side switching			Low-side switching
Input filter (digital)	3 ms			3 ms
Input current per channel for signal (0) typ.	7 mA			2.5 mA
Supply voltage (sensor)	24 VDC			24 VDC
Supply voltage (field)	24 VDC (–15 ... +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (–25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5 mA			7 mA
Data width (internal)	4 bits			4 bits
Isolation	500 V system/field			500 V system/field
Surrounding air temperature (operation)	0 ... +55 °C	–20 ... +60 °C	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-408		wago.com/753-408	wago.com/750-1422

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

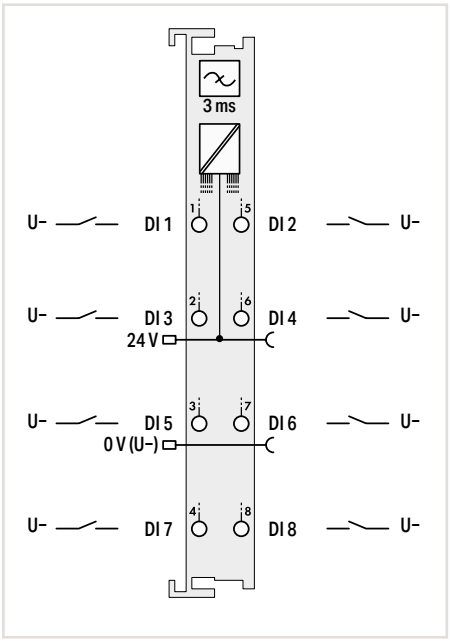
Digital Input; 24 VDC; 3 ms; Low-Side Switching

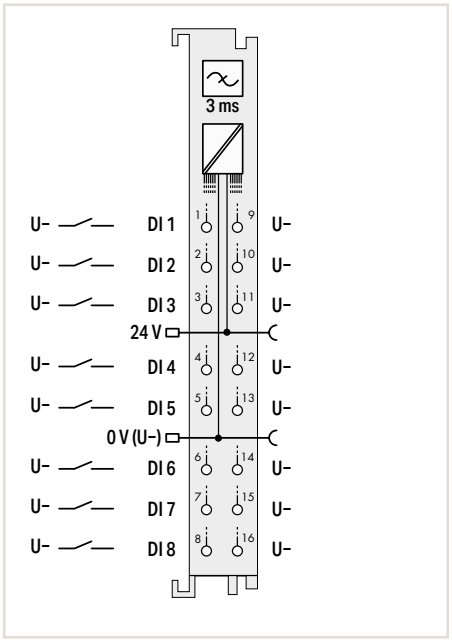


Figure: 750-436



Figure: 750-1417





Item Description	8-Channel Digital Input; 24 VDC; 3 ms; Low-side switching		8-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; 2-wire connection
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-436**	**753-436**	**750-1417**
Order Text	8DI; 24 VDC; 3ms; LSS	8DI; 24 VDC; 3ms; LSS	8DI; 24 VDC; 3ms; LSS; 2-wire
Technical Data			
Pluggable connector		•	
Number of digital inputs	8		8
Signal type	24 VDC		24 VDC
Voltage range for signal (0)	15 … 30 VDC		(U_V - 5 V) … U_V DC
Voltage range for signal (1)	−3 … +5 VDC		−3 VDC … (U_V - 15 V)
Sensor connection	1-wire		2-wire
Input characteristic	Low-side switching		Low-side switching
Input filter (digital)	3 ms		3 ms
Input current per channel for signal (0) typ.	2.8 mA		2.4 mA
Supply voltage (sensor)			24 VDC
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	13 mA		12 mA
Data width (internal)	8 bits		8 bits
Isolation	500 V system/field		500 V system/field
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 69 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-436	wago.com/753-436	wago.com/750-1417

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

5.2

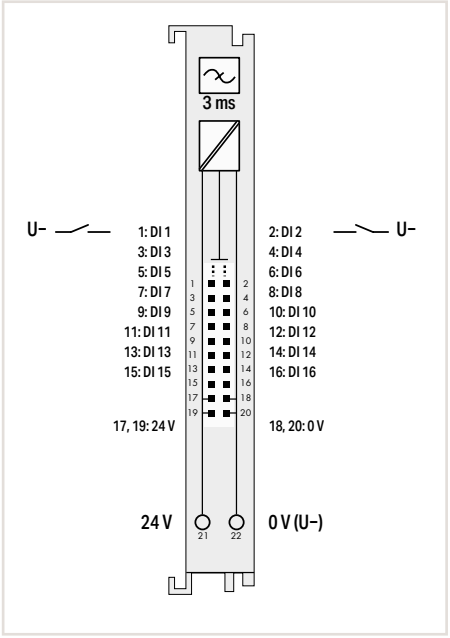
Digital Input; 24 VDC; 3 ms; Low-Side Switching

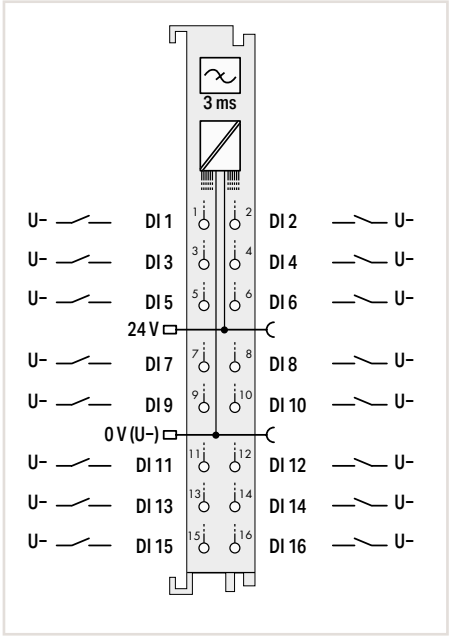


Figure: 750-1402



Figure: 750-1407





Item Description	16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; Ribbon cable	16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1402**	**750-1407**
Order Text	16DI; 24 VDC; 3ms; LSS; Ribbon Cable	16DI; 24 VDC; 3ms; LSS
Technical Data		
Number of digital inputs	16	16
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	(U_V - 5 V) ... U_V DC	(U_V - 5 V) ... U_V DC
Voltage range for signal (1)	−3 VDC ... (U_V - 15 V)	−3 VDC ... (U_V - 15 V)
Sensor connection	1-wire	1-wire
Input characteristic	Low-side switching	Low-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.3 mA	2.3 mA
Supply voltage (sensor)	24 VDC	
Supply voltage (field)	24 VDC (−25 ... +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (−25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA	25 mA
Data width (internal)	16 bits	16 bits
Isolation	500 V system/field	500 V system/field
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1402	wago.com/750-1407

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

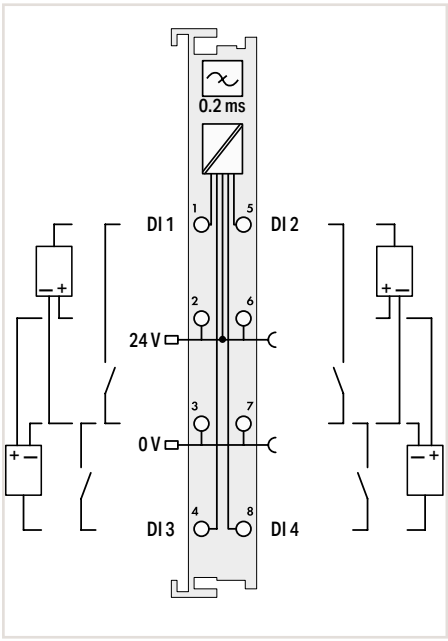
Digital Input; 24 VDC; 0.2 ms; Low-Side Switching

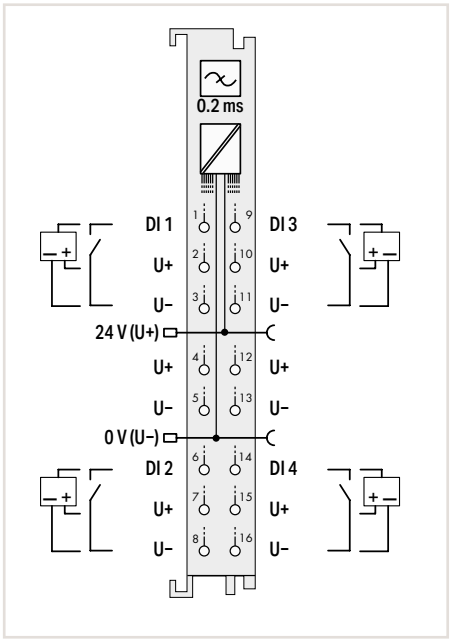


Figure: 750-409



Figure: 750-1423





Item Description	4-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching		4-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching; 3-wire connection
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-409**	**753-409**	**750-1423**
Order Text	4DI; 24 VDC; 0.2ms; LSS	4DI; 24 VDC; 0.2ms; LSS	4DI; 24 VDC; 0.2ms; LSS; 3-wire

Technical Data			
Pluggable connector		•	
Number of digital inputs	4		4
Signal type	24 VDC		24 VDC
Voltage range for signal (0)	(U_V - 5 V) ... U_V DC		(U_V - 5 V) ... U_V DC
Voltage range for signal (1)	−3 VDC ... (U_V - 15 V)		−3 VDC ... (U_V - 15 V)
Sensor connection	2 x (2-wire; 3-wire)*		3-wire
Input characteristic	Low-side switching		Low-side switching
Input filter (digital)	0.2 ms		0.2 ms
Input current per channel for signal (0) typ.	7 mA		2.5 mA
Supply voltage (sensor)	24 VDC		24 VDC
Supply voltage (field)	24 VDC (−25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5 mA		7 mA
Data width (internal)	4 bits		4 bits
Isolation	500 V system/field		500 V system/field
Surrounding air temperature (operation)	0 ... +55 °C		0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-409	wago.com/753-409	wago.com/750-1423

Accessories		Item No.	
Pluggable connector		753-110	
Coding keys		753-150	

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

5.2

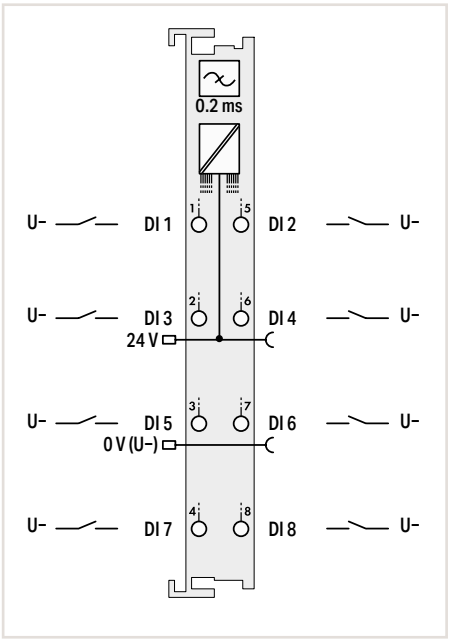
Digital Input; 24 VDC; 0.2 ms; Low-Side Switching

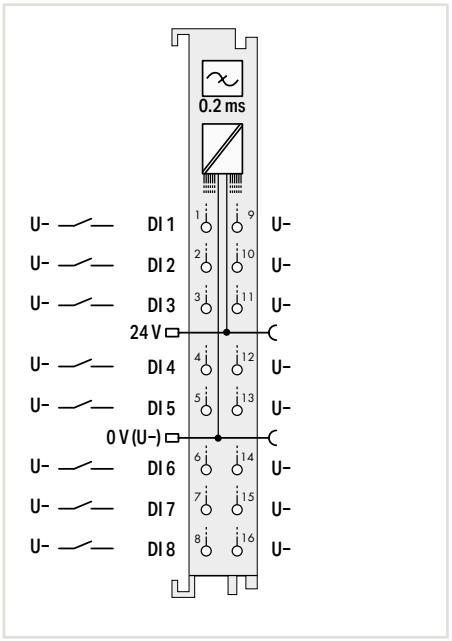


Figure: 750-437



Figure: 750-1418





Item Description	8-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching		8-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching; 2-wire connection
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard with 16 connectors**
Item No.	**750-437**	**753-437**	**750-1418**
Order Text	8DI; 24 VDC; 0.2ms; LSS	8DI; 24 VDC; 0.2ms; LSS	8DI; 24 VDC; 0.2ms; LSS; 2-wire

Technical Data			
Pluggable connector		•	
Number of digital inputs	8		8
Signal type	24 VDC		24 VDC
Voltage range for signal (0)	15 … 30 VDC		(U_V - 5 V) … U_V DC
Voltage range for signal (1)	−3 … +5 VDC		−3 VDC … (U_V - 15 V)
Sensor connection	1-wire		2-wire
Input characteristic	Low-side switching		Low-side switching
Input filter (digital)	0.2 ms		0.2 ms
Input current per channel for signal (0) typ.	2.8 mA		2.4 mA
Supply voltage (sensor)			24 VDC
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	13 mA		12 mA
Data width (internal)	8 bits		8 bits
Isolation	500 V system/field		500 V system/field
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 69 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-437	wago.com/753-437	wago.com/750-1418

Accessories		Item No.	
Pluggable connector		**753-110**	
Coding keys		**753-150**	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

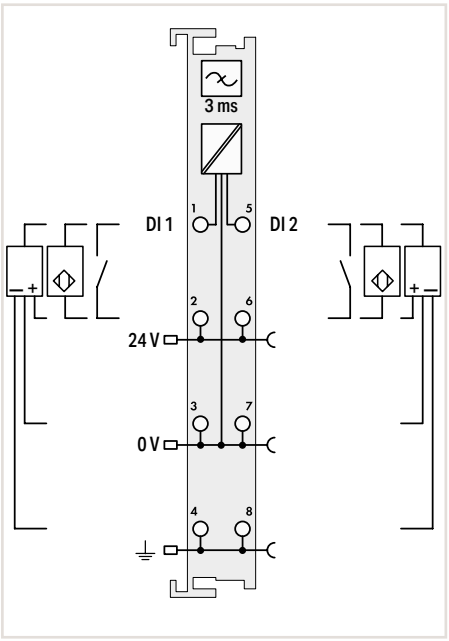
Digital Input; 24 VDC; Proximity Sensor

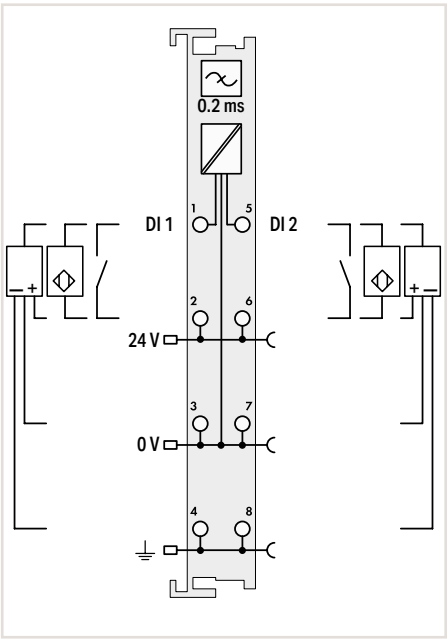


Figure: 750-410



Figure: 753-410





Item Description	2-Channel Digital Input; 24 VDC; 3 ms; Proximity sensor		2-Channel Digital Input; 24 VDC; 0.2 ms; Proximity sensor	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-410**	**753-410**	**750-411**	**753-411**
Order Text	2DI; 24 VDC; 3ms; Proxi Sensor	2DI; 24 VDC; 3ms; Proxi Sensor	2DI; 24 VDC; 0.2ms; Proxi Sensor	2DI; 24 VDC; 0.2ms; Proxi Sensor
Technical Data				
Pluggable connector		•		•
Number of digital inputs	2		2	
Signal type	24 VDC		24 VDC	
Voltage range for signal (0)	−3 … +5 VDC		−3 … +5 VDC	
Voltage range for signal (1)	15 … 30 VDC		15 … 30 VDC	
Sensor connection	2-wire; 3-wire; 4-wire		2-wire; 3-wire; 4-wire	
Input characteristic	High-side switching		High-side switching	
Input filter (digital)	3 ms		0.2 ms	
Input current per channel for signal (1) typ.	8 mA		8 mA	
Supply voltage (sensor)	24 VDC		24 VDC	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	2.5 mA		2.5 mA	
Data width (internal)	2 bits		2 bits	
Isolation	500 V system/field		500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-410	wago.com/753-410	wago.com/750-411	wago.com/753-411

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

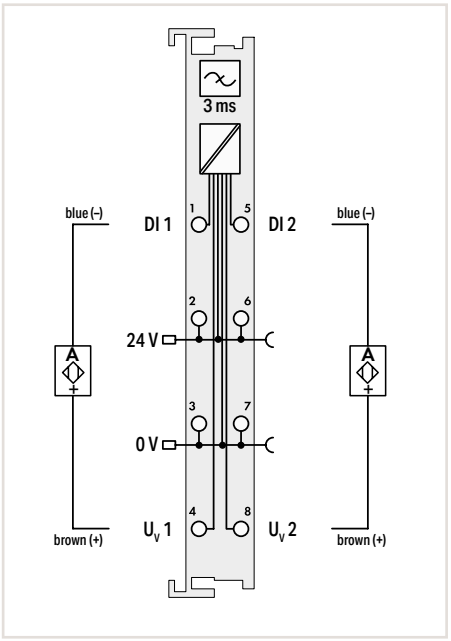
Digital Input; NAMUR



Figure: 750-425



Figure: 753-425



Item Description	2-Channel Digital Input; NAMUR	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-425**	**753-425**
Order Text	2DI; NAMUR	2DI; NAMUR
Technical Data		
Pluggable connector		•
Number of digital inputs	2	
Signal type	NAMUR	
Signal current (0) NAMUR	≤ 1.2 mA	
Signal current (1) NAMUR	≥ 2.1 mA	
Sensor connection	2-wire	
Input characteristic	High-side switching	
Input filter (digital)	3 ms	
Open-circuit voltage	8.2 VDC	
Diagnostics	Short circuit; wire break	
Supply voltage (sensor)	8.2 VDC; short-circuit-protected; isolated channels	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	5 mA	
Data width (internal)	4 bits	
Isolation	500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-425	wago.com/753-425

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

This digital input module receives control signals from NAMUR proximity sensors (per DIN EN 60947-5-6) from the field side. Each channel of the sensors is supplied with a short-circuit-protected voltage of 8.2 V. A short circuit or a line break is indicated in the process image (1 bit) and via the red LED.
The green LED indicates the input status:
• Signal current (0): LED off
• Signal current (1): LED on
Field and system levels are electrically isolated.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

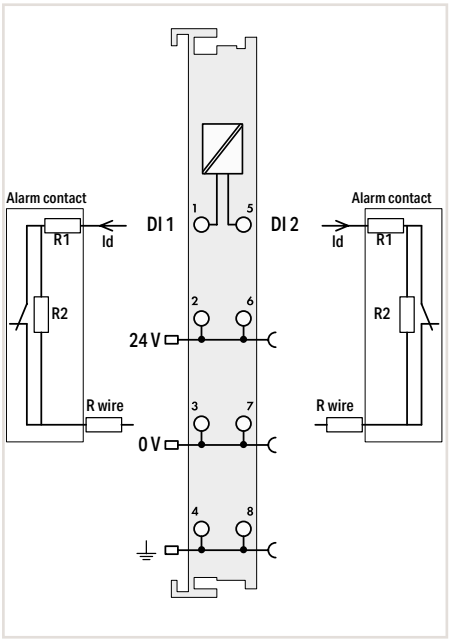
Digital Input; Intruder Detection



Figure: 750-424



Figure: 753-424



Item Description	2-Channel Digital Input; Intruder detection	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-424**	**753-424**
Order Text	2DI; Intruder Detection	2DI; Intruder Detection
Technical Data		
Pluggable connector		•
Number of digital inputs	2	
Signal type	Current loop (intruder detection)	
Sensor connection	2-wire	
Specific sensor properties	Alarm contact: R1 = 1.5 kΩ (±5 %); R2 = 2.2 kΩ (±5 %), Conductor resistance (R wire) max. 200 Ω	
Supply voltage (sensor)	24 VDC	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption, field supply (module with no external load)	16 mA	
Current consumption – system supply (5 V)	6 mA	
Data width (internal)	4 bits	
Isolation	500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-424	wago.com/753-424

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

This I/O module incorporates a current loop, which makes it possible to monitor alarm contacts (window contacts) with a fixed resistance ratio (R1, R2), for intruder detection.
The module indicates the status of the connected contact via LEDs and status bits in the process image.

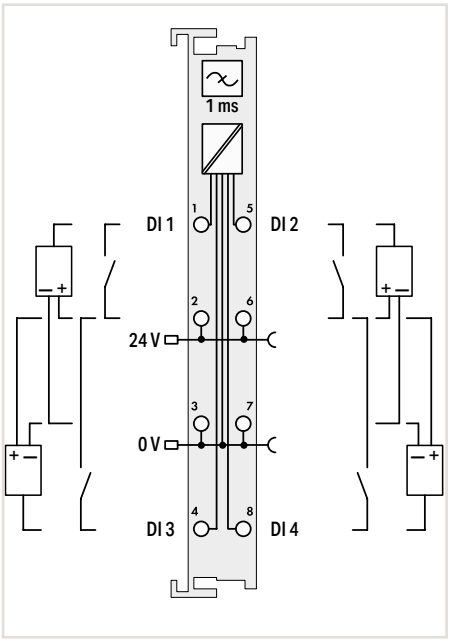
Digital Input; 24 VDC; Pulse Extension

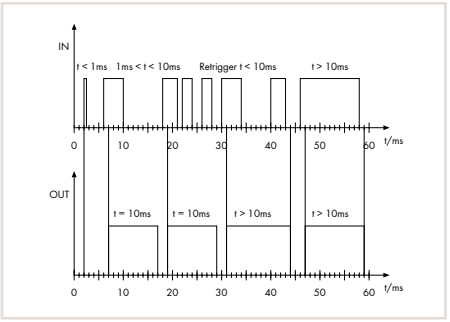


Figure: 750-422



Figure: 753-422





This I/O module extends input signals to at least 10 ms. Only signals ≥ 1 ms will be acquired.
Input signals with a pulse duration > 10 ms are not extended (without fall delay).
Field and system levels are electrically isolated.

Item Description	4-Channel Digital Input; 24 VDC; Pulse extension	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-422**	**753-422**
Order Text	4DI; 24 VDC; Pulse Extention	4DI; 24 VDC; Pulse Extention

Technical Data		
Pluggable connector		•
Number of digital inputs	4	
Signal type	24 VDC	
Voltage range for signal (0)	−3 … +5 VDC	
Voltage range for signal (1)	15 … 30 VDC	
Sensor connection	2 x (2-wire; 3-wire)*	
Input characteristic	High-side switching	
Input filter (digital)	1 ms	
Input current per channel for signal (1) typ.	4 mA	
Signal frequency (max.)	80 Hz	
Supply voltage (sensor)	24 VDC	
Supply voltage (field)	24 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	9 mA	
Data width (internal)	4 bits	
Isolation	500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-422	wago.com/753-422

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

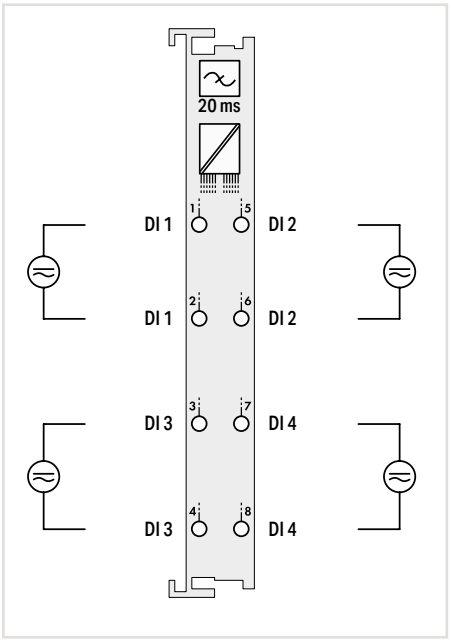
Digital Input; 24 VAC/DC

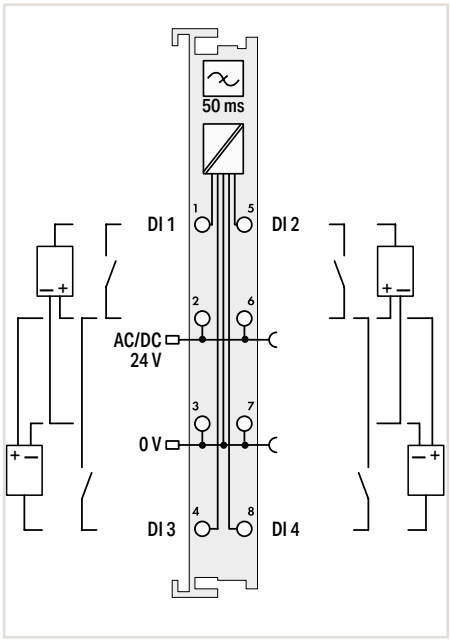


Figure: 750-415



Figure: 753-415





Item Description	4-Channel Digital Input; 24 VAC/DC; 20 ms		4-Channel Digital Input; 24 VAC/DC; 50 ms	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-415**	**753-415**	**750-423**	**753-423**
Order Text	4DI; 24 VAC/VDC; 20ms	4DI; 24 VAC/VDC; 20ms	4DI; 24 VAC/VDC; 50ms	4DI; 24 VAC/VDC; 50ms
Technical Data				
Pluggable connector		•		•
Number of digital inputs	4		4	
Signal type	24 VAC/DC		24 VAC/DC	
Voltage range for signal (0)	−3 … +5 VDC; 0 … 5 VAC		−3 … +5 VDC; 0 … 5 VAC	
Voltage range for signal (1)	11 … 30 VDC; 10 … 27 VAC		11 … 30 VDC; 10 … 27 VAC	
Sensor connection	2-wire		2 x (2-wire; 3-wire)*	
Input characteristic	High-side switching		High-side switching	
Input filter (digital)	20 ms		50 ms	
Input current (typ.) at 24 VDC	7.5 mA		7.5 mA	
Input current (typ.) at 24 VAC	9.5 mA		9.5 mA	
Supply voltage (sensor)			24 VAC/DC	
Supply voltage (field)			24 V AC/DC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	10 mA		10 mA	
Data width (internal)	4 bits		4 bits	
Isolation	500 V (system/field); 50 V (channel/channel)		500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-415	wago.com/753-415	wago.com/750-423	wago.com/753-423

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

Notice:
An additional supply module must be added for 24 VAC supply!

*A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors.

5.2

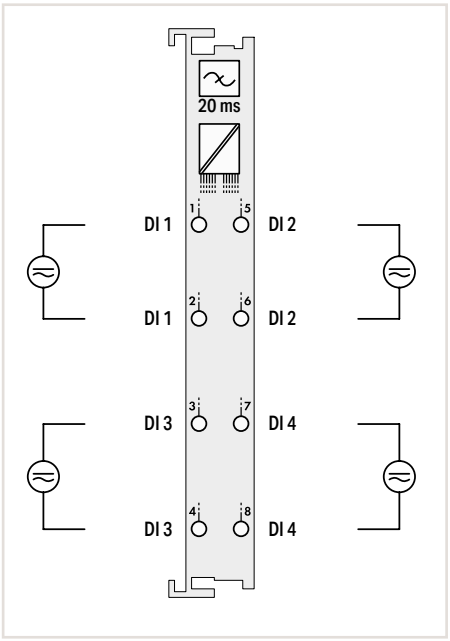
Digital Input; 42 VAC/DC



Figure: 750-428



Figure: 753-428



Item Description	4-Channel Digital Input; 24 VAC/DC; 20 ms	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-428**	**753-428**
Order Text	4DI; 42 VAC/VDC; 20ms	4DI; 42 VAC/VDC; 20ms

Technical Data		
Pluggable connector		•
Number of digital inputs	4	
Signal type	42 VAC/VDC	
Voltage range for signal (0)	−3 … +10 VDC; 0 … 10 VAC	
Voltage range for signal (1)	30 … 53 VDC; 30 … 53 VAC	
Sensor connection	2-wire	
Input characteristic	High-side switching	
Input filter (digital)	20 ms	
Input current (typ.) at 42 VDC	3.6 mA	
Input current (typ.) at 42 VAC	6 mA	
Current consumption – system supply (5 V)	5 mA	
Data width (internal)	4 bits	
Isolation	500 V (system/field); 500 V (channel/channel)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-428	wago.com/753-428

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

5.2

„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 518 or www.wago.com

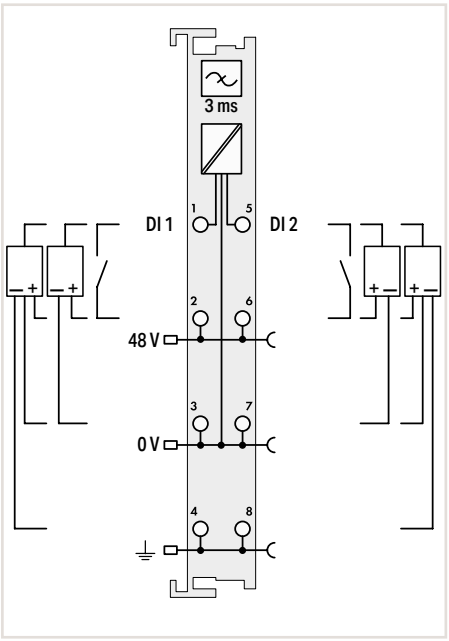
Digital Input; 48 VDC



Figure: 750-412



Figure: 753-412



Item Description	2-Channel Digital Input; 48 VDC; 3 ms	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-412**	**753-412**
Order Text	2DI; 48 VDC; 3ms	2DI; 48 VDC; 3ms

Technical Data		
Pluggable connector		•
Number of digital inputs	2	
Signal type	48 VDC	
Voltage range for signal (0)	−6 … +10 VDC	
Voltage range for signal (1)	34 … 60 VDC	
Sensor connection	2-wire; 3-wire; 4-wire	
Input characteristic	High-side switching	
Input filter (digital)	3 ms	
Input current per channel for signal (1) typ.	3.8 mA	
Supply voltage (sensor)	48 VDC	
Supply voltage (field)	48 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	2.5 mA	
Data width (internal)	2 bits	
Isolation	500 V system/field	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-412	wago.com/753-412

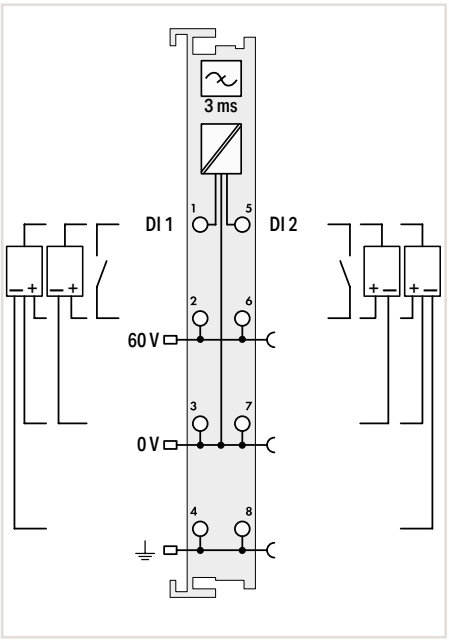
Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

Notice:
An additional supply module must be added for 48 VDC supply!

5.2

Digital Input; 60 VDC





Item Description	2-Channel Digital Input; 60 VDC; 3 ms
Version	**Pluggable** (delivery without connector)
Item No.	**753-429**
Order Text	2DI; 60 VDC; 3ms

Technical Data	
Pluggable connector	●
Number of digital inputs	2
Signal type	60 VDC
Voltage range for signal (0)	−7.5 … +12 VDC
Voltage range for signal (1)	44 … 75 VDC
Sensor connection	2-wire; 3-wire; 4-wire
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.9 mA
Supply voltage (sensor)	60 VDC
Supply voltage (field)	60 VDC (−20 … +25 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	2.5 mA
Data width (internal)	2 bits
Isolation	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/753-429

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

Notice:
An additional supply module must be added for 60 VDC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

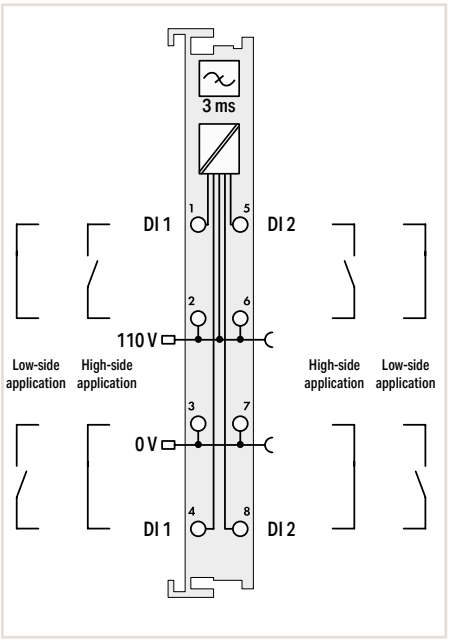
Digital Input, 110 VDC or 220 VDC

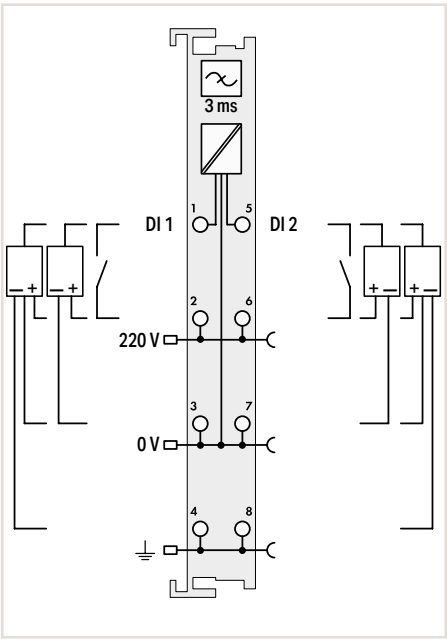


Figure: 750-427



Figure: 750-407





Item Description	2-Channel Digital Input; 110 VDC		2-Channel Digital Input; 220 VDC
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**
Item No.	**750-427**	**753-427**	**750-407**
Order Text	2DI; 110 VDC	2DI; 110 VDC	2DI; 220 VDC
Technical Data			
Pluggable connector		•	
Number of digital inputs	2		2
Signal type	110 VDC		220 VDC
Voltage range for signal (0)	−14 … +50 VDC		−3 … +100 VDC
Voltage range for signal (1)	−70 … +143 VDC		160 … 286 VDC
Sensor connection	2-wire		2-wire; 3-wire; 4-wire
Input characteristic	High-side/low-side switching; configurable		High-side switching
Input filter (digital)	3 ms		3 ms
Input current per channel for signal (1) typ.	2.5 mA		1.2 mA
Supply voltage (sensor)	110 VDC		220 VDC
Supply voltage (field)	110 VDC (−20 … +25 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		220 VDC (−20 … +25 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	2.5 mA		5 mA
Data width (internal)	2 bits		2 bits
Isolation	1500 V (system/field)		2500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; cULus OrdLoc
Data sheet and further information, see:	wago.com/750-427	wago.com/753-427	wago.com/750-407

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

Notice:
An additional supply module must be added for 110 VDC supply!

Notice:
An additional supply module must be added for 220 VDC supply!

5.2

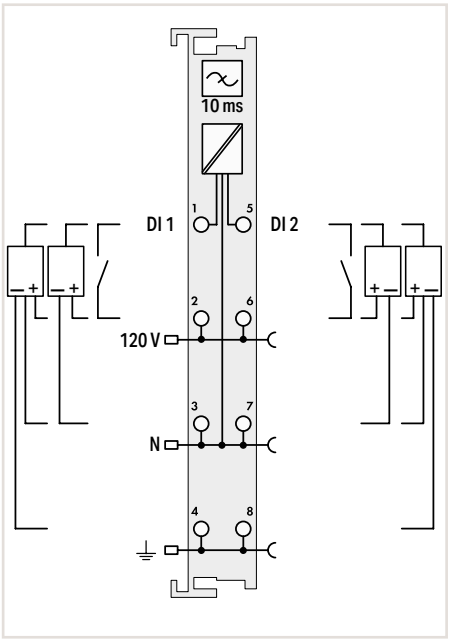
Digital Input; 120 or 230 VAC

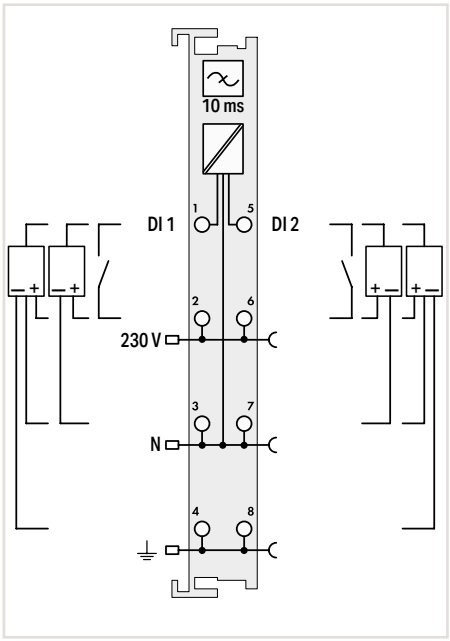


Figure: 750-406



Figure: 753-406





Item Description	2-Channel Digital Input; 120 VAC		2-Channel Digital Input; 230 VAC	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-406**	**753-406**	**750-405**	**753-405**
Order Text	2DI; 120 VAC	2DI; 120 VAC	2DI; 230 VAC	2DI; 230 VAC
Technical Data				
Pluggable connector		•		•
Number of digital inputs	2		2	
Signal type	120 VAC		230 VAC	
Voltage range for signal (0)	0 … 20 VAC		0 … 40 VAC	
Voltage range for signal (1)	79 VAC … 1.1 U_N		164 VAC … 1.1 U_N	
Sensor connection	2-wire; 3-wire; 4-wire		2-wire; 3-wire; 4-wire	
Input characteristic	High-side switching		High-side switching	
Input filter (digital)	10 ms		10 ms	
Signal frequency (min./max.)	45 Hz/65 Hz		45 Hz/65 Hz	
Input current per channel for signal (1) typ.	4.5 mA		6.5 mA	
Supply voltage (sensor)	120 VAC		230 VAC	
Supply voltage (field)	120 VAC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		230 VAC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	2 mA		2 mA	
Data width (internal)	2 bits		2 bits	
Isolation	1500 V (system/field)		1500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-406	wago.com/753-406	wago.com/750-405	wago.com/753-405

Accessories		Item No.		Item No.
Pluggable connector		**753-110**		**753-110**
Coding keys		**753-150**		**753-150**

Notice:
An additional supply module must be added for 120 VAC supply!

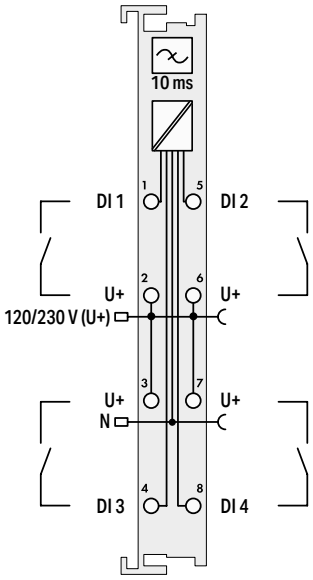
Notice:
An additional supply module must be added for 230 VAC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518 or www.wago.com

Digital Input; 120 / 230 VAC





Item Description	4-Channel Digital Input; 120/230 VAC
Version	**Pluggable** (delivery without connector)
Item No.	**753-440**
Order Text	4DI; 120/230 VAC

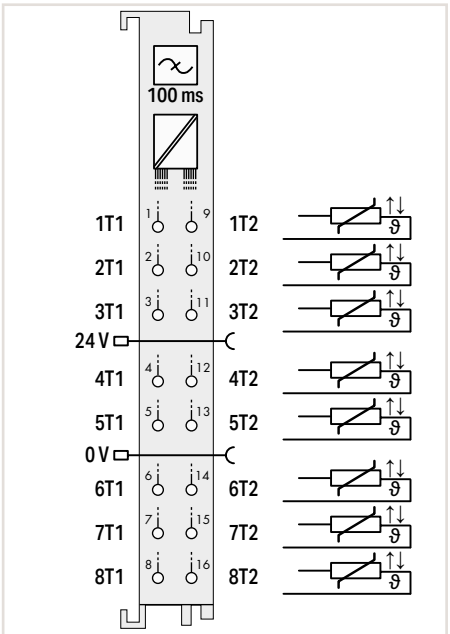
Technical Data	
Pluggable connector	•
Number of digital inputs	4
Signal type	120 (230) VAC
Voltage range for signal (0)	0 ... 40 VAC
Voltage range for signal (1)	79 ... 230 VAC (–15 ... +10 %)
Sensor connection	2-wire
Input characteristic	High-side switching
Input filter (digital)	10 ms
Signal frequency (min./max.)	45 Hz/65 Hz
Overvoltage protection	275 VAC (varistor)
Input current (typ.) at 120 VAC	2.3 mA
Input current (typ.) at 230 VAC	4.7 mA
Supply voltage (sensor)	230 VAC
Supply voltage (field)	90 ... 230 VAC (–15 ... +10 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	15 mA
Data width (internal)	4 bits
Isolation	1500 V (system/field)
Surrounding air temperature (operation)	0 ... +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/753-440

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

Notice:
An additional supply module must be added for 120/230 VAC supply!

Digital Input; PTC





Item Description	**8-Channel Digital Input; PTC**
Version	**Standard with 16 connectors**
Item No.	**750-1425**
Order Text	8DI; PTC

Technical Data

Number of digital inputs	8
Signal type	PTC; Thermistor per DIN 44081/44082
Sensor	Sensor voltage: ≤ 2.5 V / ≤ 7.5 V (dependent on resistance value); Number of PTCs per channel: Max. 6 in a series; Operating value (status bit "1" to "0"): R ≥ 3 kΩ; Return value (status bit "0" to "1"): ≤ 1.5 kΩ; Hysteresis: R = 1.5 kΩ; Wire break value: R ≥ 8 kΩ; Short circuit value: R ≤ 20 Ω
Input filter (digital)	100 ms
Output current (max.)	0.001 A
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	52 mA
Data width (internal)	16 bits
Isolation	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1425

The PTC module is used to connect PTC thermistors according to DIN 44081 and DIN 44082 for thermal monitoring (overload protection) of motors, machinery, bearings, etc. Up to six PTC thermistors can be connected in series per channel. If the nominal response temperature (ϑnat) is exceeded, a bit is set in the module's input process image. In addition, wire breaks and short circuits are monitored for each channel. If an error occurs, a bit is also set in the input process image. One green and one red status LED per channel indicate an overtemperature or wiring errors.

5.2

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

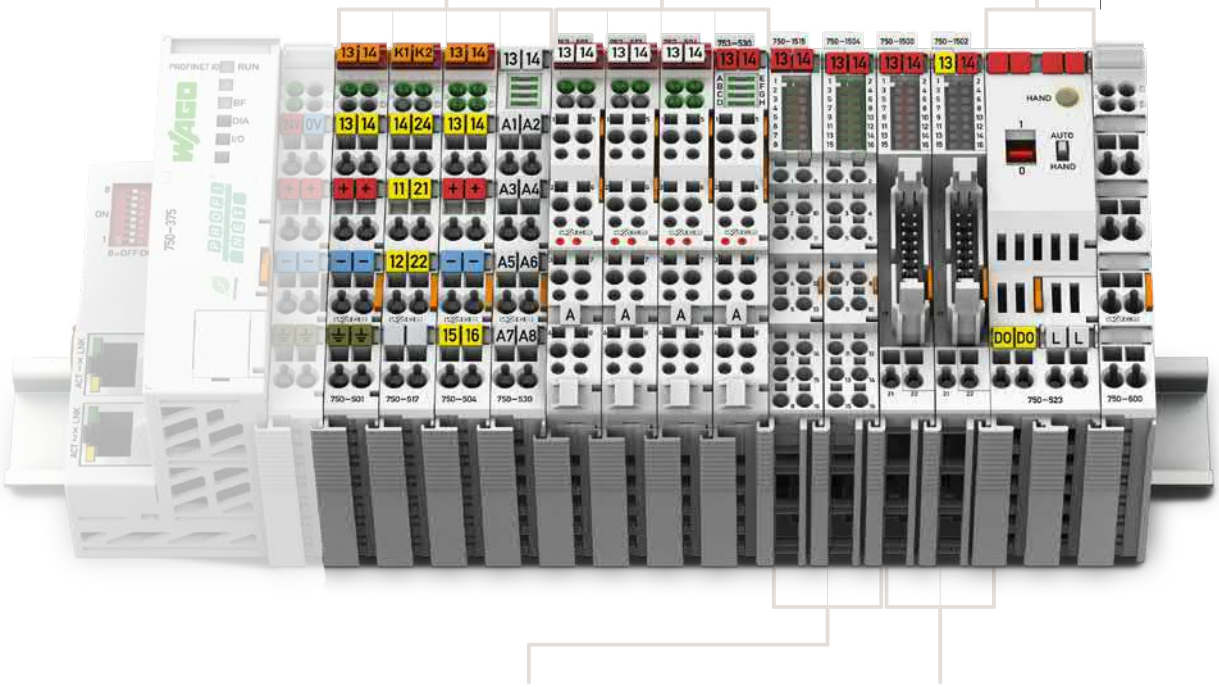
„ Approvals and corresponding ratings, see page 518 or www.wago.com

Digital Output Modules

Housing design (750 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch

Specialty housing (750 Series)	
Dimensions W x H x D	24 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	60.6 mm



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25 … 1.5 mm² / 22 … 16 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (750 Series), with ribbon cable connection	
Dimensions W x H x D	12 x 74.1 x 100 mm
Height from upper-edge of DIN-rail	66.9 mm
Connection technology	20-pole male connector + 2 x CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch







PROFIsafe

I/O System –
750 XTR Series

I/O System – 750 and 753 Series, Digital Output Modules
Contents

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		■					2-Channel Relay Output; 250 VAC; 2.0 A; 2 make contacts	750-512		753-512	208
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		■					2-Channel Relay Output; 250 VAC; 2.0 A; Potential-free; 2 make contacts; without power jumper contacts	750-513/000-001		753-513/000-001	209
			■				4-Channel Relay Output; 250 VAC; 2.0 A; Potential-free; 4 make contacts	750-515			210
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Functional Safety								See Section 5.8			
Ex i								See Section 5.9			
*This module is also available as a 750 XTR Series variant.								See Section 6			

5.3 DO

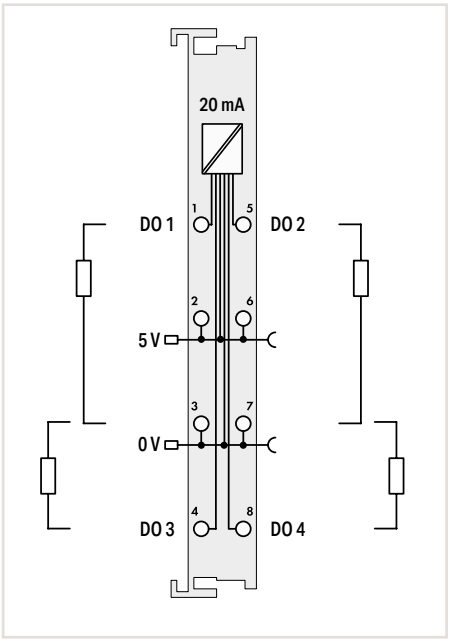
Digital Output; 5 or 12 VDC

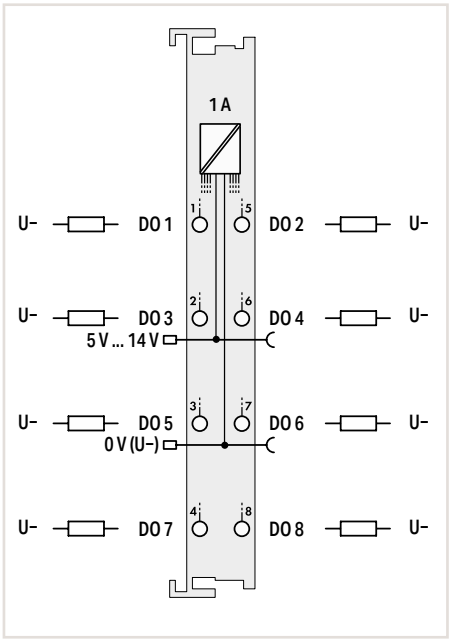


Figure: 750-519



Figure: 753-534





Item Description	4-Channel Digital Output; 5 VDC; 20 mA	8-Channel Digital Output; 12 VDC; 1 A	
Version	**Standard**	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-519**	**750-534**	**753-534**
Order Text	4DO; 5 VDC; 20mA	8DO; 12 VDC; 1A	8DO; 12 VDC; 1A
Technical Data			
Pluggable connector			•
Number of digital outputs	4	8	
Signal type	5 VDC	5 ... 14 VDC	
Output characteristic	High-side switching	High-side switching	
Output current per channel	20 mA; short-circuit-protected	1 A; short-circuit-protected	
Load type	Resistive; inductive; lamp load	Resistive; inductive	
Actuator connection	2 x (2-wire)*	1-wire	
Switching frequency (max.)	5 kHz	2 kHz	
Supply voltage (field)	5 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	14 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	10 mA	20 mA	
Data width (internal)	4 bits	8 bits	
Isolation	500 V (system/field)	500 V (system/field)	
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 67.8 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; OrdLoc/HazLoc	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-519	wago.com/750-534	wago.com/753-534

Accessories			Item No.
Pluggable connector			753-110
Coding keys			753-150

Notice:
An additional supply module must be added for 5 VDC supply!

*A suitable field side connection module (e.g., 750-614) must also be used to connect other actuators.

Notice:
An additional supply module must be added for 5–14 VDC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

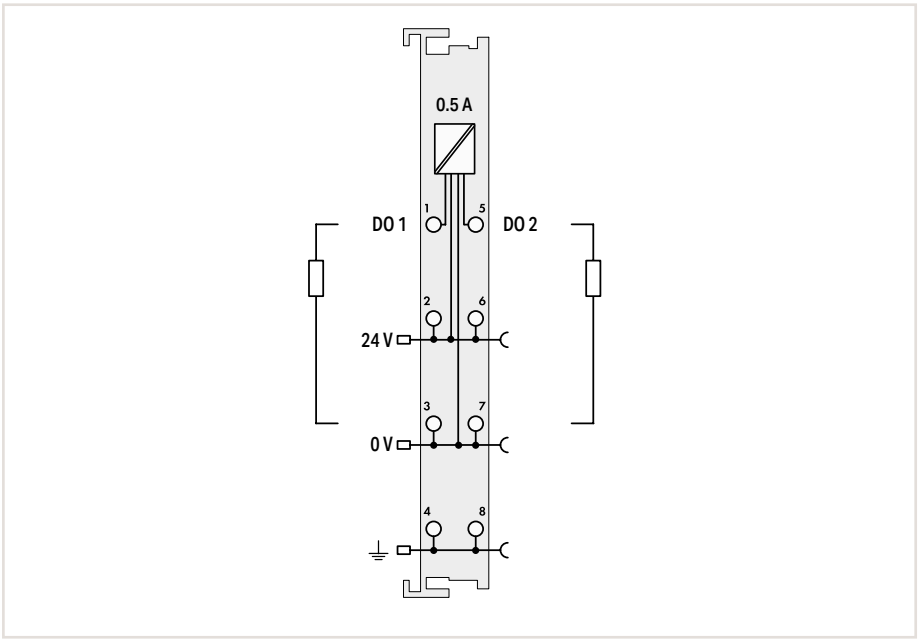
Digital Output; 24 VDC



Figure: 750-501



Figure: 753-501



Item Description	2-Channel Digital Output; 24 VDC; 0.5 A			
Version	**Standard**	**Interference-free**	**Pluggable** (delivery without connector)	**Pluggable** (delivery without connector); **Interference-free**
Item No.	**750-501**	**750-501/000-800**	**753-501**	**753-501/000-800**
Order Text	2DO; 24 VDC; 0.5A	2DO; 24 VDC; 0.5A; IF	2DO; 24 VDC; 0.5A	2DO; 24 VDC; 0.5A; IF
Technical Data				
Pluggable connector			•	
Interference-free for use in safety functions		•		•
Number of digital outputs	2			
Signal type	24 VDC			
Output characteristic	High-side switching			
Output current per channel	0.5 A; short-circuit-protected			
Load type	Resistive; inductive; lamp load			
Actuator connection	2-wire; 3-wire; 4-wire			
Switching frequency (max.)	5 kHz			
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	3.5 mA			
Data width (internal)	2 bits			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC, Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-501		wago.com/753-501	

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

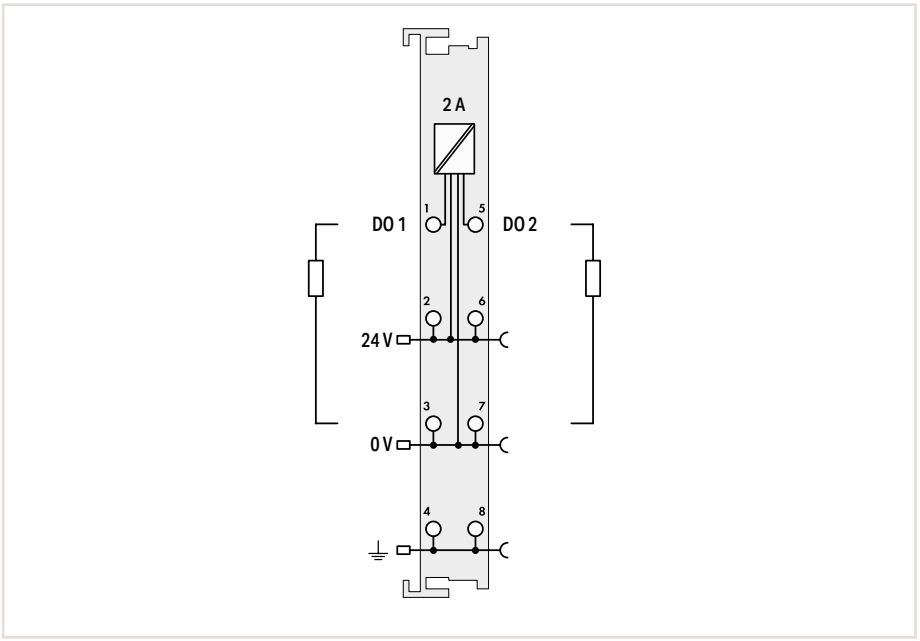
Digital Output; 24 VDC



Figure: 750-502



Figure: 753-502



Item Description	2-Channel Digital Output; 24 VDC; 2.0 A			
Version	**Standard**	**Interference-free**	**Pluggable** (delivery without connector)	**Pluggable** (delivery without connector); **Interference-free**
Item No.	**750-502**	**750-502/000-800**	**753-502**	**753-502/000-800**
Order Text	2DO; 24 VDC; 2A	2DO; 24 VDC; 2A; IF	2DO; 24 VDC; 2A	2DO; 24 VDC; 2A; IF
Technical Data				
Pluggable connector			•	
Interference-free for use in safety functions		•		•
Number of digital outputs	2			
Signal type	24 VDC			
Output characteristic	High-side switching			
Output current per channel	2 A; short-circuit-protected			
Load type	Resistive; inductive; lamp load			
Actuator connection	2-wire; 3-wire; 4-wire			
Switching frequency (max.)	2.5 kHz			
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	3.5 mA			
Data width (internal)	2 bits			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-502		wago.com/753-502	

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

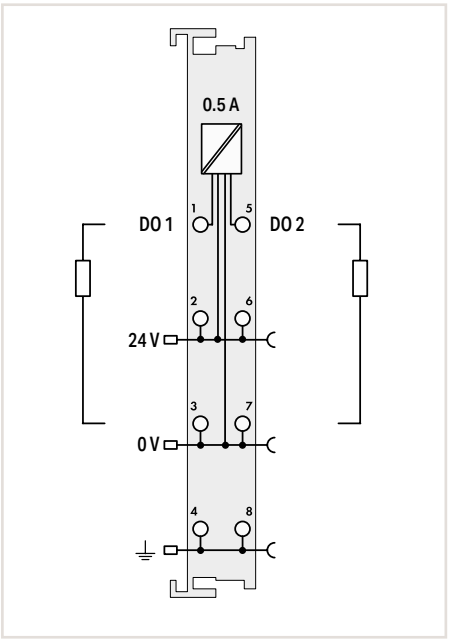
Digital Output; 24 VDC

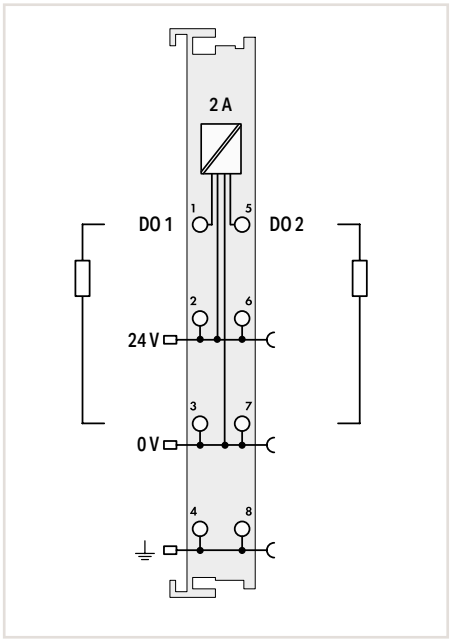


Figure: 750-506



Figure: 753-506





Item Description	2-Channel Digital Output; 24 VDC; 0.5 A; Diagnostics			2-Channel Digital Output; 24 VDC; 2.0 A; Diagnostics		
Version	**Standard**	**Interference-free**	**Pluggable** (delivery without connector)	**Standard**	**Interference-free**	**Pluggable** (delivery without connector)
Item No.	**750-506**	**750-506/000-800**	**753-506**	**750-508**	**750-508/000-800**	**753-508**
Order Text	2DO; 24 VDC; 0.5A; Diagn	2DO; 24 VDC; 0.5A; IF; Diagn	2DO; 24 VDC; 0.5A; Diagn	2DO; 24 VDC; 2A; Diagn	2DO; 24 VDC; 2A; IF; Diagn	2DO; 24 VDC; 2A; Diagn
Technical Data						
Pluggable connector			•			•
Interference-free for use in safety functions		•			•	
Number of digital outputs	2			2		
Signal type	24 VDC			24 VDC		
Output characteristic	High-side switching			High-side switching		
Output current per channel	0.5 A; short-circuit-protected			2 A; short-circuit-protected		
Load type	Resistive; inductive; lamp load			Resistive; inductive; lamp load		
Actuator connection	2-wire; 3-wire; 4-wire			2-wire; 3-wire; 4-wire		
Switching frequency (max.)	5 kHz			1 kHz		
Diagnostics	Open circuit; short circuit; overload			Open circuit; short circuit; overload		
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	15 mA			14 mA		
Data width (internal)	2-bit input; 2-bit output			2-bit input; 2-bit output		
Isolation	500 V (system/field)			500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm		
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-506		wago.com/753-506	wago.com/750-508		wago.com/753-508

Accessories	Item No.	Item No.
Pluggable connector	753-110	753-110
Coding keys	753-150	753-150

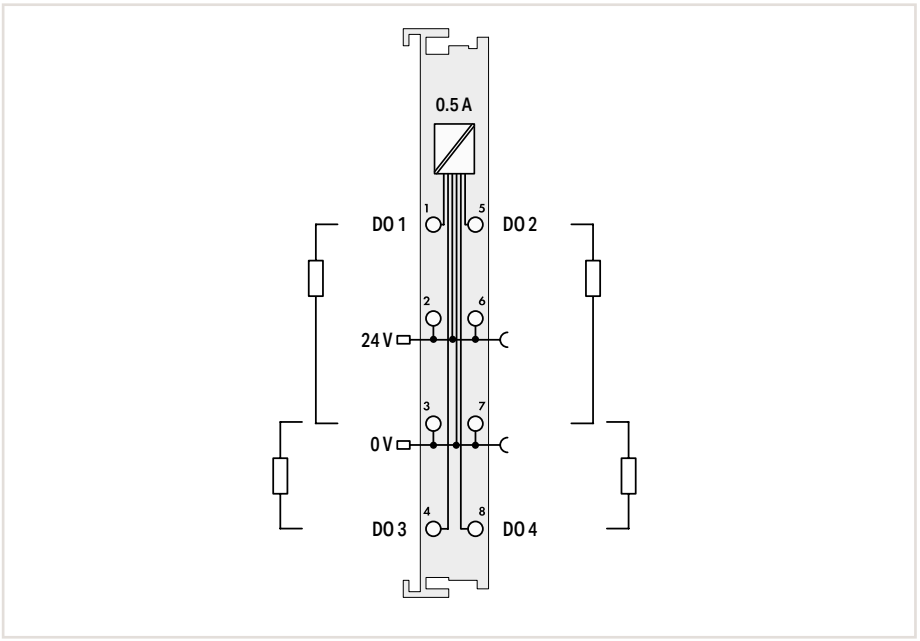
Digital Output; 24 VDC



Figure: 750-504



Figure: 753-504



Item Description	4-Channel Digital Output; 24 VDC; 0.5 A				
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Interference-free**	**Interference-free; Extended temperature**
Item No.	**750-504**	**750-504/025-000**	**753-504**	**750-504/000-800**	**750-504/025-800**
Order Text	4DO; 24 VDC; 0.5A	4DO; 24 VDC; 0.5A; T	4DO; 24 VDC; 0.5A	4DO; 24 VDC; 0.5A; IF	4DO; 24 VDC; 0.5A; IF; T
Technical Data					
Pluggable connector			•		
Interference-free for use in safety functions				•	
Number of digital outputs	4				
Signal type	24 VDC				
Output characteristic	High-side switching				
Output current per channel	0.5 A; short-circuit-protected				
Load type	Resistive; inductive; lamp load				
Actuator connection	2 x (2-wire; 3-wire)*				
Switching frequency (max.)	1 kHz				
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)				
Current consumption – system supply (5 V)	10 mA				
Data width (internal)	4 bits				
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C		−20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-504		wago.com/753-504		wago.com/750-504

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

*A suitable field side connection module (e.g., 750-614) must also be used to connect other actuators.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

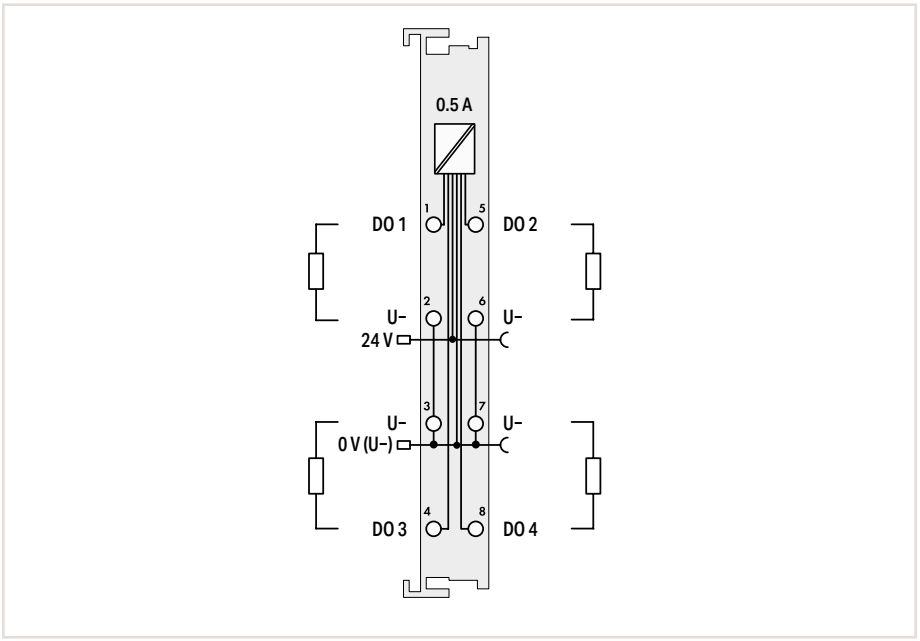
Digital Output; 24 VDC



Figure: 750-531



Figure: 753-531



Item Description	4-Channel Digital Output; 24 VDC; 0.5 A; 2-wire connection			
Version	**Standard**	**Interference-free**	**Pluggable** (delivery without connector)	**Pluggable** (delivery without connector); **Interference-free**
Item No.	**750-531**	**750-531/000-800**	**753-531**	**753-531/000-800**
Order Text	4DO; 24 VDC; 0.5A; 2-wire	4DO; 24 VDC; 0.5A; IF; 2-wire	4DO; 24 VDC; 0.5A; 2-wire	4DO; 24 VDC; 0.5A; IF; 2-wire
Technical Data				
Pluggable connector			•	
Interference-free for use in safety functions		•		•
Number of digital outputs	4			
Signal type	24 VDC			
Output characteristic	High-side switching			
Output current per channel	0.5 A; short-circuit-protected			
Load type	Resistive; inductive; lamp load			
Actuator connection	2-wire			
Switching frequency (max.)	1 kHz			
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	10 mA			
Data width (internal)	4 bits			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-531		wago.com/753-531	

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

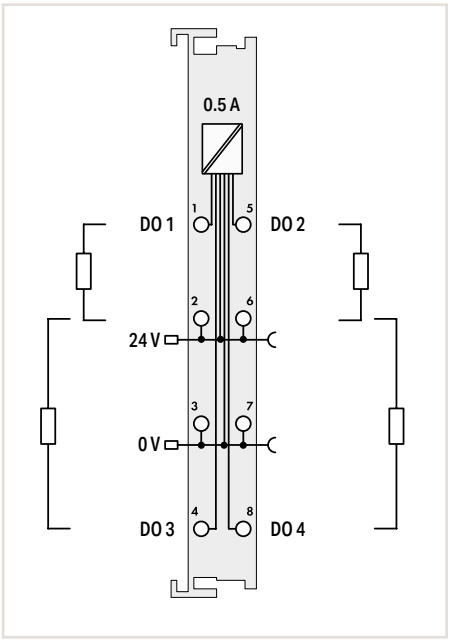
Digital Output; 24 VDC

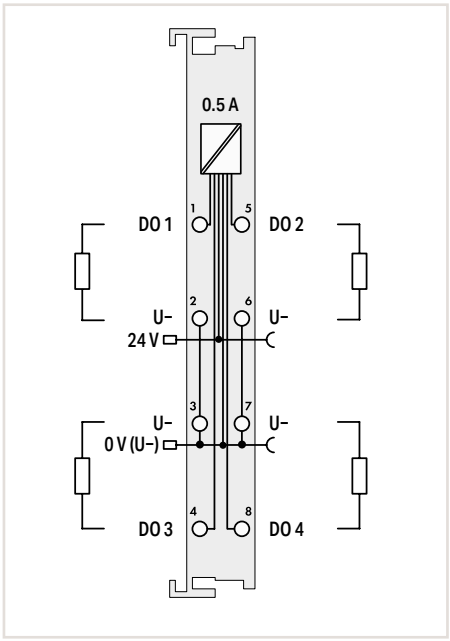


Figure: 750-516



Figure: 750-532





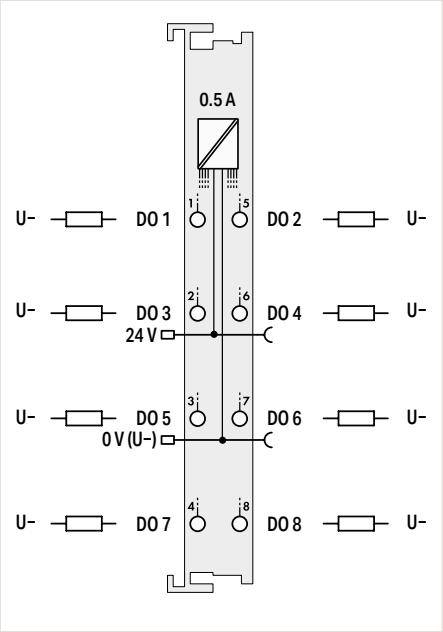
Item Description	4-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching		4-Channel Digital Output; 24 VDC; 0.5 A; Diagnostics
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**
Item No.	**750-516**	**753-516**	**750-532**
Order Text	4DO; 24 VDC; 0.5A; LSS	4DO; 24 VDC; 0.5A; LSS	4DO; 24 VDC; 0.5A; Diagn
Technical Data			
Pluggable connector		•	
Number of digital outputs	4		4
Signal type	24 VDC		24 VDC
Output characteristic	Low-side switching		High-side switching
Output current per channel	0.5 A; short-circuit-protected		0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load		Resistive; inductive; lamp load
Actuator connection	2 x (2-wire)*		2-wire
Switching frequency (max.)	5 kHz		2 kHz
Diagnostics			Open circuit; short circuit; overload
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	7 mA		10 mA
Data width (internal)	4 bits		4-bit input; 4-bit output
Isolation	500 V (system/field)		500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-516	wago.com/753-516	wago.com/750-532

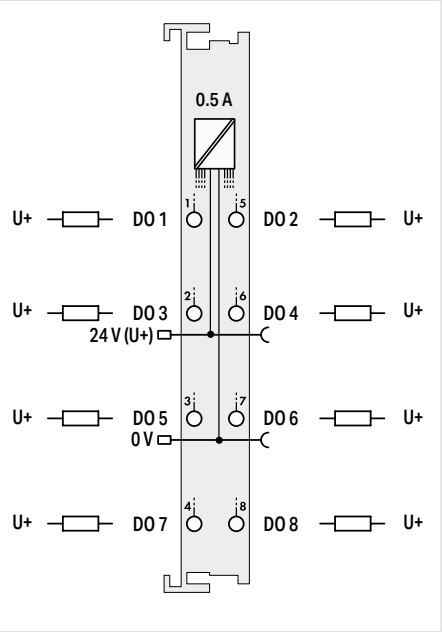
Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

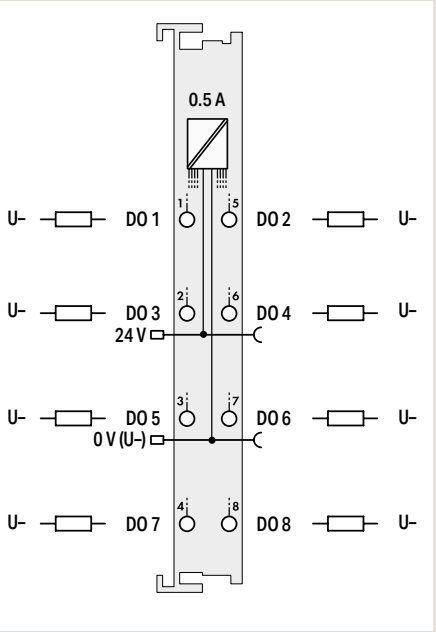
*A suitable field side connection module (e.g., 750-614) must also be used to connect other actuators.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com







8-Channel Digital Output; 24 VDC; 0.5 A		
Standard	**Extended temperature**	**Pluggable** (delivery without connector)
750-530	750-530/025-000	753-530
8DO; 24 VDC; 0.5A	8DO; 24 VDC; 0.5A; T	8DO; 24 VDC; 0.5A
•		
8		
24 VDC		
High-side switching		
0.5 A; short-circuit-protected		
Resistive; inductive; lamp load		
1-wire		
2 kHz		
24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
25 mA		
8 bits		
500 V (system/field)		
0 … +55 °C	–20 … +60 °C	0 … +55 °C
12 x 67.8 x 100 mm		12 x 69 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		
wago.com/750-530		wago.com/753-530
		Item No.
		753-110
		753-150

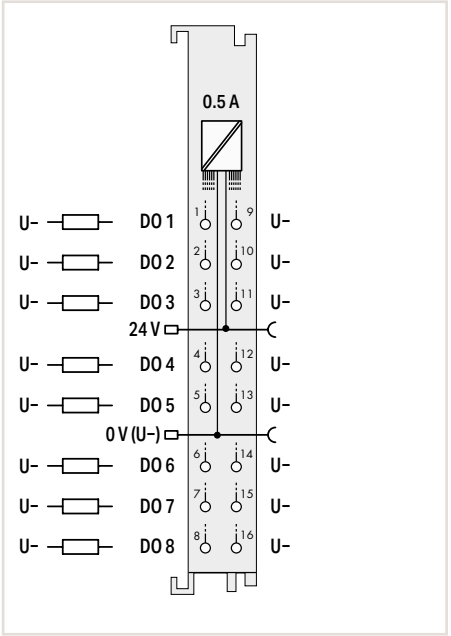
8-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching	
Standard	**Pluggable** (delivery without connector)
750-536	753-536
8DO; 24 VDC; 0.5A; LSS	8DO; 24 VDC; 0.5A; LSS
•	
8	
24 VDC	
Low-side switching	
0.5 A; short-circuit-protected	
Resistive; inductive; lamp load	
1-wire	
2 kHz	
24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
25 mA	
8 bits	
500 V (system/field)	
0 … +55 °C	
12 x 67.8 x 100 mm	12 x 69 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
wago.com/750-536	wago.com/753-536
	Item No.
	753-110
	753-150

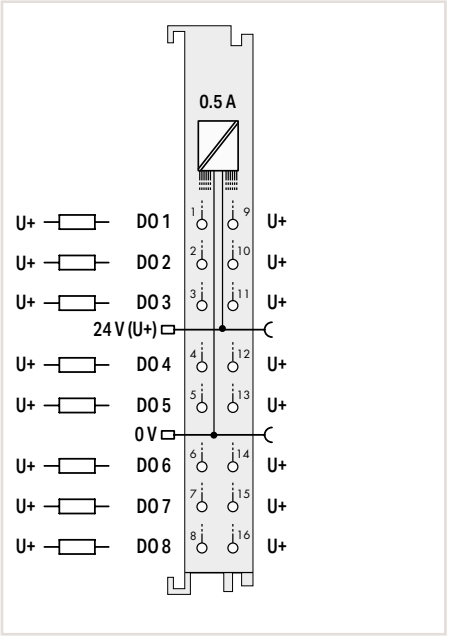
8-Channel Digital Output; 24 VDC; 0.5 A; Diagnostics	
Standard	**Pluggable** (delivery without connector)
750-537	753-537
8DO; 24 VDC; 0.5A; Diagn	8DO; 24 VDC; 0.5A; Diagn
•	
8	
24 VDC	
High-side switching	
0.5 A; short-circuit-protected	
Resistive; inductive; lamp load	
1-wire	
1 kHz	
Open circuit; short circuit; overload	
24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
50 mA	
8-bit output; 8-bit input	
500 V (system/field)	
0 … +55 °C	
12 x 67.8 x 100 mm	12 x 69 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
wago.com/750-537	wago.com/753-537
	Item No.
	753-110
	753-150

Digital Output; 24 VDC



Figure: 750-1515





Item Description	8-Channel Digital Output; 24 VDC; 0.5 A; 2-wire connection	8-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching; 2-wire connection
Version	Standard with 16 connectors	Standard with 16 connectors
Item No.	750-1515	750-1516
Order Text	8DO; 24 VDC; 0.5A; 2-wire	8DO; 24 VDC; 0.5A; LSS; 2-wire
Technical Data		
Number of digital outputs	8	8
Signal type	24 VDC	24 VDC
Output characteristic	High-side switching	Low-side switching
Output current per channel	0.5 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	2-wire	2-wire
Switching frequency (max.)	1 kHz	1 kHz
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	20 mA	20 mA
Data width (internal)	8 bits	8 bits
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1515	wago.com/750-1516

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

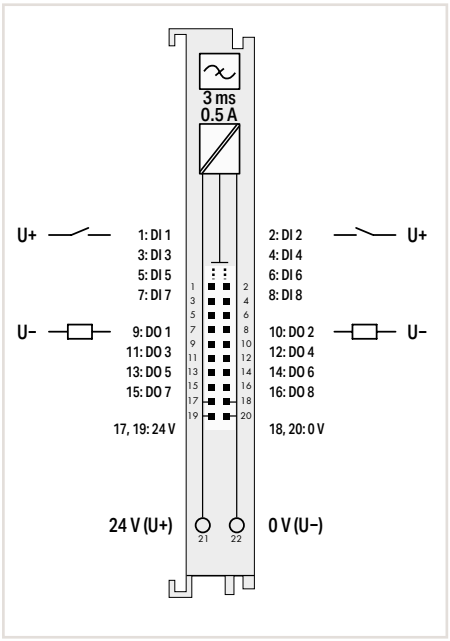
Digital Input/Output; 24 VDC

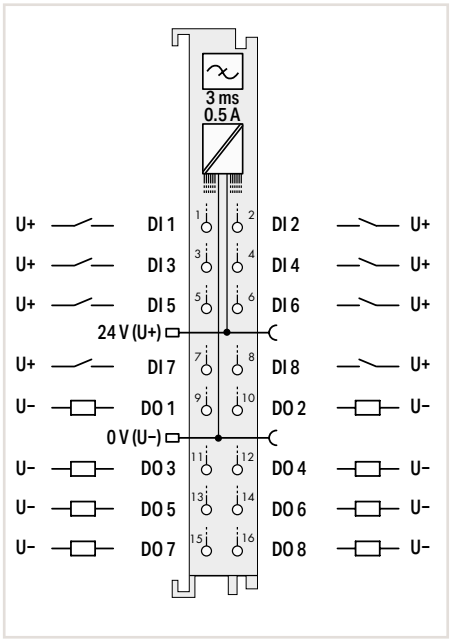


Figure: 750-1502



Figure: 750-1506





Item Description	8-Channel Digital Input/Output; 24 VDC; 0.5 A; Ribbon cable	8-Channel Digital Input/Output; 24 VDC; 0.5 A
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1502**	**750-1506**
Order Text	8DIO; 24 VDC; 0.5A; Ribbon Cable	8DIO; 24 VDC; 0.5A
Technical Data		
Number of digital inputs	8	8
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	–3 … +5 VDC	–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC	15 … 30 VDC
Sensor connection	1-wire	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.4 mA	2.4 mA
Number of digital outputs	8	8
Output characteristic	High-side switching	High-side switching
Output current per channel	0.5 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	1-wire	1-wire
Switching frequency (max.)	1 kHz	1 kHz
Current consumption, field supply (module with no external load)	16 mA	16 mA
Supply voltage (field)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	30 mA	30 mA
Data width (internal)	8-bit input; 8-bit output	8-bit input; 8-bit output
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1502	wago.com/750-1506

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

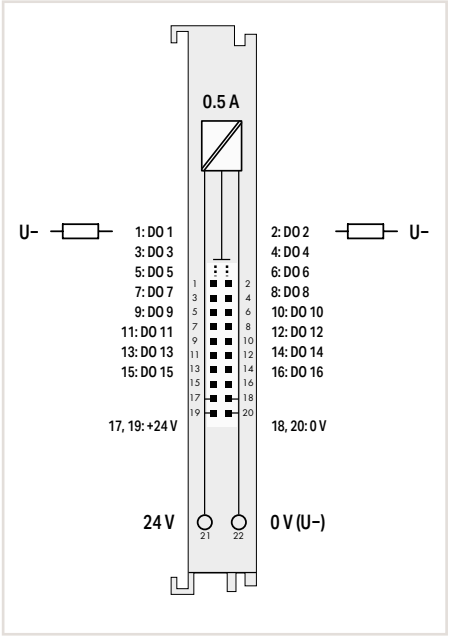
Digital Output; 24 VDC

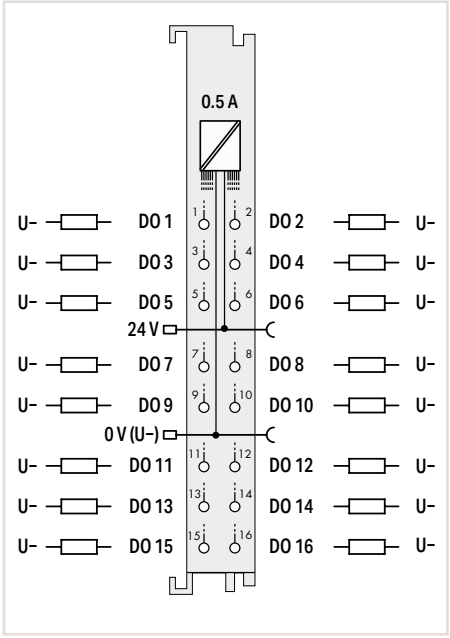


Figure: 750-1500



Figure: 750-1504





Item Description	16-Channel Digital Output; 24 VDC; 0.5 A; Ribbon cable	16-Channel Digital Output; 24 VDC; 0.5 A
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1500**	**750-1504**
Order Text	16DO; 24 VDC; 0.5A; Ribbon Cable	16DO; 24 VDC; 0.5A
Technical Data		
Number of digital outputs	16	16
Signal type	24 VDC	24 VDC
Output characteristic	High-side switching	High-side switching
Output current per channel	0.5 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	1-wire	1-wire
Switching frequency (max.)	1 kHz	1 kHz
Supply voltage (field)	24 VDC (–25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	40 mA	40 mA
Data width (internal)	16 bits	16 bits
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1500	wago.com/750-1504

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

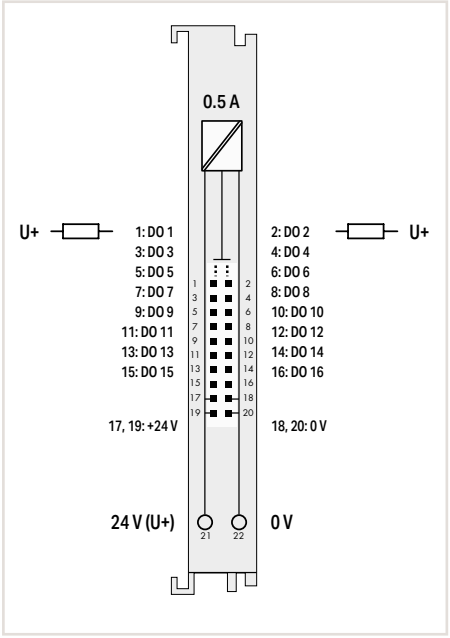
Digital Output; 24 VDC

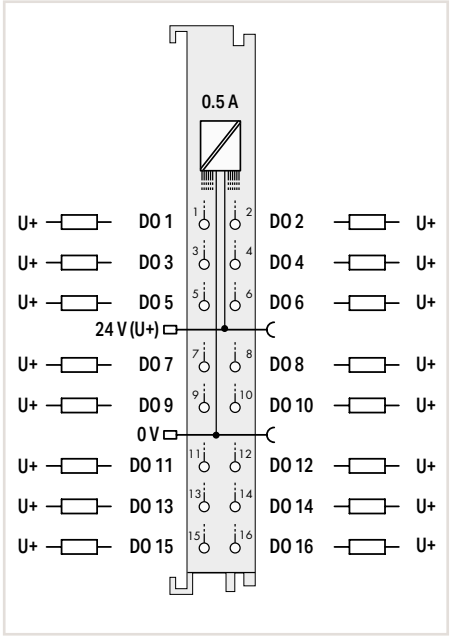


Figure: 750-1501



Figure: 750-1505





Item Description	16-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching; Ribbon cable	16-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching
Version	**Standard with ribbon cable connector**	**Standard with 16 connectors**
Item No.	**750-1501**	**750-1505**
Order Text	16DO; 24 VDC; 0.5A; LSS; Ribbon Cable	16DO; 24 VDC; 0.5A; LSS
Technical Data		
Number of digital outputs	16	16
Signal type	24 VDC	24 VDC
Output characteristic	Low-side switching	Low-side switching
Output current per channel	0.5 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	1-wire	1-wire
Switching frequency (max.)	1 kHz	1 kHz
Supply voltage (field)	24 VDC (−25 … +30 %); via wiring interface (CAGE CLAMP® connection)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	40 mA	40 mA
Data width (internal)	16 bits	16 bits
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 74.1 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1501	wago.com/750-1505

Accessories	Item No.
Interface modules for system wiring and interface cable	See Section 10

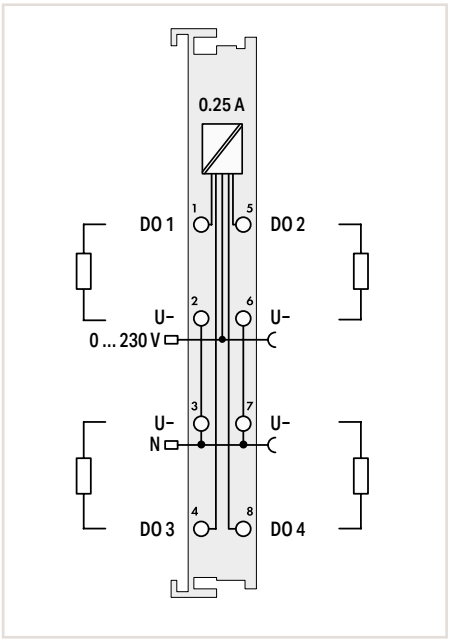
Digital Output; 230 VAC

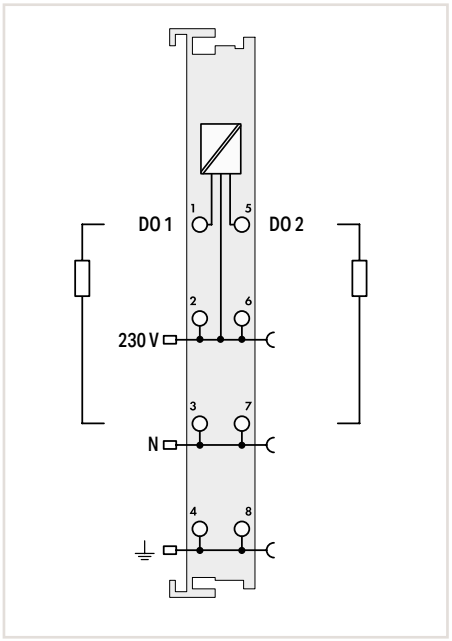


Figure: 753-540



Figure: 750-509





Item Description	4-Channel Digital Output; 230 VAC; 0.25 A; Solid-state	2-Channel Digital Output; 230 VAC; 0.3 A; Solid-state	
Version	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**753-540**	**750-509**	**753-509**
Order Text	4DO; 230 VAC; 0.25A; SSR	2DO; 230 VAC; 0.3A; SSR	2DO; 230 VAC; 0.3A; SSR
Technical Data			
Pluggable connector	•		•
Number of digital outputs	4	2	
Signal type	0 ... 250 VAC	0 ... 230 VAC/DC	
Output circuit design		Solid-state load relays	
Output characteristic	High-side switching		
Output current per channel	0.25 A; short-circuit-protected	0.3 A	
Load type	Resistive; inductive	Resistive; inductive	
Actuator connection	2-wire	2-wire; 3-wire; 4-wire	
Overvoltage protection	275 VAC (varistor)	275 VAC (varistor)	
Short-circuit current	max. 10 A (16 ms)		
Switching frequency (max.)		5 Hz (24 V 0.3 A DF = 50 %); 0.5 Hz (230 V 0.3 A DF = 50 %)	
Supply voltage (field)	230 VAC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	250 V AC/DC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	18 mA	10 mA	
Data width (internal)	4 bits	2 bits	
Isolation	1500 V (system/field)	1500 V (system/field)	
Surrounding air temperature (operation)	0 ... +55 °C	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69.8 x 100 mm	
Approvals	CE; KC; UL OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; UL OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/753-540	wago.com/750-509	wago.com/753-509

Accessories	Item No.		Item No.
Pluggable connector	**753-110**		**753-110**
Coding keys	**753-150**		**753-150**

Notice:
An additional supply module must be added for 0–250 VAC supply!

Notice:
An additional supply module must be added for 0–230 VAC/DC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

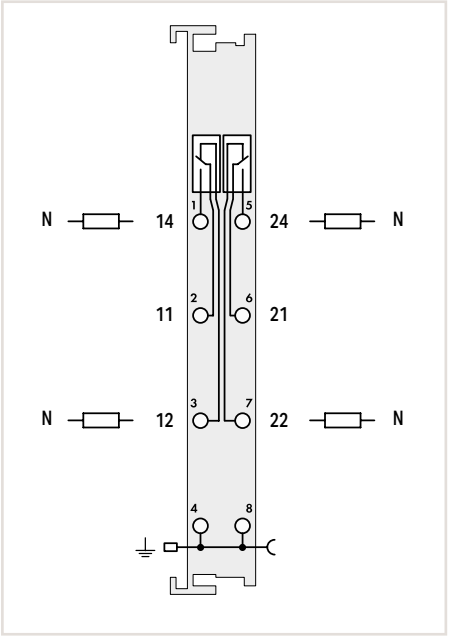
Relay Output; 125 VAC



Figure: 750-514



Figure: 753-514



Item Description	2-Channel Relay Output; 125 VAC; 0.5 A; Potential-free; Relay with 2 changeover contacts	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-514**	**753-514**
Order Text	2RO; 125 VAC; 0.5A; Pot-free; Relay2CO	2RO; 125 VAC; 0.5A; Pot-free; Relay2CO

Technical Data		
Pluggable connector		•
Number of digital outputs	2	
Switching voltage (max.)	125 VAC; 30 VDC	
Output circuit design	Relay with 2 changeover contacts	
Output characteristic	Potential-free	
Switching current (max.)	0.5 A for AC; 1 A for DC	
Switching current (min.)	0.01 mA / 10 mV (DC)	
Actuator connection	1-wire	
Switching frequency (max.)	0.33 Hz	
Mechanical switching operations (min.)	100 x 10^6	
Electrical switching operations (min.)	1 x 10^5	
Supply voltage (field)	Transmission of ground potential via power jumper contact	
Current consumption – system supply (5 V)	70 mA	
Data width (internal)	2 bits	
Isolation	1500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc	
Data sheet and further information, see:	wago.com/750-514	wago.com/753-514

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

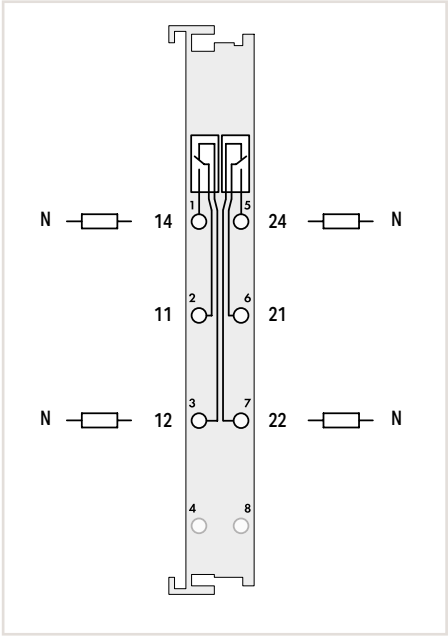
Relay Output; 250 VAC

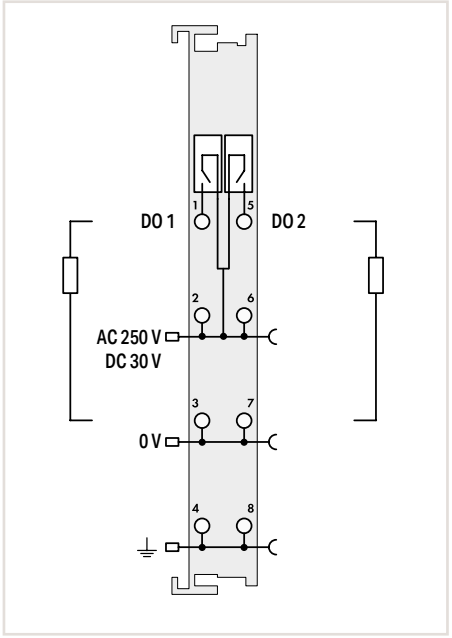


Figure: 750-517



Figure: 750-512





Item Description	2-Channel Relay Output; 250 VAC; 1 A; Potential-free; Relay with 2 changeover contacts		2-Channel Relay Output; 250 VAC; 2 A; Relay with 2 make contacts	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-517**	**753-517**	**750-512**	**753-512**
Order Text	2RO; 250 VAC; 1A; Pot-free; Relay2CO	2RO; 250 VAC; 1A; Pot-free; Relay2CO	2RO; 250 VAC; 2A; Relay2NO	2RO; 250 VAC; 2A; Relay2NO
Technical Data				
Pluggable connector		•		•
Number of digital outputs	2		2	
Switching voltage (max.)	250 VAC; 300 VDC		250 VAC; 30 VDC	
Output circuit design	Relay with 2 changeover contacts		Relay with 2 make contacts	
Output characteristic	Potential-free		Non-floating	
Switching current (max.)	1 A at 250 VAC / 40 VDC; 0.15 A at 300 VDC		2 A	
Switching current (min.)	100 mA (12 VDC)		10 mA / 5 VDC	
Actuator connection	1-wire		2-wire; 3-wire	
Switching frequency (max.)	0.1 Hz		0.5 Hz	
Mechanical switching operations (min.)	5 x 10^6		20 x 10^6	
Electrical switching operations (min.)	10 x 10^5		3 x 10^5	
Supply voltage (field)			250 VAC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	90 mA		100 mA	
Data width (internal)	2 bits		2 bits	
Isolation	1500 V (system/field)		1500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-517	wago.com/753-517	wago.com/750-512	wago.com/753-512

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

Notice:
An additional supply module must be added for 0–250 VAC/0–30 VDC supply!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

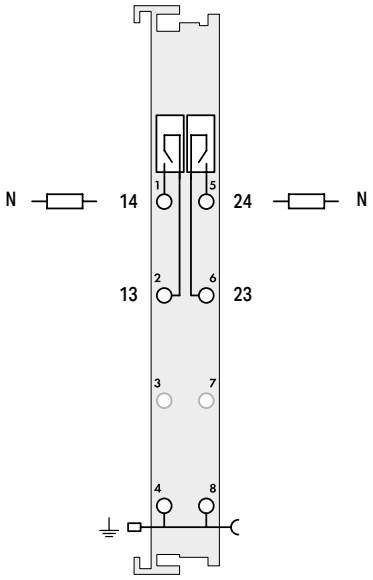
Relay Output; 250 VAC

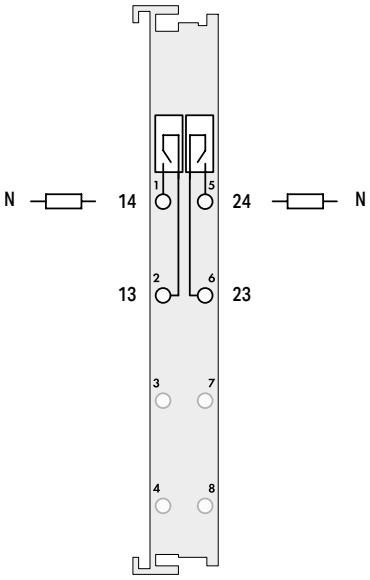


Figure: 750-513



Figure: 750-513/000-001



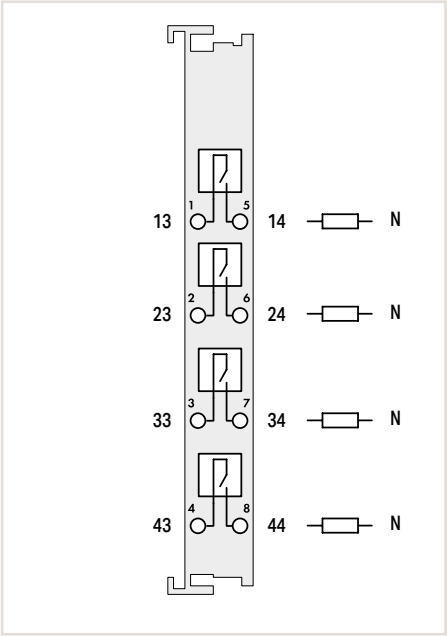


Item Description	2-Channel Relay Output; 250 VAC; 2 A; Potential-free; Relay with 2 make contacts		2-Channel Relay Output; 250 VAC; 2 A; Potential-free; Relay with 2 make contacts	
Version	**Standard**	**Pluggable** (delivery without connector)	**Without power jumper contacts**	**Without power jumper contacts; Pluggable** (delivery without connector)
Item No.	**750-513**	**753-513**	**750-513/000-001**	**753-513/000-001**
Order Text	2RO; 250 VAC; 2A; Pot-free; Relay2NO	2RO; 250 VAC; 2A; Pot-free; Relay2NO	2RO; 250 VAC; 2A; Pot-free; NC; Relay2NO	2RO; 250 VAC; 2A; Pot-free; NC; Relay2NO
Technical Data				
Pluggable connector		•		•
Number of digital outputs	2		2	
Switching voltage (max.)	250 VAC; 30 VDC		250 VAC; 30 VDC	
Output circuit design	Relay with 2 make contacts		Relay with 2 make contacts	
Output characteristic	Potential-free		Potential-free	
Switching current (max.)	2 A		2 A	
Switching current (min.)	10 mA / 5 VDC		10 mA / 5 VDC	
Actuator connection	1-wire		1-wire	
Switching frequency (max.)	0.5 Hz		0.5 Hz	
Mechanical switching operations (min.)	20 x 10^6		20 x 10^6	
Electrical switching operations (min.)	3 x 10^5		3 x 10^5	
Supply voltage (field)	Transmission of ground potential via power jumper contact			
Current consumption – system supply (5 V)	100 mA		100 mA	
Data width (internal)	2 bits		2 bits	
Isolation	1500 V (system/field)		1500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-513	wago.com/753-513	wago.com/750-513/000-001	wago.com/753-513/000-001

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

Relay Output; 250 VAC





Item Description	4-Channel Relay Output; 250 VAC; 2 A; Potential-free; Relay with 4 make contacts
Version	Standard
Item No.	750-515
Order Text	4RO; 250 VAC; 2A; Pot-free; Relay4NO

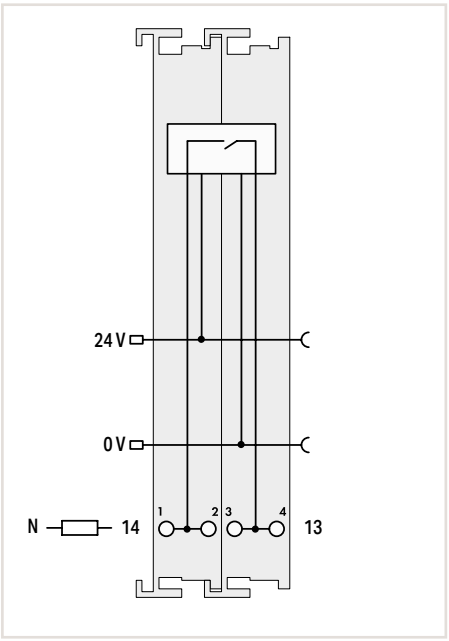
Technical Data	
Number of digital outputs	4
Switching voltage (max.)	250 VAC; 30 VDC; 110 VDC at 0.4 A
Output circuit design	Relay with 4 make contacts
Output characteristic	Potential-free
Switching current (max.)	2 A (5 A for single-channel use)
Switching current (min.)	1 mA / 5 VDC
Actuator connection	1-wire
Switching frequency (max.)	0.33 Hz; 0.1 Hz at 5 A
Mechanical switching operations (min.)	20×10^6
Electrical switching operations (min.)	1×10^5
Current consumption – system supply (5 V)	95 mA
Data width (internal)	4 bits
Isolation	1500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-515

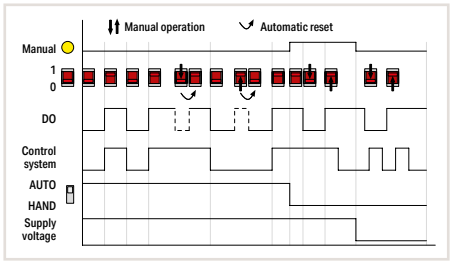
„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 519 or www.wago.com

Relay Output; 250 VAC







Item Description	1-Channel Relay Output; 230 VAC; 16 A; Potential-free; Relay with 1 make contacts
Version	**Standard**
Item No.	**750-523**
Order Text	1RO; 230 VAC; 16A; Pot-free; Relay1NO
Technical Data	
Number of digital outputs	1
Switching voltage (max.)	440 VAC
Output circuit design	Relay with 1 make contact
Output characteristic	Potential-free
Switching current	16 A
Actuator connection	1-wire
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	5 mA
Data width (internal)	2-bit input; 2-bit output
Isolation	1500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/750-523

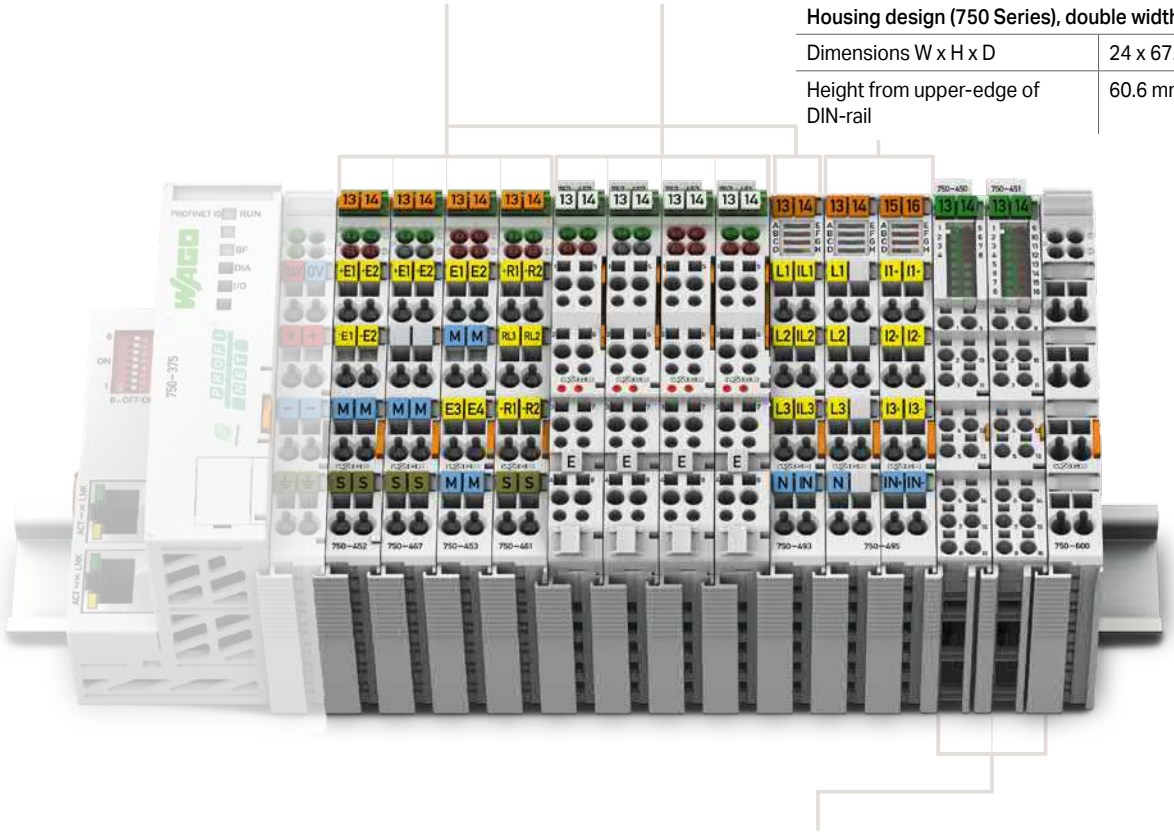
This relay output module switches a connected actuator or load.
The 24 VDC supply is derived from the power jumper contacts to trigger the relays.
The switched status of the relay is shown by the manual switch (1/0). The operating mode can be set using a manual/automatic selector switch.
The mode status is indicated by an LED and via status bits in the process image.
Manual: Coil triggering is interrupted. Actuation only via the red manual operating switches.
Auto: The relay is operated via the control system; manual status transitions via the manual switch are reset by the control system after less than 500 ms.
The manual switch can also be used without 24 V supply to switch the output ON.
The relay meets both international standards of IEC and DIN EN 61810 part 1 /VDE 0435 part 201, as well as overload and short circuit requirements of IEC and DIN EN 61036 /61037.

Analog Input Modules

Housing design (750 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor range	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor range	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch

Housing design (750 Series), double width	
Dimensions W x H x D	24 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	60.6 mm



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor range	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25–1.5 mm² / 22–16 AWG;
Strip length	8 … 9 mm / 0.33 inch





I/O System –
750 XTR Series

I/O-System – 750 and 753 Series; Analog Input Modules
Contents

Function	1-Channel AI	2-Channel AI	4-Channel AI	8-Channel AI	Description	Item Number: Standard	Item Number: /S5 or /S7 Customized Data Format	Item Number: Extended Temperature	Item Number: Pluggable	Page
0 … 20 mA		■			2-Channel Analog Input; 0 … 20 mA; Differential Input	750-452	750-452/000-200		753-452	214
		■			2-Channel Analog Input; 0 … 20 mA; Differential Input	750-480			753-480	214
		■			2-Channel Analog Input; 0 … 20 mA; Single-ended	750-465		750-465/025-000	753-465	215
		■			2-Channel Analog Input; 0 … 20 mA; Single-ended 2-Channel Analog Input; 0 … 20 mA; Single-ended; 60 Hz	750-470 750-470/005-000				215
		■			2-Channel Analog Input; 0 … 20 mA; Single-ended; 16 bits 2-Channel Analog Input; 0 … 20 mA; Single-ended; 16 bits; 60 Hz	750-472 750-472/005-000			753-472	216
			■		4-Channel Analog Input; 0 … 20 mA; Single-ended	750-453*			753-453	216
4 … 20 mA		■			2-Channel Analog Input; 4 … 20 mA; Differential input 2-Channel Analog Input; 4 … 20 mA; Differential input; Extended measurement range	750-454 750-454/000-003	750-454/000-200	750-454/025-000 750-454/025-003	753-454	217
		■			2-Channel Analog Input; 4 … 20 mA; Differential input	750-492*			753-492	218
		■			2-Channel Analog Input; 4 … 20 mA; Single-ended	750-466	750-466/000-200	750-466/025-000	753-466	219
		■			2-Channel Analog Input; 4 … 20 mA; Single-ended 2-Channel Analog Input; 4 … 20 mA; Single-ended; 60 Hz	750-473 750-473/005-000				220
		■			2-Channel Analog Input; 4 … 20 mA; Single-ended; 16 bits 2-Channel Analog Input; 4 … 20 mA; Single-ended; 16 bits; 60 Hz	750-474 750-474/005-000	750-474/000-200		753-474	221
		■			2-Channel Analog Input; 4 … 20 mA HART	750-482 750-482/000-001	750-482/000-300	750-482/025-000	753-482	222
			■		4-Channel Analog Input; 4 … 20 mA; Single-ended	750-455*		750-455/025-000	753-455	223
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		■			2-Channel Analog Input; ±10 VDC; Single-ended; 16 bits	750-476	750-476/000-200		753-476	227
			■		4-Channel Analog Input; ±10 VDC; Single-ended	750-457*		750-457/025-000	753-457	227
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		■			2-Channel Analog Input; 0 … 10 VDC; Single-ended; 16 bits 2-Channel Analog Input; 0 … 10 VDC; Single-ended; 16 bits; 60 Hz	750-478 750-478/005-000			753-478	228
			■		4-Channel Analog Input; 0 … 10 VDC; Single-ended	750-468*		750-468/025-000		229
			■		4-Channel Analog Input; 0 … 10 VDC; Single-ended	750-459			753-459	229
0 … 10 V/±10 V				■	8-Channel Analog Input; 0 … 10 VDC/±10 V; Single-ended	750-497				230
0 … 10 VAC/DC		■			2-Channel Analog Input; 0 … 10 VAC/DC; Differential input	750-477			753-477	231
0 … 30 V		■			2-Channel Analog Input; 0 … 30 VDC; Differential input	750-483*			753-483	231
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			■		4-Channel Analog Input; Resistance measurement; Measurement range: -30 °C … +150 °C	750-463				237
			■		4-Channel Analog Input; Resistance measurement; Adjustable	750-450				237
				■	8-Channel Analog Input; Resistance measurement; Adjustable	750-451		750-451/025-000		237
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		■			2-Channel Analog Input; Thermocouple K; Diagnostics; Adjustable	750-469/003-000*			753-469/003-000	238
		■			2-Channel Analog Input; Thermocouple J; Diagnostics	750-469/000-006				239
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		■			3-Phase Power Measurement; 480 VAC 1 A 3-Phase Power Measurement; 480 VAC 5 A	750-493 750-493/000-001		750-493/025-000		241
		■			3-Phase Power Measurement; 480 VAC 1 A 3-Phase Power Measurement; 480 VAC 5 A	750-494 750-494/000-001		750-494/025-000 750-494/025-001		242
		■			Power Measurement; 277 VAC/DC; External shunts	750-494/000-005				243
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Ex i						See Section 5.9				
*This module is also available as a 750 XTR Series variant.						See Section 6				

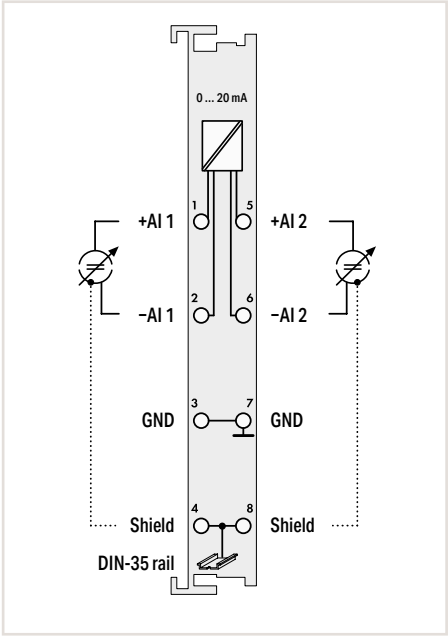
Analog Input; 0 … 20 mA; Differential Input

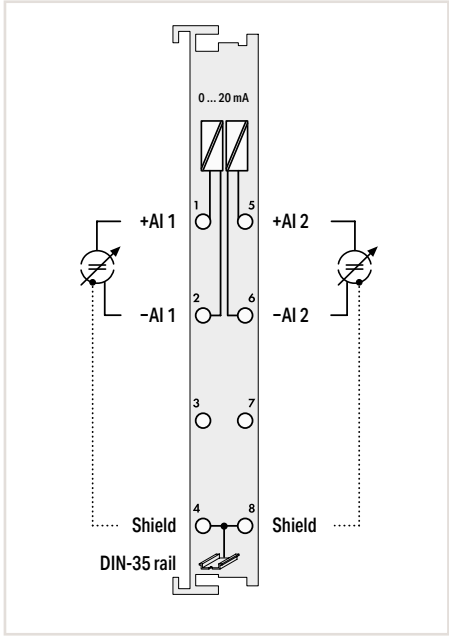


Figure: 750-452



Figure: 750-480





Item Description	2-Channel Analog Input; 0 … 20 mA; Differential input			2-Channel Analog Input; 0 … 20 mA; Differential input	
Version	**Standard**	**Data format (S5 control)**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-452**	**750-452/000-200**	**753-452**	**750-480**	**753-480**
Order Text	2AI; 0-20mA; Diff	2AI; 0-20mA; Diff; S5	2AI; 0-20mA; Diff	2AI; 0-20mA; Diff	2AI; 0-20mA; Diff
Technical Data					
Extended functionality				Time-synchronized measured value acquisition within the module	
Pluggable connector			•		•
Customized data format for S5 control*		•			
Number of analog inputs	2			2	
Signal type	0 … 20 mA			0 … 20 mA	
Signal characteristic	Differential			Differential	
Resolution	12 bits			13 bits	
Conversion time	2 ms			1 ms	
Input resistance	< 220 Ω / 20 mA			< 270 Ω / 20 mA	
Input filter (analog)				5 kHz	
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value			±0.05 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value	
Current consumption – system supply (5 V)	70 mA			80 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field)			500 V (system/field or channel/channel)	
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-452		wago.com/753-452	wago.com/750-480	wago.com/753-480

Accessories	Item No.	Item No.
Pluggable connector	753-110	753-110
Coding keys	753-150	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

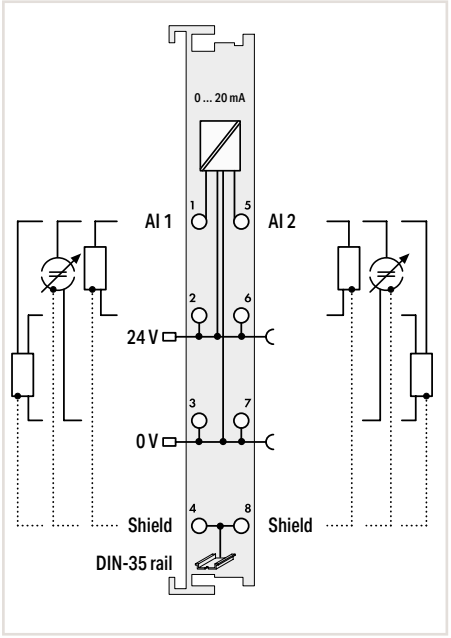
Analog Input; 0 … 20 mA; Single-Ended

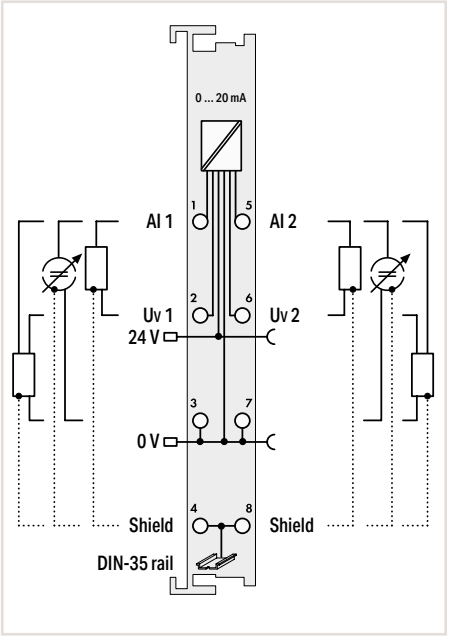


Figure: 750-465



Figure: 750-470





Item Description	2-Channel Analog Input; 0 … 20 mA; Single-ended			2-Channel Analog Input; 0 … 20 mA; Single-ended; Short-circuit-protected sensor supply	
Version	Standard	Extended temperature	Pluggable (delivery without connector)	Standard	60 Hz
Item No.	750-465	750-465/025-000	753-465	750-470	750-470/005-000
Order Text	2AI; 0-20mA; SE	2AI; 0-20mA; SE; T	2AI; 0-20mA; SE	2AI; 0-20mA; SE	2AI; 0-20mA; SE; 60Hz

Technical Data					
Extended functionality				Short-circuit-protected sensor supply	
Pluggable connector			•		
Number of analog inputs	2			2	
Signal type	0 … 20 mA			0 … 20 mA	
Signal characteristic	Single-ended			Single-ended	
Resolution	12 bits			12 bits	
Conversion time	2 ms			80 ms	
Input resistance	< 220 Ω / 20 mA			< 160 Ω / 20 mA	
Input filter (analog)				50 Hz	60 Hz
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value			±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	75 mA			100 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field)			500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE; KC; OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-465		wago.com/753-465	wago.com/750-470	

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

Analog Input; 0 … 20 mA; Single-Ended

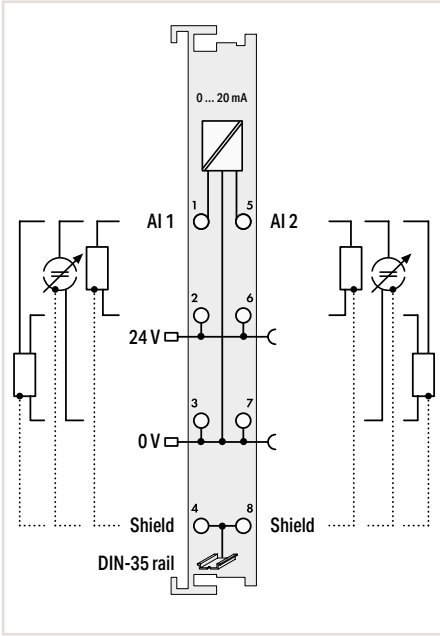
5.4

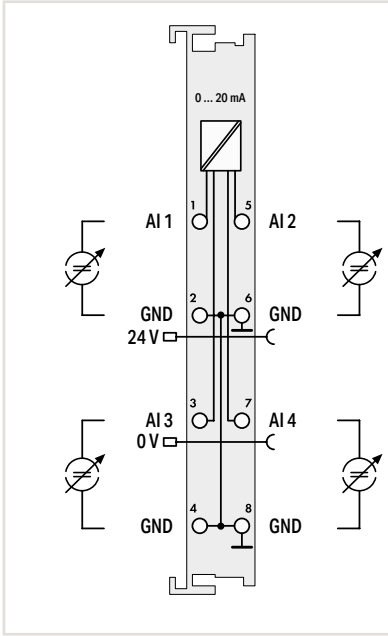


Figure: 750-472



Figure: 750-453





Item Description	2-Channel Analog Input; 0 … 20 mA; Single-ended; 16 bits			4-Channel Analog Input; 0 … 20 mA; Single-ended	
Version	**Standard**	**60 Hz**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-472**	**750-472/005-000**	**753-472**	**750-453**	**753-453**
Order Text	2AI; 0-20mA; SE; 16bits	2AI; 0-20mA; SE; 16bits; 60Hz	2AI; 0-20mA; SE; 16bits	4AI; 0-20mA; SE	4AI; 0-20mA; SE

Technical Data

Extended functionality	Overload protection				
Pluggable connector			•		•
Number of analog inputs	2			4	
Signal type	0 … 20 mA			0 … 20 mA	
Signal characteristic	Single-ended			Single-ended	
Resolution	15 bits			12 bits	
Conversion time	80 ms			10 ms	
Input resistance	220 Ω / 20 mA			< 100 Ω / 20 mA	
Input filter (analog)	50 Hz	60 Hz	50 Hz		
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value			±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value	
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	75 mA			65 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			4 x 16-bit data; 4 x 8-bit control/status (optional)	
Isolation	500 V (system/field)			500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-472		wago.com/753-472	wago.com/750-453	wago.com/753-453

Accessories		Item No.		Item No.
Pluggable connector		**753-110**		**753-110**
Coding keys		**753-150**		**753-150**

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

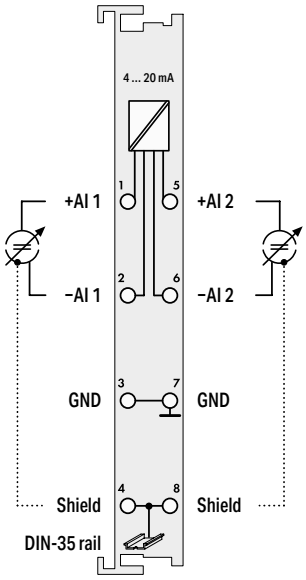
Analog Input; 4 … 20 mA; Differential Input



Figure: 750-454



Figure: 753-454



Item Description	2-Channel Analog Input; 4 … 20 mA; Differential input					
Version	Standard	Extended temperature	Pluggable (delivery without connector)	Data format (S5 control)	Extended measurement range	Extended temperature; Extended measurement range
Item No.	750-454	750-454/025-000	753-454	750-454/000-200	750-454/000-003	750-454/025-003
Order Text	2AI; 4-20mA; Diff	2AI; 4-20mA; Diff; T	2AI; 4-20mA; Diff	2AI; 4-20mA; Diff; S5	2AI; 4-20mA; Diff; EM	2AI; 4-20mA; Diff; T; EM
Technical Data						
Pluggable connector			•			
Customized data format for S5 control*				•		
Number of analog inputs	2					
Signal type	4 … 20 mA				3.8 … 20.5 mA	
Signal characteristic	Differential					
Resolution	12 bits					
Conversion time	2 ms					
Input resistance	< 220 Ω / 20 mA					
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value					
Temperature error (max.)	±0.01 % of the upper-range value					
Current consumption – system supply (5 V)	70 mA					
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)					
Isolation	500 V (system/field)					
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C			–20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm					
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx					
Data sheet and further information, see:	wago.com/750-454		wago.com/753-454	wago.com/750-454		

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

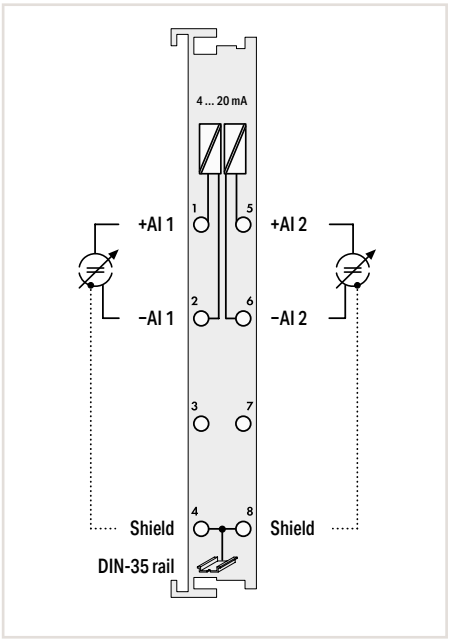
Analog Input; 4 … 20 mA; Differential Input



Figure: 750-492



Figure: 753-492



Item Description	2-Channel Analog Input; 4 … 20 mA; Differential input	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-492**	**753-492**
Order Text	2AI; 4-20mA; Diff	2AI; 4-20mA; Diff

Technical Data		
Extended functionality	Time-synchronized measured value acquisition within the module	
Pluggable connector		•
Number of analog inputs	2	
Signal type	4 … 20 mA	
Signal characteristic	Differential	
Resolution	13 bits	
Conversion time	1 ms	
Input resistance	< 270 Ω / 20 mA	
Measuring error (max.) at 25 °C	±0.05 % of the upper-range value	
Temperature error	±0.01 % of the upper-range value	
Current consumption – system supply (5 V)	80 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field or channel/channel)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-492	wago.com/753-492

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

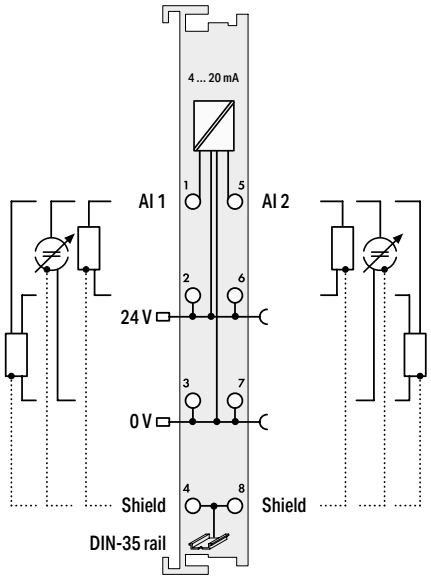
Analog Input; 4 … 20 mA; Single-Ended



Figure: 750-466



Figure: 753-466



Item Description	2-Channel Analog Input; 4 … 20 mA; Single-ended				
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Data format (S5 control)**	**Extended measurement range**
Item No.	**750-466**	**750-466/025-000**	**753-466**	**750-466/000-200**	**750-466/000-003**
Order Text	2AI; 4-20mA; SE	2AI; 4-20mA; SE; T	2AI; 4-20mA; SE	2AI; 4-20mA; SE; S5	2AI; 4-20mA; SE; EM
Technical Data					
Pluggable connector			•		
Customized data format for S5 control*				•	
Number of analog inputs	2				
Signal type	4 … 20 mA				3.8 … 20.5 mA
Signal characteristic	Single-ended				
Resolution	12 bits				
Conversion time	2 ms				
Input resistance	< 220 Ω / 20 mA				
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value				
Temperature error (max.)	±0.01 % of the upper-range value				
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)				
Current consumption – system supply (5 V)	75 mA				
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)				
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-466		wago.com/753-466	wago.com/750-466	

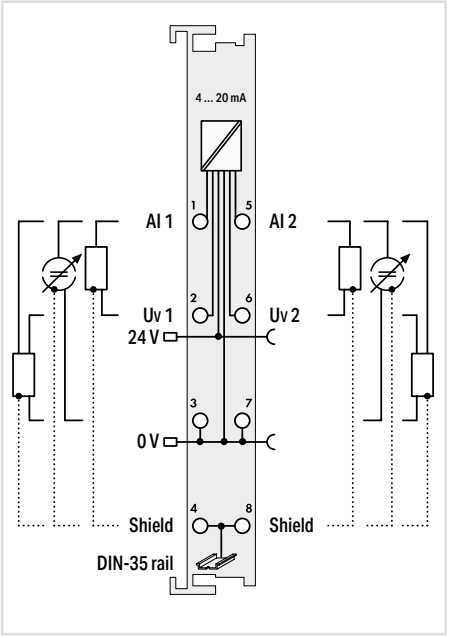
Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

Analog Input; 4 … 20 mA; Single-Ended

5.4





Item Description	2-Channel Analog Input; 4 … 20 mA; Single-ended	
Version	**Standard**	**60 Hz**
Item No.	**750-473**	**750-473/005-000**
Order Text	2AI; 4-20mA; SE	2AI; 4-20mA; SE: 60Hz
Technical Data		
Extended functionality	Short-circuit-protected sensor supply	
Number of analog inputs	2	
Signal type	4 … 20 mA	
Signal characteristic	Single-ended	
Resolution	12 bits	
Conversion time	80 ms	
Input resistance	< 160 Ω / 20 mA	
Input filter (analog)	50 Hz	60 Hz
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	100 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-473	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

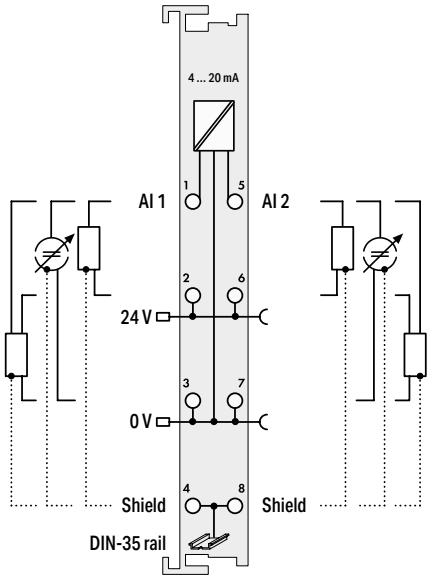
Analog Input; 4 … 20 mA; Single-Ended



Figure: 750-474



Figure: 753-474



Item Description	2-Channel Analog Input; 4 … 20 mA; Single-ended; 16 bits			
Version	**Standard**	**60 Hz**	**Pluggable** (delivery without connector)	**Data format (S5 control)**
Item No.	**750-474**	**750-474/005-000**	**753-474**	**750-474/000-200**
Order Text	2AI; 4-20mA; SE; 16bits	2AI; 4-20mA; SE; 16bits; 60Hz	2AI; 4-20mA; SE; 16bits	2AI; 4-20mA; SE; 16bits; S5

Technical Data				
Extended functionality	Overload protection			
Pluggable connector			•	
Customized data format for S5* controller				•
Number of analog inputs	2			
Signal type	4 … 20 mA			
Signal characteristic	Single-ended			
Resolution	15 bits			
Conversion time	80 ms			
Input resistance	220 Ω / 20 mA			
Input filter (analog)	50 Hz	60 Hz	50 Hz	
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value			
Temperature error (max.)	±0.01 % of the upper-range value			
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	75 mA			
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-474		wago.com/753-474	wago.com/750-474/000-200

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

*The S5 format allows you to import data with the standard S5 FB 250 function block.

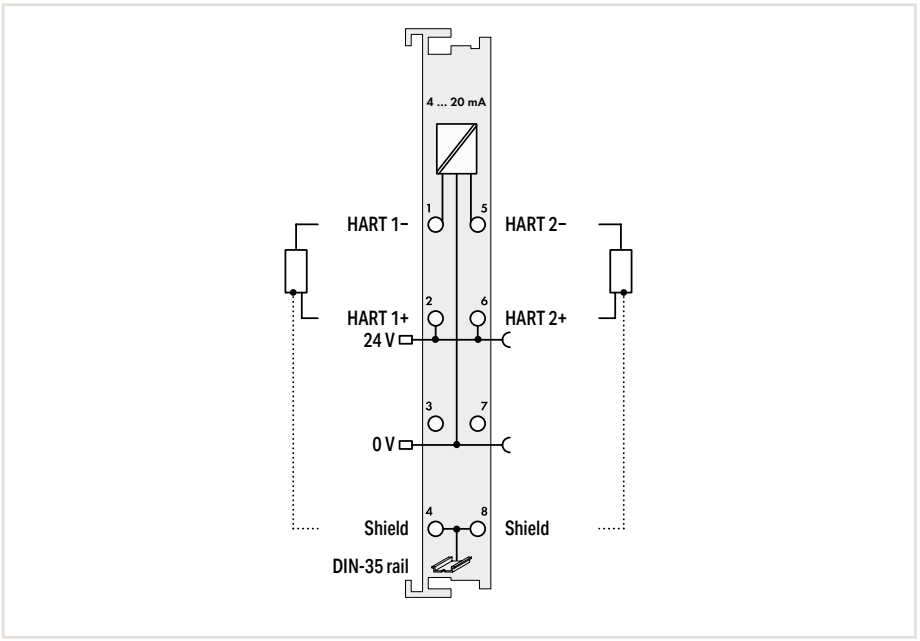
Analog Input; 4 … 20 mA HART



Figure: 750-482



Figure: 753-482



Item Description	2-Channel Analog Input; 4 … 20 mA HART			
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Data format (S7 controller)**
Item No.	**750-482**	**750-482/025-000**	**753-482**	**750-482/000-300**
Order Text	2AI; 4-20mA HART	2AI; 4-20mA HART; T	2AI; 4-20mA HART	2AI; 4-20mA HART; S7

Technical Data				
Extended functionality	Overload protection			
Pluggable connector			•	
Customized data format for S7 control				•
Number of analog inputs	2			
Signal type	4 … 20 mA			
Signal characteristic	Single-ended			
Resolution	12 bits			
Conversion time	10 ms			
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value			
Temperature error (max.)	±0.01 % of the upper-range value			
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	65 mA			
Data width	2 x 2-byte data; 2 x 2-byte data + 2n x 4-byte data (n = number of dynamic variables); 2 x 2-byte data + 6-byte mailbox			
Configurable functions	4 HART dynamic variables (PV, SV, TV, QV)			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; cULus OrdLoc/HazLoc; IECEx ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-482		wago.com/753-482	wago.com/750-482/000-300

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

HART devices per channel:
1 device (SingleDrop, no MultiDrop)

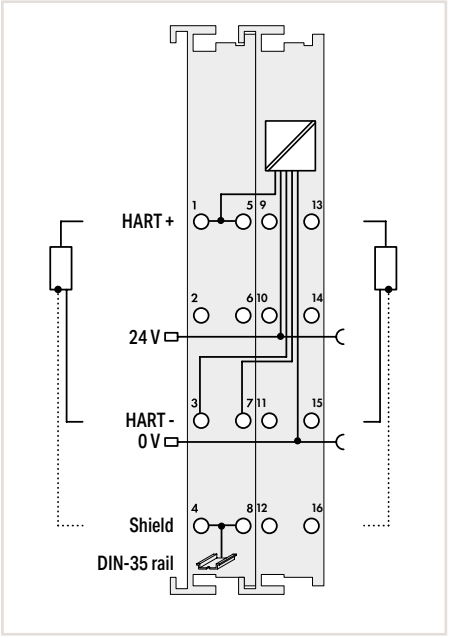
For select fieldbus couplers, FDT/DTM device drivers are available that can be used to integrate the I/O module into a higher-level control system.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; 4 … 20 mA HART





Item Description	**2-Channel Analog Input; 4 … 20 mA HART**
Version	**NAMUR NE43**
Item No.	**750-482/000-001**
Order Text	2AI; 4-20mA HART; NE43

Technical Data	
Extended functionality	Overload protection
Number of analog inputs	2
Signal type	3.6 … 21 mA
Signal characteristic	Single-ended
Resolution	12 bits
Conversion time	10 … 640 ms (programmable)
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA
Data width	2 x 2-byte data; 2 x 2-byte data + 2n x 4-byte data (n = number of dynamic variables); 2 x 2-byte data + 6-byte mailbox
Configurable functions	4 HART dynamic variables (PV, SV, TV, QV)
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-482/000-001

HART devices per channel:
1 device (SingleDrop, no MultiDrop)

For select fieldbus couplers, FDT/DTM device drivers are available that can be used to integrate the I/O module into a higher-level control system.

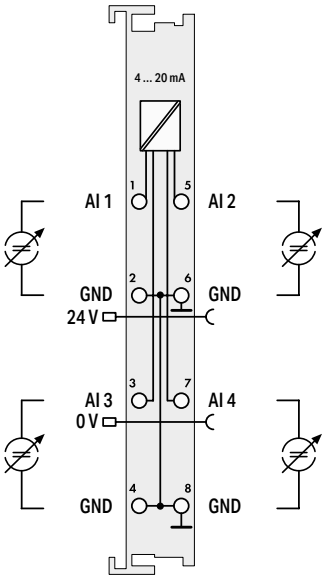
Analog Input; 4 … 20 mA; Single-Ended

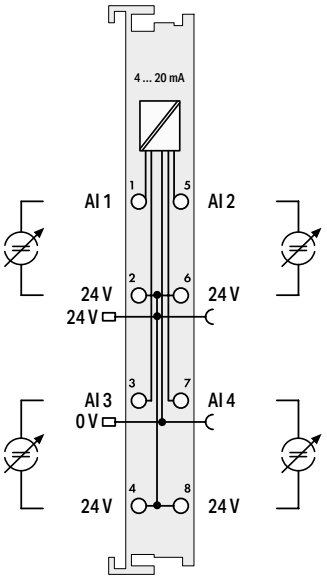


Figure: 750-455



Figure: 753-455





Item Description	4-Channel Analog Input; 4 … 20 mA; Single-ended; 4 x GND			4-Channel Analog Input; 4 … 20 mA; Single-ended; 4 x 24 V
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**4 x 24 V**
Item No.	**750-455**	**750-455/025-000**	**753-455**	**750-455/020-000**
Order Text	4AI; 4-20mA; SE	4AI; 4-20mA; SE; T	4AI; 4-20mA; SE	4AI; 4-20mA; SE; 4x24V
Technical Data				
Pluggable connector			•	
Number of analog inputs	4			4
Signal type	4 … 20 mA			4 … 20 mA
Signal characteristic	Single-ended			Single-ended
Resolution	12 bits			12 bits
Conversion time	10 ms			10 ms
Input resistance	< 100 Ω / 20 mA			< 100 Ω / 20 mA
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value			±0.1 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	65 mA			65 mA
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)			4 x 16-bit data; 4 x 8-bit control/status (optional)
Isolation	500 V (system/field)			500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-455		wago.com/753-455	wago.com/750-455/020-000

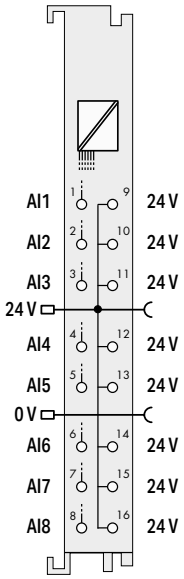
Accessories		Item No.	
Pluggable connector		753-110	
Coding keys		753-150	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; Configurable 0/4 … 20 mA; Single-Ended





Item Description	**8-Channel Analog Input; 0/4 … 20 mA; Single-ended**
Version	**Standard**
Item No.	**750-496**
Order Text	8AI; 0/4-20mA; SE
Technical Data	
Number of analog inputs	8
Signal type	Configurable: 0 … 20 mA; 4 … 20 mA; 3.6 … 21 mA
Resolution	12 bits
Conversion time	10 ms
Input resistance	< 220 Ω
Input voltage (max.)	31.2 VDC
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	69 mA
Data width	8 x 16-bit data; 8 x 8-bit control/status (optional)
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-496

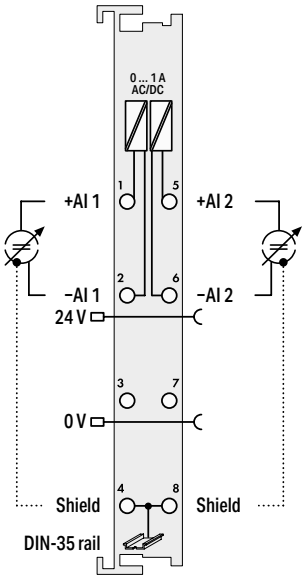
Analog Input; 0 … 1 A or 0 … 5 AAC/DC; Differential Input

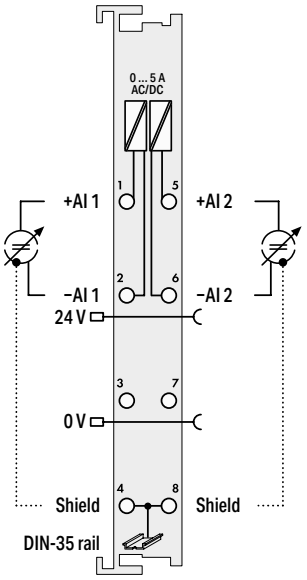


Figure: 750-475



Figure: 753-475





Item Description	2-Channel Analog Input; 0 … 1 AAC/DC; Differential input		2-Channel Analog Input; 0 … 5 AAC/DC; Differential input
Version	**Standard**	**Pluggable** (delivery without connector)	**0 … 5 AAC/DC**
Item No.	**750-475**	**753-475**	**750-475/020-000**
Order Text	2AI; 0-1A AC/DC; Diff	2AI; 0-1A AC/DC; Diff	2AI; 0-5A AC/DC; Diff
Technical Data			
Pluggable connector		•	
Number of analog inputs	2		2
Signal type	0 … 1 A rms (peak value 2.0 A)		0 … 5 A rms (peak value 6.0 A)
Signal characteristic	Differential		Differential
Input voltage (max.)	24 VAC/DC (–20 … +20 %)		24 VAC/DC (–20 … +20 %)
Resolution	15 bits		15 bits
Conversion time	200 ms		200 ms
Load impedance	22 mΩ		22 mΩ
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value		±0.1 % of the upper-range value
Temperature error (max.)	±110 ppm/K of the upper-range value		±110 ppm/K of the upper-range value
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	80 mA		80 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)		2 x 16-bit data; 2 x 8-bit control/status (optional)
Isolation	500 V (system/field or channel/channel)		500 V (system/field or channel/channel)
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-475	wago.com/753-475	wago.com/750-475/020-000

Accessories		Item No.	
Pluggable connector		**753-110**	
Coding keys		**753-150**	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

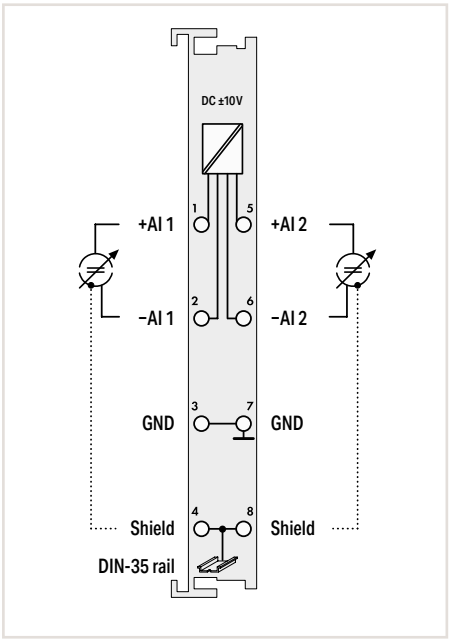
Analog Input; ±10 VDC; Differential Input

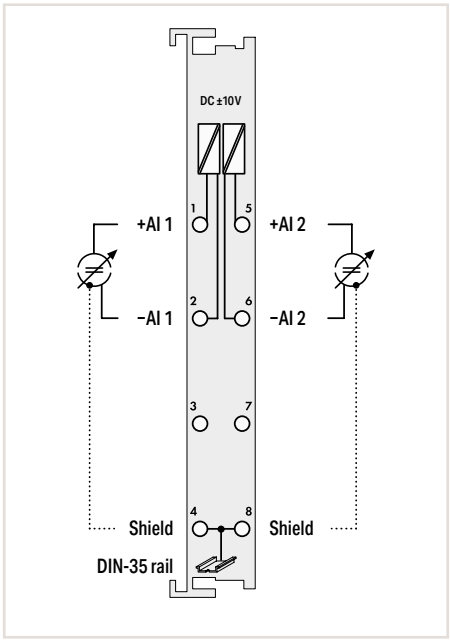


Figure: 750-456



Figure: 750-479





Item Description	2-Channel Analog Input; ±10 VDC; Differential input			2-Channel Analog Input; ±10 VDC; Differential input		
Version	**Standard**	**Data format (S5 control)**	**Pluggable** (delivery without connector)	**Standard**	**Synchronous**	**Pluggable** (delivery without connector)
Item No.	**750-456**	**750-456/000-200**	**753-456**	**750-479**	**750-479/000-001**	**753-479**
Order Text	2AI; ±10 VDC; Diff	2AI; ±10 VDC; Diff; S5	2AI; ±10 VDC; Diff	2AI; ±10 VDC; Diff	2AI; ±10 VDC; Diff; Sync	2AI; ±10 VDC; Diff
Technical Data						
Extended functionality				Time-synchronized measured value acquisition within the module	Time-synchronized measured value acquisition within the module	Time-synchronized measured value acquisition within the module
Pluggable connector			•			•
Customized data format for S5 control*		•				
Number of analog inputs		2			2	
Signal type		±10 V			±10 V	
Signal characteristic		Differential			Differential	
Resolution		12 bits			13 bits + sign	
Conversion time		2 ms			1 ms	
Internal resistance		570 kΩ			1 MΩ	
Input filter (analog)					5 kHz	
Admissible continuous overload					60 V	
Measuring error (max.) at 25 °C		±0.2 % of the upper-range value			±0.05 % of the upper-range value	
Temperature error (max.)		±0.015 %/K of the upper-range value			±0.01 % of the upper-range value	
Current consumption – system supply (5 V)		80 mA			100 mA	
Data width		2 x 16-bit data; 2 x 8-bit control/status (optional)			2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation		500 V (system/field)			500 V (system/field or channel/channel)	
Surrounding air temperature (operation)		0 … +55 °C			0 … +55 °C	
Dimensions W x H x D		12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:		wago.com/750-456	wago.com/753-456		wago.com/750-479	wago.com/753-479

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

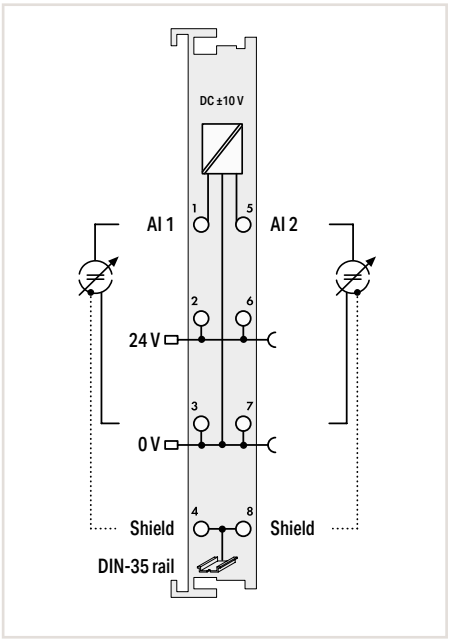
Analog Input; ±10 VDC; Single-Ended

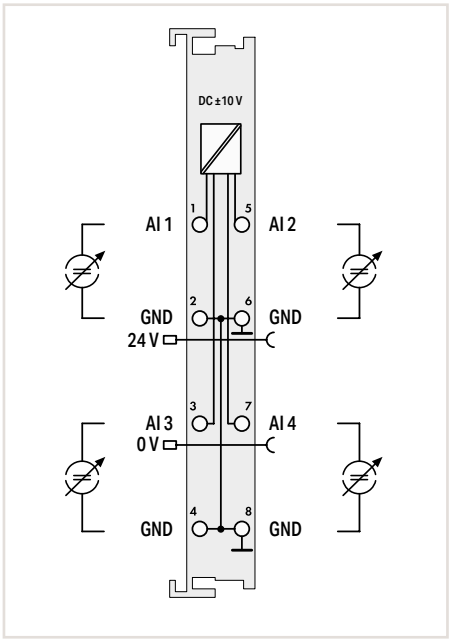


Figure: 750-476



Figure: 750-457





Item Description	2-Channel Analog Input; ±10 VDC; Single-ended; 16 bits			4-Channel Analog Input; ±10 VDC; Single-ended		
Version	**Standard**	**Data format (S5 control)**	**Pluggable** (delivery without connector)	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)
Item No.	**750-476**	**750-476/000-200**	**753-476**	**750-457**	**750-457/025-000**	**753-457**
Order Text	2AI; ±10 VDC; SE; 16bits	2AI; ±10 VDC; SE; 16bits; S5	2AI; ±10 VDC; SE; 16bits	4AI; ±10 VDC; SE	4AI; ±10 VDC; SE; T	4AI; ±10 VDC; SE
Technical Data						
Pluggable connector			•			•
Customized data format for S5 control*		•				
Number of analog inputs	2			4		
Signal type	±10 V			±10 V		
Signal characteristic	Single-ended			Single-ended		
Resolution	15 bits + sign			12 bits		
Conversion time	80 ms			10 ms		
Internal resistance	130 kΩ			> 100 kΩ		
Input voltage (max.)	24 V			±40 V		
Input filter (analog)	50 Hz	60 Hz	50 Hz			
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value			±0.1 % of the upper-range value		
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	75 mA			65 mA		
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			4 x 16-bit data; 4 x 8-bit control/status (optional)		
Isolation	500 V (system/field)			500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C	–20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm		
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-476		wago.com/753-476	wago.com/750-457		wago.com/753-457

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

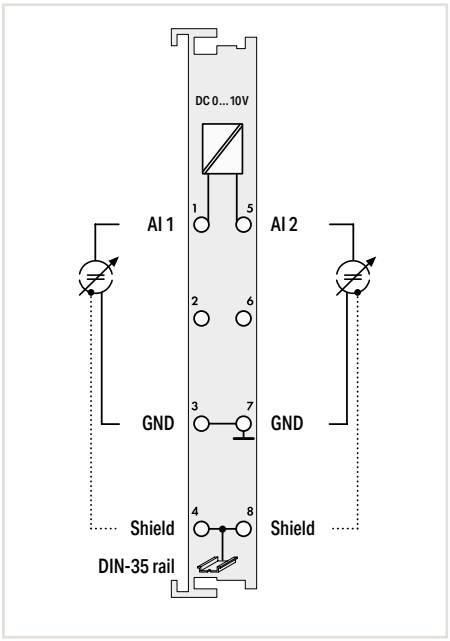
Analog Input; 0 … 10 VDC; Single-Ended

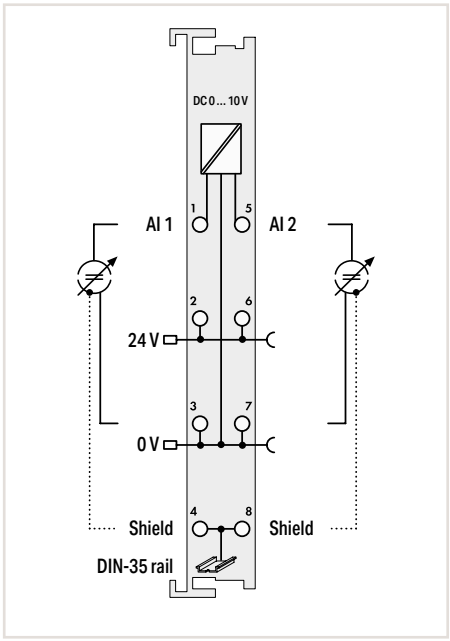


Figure: 750-467



Figure: 750-478





Item Description	2-Channel Analog Input; 0 … 10 VDC; Single-ended		2-Channel Analog Input; 0 … 10 VDC; Single-ended; 16 bits		
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**60 Hz**	**Pluggable** (delivery without connector)
Item No.	**750-467**	**753-467**	**750-478**	**750-478/005-000**	**753-478**
Order Text	2AI; 0-10 VDC; SE	2AI; 0-10 VDC; SE	2AI; 0-10 VDC; SE; 16bits	2AI; 0-10 VDC; SE; 16bits; 60Hz	2AI; 0-10 VDC; SE; 16bits
Technical Data					
Pluggable connector		•			•
Number of analog inputs	2		2		
Signal type	0 … 10 V		0 … 10 V		
Signal characteristic	Single-ended		Single-ended		
Resolution	12 bits		16 bits		
Conversion time	2 ms		80 ms		
Internal resistance	130 kΩ		130 kΩ		
Input voltage (max.)	35 V		24 V		
Input filter (analog)			50 Hz	60 Hz	50 Hz
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value		±0.1 % of the upper-range value		
Temperature error (max.)	±0.01 % of the upper-range value		±0.01 % of the upper-range value		
Supply voltage (field)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	60 mA		75 mA		
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)		2 x 16-bit data; 2 x 8-bit control/status (optional)		
Isolation	500 V (system/field)		500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm		
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-467	wago.com/753-467	wago.com/750-478		wago.com/753-478

Accessories					Item No.
Pluggable connector					753-110
Coding keys					753-150

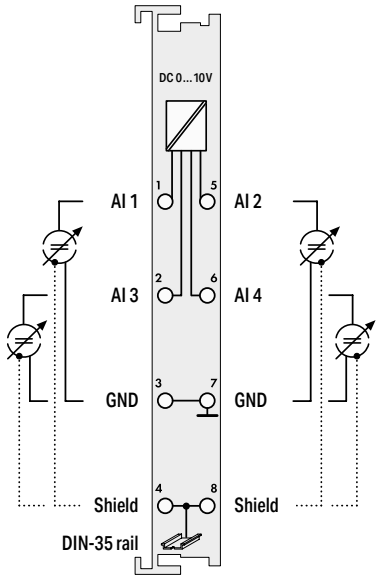
Analog Input; 0 … 10 VDC; Single-Ended

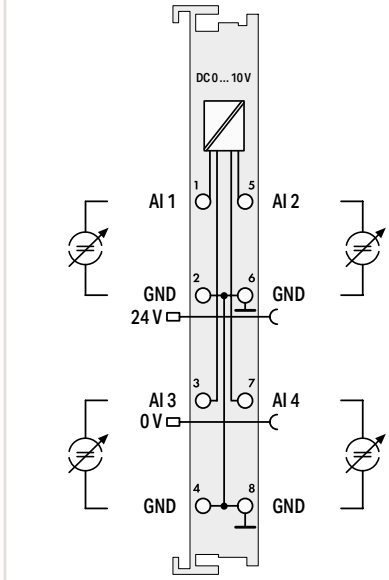


Figure: 750-468



Figure: 750-459





Item Description	4-Channel Analog Input; 0 … 10 VDC; Single-ended		4-Channel Analog Input; 0 … 10 VDC; Single-ended	
Version	**Standard**	**Extended temperature**	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-468**	**750-468/025-000**	**750-459**	**753-459**
Order Text	4AI; 0-10 VDC; SE	4AI; 0-10 VDC; SE; T	4AI; 0-10 VDC; SE	4AI; 0-10 VDC; SE
Technical Data				
Pluggable connector				•
Number of analog inputs	4		4	
Signal type	0 … 10 V		0 … 10 V	
Signal characteristic	Single-ended		Single-ended	
Resolution	12 bits		12 bits	
Conversion time	4 ms		10 ms	
Internal resistance	133 kΩ		> 100 kΩ	
Input voltage (max.)	35 V		±40 V	
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value		±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value		±0.01 % of the upper-range value	
Supply voltage (field)			24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	60 mA		65 mA	
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)		4 x 16-bit data; 4 x 8-bit control/status (optional)	
Isolation	500 V (system/field)		500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-468		wago.com/750-459	wago.com/753-459

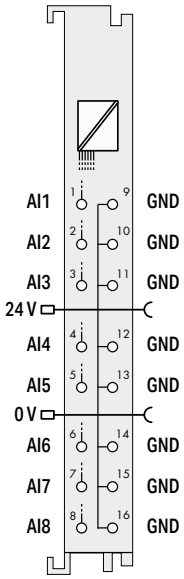
Accessories				Item No.
Pluggable connector				753-110
Coding keys				753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; Configurable ±10 VDC/0 … 10 V; Single-Ended





Item Description	**8-Channel Analog Input; 0 … 10 VDC/±10 V; Single-ended**
Version	**Standard**
Item No.	**750-497**
Order Text	8AI; 0-10 V/±10 VDC; SE
Technical Data	
Number of analog inputs	8
Signal type	Configurable: 0 … 10 V / ±10 V
Resolution	12 bits
Internal resistance	> 100 kΩ
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	105 mA
Data width	8 x 16-bit data; 8 x 8-bit control/status (optional)
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc
Data sheet and further information, see:	wago.com/750-497

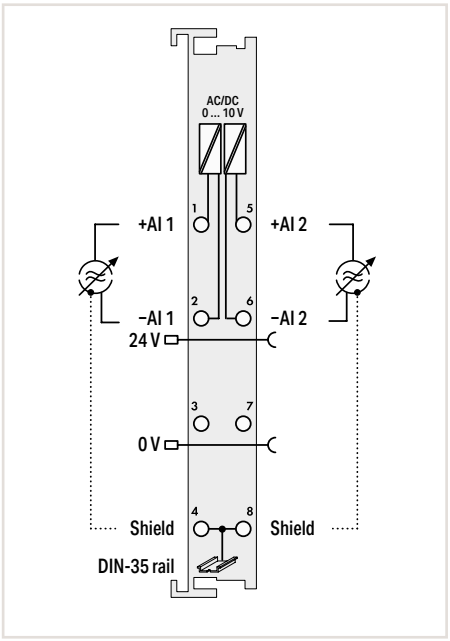
Analog Input; 0 … 10 VAC/DC or 0 … 30 VDC; Differential Input

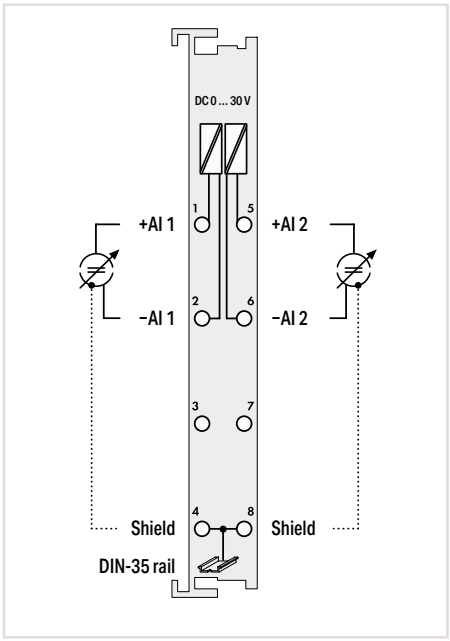


Figure: 750-477



Figure: 750-483





Item Description	2-Channel Analog Input; 0 … 10 VAC/DC; Differential input		2-Channel Analog Input; 0 … 30 VDC; Differential input	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-477**	**753-477**	**750-483**	**753-483**
Order Text	2AI; 0-10 VAC/VDC; Diff	2AI; 0-10 VAC/VDC; Diff	2AI; 0-30 VDC; Diff	2AI; 0-30 VDC; Diff
Technical Data				
Extended functionality			Time-synchronized measured value acquisition within the module	
Pluggable connector		•		•
Number of analog inputs	2		2	
Signal type	0 … 10 V rms (peak value 20 V)		0 … 30 V	
Signal characteristic	Differential		Differential	
Resolution	15 bits		14 bits	
Conversion time	200 ms		1 ms	
Internal resistance	120 kΩ		1 MΩ	
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value		±0.05 % of the upper-range value	
Temperature error (max.)	±110 ppm/K of the upper-range value		±0.01 % of the upper-range value	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	80 mA		80 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)		2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field or channel/channel)		500 V (system/field or channel/channel)	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-477	wago.com/753-477	wago.com/750-483	wago.com/753-483

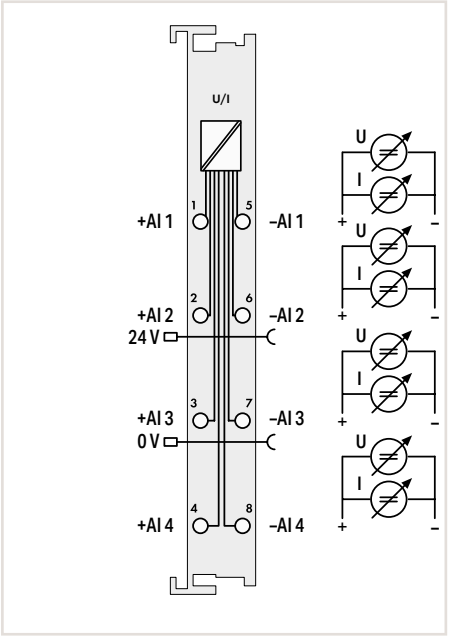
Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; Voltage/Current; Differential Input





Item Description	4-Channel Analog Input; Voltage/current; Differential input; 16 bits; Diagnostics
Item No.	**750-471**
Order Text	4AI; U/I; Diff; Galv
Technical Data	
Number of analog inputs	4 (electrically isolated)
Signal type	Voltages and currents (Configurable channel for channel)
Signal characteristic	Differential
Measurement range	0 … 20 mA; 4 … 20 mA; 3.6 … 21 mA NE43; ±20 mA 0 … 10 V; ±10 V; ±200 mV
Sensor connection	2-wire
Input impedance	AI (U) >100 kΩ; AI (I) <130 Ω (typ. 113 Ω)
Resolution	16 bits
Conversion time	≤ 5 ms
Measuring error (max.) at 25 °C	±0.1 % of the upper-range value ±0.2 % at ±200 mV
Temperature error (max.)	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	100 mA
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)
Isolation	2 kV (channel/channel); 2 kV (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-471

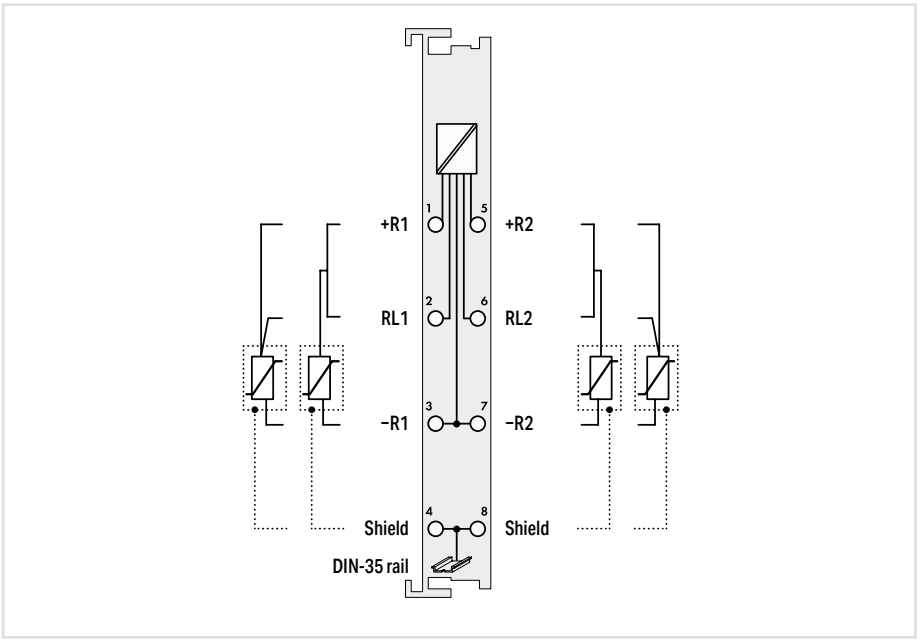
Analog Input; for Resistance Sensors



Figure: 750-461



Figure: 753-461

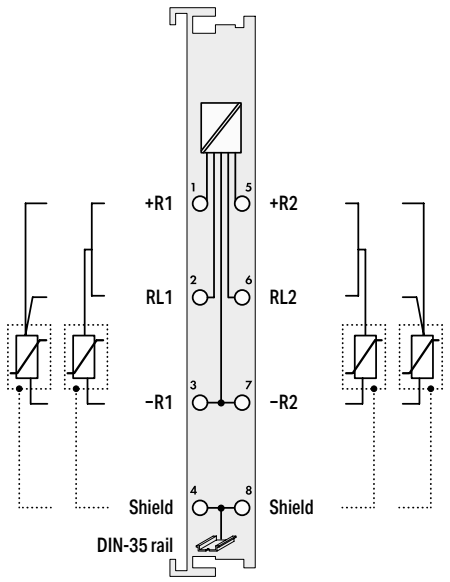


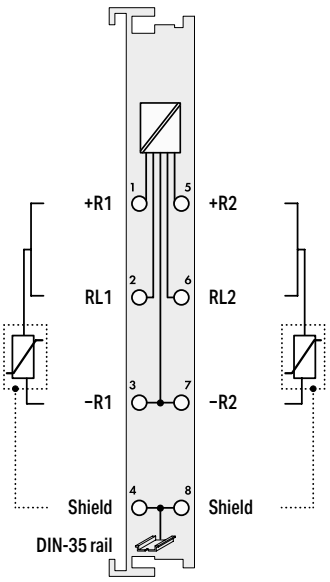
Item Description	2-Channel Analog Input; for Pt100/RTD resistance sensors					
Version	**Standard**	**Pluggable** (delivery without connector)	**Adjustable**	**Pluggable** (delivery without connector); **Adjustable**	**Extended temperature**	**Data format (S5 control)**
Item No.	**750-461**	**753-461**	**750-461/003-000**	**753-461/003-000**	**750-461/025-000**	**750-461/000-200**
Order Text	2AI; Pt100/RTD	2AI; Pt100/RTD	2AI; Pt100/RTD; Adjust	2AI; Pt100/RTD; Adjust	2AI; Pt100/ RTD; T	2AI; Pt100/ RTD; S5
Technical Data						
Pluggable connector		•		•		
Customized data format for S5 control*						•
Number of analog inputs	2					
Signal type	Pt100		Pt100 Configurable: Pt; Ni; Ohm		Pt100	
Sensor connection	2-wire; 3-wire					
Temperature range	–200 … +850 °C					
Resolution	0.1 °C					
Conversion time	320 ms (per channel)					
Measured current (typ.)	0.5 mA					
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value					
Temperature error (max.)	±0.01 % of the upper-range value					
Current consumption – system supply (5 V)	80 mA					
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)					
Isolation	500 V (system/field)					
Surrounding air temperature (operation)	0 … +55 °C				–20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm					
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx					
Data sheet and further information, see:	wago.com/750-461	wago.com/753-461	wago.com/750-461	wago.com/753-461	wago.com/750-461	

Accessories		Item No.		Item No.	
Pluggable connector		753-110		753-110	
Coding keys		753-150		753-150	

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Approvals and corresponding ratings, see page 520 or www.wago.com





2-Channel Analog Input; for resistance sensors		
Pt1000/RTD	**Ni1000/ RTD**	**Ni1000 TK5000**
750-461/000-003	**750-461/000-005**	**750-461/000-009**
2AI; Pt1000/RTD	2AI; Ni1000/RTD	2AI; Ni1000 TK5000
2		
Pt1000	Ni1000 TK6180	Ni1000 TK5000
2-wire; 3-wire		
–200 … +850 °C	–60 … +250 °C	–30 … +122 °C
0.1 °C		
320 ms (per channel)		
0.5 mA		
±0.2 % of the upper-range value		
±0.01 % of the upper-range value		
80 mA		
2 x 16-bit data; 2 x 8-bit control/status (optional)		
500 V (system/field)		
0 … +55 °C		
12 x 69.8 x 100 mm		
CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		
wago.com/750-461		

2-Channel Analog Input; for resistance sensors	2-Channel Analog Input; Resistance measurement	
NTC 20k	**10 … 1200 Ohm**	**10 … 5000 Ohm**
750-461/020-000	**750-461/000-002**	**750-461/000-007**
2AI; NTC 20k	2AI; 10R-1k2	2AI; 10R-5k0
2		
NTC 20k	10R … 1k2	10R … 5k0
2-wire		
–30 … +130 °C		
0.1 °C	0.1 Ohm	0.5 Ohm
320 ms (per channel)		
0.05 mA	0.5 mA	
0.5 … 3 K (temperature-dependent)	±0.2 % of the upper-range value	
±0.002 % of the upper-range value	±0.01 % of the upper-range value	
65 mA	80 mA	
2 x 16-bit data; 2 x 8-bit control/status (optional)		
500 V (system/field)		
0 … +55 °C		
12 x 69.8 x 100 mm		
CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		
wago.com/750-461		

Analog Input; for Resistance Sensors

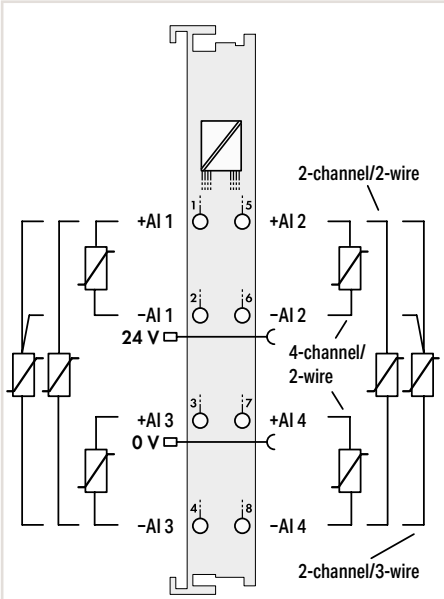
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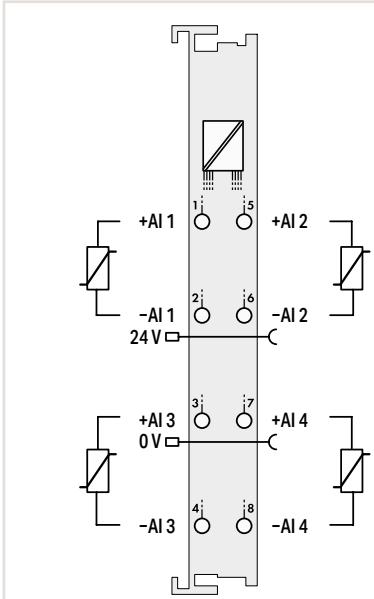


Figure: 750-464



Figure: 750-450

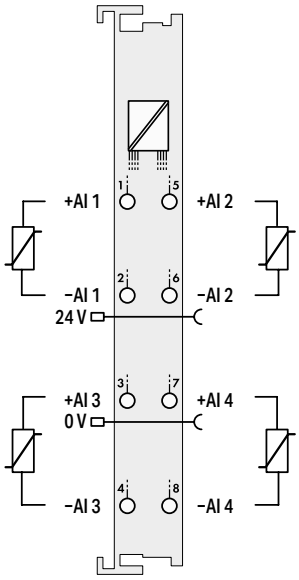


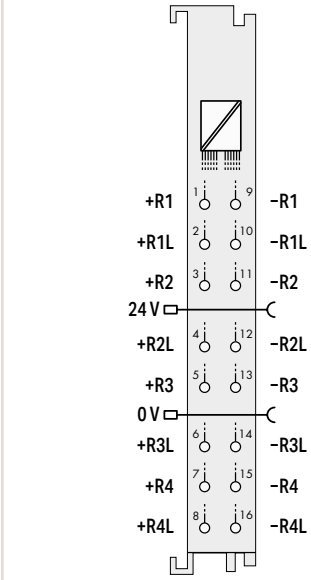


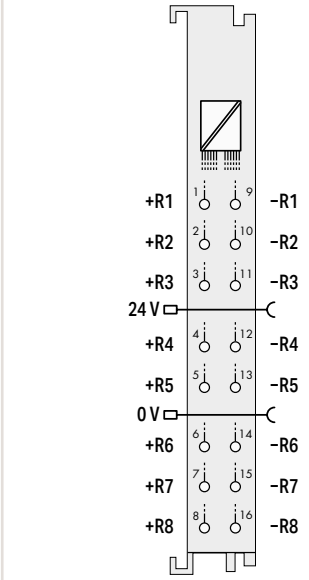
Item Description	2/4-Channel Analog Input; Resistance measurement; Adjustable	4-Channel Analog Input; for resistance sensors; Adjustable
Version	**Standard**	**NTC**
Item No.	**750-464**	**750-464/020-000**
Order Text	2/4AI; RTD; Adjust	4AI; NTC; Adjust
Technical Data		
Number of analog inputs	2/4	4
Signal type	Pt100; Configurable: Pt200; Pt500; Pt1000; Ni100; Ni120; Ni1000; Potentiometer (2-channel operation only); 10 Ohm … 1.2 kOhm; 10 Ohm … 5 kOhm	NTC 10 kOhm; Configurable: NTC 10 kOhm Thermokon; NTC 20 kOhm
Sensor connection	2-wire; 3-wire	2-wire
Temperature range	–200 … +850 °C (Pt100 … Pt1000); –60 … +300 °C (Ni100, Ni1000); –60 … +250 °C (Ni1000 TK5000); –80 … +260 °C (Ni120)	–50 … +150 °C
Resolution	0.1 °C	0.1 °C
Conversion time	320 ms (per channel)	320 ms (per channel)
Measured current (typ.)	≤ 350 µA	≤ 350 µA
Measuring error (max.) at 25 °C	1 K over entire temperature range; 0.5 K over limited temperature range (–30 … +120 °C; Pt1000)	2 K within the entire temperature range
Temperature error (max.)	20 ppm/K	20 ppm/K
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	50 mA	50 mA
Data width	4 (2) x 16-bit data; 4 (2) x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-464	wago.com/750-464/020-000

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com







4-Channel Analog Input; Resistance measurement	4-Channel Analog Input; Resistance measurement; Adjustable	8-Channel Analog Input; Resistance measurement; Adjustable	
Measurement range: –30 °C … +150 °C	Standard	Standard	Extended temperature
750-463	750-450	750-451	750-451/025-000
4AI; RTD;-30°C…+150°C	4AI; RTD; Adjust	8AI; RTD; Adjust	8AI; RTD; Adjust; T
4	4	8	
Pt1000; Configurable: Ni1000; KTY 81	Pt100; Configurable: Pt200; Pt500; Pt1000; Ni100; Ni120; Ni1000 (TK6180 + TK5000); Potentiometer 0 Ohm … 1.2 kOhm; 0 Ohm … 5 kOhm	Pt100; Configurable: Pt200; Pt500; Pt1000; Ni100; Ni120; Ni1000 (TK6180 + TK5000); Potentiometer 0 Ohm … 1.2 kOhm; 0 Ohm … 5 kOhm	
2-wire	2-wire; 3-wire; 4-wire	2-wire	
–30 … +150 °C	–200 … +850 °C (Pt100, Pt200, Pt500, Pt1000); –60 … +250 °C (Ni100, Ni1000); –80 … +260 °C (Ni120)	–200 … +850 °C (Pt100, Pt200, Pt500, Pt1000); –60 … +250 °C (Ni100, Ni1000); –80 … +260 °C (Ni120)	
0.1 °C	0.1 °C	0.1 °C	
	Per channel: ≤ 100 ms (2-/4-wire connection), ≤ 200 ms (3-wire connection)	Per channel: ≤ 100 ms	
≤ 350 µA	≤ 350 µA	≤ 350 µA	
0.5 K in temperature range: –30 … +150 °C	±0.6 K (Pt100, Pt200, Pt500, Ni100, Ni120); ±0.2 K (Pt1000, Ni1000); ±0.3 … 0.7 Ω at resistance measurement	±0.6 K (Pt100, Pt200, Pt500, Ni100, Ni120); ±0.2 K (Pt1000, Ni1000); ±0.3 Ω at resistance measurement	
20 ppm/K	±5 ppm/K	±5 ppm/K	
24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
50 mA	85 mA	110 mA	
4 x 16-bit data; 4 x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)	8 x 16-bit data; 8 x 8-bit control/status (optional)	
500 V (system/field)	500 V (system/field)	500 V (system/field)	
0 … +55 °C	0 … +55 °C	0 … +55 °C	–20 … +60 °C
12 x 69.8 x 100 mm	12 x 69.8 x 100 mm	12 x 69.8 x 100 mm	
CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
wago.com/750-463	wago.com/750-450	wago.com/750-451	

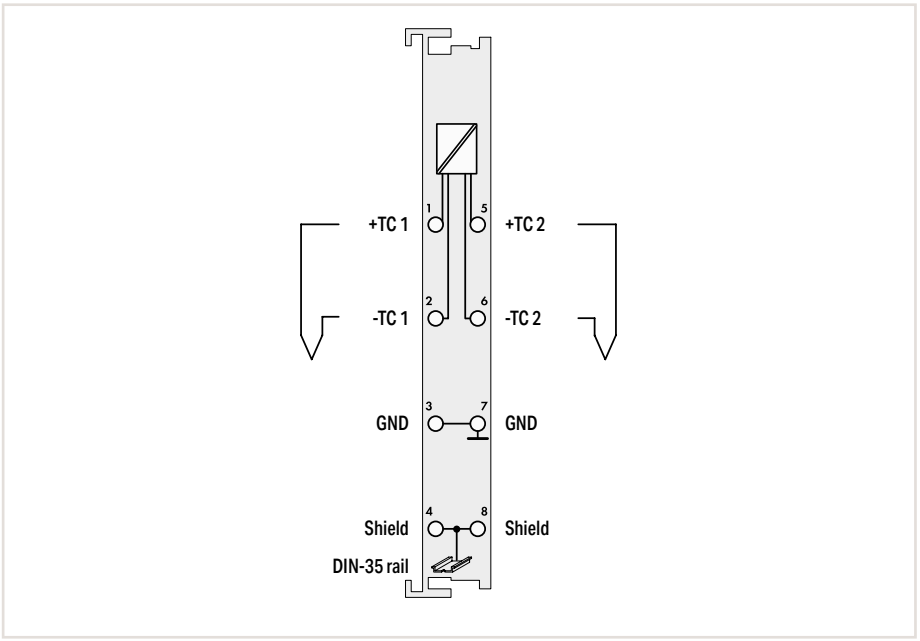
Analog Input; for Thermocouples



Figure: 750-469



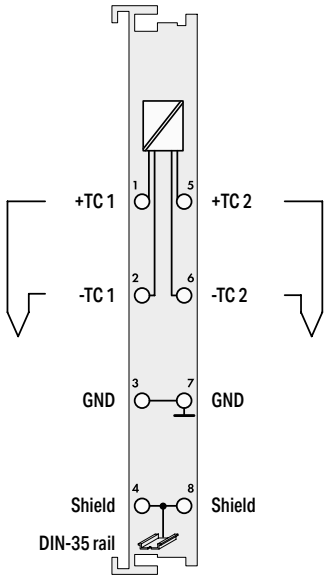
Figure: 750-458

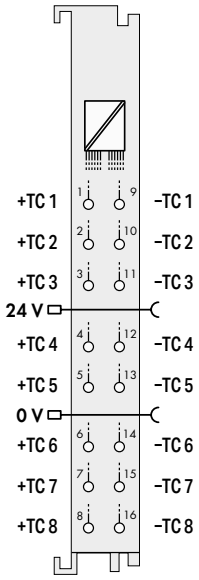


Item Description	2-Channel Analog Input; Thermocouple K; Diagnostics				
Version	**Standard**	**Pluggable** (delivery without connector)	**Adjustable**	**Pluggable** (delivery without connector); **Adjustable**	**Data format (S5 control)**
Item No.	**750-469**	**753-469**	**750-469/003-000**	**753-469/003-000**	**750-469/000-200**
Order Text	2AI; TC K; Diagn	2AI; TC K; Diagn	2AI; TC K; Diagn Adjust	2AI; TC K; Diagn Adjust	2AI; TC K; Diagn; S5
Technical Data					
Pluggable connector		•		•	
Customized data format for S5 control*					•
Number of analog inputs	2				
Signal type	Thermocouple K		Thermocouple K; Configurable: L; J; E; T; N; U; B; R; S; mV		Thermocouple K
Temperature range	–100 … +1370 °C		Sensor-specific		–100 … +1370 °C
Resolution	0.1 °C				
Conversion time	320 ms				
Measuring error (max.) at 25 °C	±6 K (voltage input: ±2 K; cold junction compensation: ±4 K)				
Temperature error (max.)	±0.2 K/K				
Cold junction compensation	Integrated or external				
Supply voltage (field)					
Current consumption – system supply (5 V)	65 mA				
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)				
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C				
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-469	wago.com/753-469	wago.com/750-469	wago.com/753-469	wago.com/750-469

Accessories		Item No.		Item No.	
Pluggable connector		753-110		753-110	
Coding keys		753-150		753-150	

*The S5 format allows you to import data with the standard S5 FB 250 function block.

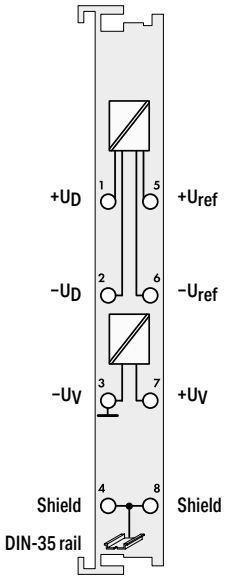


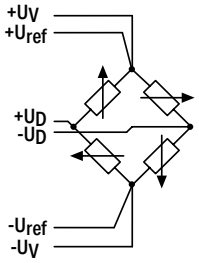


2-Channel Analog Input; Thermocouple; Diagnostics						8-Channel Analog Input; Thermocouple; Adjustable
Thermocouple S	Thermocouple T	Thermocouple J	Thermocouple E	Thermocouple L	Thermocouple ±120 mV;	Standard
750-469/000-001	750-469/000-002	750-469/000-006	750-469/000-008	750-469/000-012	750-469/000-003	750-458
2AI; TC S; Diagn	2AI; TC T; Diagn	2AI; TC J; Diagn	2AI; TC E; Diagn	2AI; TC L; Diagn	2AI; TC ±120mV; Diagn	8AI; TC; Adjust
2						8
Thermocouple S	Thermocouple T	Thermocouple J	Thermocouple E	Thermocouple L	±120 mV	Thermocouple K; Configurable: J; B; E; N; R; S; T; U; C; Voltage measurement: −30 … +30 mV; −60 … +60 mV; −120 … +120 mV; −240 … +240 mV
−50 … +1700 °C	−100 … +400 °C	−100 … +1200 °C	−100 … +1000 °C	−100 … +900 °C		Sensor-specific
0.1 °C						0.1 °C
320 ms						Per channel: ≤ 100 ms
±6 K (voltage input: ±2 K; cold junction compensation: ±4 K)						Without cold junction compensation: ±1 K (type E, N, K, T, J, C); ±2 K (type S, R); ±3 K (type B); Cold-junction compensation measurement error: ±4 K
±0.2 K/K						±0.05 K/K
Integrated or external						Integrated or external
						24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
65 mA						100 mA
2 x 16-bit data; 2 x 8-bit control/status (optional)						8 x 16-bit data; 8 x 8-bit control/status (optional)
500 V (system/field)						500 V (system/field)
0 … +55 °C						0 … +55 °C
12 x 69.8 x 100 mm						12 x 69.8 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx						CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-469						wago.com/750-458

Analog Input; for Resistor Bridges (Strain Gauge)







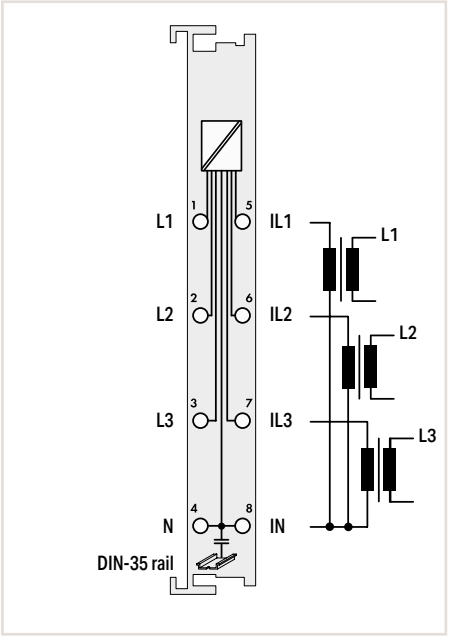
Item Description	1-Channel Analog Input; Resistor bridges (strain gauge)	
Version	**Standard**	**Conversion time: 125 ms**
Item No.	**750-491**	**750-491/000-001**
Order Text	1AI; DMS	1AI; DMS; 125ms
Technical Data		
Number of analog inputs	1	
Signal type	Resistor bridge (strain gauge)	
Signal voltage U_D	−15 … +15 mV	
Signal voltage U_{ref}	+2 … +6 V	
Internal resistance	> 200 kΩ (U_{ref}); > 1 MΩ (U_D)	
Supply voltage U_v	5 VDC; 20 mA	
Resolution	16 bits	
Conversion time	500 ms	125 ms
Measuring error	U_D: ±30 µV; U_{ref}: ±10 mV	
Filter	50 Hz	200 Hz
Current consumption – system supply (5 V)	65 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc	
Data sheet and further information, see:	wago.com/750-491	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; for 3-Phase Power Measurement





Item Description	3-Phase Power Measurement; 480 VAC 1 A		
Version	Standard	Extended temperature	480 VAC, 5 A
Item No.	750-493	750-493/025-000	750-493/000-001
Order Text	3-PHASE POM; 480VAC 1A	3-PHASE POM; 480VAC 1A; T	3-PHASE POM; 480VAC 5A

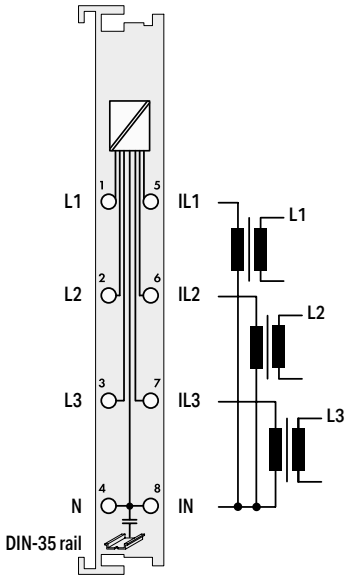
Technical Data			
Signal type	3-phase power measurement		
Measured variables	Voltage; Current; Effective power; Reactive power; Apparent power; Power consumption; Frequency; Cos phi		
Number of measurement inputs	6 (3 voltage measurement inputs; 3 current measurement inputs)		
Rated voltage	ULN = 277 VAC/VDC; ULL = 480 VAC		
Input resistance (voltage path) typ.	1071 kΩ		
Measuring current (max.)	1 A		5 A
Input resistance (current path) typ.	22 mΩ		5 mΩ
Resolution	16 bits		
Measuring error (max.) at 25 °C	AC current/voltage:		
	±0.5 % of the upper-range value	±0.6 % of the upper-range value	±0.5 % of the upper-range value
Frequency range (mains frequency)	45 … 65 Hz		
Limit frequency	7.2 kHz		
Current consumption – system supply (5 V)	100 mA		
Data width	2 x 48-bit data; 2 x 24-bit control/status (optional)		
Isolation	4 kV (system/field)		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-493		

Accessories	Item No.
Split-core and plug-in current transformers	See Full Line Catalog, Volume 4

Analog Input; for 3-Phase Power Measurement

5.4





Item Description	3-Phase Power Measurement; 480 VAC 1 A			
Version	Standard	Extended temperature	480 VAC, 5 A	480 VAC 5 A; Extended temperature
Item No.	750-494	750-494/025-000	750-494/000-001	750-494/025-001
Order Text	3-PHASE POM; 480VAC 1A	3-PHASE POM; 480VAC 1A; T	3-PHASE POM; 480VAC 5A	3-PHASE POM; 480VAC 5A; T

Technical Data				
Signal type	3-phase power measurement			
Measured variables	Voltage; Current; Effective power; Reactive power; Apparent power; Power consumption; Frequency; Cos phi; Harmonics (up to the 41st harmonic); THD and more			
Number of measurement inputs	6 (3 voltage measurement inputs; 3 current measurement inputs)			
Rated voltage	ULN = 277 VAC/VDC; ULL = 480 VAC			
Input resistance (voltage path) typ.	1072 kΩ			
Measuring current (max.)	1 A		5 A	
Input resistance (current path) typ.	22 mΩ		5 mΩ	
Resolution	24 bits			
Measuring error (max.) at 25 °C	AC current/voltage: ±0.5 % the upper-range value			
Frequency range (mains frequency)	45 … 65 Hz			
Frequency range (harmonics analysis)	0 … 3300 Hz			
Limit frequency	15.9 kHz			
Current consumption – system supply (5 V)	100 mA			
Data width	2 x 128-bit data; 2 x 64-bit control/status			
Isolation	4 kV (system/field)			
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	−20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-494			

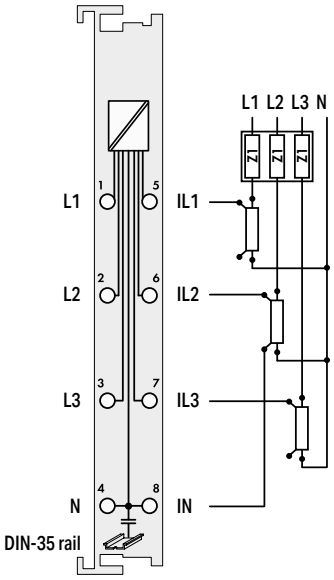
Accessories	Item No.
Split-core and plug-in current transformers	See Full Line Catalog, Volume 4

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; for Power Measurement



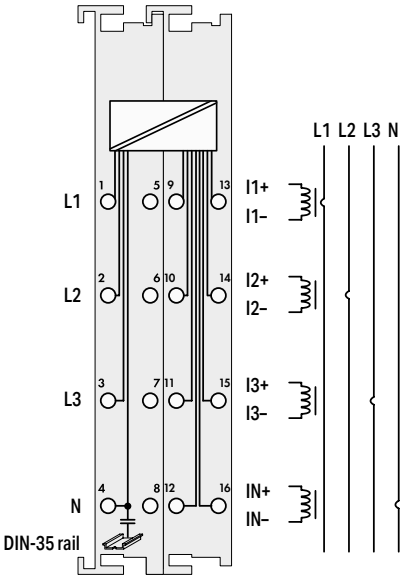


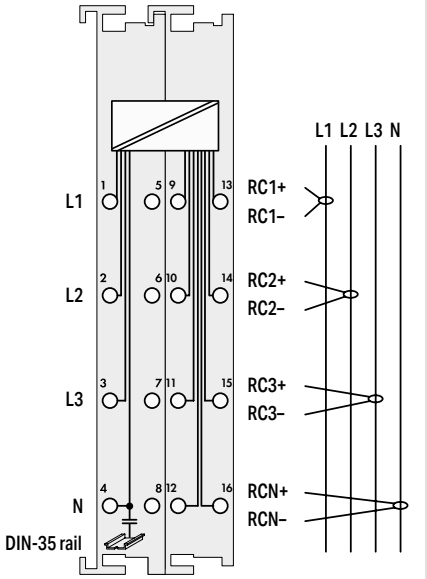
Item Description	Power Measurement
Version	277 VAC/DC; External shunts
Item No.	750-494/000-005
Order Text	Power Measurement; 277 VAC/DC; External shunts

Technical Data	
Signal type	Power Measurement
Measured variables	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); THD
Number of measurement inputs	6 (3 voltage measurement inputs*; 3 current measurement inputs*); *Only 2 voltage/current measurement inputs can be used for DC measurement!
Rated voltage	ULN = 277 VAC/VDC; ULL = 480 VAC
Input resistance (voltage path) typ.	1072 kΩ
Measuring current (max.)	1 … 20,000 A via ext. shunts (DIN 43703, DIN EN 60051 [50 … 300 mV])
Input resistance (current path) typ.	Approx. 15 kΩ
Resolution	24 bits
Measuring error for current and voltage	AC: 0.5 % (max.); DC: 1.0 % (of the upper-range value)
Frequency range (mains frequency)	45 … 65 Hz
Frequency range (harmonics analysis)	0 … 3300 Hz
Limit frequency	15.9 kHz
Current consumption – system supply (5 V)	100 mA
Data width	2 x 128-bit data; 2 x 64-bit control/status
Isolation	4 kV (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-494/000-005

Analog Input; for 3-Phase Power Measurement







Item Description	3-Phase Power Measurement; 690 VAC 1 A		3-phase power measurement
Version	Standard	690 VAC 5 A	690 VAC Rogowski coils
Item No.	750-495	750-495/000-001	750-495/000-002
Order Text	3-PHASE POM; 690VAC 1A	3-PHASE POM; 690VAC 5A	3-PHASE POM; 690VAC R.C.

Technical Data			
Signal type	3-phase power measurement		3-phase power measurement
Measured variables	Voltage; Current; Effective power; Reactive power; Apparent power; Power consumption; Frequency; Cos phi; Harmonics (up to the 41st harmonic); THD; Current measurement in N-conductor; and more		Voltage; Current; Effective power; Reactive power; Apparent power; Power consumption; Frequency; Cos phi; Harmonics (up to the 41st harmonic); THD; Current measurement in N-conductor; and more
Number of measurement inputs	7 (3 voltage measurement inputs; 4 differential current measurement inputs)		7 (3 voltage measurement inputs; 4 differential current measurement inputs)
Rated voltage	U_{LN} = 400 VAC; U_{LL} = 690 VAC		U_{LN} = 277 VAC; U_{LL} = 480 VAC
Input resistance (voltage path) typ.	1429 kΩ		1429 kΩ
Measuring current (max.)	1 A	5 A	Rogowski coils
Input resistance (current path) typ.	22 mΩ	5 mΩ	44 kΩ
Resolution	24 bits		24 bits
Measuring error (max.) at 25 °C	AC current/voltage: ±0.5 % of the upper-range value		AC current/voltage: ±0.5 % of the upper-range value
Frequency range (mains frequency)	45 … 65 Hz		45 … 65 Hz
Frequency range (harmonics analysis)	0 … 3300 Hz		0 … 3300 Hz
Limit frequency	15.9 kHz		15.9 kHz
Current consumption – system supply (5 V)	100 mA		100 mA
Data width	2 x 128-bit data; 2 x 64-bit control/status		2 x 128-bit data; 2 x 64-bit control/status
Isolation	6 kV (system/field)		6 kV (system/field)
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	24 x 69.8 x 100 mm		24 x 69.8 x 100 mm
Approvals	CE; KC; Marine		CE; KC; Marine
Data sheet and further information, see:	wago.com/750-495		wago.com/750-495/000-002

Accessories	Item No.	Item No.
Split-core and plug-in current transformers	See Full Line Catalog, Volume 4	
Rogowski coils		See Full Line Catalog, Volume 4

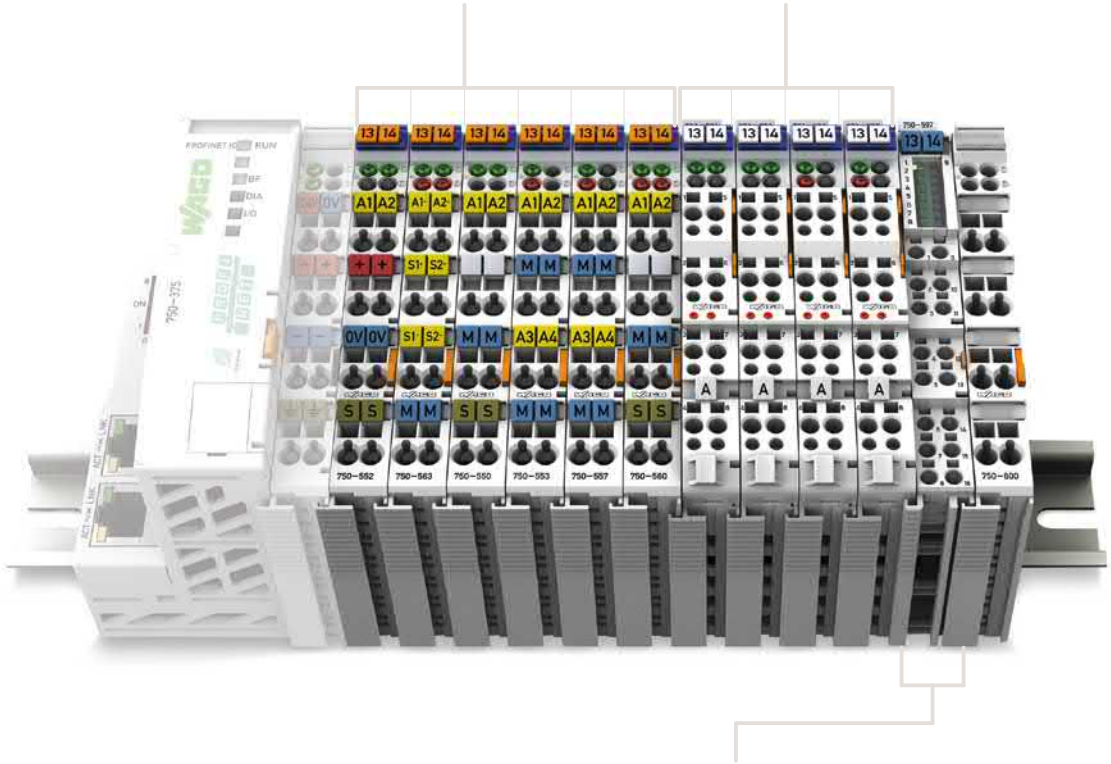
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Output Modules

Housing design (750 Series)	
Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper-edge of DIN-rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor range	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper-edge of DIN-rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor range	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor range	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25–1.5 mm² / 22–16 AWG;
Strip length	8 … 9 mm / 0.33 inch





I/O System –
750 XTR Series

I/O System – 750 and 753 Series; Analog Output Modules
Contents

Function	2-Channel AO	4-Channel AO	8-Channel AO	Description	Item Number				Page
					Standard	/S5 Customized Data Format	Extended Temperature	Pluggable	
0 … 20 mA	■			2-Channel Analog Output; 0 … 20 mA	750-552	750-552/000-200	750-552/025-000	753-552	248
		■		4-Channel Analog Output; 0 … 20 mA	750-553			753-553	249
4 … 20 mA	■			2-Channel Analog Output; 4 … 20 mA	750-554	750-554/000-200	750-554/025-000	753-554	250
		■		4-Channel Analog Output; 4 … 20 mA	750-555			753-555	251
0/4 … 20 mA	■			2-Channel Analog Output; 0/4 … 20 mA; 16 bits; 6 … 18 VDC	750-563*				251
0 … 10 V	■			2-Channel Analog Output; 0 … 10 VDC	750-550	750-550/000-200		753-550	252
	■			2-Channel Analog Output; 0 … 10 VDC; 10 bits; 100 mW/24 V	750-560				252
		■		4-Channel Analog Output; 0 … 10 VDC	750-559*		750-559/025-000	753-559	253
±10 V	■			2-Channel Analog Output; ±10 VDC	750-556	750-556/000-200		753-556	254
		■		4-Channel Analog Output; ±10 VDC	750-557*			753-557	254
0 … 10 V/±10 V	■			2-Channel Analog Output; 0 … 10 VDC/±10 V; 16 bits	750-562				255
			■	8-Channel Analog Output; 0 … 10 VDC/±10 V	750-597				255
Ex i									See Section 5.9
*This module is also available as a 750 XTR Series variant.									See Section 6

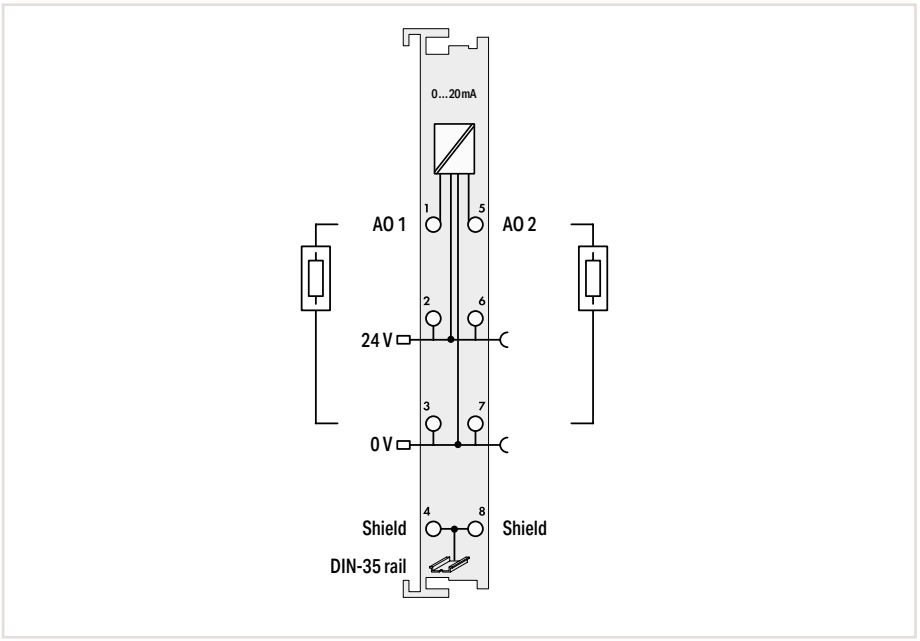
Analog Output; 0 … 20 mA



Figure: 750-552



Figure: 753-552



Item Description	2-Channel Analog Output; 0 … 20 mA			
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Data Format (S5 Control)**
Item No.	**750-552**	**750-552/025-000**	**753-552**	**750-552/000-200**
Order Text	2AO; 0-20mA	2AO; 0-20mA; T	2AO; 0-20mA	2AO; 0-20mA; S5
Technical Data				
Pluggable connector			•	
Customized data format for S5 control*				•
Number of analog outputs	2			
Signal type	0 … 20 mA			
Actuator connection	2-wire			
Load impedance	< 600 Ω			
Resolution	12 bits			
Conversion time	Approx. 2 ms			
Output error (max.) at 25 °C	±0.1 % of the upper-range value			
Temperature error (max.)	±0.01 % of the upper-range value			
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	70 mA			
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-552		wago.com/753-552	wago.com/750-552

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 521 or www.wago.com

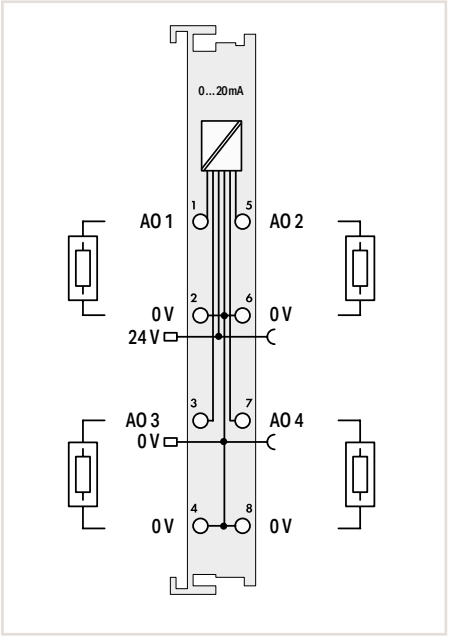
Analog Output; 0 … 20 mA



Figure: 750-553



Figure: 753-553



Item Description	4-Channel Analog Output; 0 … 20 mA	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-553**	**753-553**
Order Text	4AO; 0-20mA	4AO; 0-20mA
Technical Data		
Pluggable connector		•
Number of analog outputs	4	
Signal type	0 … 20 mA	
Actuator connection	2-wire	
Load impedance	Either 0 … 300 Ω or 300 … 600 Ω (same resistance for all load impedances)	
Resolution	12 bits	
Conversion time	10 ms	
Output error (max.) at 25 °C	±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value	
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	60 mA	
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-553	wago.com/753-553

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

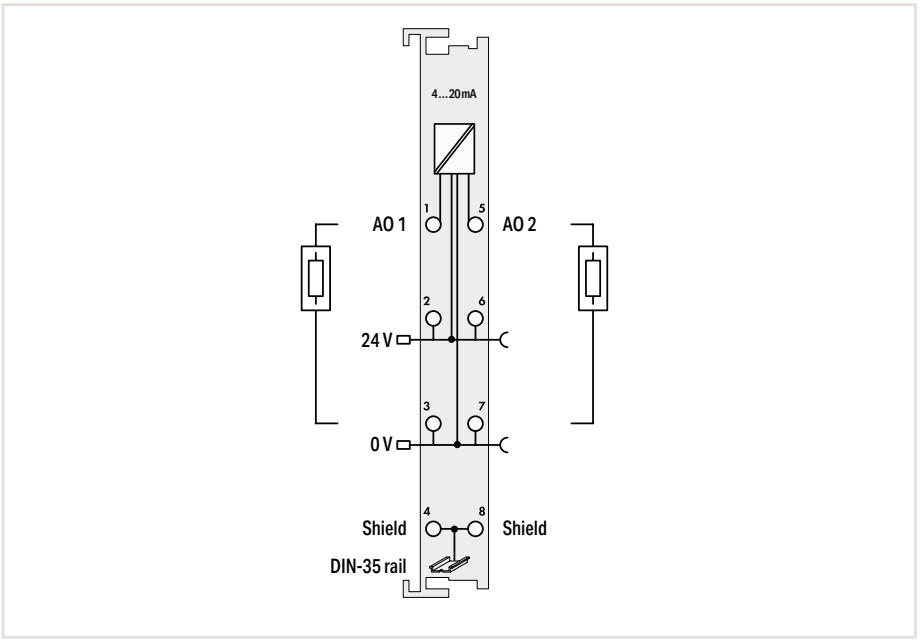
Analog Output; 4 … 20 mA



Figure: 750-554



Figure: 753-554



Item Description	2-Channel Analog Output; 4 … 20 mA			
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)	**Data format (S5 control)**
Item No.	**750-554**	**750-554/025-000**	**753-554**	**750-554/000-200**
Order Text	2AO; 4-20mA	2AO; 4-20mA; T	2AO; 4-20mA	2AO; 4-20mA; S5
Technical Data				
Pluggable connector			•	
Customized data format for S5 control*				•
Number of analog outputs	2			
Signal type	4 … 20 mA			
Actuator connection	2-wire			
Load impedance	< 600 Ω			
Resolution	12 bits			
Conversion time	Approx. 2 ms			
Output error (max.) at 25 °C	±0.1 % of the upper-range value			
Temperature error (max.)	±0.015 %/K of the upper-range value			
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	70 mA			
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-554		wago.com/753-554	wago.com/750-554

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 521 or www.wago.com

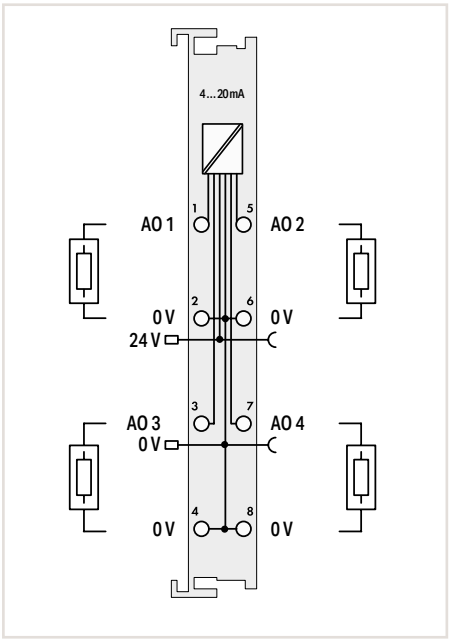
Analog Output; 4 … 20 mA or Configurable 0/4 … 20 mA; 6 … 18 VDC

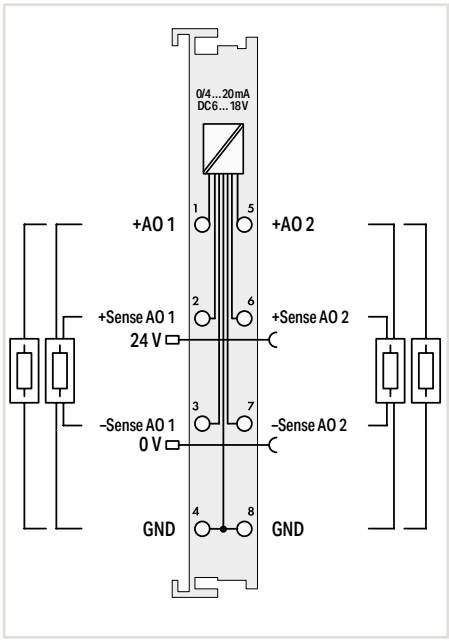


Figure: 750-555



Figure: 753-555





Item Description	4-Channel Analog Output; 4 … 20 mA		2-Channel Analog Output; 0/4 … 20 mA; 16 bits; 6 … 18 VDC
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**
Item No.	**750-555**	**753-555**	**750-563**
Order Text	4AO; 4-20mA	4AO; 4-20mA	2AO; 0/4-20mA; 16bits; 6-18 VDC
Technical Data			
Pluggable connector		•	
Number of analog outputs	4		2
Signal type	4 … 20 mA		0 … 20 mA; 4 … 20 mA; 6 … 18 V
Actuator connection	2-wire		2-wire; 4-wire
Load impedance	Either 0 … 300 Ω or 300 … 600 Ω (same resistance for all load impedances)		> 1.8 kΩ (voltage output); < 500 Ω (current output)
Resolution	12 bits		16 bits
Conversion time	10 ms		5 ms
Output error (max.) at 25 °C	±0.1 % of the upper-range value		±0.05 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value		±100 ppm
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	60 mA		80 … 110 mA
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)		2 x 16-bit data; 2 x 8-bit control/status (optional)
Isolation	500 V (system/field)		500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-555	wago.com/753-555	wago.com/750-563

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

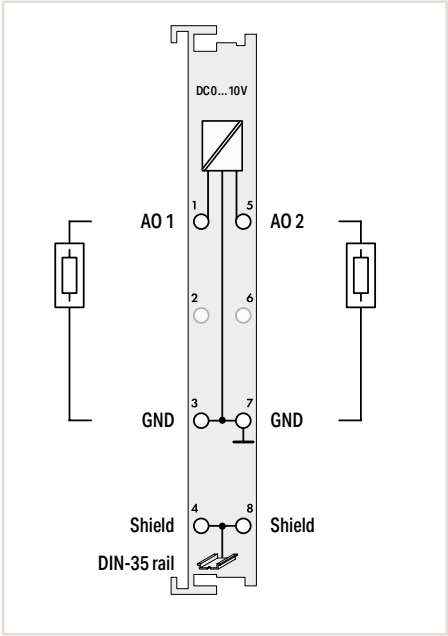
Analog Output; 0 … 10 VDC

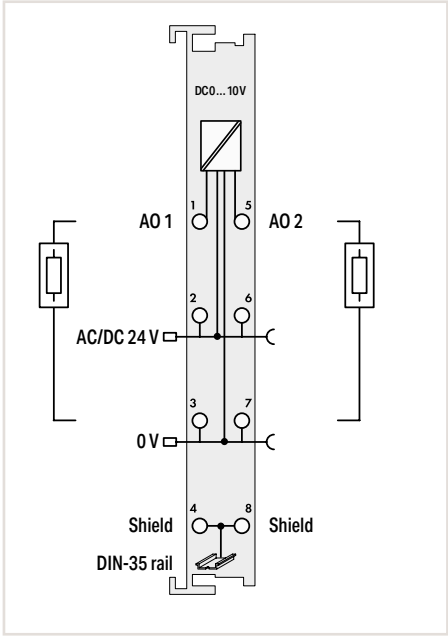


Figure: 750-550



Figure: 753-550





Item Description	2-Channel Analog Output; 0 … 10 VDC			2-Channel Analog Output; 0 … 10 VDC; 10 bits; 100 mW/24 V
Version	**Standard**	**Data format (S5 control)**	**Pluggable** (delivery without connector)	**Standard**
Item No.	**750-550**	**750-550/000-200**	**753-550**	**750-560**
Order Text	2AO; 0-10 VDC	2AO; 0-10 VDC; S5	2AO; 0-10 VDC	2AO; 0-10 VDC; 10Bit; 100mW/ 24V
Technical Data				
Pluggable connector			•	
Customized data format for S5 control*		•		
Number of analog outputs	2			2
Signal type	0 … 10 V			0 … 10 V
Actuator connection	2-wire			2-wire
Load impedance	> 5 kΩ			≥ 1 kΩ
Resolution	12 bits			10 bits
Conversion time	Approx. 2 ms			Approx. 10 ms
Output error (max.) at 25 °C	±0.1 % of the upper-range value			±0.2 % of the upper-range value
Temperature error (max.)	±0.01 % of the upper-range value			±0.02 % of the upper-range value
Supply voltage (field)				24 V AC/DC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	65 mA			16 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			2 x 16-bit data; 2 x 8-bit control/status (optional)
Isolation	500 V (system/field)			500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-550		wago.com/753-550	wago.com/750-560

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 521 or www.wago.com

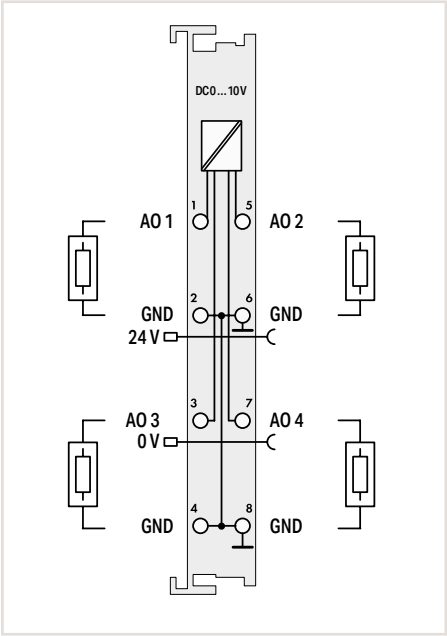
Analog Output; 0 … 10 VDC



Figure: 750-559



Figure: 753-559



Item Description	4-Channel Analog Output; 0 … 10 VDC		
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)
Item No.	**750-559**	**750-559/025-000**	**753-559**
Order Text	4AO; 0-10 VDC	4AO; 0-10 VDC; T	4AO; 0-10 VDC

Technical Data			
Pluggable connector			•
Number of analog outputs	4		
Signal type	0 … 10 V		
Actuator connection	2-wire		
Load impedance	> 5 kΩ		
Resolution	12 bits		
Conversion time	10 ms		
Output error (max.) at 25 °C	±0.1 % of the upper-range value		
Temperature error (max.)	±0.01 % of the upper-range value		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	125 mA		
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)		
Isolation	500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-559		wago.com/753-559

Accessories		Item No.
Pluggable connector		**753-110**
Coding keys		**753-150**

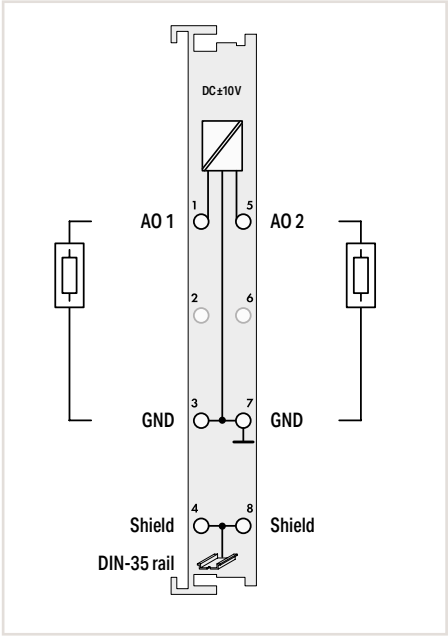
Analog Output; ±10 VDC

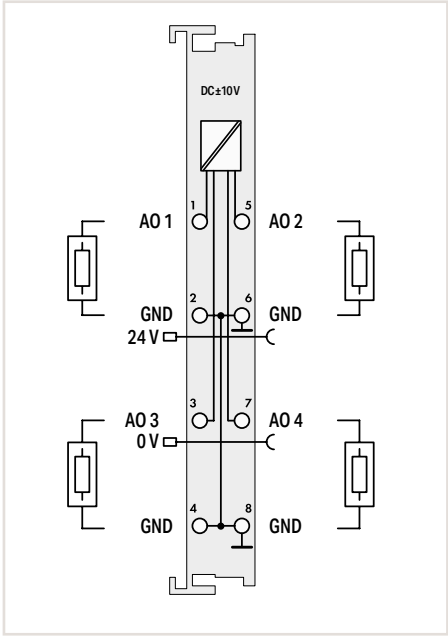


Figure: 750-556



Figure: 753-556





Item Description	2-Channel Analog Output; ±10 VDC			4-Channel Analog Output; ±10 VDC	
Version	**Standard**	**Data format (S5 control)**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-556**	**750-556/000-200**	**753-556**	**750-557**	**753-557**
Order Text	2AO; ±10 VDC	2AO; ±10 VDC; S5	2AO; ±10 VDC	4AO; ±10 VDC	4AO; ±10 VDC
Technical Data					
Pluggable connector			•		•
Customized data format for S5 control*		•			
Number of analog outputs	2			4	
Signal type	±10 V			±10 V	
Actuator connection	2-wire			2-wire	
Load impedance	> 5 kΩ			> 5 kΩ	
Resolution	12 bits			12 bits	
Conversion time	Approx. 2 ms			10 ms	
Output error (max.) at 25 °C	±0.1 % of the upper-range value			±0.1 % of the upper-range value	
Temperature error (max.)	±0.01 % of the upper-range value			±0.01 % of the upper-range value	
Supply voltage (field)				24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	65 mA			125 mA	
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)			4 x 16-bit data; 4 x 8-bit control/status (optional)	
Isolation	500 V (system/field)			500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C			0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-556		wago.com/753-556	wago.com/750-557	wago.com/753-557

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

*The S5 format allows you to import data with the standard S5 FB 250 function block.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 521 or www.wago.com

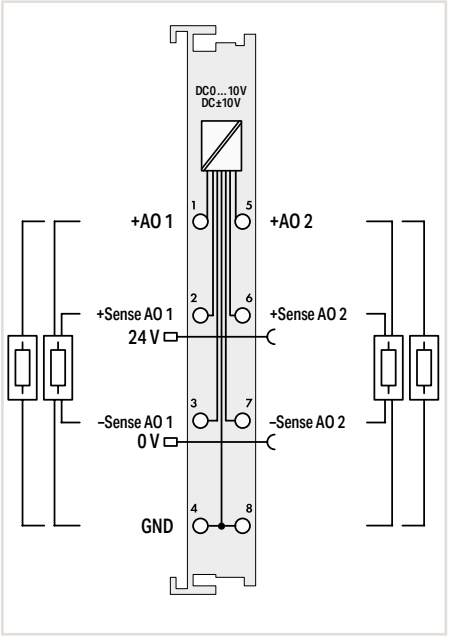
Analog Output; Configurable 0 … 10 VDC; ±10 V

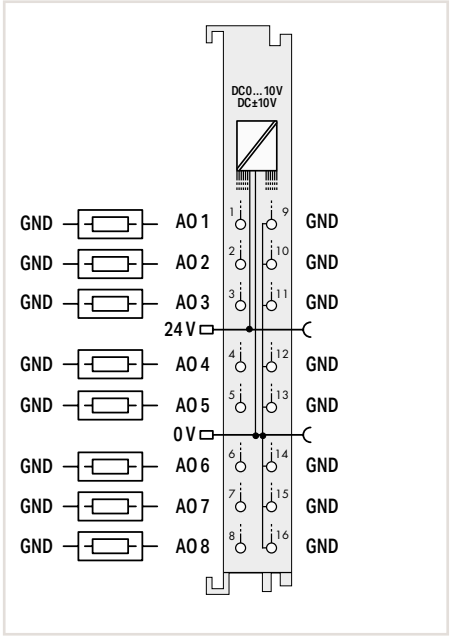


Figure: 750-562



Figure: 750-597





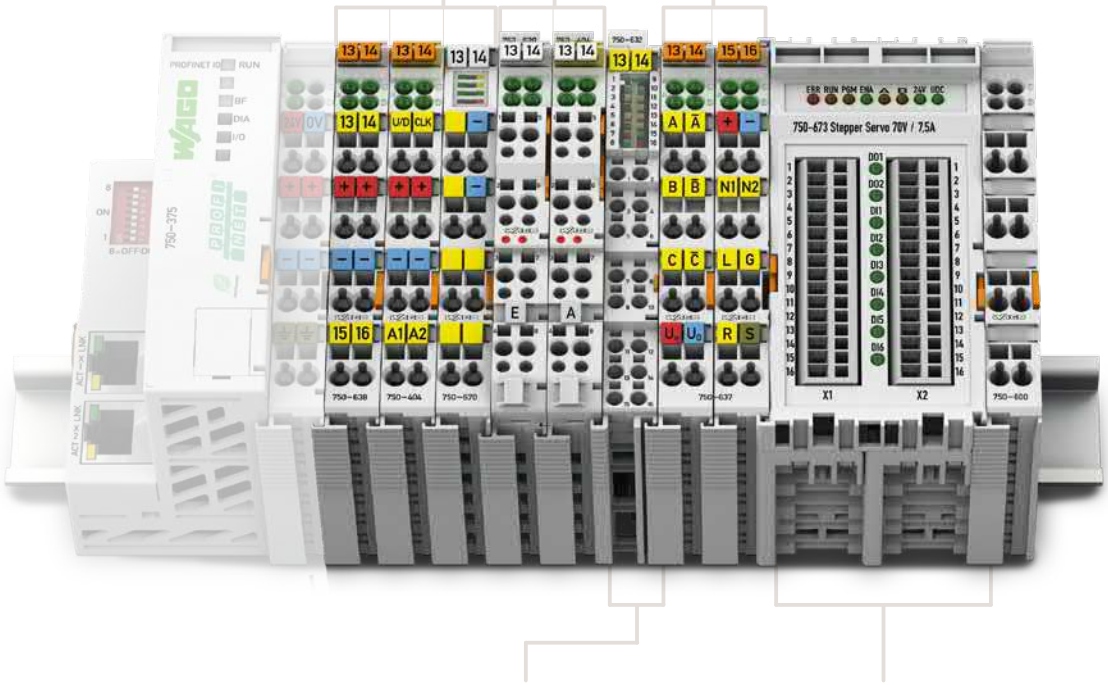
Item Description	2-Channel Analog Output; 0 … 10 VDC/±10 V; 16 bits	8-Channel Analog Output; 0 … 10 VDC/±10 V
Version	**Standard**	**Standard with 16 connectors**
Item No.	**750-562**	**750-597**
Order Text	2AO; 0-10 V/±10 VDC; 16bits	8AO; 0-10 V/±10 VDC
Technical Data		
Number of analog outputs	2	8
Signal type	0 … 10 V; ±10 V	0 … 10 V; ±10 V
Actuator connection	2-wire; 4-wire	2-wire
Load impedance	> 5 kΩ	≥ 2 kΩ
Resolution	16 bits	12 bits
Conversion time	5 ms	13 ms
Output error (max.) at 25 °C	±0.05 % of the upper-range value	±0.1 % of the upper-range value
Temperature error (max.)	±100 ppm	±10 ppm/K of the upper-range value
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–15 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	80 … 170 mA	61 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	8 x 16-bit data; 8 x 8-bit control/status (optional)
Isolation	500 V (system/field)	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC
Data sheet and further information, see:	wago.com/750-562	wago.com/750-597

Function/Technology Modules

Housing design (750 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch

Housing design (750 Series), double width	
Dimensions W x H x D	24 x 69.8 x 100 mm
Height from upper-edge of DIN-rail	62.6 mm



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25–1.5 mm² / 22–16 AWG;
Strip length	8 … 9 mm / 0.33 inch

Specialty housing	
Dimensions W x H x D	51 x 69.8 x 100 mm
Height from upper-edge of DIN-rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 1.5 mm² / 28 … 14 AWG
Strip length	5 … 6 mm / 0.22 in





I/O System –
750 XTR Series

I/O System – 750 and 753 Series; Function/Technology Modules
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*This module is also available as a 750 XTR Series variant.		See Section 6			

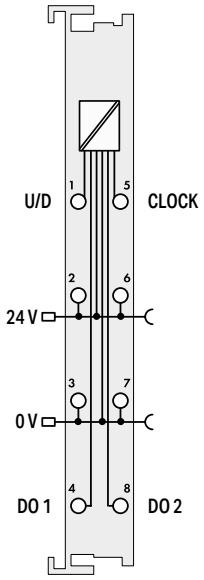
Up/Down Counter; 100 kHz



Figure: 750-404



Figure: 753-404



Item Description	Up/Down Counter				
Version	**Standard**	**Switch output**	**Pluggable** (delivery without connector)	**Up counter; Release input**	**Peak-time counter**
Item No.	**750-404**	**750-404/000-004**	**753-404**	**750-404/000-001**	**750-404/000-002**
Order Text	Up/Down Counter	Up/Down Counter; Switch Output	Up/Down Counter	Up Counter; Release Input	Peak Time Counter
Technical Data					
Pluggable connector			•		
Number of outputs	2				
Number of counters	1				
Voltage range for signal (0)	−3 … +5 VDC				
Voltage range for signal (1)	15 … 30 VDC				
Output current	0.5 A; short-circuit-protected				
Switching frequency (max.)	100 kHz				10 kHz
Pulse width (min.)					
Input current (typ.)	6 mA				
Counter depth	32 bits				
Supply voltage (field)	5 … 14 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)				
Current consumption – system supply (5 V)	70 mA				
Data width (internal)	32-bit data; 8-bit control/status				
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C				
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-404		wago.com/753-404		wago.com/750-404

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

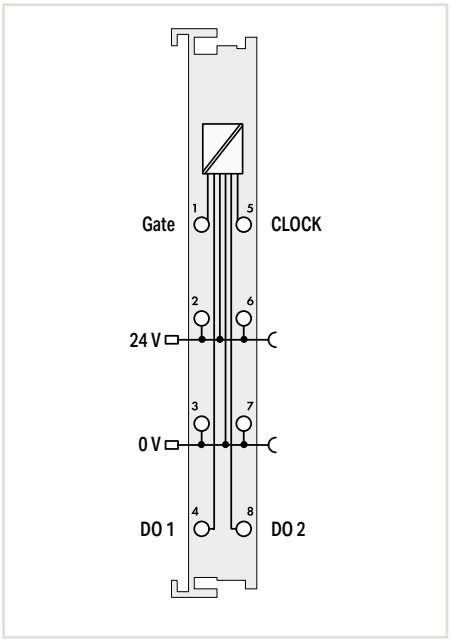
Up/down counter: When the U/D input is switched with +24 V, the counting direction is upward. When an input is not switched or is 0 V, the counting direction is downward.

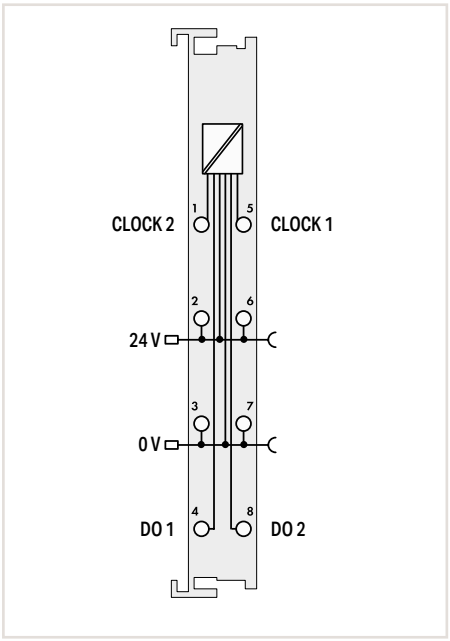
Up counter: The counting is locked when the GATE input is open or 0 V is present. Counting is enabled with +24 V at the GATE input.

Peak-time counter: The count pulses at the CLOCK input are recorded over a pre-set period of 10 seconds.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com





Frequency Counter	
Standard	**Pluggable** (delivery without connector)
750-404/000-003	**753-404/000-003**
Frequency Counter; 100kHz	Frequency Counter; 100kHz

2 Up Counters; 16 bits	
Standard	**Pluggable** (delivery without connector)
750-404/000-005	**753-404/000-005**
2Up Counter; 16bits	2Up Counter; 16bits

	•
	2
	1
	−3 … +5 VDC
	15 … 30 VDC
	0.5 A; short-circuit-protected
	100 kHz
	10 µs
	5 mA
	32 bits
	5 … 14 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
	70 mA
	32-bit data; 8-bit control/status
	500 V (system/field)
	0 … +55 °C
	12 x 69.8 x 100 mm
	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
	wago.com/750-404/000-003

	•
	2
	2
	−3 … +5 VDC
	15 … 30 VDC
	0.5 A; short-circuit-protected
	5 kHz (pulse width > 100 µs)
	5 mA
	2 x 16-bit data
	5 … 14 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
	70 mA
	32-bit data; 8-bit control/status
	500 V (system/field)
	0 … +55 °C
	12 x 69.8 x 100 mm
	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
	wago.com/750-404/000-005

	Item No.
	753-110
	753-150

	Item No.
	753-110
	753-150

The frequency counter measures the 24 V signal pulse period at the CLOCK input and converts it to a frequency value. The measurement is enabled when the GATE input is open or 0 V is present. Measurement is disabled when 24 V are present at the GATE input.

This module is equipped with two 16-bit up counters. The count pulses are recorded at the CLOCK 1 and CLOCK 2 inputs.

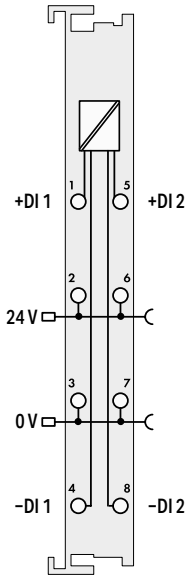
2 Up/Down Counters; 16 bits; 500 Hz



Figure: 750-638



Figure: 753-638



Item Description	2 Up/Down Counters; 16 bits; 500 Hz		
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)
Item No.	**750-638**	**750-638/025-000**	**753-638**
Order Text	2Up/Down Counter; 16bits; 500Hz	2Up/Down Counter; 16bits; 500Hz; T	2Up/Down Counter; 16bits; 500Hz
Technical Data			
Pluggable connector			•
Number of outputs	2		
Number of counters	2		
Voltage range for signal (0)	−3 … +5 VDC		
Voltage range for signal (1)	15 … 30 VDC		
Switching frequency (max.)	500 Hz		
Pulse width (min.)	1 ms		
Counter depth	16 bits		
Supply voltage (field)	5 … 14 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current consumption – system supply (5 V)	10 mA		
Data width (internal)	2 x 16-bit data; 2 x 8-bit control/status		
Isolation	500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-638		wago.com/753-638

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

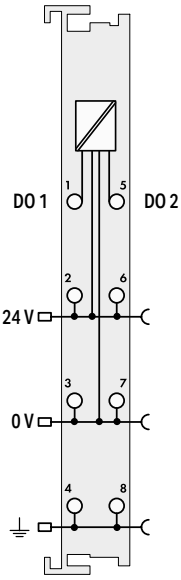
Pulse Width Output



Figure: 750-511



Figure: 753-511



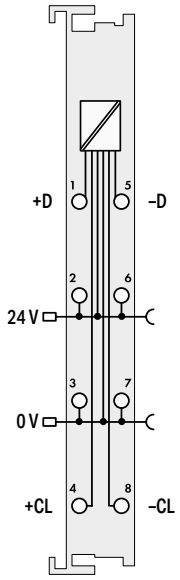
Item Description	2 Pulse Width Outputs; 24 VDC; 0.1 A; 250 Hz			
Version	**Standard**	**Pluggable** (delivery without connector)	**2 kHz; Frequency counter**	**100 Hz**
Item No.	**750-511**	**753-511**	**750-511/000-001**	**750-511/000-002**
Order Text	2PWM; 24 VDC; 0.1A; 250Hz	2PWM; 24 VDC; 0.1A; 250Hz	2PWM; 24 VDC; 0.1A; 2kHz; Frequency Counter	2PWM; 24 VDC; 0.1A; 100Hz
Technical Data				
Pluggable connector		•		
Number of outputs	2			
Load type	Resistive; inductive			
Pulse frequency	250 Hz		2 Hz … 2 kHz	100 Hz
Duty cycle	0 … 100 %		50 %	0 … 100 %
Output current	0.1 A; short-circuit-protected			
Resolution	10 bits			
Supply voltage (field)	5 … 14 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	70 mA			
Data width (internal)	2 x 16-bit data; 2 x 8-bit control/status			
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-511	wago.com/753-511	wago.com/750-511/000-001	wago.com/750-511/000-002

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

SSI Transmitter Interface



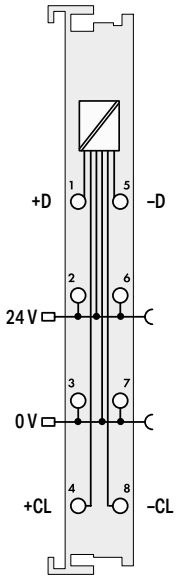
Figure: 750-630



Item Description	SSI Transmitter Interface			
Version	Adjustable	24 Bits; 125 kHz; Gray Code	24 Bits; 125 kHz; Gray Code; Status Byte	15 Bits; 125 kHz; Gray Code; Status Byte
Item No.	750-630/003-000	750-630	750-630/000-004	750-630/000-005
Order Text	SSI Interface; adjust	SSI Interface; 24bits; 125kHz; Gray	SSI Interface; 24bits; 125kHz; Gray; Status	SSI Interface; 15bits; 125kHz; Gray; Status
Technical Data				
Encoder connection	On + D; - D; Off + Cl; - Cl			
Encoder supply	24 VDC; via power jumper contacts			
Transmission rate	62.5 … 250 kHz	125 kHz		
Serial input	Data width: 1 … 32 bits	Data width: 24 bits		Data width: 15 bits
Signal output	Differential signal (RS-422)			
Signal input	Differential signal (RS-422)			
Code	Gray code/binary code	Gray code		
Supply voltage (field)	5 … 14 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)			
Current consumption – system supply (5 V)	20 mA			
Data width (internal)	1 x 32 bits	1 x 32-bit; 1 x 8-bit control/status (optional)		
Isolation	500 V (system/field)			
Surrounding air temperature (operation)	0 … +55 °C			
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-630			

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com



SSI Transmitter Interface							
24 Bits; 250 kHz; Gray Code	25 Bits; 125 kHz; Gray Code	13 Bits; 125 kHz; Gray Code	24 Bits; 125 kHz; Bin. Code	25 Bits; 125 kHz; Bin. Code	29 Bits; 125 kHz; Bin. Code	24 Bits; 250 kHz; Bin. Code	13 Bits; 250 kHz; Bin. Code
750-630/000-006	750-630/000-008	750-630/000-012	750-630/000-001	750-630/000-011	750-630/000-013	750-630/000-002	750-630/000-009
SSI Interface; 24bits; 250kHz; Gray	SSI Interface; 25bits; 125kHz; Gray	SSI Interface; 13bits; 125kHz; Gray	SSI Interface; 24bits; 125kHz; Bin	SSI Interface; 25bits; 125kHz; Bin	SSI Interface; 29bits; 125kHz; Bin	SSI Interface; 24bits; 250kHz; Bin	SSI Interface; 13bits; 250kHz; Bin

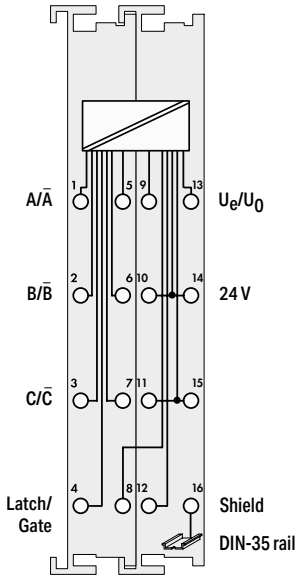
On + D; - D; Off + Cl; - Cl							
24 VDC; via power jumper contacts							
250 kHz	125 kHz					250 kHz	
Data width: 24 bits	Data width: 25 bits	Data width: 13 bits	Data width: 24 bits	Data width: 25 bits	Data width: 29 bits	Data width: 24 bits	Data width: 13 bits
Differential signal (RS-422)							
Differential signal (RS-422)							
Gray code			Binary code				
5 … 14 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)							

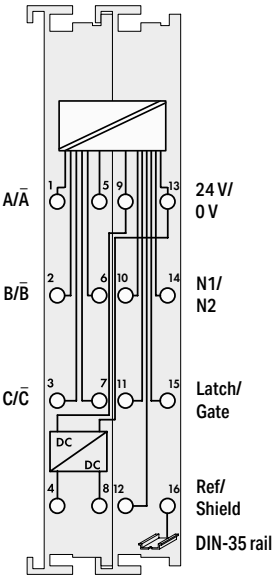
20 mA
1 x 32 bits
500 V (system/field)
0 … +55 °C
12 x 69.8 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-630

Incremental Encoder Interface



Figure: 750-631/000-004

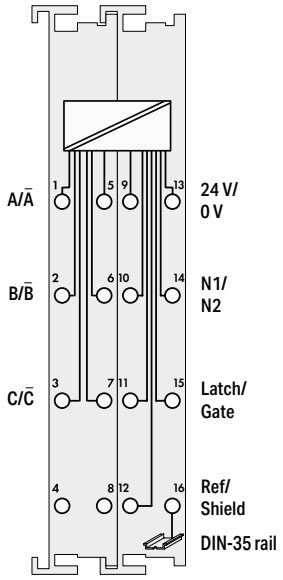


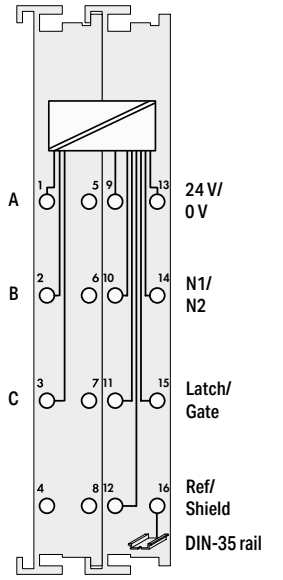


Item Description	Incremental Encoder Interface; RS-422; 16 bits	Incremental Encoder Interface; RS-422; 32 bits	
Version	**Standard**	**Standard**	**Single evaluation**
Item No.	**750-631/000-004**	**750-637**	**750-637/000-003**
Order Text	Inc. Encoder; RS422; 16bits	Inc. Encoder; RS422; 32bits	Inc. Encoder; RS422; 32bits
Technical Data			
Encoder connection	A; /A; B; /B; C; /C (RS-422 inputs)	A; /A; B; /B; C; /C (RS-422 inputs)	
Counter Modules	16 bits (binary)	32 bits (binary)	
Limit frequency	1000 kHz	250 kHz	
Quadrature decoder	4x evaluation	4x evaluation	1x evaluation
Zero impulse latch	16 bits	32 bits	
Commands	Reading; setting; activating	Reading; setting; activating	
Current consumption (typ.)	10 mA; without encoder	35 mA; without encoder	
Encoder operating voltage	5 VDC	5 VDC	
Encoder output current (max.)	200 mA	300 mA	
Output voltage		24 VDC	
Output current (max.)		0.5 A; short-circuit-protected	
Voltage range for signal (0)	U_{ABC} = 0 V; $U_{ABC/}$ = 5 V; Latch, gate ≤ 5.0 V; External error U ≥ 5.0 V or open input	U_{ABC} = RS-422; Latch, Gate, Ref.: −3 … +5 VDC	
Voltage range for signal (1)	U_{ABC} = 5 V; $U_{ABC/}$ = 0 V; Latch, gate ≥ 15.0 V; External error U < 0.5 V	U_{ABC} = RS-422; Latch, Gate, Ref.: 15 … 30 VDC	
Input current (typ.)		Latch 5 mA; Gate 7 mA; Ref. 7 mA	
Current consumption – system supply (5 V)	50 mA	110 mA	
Data width (internal)	2-byte output; 5-byte input 2x 8-bit control/status (optional) 3 additional output bytes (reserved)	1 x 32-bit data; 2 x 8-bit control/status	
Isolation	500 V (system/field)	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C	
Dimensions W x H x D	24 x 69.8 x 100 mm	24 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-631/000-004	wago.com/750-637	

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com





Incremental Encoder Interface; 24 VDC; Differential input; 32 bits	Incremental Encoder Interface; 24 VDC; Single-ended; 32 bits	
Standard	Standard	Cam output
750-637/000-001	750-637/000-002	750-637/000-004
Inc. Encoder; 24 VDC; Diff; 32bits	Inc. Encoder; 24 VDC; SE; 32bits	Inc. Encoder; 24 VDC; SE; 32bits; Cam
A; /A; B; /B; C; /C (differential inputs)	A; B; C (single-ended inputs)	
32 bits (binary)	32 bits (binary)	
250 kHz	250 kHz	
4x evaluation	4x evaluation	
32 bits	32 bits	
Reading; setting; activating	Reading; setting; activating	
35 mA; without encoder	35 mA; without encoder	
24 VDC	24 VDC	
300 mA	300 mA	
24 VDC	24 VDC	
0.5 A; short-circuit-protected	0.5 A; short-circuit-protected	
(U_{ABC} - $U_{ABC/}$): -30 … +15 VDC; Latch, Gate, Ref.: -3 … +5 VDC	−3 … +5 VDC	
(U_{ABC} - $U_{ABC/}$): 15 … 30 VDC; Latch, Gate, Ref.: 15 … 30 VDC	15 … 30 VDC	
Latch 5 mA; Gate 7 mA; Ref. 7 mA	Latch 5 mA; Gate 7 mA; Ref. 7 mA	
110 mA	110 mA	
1 x 32-bit data; 2 x 8-bit control/status	1 x 32-bit data; 2 x 8-bit control/status	
500 V (system/field)	500 V (system/field)	
0 … +55 °C	0 … +55 °C	
24 x 69.8 x 100 mm	24 x 69.8 x 100 mm	
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
wago.com/750-637	wago.com/750-637	

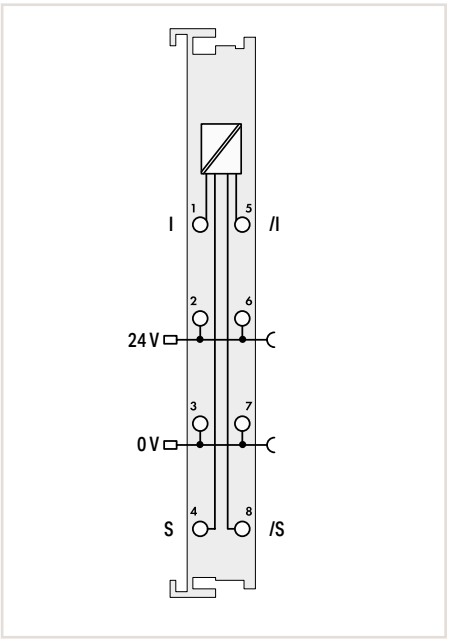
Digital Impulse Interface



Figure: 750-635



Figure: 753-635



Item Description	Digital Impulse Interface	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-635**	**753-635**
Order Text	Digital impulse interface	Digital impulse interface
Technical Data		
Pluggable connector		•
Encoder connection	Start/stop; Initialization; U_v; Ground; Shield connection via encoder housing	
Number of inputs	1	
Data transmission	RS-422	
Signal output	Differential signal (RS-422)	
Signal input	Differential signal (RS-422)	
Resolution	1 µm	
Update time	2 ms	
Position sensor length	≤ 4 m	
Line length (max.)	500 m	
Supply voltage (field)	24 VDC (−15 % ... +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	45 mA	
Data width (internal)	1 x 24-bit data; 1 x 8-bit control/status	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 ... +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-635	wago.com/753-635

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

This digital impulse interface connects position sensors equipped with a start/stop interface. After receiving a read pulse, these sensors deliver a time-delayed reply impulse. The time delay is proportional to the sensor distance.
Each sensor may have up to four position transmitters (permanent magnets). Their position data can be accessed serially by the control and are stored in the process image of the fieldbus coupler as a 24-bit value.
Position sensors, from manufacturers such as Balluff, with the following features can be used:

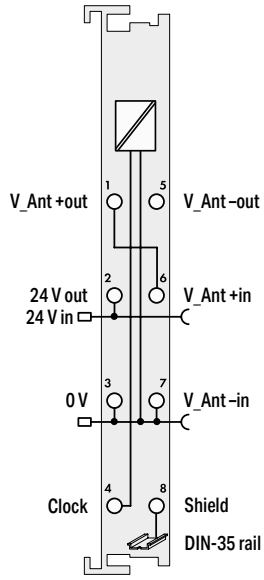
- Start/stop interface with RS-422 differential signals
- 24 V sensor supply

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Real-Time Clock Module



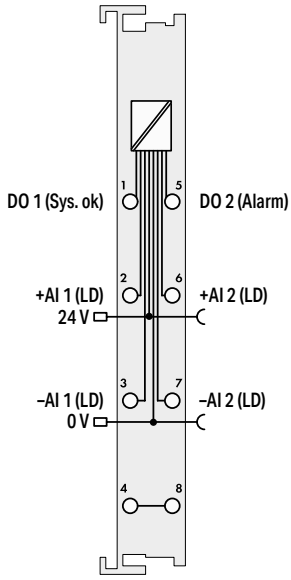


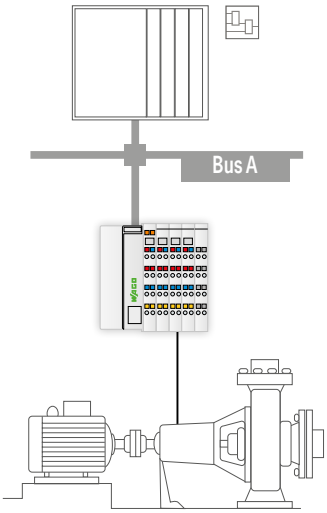
Item Description	Real-Time Clock Module
Version	Standard
Item No.	750-640
Order Text	RTC Module
Technical Data	
Drift (clock)	< 2 min./year
Buffer length	> 6 days
Timer	32 channels and switch points (32 x on/off)
Voltage range for signal (0)	–24 … +1 V
Voltage range for signal (1)	3 … 24 V
Input filter	10 ms
Supply voltage (field)	5 … 14 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	20 mA
Data width (internal)	1 x 40-bit data (input/output); (5-byte user data); 1 x 8-bit control/status (optional)
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-640

This RTC module provides higher-level control systems with the actual time. The time is buffered and continues to run in the event of a power failure. When an external receiver is connected, the clock can be set using the time signal from DCF77, WWVB, or MSF.
By default, the module is set to receive DCF77 signals. The receiver can be supplied directly via the module.
Connecting an external receiver to operate the RTC module is not absolutely necessary.

2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O Module







Item Description	2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O Module
Version	**Standard**
Item No.	**750-645**
Order Text	2VIB VRMS/SPM Multi
Technical Data	
Encoder inputs	+AI1; -AI1; +AI2; -AI2
Number of inputs	2
Oscillating velocity (RMS)	0 … 100 mm/s
Shock impulse (SPM)	-10 … +80 dbSV
Number of outputs	2 (alarm and system OK)
Configuration	Both alarm and warning threshold can be set via process image and engineering software.
Outputs	24 VDC; 0.5 A; short-circuit protected
Supply voltage (field)	24 VDC (−15 % … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	30 mA
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-645

Accessories	Item No.
Tandem-piezo acceleration sensor	**750-925**

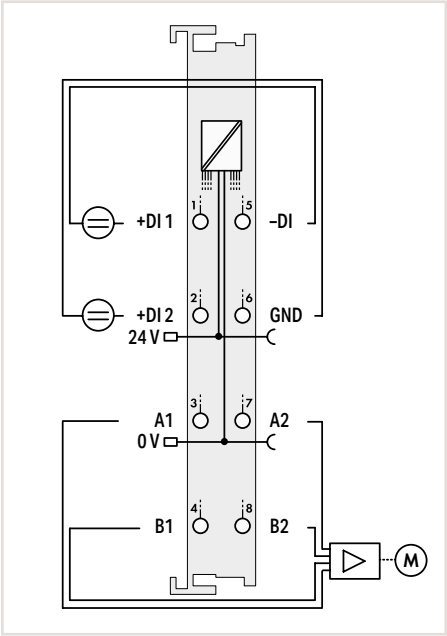
This module is used for online monitoring of machine vibration levels. It records the two key parameters required for condition monitoring: vibration velocity and bearing condition.
Vibration velocity is a measurement for machines' energy and therefore, a suitable indicator for the vibration forces acting on the machine.
Bearing condition is evaluated on the basis of high-frequency shock impulse signals. Shock impulses are momentary impulses arising from mechanical damage to roller bearings or the bearing surfaces.
By recording the measurement results and evaluation in a trend curve, bearing damage can be detected at an early stage. A special Tandem-Piezo® acceleration sensor serves as encoder to facilitate simultaneous measurement of machine vibrations and high-frequency shock impulse signals.

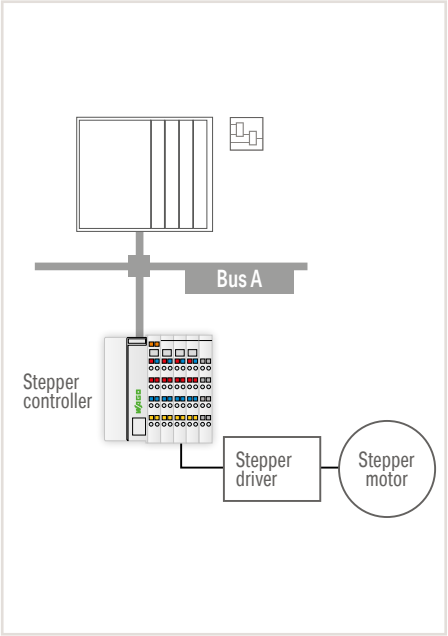
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Stepper Controller







Item Description	**Stepper Controller; RS-422/24 VDC; 20 mA**
Version	**Standard**
Item No.	**750-670**
Order Text	Stepper Controller; RS422/24 VDC; 20mA
Technical Data	
Number of outputs	1 channel (2 differential outputs A1; A2; B1; B2)
Signal voltage	5 VDC (internal); 5 … 24 VDC (external)
Load type	RS-422; TTL; Optocoupler
Output current (max.)	30 mA; short-circuit-protected
Output frequency	200 µHz … 500 kHz
Number of inputs	2 x 24 VDC
Voltage range for signal (0)	–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC
Input filter	100 µs; software filter can be connected
Resolution	Path: 23 bits + sign bit; Speed: 15 bits + 16-bit prescaler; Acceleration: 15 bits + 16 bit- prescaler
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	98 mA
Data width (internal)	12-byte input/output
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-670

This stepper controller is used to control different drive power sections with pulse/direction interface or incremental encoder input.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses.

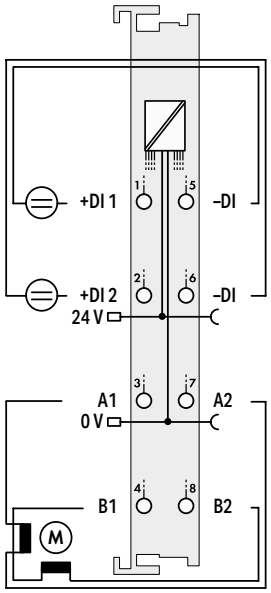
Operating modes:
- Step positioning
- Reference motion
- Jog
- Tip
- Command table
- Cam switch

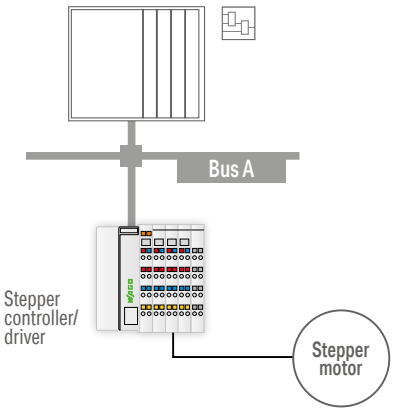
Functions include:
- Absolute/relative positioning
- Setpoint change on the fly
- Rotary axis

Additional operating modes:
- Pulse width modulation
- Frequency generator
- Single-shot mode

Stepper Controller







Item Description	**Stepper Controller; 24 VDC; 1.5 A**
Version	**Standard**
Item No.	**750-671**
Order Text	Stepper Controller; 24 VDC; 1.5A

Technical Data	
Number of outputs	1 stepper motor (2-phase/bipolar)
Output current (max.)	Up to 2 x 1.5 A peak value; 1 A rms
Output frequency	7812 Hz
Number of inputs	2 x 24 VDC
Voltage range for signal (0)	–3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC
Input filter	100 µs; software filter can be connected
Resolution	Path: 23 bits + sign bit; Speed: 15 bits + 16-bit prescaler; Acceleration: 15 bits + 16 bit- prescaler
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	85 mA
Data width (internal)	12-byte input/output
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; EAC ATEX/IECEx
Data sheet and further information, see:	wago.com/750-671

This stepper controller has an on-board power driver designed to control 2-phase stepper motors up to 24 V/1.5 A.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses.

Operating modes:
- Step positioning
- Reference motion
- Jog
- Tip
- Command table
- Cam switch

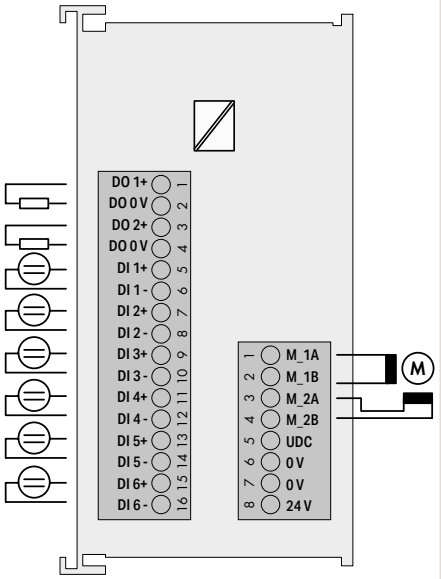
Functions include:
- Absolute/relative positioning
- Setpoint change on the fly
- Rotary axis

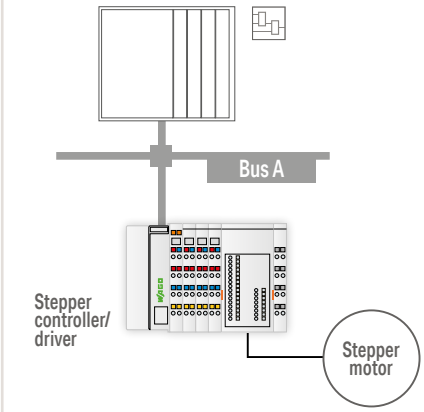
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Stepper Controller







Item Description	Stepper Controller; 70 VDC; 7.5 A
Item No.	750-672
Order Text	Stepper Controller; 70 VDC; 7.5A
Technical Data	
Number of motor outputs	1 stepper motor (2 phases)
Supply voltage (motor)	55 VDC; Absolute upper limit: 71.5 V; Absolute lower limit: 18 V
Max. output current (motor)	2 x 5.0 A (2 x 7.5 A transient)
Stepper frequency	7812 Hz
Resolution	Path: 23 bits + sign bit; Speed: 15 bits + 16-bit prescaler; Acceleration: 15 bits + 16 bit- prescaler
Number of digital outputs	2
Control voltage	24 VDC (–25 … +30 %)
Max. output current (digital outputs)	0.5 A; short-circuit-protected
Output frequency	5 Hz
Number of digital inputs	2 x 24 VDC
Input filter	100 µs; software filter can be connected
Current consumption – system supply (5 V)	70 mA
Data width (internal)	12-byte input/output
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	48 x 69.8 x 100 mm
Approvals	CE;
Data sheet and further information, see:	wago.com/750-672

This stepper controller has an on-board power driver designed to control 2-phase stepper motors.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation.

Six configurable inputs are directly processed by the internal software without delay. Two outputs can be linked with internal functions or freely allocated. Versatile functions enable a wide application range.

Inputs:
- Start/stop
- Limit switch (positive and negative direction)
- Reference cam
- Jog/tip (positive and negative direction)

Outputs (default setting):
- Target reached
- Error

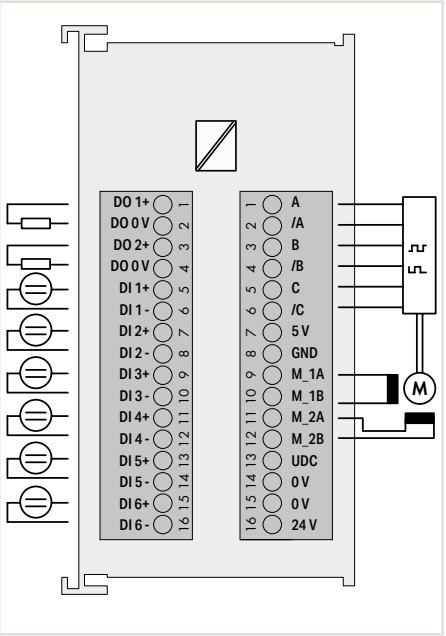
Operating modes:
- Single positioning with different acceleration ramps
- Reference motion
- Jog
- Tip
- Command table
- Cam switch

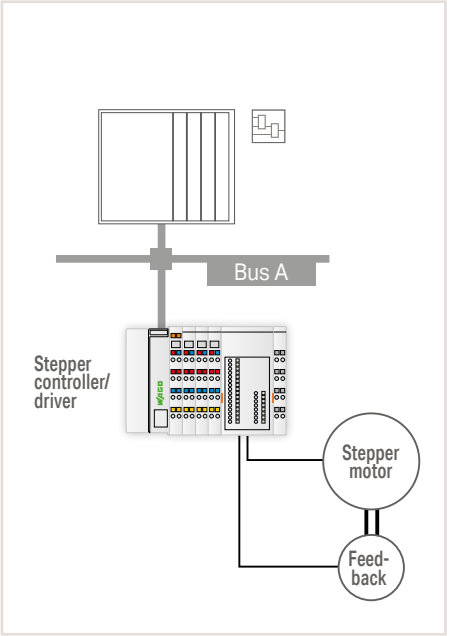
Functions include:
- Absolute/relative positioning
- Setpoint change on the fly
- Rotary axis

Protection:
- Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V
- 24 V supply: Reverse voltage protection
- Motor supply: Reverse voltage protection via external fuse

Servo Stepper Controller







Item Description	Servo Stepper Controller; 55 VDC; 7.5 A
Item No.	**750-673**
Order Text	Servo Stepper Controller; 55 VDC; 7.5A
Technical Data	
Number of motor outputs	1 stepper motor (2 phases)
Supply voltage (motor)	55 VDC; Absolute upper limit: 71.5 V; Absolute lower limit: 18 V
Max. output current (motor)	2 x 5.0 A (2 x 7.5 A transient)
Stepper frequency	7812 Hz
Resolution	Path: 23 bits + sign bit; Speed: 15 bits + 16-bit prescaler; Acceleration: 15 bits + 16 bit- prescaler
Number of digital outputs	2
Control voltage	24 VDC (–25 … +30 %)
Max. output current (digital outputs)	0.5 A; short-circuit-protected
Output frequency	5 Hz
Number of digital inputs	2 x 24 VDC
Input filter	100 µs; software filter can be connected
Signal voltage (encoder)	RS-485/422 compatible
Encoder frequency	1 MHz
Sensor supply	5 VDC; 300 mA; short-circuit-protected
Quadrature decoder	4x evaluation
Counter Modules	32 bits; binary
Current consumption – system supply (5 V)	70 mA
Data width (internal)	12-byte input/output
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	48 x 69.8 x 100 mm
Approvals	CE;
Data sheet and further information, see:	wago.com/750-673

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

This servo stepper controller has an on-board power driver and an incremental encoder evaluation for controlling 2-phase stepper motors.

The 64-fold microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Together with the incremental encoder, the integrated vector control contributes to efficient, dynamic rotation speed characteristics.

Six configurable inputs are directly processed by the internal software without delay. Two outputs can be linked with internal functions or freely allocated. Versatile functions enable a wide application range.

Inputs:
- Start/stop
- Limit switch (positive and negative direction)
- Reference cam
- Jog/tip (positive and negative direction)

Outputs (default setting):
- Target reached
- Error

Operating modes:
- Single positioning with different acceleration ramps
- Reference motion
- Jog
- Tip
- Command table
- Cam switch

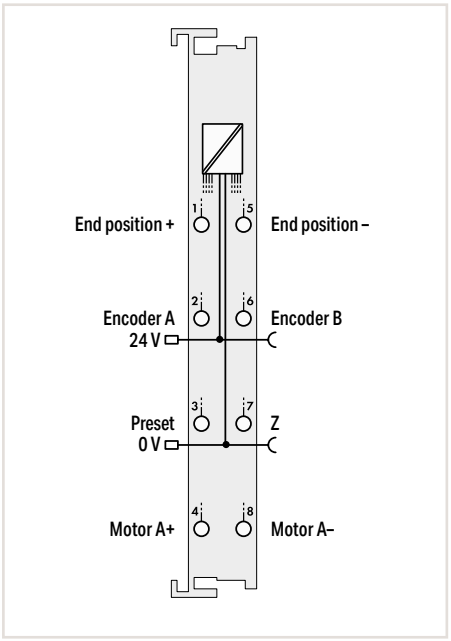
Functions include:
- Absolute/relative positioning
- Setpoint change on the fly
- Rotary axis

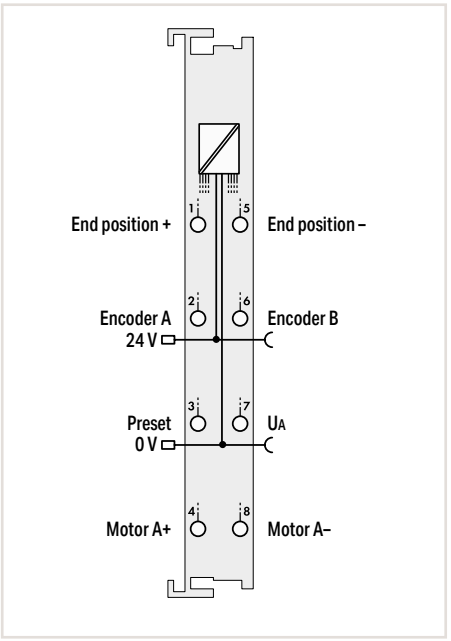
Protection:
- Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V
- 24 V supply: Reverse voltage protection
- Motor supply: Reverse voltage protection via external fuse

DC Drive Controller



Figure: 750-636





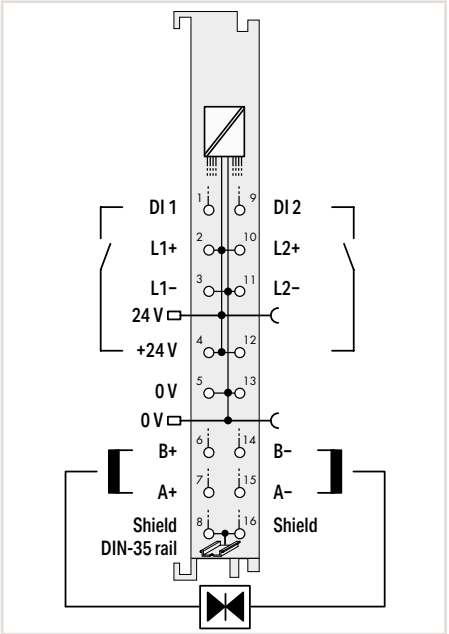
Item Description	DC Drive Controller; 24 VDC; 5 A		DC Drive Controller; 24 VDC; 5 A	
Version	Standard	Extended temperature	Separate motor power supply	Interference-free
Item No.	750-636	750-636/025-000	750-636/000-700	750-636/000-800
Order Text	DC-Drive Controller; 24 VDC; 5A	DC-Drive Controller; 24 VDC; 5A; T	DC-Drive Controller; 24 VDC; 5A; UA	DC-Drive Controller; 24 VDC; 5A; IF
Technical Data				
Interference-free				•
Number of outputs	1 (A+; A-; H-bridge output)		1 (A+; A-; H-bridge output)	
Motor voltage	24 VDC (–20 … +15 %)		24 VDC (–20 … +15 %)	
Separate motor voltage			24 VDC (–20 … +30 %)	
Output current (max.)	5 A (15 A/500 ms); short-circuit-protected		5 A (15 A/500 ms); short-circuit-protected	
PWM frequency (typ.)	20 kHz		20 kHz	
Number of digital inputs	3; Type 1; high-side switching		3; Type 1; high-side switching	
Signal voltage (0)	–3 … +1.5 VDC		–3 … +1.5 VDC	
Signal voltage (1)	2.4 … 30 VDC		2.4 … 30 VDC	
Encoder connection	A; B; Zero low-side switching		A; B; Zero low-side switching	
Signal voltage	5 … 24 VDC; Open collector		5 … 24 VDC; Open collector	
Limit frequency	50 kHz		50 kHz	
Quadrature decoder	1x, 2x, 4x evaluation		1x, 2x, 4x evaluation	
Supply voltage (field)	5 … 14 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		5 … 14 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	55 mA		55 mA	
Data width (internal)	32-bit set/actual value; 16-bit control or status		32-bit set/actual value; 16-bit control or status	
Isolation	500 V (system/field)		500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C	
Dimensions W x H x D	12 x 67.8 x 100 mm		12 x 67.8 x 100 mm	
Approvals	CE; KC		CE; KC	
Data sheet and further information, see:	wago.com/750-636		wago.com/750-636	

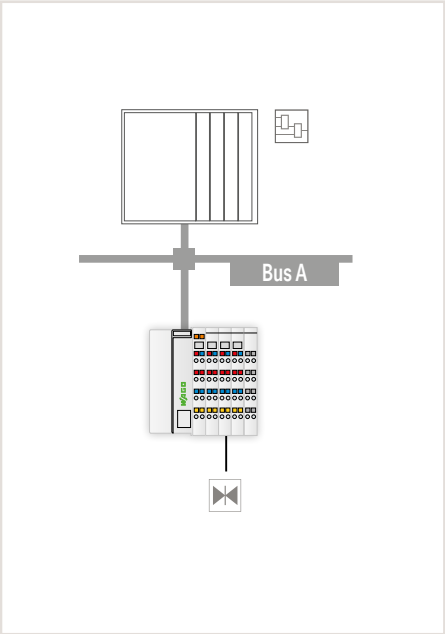
This DC drive controller is a single-channel, intelligent positioning controller for 24 VDC motors up to 5 A with incremental position feedback.
Three 24 V inputs record the limit switches and a preset signal.
An incremental encoder interface evaluates signals from the position sensor and determines actual value.
Current reduction is possible via pulse width modulation (PWM).

As an option, the motor voltage can be supplied separately.

Proportional Valve Module







Item Description	**Proportional valve controller**
Version	**Standard with 16 connectors**
Item No.	**750-632**
Order Text	Proportional Valve Module
Technical Data	
Number of outputs	2 bipolar outputs (A+; A- and B+; B-)
Output current (max.)	1-channel operation: 2 A; 2-channel operation: 1.6 A per channel
Output type	H-bridge output with current-regulated PWM output (short-circuit-proof and thermal overload-proof for each channel)
Dither frequency	250 Hz; 125 Hz; 62.5 … 1 Hz (parameterizable)
PWM frequency (typ.)	50 kHz
Nominal output voltage	24 VDC (–25 … +30 %)
Load type	Operating range: inductive (1 mH … 600 mH); Internal load resistance (> 8 Ohm)
Number of digital inputs	2; Type 1; high-side switching
Supply voltage (field)	24 VDC (–25 % … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	125 mA
Data width (internal)	6 bytes (single-channel operating mode), 12 bytes (dual-channel operating mode)
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-632

This proportional valve module controls two single-coil valves or one valve.
The module features two current-controlled PWM outputs with adjustable dither. Both unipolar and bipolar valve control are possible. Additionally, operation of a valve with two unipolar coils is also provided. The module is single-channel in this operating mode! Characteristic curve adaptations, such as zero offset, dual gain compensation or range limitations, can be adjusted via parameters.
The module functions can be internally triggered via digital outputs without any detours.

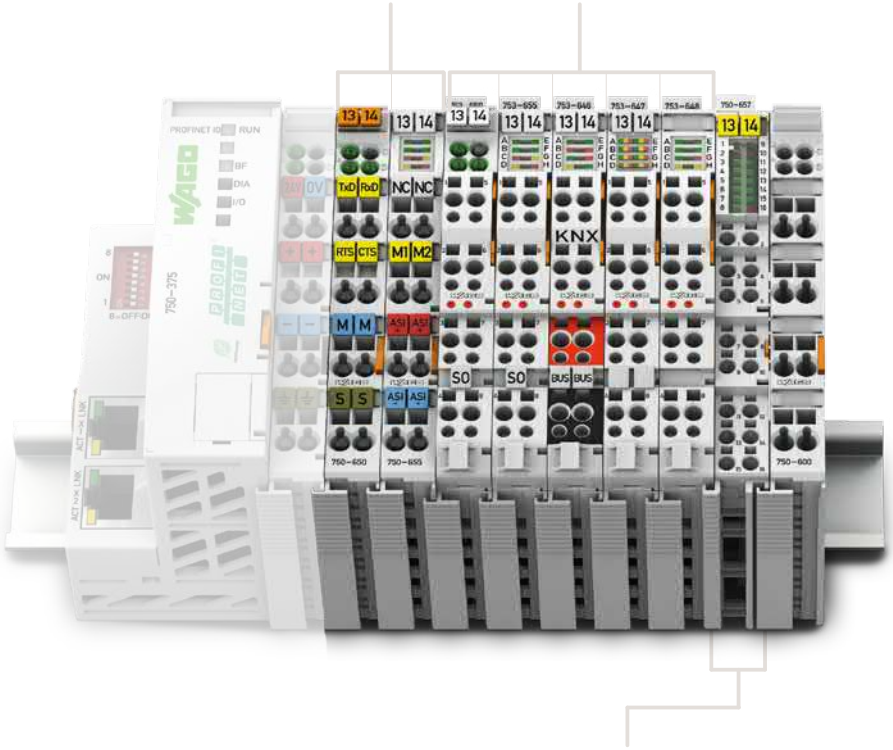
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Communication Modules

Housing design (750 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

Housing design (753 Series)	
Dimensions W x H x D	Housing with 4 LEDs: 12 x 69.8 x 100 mm Housing with 8 LEDs: 12 x 69 x 100 mm
Height from upper-edge of DIN-rail	Housing with 4 LEDs: 62.6 mm Housing with 8 LEDs: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	9 … 10 mm / 0.37 inch



Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	Solid: 0.08 … 1.5 mm² / 28 … 16 AWG Fine-stranded: 0.25 … 1.5 mm² / 22 … 16 AWG
Strip length	8 … 9 mm / 0.33 inch



I/O System –
750 XTR Series

I/O-System – 750 and 753 Series, Communication Modules
Contents

Function	Description	Item Number			Page
		Standard	Extended Temperature	Pluggable	
Serial Interfaces	Serial Interface RS-232 C; 9600 baud	750-650		753-650	278
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	Serial Interface RS-232 C; 9600 baud; Even; 8/1 bits	750-650/000-006			278
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	Serial Interface RS-232 C; 19200 baud; Even; 8/1 bits	750-650/000-011			279
	Serial Interface RS-232 C; 2400 baud; None; 8/1 bits	750-650/000-012			279
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	Serial Interface RS-485; 9600 baud; Even; 8/1 bits	750-653/000-002			280
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	Serial Interface RS-485; 2400 baud; None; 8/1 bits	750-653/000-007			281
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	Serial TTY Interface; 9600 baud; None; 8/1 bits	750-651			283
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IO-Link Master	IO-Link Master	750-657			292
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Data Exchange	Serial Data Exchange Interface	750-654			294

*This module is also available as a 750 XTR Series variant.

See Section 6

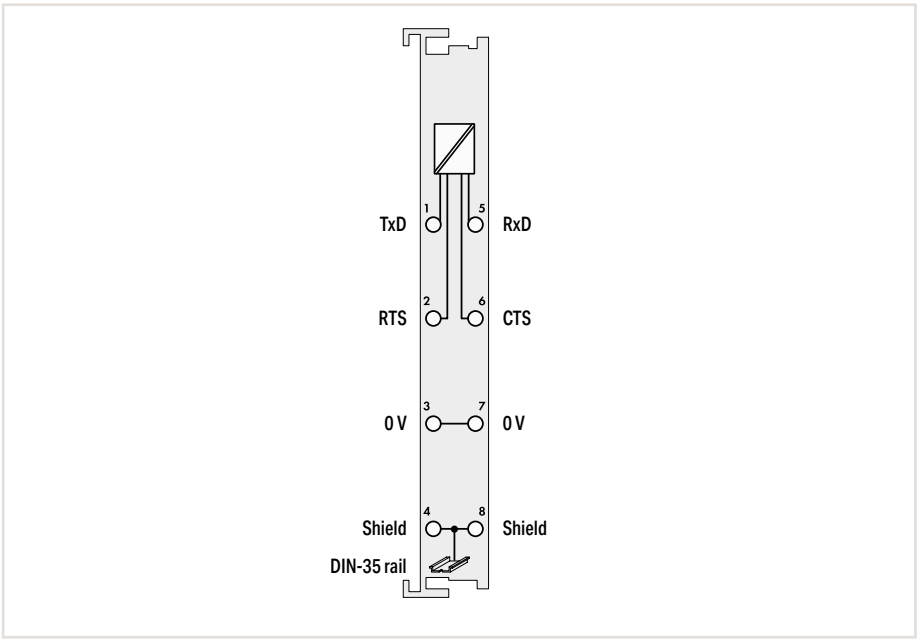
Serial Interface RS-232 C



Figure: 750-650



Figure: 753-650



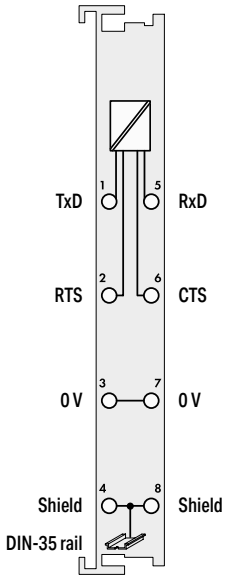
5.7

Item Description	Serial Interface RS-232 C				
Version	**9600 baud**	**9600 baud; Pluggable** (delivery without connector)	**9600 baud; 5 bytes**	**9600 baud; Even; 7/2 bits**	**9600 baud; Even; 8/1 bits**
Item No.	**750-650**	**753-650**	**750-650/000-001**	**750-650/000-002**	**750-650/000-006**
Order Text	RS232 C Interface; 9600Bd	RS232 C Interface; 9600Bd	RS232 C Interface; 9600Bd; 5byte	RS232 C Interface; 9600Bd; E; 7/2	RS232 C Interface; 9600Bd; E; 8/1
Technical Data					
Pluggable connector		•			
Signal type	RS-232				
Transmission channels	1 TxD / 1 RxD; full-duplex				
Baud rate	9600 Bd				
Parity	None			Even	
Number of data bits	8			7	8
Number of stop bits	1			2	1
Buffer	120-byte input / 16-byte output				
Supply voltage (system)	5 VDC; via data contacts				
Current consumption – system supply (5 V)	55 mA				
Data width (internal)	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status		1 x 24-bit input/ output (5-byte user data); 1 x 8-bit control/ status	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status	
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C				
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-650	wago.com/753-650	wago.com/750-650		

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com



Serial Interface RS-232 C					
4800 baud; Even; 8/1 bits; 5 bytes	**2400 baud; None; 8/1 bits**	**19,200 baud; None; 8/1 bits**	**19,200 baud; Even; 8/1 bits**	**Adjustable**	**Adjustable; Pluggable** (delivery without connector);
750-650/000-015	**750-650/000-012**	**750-650/000-010**	**750-650/000-011**	**750-650/003-000**	**753-650/003-000**
RS232 C Interface; 4800Bd; E; 8/1	RS232 C Interface; 2400Bd; N; 8/1	RS232 C Interface; 19200Bd; N; 8/1	RS232 C Interface; 19200Bd; E; 8/1	RS232 C Interface; adjust	RS232 C Interface; adjust
					•
RS-232					
1 TxD / 1 RxD; full-duplex					
4800 Bd	2400 Bd	19,200 Bd		1200 … 57,600 Bd	
Even	None		Even	None/even; adjustable	
8				7/8; adjustable	
1				1/2; adjustable	
120-byte input / 16-byte output					
5 VDC; via data contacts					
55 mA					
1 x 24-bit input/output (5-byte user data); 1 x 8-bit control/status	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status			1 x 24-bit input/output (3-byte user data); 1 x 40-bit input/output (5-byte user data); 1 x 8-bit control/status	
500 V (system/field)					
0 … +55 °C					
12 x 69.8 x 100 mm					
CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx					
wago.com/750-650				wago.com/ 750-650/003-000	wago.com/ 753-650/003-000

	Item No.
	753-110
	753-150

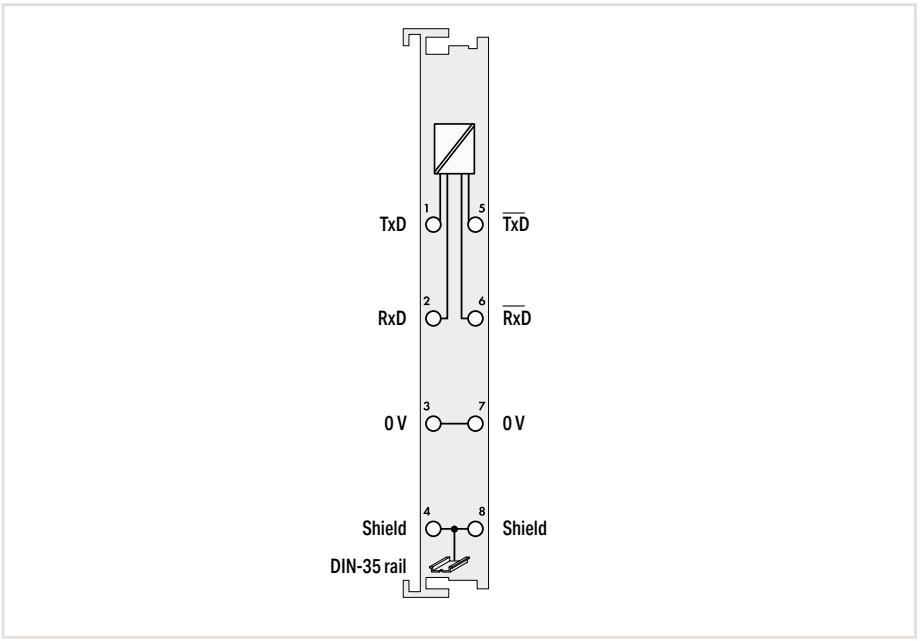
Serial Interface RS-485



Figure: 750-653



Figure: 753-653



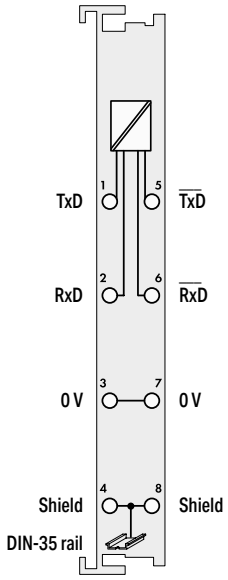
5.7

Item Description	Serial Interface RS-485				
Version	**Standard**	**Pluggable** (delivery without connector)	**9600 baud; Even; 7/2 bits**	**9600 baud; Even; 8/1 bits**	**9600 baud; None; 8/1 bits; Extended temperature**
Item No.	**750-653**	**753-653**	**750-653/000-001**	**750-653/000-002**	**750-653/025-018**
Order Text	RS485 Interface	RS485 Interface	RS485 Interface; 9600Bd; E; 7/2	RS485 Interface; 9600Bd; E; 8/1	RS485 Interface; 9600Bd; N; 8/1
Technical Data					
Pluggable connector		•			
Signal type	RS-422/-485				
Transmission channels	1 TxD / 1 RxD; full-duplex				
Baud rate	9600 Bd				
Parity	None		Even		None
Number of data bits	8		7	8	
Number of stop bits	1		2	1	
Buffer	120-byte input / 16-byte output				
Supply voltage (system)	5 VDC; via data contacts				
Current consumption – system supply (5 V)	65 mA				
Data width (internal)	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status				1 x 40-bit input/output (5-byte user data); 1 x 8-bit control/status
Isolation	500 V (system/field)				
Surrounding air temperature (operation)	0 … +55 °C				–20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm				
Approvals	CE; cULus; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx				
Data sheet and further information, see:	wago.com/750-653	wago.com/753-653	wago.com/750-653		

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com



Serial Interface RS-485				
19,200 baud; None; 8/1 bits	**2400 baud; None; 8/1 bits**	**Adjustable**	**Adjustable; Extended temperature**	**Adjustable;** Pluggable (delivery without connector)
750-653/000-006	**750-653/000-007**	**750-653/003-000**	**750-653/025-000**	**753-653/003-000**
RS485 Interface; 19200Bd; N; 8/1	RS485 Interface; 2400Bd; N; 8/1	RS485 Interface; adjust	RS485 Interface; adjust; T	RS485 Interface; adjust

				•
RS-422/-485				
1 TxD / 1 RxD; full-duplex				
19,200 Bd	2400 Bd	1200 … 19,200 Bd		
None		None/even; adjustable		
8		7/8; adjustable		
1		1/2; adjustable		
120-byte input / 16-byte output				
5 VDC; via data contacts				
65 mA				
1 x 40-bit input/ output (5-byte user data); 1 x 8-bit control/ status	1 x 24-bit input/ output (3-byte user data); 1 x 8-bit control/ status	1 x 40-bit input/output (3/5-byte user data); 1 x 8-bit control/status		
500 V (system/field)				
0 … +55 °C			−20 … +60 °C	0 … +55 °C
12 x 69.8 x 100 mm				
CE; Marine; OrdLoc/HazLoc; ATEX/IECEx				
wago.com/750-653				wago.com/ 753-653

	Item No.
	753-110
	753-150

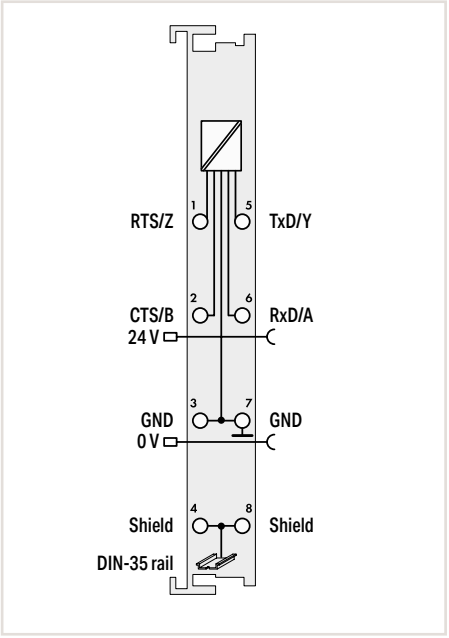
Serial Interface RS-232/485



Figure: 750-652



Figure: 753-652



5.7

Item Description	Serial Interface RS-232/485		
Version	**Standard**	**Extended temperature**	**Pluggable** (delivery without connector)
Item No.	**750-652**	**750-652/025-000**	**753-652**
Order Text	RS232/485 Interface	RS232/485 Interface; T	RS232/485 Interface
Technical Data			
Pluggable connector			•
Signal type	RS-232 / RS-422 / RS-485		
Transmission channels	1 TxD / 1 RxD; full-duplex; half-duplex		
Baud rate	9600 Bd (default setting); 300 … 11,5200 Bd		
Parity	None/Odd/Even		
Number of data bits	7/8; adjustable		
Number of stop bits	1/2; adjustable		
Buffer	2560 bytes for reception / 512 bytes for transmission		
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Supply voltage (system)	5 VDC; via data contacts		
Current consumption – system supply (5 V)	85 mA		
Data width (internal)	8, 24 or 48 bytes (parameterizable)		
Isolation	500 V (system/field)		
Surrounding air temperature (operation)	0 … +55 °C		
Dimensions W x H x D	12 x 67.8 x 100 mm		12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-652		wago.com/753-652

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

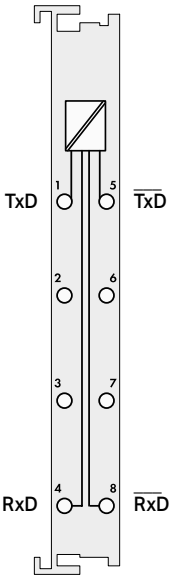
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Serial TTY Interface



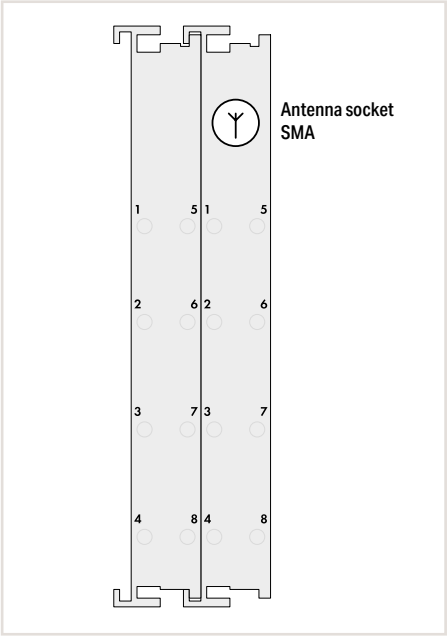
Figure: 750-651



Item Description	Serial TTY Interface	
Version	**9600 baud; None; 8/1 bits**	**9600 baud; Even; 8/1 bits**
Item No.	**750-651**	**750-651/000-002**
Order Text	TTY Interface; 9600Bd; N; 8/1	TTY Interface; 9600Bd; E; 8/1
Technical Data		
Signal type	TTY; 20 mA	
Transmission channels	1 TxD / 1 RxD; full-duplex	
Baud rate	9600 Bd	
Load impedance	< 500 Ω	
Parity	None	Even
Number of data bits	8	
Number of stop bits	1	
Buffer	128-byte input / 16-byte output	
Supply voltage (system)	5 VDC; via data contacts	
Current consumption – system supply (5 V)	55 mA	
Data width (internal)	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc	
Data sheet and further information, see:	wago.com/750-651	

Radio Receiver EnOcean





5.7

Item Description	Radio Receiver EnOcean
Version	**Standard**
Item No.	**750-642**
Order Text	Radio Receiver EnOcean

Technical Data	
Antenna	External via SMA socket
Frequency band	868.3 MHz
Transmission range	Up to 300 m in open field (30 m typical in buildings, see manual)*
Transmission protocol (radio telegram)	EnOcean
Supply voltage (system)	5 VDC; via data contacts
Current consumption – system supply (5 V)	80 mA
Data width (internal)	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 72 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-642

Accessories	Item No.	Page
External antenna	758-910	424

*The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore, range specifications within buildings can only represent typical values which can normally be achieved. More detailed information is available in the manual.

This radio receiver obtains radio telegrams from maintenance-free, self-powered and wireless switches/sensors based on EnOcean radio technology.
The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy.
The LED (RSSI) indicates a sufficient input level.

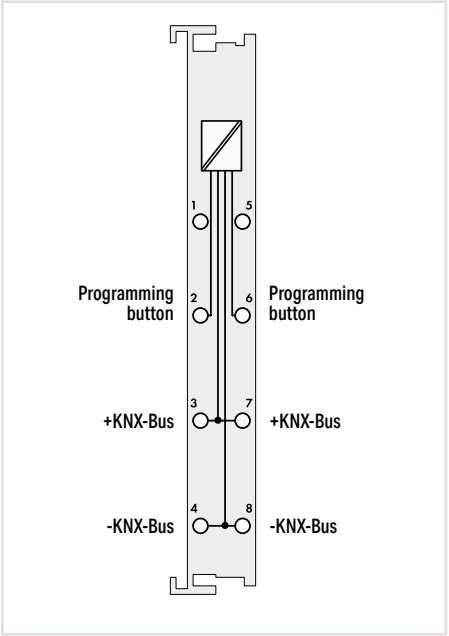
Preprogrammed function blocks for WAGO Controllers make integration easy.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

KNX/EIB/TP1 Interface





Item Description	KNX/EIB/TP1 Interface
Version	**Pluggable**
Item No.	**753-646**
Order Text	KNX/EIB/TP1 Interface

Technical Data	
Pluggable connector	•
Specification	KNX/TP1 bus: 1.0
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Baud rate	9.6 kBd
Additional connections	Programming button
Applicability	On controllers
Current consumption – system supply (5 V)	25 mA
Data width (internal)	24 bytes
Isolation	2500 V rms
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/753-646

Accessories	Item No.
Pluggable connector	Included
Coding keys	Included

The KNX/EIB/TP1 Module connects to a KNX/EIB/TP1 network. This module supports two different functions:

1. Device mode:
With this module, all programmable fieldbus controllers relevant for building automation can be connected to a KNX/TP1 network. The module is a standard KNX device and is linked via ETS3/4 Professional Commissioning Tool.

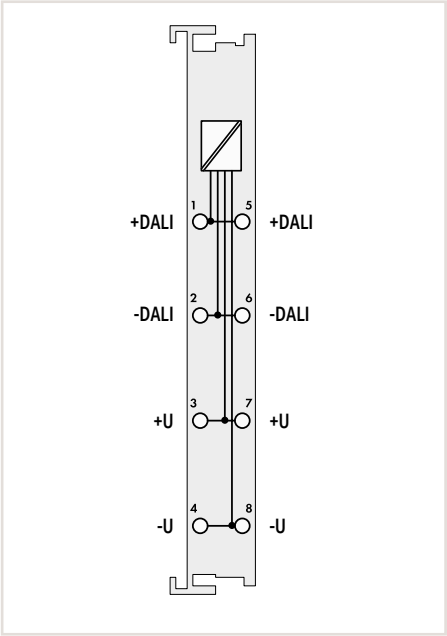
An ETS3/4 plug-in is required so that data from the application program can be allocated to group addresses for the programming software.

2. Router mode:
When connected to a KNX/IP Controller (e.g., 750-889), the combination becomes a KNXnet/IP router. The module is switched to the router mode automatically. An application program is not required for operation in router mode. Additional modules that are connected to a KNX IP Controller are addressed in device mode by the application.

The bus connections are internally bridged inside the plug, so the bus is not interrupted when the plug is pulled from the module. The plug is included with delivery.

DALI Multi-Master





5.7

Item Description	DALI Multi-Master
Version	Pluggable
Item No.	753-647
Order Text	DALI Multi-Master
Technical Data	
Pluggable connector	•
Number of participants	64 control gears (EVG) + 16 multi-sensors (max. 64 addresses for control devices (sensors))
Baud rate	1200 bit/s
Bus length (max.)	300 m
Bus topology	Star/line/combination
Supply voltage (DALI)	18 V (external)
Number of groups	16 (+ 16 virtual groups)
Number of scenes	16
Applicability	On programmable fieldbus controllers
Current consumption – system supply (5 V)	85 mA
Data width (internal)	24 bytes
Isolation	1500 V DALI bus/local bus
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/753-647

Accessories	Item No.	Page
DALI Multi-Master DC/DC Converter (for supplying a single module)	753-620	330
Switched-Mode Power Supply; for DALI Multi-Master (753-647); 1-phase; Output voltage: 18 VDC; Output current: 1.1 A	787-1007	493
Pluggable connector	Included	
Coding keys	Included	

This manufacturer-independent DALI standard ensures interoperability of DALI devices in lighting applications. This standard is substitute for the 1–10 V dimmer interface.

In addition to 64 DALI actuators (ECGs), a DALI Multi-Master Module supports up to 16 multi-sensors (max. 64 sensor addresses). Each DALI ECG can be assigned to 16 groups and 16 scenes. The DALI Multi-Master Module also offers 16 additional virtual groups on the DALI bus.

DALI control devices can be seamlessly integrated with all other building systems. Several DALI masters can be connected to a single fieldbus node. The maximum number of modules that can be connected to a controller depends on the memory required by the application. Function blocks prepared for DALI are available for programming fieldbus nodes.

Alternatively, an “EASY Mode” allows lighting functions to be readily controlled without any PLC programming.

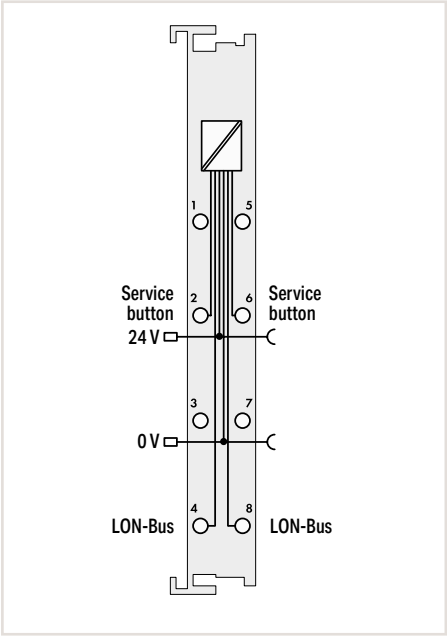
The DALI Configurator (Section “Software”/ Page 39) simplifies commissioning of the DALI network. It provides the following functions: easy commissioning, configuration, service, support and maintenance of the DALI network.

„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 522 or www.wago.com

LON® FTT Interface





Item Description	LON® FTT Interface
Version	Pluggable
Item No.	753-648
Order Text	LON FTT Interface

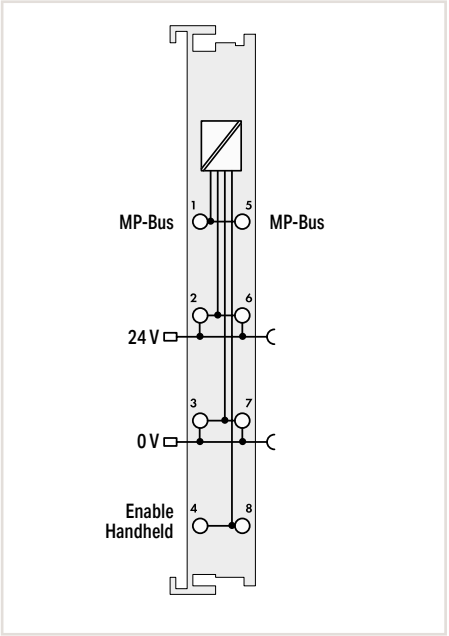
The LON® FTT Interface is a full-fledged and flexible LON® device within LonWorks® FT or LP network. The module's network variable interface defines 249 network variables of any type and supports both LonMark® objects and configuration properties.

Technical Data	
Pluggable connector	•
Number of network variables	249
Number of aliases	127
Baud rate	78 kbit/s
Bus length (max.)	500 m (free topology) / 2700 m (bus)
Transmission medium	Twisted Pair – FTT
Additional connections	Service button
Applicability	On controllers; max. 2 per controller
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	30 mA
Data width (internal)	24 bytes
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc
Data sheet and further information, see:	wago.com/753-648

Accessories	Item No.
Pluggable connector	Included
Coding keys	Included

MP-Bus Master





5.7

Item Description	MP-Bus Master
Version	Standard
Item No.	750-643
Order Text	MP-Bus Master

Technical Data	
Number of participants	Max. 8 slaves
Supply voltage (MP-Bus)	24 VDC; via power jumper contacts
Bus length (max.)	800 m
Applicability	On controllers
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	15 mA
Data width (internal)	8 bytes
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-643

This module acts as a master for the MP bus (Multi-Point bus from Belimo/Switzerland) and allows the bus to be integrated into a higher level bus network. The MP-Bus controls HVAC actuators for dampers, regulator valves or VAV air volume controls.

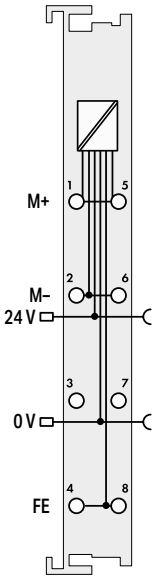
The actuators have connections for active and passive sensors (temperature, humidity, ON/OF switch), which may also be accessed via MP-Bus. An MP-Bus master can manage up to 8 slaves (actuators) + 8 sensors (1 sensor per slave) via a common bus line, which considerably reduces actuator and sensor wiring.

„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 522 or www.wago.com

M-Bus Master





Item Description	M-Bus Master
Version	Pluggable
Item No.	753-649
Order Text	M-Bus Master

Technical Data	
Pluggable connector	•
Transmission channels	1; bidirectional
Baud rate	up to 1000 m at 9600 baud; up to 2000 m at 2400 baud; up to 6000 m at 300 baud
M-Bus loads (max.)	40 (1.5 mA each)
Topology	Star, tree and line topology
Supply voltage (field)	24 VDC (−2.5 … +5 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	130 mA
Supply voltage (system)	5 VDC; via data contacts
Current consumption – system supply (5 V)	29 mA
Isolation	500 V (system/field)
Cable type	2-line; shielded or unshielded
Data width	24 bytes (mailbox 2.0 with 22-byte length)
Startup and configuration	WAGO-I/O-*PRO* V2.3; *e!COCKPIT*
Approvals	CE;
Data sheet and further information, see:	wago.com/753-649

Accessories	Item No.
Pluggable connector	Included
Coding keys	Included

SMI Master Module

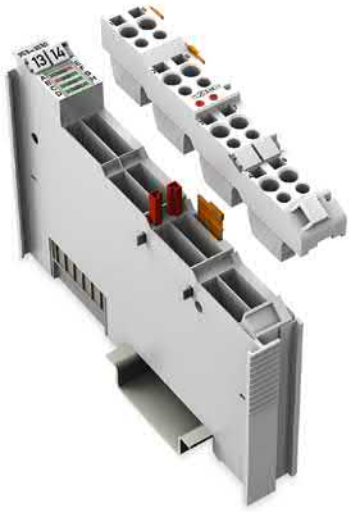
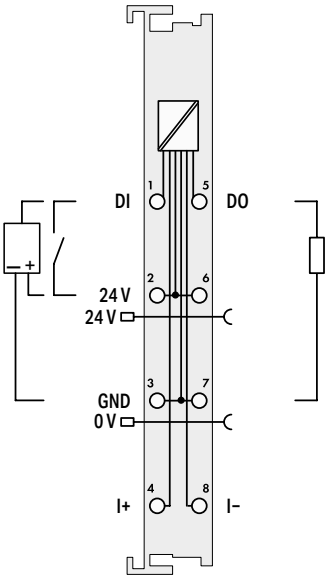
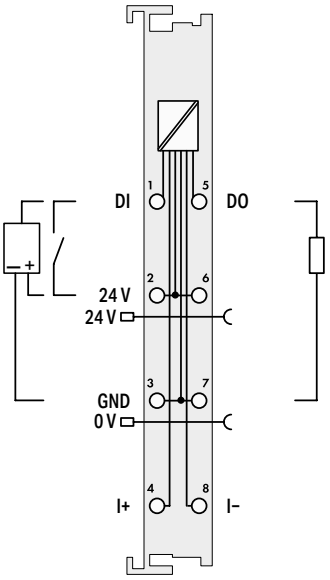


Figure: 753-1630





Item Description	SMI Master; 230 VAC	SMI Master LoVo; 24 VDC
Version	Pluggable	Pluggable
Item No.	753-1630	753-1631
Order Text	SMI Master; 230 VAC	SMI Master LoVo; 24 VDC
Technical Data		
Number of channels	1 x SMI (1 … 16 SMI slaves per channel)	1 x SMI (1 … 16 SMI slaves per channel)
Interface specification	SMI Master interface per SMI specification	SMI Master interface per SMI specification
Number of digital inputs	1	1
Input characteristic	Type 1	Type 1
Input voltage (max.)	31.2 VDC	31.2 VDC
Number of digital outputs	1	1
Output current per channel	0.5 ADC; short-circuit protected	0.5 ADC; short-circuit protected
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	11.8 mA	11.8 mA
Supply voltage (system)	5 VDC; via data contacts	5 VDC; via data contacts
Current consumption – system supply (5 V)	33 … 42 mA	33 … 42 mA
Isolation	3 kVAC RMS; 4 kV surge (system/SMI); 1.5 kVAC RMS; 2.5 kV surge (system/field)	3 kVAC RMS; 4 kV surge (system/SMI); 1.5 kVAC RMS; 2.5 kV surge (system/field)
Cable type	2-line; unshielded	2-line; unshielded
Cable length	350 m	350 m
Data width	12-byte data	12-byte data
Startup and configuration	Via WAGO SMI Configurator or IEC libraries	Via WAGO SMI Configurator or IEC libraries
Approvals	CE; KC	CE; KC
Data sheet and further information, see:	wago.com/753-1630	wago.com/753-1631

Accessories	Item No.	Item No.
Pluggable connector	Included	Included
Coding keys	Included	Included

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

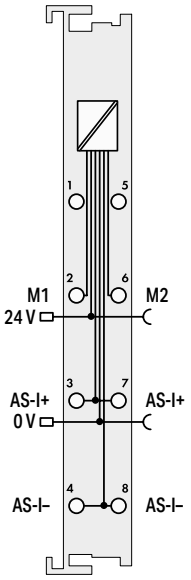
AS-Interface Master

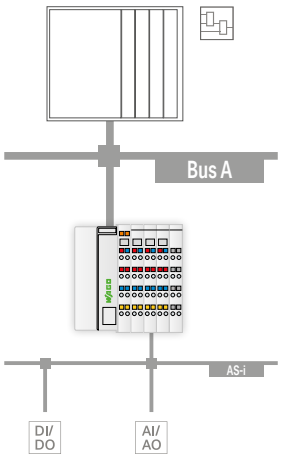


Figure: 750-655



Figure: 753-655





Item Description	AS-Interface Master	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-655**	**753-655**
Order Text	AS-Interface Master	AS-Interface Master
Technical Data		
Pluggable connector		•
AS-i master class	M4	
Number of slaves	62	
Slave profiles	V3.0 with transaction types 1 … 5	
Cable length	100 m (with repeater 300 m)	
AS-i cycle time	0.3 … 10 ms	
Supply voltage (AS-i)	26.5 … 31.6 V	
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption – system supply (5 V)	55 mA	
Data width (internal)	12 … 48 bytes (max.); Configurable, including 1 byte control/status	
Isolation	500 V (system/field)	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-655	wago.com/753-655

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

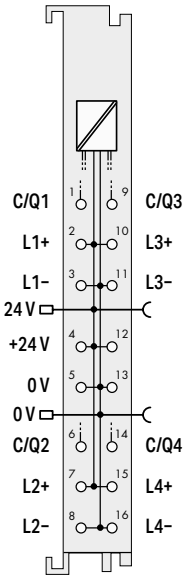
The AS-Interface Master Module connects AS-Interface devices to a higher-level fieldbus. It acts as a master for the AS-Interface and via the fieldbus coupler, as a slave for the fieldbus. The AS-i functions are provided both cyclically and acyclically via the fieldbus.

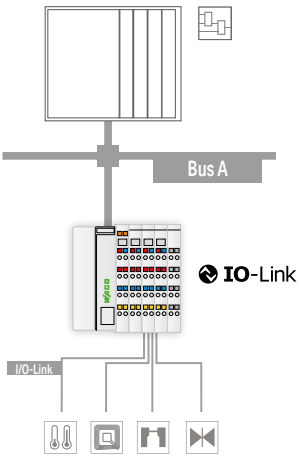
Diagnostics, which go far beyond the AS-i specifications, simplify detection of both sporadic configuration errors and AS-i communication interference sources. An auto-installation mode allows an AS-Interface network to be created via sequential slave installation, with no addressing tool required.

Both signal transmission and operating status, as well as trouble-free local bus communication, are indicated via LEDs.

IO-Link Master



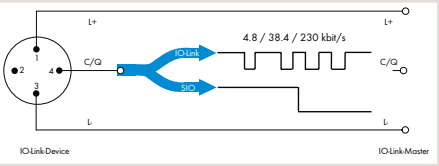




Item Description	IO-Link Master
Version	Standard with 16 connectors
Item No.	750-657
Order Text	IO-Link Master
Technical Data	
Number of I/O-Link ports	4
Baud rate	4.8 Kbit/s; 38.4 Kbit/s; 230.4 Kbit/s
Cable length	20 m
Supply voltage (field)	24 VDC (−15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	40 mA
Data width (internal)	4 … 24 bytes
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; KC; UL OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-657

Four different IO-Link devices or standard digital sensors/actuators can simultaneously connect to the IO-Link Master. Process data, as well as acyclic data for identification, configuration, parameterization and diagnostics can be communicated to the respective device via a 3-wire connection.

The functions and performance data are defined in device description files for master and devices; these are easy to customize via engineering tool. If a device must be replaced, the IO-Link devices' configuration and parameterization can be automatically restored without maintenance personnel. Project design, installation and operation are simplified!

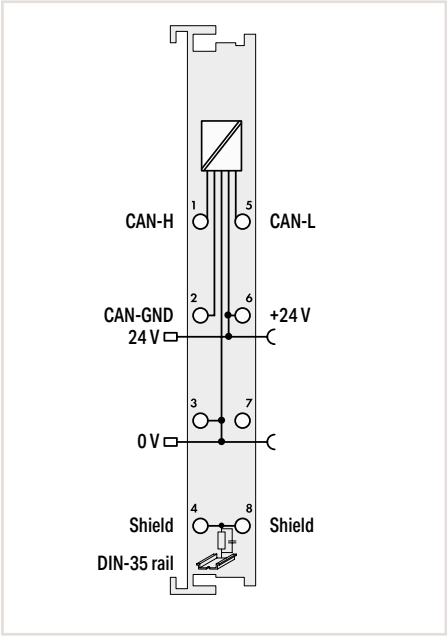


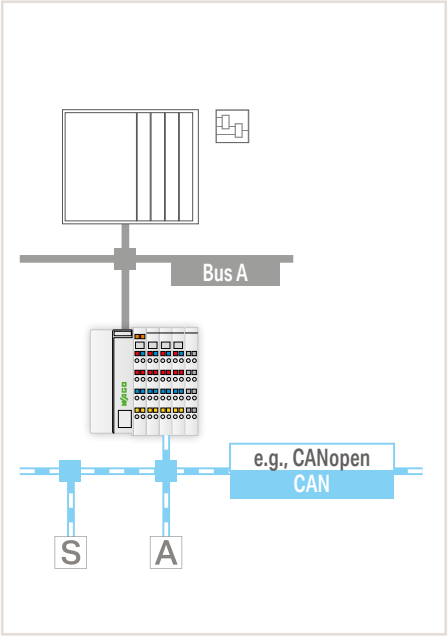
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

CAN Gateway







Item Description	CAN Gateway
Version	Standard
Item No.	750-658
Order Text	CAN Gateway
Technical Data	
Number of CAN interfaces	1
Baud rate	10 kbit/s; 20 kbit/s; 50 kbit/s; 125 kbit/s; 250 kbit/s; 500 kbit/s; 800 kbit/s (automatic baud rate)
Data formats	Per 2.0 A standard (11-bit ID); Per 2.0 B extended (29-bit ID)
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	50 mA
Data transfer time	5 ms (at 32-bit I/O)
Data width (internal)	4 … 24 bytes
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-658

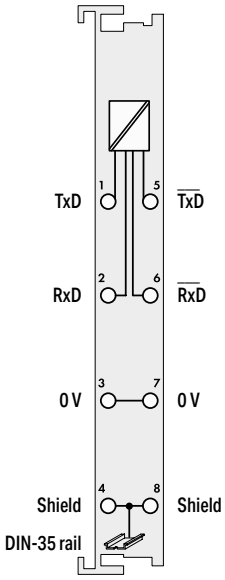
The CAN Gateway allows a CAN bus to be installed as a sub-bus beneath a fieldbus coupler or controller. It enables special sensors/actuators that are only available with the widely used CAN bus to also be integrated under other bus systems. Function blocks allow the gateway to read and write higher-protocol telegrams (e.g., CANopen).

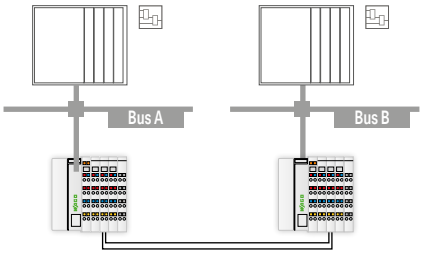
The module offers three different operating modes:

- Sniffer mode: Detailed analysis of the CAN bus through passive "snooping"
- Transparent mode: Active CAN subscriber that can send and receive any type of CAN telegram
- Mapped mode: Enables direct generation of CAN telegrams from the process image, or selective copying of process values from received CAN telegrams into the input process image (cyclic or event-based)

Serial Data Exchange Interface







Item Description	Serial Data Exchange Interface
Version	**Standard**
Item No.	**750-654**
Order Text	Data Exchange Interface
Technical Data	
Transmission channels	1 TxD / 1 RxD; full-duplex
Baud rate	62500 Bd (8 N 1)
Bit transfer	Via 2 twisted pairs with differential signals
Line impedance	120 Ω
Line length (max.)	1000 m
Current consumption – system supply (5 V)	65 mA
Data width (internal)	1 x 32-bit input/output; 1 x 8-bit control/status
Isolation	500 V (system/field)
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/750-654

This data exchange interface allows the exchange of data between different fieldbus systems. Two modules form a communication pair that is installed in fieldbus nodes and connected by two twisted wire pairs. The data exchange is done in full duplex operation, independent of the fieldbus system used. The data at the output of the fieldbus coupler is transmitted to the communication partner. This module then transmits the data to the input process image of its fieldbus coupler and vice versa.
The "function" LED indicates a data exchange with the coupler. The status of the data transmission is indicated by the TxD and RxD LEDs.

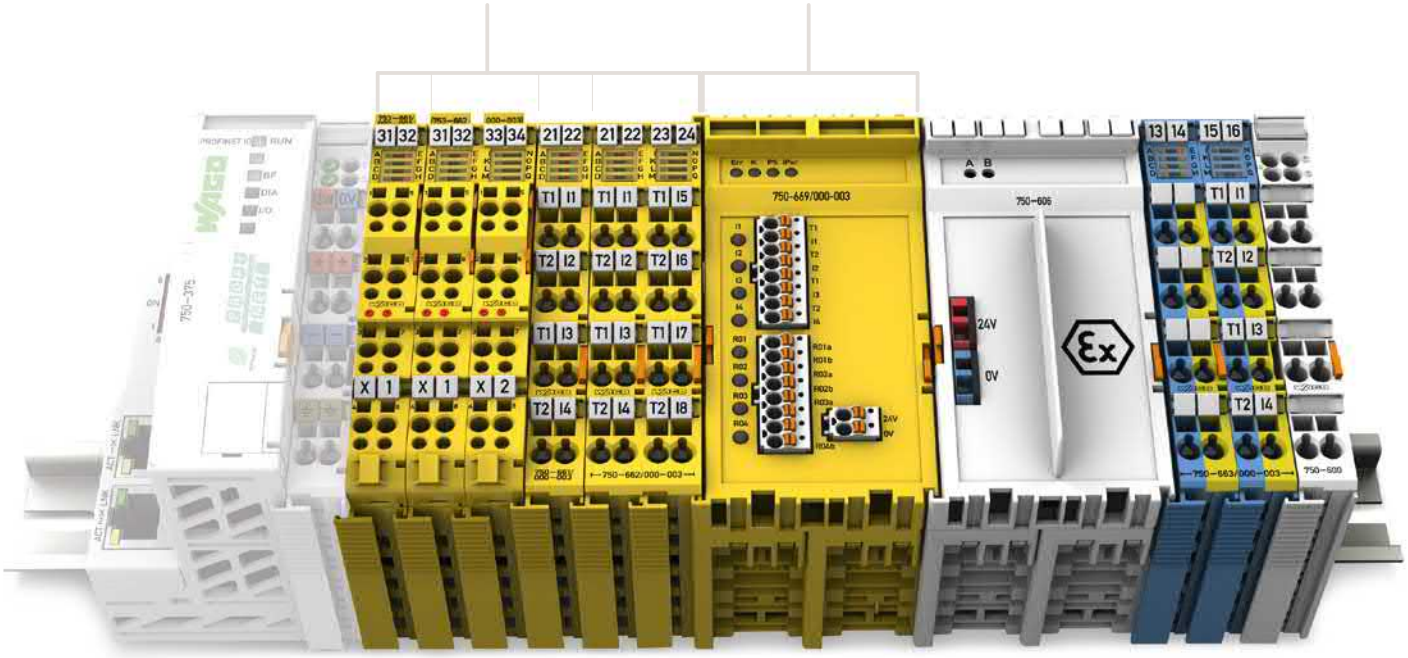
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Functional Safety

Housing design (750/753 Series)	
Dimensions W x H x D	750 Series: 12 or 24 x 67.8 x 100 mm 753 Series: 12 or 24 x 69 x 100 mm
Height from upper-edge of DIN-rail	750 Series: 60.6 mm; 753 Series: 61.8 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	750 Series: 8 … 9 mm / 0.33 inch 753 Series: 9 … 10 mm / 0.37 inch

Specialty housing	
Dimensions W x H x D	48 x 69.8 x 100
Height from upper-edge of DIN-rail	62.6 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	0.05 … 1.5 mm² / 20 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch

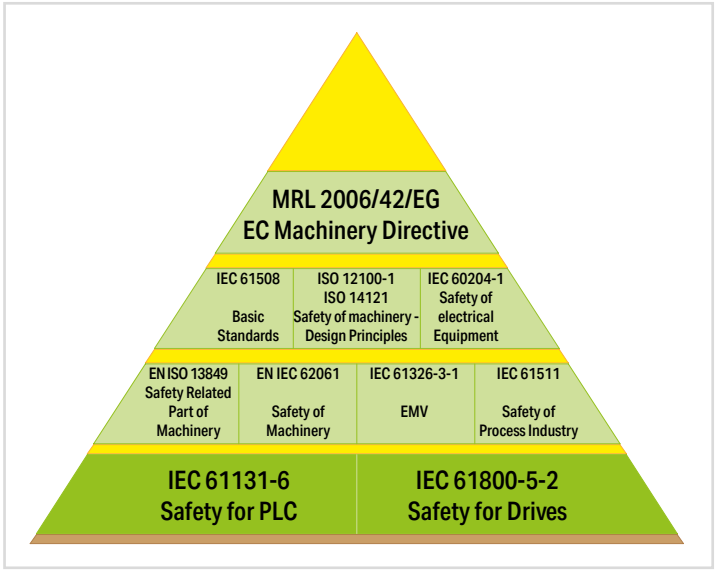


Functional Safety

In the European Union, the machinery directive defines the requirements for machine and system safety. This ensures a uniform standard for the protection of “life and limb” for people within a machine’s operating area.

The required risk assessment is based on harmonized standards (e.g., EN 13849) and identifies existing risks and required risk reduction (SIL or PL quality). Based on the risk assessment, safety functionality can be implemented, e.g., by presence detection or protection zone violations using secure switches or light arrays to immediately shut down the “risk.” For this purpose, the safety signals are detected by the “yellow” safety modules and transmitted via “PROFIsafe” to the fail-safe PLC for further processing. The result is then executed via safe actuator (e.g., output module or controller).

The unique characteristic safety values of the WAGO modules facilitate calculation of the final safety function up to Cat. 4/PLe according to EN 13849, or SIL3 according to EN 62061 or IEC 61511.



I/O System – 750 and 753 Series, Functional Safety
Contents

Function	Description	Item Number		Page
		Standard	Pluggable	
Fail-Safe Digital Inputs PROFIsafe	Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe	750-660/000-001		302
	Fail-Safe Digital Input, 4 Channels; 24 VDC; PROFIsafe V 2.0 iPar	750-661/000-003	753-661/000-003	303
	Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe V 2.0 iPar	750-662/000-003	753-662/000-003	303
Fail-Safe Digital Inputs/Outputs PROFIsafe	Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 0.5 A; PROFIsafe	750-665/000-001		302
	Fail-Safe Digital Input/Output, 4/2 Channels; 24 VDC; 10 A; PROFIsafe V 2.0 iPar	750-666/000-003	753-666/000-003	304
	Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 2 A; PROFIsafe V 2.0 iPar	750-667/000-003	753-667/000-003	304
	Fail-Safe Digital Input/Relay Output, 4/4 Channels; 48 VAC/60 VDC; 6 A; PROFIsafe V 2.0 iPar	750-669/000-003		306
Intrinsically Safe Digital Input for Functional Safety	Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar	750-663/000-003		307
	Classification of binary 24 V interfaces with testing in the field of functional safety according to position paper CB24I of ZVEI (German Electrical and Electronic Manufacturer's Association)			298
Supply Modules Ex i 	The intrinsically safe I/O module with inputs for functional safety (750-663/000-003) must only be operated using an Ex i 24 VDC power supply (e.g., 750-606, 750-625/000-001)! General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!			
	Supply Module; 24 VDC; Diagnostics; Intrinsically safe	750-606		310
	Power Supply; 24 VDC; Intrinsically safe	750-625/000-001		310
Filter Modules 	The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased electromagnetic immunity (EMC standard), WAGO offers compact power supply filter modules (see Section 4.10). Specific power supply features must be considered, which are described in the corresponding manuals.			
	Field Supply Filter (Surge); 24 VDC; Higher isolation	750-624/020-000		334
	Supply Filter; 24 VDC; Higher isolation	750-626/020-000		336

Position Paper CB24I of the German Electrical and Electronic Manufacturer's Association (ZVEI)

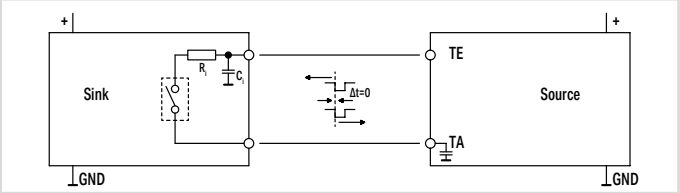
Fail-safe digital interfaces differ from conventional digital interfaces though higher safety testing for both inputs and outputs.
They include dynamic digital interfaces of different characteristics and functions. At first glance, the combination of inputs to outputs results in a variety of possible variants due to the different applications.
For this reason, ZVEI has issued the Position Paper CB24i in order to increase functional safety and simplify engineering processes.

The purpose of this paper is to:
- describe terms
- define characteristics of interface types
- specify product information (technical data) per interface type to be supplied by the manufacturer.

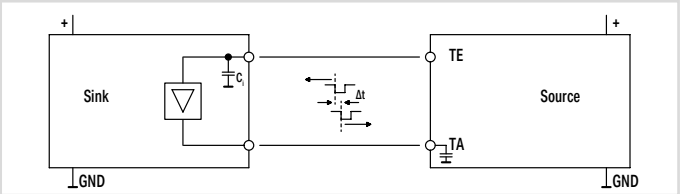
This paper provides a technical description for all interface types. No safety-related assessment is made.

The variety of possible combinations was divided into just four interface types:

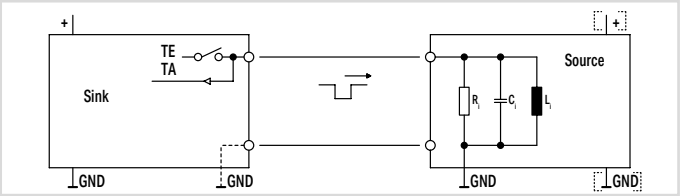
For both interface types C and D, four "performance" classes are also available to match the time requirements of the test pulses.



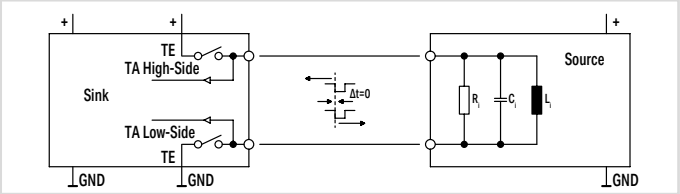
Interface type A



Interface type B



Interface type C



Interface type D

The identifying key has the following structure:

Source/Sink	Interface type (and class)	Additional measures "M"	Sink/Source	Suitable interface type (and class)	Suitable interface type (and class)	Suitable interface type (and class)

The first position describes the interface type and, if necessary, the class of the product. The second position indicates if additional measures are necessary. Next, the interface type suitable for this product is specified. Up to three interface types can be indicated.
A row can only contain interface types of the same kind. Depending on the product, several identifying keys may also be used.

Examples:

a) Manufacturer information for a source of interface type C/class 2 (e.g., sensor):

Source	C2		Sink	C1	C2	

Explanation: In this case, a source of type C2 is compatible with a sink of type C1 and also with a sink of type C2.

b) Manufacturer information for a sink of interface type C/class 2 (e.g., safety PLC):

Sink	C2		Source		C2	C3

Explanation: In this case, a sink of type C2 is compatible with a source of type C2 and also with a sink of type C3.

c) Manufacturer information for a sink of interface type A (e.g., safety evaluation unit):

Sink	A	M	Source	A		

Explanation: In this case, a sink of type A is compatible with a source of type A subject to "M" additional measures.

Complete information can be found in the ZVEI Position Paper CB24i.
This position paper is available for download in German and English via the ZVEI website.

Classification of Binary 24 V Interfaces with Testing in the Field of Functional Safety per ZVEI Position Paper CB24I

WAGO – Functional Safety		Identifying Key per ZVEI Position Paper CB24I										
					Measures							
Description	Item No.	Source/Sink	Interface type	Additional measures "M"	Parameterize filter time, short circuit test	Parameterize/switch off test pulse duration	Protected wiring	Sink/Source	Suitable interface type	Suitable interface type	Suitable interface type	Suitable interface type
Inputs												
Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe	750-660/000-001	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
Fail-Safe Digital Input, 4 Channels; 24 VDC; PROFIsafe V 2.0 iPar	750-661/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
Fail-Safe Digital Input, 4 Channels; 24 VDC; PROFIsafe V 2.0 iPar	753-661/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe V 2.0 iPar	750-662/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe V 2.0 iPar	753-662/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
Inputs/Outputs												
Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 0.5 A; PROFIsafe	750-665/000-001	Sink	A	M				Source	A	-	-	-
		Source	C0	M				Sink	C0	-	-	-
Fail-Safe Digital Input/Output, 4/2 Channels; 24 VDC; 10 A; PROFIsafe V 2.0 iPar	750-666/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
		Source	C0	M		x		Sink	C0	C1	C2	C3
		Source	D0	M		x		Sink	D0	D1	D2	D3
Fail-Safe Digital Input/Output, 4/2 Channels; 24 VDC; 10 A; PROFIsafe V 2.0 iPar	753-666/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
		Source	C0	M		x		Sink	C0	C1	C2	C3
		Source	D0	M		x		Sink	D0	D1	D2	D3
Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 2 A; PROFIsafe V 2.0 iPar	750-667/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
		Source	C0	M		x		Sink	C0	C1	C2	C3
		Source	D0	M		x		Sink	D0	D1	D2	D3
Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 2 A; PROFIsafe V 2.0 iPar	753-667/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
		Source	C0	M		x		Sink	C0	C1	C2	C3
		Source	D0	M		x		Sink	D0	D1	D2	D3
Fail-Safe Digital Input/Relay Output, 4/4 Channels; 48 VAC/60 VDC; 6 A; PROFIsafe V 2.0 iPar	750-669/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3
		Source	A	-				Sink	A	-	-	-
		Source	C0	M			x	Sink	C0	C1	C2	C3
Intrinsically Safe Input												
Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar	750-663/000-003	Sink	A	-				Source	A	-	-	-
		Sink	C0	M	x			Source	C0	C1	C2	C3

Classification of Binary 24 V Interfaces with Testing in the Field of Functional Safety per ZVEI Position Paper CB24I

Interface Type A – Sink	Item: 75x-661/000-003; 75x-662/000-003; 75x-666/000-003; 75x-667/000-003; 750-669/000-003			Item: 75x-663/000-003		
Parameter	Min.	Typ. (24 V)	Max.	Min.	Typ. (24 V)	Max.
Input current I_i (in the ON state)	>2 mA	-	<9 mA	>2 mA	3 mA	<9 mA
Output voltage U_i	Field power supply −0.2 V	-	-	Field power supply −0.2 V	-	-
Input capacitance C_i	-	-	12 nF	-	-	12 nF
Additional measure "M"	• Parameterize filter time; activate short circuit test			• Parameterize filter time; activate short circuit test		

Interface Type C – Sink, Class C0	Item: 75x-661/000-003; 75x-662/000-003; 75x-666/000-003; 75x-667/000-003; 750-669/000-003			Item: 75x-663/000-003		
Parameter	Min.	Typ. (24 V)	Max.	Min.	Typ. (24 V)	Max.
Test pulse duration t_i	0.5 ms	-	200 ms	0.5 ms	-	200 ms
Test pulse interval T	18 ms	42 ms	1230 ms	18 ms	42 ms	1230 ms
Input resistance R	-	3.6 kΩ	8.5 kΩ	-	2.4 kΩ	8.5 kΩ
Input capacitance C_L	-	-	12 nF	-	-	12 nF
Inductance L_L	-	-	-	-	-	-
Additional measure "M"	• Parameterize filter time • Deactivate short circuit test			• Parameterize filter time • Deactivate short circuit test		

Interface Type C – Sink, Class C1	Item: 75x-661/000-003; 75x-662/000-003; 75x-666/000-003; 75x-667/000-003; 750-669/000-003			Item: 75x-663/000-003		
Parameter	Min.	Typ. (24 V)	Max.	Min.	Typ. (24 V)	Max.
Test pulse duration t_i	2 ms	-	200 ms	2 ms	-	200 ms
Test pulse interval T	18 ms	42 ms	1230 ms	18 ms	42 ms	1230 ms
Input resistance R	-	3.6 kΩ	8.5 kΩ	-	2.4 kΩ	8.5 kΩ
Input capacitance C_L	-	-	12 nF	-	-	12 nF
Inductance L_L	-	-	-	-	-	-
Additional measure "M"	• Parameterize filter time to at least 2 ms • Deactivate short circuit test			• Parameterize filter time to at least 2 ms • Deactivate short circuit test		

Interface Type C – Sink, Class C2	Item: 75x-661/000-003; 75x-662/000-003; 75x-666/000-003; 75x-667/000-003; 750-669/000-003			Item: 75x-663/000-003		
Parameter	Min.	Typ. (24 V)	Max.	Min.	Typ. (24 V)	Max.
Test pulse duration t_i	1 ms	-	200 ms	1 ms	-	200 ms
Test pulse interval T	18 ms	42 ms	1230 ms	18 ms	42 ms	1230 ms
Input resistance R	-	3.6 kΩ	8.5 kΩ	-	2.4 kΩ	8.5 kΩ
Input capacitance C_L	-	-	12 nF	-	-	12 nF
Inductance L_L	-	-	-	-	-	-
Additional measure "M"	• Parameterize filter time to at least 1 ms • Deactivate short circuit test			• Parameterize filter time to at least 1 ms • Deactivate short circuit test		

Interface Type C – Sink, Class C3	Item: 75x-661/000-003; 75x-662/000-003; 75x-666/000-003; 75x-667/000-003; 750-669/000-003			Item: 75x-663/000-003		
Parameter	Min.	Typ. (24 V)	Max.	Min.	Typ. (24 V)	Max.
Test pulse duration t_i	0.5 ms	-	200 ms	0.5 ms	-	200 ms
Test pulse interval T	18 ms	42 ms	1230 ms	18 ms	42 ms	1230 ms
Input resistance R	-	3.6 kΩ	8.5 kΩ	-	2.4 kΩ	8.5 kΩ
Input capacitance C_L	-	-	12 nF	-	-	12 nF
Inductance L_L	-	-	-	-	-	-
Additional measure "M"	• Parameterize filter time to at least 0.5 ms • Deactivate short circuit test			• Parameterize filter time to at least 0.5 ms • Deactivate short circuit test		

Classification of Binary 24 V Interfaces with Testing in the Field of Functional Safety per ZVEI Position Paper CB24I

Interface Type A – Source	Item: 750-669/000-003		
Parameter	Min.	Typ.	Max.
Switching current I_i	3 mA	-	6 A per contact
Switching voltage U_i	10 V	-	60 VDC / 48 VAC
Internal resistance R_i (in the switched state)	-	-	100 mΩ
Load capacitance C_L	-	-	-
Load inductance L_L	-	-	1.2 H
Potential-free	Yes		

Interface Type C – Source, Class C0	Item: 75x-666/000-003			Item: 75x-667/000-003		
Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.
Test pulse duration t_i	2 ms	-	500 ms	1 ms	-	500 ms
Leakage current $I_{Leakage}$ of the output in the OFF state	-	-	<1 mA	-	-	1.2 mA
Nominal current I_N of the output in the ON state	-	-	10 A	20 mA	2 A	2.4 A
Capacitive load C_L	-	-	10,000 µF	-	-	2.2 µF
Inductive load L_L	-	-	1.2 H	-	-	1.2 H
Additional measure “M”	• Parameterize test pulse duration • Parameterize output tolerance time			• Parameterize test pulse duration		

Interface Type D – Source, Class D0	Item: 75x-666/000-003			Item: 75x-667/000-003		
Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.
Test pulse duration t_i	2 ms	-	500 ms	1 ms	-	500 ms
Leakage current $I_{Leakage}$ of the output in the OFF state	-	-	<1 mA	-	-	1.2 mA
Nominal current I_N of the output in the ON state	-	-	10 A	20 mA	2 A	2.4 A
Capacitive load C_L	-	-	10,000 µF	-	-	2.2 µF
Inductive load L_L	-	-	1.2 H	-	-	1.2 H
Additional measure “M”	• Parameterize test pulse duration • Parameterize output tolerance time			• Parameterize test pulse duration		

Interface Type D – Source, Class D1	Item: 75x-667/000-003		
Parameter	Min.	Typ.	Max.
Test pulse duration t_i	-	-	1 ms
Leakage current $I_{Leakage}$ of the output in the OFF state	-	-	1.2 mA
Nominal current I_N of the output in the ON state	20 mA	2 A	2.4 A
Capacitive load C_L	-	-	2.2 µF
Inductive load L_L	-	-	1.2 H
Additional measure “M”	• Parameterize test pulse duration to 1 ms		

Interface Type D – Source, Class D1, D2, D3	Item: 75x-666/000-003			Item: 75x-667/000-003		
Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.
Test pulse duration t_i	-	-	-	-	-	-
Leakage current $I_{Leakage}$ of the output in the OFF state	-	-	<1 mA	-	-	1.2 mA
Nominal current I_N of the output in the ON state	20 mA	2 A	10 A	20 mA	2 A	2.4 A
Capacitive load C_L	-	-	10,000 µF	-	-	2.2 µF
Inductive load L_L	-	-	1.2 H	-	-	1.2 H
Additional measure “M”	• Parameterize test pulse duration to 0 ms (off) • Parameterize output tolerance time • Program safety application for automatic test: Switch off the output once every 8 h • Parameterize output configuration			• Parameterize test pulse duration to 0 ms (off) • Program safety application for automatic test: Switch off the output once every 8 h		

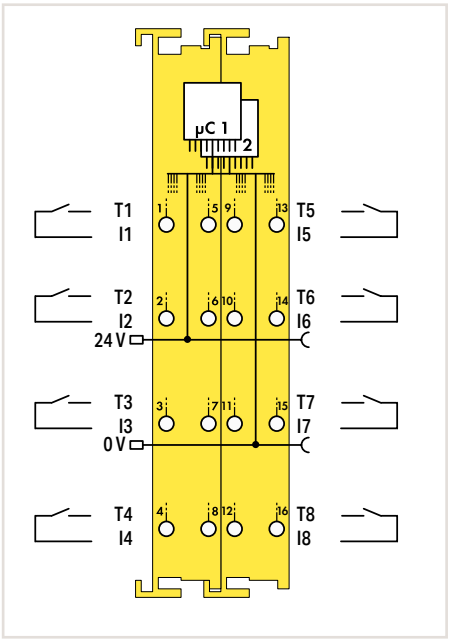
Fail-Safe Digital Input or Digital Input/Output; 24 VDC; PROFIsafe

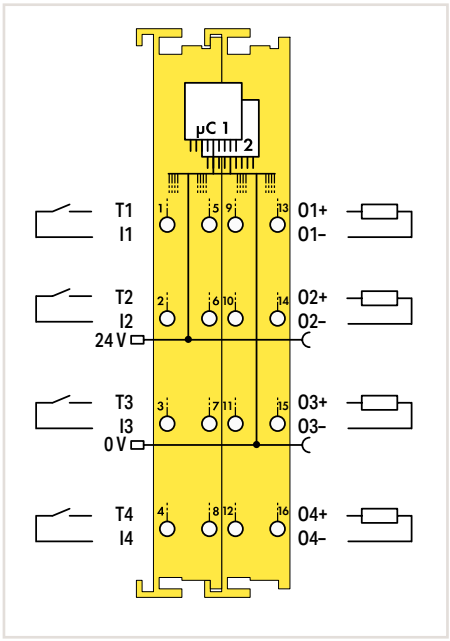


Figure: 750-660/000-001



Figure: 750-665/000-001





5.8

Item Description	Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe	Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 0.5 A; PROFIsafe
Version	**Standard**	**Standard**
Item No.	**750-660/000-001**	**750-665/000-001**
Order Text	8FDI; 24 VDC; PROFIsafe	4FDI/4FDO; 24 VDC; 0.5A; PROFIsafe
Technical Data		
Number of digital inputs	8	4
Achievable safety classes	8 x Cat. 2/SIL 2 or 4 x Cat. 4/SIL 3	4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
Protocol	PROFIsafe V1.3	PROFIsafe V1.3
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software	PROFIsafe address adjustable via DIP switch or engineering software
Sensor connection	Fail-safe input with test pulse	Fail-safe input with test pulse
Input characteristic	Clock sensitive	Clock sensitive
Input current per channel for signal (1) typ.	2.2 mA	2.2 mA
Number of digital outputs		4
Output circuit design		Power outputs
Actuator connection		Fail-safe output with test pulse
Switching frequency (max.) with load type		5 Hz, ohmic load; 0.1 Hz, inductive load per IEC 947-5-1, DC 13; 5 Hz, inductive load per IEC 947-5-1, DC 13, with recovery diodes
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Proof test interval	10 years	10 years
Supply voltage (system)	5 VDC; via data contacts	5 VDC; via data contacts
Current consumption – system supply (5 V)	40 mA	55 mA
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm	24 x 70.9 x 100 mm
Safety Standards	IEC 61508, parts 1-7, 1998 and 2000; EN 954-1 Cat. 4	IEC 61508, parts 1-7, 1998 and 2000; EN 954-1 Cat. 4
Approvals	CE; KC; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-660/000-001	wago.com/750-665/000-001

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

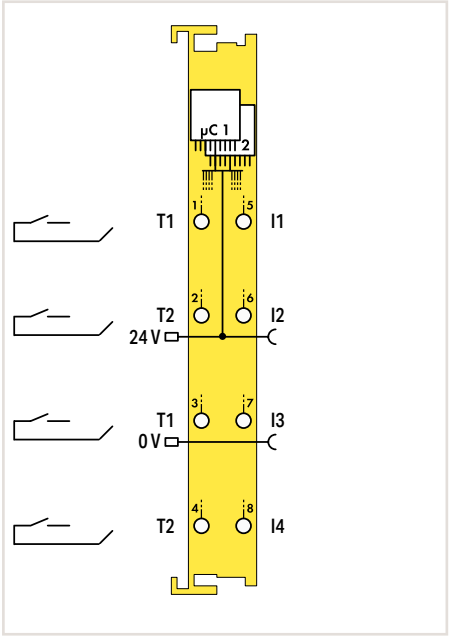
Fail-Safe Digital Input; 24 VDC; PROFIsafe V 2.0 iPar

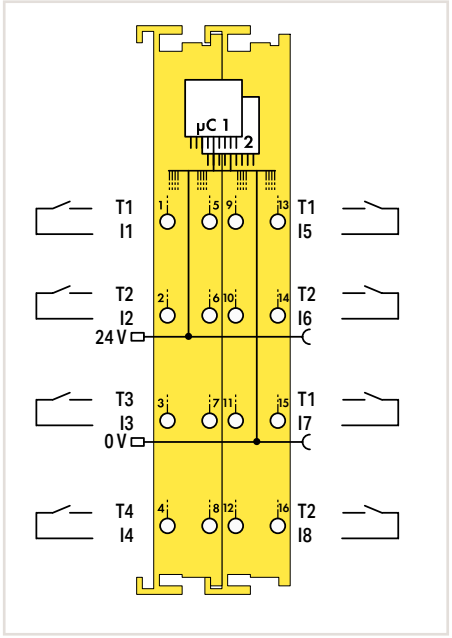


Figure: 750-661/000-003



Figure: 750-662/000-003





5.8

Item Description	Fail-Safe Digital Input, 4 Channels; 24 VDC; PROFIsafe V 2.0 iPar		Fail-Safe Digital Input, 8 Channels; 24 VDC; PROFIsafe V 2.0 iPar	
Version	**Standard**	**Pluggable** (delivery without connector)	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-661/000-003**	**753-661/000-003**	**750-662/000-003**	**753-662/000-003**
Order Text	4FDI; 24 VDC; PROFIsafe V2 iPar	4FDI; 24 VDC; PROFIsafe V2 iPar	8FDI; 24 VDC; PROFIsafe V2 iPar	8FDI; 24 VDC; PROFIsafe V2 iPar
Technical Data				
Pluggable connector		•		•
Number of digital inputs	4		8	
Achievable safety classes	SIL 3; Cat. 4, PL e		SIL 3; Cat. 4, PL e	
Protocol	PROFIsafe V2		PROFIsafe V2	
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software		PROFIsafe address adjustable via DIP switch or engineering software	
Sensor connection	Fail-safe input with test pulse		Fail-safe input with test pulse	
Input characteristic	Clock sensitive		Clock sensitive	
Input current per channel for signal (1) typ.	2.2 mA		2.2 mA	
Input characteristic	Type 1		Type 1	
Signal frequency (max.)	50 Hz		50 Hz	
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Supply voltage (system)	5 VDC; via data contacts		5 VDC; via data contacts	
Current consumption – system supply (5 V)	145 mA		148 mA	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	24 x 70.9 x 100 mm		24 x 70.9 x 100 mm	
Safety Standards	IEC 61508, Parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061		IEC 61508, Parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-661/000-003	wago.com/753-661/000-003	wago.com/750-662/000-003	wago.com/753-662/000-003

Accessories		Item No.		Item No.
Pluggable connector, safety		753-120		753-120
Coding keys		753-150		753-150

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

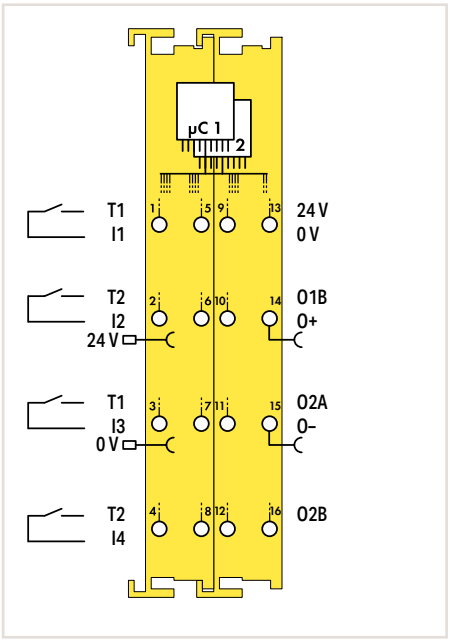
Fail-Safe Digital Input/Output, 4/2 Channels; 24 VDC; 10 A; PROFIsafe V 2.0 iPar

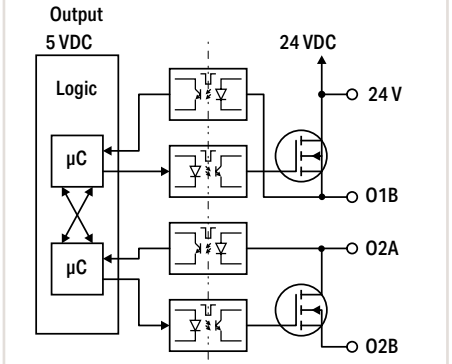


Figure: 750-666/000-003



Figure: 753-666/000-003





5.8

Item Description	Fail-Safe Digital Input/Output, 4/2 Channels; 24 VDC; 10 A; PROFIsafe V 2.0 iPar	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-666/000-003**	**753-666/000-003**
Order Text	4FDI/2FDO; 24 VDC; 10A; PROFIsafe V2 iPar	4FDI/2FDO; 24 VDC; 10A; PROFIsafe V2 iPar
Technical Data		
Pluggable connector		•
Number of digital inputs	4	
Achievable safety classes	SIL 3; Cat. 4, PL e	
Protocol	PROFIsafe V2	
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software	
Sensor connection	Fail-safe input with test pulse	
Input characteristic	Clock sensitive	
Input current per channel for signal (1) typ.	2.2 mA	
Signal frequency (max.)	50 Hz	
Number of digital outputs	2	
Output circuit design	Power outputs	
Actuator connection	2 x (fail-safe output with test pulse)	
Output current per channel	10 A	
Output current (module) max.	20 A (single operation)	
Protection against incorrect wiring	Short-circuit-protected	
Switching frequency (max.) with load type	50 Hz, ohmic load; 0.1 Hz, inductive load	
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Supply voltage (system)	5 VDC; via data contacts	
Current consumption – system supply (5 V)	190 mA	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	24 x 70.9 x 100 mm	
Safety Standards	IEC 61508, Parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-666/000-003	wago.com/753-666/000-003

This module enables a fail-safe 2-channel switch-off (single failure protection) when the power outputs are used in a bipolar configuration. If a fail-safe 1-channel switch-off is adequate, two independent switching channels are available.
The module is capable of safely shutting off the supply voltage of entire actuator groups which are connected to the standard modules arranged to the right.
The 2-channel circuit types P-M and P-P as well as the 1-channel circuit types P, P or P, M are available.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Accessories	Item No.
Pluggable connector, safety	753-120
Coding keys	753-150

„ Approvals and corresponding ratings, see page 522 or www.wago.com

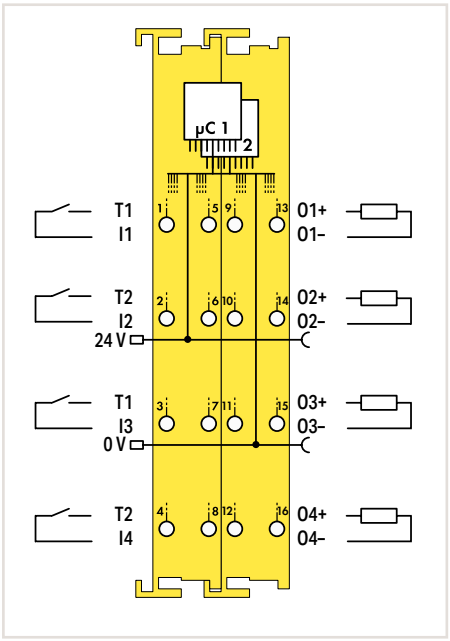
Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 2 A; PROFIsafe V 2.0 iPar



Figure: 750-667/000-003



Figure: 753-667/000-003



Item Description	Fail-Safe Digital Input/Output, 4/4 Channels; 24 VDC; 2 A; PROFIsafe V 2.0 iPar	
Version	**Standard**	**Pluggable** (delivery without connector)
Item No.	**750-667/000-003**	**753-667/000-003**
Order Text	4FDI/4FDO; 24 VDC; 2A; PROFIsafe V2 iPar	4FDI/4FDO; 24 VDC; 2A; PROFIsafe V2 iPar
Technical Data		
Pluggable connector		•
Number of digital inputs	4	
Achievable safety classes	SIL 3; Cat. 4, PL e	
Protocol	PROFIsafe V2	
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software	
Sensor connection	Fail-safe input with test pulse	
Input characteristic	Clock sensitive	
Input current per channel for signal (1) typ.	2.2 mA	
Signal frequency (max.)	50 Hz	
Number of digital outputs	4	
Output circuit design	Power outputs	
Actuator connection	4 x (fail-safe output with test pulse)	
Output current per channel	2 A	
Output current (module) max.	8 A	
Protection against incorrect wiring	Short-circuit-protected	
Switching frequency (max.) with load type	50 Hz, ohmic load; 0.1 Hz, inductive load	
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Supply voltage (system)	5 VDC; via data contacts	
Current consumption – system supply (5 V)	180 mA	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	24 x 70.9 x 100 mm	
Safety Standards	IEC 61508, Parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-667/000-003	wago.com/753-667/000-003

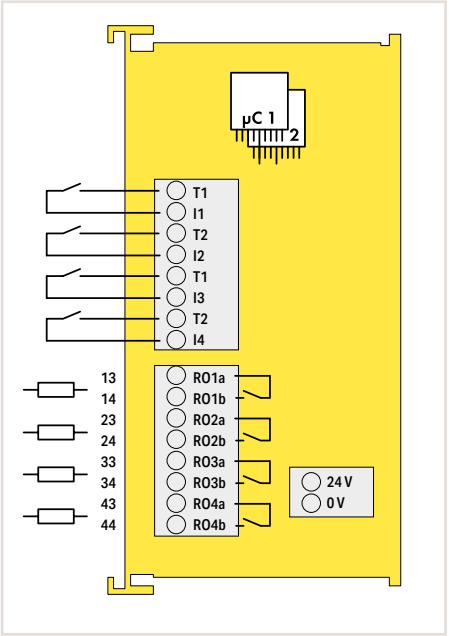
Accessories	Item No.
Pluggable connector, safety	**753-120**
Coding keys	**753-150**

The 2-channel circuit types P-M and P-P as well as the 1-channel circuit types P, P or P, M are available at each output. When two 1-channel P circuits are used, Categories 4/PLe or SIL3 are possible.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Fail-Safe Digital Input/Relay Output, 4/4 Channels; 48 VAC/60 VDC; 6 A; PROFIsafe V 2.0 iPar





5.8

Item Description	Fail-Safe Digital Input/Relay Output, 4/4 Channels; 48 VAC/60 VDC; 6 A; PROFIsafe V 2.0 iPar
Item No.	**750-669/000-003**
Order Text	4FDI/4FRO; 48VAC/ 60VDC; 6A; PROFIsafe V2 iPar
Technical Data	
Number of digital inputs	4
Achievable safety classes	SIL 3; Cat. 4, PL e
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software
Sensor connection	4 x (fail-safe input with test pulse)
Input characteristic	Clock sensitive
Input current per channel for signal (1) typ.	2.2 mA
Input characteristic	Type 1
Signal frequency (max.)	50 Hz
Number of digital outputs	4
Output circuit design	Relay outputs
Actuator connection	4 x (fail-safe output with test pulse)
Load switching voltage range	5 … 60 VDC (SELV/PELV); 5 … 48 VAC
Isolation voltage	Relay outputs: 48 VAC; 60 VDC
Switching current (min.)	3 mA
Output current per channel	6 A
Output current (module) max.	24 A
Switching delay	50 ms
Supply voltage (field)	24 VDC via wiring level (push-in CAGE CLAMP® connector)
Supply voltage (system)	5 VDC; via data contacts
Current consumption – system supply (5 V)	120 mA
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Safety Standards	IEC 61508, Parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061
Approvals	CE;
Data sheet and further information, see:	wago.com/750-669/000-003

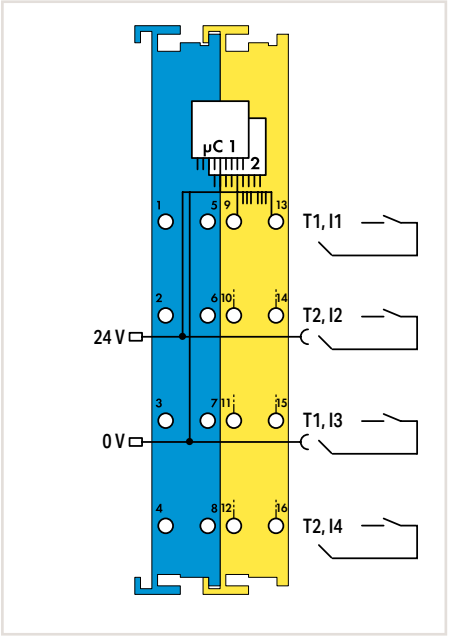
Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar





Item Description	Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar
Item No.	**750-663/000-003**
Order Text	4F-Ex i DI; 24 VDC; PROFIsafe V2 iPar
Technical Data	
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software
Sensor inputs	I4; clock sensitive to T1 ... T2
Input current (typ.)	3 mA
Input frequency (max.)	50 Hz
Input filter (digital)	0 ... 200 ms, parameterizable in steps
Clock outputs	2
Supply voltage (field)	24 VDC (Ex i power supply: U_o = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	20 mA
Current consumption – system supply (5 V)	145 mA
Isolation	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 ... +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Functional Safety	
Achievable risk reduction	SIL 3 per IEC 61508:2010; SIL 3 per IEC 61511:2005; SIL 3 per IEC 62061:2005; Cat. 4, PL e per EN ISO 13849:2008
Safety standards	IEC 61508; IEC 62061; EN ISO 13849; IEC 61511
Explosion Protection	
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 23 mA; P_o = 157 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 61 mH; C_o = 64 nF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 552 nF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 2.28 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 2.95 µF
Ex guideline	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-663/000-003

5.8

This module combines intrinsic safety with functional safety and was specifically developed for reliable acquisition from potential-free, contact-based emergency stop switches, safety interlock switches, mode selectors and safety sensors that are located in hazardous environments.
Thus, safety functions with fail-safe sensors from Ex Zones 0 and 1 can be implemented.

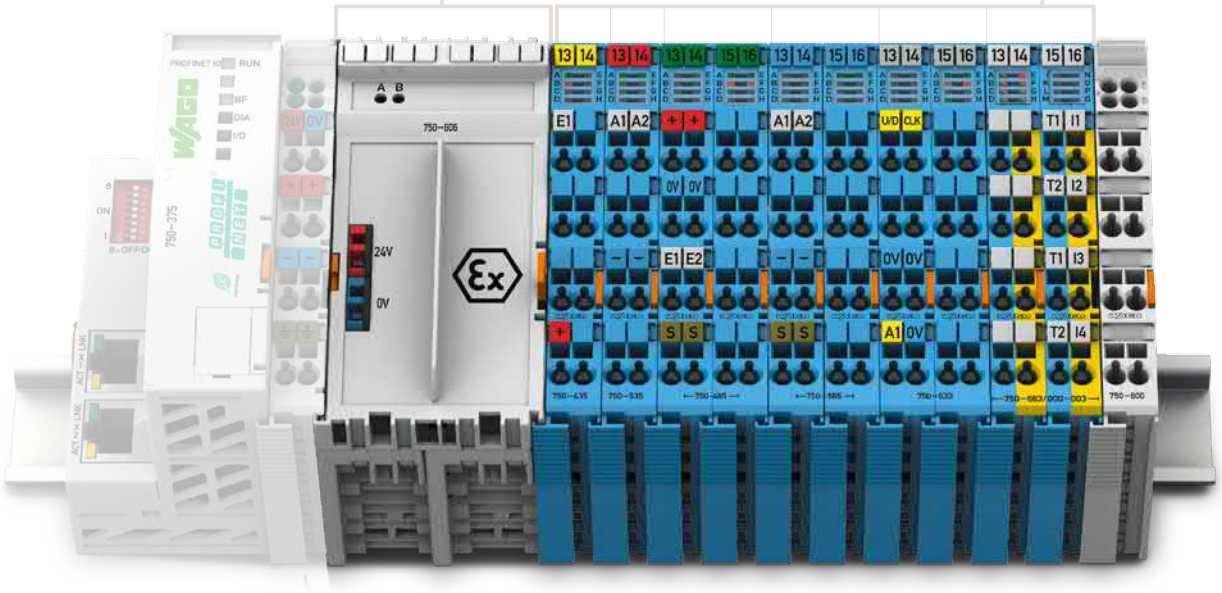
Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

Intrinsically Safe Modules Ex i

Specialty Housing	
Dimensions W x H x D	48 x 70.9 x 100
Height from upper-edge of DIN-rail	63.7 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 1.5 mm² / 28 … 16 AWG
Strip length	5 … 6 mm / 0.22 inch

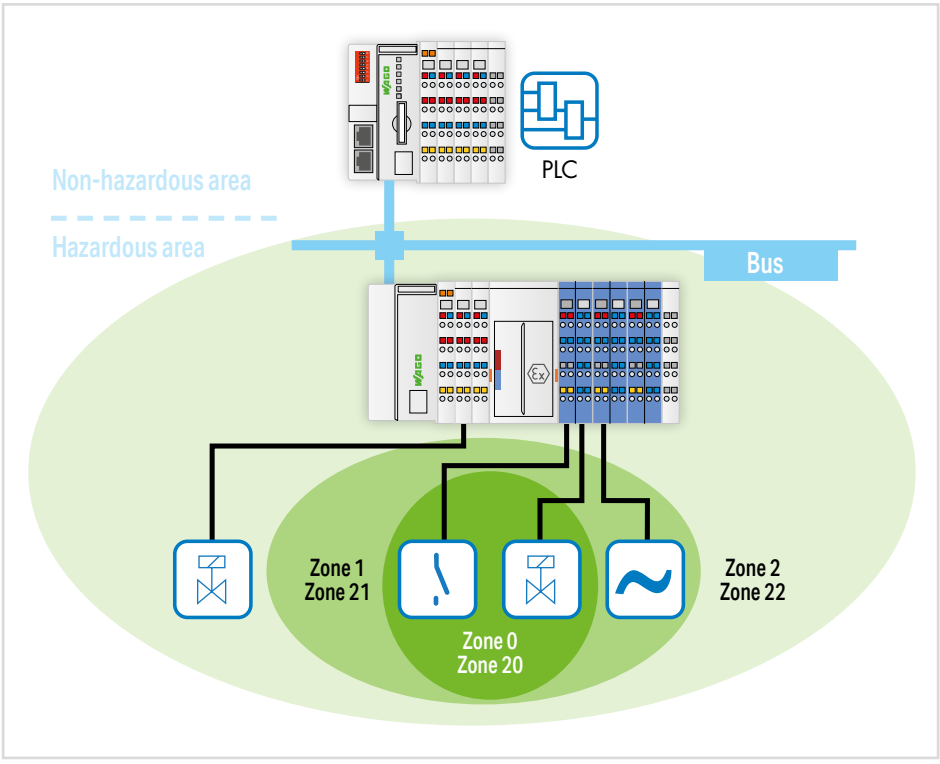
Housing Design (750 Series)	
Dimensions W x H x D	12 or 24 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch



Use in Hazardous Areas

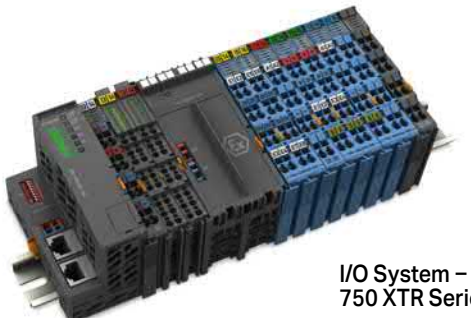
In many plants across the chemical and petrochemical industries, as well as in the production and process automation sectors, installations are operated that process explosive gas- or dust-air mixtures. This is why electrical equipment must be explosion-proof in order to avoid injuries to personnel and damage to equipment.

The modules within the WAGO-I/O-SYSTEM 750 are designed for use in both non-hazardous and hazardous areas. The direct application of fieldbus technology in potentially explosive areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the WAGO-I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. The “blue” Ex i I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard fieldbus node, offering all the advantages of state-of-the-art fieldbus technology. The WAGO-I/O-SYSTEM 750 is also approved for mining applications.



I/O System – 750 and 753 Series; Intrinsically Safe Modules Ex i
Contents

Function	Description	Item Number	Page
Power Supplies Ex i	Power Supply; 24 VDC; Diagnostics; Intrinsically safe	750-606*	310
	Power Supply; 24 VDC; Intrinsically safe	750-625/000-001	310
Digital Inputs Ex i for Proximity Sensors per EN 60947-5-6	1-Channel Digital Input; NAMUR; Intrinsically safe	750-435	311
	2-Channel Digital Input; NAMUR; Intrinsically safe	750-438	311
	Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar	750-663/000-003	312
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Digital Outputs Ex i	2-Channel Digital Output; 24 VDC; Intrinsically safe	750-535*	314
	4-Channel Digital Output; 24 VDC; Valve; Intrinsically safe	750-539	314
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Analog Inputs Ex i	2-Channel Analog Input; 4 … 20 mA; Intrinsically safe	750-485	316
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Analog Outputs Ex i	2-Channel Analog Output; 0 … 20 mA; Intrinsically safe	750-585*	319
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Function Module Ex i	Up/Down Counter; Intrinsically safe	750-633*	320
*This module is also available as a variant of the 750 XTR Series.		See Section 6	



I/O System –
750 XTR Series

Power Supply; Ex i

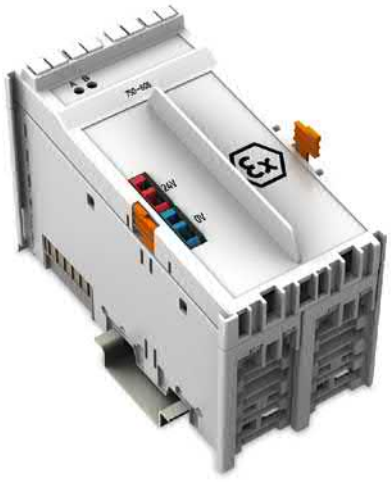
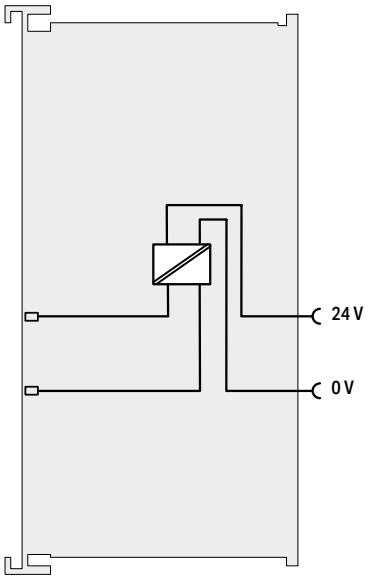
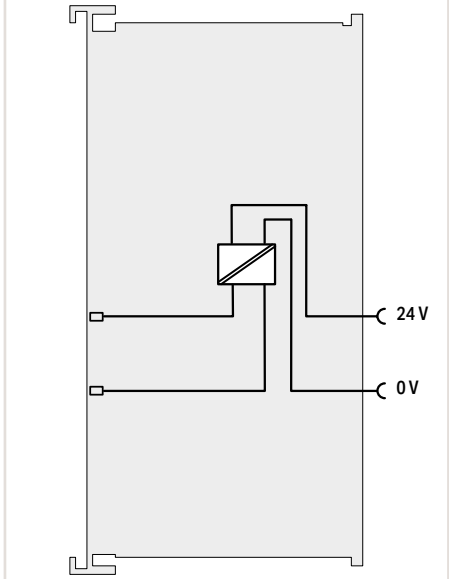


Figure: 750-606





Item Description	Power Supply; 24 VDC; Diagnostics; Intrinsically safe	Power Supply; 24 VDC; Intrinsically safe
Item No.	**750-606**	**750-625/000-001**
Order Text	Power Supply; 24 VDC; Diagn; Ex i	Power Supply; 24 VDC; Ex i
Technical Data		
Current consumption – system supply (5 V)	7.5 mA	7.5 mA
Input voltage	24 VDC (–25 … +30 %)	24 VDC (–25 … +30 %)
Supply voltage (field)	24 VDC (adjacent Ex i modules are supplied with U_O = max. 27.3 V); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)	24 VDC (adjacent Ex i modules are supplied with U_O = max. 27.3 V); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
Current carrying capacity (power jumper contacts)	1 ADC	1 ADC
Fuse	Electronic	Electronic
Data width	2 bits (input voltage failure, fuse triggered)	
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	24 x 70.9 x 100 mm	24 x 70.9 x 100 mm
Explosion Protection		
Power supply (input)	U_n = 24 VDC; P_{max} = 29 W; U_m = 253 V	U_n = 24 VDC; P_{max} = 29 W; U_m = 253 V
Power supply (output)	U_o = 27.3 V (intrinsically safe output voltage per protection level ia); I_n = 1 A	U_o = 27.3 V (intrinsically safe output voltage per protection level ia); I_n = 1 A
Ex guideline	EN IEC 60079-0, -7, -11	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; KC; Marine; cULus OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3G Ex ec IIC T4 Gc	ATEX/IECEx: II 3G Ex ec IIC T4 Gc
Data sheet and further information, see:	wago.com/750-606	wago.com/750-625/000-001

The supply modules monitor the voltage supply of the downstream intrinsically safe segment and separate the intrinsically safe from the non-intrinsically safe section of the I/O system. The input and output sides are electrically isolated from each other.
Note: If, due to load conditions, more than one supply module is required per station, four spacer modules (750-616) must be placed between the intrinsically safe sections.
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

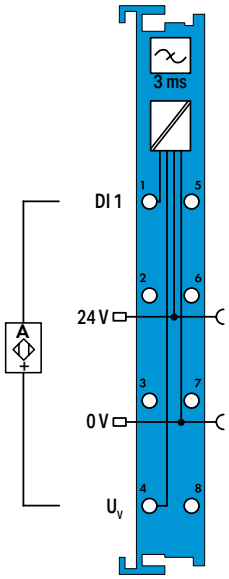
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

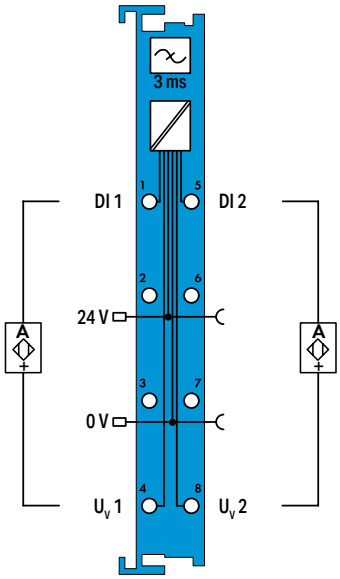
„ Approvals and corresponding ratings, see page 523, 518 or www.wago.com

Digital Input; NAMUR; Ex i



Figure: 750-435



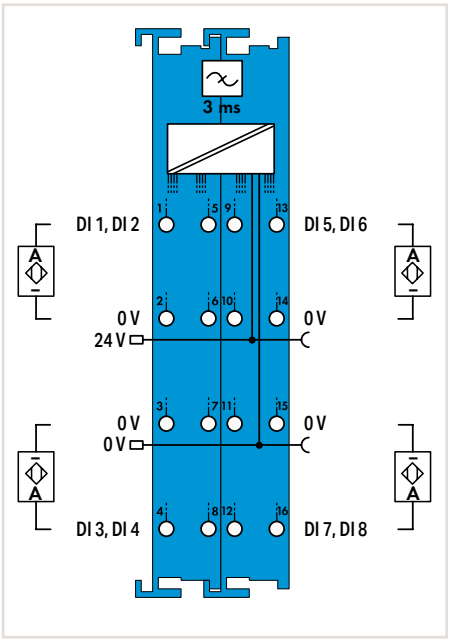


Item Description	1-Channel Digital Input; NAMUR; Intrinsically safe	2-Channel Digital Input; NAMUR; Intrinsically safe
Item No.	**750-435**	**750-438**
Order Text	1DI; NAMUR; Ex i	2DI; NAMUR; Ex i
Technical Data		
Number of digital inputs	1	2
Signal type	NAMUR	NAMUR
Sensor connection	2-wire	2-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Open-circuit voltage	8.2 VDC	8.2 VDC
Diagnostics	Short circuit; wire break	-/-
Supply voltage (sensor)	8.2 VDC; short-circuit-protected; isolated channels	8.2 VDC; short-circuit-protected; isolated channels
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	13 mA	16 mA
Current consumption – system supply (5 V)	2.5 mA	2.5 mA
Data width (internal)	2 bits	2 bits
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Explosion Protection		
Safety-relevant data (circuit)	U_o = 12 V; I_o = 16 mA; P_o = 48 mW; Linear characteristic curve	U_o = 12 V; I_o = 13.5 mA; P_o = 40.5 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 180 mH; C_o = 1.4 µF	L_o = 190 mH; C_o = 1.4 µF
Reactances Ex ia IIB	L_o = 560 mH; C_o = 9 µF	L_o = 600 mH; C_o = 9 µF
Reactances Ex ia IIA	L_o = 900 mH; C_o = 36 µF	L_o = 1 H; C_o = 36 µF
Reactances Ex ia I	L_o = 1 H; C_o = 38 µF	L_o = 1 H; C_o = 38 µF
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)
Ex guideline	EN IEC 60079-0, -7, -11	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-435	wago.com/750-438

5.9

Digital Input; NAMUR; Ex i





Item Description	8-Channel Digital Input; NAMUR; Intrinsically safe
Item No.	750-439
Order Text	8DI; NAMUR; Ex i
Technical Data	
Number of digital inputs	8
Signal type	NAMUR
Sensor connection	2-wire
Input characteristic	High-side switching
Input filter (digital)	3 ms
Open-circuit voltage	8.2 VDC
Diagnostics	Short circuit; wire break (can be switched off)
Supply voltage (sensor)	8.2 VDC; short-circuit-protected; isolated channels
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	11 mA
Current consumption – system supply (5 V)	56 mA
Data width (internal)	16 bits
Isolation	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion Protection	
Safety-relevant data (circuit)	U_o = 11.76 V; I_o = 12.4 mA; P_o = 36.67 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 100 mH; C_o = 1 µF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 9.9 µF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 39 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 30 µF
Ex guideline	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-439

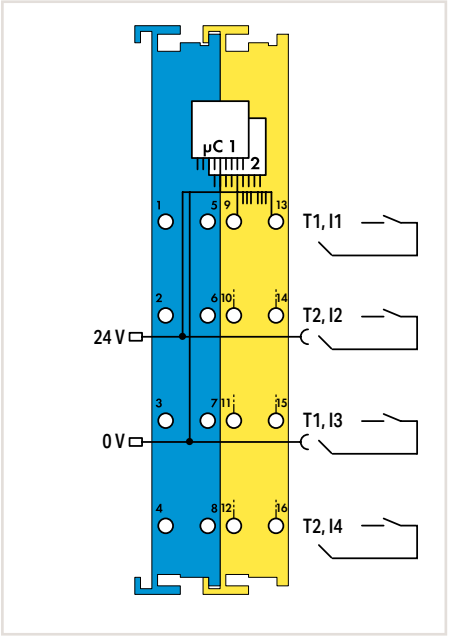
Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 518, 522 or www.wago.com

Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar





Item Description	Intrinsically Safe 4-Channel Digital Input; 24 VDC; PROFIsafe V 2.0 iPar
Item No.	**750-663/000-003**
Order Text	4F-Ex i DI; 24 VDC; PROFIsafe V2 iPar
Technical Data	
Protocol	PROFIsafe V2
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software
Sensor inputs	4; clock sensitive to T1 … T2
Input current (typ.)	3 mA
Input frequency (max.)	50 Hz
Input filter (digital)	0 … 200 ms (configurable in steps)
Clock outputs	2
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	20 mA
Current consumption – system supply (5 V)	145 mA
Isolation	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Functional Safety	
Achievable risk reduction	SIL 3 per IEC 61508:2010; SIL 3 per IEC 61511:2005; SIL 3 per IEC 62061:2005; Cat. 4, PL e per EN ISO 13849:2008
Safety standards	IEC 61508; IEC 62061; EN ISO 13849; IEC 61511
Explosion Protection	
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 23 mA; P_o = 157 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 61 mH; C_o = 64 nF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 552 nF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 2.28 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 2.95 µF
Ex guideline	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-663/000-003

This module combines intrinsic safety with functional safety and was specifically developed for reliable acquisition from potential-free, contact-based emergency stop switches, safety interlock switches, mode selectors and safety sensors that are located in hazardous environments.
Thus, safety functions with fail-safe sensors from Ex Zones 0 and 1 can be implemented.

Support for iPar servers allows automatic parameter restoration when replacing an I/O module.

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

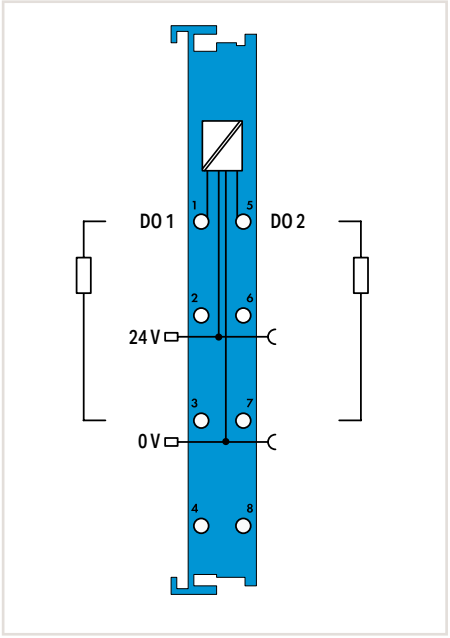
Digital Output; 24 VDC; Ex i

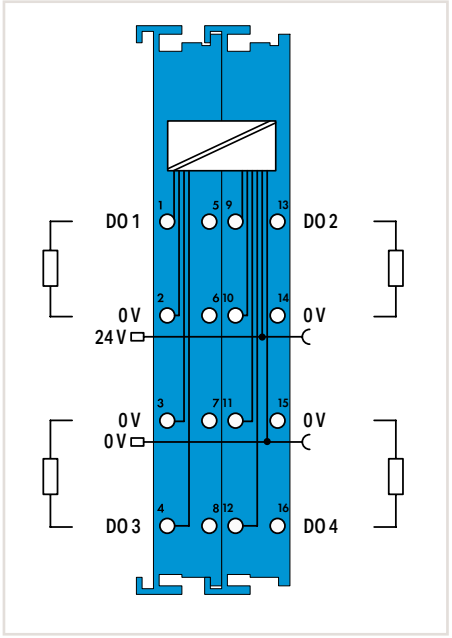


Figure: 750-535



Figure: 750-539





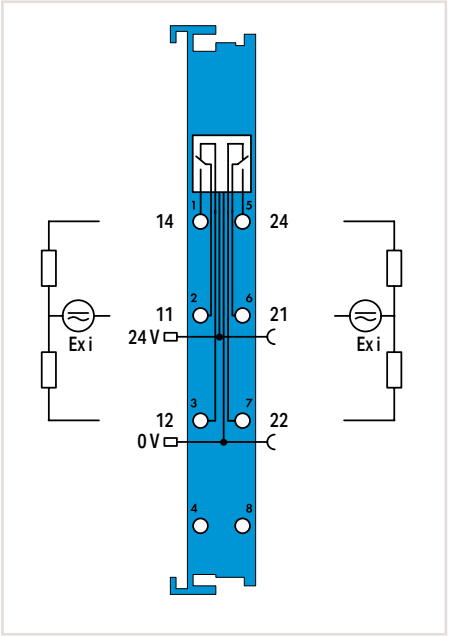
Item Description	2-Channel Digital Output; 24 VDC; Intrinsically safe	4-Channel Digital Output; 24 VDC; Valve; Intrinsically safe
Item No.	**750-535**	**750-539**
Order Text	2DO; 24 VDC; Ex i	4DO; 24 VDC; Valve; Ex i
Technical Data		
Number of digital outputs	2	4
Signal type	24 VDC	24 VDC
Output characteristic	High-side switching	High-side switching
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	2-wire	2-wire
Switching frequency (max.)	1 kHz	100 Hz
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	8.5 mA	10 mA
Current consumption – system supply (5 V)	7 mA	20 mA
Data width (internal)	2 bits	4-bit output; 4-bit input (diagnostics)
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	24 x 67.8 x 100 mm
Explosion Protection		
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 106 mA; P_o = 723 mW; Linear characteristic curve	U_o = 27.3 V; I_o = 117.5 mA; P_o = 800.1 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 3 mH; C_o = 88 nF	L_o = 13 µH; C_o = 88 nF
Reactances Ex ia IIB	L_o = 12 mH; C_o = 680 nF	L_o = 8.1 mH; C_o = 683 nF
Reactances Ex ia IIA	L_o = 18 mH; C_o = 2.2 µF	L_o = 14 mH; C_o = 2.28 µF
Reactances Ex ia I	L_o = 20 mH; C_o = 3.6 µF	L_o = 21 mH; C_o = 3.6 µF
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)
Ex guideline	EN IEC 60079-0, -7, -11	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; KC; Marine; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-535	wago.com/750-539

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 519 or www.wago.com

Relay Output; Ex i





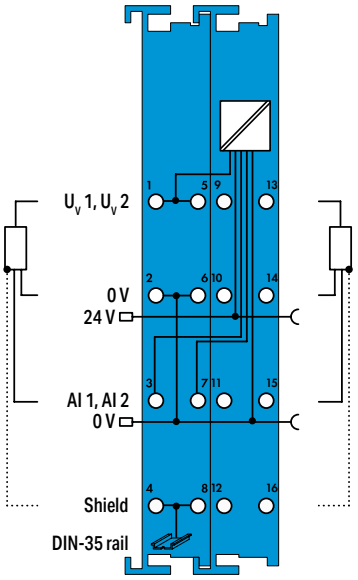
Item Description	2-Channel Relay Output; Changeover contact; Potential-free; Intrinsically safe
Item No.	**750-538**
Order Text	2RO; Changeover contacts; Pot-free; Ex i
Technical Data	
Number of digital outputs	2
Signal type	100 VAC; 30 VDC*
Output circuit design	Relay with 2 changeover contacts
Output characteristic	Potential-free
Output current per channel	0.5 AAC; 1 ADC*
Actuator connection	2-wire
Switching frequency (max.)	0.33 Hz
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	24 mA
Current consumption – system supply (5 V)	26 mA
Data width (internal)	2 bits
Isolation	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Explosion Protection	
Safety-relevant data (circuit)	Relay output: U_i = DC 30 V; I_i = 1 A; P_i = 30 W; U_i = AC 100 V; I_i = 0,5 A; P_i = 50 VA; L_i = negligible; C_i = negligible
Ex guideline	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-538

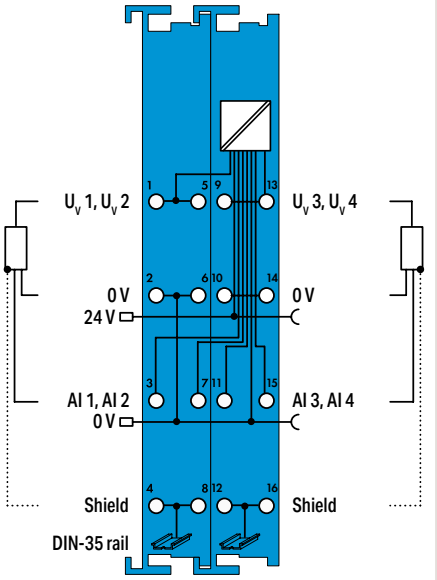
*Details on relay!
Both maximum switching current and voltage must comply with EN 60079-11.

Analog Input; 4 … 20 mA or 0/4 … 20 mA; Ex i



Figure: 750-486





Item Description	2-Channel Analog Input; 4 … 20 mA; Intrinsically safe	4-Channel Analog Input; 0/4 … 20 mA; NAMUR NE43; Intrinsically safe
Item No.	**750-485**	**750-486**
Order Text	4AI; 4–20mA; Ex i	4AI; 0/4–20mA; NE43; Ex i
Technical Data		
Number of analog inputs	2	4
Signal type	4 … 20 mA	0 … 20 mA; 4 … 20 mA; 3.6 … 21 mA
Signal characteristic	Single-ended	Single-ended
Input resistance	< 100 Ω	< 200 Ω
Resolution	12 bits	12 bits + sign bit
Conversion time	< 2 ms	< 10 ms
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value	±0.1 % of the upper-range value
Temperature error (max.)	±0.01 %/K of the upper-range value	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	11 mA	19 mA
Current consumption – system supply (5 V)	31 mA	45 mA
Transmitter supply	U_V = 16 V at 20 mA	U_V = 15 V at 20 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm	24 x 67.8 x 100 mm
Explosion Protection		
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 90 mA; P_o = 0.61 mW; Linear characteristic curve	U_o = 27.3 V; I_o = 98.4 mA; P_o = 0.672 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 5 mH; C_o = 88 nF	L_o = 970 µH; C_o = 88 nF
Reactances Ex ia IIB	L_o = 18 mH; C_o = 680 nF	L_o = 13 mH; C_o = 683 nF
Reactances Ex ia IIA	L_o = 40 mH; C_o = 2.2 µF	L_o = 22 mH; C_o = 2.28 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 3.5 µF	L_o = 31 mH; C_o = 3.6 µF
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)
Ex guideline	EN IEC 60079-0, -7, -11	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; KC; Marine; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-485	wago.com/750-486

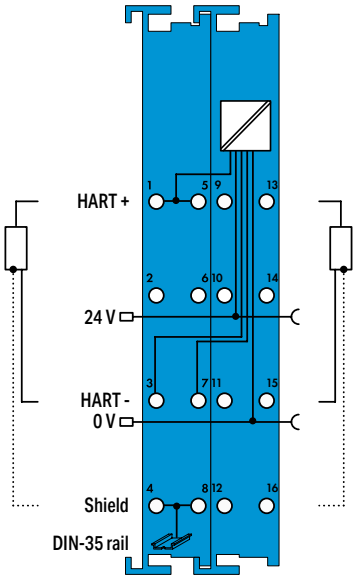
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520 or www.wago.com

Analog Input; 4 … 20 mA HART; Ex i



Figure: 750-484



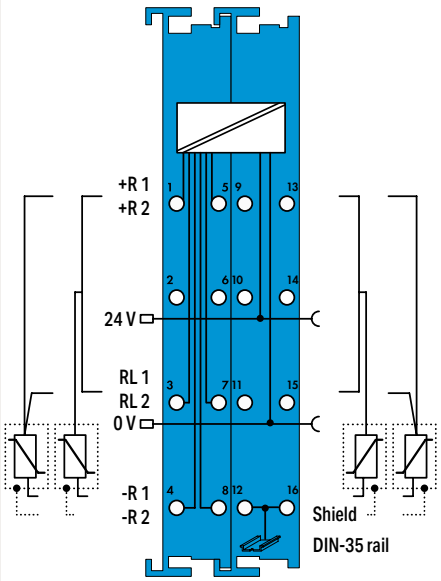
Item Description	2-Channel Analog Input; 4 … 20 mA HART; Intrinsically safe	2-Channel Analog Input; 4 … 20 mA HART; NAMUR NE43; Intrinsically safe
Item No.	**750-484**	**750-484/000-001**
Order Text	2AI; 4–20mA HART; Ex i	2AI 4–20 mA HART NAMUR NE43 Ex i
Technical Data		
Number of analog inputs	2	
Signal type	4 … 20 mA	
Signal characteristic	Single-ended	
Resolution	12 bits	
Conversion time	10 ms	
Measuring error (max.) at 25 °C	0.2 % of the upper-range value	
Temperature error (max.)	±0.01 %/K of the upper-range value	
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption, field supply (module with no external load)	26 mA	
Current consumption – system supply (5 V)	25 mA	
Transmitter supply	U_V = 16.5 V at 20 mA	
Data width	2 x 2-byte data; 2 x 2-byte data + 2n x 4-byte data (n = number of dynamic variables); 2 x 2-byte data + 6-byte mailbox	
Isolation	U_m = 375 V system/supply	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	24 x 67.8 x 100 mm	
Explosion Protection		
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 92.7 mA; P_o = 630 mW; Linear characteristic curve	
Reactances Ex ia IIC	L_o = 1.5 mH; C_o = 87 nF	
Reactances Ex ia IIB	L_o = 15 mH; C_o = 670 nF	
Reactances Ex ia IIA	L_o = 38 mH; C_o = 2.2 µF	
Reactances Ex ia I	L_o = 36 mH; C_o = 3.49 µF	
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	
Ex guideline	EN IEC 60079-0, -7, -11	
Approvals	CE; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	
Data sheet and further information, see:	wago.com/750-484	wago.com/750-484/000-001

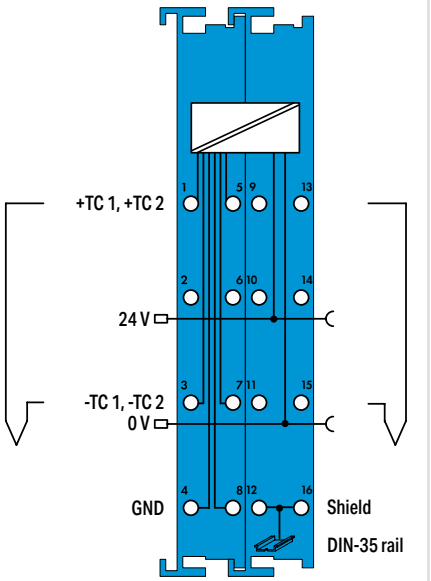
In addition to analog signal processing, this module offers optional HART communication for parameterizing or recording dynamic variables.

Analog Input; for Resistance Sensors or Thermocouples; Ex i



Figure: 750-481/003-000





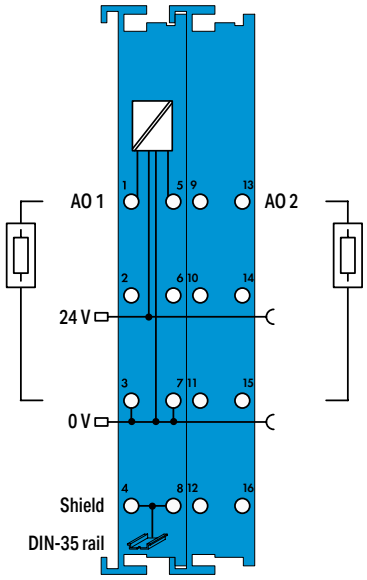
Item Description	2-Channel Analog Input; Resistance measurement; Intrinsically safe	2-Channel Analog Input; Thermocouple; Intrinsically safe
Item No.	750-481/003-000	750-487/003-000
Order Text	2AI; RTD; Ex i	2AI; TC; Ex i
Technical Data		
Number of analog inputs	2	2
Signal type	Resistance thermometers: Pt100; Pt200; Pt500; Pt1000; Ni100; Ni120; Ni1000; Resistors: 1.2 kΩ; 5 kΩ; Potentiometer setting: 0 … 100 %	Thermocouples: Type B; E; J; K; L; N; R; S; T; U; Voltage encoders: ±30 mV; ±60 mV; ±120 mV
Sensor connection	2-wire; 3-wire	2-wire
Temperature range	-200 … + 850 °C (Pt); -60 … +250 °C (Ni); -80 … +320 °C (Ni 120)	-100 … +1,800 °C
Resolution	0.1 °C; 0.1 Ω; 0.0049 %	0.1°C or 0.01 mV for voltage measurement
Conversion time	150 … 500 ms (per channel)	≤ 320 ms (both channels)
Measuring error (max.) at 25 °C	±0.2 % of the upper-range value	±6 K (type K); Voltage input ±2 K; Cold junction compensation ±4 K
Temperature error (max.)	±0.01 %/K of the upper-range value	±0.2 K/K of the upper-range value (type K)
Cold junction compensation		Integrated or external
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	12 mA	8.5 mA
Current consumption – system supply (5 V)	25 mA	13.5 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)	2 x 16-bit data; 2 x 8-bit control/status (optional)
Isolation	U_m = 375 V system/supply	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm	24 x 67.8 x 100 mm
Explosion Protection		
Safety-relevant data (circuit)	U_o = 7.2 V; I_o = 5.8 mA; P_o = 10.5 mW; Linear characteristic curve	U_o = 14.4 V; I_o = 29.1 mA; P_o = 52.4 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 0.9 H; C_o = 13.5 µF	L_o = 52 mH; C_o = 650 nF
Reactances Ex ia IIB	L_o = 1 H; C_o = 240 µF	L_o = 100 mH; C_o = 4.0 µF
Reactances Ex ia IIA	L_o = 1 H; C_o = 1000 µF	L_o = 300 mH; C_o = 15.8 µF
Reactances Ex ia I	L_o = 1 H; C_o = 1000 µF	L_o = 400 mH; C_o = 17.9 µF
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)
Ex guideline	EN IEC 60079-0, -7, -11	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-481/003-000	wago.com/750-487/003-000

5.9

Analog Output; 0 … 20 mA or 4 … 20 mA; Ex i



Figure: 750-585



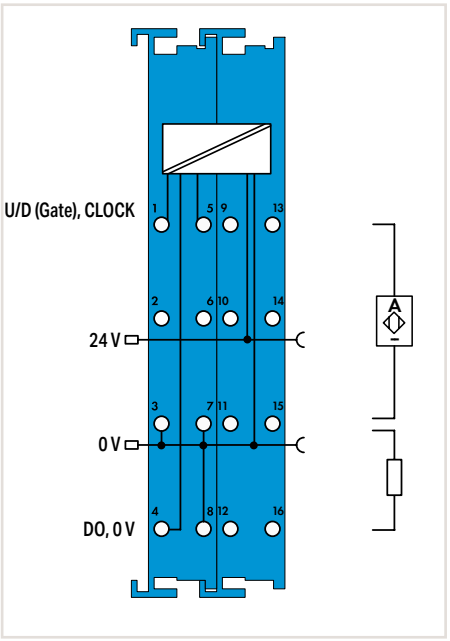
Item Description	2-Channel Analog Output; 0 … 20 mA; Intrinsically safe	2-Channel Analog Output; 4 … 20 mA; Intrinsically safe
Item No.	**750-585**	**750-586**
Order Text	2AO; 0–20mA; Ex i	2AO; 4–20mA; Ex i
Technical Data		
Number of analog outputs	2	
Signal type	0 … 20 mA	4 … 20 mA
Signal characteristic	Single-ended	
Load impedance	< 500 Ω	
Resolution	12 bits	
Conversion time	< 2 ms	
Output error (max.) at 25 °C	±0.2 % of the upper-range value	
Temperature error (max.)	±0.01 %/K of the upper-range value	
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current consumption, field supply (module with no external load)	19 mA	
Current consumption – system supply (5 V)	21 mA	
Data width	2 x 16-bit data	
Isolation	U_m = 375 V system/supply	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	24 x 67.8 x 100 mm	
Explosion Protection		
Safety-relevant data (circuit)	U_o = 27.3 V; I_o = 57.5 mA; P_o = 392 mW; Linear characteristic curve	
Reactances Ex ia IIC	L_o = 11 mH; C_o = 88 nF	
Reactances Ex ia IIB	L_o = 56 mH; C_o = 680 nF	
Reactances Ex ia IIA	L_o = 90 mH; C_o = 2.2 µF	
Reactances Ex ia I	L_o = 110 mH; C_o = 3.5 µF	
Reactances	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)	
Ex guideline	EN IEC 60079-0, -7, -11	
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO	
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I	
Data sheet and further information, see:	wago.com/750-585	wago.com/750-586

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 520, 521 or www.wago.com

Up/Down Counter; Ex i





Item Description	Up/Down Counter; Intrinsically safe
Item No.	750-633
Order Text	Up/Down Counter; Ex i
Technical Data	
Number of counters	1
Number of outputs	1
Sensor supply UV	8.2 VDC
Input filter	10 µs
Switching frequency	20 Hz … 50 kHz
Counter depth	32 bits
Output voltage	24 VDC
Supply voltage (field)	24 VDC (Ex i power supply: U_O = max. 27.3 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	31 mA
Current consumption – system supply (5 V)	25 mA
Data width	1 x 32-bit data, 1 x 8-bit status/diagnostics
Isolation	U_m = 375 V system/supply
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion Protection	
Safety data – input	U_o = 12 V; I_o = 13.5 mA; P_o = 40.5 mW; Linear characteristic curve
Input reactances Ex ia IIC	L_o = 100 mH; C_o = 1.4 µF
Input reactances Ex ia IIB	L_o = 100 mH; C_o = 9 µF
Input reactances Ex ia IIA	L_o = 100 mH; C_o = 36 µF
Input reactances Ex ia I	L_o = 100 mH; C_o = 38 µF
Safety data – output	U_o = 27.3 V; I_o = 103 mA; P_o = 703 mW; Linear characteristic curve
Output reactances Ex ia IIC	L_o = 0.5 mH; C_o = 88 nF
Output reactances Ex ia IIB	L_o = 10 mH; C_o = 683 nF
Output reactances Ex ia IIA	L_o = 18 mH; C_o = 2.2 µF
Output reactances Ex ia I	L_o = 26 mH; C_o = 3.6 µF
Ex guideline	EN IEC 60079-0, -7, -11
Approvals	CE; KC; Marine; OrdLoc/HazLoc/AEx; ATEX/IECEx; INMETRO
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-633

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

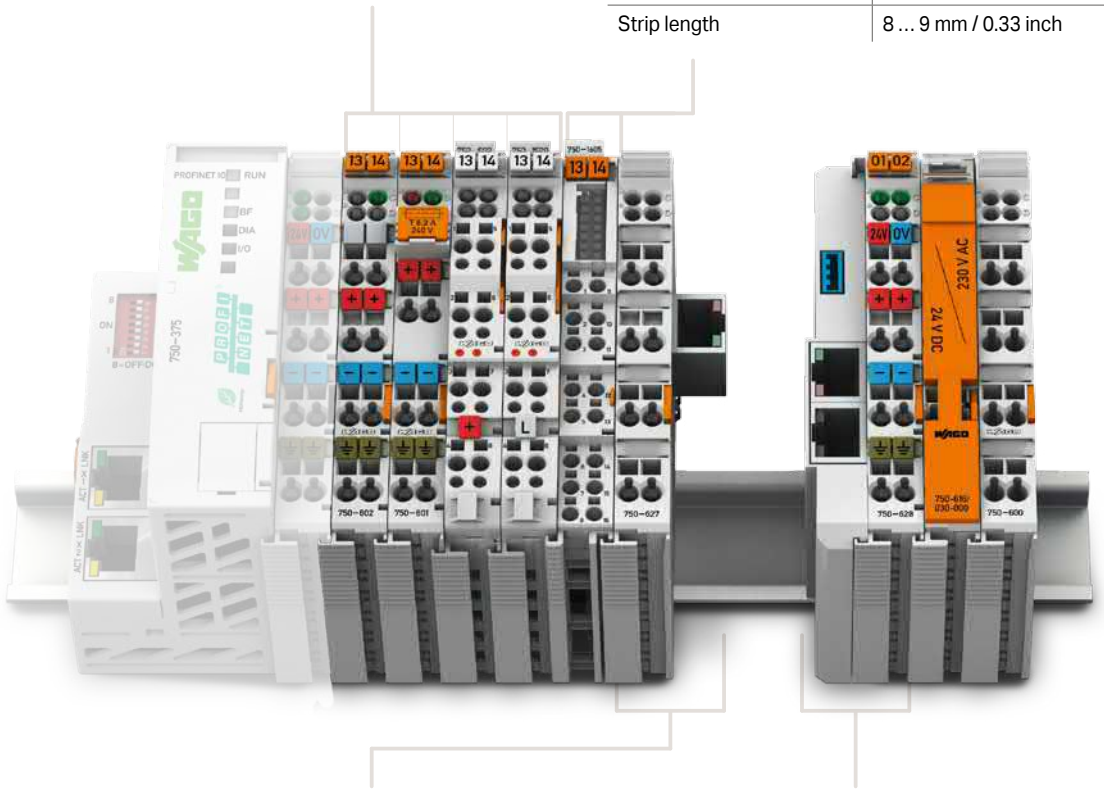
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Supply/Segment Modules

Housing design (750/753 Series)	
Dimensions W x H x D	12 x 69.8 x 100 mm
Height from upper-edge of DIN-rail	62.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	750 Series: 8 … 9 mm / 0.33 inch 753 Series: 9 … 10 mm / 0.37 inch

Housing design (750 Series), with Push-in CAGE CLAMP® connections (up to 16 connection points)	
Dimensions W x H x D	12 x 69 x 100 mm
Height from upper-edge of DIN-rail	61.8 mm
Connection technology	Push-in CAGE CLAMP®
Conductor cross section	Solid: 0.08 … 2.5 mm² / 28 … 16 AWG Fine-stranded: 0.25 … 1.5 mm² / 22 … 16 AWG
Strip length	8 … 9 mm / 0.33 inch



Specialty housing (end module for bus extension)	
Dimensions W x H x D	24 x 69.8 x 100
Height from upper-edge of DIN-rail	62.6 mm

Specialty housing (coupler module for bus extension)	
Dimensions W x H x D	24 x 69.8 x 100
Height from upper-edge of DIN-rail	62.6 mm





I/O System –
750 XTR Series

I/O System – 750 and 753 Series, Supply/Segment Modules
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Ex i		See Section 5.9			
*This module is also available as a variant of the 750 XTR Series.		See Section 6			

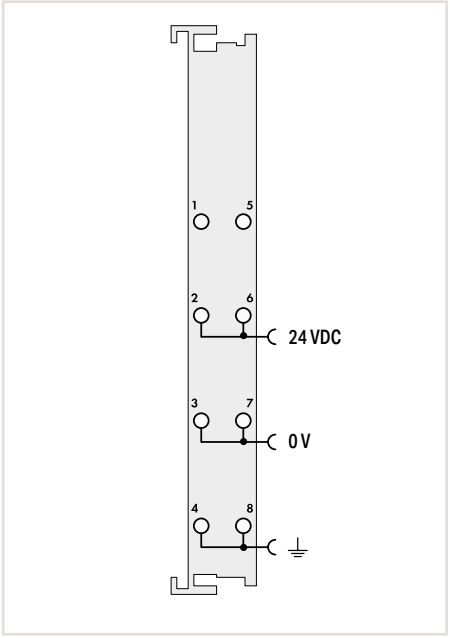
Power Supply; 24 VDC

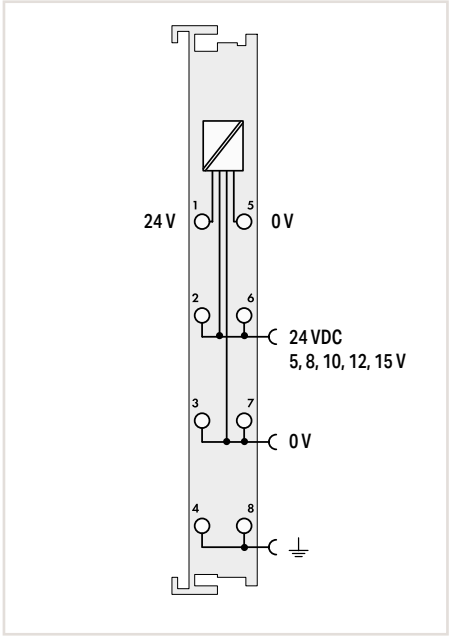


Figure: 750-602



Figure: 750-623





Item Description	Power Supply; 24 VDC			Power Supply; 24 VDC/5 … 15 VDC
Version	Standard	Extended temperature	Pluggable (delivery without connector)	Standard
Item No.	750-602	750-602/025-000	753-602	750-623
Order Text	Power Supply; 24 VDC	Power Supply; 24 VDC; T	Power Supply; 24 VDC	Power Supply; 24/5–15 VDC
Technical Data				
Pluggable connector			•	
Supply voltage (system)	5 VDC; via data contacts			5 VDC; via data contacts
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)			24 VDC (−15 … +20 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact); Output voltage adjustable in steps via DIP switch: 5 V; 8 V; 10 V; 12 V; 15 V
Total current (system supply)				0.5 A (1 A at 5 V)
Current carrying capacity (power jumper contacts)	10 A			
Surrounding air temperature (operation)	0 … +55 °C	−20 … +60 °C	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx			CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-602		wago.com/753-602	wago.com/750-623

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules.

This I/O module converts the applied supply voltage to a value selected via DIP switch and provides it to the field devices connected to the downstream I/O modules.

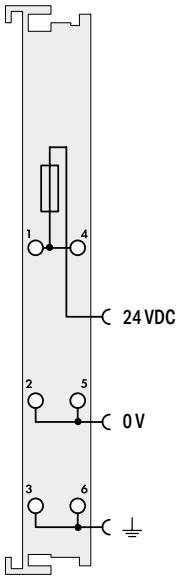
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com

Power Supply; 24 VDC



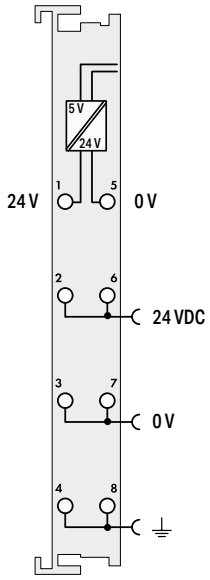
Figure: 750-601



Item Description	Power Supply; 24 VDC; Fuse holder	
Version	**Standard**	**Diagnostics**
Item No.	**750-601**	**750-610**
Order Text	Power Supply; 24 VDC; Fuse	Power Supply; 24 VDC; Fuse; Diagn
Technical Data		
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)	
Current carrying capacity (power jumper contacts)	6.3 A	
Fuse	5 x 20; T max. 6.3 A (not included)	
Diagnostics		Supply voltage, field: Detection “on” at > 15 VDC; Detection “off” at < 5 VDC
Current consumption – system supply (5 V)		5 mA
Data width (internal)		2 bits (1-bit current monitoring; 1-bit fuse fault)
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-601	wago.com/750-610
	This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED.	This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED. The fuse status can also be queried from the fieldbus coupler.

System Power Supply; 24 VDC





Item Description	System Power Supply; 24 VDC
Version	Standard
Item No.	750-613
Order Text	System Power Supply; 24 VDC
Technical Data	
Supply voltage, system (24 V)	24 VDC (–25 … +30 %); power supply and transmission via CAGE CLAMP® connection
Input current (typ.) at nominal load (24 V)	500 mA
Power supply efficiency (typ.) at nominal load (24 V)	90 %
Total current (system supply)	2000 mA
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
Current carrying capacity (power jumper contacts)	10 A
Isolation	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-613

This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules. It also serves as an additional system supply for large nodes, covering the power demands of the I/O modules themselves.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com

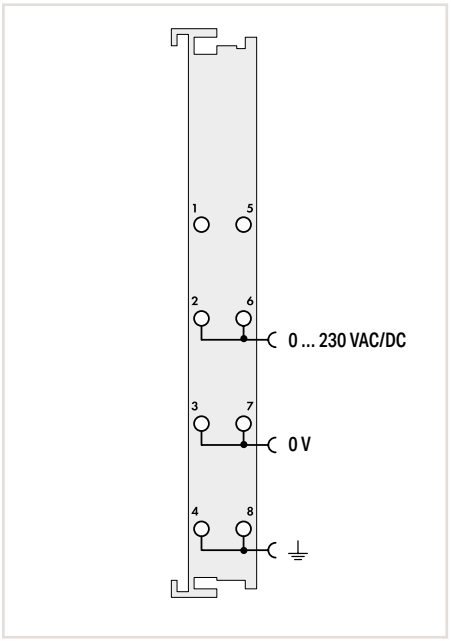
Power Supply; 0 … 230 VAC/DC



Figure: 750-612



Figure: 753-612



Item Description	Power Supply; 0 … 230 VAC/DC	
Version	Standard	Pluggable (delivery without connector)
Item No.	750-612	753-612
Order Text	Power Supply; 0–230 VAC/DC	Power Supply; 0–230 VAC/DC
Technical Data		
Pluggable connector		•
Supply voltage (field)	0 … 230 VAC/DC (–15 … +10 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)	
Current carrying capacity (power jumper contacts)	10 A	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-612	wago.com/753-612

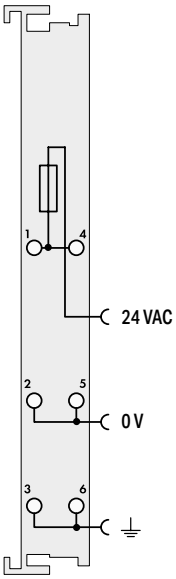
Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

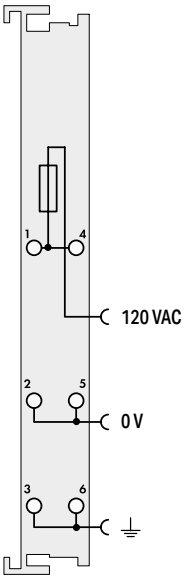
This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules.

Power Supply; 24 VAC or 120 VAC



Figure: 750-617





Item Description	Power Supply; 24 VAC; Fuse holder	Power Supply; 120 VAC; Fuse holder
Version	Standard	Standard
Item No.	750-617	750-615
Order Text	Power Supply; 24 VAC; Fuse	Power Supply; 120 VAC; Fuse
Technical Data		
Supply voltage (field)	24 VAC; via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)	120 VAC; via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
Current carrying capacity (power jumper contacts)	6.3 A	6.3 A
Fuse	5 x 20; T max. 6.3 A (not included)	5 x 20; T max. 6.3 A (not included)
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-617	wago.com/750-615

This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED.

This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED.

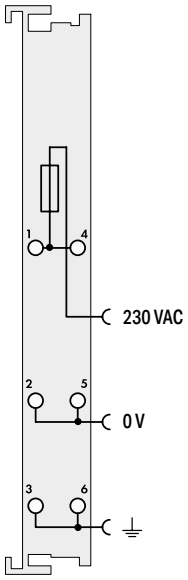
„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 523 or www.wago.com

Power Supply; 230 VAC



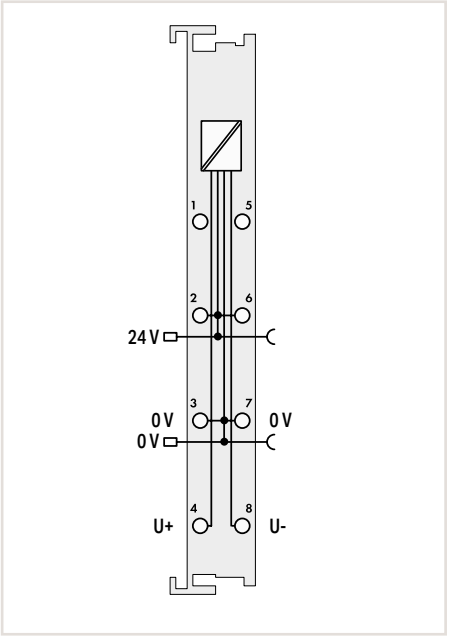
Figure: 750-609



Item Description	Power Supply; 230 VAC; Fuse holder	
Version	**Standard**	**Diagnostics**
Item No.	**750-609**	**750-611**
Order Text	Power Supply; 230 VAC; Fuse	Power Supply; 230 VAC; Fuse; Diagn
Technical Data		
Supply voltage (field)	230 VAC (–15 … +10 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)	
Current carrying capacity (power jumper contacts)	6.3 A	
Fuse	5 x 20; T max. 6.3 A (not included)	
Diagnostics		Supply voltage, field: Detection “on” at > 164 VAC; Detection “off” at < 40 VAC
Current consumption – system supply (5 V)		5 mA
Data width (internal)		2 bits (1-bit current monitoring; 1-bit fuse fault)
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-609	wago.com/750-611
	This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED.	This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED. The fuse status can also be queried from the fieldbus coupler.

DALI Multi-Master DC/DC Converter





Item Description	DALI Multi-Master DC/DC Converter
Version	Pluggable (delivery without connector)
Item No.	753-620
Order Text	DALI Multi-Master DC/DC Converter

Technical Data	
Pluggable connector	•
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Supply voltage (DALI): 18 VDC; at +U and -U via CAGE CLAMP® connection
Current carrying capacity (power jumper contacts)	10 A
Total current (system supply)	200 mA; short-circuit-protected
Test voltage (input/output)	1.5 kV
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/753-620

Accessories	Item No.
Pluggable connector	753-110
Coding keys	753-150

This I/O module powers the DALI Multi-Master (753-647). It uses the field supply, which is connected via the power jumper contacts. Cable bridges connect the module to the DALI Multi-Master.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com

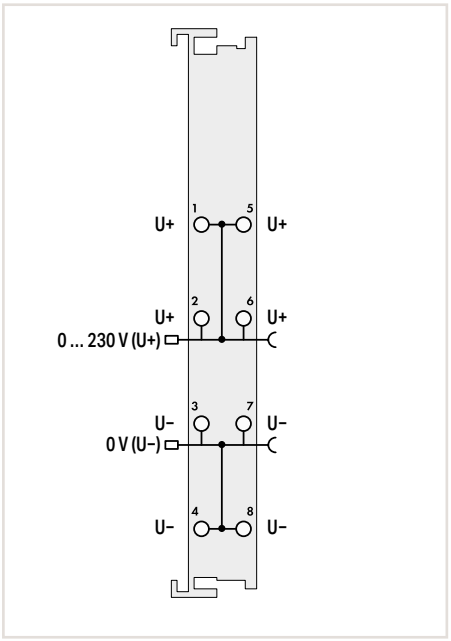
Potential Distribution



Figure: 750-614



Figure: 753-614



Item Description	Potential Distribution	
Version	**Standard**	**Pluggable (delivery without connector)**
Item No.	**750-614**	**753-614**
Order Text	Potential Distribution	Potential Distribution
Technical Data		
Pluggable connector		•
Supply voltage (field)	0 … 230 VAC/DC; via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current carrying capacity (power jumper contacts)	10 A	
Surrounding air temperature (operation)	0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-614	wago.com/753-614

Accessories	Item No.
Pluggable connector	**753-110**
Coding keys	**753-150**

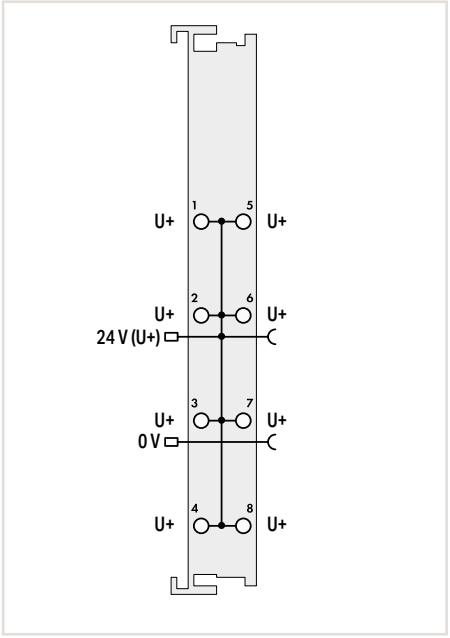
Potential Distribution

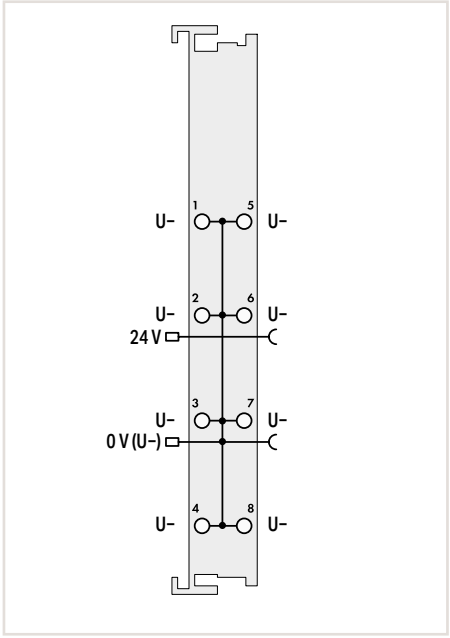


Figure: 750-603



Figure: 750-1605



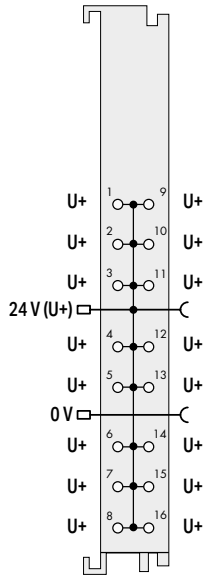


Item Description	Potential Distribution; 8x 24 V		Potential Distribution; 8x 0 V	
Version	**Standard**	**Pluggable (delivery without connector)**	**Standard**	**Pluggable (delivery without connector)**
Item No.	**750-603**	**753-603**	**750-604**	**753-604**
Order Text	Potential Distribution; 8*24V	Potential Distribution; 8*24V	Potential Distribution; 8*0V	Potential Distribution; 8*0V
Technical Data				
Pluggable connector		•		•
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	
Current carrying capacity (power jumper contacts)	10 A		10 A	
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C	
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-603	wago.com/753-603	wago.com/750-604	wago.com/753-604

Accessories		Item No.		Item No.
Pluggable connector		753-110		753-110
Coding keys		753-150		753-150

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com

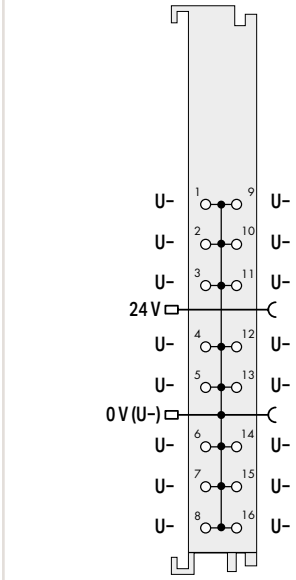


Potential Distribution; 16x 24 V

Standard with 16 connectors

750-1605

Potential Distribution; 16*24V

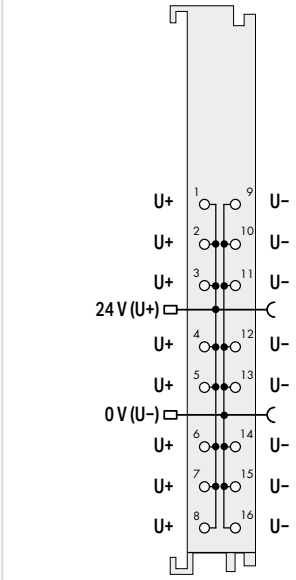


Potential Distribution; 16x 0 V

Standard with 16 connectors

750-1606

Potential Distribution; 16*0V



Potential Distribution; 8x 24 V/8x 0 V

Standard with 16 connectors

750-1607

Potential Distribution; 8*24V/8*0V

24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
10 A	10 A	10 A
0 … +55 °C	0 … +55 °C	0 … +55 °C
12 x 69 x 100 mm	12 x 69 x 100 mm	12 x 69 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-1605	wago.com/750-1606	wago.com/750-1607

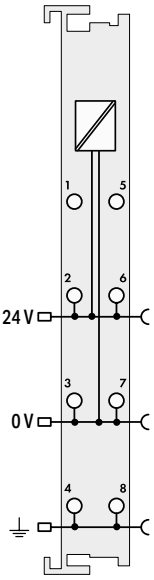
Field Supply Filter (Surge)



Figure: 750-624/020-000



Figure: 750-624/020-001



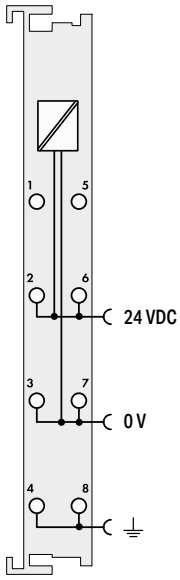
Item Description	Field Supply Filter (Surge); 24 VDC		
Version	**Standard**	**Higher isolation**	**Higher isolation; Ground fault diagnostics**
Item No.	**750-624**	**750-624/020-000**	**750-624/020-002**
Order Text	Field Supply Filter; 24 VDC	Field Supply Filter; 24 VDC; HI	Field Supply Filter; 24 VDC HI; GF
Technical Data			
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)		
Current carrying capacity (power jumper contacts)	10 A		
Use	Marine-certified operation in conjunction with the Ex i supply module and the use of 750 Series PROFIsafe Modules	Marine-certified operation in conjunction with 750 Series I/O Modules	
Ground diagnostics			Response values:
Pre-alarm			50 kΩ (±15 %)
Main alarm			25 kΩ (±15 %);
Hysteresis			typ. 25 … 30 %;
Response time			≤5 s (typ. 2.5 s);
Internal resistance DC (test circuit)			> 10 MΩ (test inactive), > 90 kΩ (test active)
Test current			≤180 µA (R_F = 0 Ω)
Permissible system leakage capacitance			≤2 µF
Surrounding air temperature (operation)	0 … +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx		
Data sheet and further information, see:	wago.com/750-624	wago.com/750-624/020-000	wago.com/750-624/020-002

*pending

Use in systems with isolation monitoring requires the high isolation variants.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com



Field Supply Filter (Surge); 24 VDC	
Without power jumper contacts	**Higher isolation; Without power jumper contacts**
750-624/000-001	**750-624/020-001**
Field Supply Filter; 24 VDC; NC	Field Supply Filter; 24 VDC; HI; NC

24 VDC (−25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
10 A

Marine-certified operation in conjunction with the Ex i supply module and the use of 750 Series PROFIsafe Modules	Marine-certified operation in conjunction with 750 Series I/O Modules

0 … +55 °C
12 x 69.8 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx

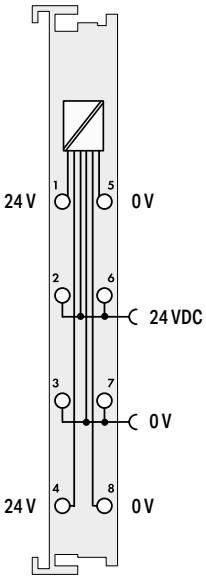
wago.com/750-624/000-001	wago.com/750-624/020-001

Use in systems with isolation monitoring requires the high isolation variants.

Supply Filter



Figure: 750-626/020-000

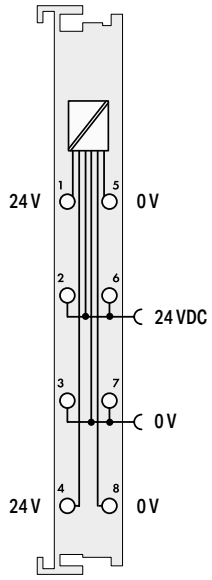


Item Description	Supply Filter; 24 VDC			
Version	Higher isolation	Higher isolation; Extended temperature	Standard	Extended temperature
Item No.	750-626/020-000	750-626/025-001	750-626	750-626/025-000
Order Text	Supply Filter; 24 VDC; HI	Supply Filter; 24 VDC; HI; T	Supply Filter; 24 VDC	Supply Filter; 24 VDC; T
Technical Data				
Supply voltage (field)	24 VDC (–25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)			
Supply voltage, system (24 V)	24 VDC (–25 … +30 %); power supply and transmission via CAGE CLAMP® connection			
Current via system voltage (max.)	1.5 A			
Current carrying capacity (power jumper contacts)	10 A			
Use	Marine-certified operation in conjunction with 750 Series Couplers and Controllers		Marine-certified operation in conjunction with the Ex i supply module and the use of 750 Series PROFIsafe Modules	
Ground diagnostics				
Pre-alarm				
Main alarm				
Hysteresis				
Response time				
Internal resistance DC (test circuit)				
Test current				
Permissible system leakage capacitance				
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C	0 … +55 °C	–20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm			
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx			
Data sheet and further information, see:	wago.com/750-626/020-000		wago.com/750-626	

Use in systems with isolation monitoring requires the high isolation variants.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com



Supply Filter; 24 VDC
Higher isolation; Ground fault diagnostics
750-626/020-002
Supply Filter; 24 VDC HI; GF

24 VDC (−25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
24 VDC (−25 … +30 %); power supply and transmission via CAGE CLAMP® connection
1.5 A
10 A

Marine-certified operation in conjunction with 750 Series Couplers and Controllers
Response values:
50 kΩ (±15 %)
25 kΩ (±15 %);
typ. 25 … 30 %;
≤5 s (typ. 2.5 s);
> 10 MΩ (test inactive), > 90 kΩ (test active)
≤ 180 µA (R_F = 0 Ω)
≤ 2 µF
0 … +55 °C
12 x 69.8 x 100 mm
CE; Marine; OrdLoc; ATEX/IECEx
wago.com/750-626/020-002

Use in systems with isolation monitoring requires the high isolation variants.

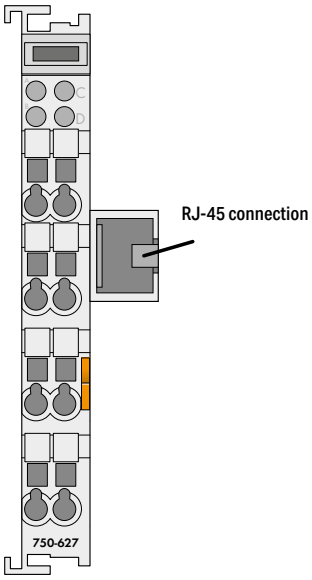
End Module/Coupler Module for Bus Extension

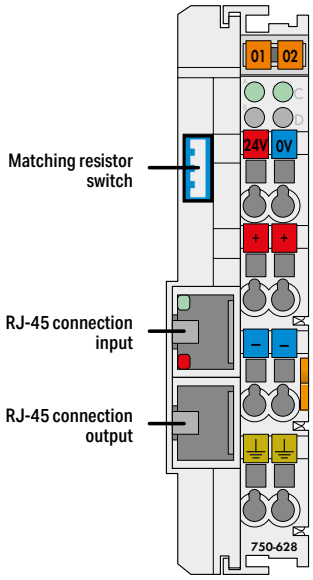


Figure: 750-627

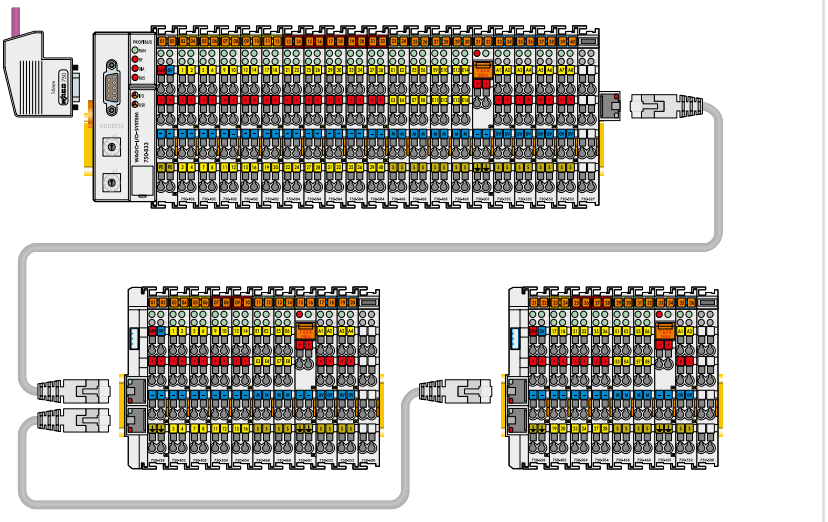


Figure: 750-628





Item Description	Bus Extension End Module	Bus Extension Coupler Module
Version	Standard	Standard
Item No.	750-627	750-628
Order Text	Bus Extension End Module	Bus Extension Coupler Module
Technical Data		
Number of coupler modules	Up to 10	
Number of I/O modules		64 (within the system)
Connection technology (local bus)	1 x RJ-45 socket	2 x RJ-45 socket (input + output)
Distance (max.)	5 m (10 m see manual); (end/coupler modules or coupler/coupler modules)	5 m (10 m see manual); (end/coupler modules or coupler/coupler modules)
Supply voltage (field)		24 VDC (−15 … +20 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
Supply voltage, system (24 V)		24 VDC (−15 … +20 %); power supply and transmission via CAGE CLAMP® connection
Current consumption – system supply (5 V)	70 mA	150 mA
Current carrying capacity (power jumper contacts)		10 A
Isolation	500 V system/field	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C	0 … +55 °C
Dimensions W x H x D	24 x 69.8 x 100 mm	24 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc	CE; KC; Marine; cULus OrdLoc
Data sheet and further information, see:	wago.com/750-627	wago.com/750-628

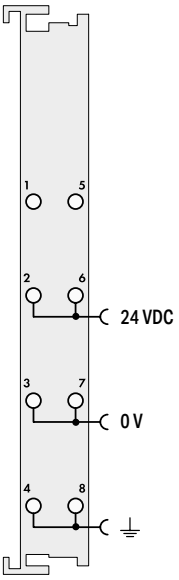


„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com

Binary Spacer Module





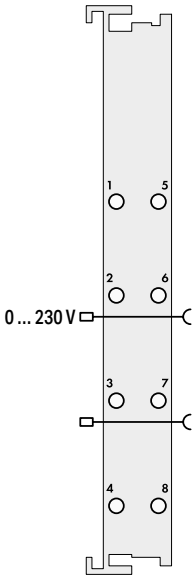
Item Description	Binary Spacer Module
Version	**Standard**
Item No.	**750-622**
Order Text	Binary Spacer Module
Technical Data	
Current consumption – system supply (5 V)	10 mA
Supply voltage (field)	24 VDC (–15 … +20 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)
Current carrying capacity (power jumper contacts)	10 A
Data width (internal)	2; 4; 6 or 8 bits (adjustable via DIP switches)
Operating mode	Inputs/outputs (adjustable via DIP switches)
Isolation	500 V system/field
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-622

This binary spacer module reserves bit addresses in the process image of a fieldbus node.

Spacer Module



Figure: 753-1629



Item Description	Spacer Module		
Version	Active; Pluggable (delivery without connector)	Active; Without power jumper contacts; Pluggable (delivery without connector)	Passive; Pluggable (delivery without connector)
Item No.	753-1629	753-1629/000-001	753-629/020-000
Order Text	Spacer Module; Active	Spacer Module; Active; NC	Spacer Module; Passive
Technical Data			
Supply voltage (field)	0 … 230 VAC/DC; Field-side supply via power jumper contacts		0 … 230 VAC/DC; Field-side supply via power jumper contacts
Surrounding air temperature (operation)	0 … +55 °C		
Dimensions W x H x D	12 x 69.8 x 100 mm		
Approvals	CE; KC; cULus OrdLoc		
Data sheet and further information, see:	wago.com/753-1629		wago.com/753-629

This active spacer module enables both hardware and software space reservation for standard function modules (digital input/output modules and analog input/output modules) in PROFIBUS/PROFINET networks (only in conjunction with 750-333, 750-375, 750-377).

This passive spacer module enables hardware space reservation for standard function modules (digital input/output modules and analog input/output modules).

„ Mini-WSB marker card and mounting accessories, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 523 or www.wago.com

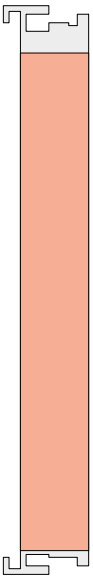
Distance Module

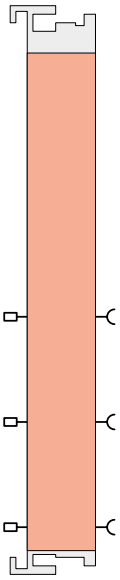


Figure: 750-616



Figure: 750-616/030-000





Item Description	Distance Module		Distance Module
Version	Standard	Labeled	With power jumper contacts
Item No.	750-616	750-616/030-000	750-621
Order Text	Distance Module	Distance Module	Distance Module
Technical Data			
Surrounding air temperature (operation)	0 … +55 °C		0 … +55 °C
Dimensions W x H x D	12 x 69.8 x 100 mm		12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx		CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-616		wago.com/750-621

This distance module visually divides a fieldbus node into sections.

The 750-616 Distance Module has no power jumper contacts. The labeled version of the distance module is available under the item number 750-616/030-000.

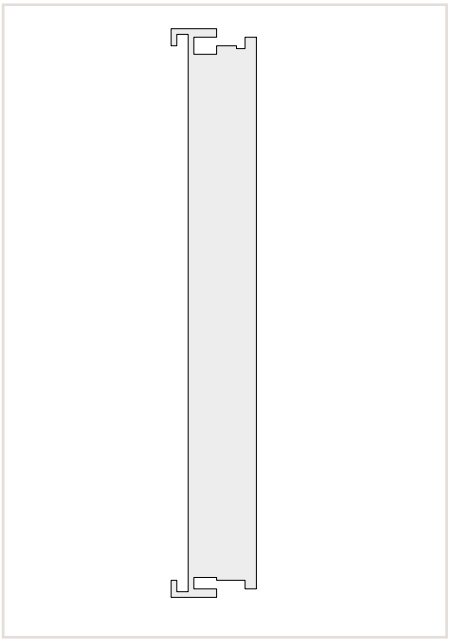
Notice:
Operation of the adjacent I/O modules requires a supply module.

The 750-621 Distance Module has power jumper contacts that can supply the power to adjacent I/O modules.

End Module



Figure: 750-600



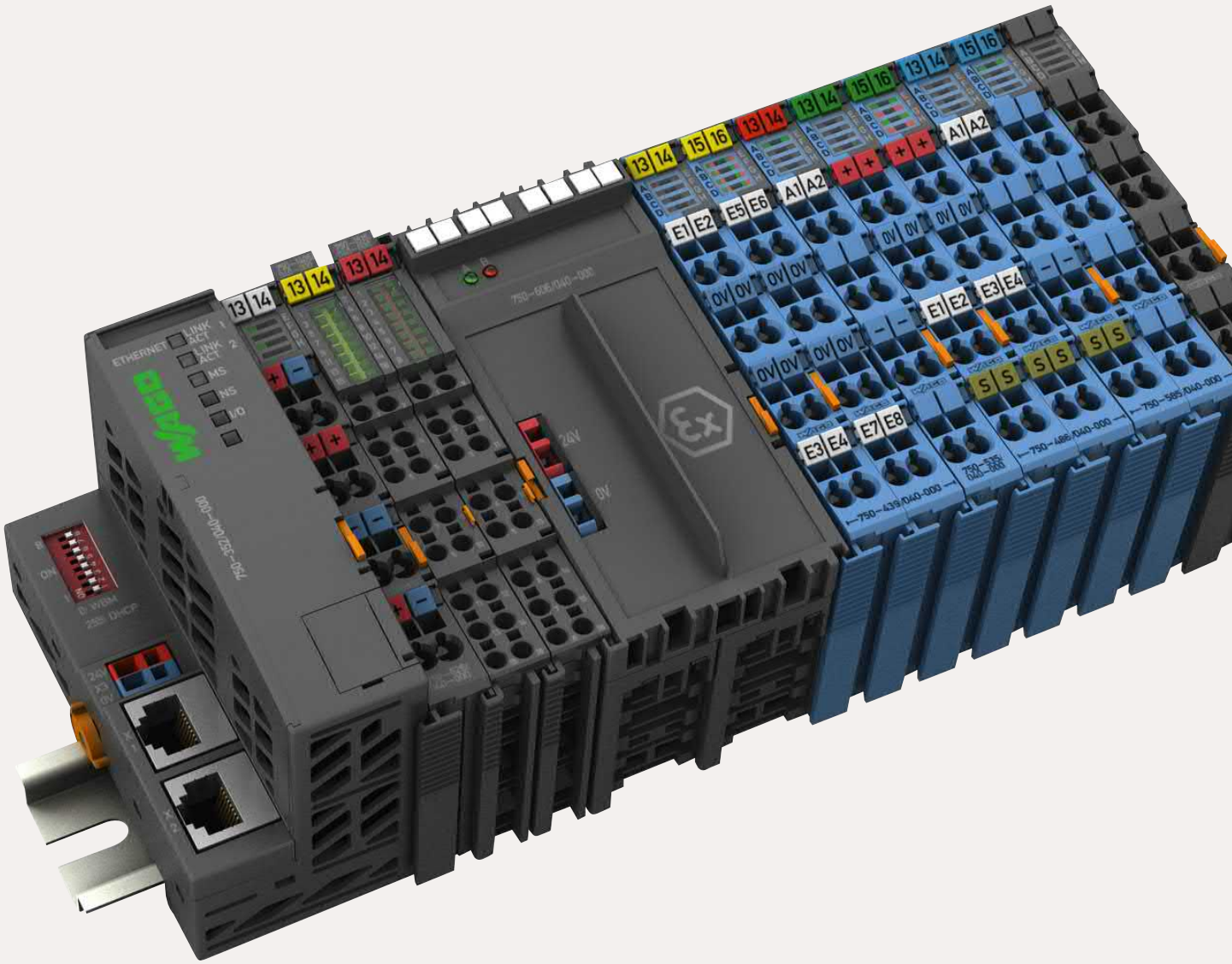
Item Description	End Module	
Version	Standard	Extended temperature
Item No.	750-600	750-600/025-000
Order Text	End Module	End Module; T
Technical Data		
Surrounding air temperature (operation)	0 … +55 °C	–20 … +60 °C
Dimensions W x H x D	12 x 69.8 x 100 mm	
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	
Data sheet and further information, see:	wago.com/750-600	

This end module must be snapped onto the assembly at the end of a fieldbus node.
The end module completes the internal data bus, ensuring flawless data transmission.

5.10

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 523 or www.wago.com



I/O System – 750 XTR Series

I/O System – 750 and 753 Series

- Highly versatile
- More than 500 modules available
- Functional safety
- Ex i

I/O System – 750 XTR Series

For demanding applications in which the following are critical:

- Extreme temperature stability
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

◂ Section 5

I/O System – 750 XTR Series
Contents

	Page
General Product Information	346
Interfaces and Types	347
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Standards and Rated Conditions for Rail Applications (EN 50155)	350
Standards and Rated Conditions	351
Item Number Key	350
Approvals	350
Controllers PFC200 XTR	see Section 4.2
Controllers 750 XTR	see Section 4.4









	Description	Item No.	
Fieldbus Couplers	Fieldbus Coupler PROFIBUS DP; 2nd generation; 12 MBd; extreme	750-333/040-000	352
	Fieldbus Coupler ETHERNET; 3rd generation; extreme	750-352/040-000	353
	Fieldbus Coupler CANopen; D-Sub; extreme	750-338/040-000	354
Digital Input Modules	8-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection; extreme	750-1415/040-000	355
	8-Channel Digital Input; 24 VDC; 3 ms; extreme	750-430/040-000	355
	16-Channel Digital Input; 24 VDC; 3 ms; extreme	750-1405/040-000	356
	8-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection; extreme	750-1416/040-000	357
	8-Channel Digital Input; 24 VDC; 0.2 ms; extreme	750-431/040-000	357
	2-Channel Digital Input; 60 VDC; 3 ms; extreme	750-429/040-001	358
	2-Channel Digital Input; 110 VDC; 3 ms; extreme	750-427/040-000	358
	2-Channel Digital Input; 220 VDC; 3 ms; extreme	750-407/040-000	359
Digital Output Modules	2-Channel Digital Output; 24 VDC; 2.0 A; Diagnostics; extreme	750-508/040-000	360
	8-Channel Digital Output; 24 VDC; 0.5 A; Diagnostics; extreme	750-537/040-000	360
	8-Channel Digital Output; 24 VDC; 0.5 A; 2-wire connection; extreme	750-1515/040-000	361
	2-Channel Relay Output; 250 VAC; 1 A; Relay with 2 changeover contacts; extreme	750-517/040-000	362
Analog Input Modules	4-Channel Analog Input; 0 … 20 mA; single-ended; extreme	750-453/040-000	363
	4-Channel Analog Input; 4 … 20 mA; single-ended; extreme	750-455/040-000	363
	2-Channel Analog Input; 4 … 20 mA; Differential input; NAMUR NE 43; extreme	750-492/040-001	364
	4-Channel Analog Input; 0 … 10 VDC; single-ended; extreme	750-468/040-000	365
	4-Channel Analog Input; ±10 VDC; single-ended; extreme	750-457/040-000	365
	2-Channel Analog Input; 0 … 30 VDC; Differential input; extreme	750-483/040-000	366
	2/4-Channel Analog Input; Resistance measurement; adjustable; extreme	750-464/040-000	367
	2-Channel Analog Input; Thermocouple; adjustable; extreme	750-469/040-000	367
	3-Phase Power Measurement; 690 VAC 1 A; extreme	750-495/040-000	368
	3-Phase Power Measurement; 690 VAC 5 A; extreme	750-495/040-001	368
	3-Phase Power Measurement; 690 VAC Rogowski coils; extreme	750-495/040-002	368
Analog Output Modules	2-Channel Analog Output; 0/4 … 20 mA; 16 bits; 6 … 18 VDC; extreme	750-563/040-000	369
	4-Channel Analog Output; ±10 VDC; extreme	750-557/040-000	370
	4-Channel Analog Output; 0 … 10 VDC; extreme	750-559/040-000	370
Function/Technology Modules	Counter; adjustable; extreme	750-404/040-003	371
	SSI Transmitter Interface; adjustable; extreme	750-630/040-001	372
	Incremental Encoder Interface; 24 VDC; Differential input; 32 bits; extreme	750-637/040-001	373
Communication Modules	Serial Interface RS-232/485; extreme	750-652/040-000	374
	CAN Gateway; extreme	750-658/040-000	375
Supply/Segment Modules	Power Supply; 24 VDC; extreme	750-602/040-000	376
	Power Supply; 24 VDC; Fuse holder; extreme	750-601/040-000	376
	Power Supply; 24 VDC; Fuse holder; Diagnostics; extreme	750-610/040-000	377
	Power Supply; 0 … 230 VAC/DC; extreme	750-612/040-000	377
	System Power Supply; 24 VDC; extreme	750-613/040-000	377
	Potential Distribution; 16x 24 V; extreme	750-1605/040-000	378
	Potential Distribution; 16x 0 V; extreme	750-1606/040-000	378
	Potential Distribution; 0 … 230 VAC/DC; extreme	750-614/040-000	379
	Field Supply Filter (Surge); 24 VDC; Higher isolation; extreme	750-624/040-000	380
	Field Supply Filter (Surge); 24 VDC; Higher isolation; without power jumper contacts; extreme	750-624/040-001	380
	Supply Filter; 24 VDC; Higher isolation; extreme	750-626/040-000	381
	Distance Module; extreme	750-616/040-000	382
	End Module; extreme	750-600/040-000	383
Intrinsically Safe XTR Modules	Power Supply; 24 VDC; extreme; for intrinsically safe XTR modules	750-606/040-000	385
	8-Channel Digital Input; NAMUR; intrinsically safe; extreme	750-439/040-000	386
	2-Channel Digital Output; 24 VDC; intrinsically safe; extreme	750-535/040-000	387
	4-Channel Analog Input; 0/4 … 20 mA; intrinsically safe; extreme	750-486/040-000	388
	2-Channel Analog Input; 4 … 20 mA HART; intrinsically safe; extreme	750-484/040-000	389
	2-Channel Analog Input; Resistance measurement; intrinsically safe; extreme	750-481/040-000	390
	2-Channel Analog Output; 0 … 20 mA; intrinsically safe; extreme	750-585/040-000	391
	Up/Down Counter; intrinsically safe; extreme	750-633/040-000	392
Accessories Marking and Mounting Accessories		Section 10	

I/O System – 750 XTR Series
General Product Information

Taking It to the eXTReme — The Standard for 750 XTR

Instantly recognizable by its dark gray modules, the WAGO-I/O-SYSTEM 750 XTR's unique features make it ideal for extreme environments.

Extremely temperature-resistant, immune to interference, as well as unfazed by vibrations and impulse voltages – WAGO's 750 XTR is the first choice for demanding applications including:

- Marine systems and onshore/offshore industry
- Renewable energy systems (wind turbines, solar systems and biogas plants)
- Transformer stations and power distribution systems
- Petrochemical processing
- Water and wastewater treatment systems
- Custom machines
- Railway applications

Superior Reliability in Extreme Climates

Automation systems are increasingly being located in outdoor and remote locations where components are directly affected by widely fluctuating temperature conditions such as wind turbines or transformer stations.
Engineered for freezing cold, extreme heat and high humidity, the WAGO-I/O-SYSTEM 750 XTR provides absolute dependability in virtually any weather. The XTR version of the WAGO-I/O-SYSTEM 750 is unfazed by both freezing cold down to −40°C and scorching heat up to +70°C. And this applies equally for both start-up and ongoing operation. The maximum approved operating altitude of 5,000 m is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

eXTReme Evolution of the Tried and Tested

Using an industry-leading platform, the WAGO-I/O-SYSTEM 750 XTR boasts the same proven benefits:

- Compact design: up to 16 channels in a module width of 12 mm (1/2")
- Easy to Use
- Vibration-proof, fast and maintenance-free CAGE CLAMP® spring connections
- Fieldbus independence due to its modular design
- Clear identification with the WAGO WSB Marking System

Additional Protection Against Interference Pulses

The WAGO-I/O-SYSTEM 750 XTR provides greater isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths add up to trouble-free operation.

High Mechanical Performance

Automation systems must be incredibly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples from a wide range of applications that can stress automation systems. In order to perform in these demanding environments, the WAGO-I/O-SYSTEM 750 XTR was developed to set new standards. With 5g of vibration resistance up to an acceleration of 50 m/s² per DIN EN 60068-2-6 and shock resistance of 15g (150 m/s²), as well as 25g (250 m/s²) of shock resistance per IEC 60068-2-27, the system is engineered for dependability – no matter what.
Count on long-lasting, trouble-free operation and industry-topping levels of safety – even in the most severe applications, such as tunnel boring machines.

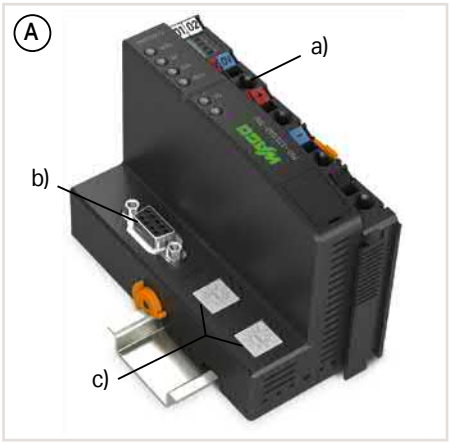
Worldwide Approvals

International approvals for industrial automation, shipbuilding and onshore/offshore applications guarantee worldwide use even under the harshest operating conditions, e.g., Germanischer Lloyd, Det Norske Veritas, American Bureau of Shipping, Korean Register of Shipping, Nippon Kaiji Kyokai, Registro Italiano Navale, Polski Rejestr Stratkow.

Advantages:

- No need for air conditioning
  - Takes less space
  - Lower energy and maintenance costs
- Can be used in unshielded areas
- Maximum system uptime
- Install close to vibrating and shock-generating system components
- Vibration-proof, fast and maintenance-free CAGE CLAMP® connections

I/O System – 750 XTR Series
Interfaces and Types

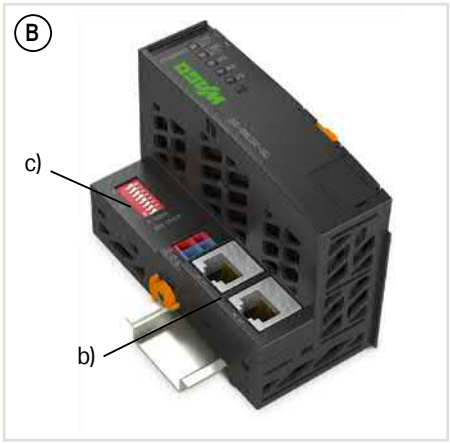


Housing design: fieldbus coupler (A)

- Including supply module (a) to power downstream I/O modules
- Technical differences on the connection level; fieldbus interface (b) and optional addressing switch (c)
- W x H x D (mm) 50.5 x 71.1 x 100

Housing design: fieldbus coupler Eco (B)

- Restriction on power supply and data width
- W x H x D (mm) 49.5 x 71.9 x 96.8





Housing design: 750 (C)

- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 67.8 x 100

Housing design: 750 (D)

- 16 connection points (Push-in CAGE CLAMP®)
- W x H x D (mm) 12 x 69 x 100





Housing design: double width (G)

- Some modules are integrated into a double housing to address specific technological needs. Despite utilizing the same standardized housing, these modules are twice as wide.
- W x H x D (mm) 24 x 67.8 x 100

Specialty housing design (H)

- Some modules are integrated into a specialty housing with a specific width and pluggable connectors. The dimensions are specified on the respective catalog pages.





Housing design: intrinsically safe XTR modules (G)

- 8 connection points (CAGE CLAMP®)
- W x H x D (mm) 12 x 67.8 x 100

Housing design (intrinsically safe XTR modules): double width (H)

- 16 connection points (CAGE CLAMP®)
- W x H x D (mm) 24 x 67.8 x 100



I/O System – 750 XTR Series
Application and Installation Instructions



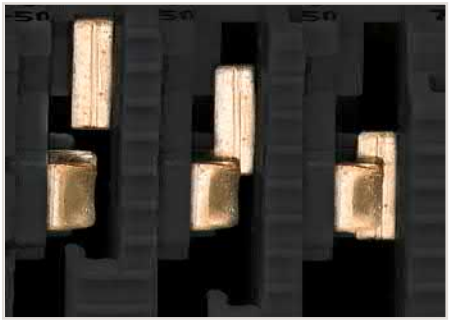
Securing/removing a module from the mounting rail



Secure, automatic data and electronics power supply connection via gold-plated pressure contacts



Service interface for configuring the fieldbus coupler; connectivity via configuration cable or radio adapter



Secure, automatic power supply connection via self-cleaning blade contacts

Notice:

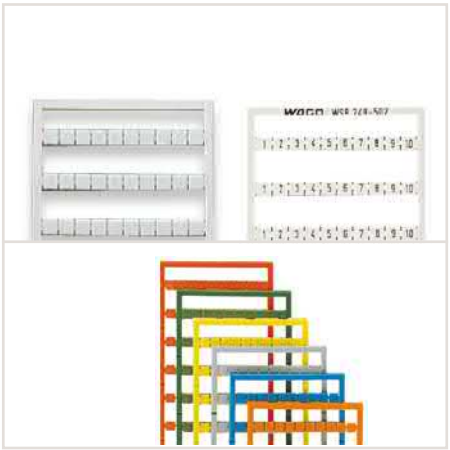
For some I/O modules, not all power jumper contacts are made! An I/O module with three power jumper contacts (e.g., 2-channel digital input) cannot be snapped into place behind a module in which not every contact is made.

To increase electromagnetic compatibility (EMC), some components are connected to the DIN-rail by a discharge contact. The DIN-rail must always have a low-resistance connection to the ground potential.



Wide range of accessories available for EMC-compliant installation, including shield connection

Marking Accessories



Mini-WSB Quick Marking System, blank, pre-marked and colored; suitable for all 750 Series I/O Modules.



Marker carrier for one single I/O module (suitable for all 750 and 753 Series I/O Modules); the marker carrier can be accommodated in the upper Mini-WSB marker slot.

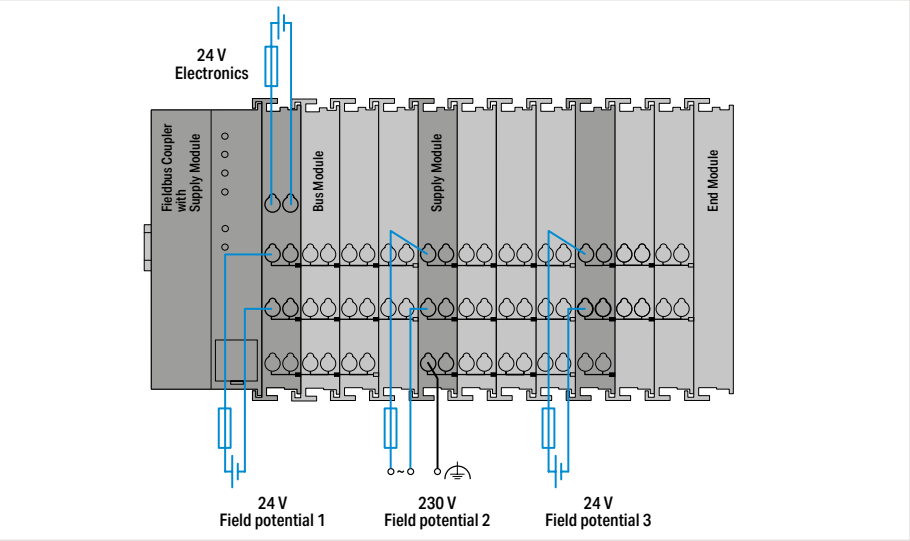


Marker carrier for one I/O node; both carrier models (750-106 and 750-107) permit continuous marking regardless of the I/O module housing used.

I/O System – 750 XTR Series
Application and Installation Instructions

Power Supply

The internal electronics are powered by the fieldbus coupler. The power supply to the field-side supply is electrically isolated. This division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes the supply voltages. Supply modules with diagnostics also enable power supply monitoring. This ensures a flexible, user-specific supply design for a station.
Power supply to the electronics is limited by a maximum value. This value depends on the fieldbus coupler used. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional system supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



Interference-Free in Safety-Related Applications

To easily and safely perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

All 750 XTR Series Digital Output Modules are designed to provide interference-free safety functionality. The modules can be used in safety applications up to category 4 per DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.

Notice:

WAGO's interference-free I/O modules are not a component of the safety function and do not replace the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.

Notes

Additional steps must be implemented based on where the I/O system is installed:
Specific power and field-side power supply filters (750-624/040-001 or 750-626/040-000) are required for marine and onshore/offshore applications, as well as in telecontrol and rail technology.

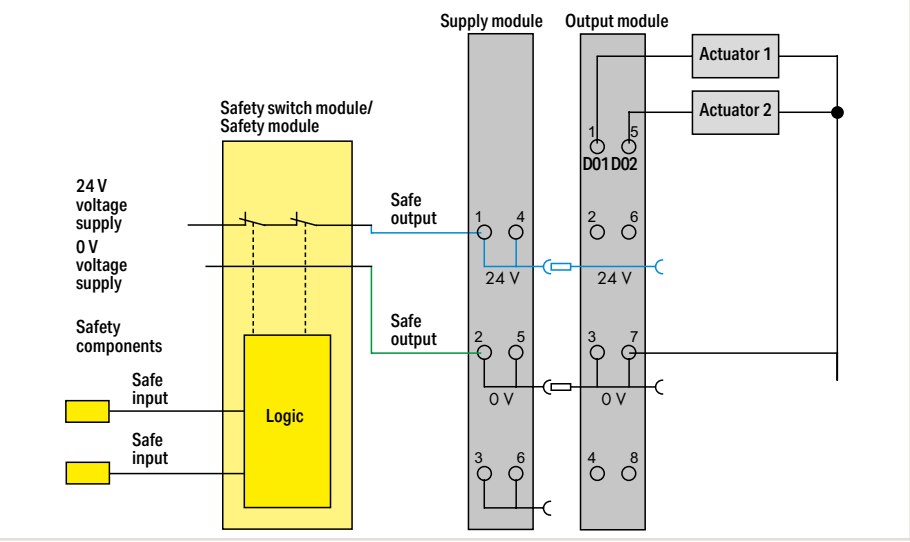
A specific supply module (750-606/040-000) is required to operate intrinsically safe Ex i modules.

Additionally, both supply modules and a field-side power supply filters are recommended when operating intrinsically safe Ex i modules for marine and onshore/offshore applications.

Please refer to the manual for details about the power supply's design.

Mixed Operation

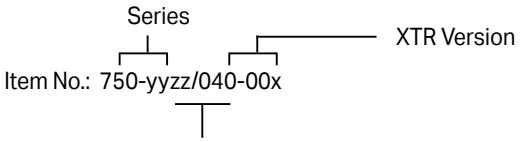
Mixed operation (standard/XTR modules) within a node is possible when groups of I/O modules are electrically isolated on the field side, i.e., electrically isolated power supply. The combination may be useful, for example, when there are only increased requirements for dielectric strength and immunity to interference, but the surrounding air temperature is not critical.



Example: 2-channel, double-pole power supply disconnection

I/O System – 750 XTR Series
Item Number Key

Explanation of item number key's components



01zz: Marker
03zz: Fieldbus Coupler
zz: Consecutive number

1yzz: 16 connection points or ribbon cable
y4zz: Input
00 ... 49 = Digital input
50 ... 99 = Analog input

y5zz: Output
00 ... 49 = Digital output
50 ... 99 = Analog input

y6zz: Communication/system modules
0z: Power supply, field-side connection, end module
1z: Power supply, spacer module
2z: Filter
5z: Serial interface

09zz: Accessories

Approvals

Overview of the approvals in the item comparison in Section 11, Technical Section, or online under www.wago.com

6

Standards and Rated Conditions for Rail Applications (EN 50155), not for Intrinsically Safe XTR Modules

Railway Applications (EN 50155)	Class/Standard Compliance
4.1 Rated operating conditions	
4.1.1 Altitude above sea level	AX (EN 50125-1)
4.1.2 Surrounding air temperature	TX
4.1.3 Shock and vibration	1A and 1B (EN 61373)
4.1.4 Relative humidity	95 % (coated PCBs)
5.1 Power supply	
5.1.1.1 Master voltage fluctuations	
Minimum voltage	0.725 x Un
Maximum voltage	1.3 x Un
5.1.1.2 Power interruptions	S1
5.4 Surge, ESD, burst tests	EN 50121-3-2
5.5 EMC (emission of interference, immunity to interference)	EN 50121-3-2, EN 50121-4, -5
Fire behavior: per EN 45545-2 hazard level HL3	

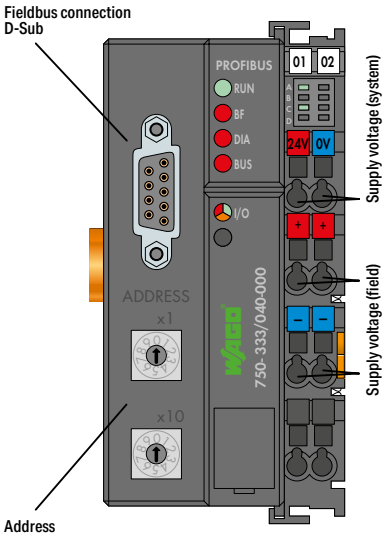
WAGO is certified in accordance with the **IRIS** quality standard.

I/O System – 750 XTR Series
Standards and Rated Conditions

General Specifications	
Supply voltage (system)	24 VDC (–25 … +30 %); via power jumper contacts; Specified values for surrounding air temperature: +15 … +35 °C For –40 … +55 °C: 24 V (–25 … +20 %); For +55 … +70 °C: 24 V (–25 … +10 %); Lower limit in all temperature ranges: –27.5 % (including 15 % residual ripple)
Supply voltage (system) for intrinsically safe XTR modules	24 VDC via power jumper contacts (Ex i power supply: U_0 = max. 26.8 V)
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	Max. 95 %; Short-term condensation per Class 3K7 / IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Operating altitude	Without temperature derating: 0 … 2000 m; With temperature derating: 2000 … 5000 m (0.5 K/100 m); max.: 5000 m
Pollution degree	2 per IEC 61131-2
Immunity to impulse voltages	Per EN 60870-2-1 Module ≤ 50 V: 510 VAC/775 VDC; Module > 50 V: 2.5 kVAC/3.5 kVDC Isolation: rated surge voltage (EN 60079-11) Module ≤ 50 V: 1 kV (Class VW1 per EN 60870-2-1) Module > 50 V: 5 kV (Class VW3 per EN 60870-2-1) Intrinsically safe module: 1 kV; 1.5 kV between intrinsically safe and non-intrinsically safe circuits Surge: Module ≤ 50 V: 1 kV (L - L) / 2 kV (L - E) Module > 50 V: 2 kV (L - L) / 4 kV (L - E)
Vibration resistance	• Per IEC 60068-2-6 (acceleration: 5g), EN 60870-2-2, IEC 60721-3-1, -3 • EN 50155; EN 61373 (not for intrinsically safe modules)
Shock resistance	• Per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks); EN 61373 • EN 50155 (not for intrinsically safe modules)
EMC immunity to interference	• Per EN 61000-6-1, -2; EN 61131-2; Marine applications; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994 • EN 50121-3-2; EN 50121-4, -5 (not for intrinsically safe modules)
EMC emission of interference	• Per EN 61000-6-3, -4; EN 61131-2; EN 60255-26; Marine applications; EN 60870-2-1 (industrial and residential areas); EN 61850-3 (industrial and residential areas) • EN 50121-3-2; EN 50121-4, -5 (not for intrinsically safe modules)
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	DIN-35 rail mounting
Housing material	Polycarbonate; polyamid 6.6
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible SO_2 contaminant concentration at a relative humidity < 75 %	25 ppm
Permissible H_2S contaminant concentration at a relative humidity < 75 %	10 ppm
Connection technology	CAGE CLAMP®
Conductor cross section; strip length for standard modules and fieldbus couplers: Eco fieldbus couplers and power supply module:	0.25 … 2.5 mm²/24 … 14 AWG; 8 … 9 mm/0.31 … 0.35 inch 0.25 … 1.5 mm²/24 … 14 AWG; 5 … 6 mm/0.2 … 0.24 inch
Connection technology	Push-in CAGE CLAMP® (for I/O modules with 16 connection points)
Conductor cross section; strip length for I/O modules with 16 connection points:	0.25 … 1.5 mm²/24 … 16 AWG; 8 … 9 mm/0.31 … 0.35 inch
Current carrying capacity (power jumper contacts)	10 A; 1 A for all intrinsically safe modules

Fieldbus Coupler PROFIBUS DP





Item Description	**Fieldbus Coupler PROFIBUS DP; 2nd generation; 12 MBd**
Version	**Extreme**
Item no.	**750-333/040-000**
Order text	FC PROFIBUS; G2; 12 MBd; XTR

Technical Data	
Fieldbus	PROFIBUS
Protocols	PROFIBUS DP/V1
Connection technology: Fieldbus input/output	Socket D-Sub 9
Number of fieldbus nodes on master (max.)	96 with repeater
Baud rate	9.6 kBd ... 12 MBd
Transmission medium	Copper cable per EN 50170
Number of modules per node (max.)	63
Input and output process image (internal) max.	244 bytes
Supply voltage (system)	24 VDC (−25 ... +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 ... +35 °C; For −40 ... +55 °C: 24 V (−25 ... +20 %); For +55 ... +70 °C: 24 V (−25 ... +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	200 mA
Total current (system supply)	1800 mA
Rated surge voltage	1 kV
Surrounding air temperature (operation)	−40 ... +70 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-333/040-000

Accessories	**Item no.**
GSD files	Download: www.wago.com

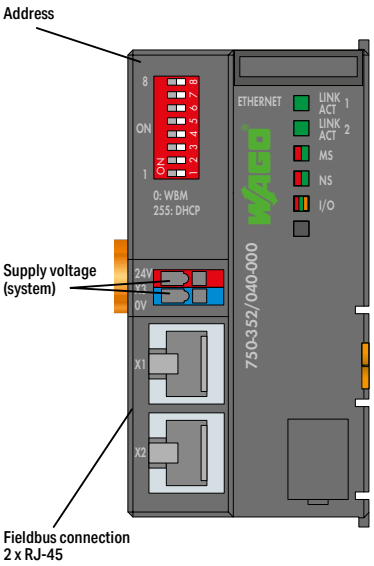
„ Mini-WSB Quick Marking System, see Full Line Catalog, Volume 6

„ DIN-rails and tools, see Section 10

„ Approvals and corresponding ratings, see page 526 or www.wago.com

Fieldbus Coupler ETHERNET



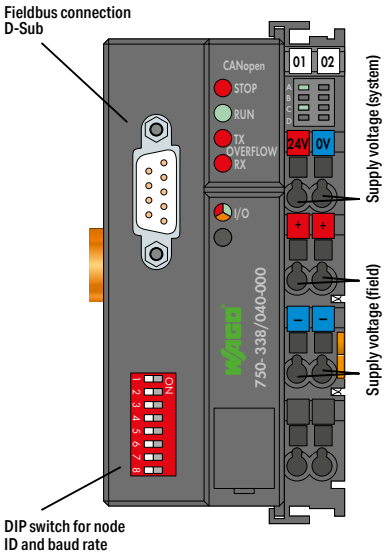


Item Description	**Fieldbus Coupler ETHERNET; 3rd generation**
Version	**Extreme**
Item no.	**750-352/040-000**
Order text	FC ETHERNET; G3; XTR

Technical Data	
Fieldbus	EtherNet/IP; Modbus (TCP, UDP)
Protocols	HTTP; BootP; DHCP; DNS; FTP; SNMP
Connection technology: Fieldbus input/output	2 x RJ-45
Baud rate	10/100 Mbit/s
Transmission medium	Twisted Pair S-UTP; 100 Ω; Cat. 5
Number of modules per node (max.)	64
Input and output process image (internal) max.	1020 words
Supply voltage (system)	24 VDC (–25 … 30 %); via wiring level (CAGE CLAMP® connection); Lower limit: –27.5 % (including 15 % residual ripple)
Input current (typ.) at nominal load (24 V)	280 mA
Current consumption – system supply (5 V)	450 mA
Total current (system supply)	700 mA
Rated surge voltage	1 kV
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	49.5 x 71.9 x 96.8 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-352/040-000

Fieldbus Coupler CANopen





Item Description	**Fieldbus Coupler CANopen; D-Sub**
Version	**Extreme**
Item no.	**750-338/040-000**
Order text	FC CANopen; DSub; XTR

Technical Data	
Fieldbus	CANopen
Connection technology: Fieldbus input/output	Plug D-Sub 9
Number of fieldbus nodes on master (max.)	110
Bus segment length (max.)	30 m … 1000 m (depending on baud rate/cable)
Baud rate	10 kBd … 1 MBd
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Number of modules per node (max.)	64
Input and output process image (internal) max.	512 bytes
Number of PDOs	32 Tx / 32 Rx
Number of SDOs	2 SDO servers
Communication profile	DS-301 V4.01
Device profile	DS-401 V2.0, Additional functions: limit monitoring; flank-triggered PDOs; configurable response in the event of an error
Supply voltage (system)	24 VDC (–25 … +30 %); via wiring level (CAGE CLAMP® connection); Specified values for surrounding air temperature: +15 … +35 °C; For –40 … +55 °C: 24 V (–25 … +20 %); For +55 … +70 °C: 24 V (–25 … +10 %); Lower limit in all temperature ranges: –27.5 % (including 15 % residual ripple)
Input current (typ.) at nominal load (24 V)	500 mA
Current consumption – system supply (5 V)	350 mA
Total current (system supply)	1650 mA
Rated surge voltage	1 kV
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	50.5 x 71.1 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-338/040-000

Accessories	**Item no.**
EDS files	Download: www.wago.com

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

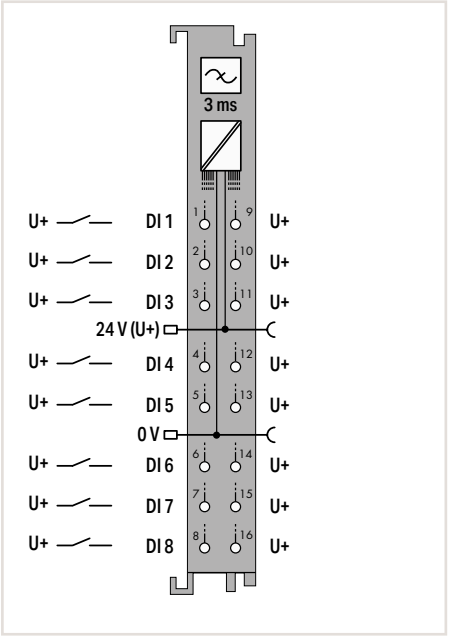
Digital Input; 24 VDC

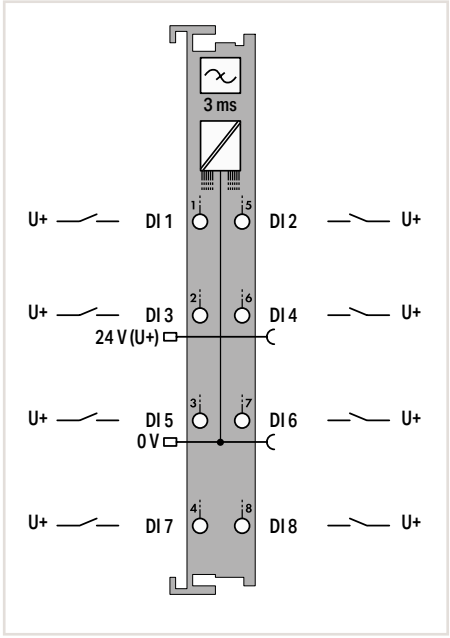


Figure: 750-1415/040-000



Figure: 750-430/040-000



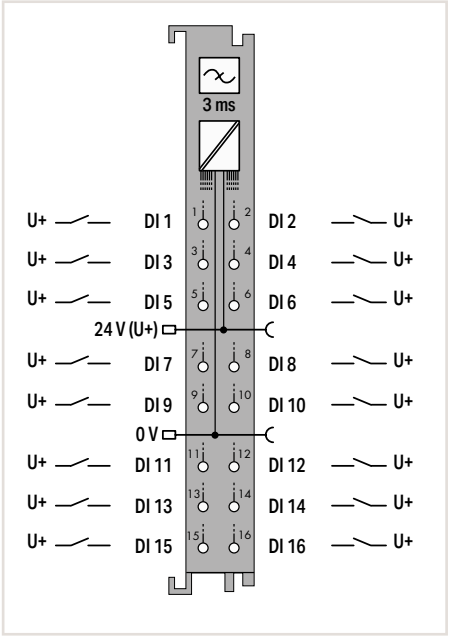


Item Description	8-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection	8-Channel Digital Input; 24 VDC; 3 ms
Version	**Extreme**	**Extreme**
Item no.	**750-1415/040-000**	**750-430/040-000**
Order text	8DI; 24 VDC; 3ms; 2-wire; XTR	8DI; 24 VDC; 3ms; XTR
Technical Data		
Number of digital inputs	8	8
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	−3 … +5 VDC	−3 … +5 VDC
Voltage range for signal (1)	11 … 30 VDC	15 … 30 VDC
Sensor connection	2-wire	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	4.5 mA	2.8 mA
Supply voltage (sensor)	24 VDC	24 VDC
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	6 mA	17 mA
Rated surge voltage	1 kV	1 kV
Data width (internal)	8 bits	8 bits
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 69 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1415/040-000	wago.com/750-430/040-000

6

Digital Input; 24 VDC





Item Description	**16-Channel Digital Input; 24 VDC; 3 ms**
Version	**Extreme**
Item no.	**750-1405/040-000**
Order text	16DI; 24 VDC; 3ms; XTR

Technical Data	
Number of digital inputs	16
Signal type	24 VDC
Voltage range for signal (0)	−3 … +5 VDC
Voltage range for signal (1)	11 … 30 VDC
Sensor connection	1-wire
Input characteristic	High-side switching
Input filter (digital)	3 ms
Input current per channel for signal (1) typ.	2.3 mA
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	25 mA
Rated surge voltage	1 kV
Data width (internal)	16 bits
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1405/040-000

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

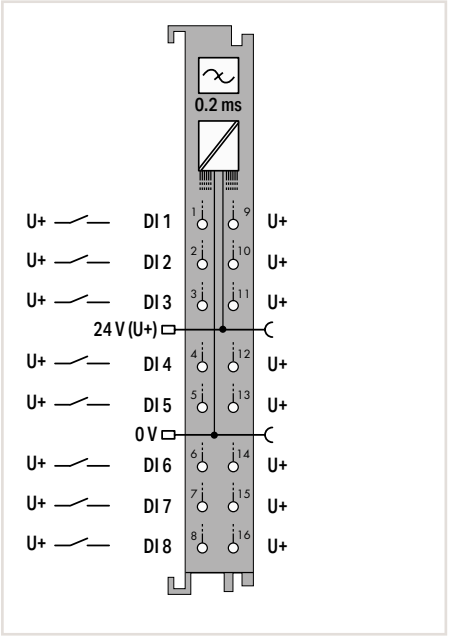
Digital Input; 24 VDC

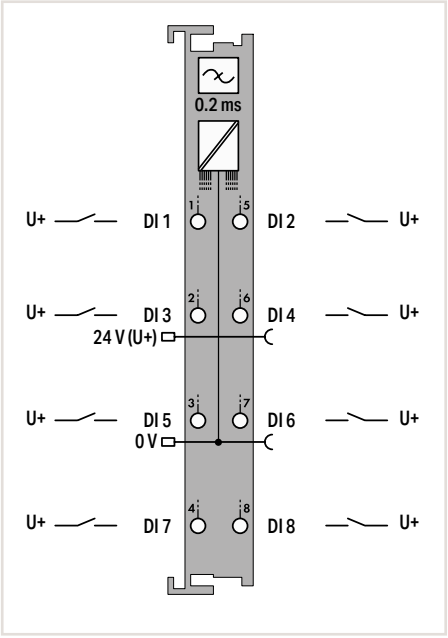


Figure: 750-1416/040-000



Figure: 750-431/040-000



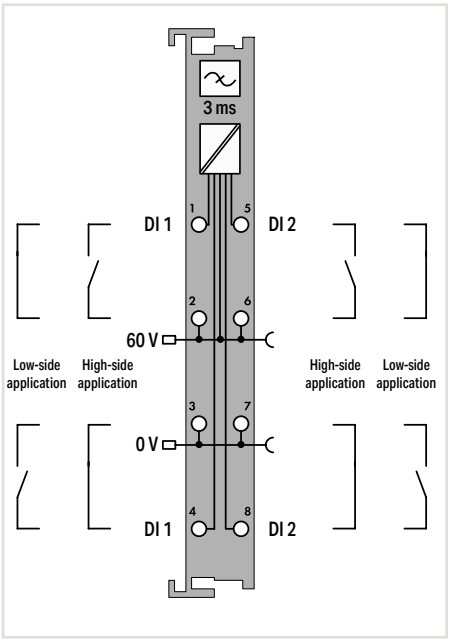


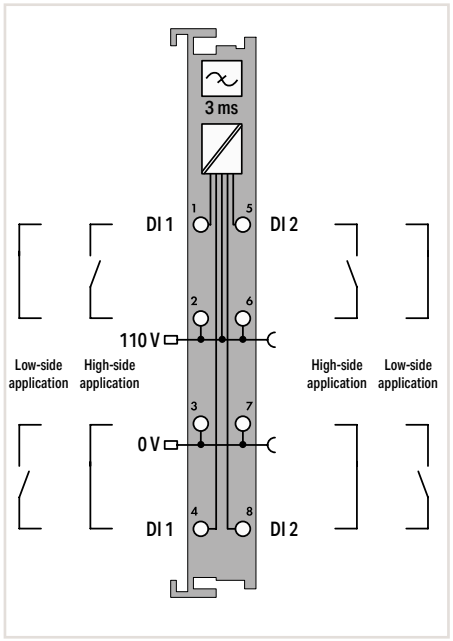
Item Description	8-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection	8-Channel Digital Input; 24 VDC; 0.2 ms
Version	**Extreme**	**Extreme**
Item no.	**750-1416/040-000**	**750-431/040-000**
Order text	8DI; 24 VDC; 0.2ms; 2-wire; XTR	8DI; 24 VDC; 0.2ms; XTR
Technical Data		
Number of digital inputs	8	8
Signal type	24 VDC	24 VDC
Voltage range for signal (0)	−3 … +5 VDC	−3 … +5 VDC
Voltage range for signal (1)	11 … 30 VDC	15 … 30 VDC
Sensor connection	2-wire	1-wire
Input characteristic	High-side switching	High-side switching
Input filter (digital)	0.2 ms	0.2 ms
Input current per channel for signal (1) typ.	4.5 mA	2.8 mA
Supply voltage (sensor)	24 VDC	24 VDC
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	6 mA	17 mA
Rated surge voltage	1 kV	1 kV
Data width (internal)	8 bits	8 bits
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 69 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1416/040-000	wago.com/750-431/040-000

6

Digital Input; 60 VDC; 110 VDC or 220 VDC







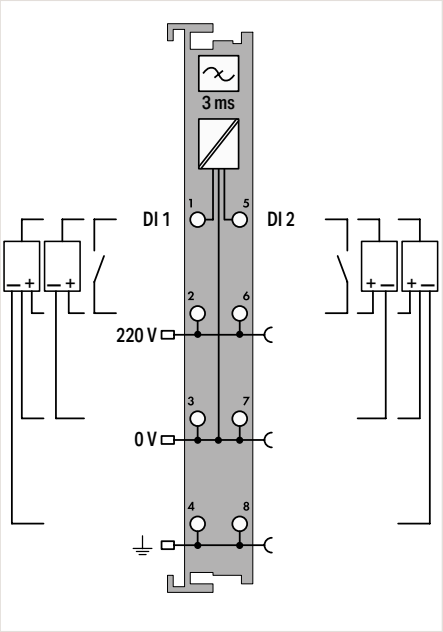
Item Description	2-Channel Digital Input; 60 VDC; 3 ms	2-Channel Digital Input; 110 VDC
Version	Extreme	Extreme
Item no.	750-429/040-001	750-427/040-000
Order text	2DI; 60 VDC; 3ms; XTR	2DI; 110 VDC; XTR
Technical Data		
Number of digital inputs	2	2
Signal type	60 VDC	110 VDC
Voltage range for signal (0)	-7.5 … +12 VDC	-14 … +50 VDC
Voltage range for signal (1)	44 … 78 VDC	70 … 143 VDC
Sensor connection	2-wire	2-wire
Input characteristic	High-side/low-side switching; configurable	High-side/low-side switching; configurable
Input filter (digital)	3 ms	3 ms
Input current per channel for signal (1) typ.	2.9 mA	2.5 mA
Supply voltage (sensor)	60 VDC	110 VDC
Supply voltage (field)	60 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)	110 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	2.5 mA	2.5 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 2.5 kV (UL 508); 2.5 kV (EN 60664-1 / to 5,000 m ASL)	5.0 kV (EN 60870-2-1 / Class VW3); 4.0 kV (UL 508); 4.0 kV (EN 60664-1 / to 2,000 m ASL); 2.5 kV (EN 60664-1 / > 2,000 m to 5,000 m ASL)
Overvoltage category	Nominal voltage 60 V: IV (EN 60664-1 / to 5,000 m ASL)	Nominal voltage 110 V: IV (EN 60664-1 / to 2,000 m ASL); III (EN 60664-1 / > 2,000 m to 5,000 m ASL)
Data width (internal)	2 bits	2 bits
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; EAC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; EAC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-429/040-001	wago.com/750-427/040-000

Notice:
An additional supply module must be added for operation with 60 VDC!

Notice:
An additional supply module must be added for operation with 110 VDC!

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com



2-Channel Digital Input; 220 VDC
Extreme
750-407/040-000
2DI; 220 VDC; XTR

2
220 VDC
-3 … +100 VDC
160 … 286 VDC
2-wire; 3-wire; 4-wire
High-side switching
3 ms
1.2 mA
220 VDC
220 VDC (–25 … +25 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)
5 mA
5.0 kV (EN 60870-2-1 / Class VW3); 4.0 kV (UL 508); 4.0 kV (EN 60664-1 / to 4,000 m ASL); 2.5 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)
Nominal voltage 220 V: III (EN 60664-1 / to 4,000 m ASL); II (EN 60664-1 / > 4,000 m to 5,000 m ASL)
2 bits
–40 … +70 °C
12 x 67.8 x 100 mm
CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
wago.com/750-407/040-000

Notice:
An additional supply module must be added for operation with 220 VDC!

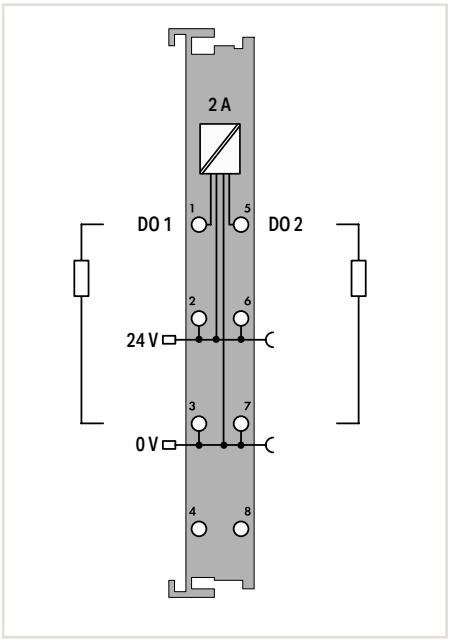
Digital Output; 24 VDC

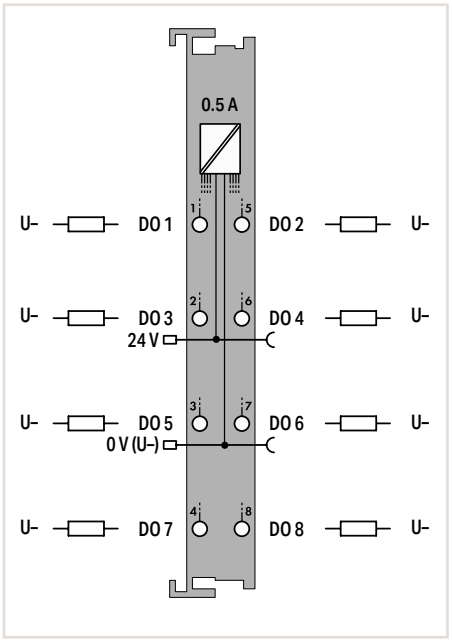


Figure: 750-508/040-000



Figure: 750-537/040-000





Item Description	2-Channel Digital Output; 24 VDC; 2 A; Diagnostics	8-Channel Digital Output; 24 VDC; 0.5 A; Diagnostics
Version	**Extreme**	**Extreme**
Item no.	**750-508/040-000**	**750-537/040-000**
Order text	2DO; 24 VDC; 2A; Diagn; XTR	8DO; 24 VDC; 0.5A; Diagn; XTR
Technical Data		
Number of digital outputs	2	8
Signal type	24 VDC	24 VDC
Output characteristic	High-side switching	High-side switching
Output current per channel	2 A; short-circuit-protected	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load	Resistive; inductive; lamp load
Actuator connection	2-wire; 3-wire	1-wire
Switching frequency (max.)	1 kHz	1 kHz
Diagnostics	Open circuit; overload; short circuit	Open circuit; overload; short circuit
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	14 mA	50 mA
Rated surge voltage	1 kV	1 kV
Data width (internal)	2-bit input; 2-bit output	8-bit input; 8-bit output
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-508/040-000	wago.com/750-537/040-000

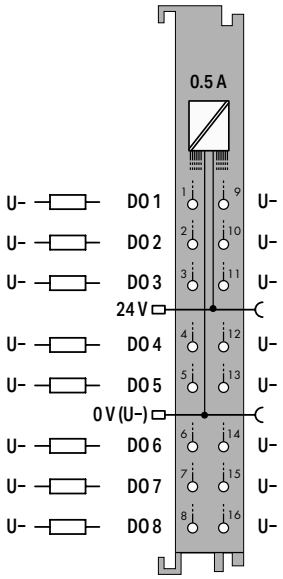
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„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

Digital Output; 24 VDC



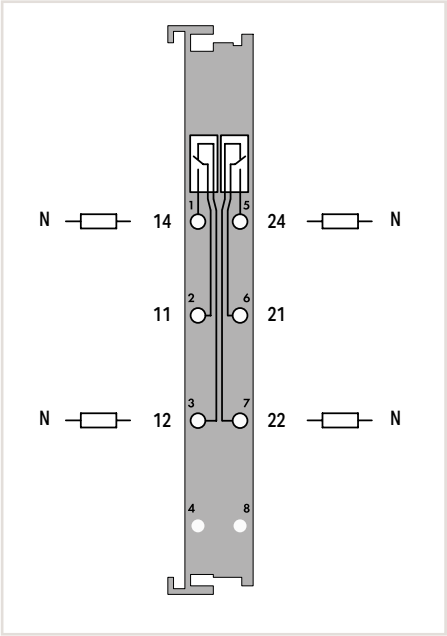


Item Description	**8-Channel Digital Output; 24 VDC; 0.5 A; 2-wire connection**
Version	**Extreme**
Item no.	**750-1515/040-000**
Order text	8DO; 24 VDC; 0.5A; 2-wire; XTR

Technical Data	
Number of digital outputs	8
Signal type	24 VDC
Output characteristic	High-side switching
Output current per channel	0.5 A; short-circuit-protected
Load type	Resistive; inductive; lamp load
Actuator connection	2-wire
Switching frequency (max.)	1 kHz
Diagnostics	Open circuit; overload; short circuit
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	20 mA
Rated surge voltage	1 kV
Data width (internal)	8 bits
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 69 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1515/040-000

Relay Output; 230 VAC





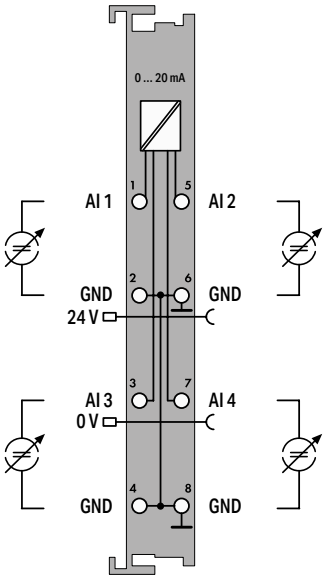
Item Description	2-Channel Relay Output; 250 VAC; 1 A; Relay with 2 changeover contacts
Version	**Extreme**
Item no.	**750-517/040-000**
Order text	2RO; 250 VAC; 1A; Relay2CO; XTR
Technical Data	
Number of digital outputs	2
Switching voltage (max.)	250 VAC; 300 VDC
Output circuit design	2 changeover contacts; relay
Output characteristic	Potential-free
Switching current (max.)	1 A at 250 VAC / 40 VDC; 0.15 A at 300 VDC
Switching current (min.)	100 mA (12 VDC)
Actuator connection	1-wire
Switching frequency (max.)	0.1 Hz
Mechanical switching operations (min.)	5 x 10^6
Electrical switching operations (min.)	10 x 10^5
Current consumption – system supply (5 V)	90 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / to 4,000 m ASL); 4.0 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)
Overvoltage category	Nominal voltage 230 V: IV (EN 60664-1 / to 4,000 m ASL); III (EN 60664-1 / > 4,000 m to 5,000 m ASL)
Data width (internal)	2 bits
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-517/040-000

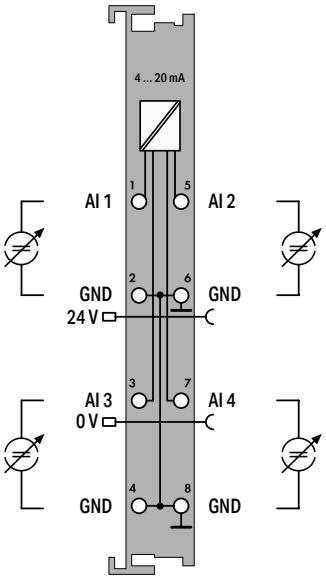
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

Analog Input; 0 … 20 mA or 4 … 20 mA





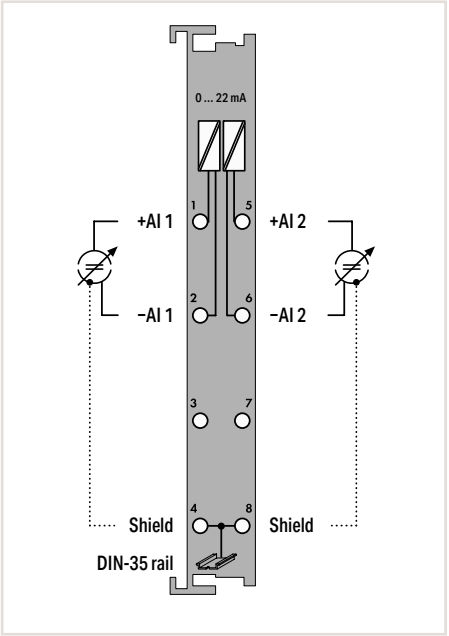


Item Description	4-Channel Analog Input; 0 … 20 mA; single-ended	4-Channel Analog Input; 4 … 20 mA; single-ended
Version	**Extreme**	**Extreme**
Item no.	**750-453/040-000**	**750-455/040-000**
Order text	4AI; 0-20mA; SE; XTR	4AI; 4-20mA; SE; XTR
Technical Data		
Number of analog inputs	4	4
Signal type	0 … 20 mA	4 … 20 mA
Signal characteristic	Single-ended	Single-ended
Resolution	12 bits	12 bits
Conversion time	10 ms	10 ms
Input resistance	< 100 Ω / 20 mA	< 100 Ω / 20 mA
Measuring error max., 25 °C	±0.1 % of the upper-range value	±0.1 % of the upper-range value
Temperature error max.	±0.01 % / K of the upper-range value	±0.01 % / K of the upper-range value
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	65 mA	65 mA
Rated surge voltage	1 kV	1 kV
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-453/040-000	wago.com/750-455/040-000

6

Analog Input; 4 … 20 mA





Item Description	2-Channel Analog Input; 4 … 20 mA; Differential input; NE43
Version	Extreme
Item no.	750-492/040-001
Order text	2AI; 4-20mA; Diff; NE43; XTR

Technical Data	
Number of analog inputs	2
Signal type	3.8 … 20.5 mA (NE43)
Signal characteristic	Differential
Resolution	13 bits
Conversion time	1 ms
Input resistance	< 270Ω / 20mA
Measuring error max., 25 °C	±0.1 % of the upper-range value
Temperature error max.	±0.01 % / K of the upper-range value
Current consumption – system supply (5 V)	80 mA
Rated surge voltage	1 kV
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-492/040-001

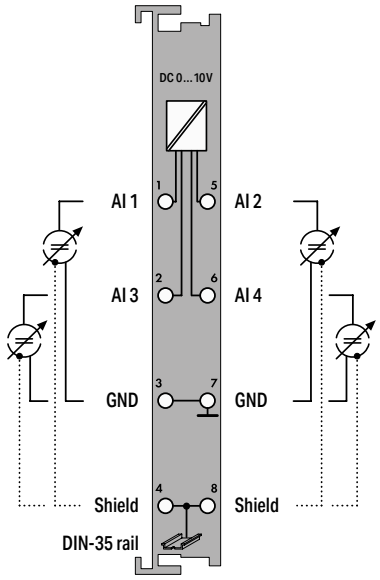
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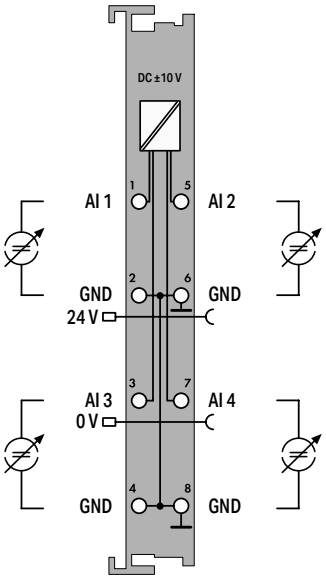
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

Analog Input; 0 … 10 VDC or ±10 VDC





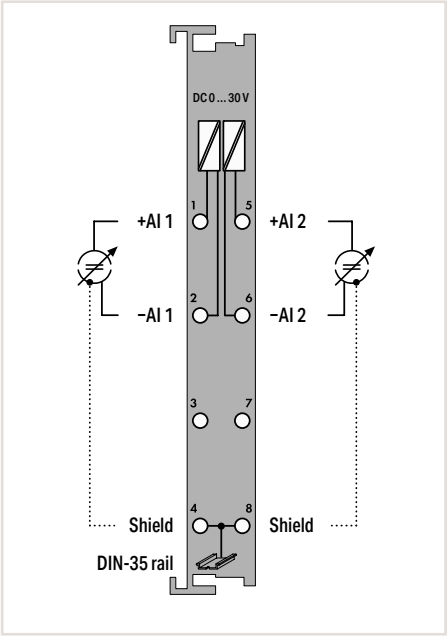


Item Description	4-Channel Analog Input; 0 … 10 VDC; single-ended	4-Channel Analog Input; ±10 VDC; single-ended
Version	**Extreme**	**Extreme**
Item no.	**750-468/040-000**	**750-457/040-000**
Order text	4AI; 0-10 VDC; SE; XTR	4AI; ±10 VDC; SE; XTR
Technical Data		
Number of analog inputs	4	4
Signal type	0 … 10 V	±10 V
Signal characteristic	Single-ended	Single-ended
Resolution	12 bits	12 bits
Conversion time	4 ms	10 ms
Input resistance	133 kΩ	> 100 kΩ
Input voltage (max.)	35 V	±40 V
Measuring error max., 25 °C	±0.2 % of the upper-range value	±0.1 % of the upper-range value
Temperature error max.	±0.01 % / K of the upper-range value	±0.01 % / K of the upper-range value
Supply voltage (field)		24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	60 mA	65 mA
Rated surge voltage	1 kV	1 kV
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-468/040-000	wago.com/750-457/040-000

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Analog Input; 0 … 30 VDC





Item Description	2-Channel Analog Input; 0 … 30 VDC; Differential input
Version	Extreme
Item no.	750-483/040-000
Order text	2AI; 0-30 VDC; Diff; XTR

Technical Data	
Extended functionality	Time-synchronized measured value acquisition within the module
Number of analog inputs	2
Signal type	0 … 30 V
Signal characteristic	Differential
Resolution	14 bits
Conversion time	1 ms
Internal resistance	1 MΩ
Measuring error max., 25 °C	±0.1 % of the upper-range value
Temperature error max.	±0.01 % / K of the upper-range value
Current consumption – system supply (5 V)	80 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)
Rated surge voltage	1 kV
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-483/040-000

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

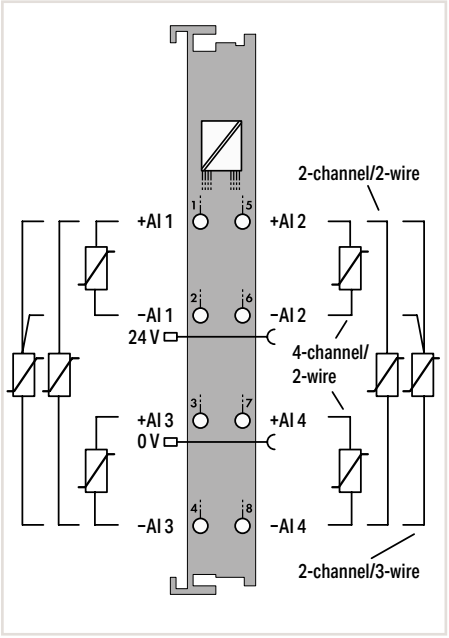
Analog Input; for Resistance Sensors or Thermocouples

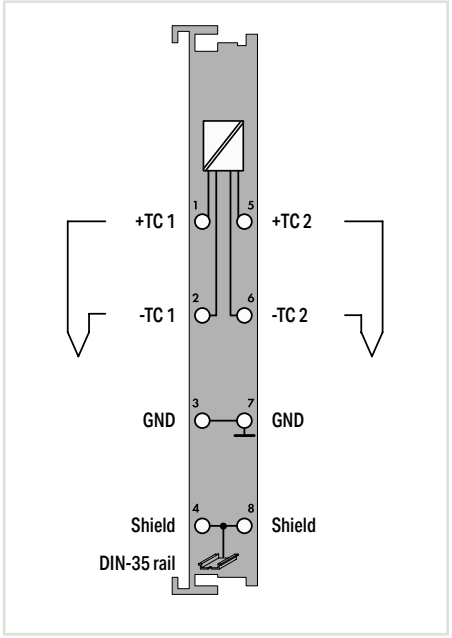


Figure: 750-464/040-000



Figure: 750-469/040-000



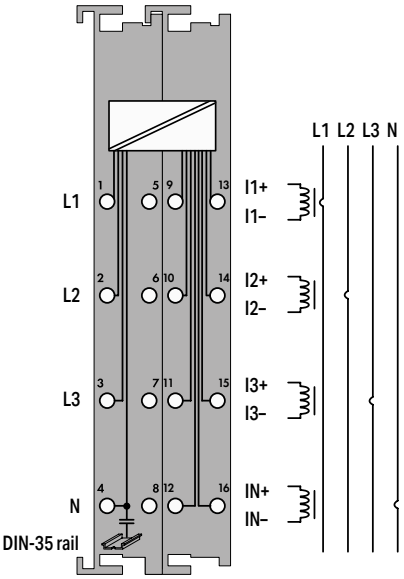


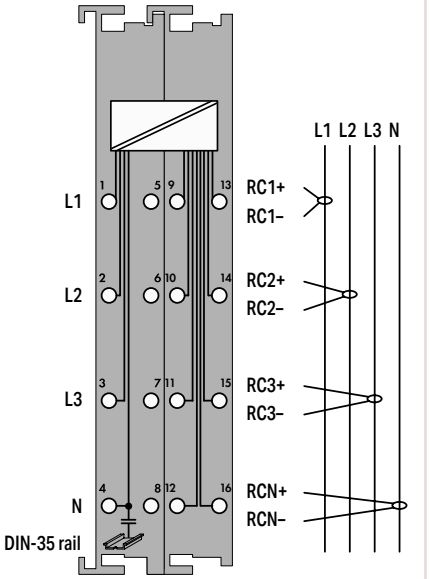
Item Description	2/4-Channel Analog Input; Resistance measurement; adjustable	2-Channel Analog Input; Thermocouple; adjustable
Version	**Extreme**	**Extreme**
Item no.	**750-464/040-000**	**750-469/040-000**
Order text	2/4AI; RTD; Adjust; XTR	2AI; TC; Adjust; XTR
Technical Data		
Number of analog inputs	2/4	2
Signal type	Pt100; Configurable: Pt200; Pt500; Pt1000 (IEC 751); Ni100; Ni1000 (DIN 43760); Ni120 (Minco); Ni1000 (TK 5000); 2-channel operation: Potentiometer; Resistance measurement 10 … 5000 Ω; 10 … 1200 Ω	Type K; Configurable: J; E; S; T; L; N; U; B; R; -30 … +30 mV; -60 … +60 mV; -120 … +120 mV
Sensor connection	2-wire; 3-wire	2-wire
Temperature range	-200 … +850 °C (Pt100 … Pt1000); -60 … +300 °C (Ni100, Ni1000); -60 … +250 °C (Ni1000 TK5000); -80 … +260 °C (Ni120)	Sensor-specific
Resolution	0.1 °C	0.1 °C
Conversion time	320 ms	320 ms
Measured current (typ.)	≤ 350 µA per measurement circuit	
Measuring error max., 25 °C	1 K over entire temperature range; 0.5 K over limited temperature range (-30 °C … +120 °C)	±6 K (voltage input ±2 K; cold junction compensation ±4 K)
Temperature error max.	20 ppm/K; typ. 5 ppm/K	±0.2 K/K
Cold junction compensation		Integrated or external
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	
Current consumption – system supply (5 V)	50 mA	65 mA
Rated surge voltage	1 kV	1 kV
Data width	4 (2) x 16-bit data; 4 (2) x 8-bit control/status (optional)	2 x 16-bit data; 2 x 8-bit control/status (optional)
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-464/040-000	wago.com/750-469/040-000

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Analog Input; for 3-Phase Power Measurement







Item Description	3-Phase Power Measurement; 690 VAC 1 A		3-Phase Power Measurement;
Version	Extreme	690 VAC 5 A; extreme	690 VAC Rogowski coils; extreme
Item no.	750-495/040-000	750-495/040-001	750-495/040-002
Order text	3-PHASE POM; 690VAC 1A; XTR	3-PHASE POM; 690VAC 5A; XTR	3-PHASE POM; 690VAC R.C.; XTR

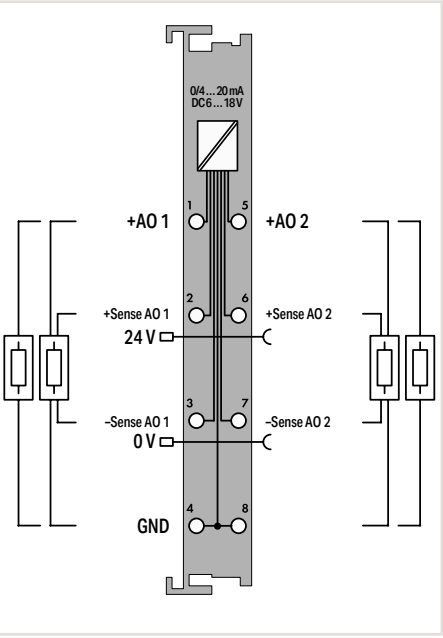
Technical Data

Signal type	3-phase power measurement		3-phase power measurement
Measured variables	Voltage; current; effective power; reactive power; apparent power; power consumption; frequency; cos phi; harmonics (up to the 41st harmonic); THD; current measurement in N-conductor; and more		Voltage; current; effective power; reactive power; apparent power; power consumption; frequency; cos phi; harmonics (up to the 41st harmonic); THD; current measurement in N-conductor; and more
Number of measurement inputs	7 (3 voltage measurement inputs; 4 differential current measurement inputs)		7 (3 voltage measurement inputs; 4 differential current measurement inputs)
Rated voltage	U_{LN} = 400 VAC/DC; U_{LL} = 690 VAC		U_{LN} = 277 VAC/DC; U_{LL} = 480 VAC
Input resistance (voltage path) typ.	1429 kΩ		1429 kΩ
Measuring current (max.)	1 A	5 A	Rogowski coils
Input resistance (current path) typ.	22 mΩ	5 mΩ	44 kΩ
Resolution	24 bits		24 bits
Measuring error max., 25 °C	AC current/voltage: ±0.5 % of the upper-range value		AC current/voltage: ±0.5 % of the upper-range value
Frequency range (mains frequency)	45 … 65 Hz		45 … 65 Hz
Frequency range (harmonics analysis)	0 … 3300 Hz		0 … 3300 Hz
Limit frequency	15.9 kHz		15.9 kHz
Current consumption – system supply (5 V)	100 mA		100 mA
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / to 4,000 m ASL); 4.0 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)		5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 508); 6.0 kV (EN 60664-1 / to 4,000 m ASL); 4.0 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)
Overvoltage category	Nominal voltage 400 V/690 V in a 3-phase system: III (EN 60664-1 / to 4,000 m ASL); II (EN 60664-1 / > 4,000 m up to 5,000 m ASL)		Nominal voltage 400 V/690 V in a 3-phase system: III (EN 60664-1 / to 4,000 m ASL); II (EN 60664-1 / > 4,000 m up to 5,000 m ASL)
Data width	2 x 128-bit data; 2 x 64-bit control/status		2 x 128-bit data; 2 x 64-bit control/status
Surrounding air temperature (operation)	–40 … +70 °C		–40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm		24 x 67.8 x 100 mm
Approvals	CE; KC; Marine; ATEX/IECEx		CE; KC; Marine; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-495/040-000	wago.com/750-495/040-001	wago.com/750-495/040-002

Accessories	Item no.	Item no.
Split-core and plug-in current transformers	See Full Line Catalog, Volume 4	
Rogowski coils		See Full Line Catalog, Volume 4

Analog Output; Configurable 0/4 … 20 mA; 6 … 18 VDC





Item Description	**2-Channel Analog Output; 0/4 … 20 mA; 16 bits; 6 … 18 VDC**
Version	**Extreme**
Item no.	**750-563/040-000**
Order text	2AO; 0/4-20mA; 16Bit; 6-18 VDC; XTR
Technical Data	
Number of analog outputs	2
Signal type	0 … 20 mA; 4 … 20 mA; 6 … 18 V
Load impedance	> 1.8 kΩ (voltage output); < 500 Ω (current output)
Resolution	16 bits
Conversion time	5 ms
Output error max., 25 °C	±0.05 % of the upper-range value
Temperature error max.	±100 ppm
Supply voltage (field)	24 VDC (-15 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C; for −40 … +55 °C: 24 V (min. … +20 %); for +55 … +70 °C: 24 V (min. … +10 %); Voltage range (min.): 21.6 V; Current range (min.): 20.4 V; Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	80 … 110 mA
Rated surge voltage	1 kV
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-563/040-000

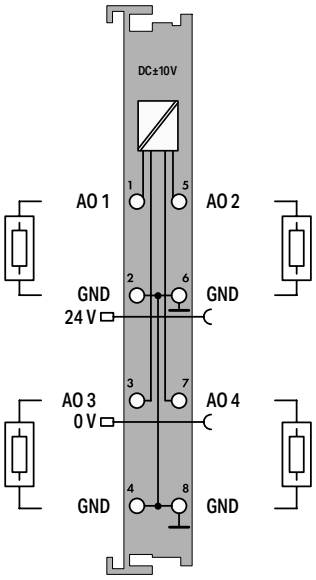
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

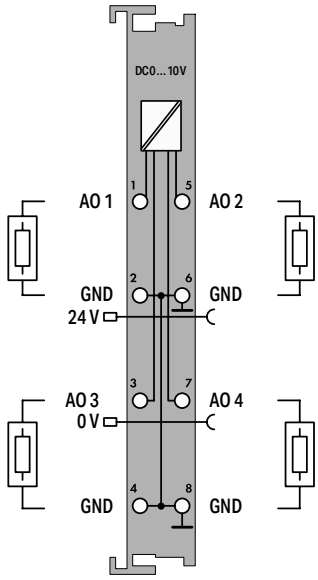
„ Approvals and corresponding ratings, see page 526 or www.wago.com

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Analog Output; ±10 VDC or 0 … 10 VDC







Item Description	4-Channel Analog Output; ±10 VDC	4-Channel Analog Output; 0 … 10 VDC
Version	Extreme	Extreme
Item no.	750-557/040-000	750-559/040-000
Order text	4AO; ±10V DC; XTR	4AO; 0-10V DC; XTR
Technical Data		
Number of analog outputs	4	4
Signal type	±10 V	0 … 10 V
Load impedance	> 5 kΩ	> 5 kΩ
Resolution	12 bits	12 bits
Conversion time	10 ms	10 ms
Output error max., 25 °C	±0.1 % of the upper-range value	±0.1 % of the upper-range value
Temperature error max.	±0.01 % / K of the upper-range value	±0.01 % / K of the upper-range value
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	125 mA	125 mA
Rated surge voltage	1 kV	1 kV
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)	4 x 16-bit data; 4 x 8-bit control/status (optional)
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-557/040-000	wago.com/750-559/040-000

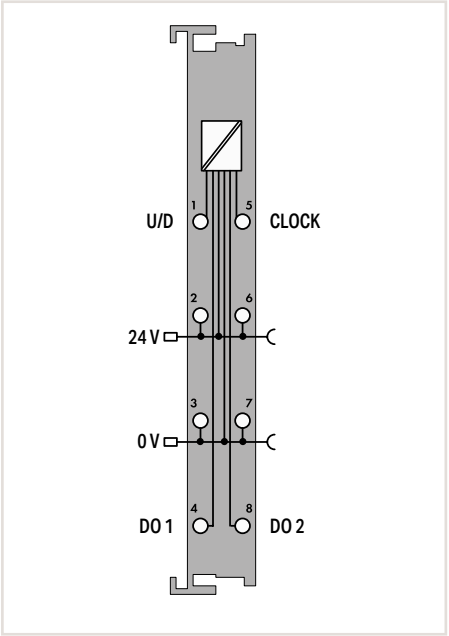
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„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526, 527 or www.wago.com

Counter

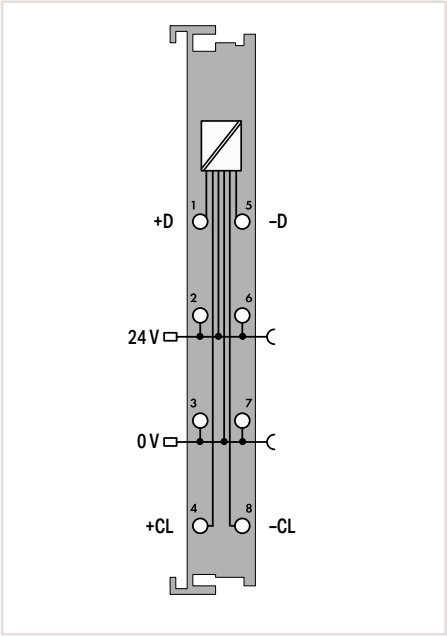




Item Description	**Counter; adjustable**
Version	**Extreme**
Item no.	**750-404/040-003**
Order text	Counter; Adjust; XTR
Technical Data	
No. of outputs	2
Number of counters	1
Voltage range for signal (0)	−3 … +5 VDC
Voltage range for signal (1)	15 … 30 VDC
Output current	0.5 A; short-circuit-protected
Switching frequency (max.)	100 kHz
Pulse width (min.)Pulse width (min.)	10 µs
Input current (typ.)	7 mA
Counter depth	32 bits
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	70 mA
Rated surge voltage	1 kV
Data width (internal)	32-bit data; 8-bit control/status
Operating modes	Up/down counter/100 kHz; Up counter/enable input; Peak-time counter; Frequency measurement: 0.1 Hz … 100 kHz*; Up/down counter/signal outputs (DO); Two up counters/16 bits/5 kHz *Default setting
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-404/040-003

SSI Transmitter Interface





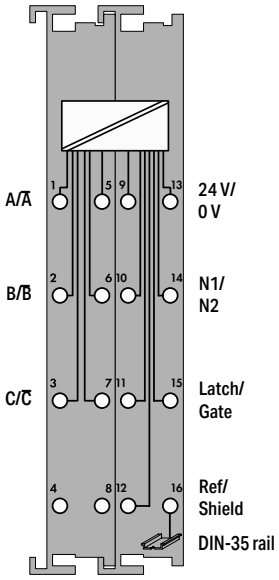
Item Description	**SSI Transmitter Interface; adjustable**
Version	**Extreme**
Item no.	**750-630/040-001**
Order text	SSI Interface; Adjust; XTR
Technical Data	
Transmitter connection	On + D; - D; Off + Cl; - Cl
Transmitter supply	24 VDC; via power jumper contacts
Baud rate	62.5 … 250 kHz
Serial input	Data width: 1 … 32 bits
Signal output	Differential signal (RS-422)
Signal input	Differential signal (RS-422)
Code	Gray code/binary code
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	20 mA
Data width (internal)	1 x 32-bit; 1 x 8-bit control/status (optional) (24-bit data, 8 bits reserved)
Rated surge voltage	1 kV
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-630/040-001

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com

Incremental Encoder Interface



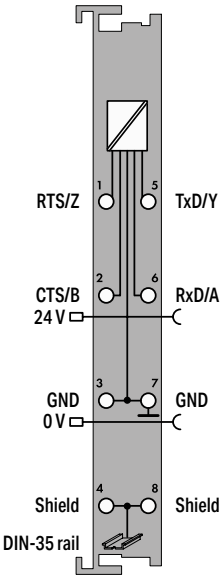


Item Description	Incremental Encoder Interface; 24 VDC; Differential input; 32 bits
Version	**Extreme**
Item no.	**750-637/040-001**
Order text	Inc. Encoder; 24 VDC; Diff; 32Bit; XTR
Technical Data	
Transmitter connection	A; /A; B; /B; C; /C (differential inputs)
Counter	32 bits (binary)
Limit frequency	250 kHz
Quadrature decoder	4x report
Zero impulse latch	32 bits
Commands	Reading; setting; activating
Current consumption (typ.)	35 mA; without transmitter
Output voltage	24 VDC
Output current (max.)	0.5 A; short-circuit-protected
Voltage range for signal (0)	(U_{ABC} - $U_{ABC/}$): -30 … +15 VDC; Latch, Gate, Ref.: -3 … +5 VDC
Voltage range for signal (1)	(U_{ABC} - $U_{ABC/}$): 15 … 30 VDC; Latch, Gate, Ref.: 15 … 30 VDC
Input current (typ.)	Latch 7 mA; gate 7 mA; ref. 7 mA
Current consumption – system supply (5 V)	110 mA
Data width (internal)	1 x 32-bit data; 2 x 8-bit control/status
Rated surge voltage	1 kV
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-637/040-001

6

Serial Interface RS-232/485





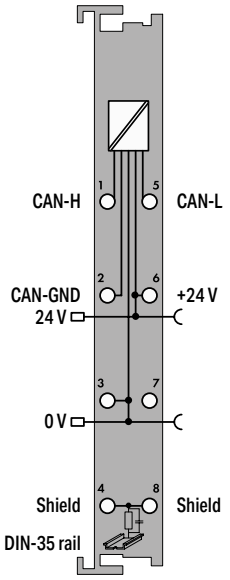
Item Description	Serial Interface RS-232/485
Version	Extreme
Item no.	750-652/040-000
Order text	RS232/485 Interface; XTR
Technical Data	
Signal type	RS-232; RS-422; RS-485
Transmission channels	1 TxD / 1 RxD; full-duplex; half-duplex
Baud rate	9600 Bd (default setting); 300 … 115200 Bd
Parity	None/Odd/Even
Number of data bits	7/8; adjustable
Number of stop bits	1/2; adjustable
Buffer	2560 bytes for reception; 512 bytes for transmission
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current consumption – system supply (5 V)	85 mA
Rated surge voltage	1 kV
Data width (internal)	8, 24 or 48 bytes (parametrizable)
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-652/040-000

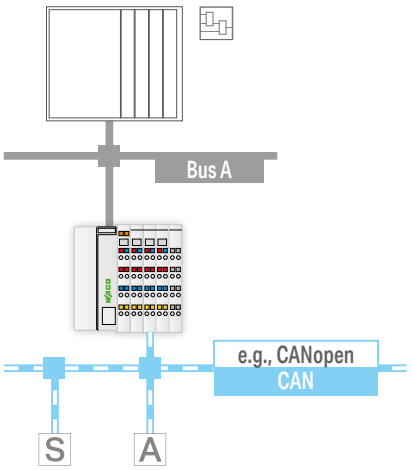
„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com

CAN Gateway







Item Description	CAN Gateway
Version	Extreme
Item no.	750-658/040-000
Order text	CAN Gateway; XTR
Technical Data	
Number of CAN interfaces	1
Baud rate	10 kbit/s; 20 kbit/s; 50 kbit/s; 125 kbit/s; 250 kbit/s; 500 kbit/s; 800 kbit/s; 1 Mbit/s (automatic baud rate)
Data formats	Per 2.0 A standard (11-bit ID); Per 2.0 B extended (29-bit ID)
Operating modes	Sniffer mode; Transparent mode; Mapped mode
Current consumption – system supply (5 V)	50 mA
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption (field supply) (module with no external load)	15 mA
Data transfer time	5 ms (at 32-bit I/O)
Data width (internal)	8, 12, 16, 20, 24, 32, 40, 48 bytes Configurable; including 1 control/status byte
Rated surge voltage	1 kV
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-658/040-000

The CAN Gateway allows a CAN bus to be installed as a sub-bus beneath a fieldbus coupler or controller. It enables special sensors/actuators that are only available with the widely spread CAN bus to also be integrated under other bus systems. Function blocks allow the gateway to read and write higher-protocol telegrams (e.g., CANopen).

The module offers three different operating modes:

- Sniffer mode: Detailed analysis of the CAN bus through passive "snooping"
- Transparent mode: Active CAN subscriber that can send and receive any type of CAN telegram
- Mapped mode: Enables direct generation of CAN telegrams from the process image, or selective copying of process values from received CAN telegrams into the input process image (cyclic or event-based)

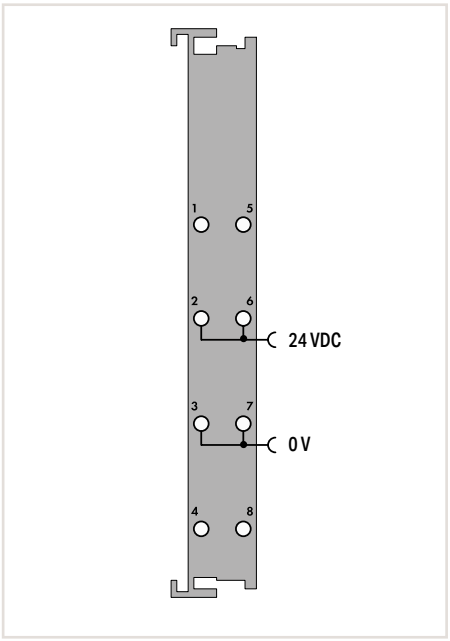
Power Supply; 24 VDC or 0 … 230 VAC/DC
System Power Supply; 24 VDC

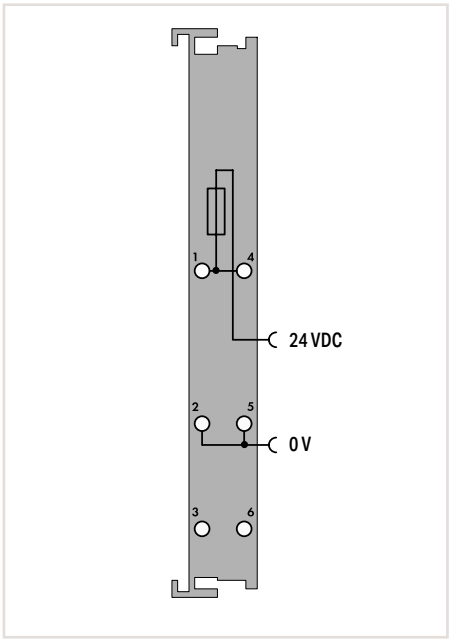


Figure: 750-602/040-000



Figure: 750-601/040-000

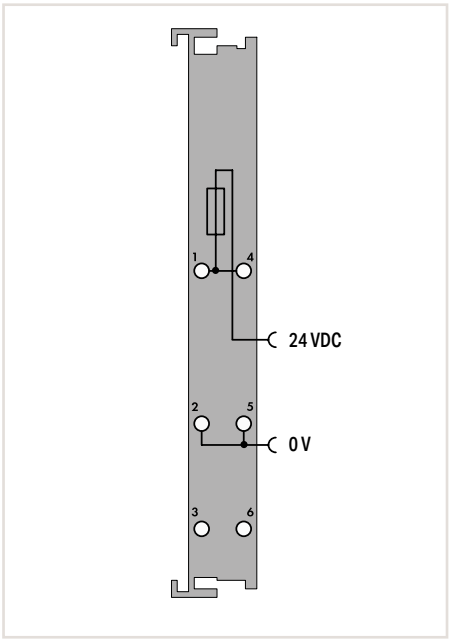




Item Description	Power Supply; 24 VDC	Power Supply; 24 VDC; Fuse holder
Version	**Extreme**	**Extreme**
Item no.	**750-602/040-000**	**750-601/040-000**
Order text	Power Supply; 24 VDC; XTR	Power Supply; 24 VDC; Fuse; XTR
Technical Data		
Supply voltage (system)	5 VDC; via data contacts	5 VDC; via data contacts
Input current (typ.) at nominal load (24 V)		
Total current (system supply)		
Supply voltage (field)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (-25 … 30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	10 A	10 A
Fuse	5 x 20; T max. 6.3 A (not included)	
Diagnostics		
Current consumption – system supply (5 V)		
Data width (internal)		
Rated surge voltage	1 kV	1 kV
Overvoltage category		
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx	CE; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-602/040-000	wago.com/750-601/040-000
	This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules.	This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com



Power Supply; 24 VDC; Fuse holder; Diagnostics

Extreme

750-610/040-000

Power Supply; 24 VDC; Fuse Diagn; XTR

5 VDC; via data contacts

24 VDC (-25 … 30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact);
Specified values for surrounding air temperatures:
+15 … +35 °C;
for −40 … +55 °C: 24 V (−25 … +20 %);
for +55 … +70 °C: 24 V (−25 … +10 %);
Lower limit in all temperature ranges:
−27.5 % (including 15 % residual ripple)

6.3 A

5 x 20; T max. 6.3 A
(not included)

Supply voltage (field):
Detection "on" at > 15 VDC;
Detection "off" at < 5 VDC

5 mA

2 bits (1 bit current monitoring; 1 bit fuse fault)

1 kV

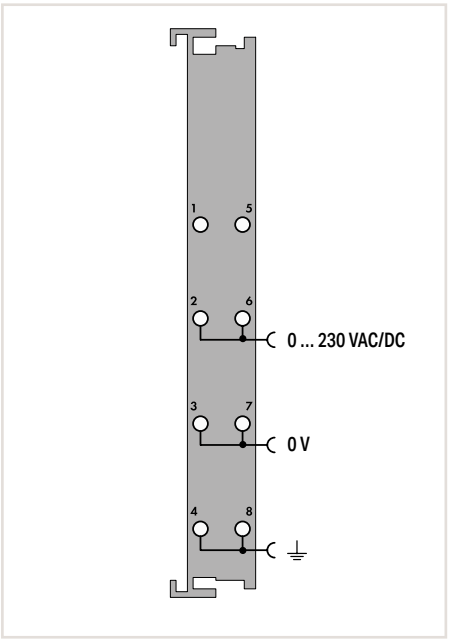
−40 … +70 °C

12 x 67.8 x 100 mm

CE; Marine; OrdLoc/HazLoc; ATEX/IECEx

wago.com/750-610/040-000

This I/O module provides the applied supply voltage, protected by fuse, to the field devices connected to downstream I/O modules. A blown fuse is indicated by an LED. The fuse status can also be queried from the fieldbus coupler.



Power Supply; 0 … 230 VAC/DC

Extreme

750-612/040-000

Power Supply; 0-230 VAC/VDC; XTR

5 VDC; via data contacts

0 … 230 VAC/DC (-20 … 25 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact)

6.3 A

5.0 kV (EN 60870-2-1 / Class VW3);
6.0 kV (UL 508);
6.0 kV (EN 60664-1 / to 4,000 m ASL);
4.0 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)

Nominal voltage 230 V:
IV (EN 60664-1 / to 4,000 m ASL);
III (EN 60664-1 / > 4,000 m to 5,000 m ASL)

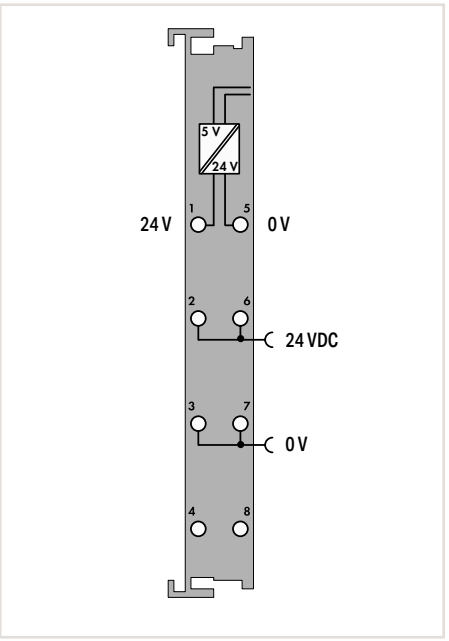
−40 … +70 °C

12 x 67.8 x 100 mm

CE; ; Marine; OrdLoc/HazLoc; ATEX/IECEx

wago.com/750-612/040-000

This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules.



System Power Supply; 24 VDC

Extreme

750-613/040-000

System Power Supply; 24 VDC; XTR

24 VDC (−25 … +30 %); power supply and transmission via CAGE CLAMP® connection

500 mA

2000 mA

24 VDC (-25 … 30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact);
Specified values for surrounding air temperatures:
+15 … +35 °C;
for −40 … +55 °C: 24 V (−25 … +20 %);
for +55 … +70 °C: 24 V (−25 … +10 %);
Lower limit in all temperature ranges:
−27.5 % (including 15 % residual ripple)

10 A

1 kV

−40 … +70 °C

12 x 67.8 x 100 mm

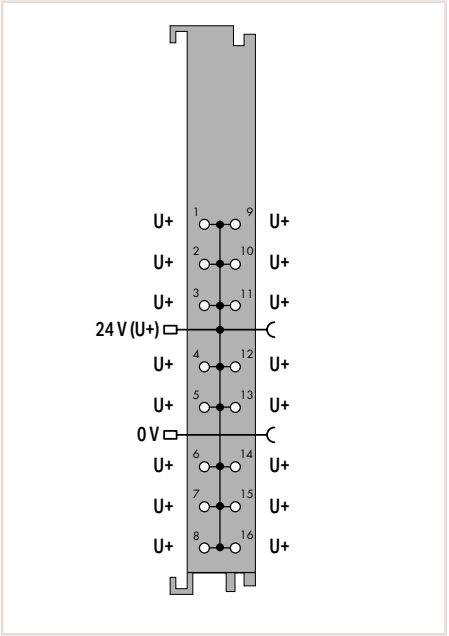
CE; ; Marine; OrdLoc/HazLoc; ATEX/IECEx

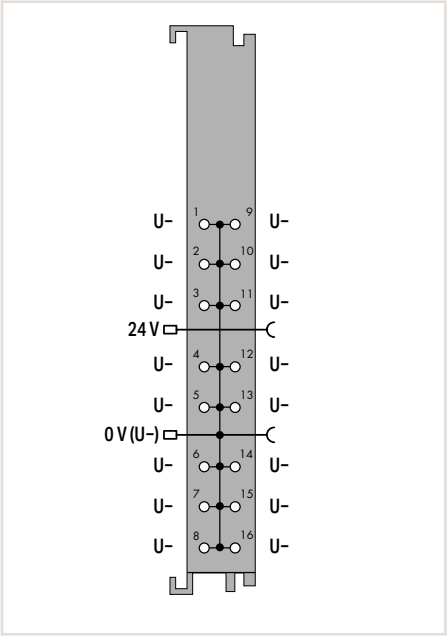
wago.com/750-613/040-000

This I/O module provides the applied supply voltage to the field devices connected to downstream I/O modules. It also serves as an additional system supply for large nodes, covering the power demands of the I/O modules themselves.

Potential Distribution







Item Description	Potential Distribution; 16x 24 V	Potential Distribution; 16x 0 V
Version	Extreme	Extreme
Item no.	750-1605/040-000	750-1606/040-000
Order text	Potential Distribution; 16*24V; XTR	Potential Distribution; 16*0V; XTR
Technical Data		
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	10 A	10 A
Rated surge voltage	1 kV	1 kV
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 69 x 100 mm	12 x 69 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-1605/040-000	wago.com/750-1606/040-000

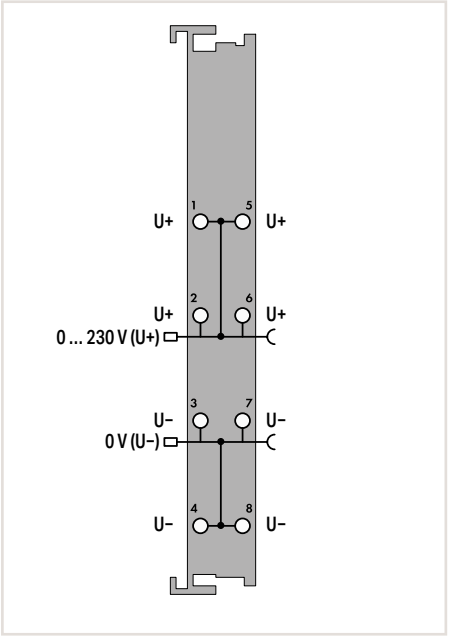
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„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com

Potential Distribution





Item Description	Potential Distribution
Version	**Extreme**
Item no.	**750-614/040-000**
Order text	Potential Distribution; XTR
Technical Data	
Supply voltage (field)	0 … 230 VAC/DC; via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current carrying capacity (power jumper contacts)	10 A
Rated surge voltage	5.0 kV (EN 60870-2-1 / Class VW3); 6.0 kV (UL 61010); 6.0 kV (EN 60664-1 / to 4,000 m ASL); 4.0 kV (EN 60664-1 / > 4,000 m to 5,000 m ASL)
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-614/040-000

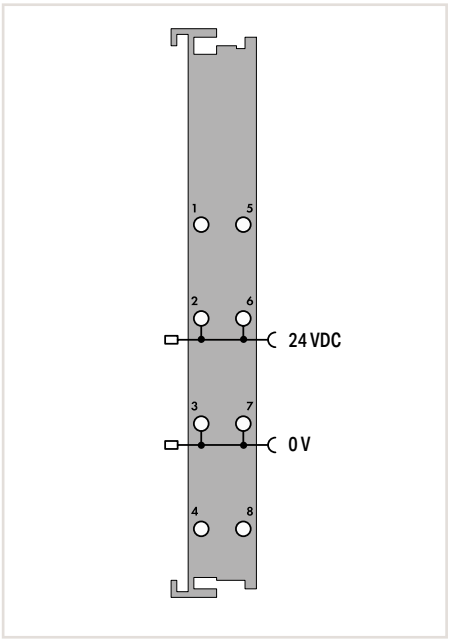
Field Supply Filter (Surge)

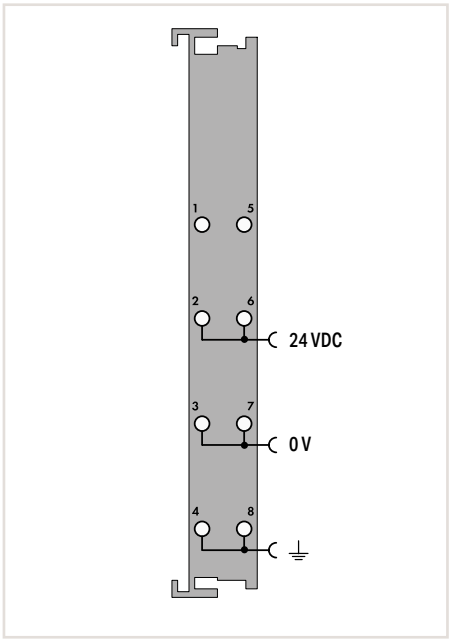


Figure: 750-624/040-000



Figure: 750-624/040-001





Item Description	Field Supply Filter (Surge); 24 VDC; Higher isolation	Field Supply Filter (Surge); 24 VDC; Higher isolation
Version	**Extreme**	**Without power jumper contacts; extreme**
Item no.	**750-624/040-000**	**750-624/040-001**
Order text	Field Supply Filter; 24 VDC; HI; XTR	Field Supply Filter; 24 VDC; HI; NC; XTR
Technical Data		
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact); Specified values for surrounding air temperature: +15 … +35 °C; For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	10 A	10 A
Rated surge voltage	1 kV	1 kV
Use	In marine and onshore/offshore applications, as well as in telecontrol and rail technology	In marine and onshore/offshore applications, as well as in telecontrol and rail technology
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm	12 x 67.8 x 100 mm
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-624/040-000	wago.com/750-624/040-001

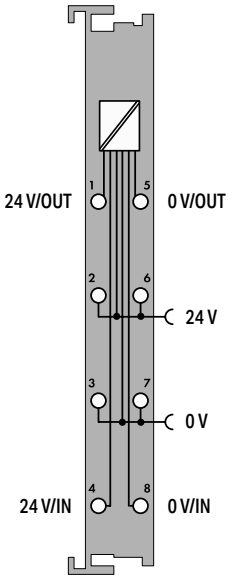
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„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com

Supply Filter



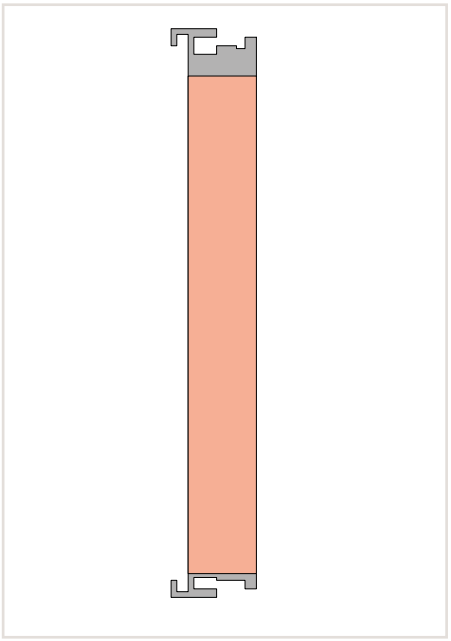


Item Description	**Supply Filter; 24 VDC; Higher isolation**
Version	**Extreme**
Item no.	**750-626/040-000**
Order text	Supply Filter; 24 VDC; HI; XTR
Technical Data	
Supply voltage (system)	24 VDC (−25 … +30 %); power supply and transmission via CAGE CLAMP® connection
Current via system voltage (max.)	1.5 A
Supply voltage (field)	24 VDC (−25 … +30 %); via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact) Specified values for surrounding air temperature: +15 … +35 °C; For −40 … +55 °C: 24 V (−25 … +20 %); For +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	10 A
Rated surge voltage	1 kV
Use	In marine and onshore/offshore applications, as well as in telecontrol and rail technology
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-626/040-000

6

Distance Module





Item Description	**Distance Module**
Version	**Extreme**
Item no.	**750-616/040-000**
Order text	Distance Module; XTR
Technical Data	
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 69.8 x 100 mm
Approvals	CE; KC; Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx
Data sheet and further information, see:	wago.com/750-616/040-000

A distance module visually divides a fieldbus node into sections.

Notice:
Operation of the adjacent I/O modules requires a supply module.

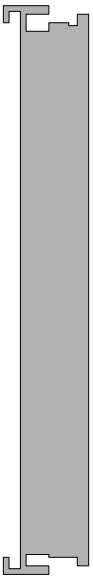
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„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com

End Module





Item Description	End Module
Version	Extreme
Item no.	750-600/040-000
Order text	End Module; XTR
Technical Data	
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Approvals	CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-600/040-000

An end module must be snapped onto the assembly at the end of a fieldbus node.
The end module completes the internal data bus, ensuring flawless data transmission.

6

Intrinsically Safe XTR Modules

Specialty housing	
Dimensions W x H x D	48 x 70.9 x 100
Height from upper-edge of DIN-rail	63.7 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.25 … 1.5 mm² / 24 … 14 AWG
Strip length	5 … 6 mm / 0.22 inch

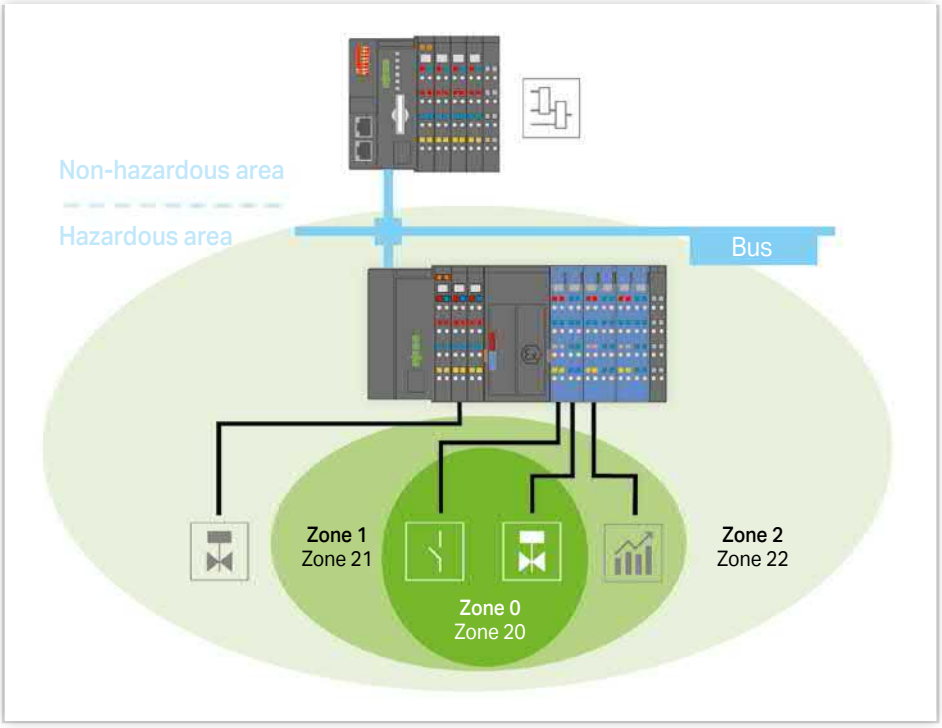
Housing design (750 Series)	
Dimensions W x H x D	12 or 24 x 67.8 x 100 mm
Height from upper-edge of DIN-rail	60.6 mm
Connection technology	CAGE CLAMP®
Conductor cross section	0.25 … 2.5 mm² / 24 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch



6

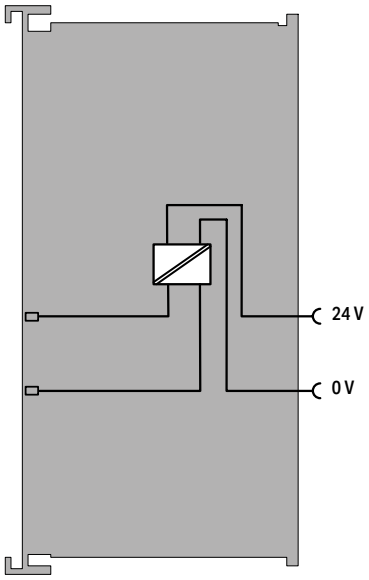
Use in Hazardous Locations in eXTReme Environments

In many plants across the oil and gas industry, along with those in the chemical and petrochemical industries and the process automation sector, installations are operated that process explosive gas- or dust-air mixtures under extreme conditions. This is why electrical equipment must be explosion-proof in order to avoid injuries to personnel and damage to facilities.
When used in hazardous areas of Zone 2/22, the WAGO-I/O-SYSTEM 750 XTR offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. Surrounding air temperatures from −40 to +70°C are permissible, as well as increased vibration loads up to 5g. The "blue" Ex i XTR I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard 750 XTR Series node, offering all the advantages of state-of-the-art fieldbus technology. The WAGO-I/O-SYSTEM 750 XTR is also approved for mining applications.



Power Supply; 24 VDC; Extreme; for Intrinsically Safe XTR Modules



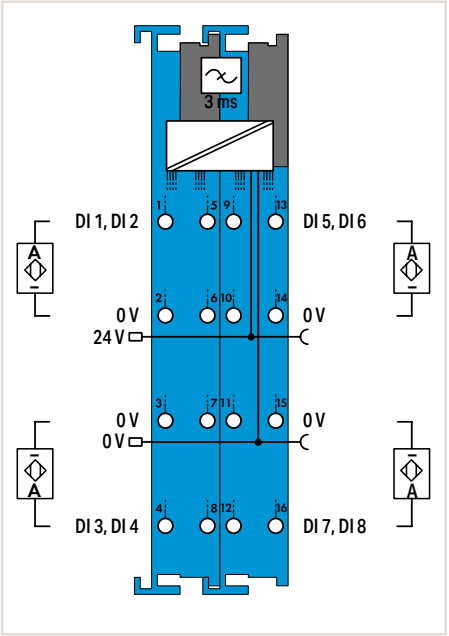


Item Description	**Power Supply; 24 VDC; intrinsically safe**
Version	**Extreme**
Item no.	**750-606/040-000**
Order text	Power Supply; 24 VDC; Ex i; XTR
Technical Data	
Current consumption – system supply (5 V)	7.5 mA
Supply voltage (field)	24 VDC; via power jumper contacts (power supply via CAGE CLAMP® connection; transmission via spring contact); Specified values for surrounding air temperatures: +15 … +35 °C; for −40 … +55 °C: 24 V (−25 … +20 %); for +55 … +70 °C: 24 V (−25 … +10 %); Lower limit in all temperature ranges: −27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	1 ADC
Fuse	Electronic
Data width	2 bits (input voltage failure; fuse triggered)
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	24 x 70.9 x 100 mm
Explosion protection	
Power supply (input)	U_n = 24 VDC; P_{max} = 29 W; U_m = 253 V
Power supply (output)	U_o = 26.8 V (intrinsically safe output voltage per protection level ia); I_n = 1 A
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3G Ex ec IIC T4 Gc
Data sheet and further information, see:	wago.com/750-606/040-000

This supply module monitors power supply to the downstream Ex i segment and separates the intrinsically safe from the non-intrinsically safe section of the I/O system. Input and output sides are electrically isolated from each other.
Note: If, due to load conditions, more than one supply module is required per station, four distance modules (750-616/040-000) must be placed between the intrinsically safe sections.
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 XTR manuals!

8-Channel Digital Input; NAMUR; Intrinsically Safe; Extreme





Item Description	8-Channel Digital Input; NAMUR; intrinsically safe
Version	**Extreme**
Item no.	**750-439/040-000**
Order text	8DI; NAMUR; Ex i; XTR
Technical Data	
Number of digital inputs	8
Signal type	NAMUR
Sensor connection	2-wire
Input characteristic	High-side switching
Input filter (digital)	3 ms
Open-circuit voltage	8.2 VDC
Diagnostics	Short circuit; wire break
Supply voltage (sensor)	8.2 VDC; short-circuit-protected; isolated channels
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	56 mA
Data width (internal)	2 x 16 bits
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 11.76 V; I_o = 12.48 mA; P_o = 36.67 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 100 mH; C_o = 1.5 µF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 9.9 µF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 39 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 38 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-439/040-000

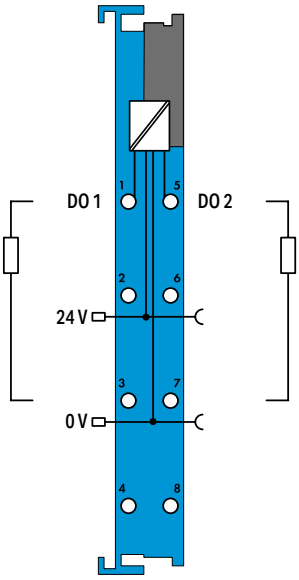
Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

2-Channel Digital Output; 24 VDC; Intrinsically Safe; Extreme





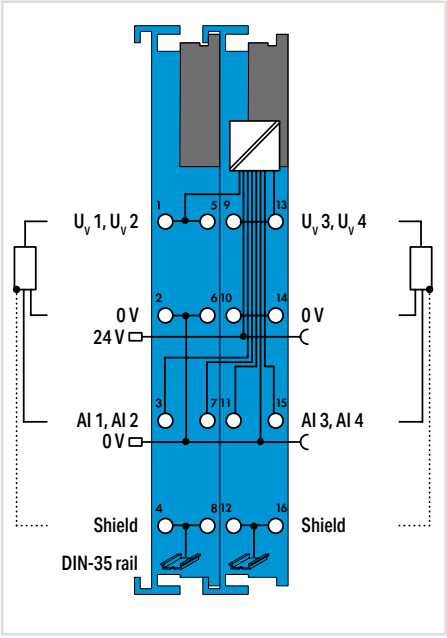
Item Description	2-Channel Digital Output; 24 VDC; intrinsically safe
Version	**Extreme**
Item no.	**750-535/040-000**
Order text	2DO; 24 VDC; Ex i; XTR
Technical Data	
Number of digital outputs	2
Signal type	24 VDC
Output characteristic	High-side switching
Load type	Resistive; inductive; lamp load
Actuator connection	2-wire
Switching frequency (max.)	1 kHz
Actuator supply voltage	24 VDC
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	7 mA
Data width (internal)	2 bits
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	12 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 26.8 V; I_o = 99.91 mA; P_o = 669.43 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 1.1 mH; C_o = 0.092 µF
Reactances Ex ia IIB	L_o = 12 mH; C_o = 0.72 µF
Reactances Ex ia IIA	L_o = 21 mH; C_o = 2.37 µF
Reactances Ex ia I	L_o = 30 mH; C_o = 3.85 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-535/040-000

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

6

4-Channel Analog Input; 0/4 … 20 mA; NE43; Intrinsically Safe; Extreme





Item Description	4-Channel Analog Input; 0/4 … 20 mA; intrinsically safe
Version	**Extreme**
Item no.	**750-486/040-000**
Order text	4AI; 0/4-20mA; Ex i; XTR
Technical Data	
Number of analog inputs	4
Signal type	0 mA … 20 mA; 4 mA … 20 mA; 3.6 … 21 mA
Signal characteristic	Single-ended
Input resistance	< 200 Ω
Resolution	12 bits + sign bit
Conversion time	< 10 ms
Measuring error max., 25 °C	±0.1 % of the upper-range value
Temperature error max.	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	45 mA
Transmitter supply	U_V = 15 V at 20 mA
Data width	4 x 16-bit data; 4 x 8-bit control/status (optional)
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 26.8 V; I_o = 92.72 mA; P_o = 621.27 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 1.6 mH; C_o = 0.082 µF
Reactances Ex ia IIB	L_o = 15 mH; C_o = 0.71 µF
Reactances Ex ia IIA	L_o = 25 mH; C_o = 2.36 µF
Reactances Ex ia I	L_o = 36 mH; C_o = 3.84 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-486/040-000

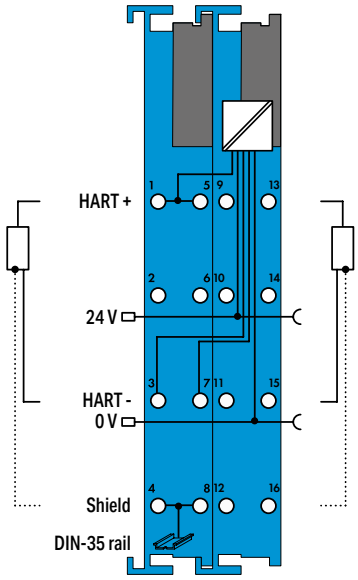
Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

2-Channel Analog Input; 4 … 20 mA HART; Intrinsically Safe; Extreme





Item Description	**2-Channel Analog Input; 4 … 20 mA HART; intrinsically safe**
Version	**Extreme**
Item no.	**750-484/040-000**
Order text	2AI; 4-20mA HART; Ex i; XTR
Technical Data	
Number of analog inputs	2
Signal type	4 … 20 mA
Signal characteristic	Single-ended
Resolution	12 bits
Conversion time	10 ms
Measuring error max., 25 °C	0.2 % of the upper-range value
Temperature error max.	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA
Transmitter supply	U_V = 16.5 V at 20 mA
Data width	2 x 2-byte data; 2 x 2-byte data + 2n x 4-byte data (n = number of dynamic variables); 2 x 2-byte data + 6-byte mailbox
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 26.8 V; I_o = 90.07 mA; P_o = 603.5 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 1.8 mH; C_o = 0.092 µF
Reactances Ex ia IIB	L_o = 16 mH; C_o = 0.72 µF
Reactances Ex ia IIA	L_o = 27 mH; C_o = 2.37 µF
Reactances Ex ia I	L_o = 38 mH; C_o = 3.85 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-484/040-000

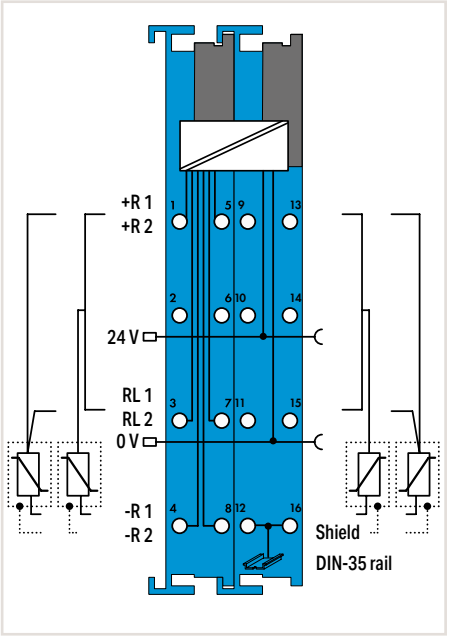
In addition to the analog signal processing, this product offers the option of HART communication for parameterizing or recording side variables.

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

6

2-Channel Analog Input; Resistance Measurement; Intrinsically Safe; Extreme





Item Description	2-Channel Analog Input; Resistance measurement; intrinsically safe
Version	**Extreme**
Item no.	**750-481/040-000**
Order text	2AI; RTD; Ex i; XTR
Technical Data	
Number of analog inputs	2
Signal type	Resistance thermometers: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000; Resistors: 1.2 kΩ, 5 kΩ; Potentiometer setting: 0 … 100 % (1.2 kΩ, 5 kΩ)
Sensor connection	2-wire; 3-wire
Temperature range	-200 … + 850 °C (Pt); -60 … +250 °C (Ni); -80 … +320 °C (Ni120)
Resolution	0.1 °C; 0.1 Ω; 0.0049 %
Conversion time	150 … 500 ms (per channel)
Measuring error max., 25 °C	±0.2 % of the upper-range value
Temperature error max.	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA
Data width	2 x 16-bit data; 2 x 8-bit control/status (optional)
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 7.2 V; I_o = 5.8 mA; P_o = 10.5 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 100 mH; C_o = 13.5 µF
Reactances Ex ia IIB	L_o = 100 mH; C_o = 240 µF
Reactances Ex ia IIA	L_o = 100 mH; C_o = 1000 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 1000 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-481/040-000

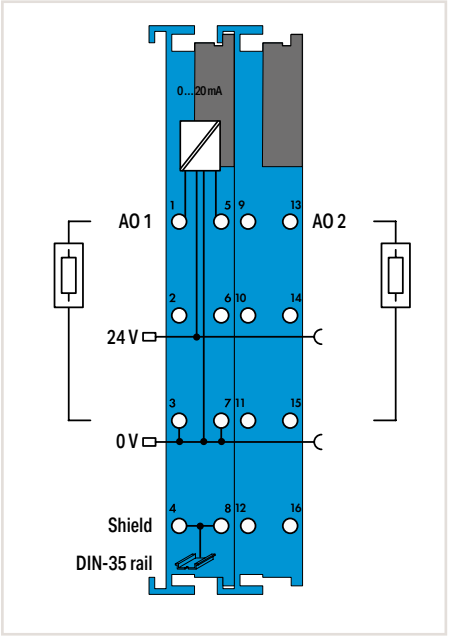
Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 526 or www.wago.com

2-Channel Analog Output; 0 … 20 mA; Intrinsically Safe; Extreme





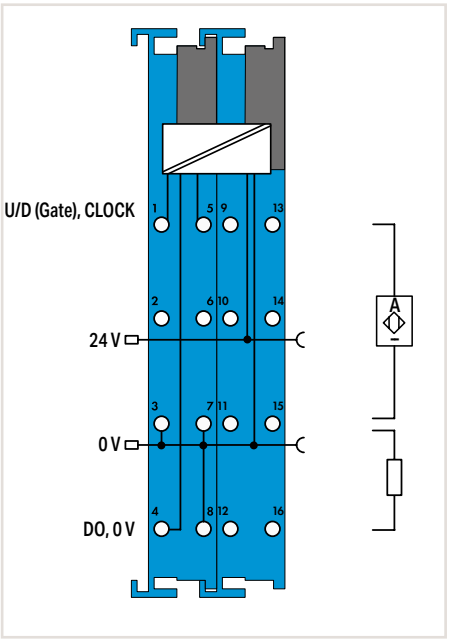
Item Description	**2-Channel Analog Output; 0 … 20 mA; intrinsically safe**
Version	**Extreme**
Item no.	**750-585/040-000**
Order text	2AO; 0-20mA; Ex i; XTR
Technical Data	
Number of analog outputs	2
Signal type	0 … 20 mA
Signal characteristic	Single-ended
Load impedance	< 500 Ω
Resolution	12 bits
Conversion time	< 2 ms
Output error max., 25 °C	±0.2 % of the upper-range value
Temperature error max.	±0.01 %/K of the upper-range value
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	21 mA
Data width	2 x 16-bit data
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	−40 … +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety-relevant data (circuit)	U_o = 26.8 V; I_o = 56.4 mA; P_o = 378 mW; Linear characteristic curve
Reactances Ex ia IIC	L_o = 8.2 mH; C_o = 0.092 µF
Reactances Ex ia IIB	L_o = 46 mH; C_o = 0.72 µF
Reactances Ex ia IIA	L_o = 76 mH; C_o = 2.37 µF
Reactances Ex ia I	L_o = 100 mH; C_o = 3.85 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-585/040-000

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

6

Up/Down Counter; Intrinsically Safe; Extreme





Item Description	Up/Down Counter; intrinsically safe
Version	**Extreme**
Item no.	**750-633/040-000**
Order text	Up/Down Counter; Ex i; XTR
Technical Data	
Number of counters	1
No. of outputs	1
Sensor supply U_V	8.2 VDC
Input filter	10 µs
Switching frequency	20 Hz ... 50 kHz
Counter depth	32 bits
Output voltage	24 VDC
Supply voltage (field)	24 VDC (Ex i XTR power supply U_o = max. 26.8 V); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption – system supply (5 V)	25 mA
Data width	1 x 32-bit data, 1 x 8-bit status/diagnostics
Isolation	U_m = 300 VAC system/supply
Surrounding air temperature (operation)	–40 ... +70 °C
Dimensions W x H x D	24 x 67.8 x 100 mm
Explosion protection	
Safety data – input	U_o = 12 V; I_o = 13.3 mA; P_o = 40.4 mW; Linear characteristic curve
Input reactances Ex ia IIC	L_o = 100 mH; C_o = 1.41 µF
Input reactances Ex ia IIB	L_o = 100 mH; C_o = 9 µF
Input reactances Ex ia IIA	L_o = 100 mH; C_o = 36 µF
Input reactances Ex ia I	L_o = 100 mH; C_o = 35 µF
Safety data – output	U_o = 26.8 V; I_o = 96.69 mA; P_o = 674.83 mW; Linear characteristic curve
Output reactances Ex ia IIC	L_o = 1.3 mH; C_o = 0.091 µF
Output reactances Ex ia IIB	L_o = 13 mH; C_o = 0.719 µF
Output reactances Ex ia IIA	L_o = 23 mH; C_o = 2.369 µF
Output reactances Ex ia I	L_o = 33 mH; C_o = 3.849 µF
Ex guideline	EN/IEC 60079-0, -7, -11
Approvals	CE; Marine; OrdLoc/HazLoc; ATEX/IECEx
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Data sheet and further information, see:	wago.com/750-633/040-000

Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 527 or www.wago.com



Industrial Switches

Industrial Switches

- Copper cables
- Fiber optic cables
- Ring redundancy

Industrial Switches
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	Managed	No. of Ports	Medium	Item No.	
Industrial Switches		5	100BASE-TX	852-101	402
		8	100BASE-TX	852-102	402
		8/2	100BASE-TX/ 100BASE-FX	852-103	403
		8	1000BASE-T	852-1102	404
		16	1000BASE-T	852-1106	405
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		8	100BASE-TX	852-112	408
		5	1000BASE-T	852-1111	409
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		5 4 PoE+	1000BASE-T	852-1411	410
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7

Industrial Switches
General Product Information

Always the Right Solution

WAGO's range of switches ensures the scalability of your ETHERNET network infrastructure, while providing outstanding electrical and mechanical characteristics. These robust switches are designed for industrial use and are fully compliant with IEEE 802.3, IEEE 802.3u and IEEE 802.3ab.

Combinable with Fiber Optic Cables

ETHERNET via fiber optic cables offers a multitude of advantages for industrial applications.
High immunity to interference, electrical isolation and long ranges up to 80 km are extremely beneficial characteristics – and these benefits are a perfect fit with IT.

Scaled Offering

Unmanaged and managed switches in various designs are available for high-end applications. Our Eco Switches are ideal for cost-sensitive applications that do not require technical features such as redundancy. They are ideal for small- to medium-sized networks.

Modular and Expandable

Exchangeable SPF modules adapt WAGO's switches to various fiber optic cables (FOC) and the associated required distances and fibers.
There are SFP modules for multimode and single-mode fiber optic cables for ranges up to 80 km. With the exact combination of copper and fiber optic cables, you are prepared for a multitude of requirements.

Web-Based Management

WAGO's fully managed switches have integrated Web-based management. Any Web browser can be used to configure the switch.

Integrated Function Monitoring

For monitoring and error reporting, the managed switch has configurable functions such as e-mail alarm and SNMP traps. In addition, all switches (except for Eco versions) can monitor individual ports or the power supply via potential-free alarm contact. A DIP switch is used to configure this function.

Full Bandwidth on All Ports

The switches' internal bandwidth is designed so that all ports can communicate simultaneously – in full duplex without restrictions.

Security

Managed switches have built-in security features, such as:
- Authentication
- Access control lists
- DHCP snooping
- Port security

Data Transmission

Managed switches provide configuration options for data transfer, such as:
- VLAN
- IGMP snooping
- IP-based VLAN
- MAC-based VLAN

Availability, Redundancy

Select industrial switches have several options to build redundant network structures and guarantee secure communication – even when connections are faulty:
- Rapid Spanning Tree per IEEE 802.1w – compatible with IT standards
- Jet Ring – a simple ring protocol with switching time < 300 ms
- Xpress Ring – fast ring protocol with switching time < 20 ms
- ERPSv2 per ITU-T standard with switching time < 50 ms

In addition to communication link redundancy, a redundant power supply – which can also be monitored using an alarm relay – is integrated into the switches. If the power supply fails, communication is not interrupted.

Different Operating Modes

The unmanaged switches are ideal for direct plug-and-play use. Managed switches are available for applications where IP filtering or further interpretation of telegrams is required for the application.

Configurable Performance

Managed switches offer performance control features, such as:
- Storm control
- Bandwidth control
- Auto-provisioning
- Link aggregation

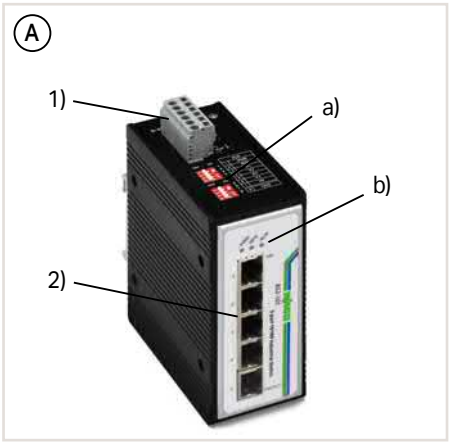
Bit-Based Configuration and Diagnostics

Modbus® can be used to diagnose managed switches. Configuration and diagnostics are also possible with standardized protocols such as SNMP.

Advantages:

- Adaptable to different transmission media
- Automatically adapts to
  - Speed (auto-negotiation)
  - Wiring (auto-crossover, MDI/MDIX)
- Optional redundancy
- Wide supply voltage range

Industrial Switches
Interfaces and Types



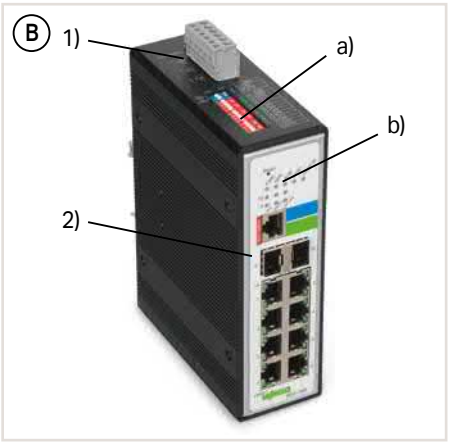
Power supply (1)
Technologically related differences on the connection level (2)

Housing Design (A)

- DIP switch for configuration (a)
- Diagnostic LEDs (b)
- W x H* x D (mm) 50 x 120 x 105

Housing Design (B)

- DIP switch for configuration (a)
- Diagnostic LEDs (b)
- W x H* x D (mm) 50 x 120 x 162



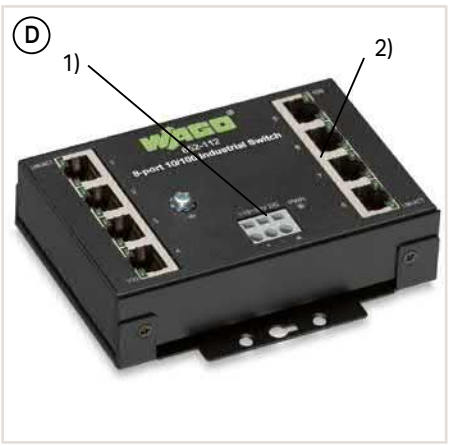


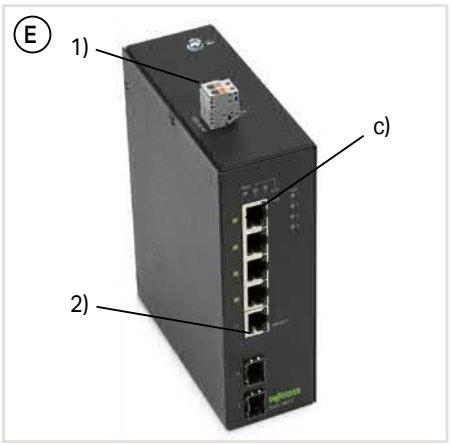
Housing Design Eco (C)

- W x H* x D (mm) 23.4 x 73.8 x 109.2 or 46 x 99.6 x 116
- DIN-35 rail
- wall-mount (852-111, 852-1111)

Housing Design Eco (D)

- W x H* x D (mm) 109.2 x 23.4 x 73.8
- DIN-35 rail or wall-mount





Housing Design PoE+ (E)

- Power over Ethernet (PoE+) Ports (c)
- W x H* x D (mm) 50 x 120 x 160

Housing Design (F)

- SFP module for connecting fiber optic cables
- LC connector
- W x H x D (mm) 13.4 x 13.3 x 56.6

*Height from upper edge of DIN-rail



Variants



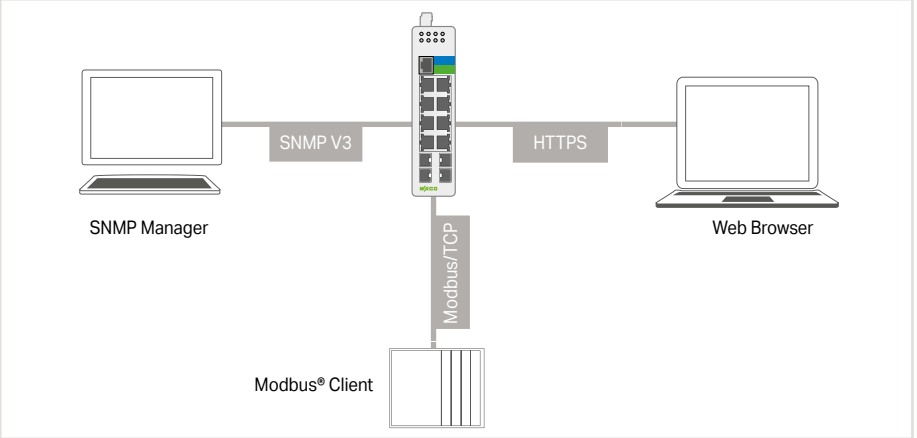
Extended Temperature Range

Industrial automation technology is typically operated in temperatures ranging from 0°C to 55°C. However, there are applications that require an extended temperature range. Nearly all switches and SFP modules are available for an extended temperature range of –40°C to +70°C.

Industrial Switches
Configuration, Diagnostics and Performance

Configuration and Diagnostics

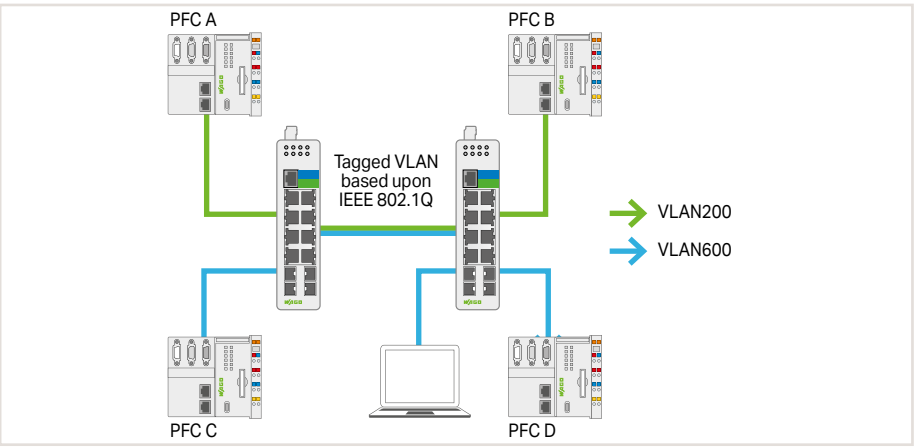
Several options:
- Configuration via Web-based management
- Configuration via command line (SSH, Telnet, RS-232)
- Network management via SNMP v1, v2c, v3
- Support of MIB standards (Management Information Base)
- Diagnostics via Modbus TCP: Comprehensive diagnostic data available for easy diagnostics via Modbus®



Configuration Interfaces

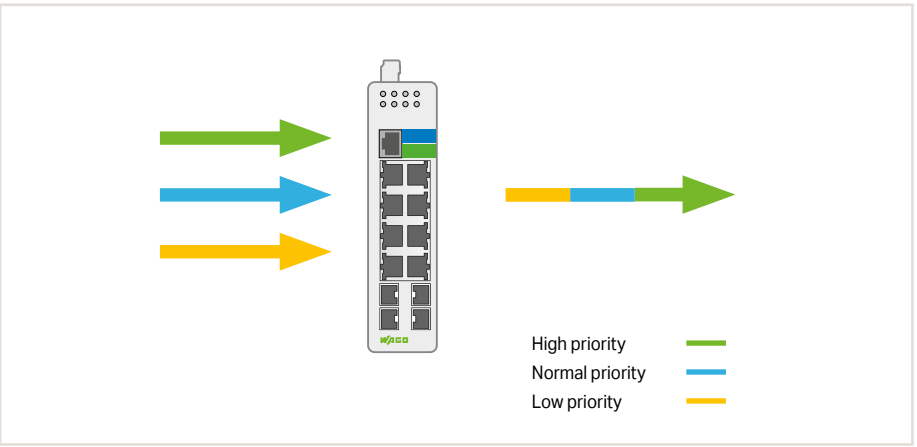
Logical Network Disconnection

VLAN (e.g., per IEEE 802.1Q)
Segmentation into virtual networks:
- Broadcast limitation
- Security improvement
- Data flow prioritization
- Subdivision of machines and office networks, for example



Traffic Prioritization and Limitation

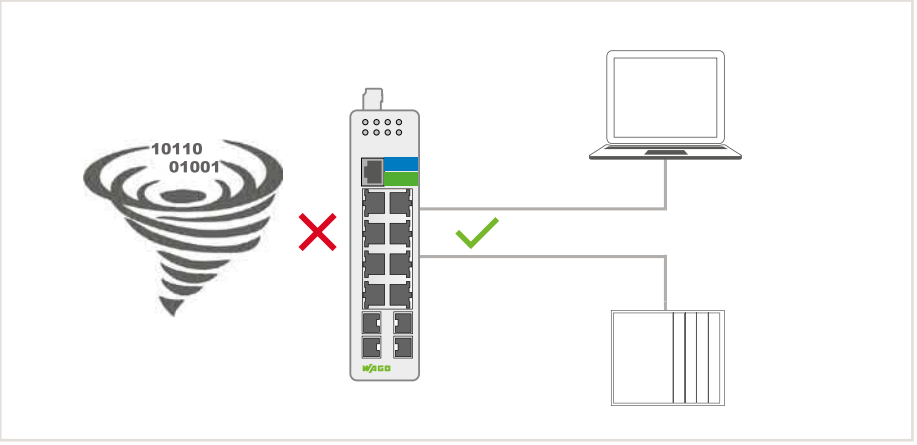
- Faster transfer of important data packets through the switch
- Prioritization of data packets per IEEE 802.1 Q
- Limitation of the bandwidth or number of packets per unit of time per port
- Increase in data transmission quality



QoS

Mastering Data Traffic

- Stopping broadcast storms
- Ensuring network availability
- Limiting broadcast and multicast data flows (packets/time)



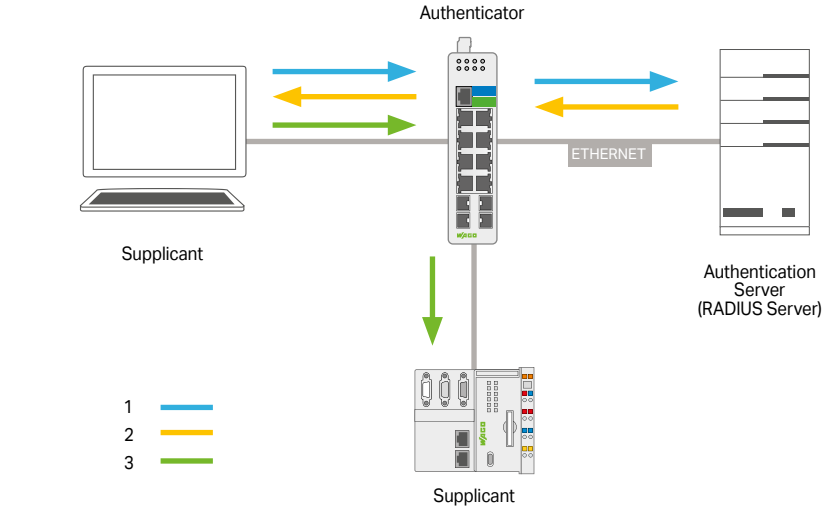
Storm Control

Industrial Switches
Security

Authentication IEEE 802.1X

Secure authentication and authorization in ETHERNET networks (locally on the switch or via RADIUS server)

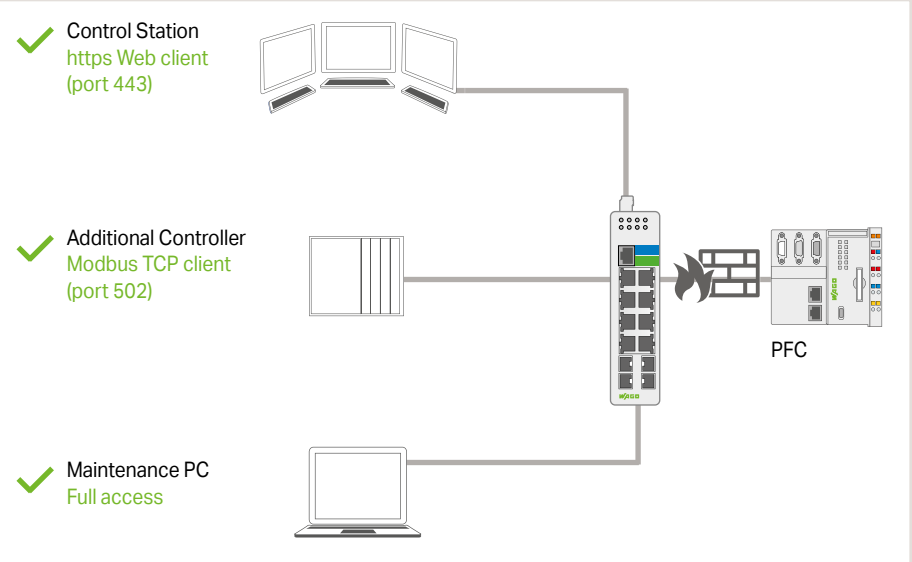
Process:
- Authentication of a subscriber is performed by the authenticator.
- The authenticator checks the authentication information of the subscriber (supplicant) with an authentication server.



IEEE 802.1X

Firewall – *Access Control List*

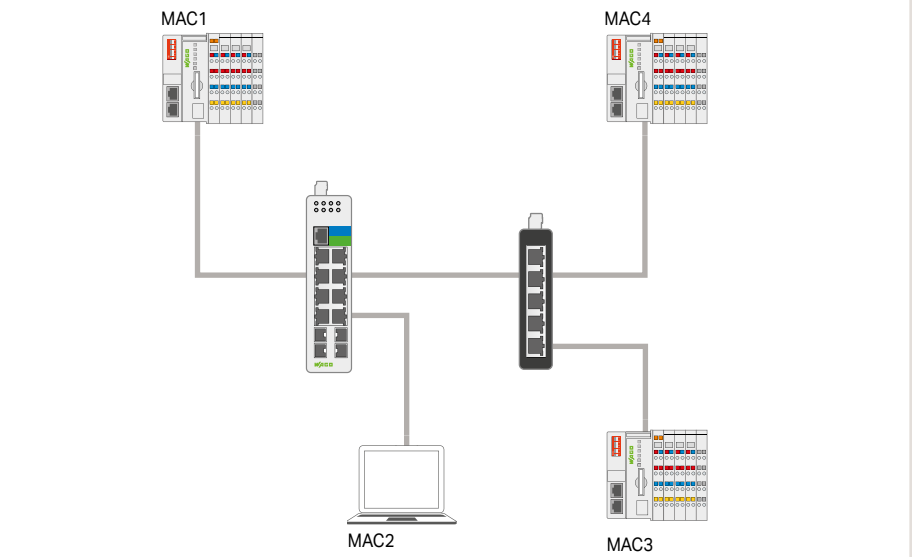
Filtering data packets due to:
- a source MAC or source IP address
- a destination MAC or destination IP address
- a range of MAC or IP addresses
- UDP/TCP source or destination ports



Firewall

Port Security

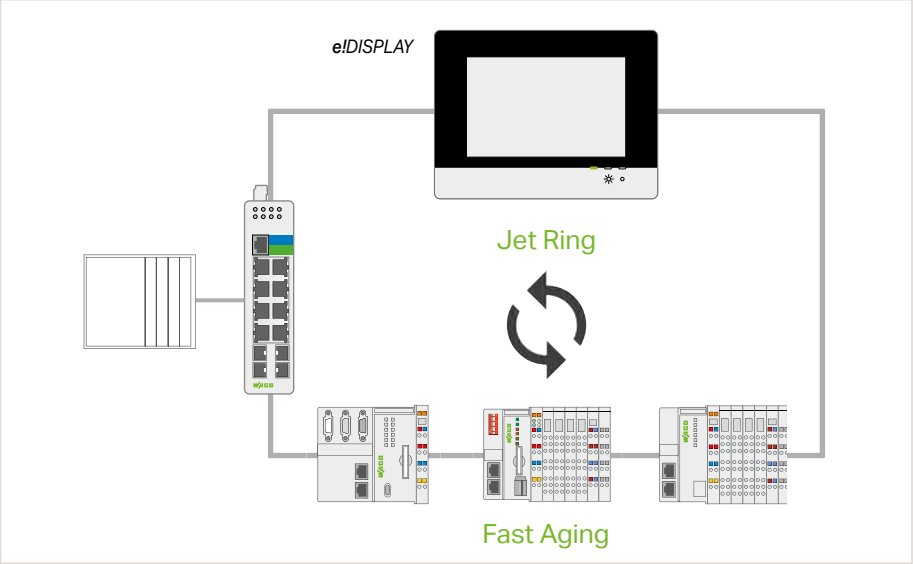
- Dynamically learns MAC addresses per port
- Limitation of MAC addresses per port
- MAC-based white/blacklist per port



Industrial Switches
Redundancy

Jet Ring

- Typical switching time < ~ 300 ms (depends on the application)
- Extremely easy configuration
- Up to 20 participants (Fast Aging) in a Jet Ring



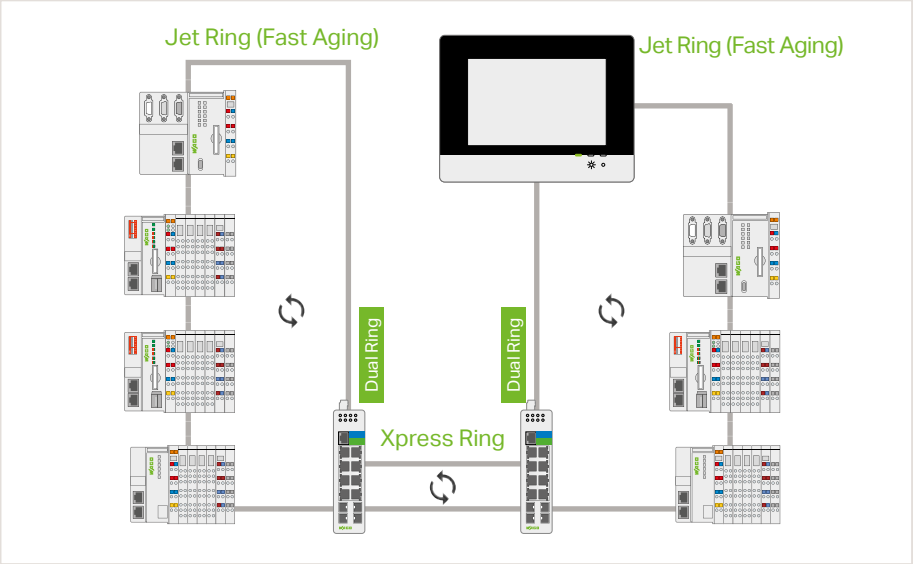
Jet Ring

Xpress Ring

- Switching time < 20 ms
- Easy configuration
- Up to 200 switches in one Xpress Ring
- 2 Xpress Rings per switch

Dual Ring

- Combination of both redundancy types
- 1 Jet Ring and 1 Xpress Ring per switch or 2 Xpress Rings per switch



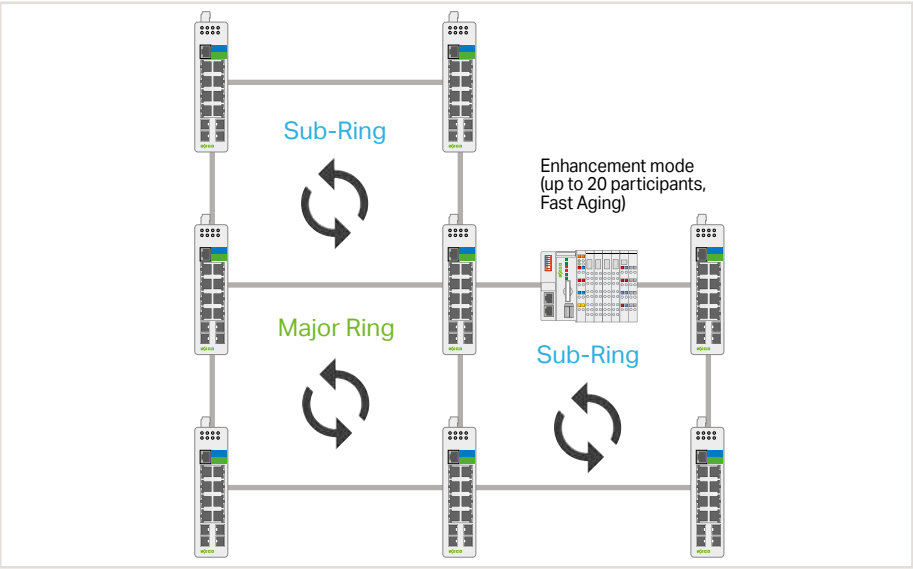
Xpress Ring and Dual Ring

ERPS: ETHERNET Ring Protection Switching

- Standardized and open technology
- Switching time < 50 ms
- Nested topologies with up to six rings per switch
- Realization of a one-fault tolerance (SPOF – Single Point of Failure)

ERPS – Enhancement Mode

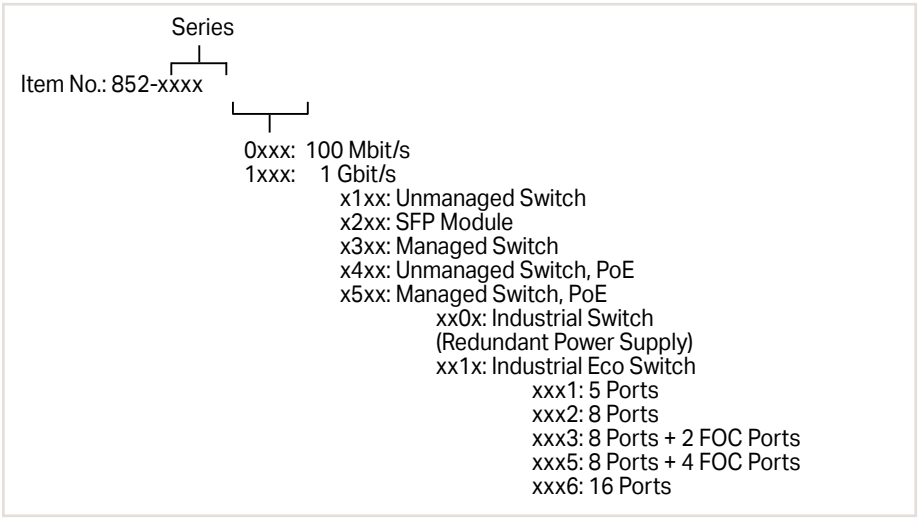
- WAGO devices with an integrated switch and Fast Aging configuration
- Typical switching time < ~ 300 ms (depends on the application)



ERPS V2

Industrial Switches
Item Number Key

Explanation of an item number key's components



Standards and Rated Conditions

General Specifications	
Packet throughput per port	10 Mbps port: 14,880 packages per second (pps) 100 Mbps port: 148,800 packages per second (pps) 1000 Mbps port: 1,488,000 packages per second (pps)
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +80 °C
Relative humidity max.	95 % (non condensing)
Vibration resistance	4g per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Protection type	IP30
Mounting type	On DIN-35 rail, Eco version also for wall-mount
Mounting position	Any

Approvals

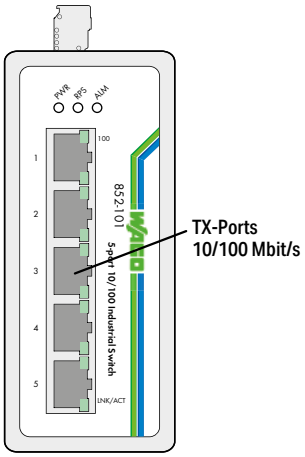
For approvals overview (item comparison), see Section 11 (Technical Section) or visit www.wago.com.

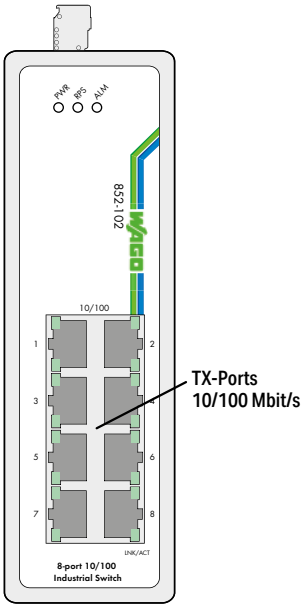
7

Industrial Switch



Figure: 852-101





Item Description	Industrial Switch; 5-port 100BASE-TX	Industrial Switch; 8-port 100BASE-TX
Item No.	852-101	852-102
Order Text	Industrial Switch; 5Port	Industrial Switch; 8Port
Technical Data		
Switching mode	Store-and-forward, non-blocking	Store-and-forward, non-blocking
Number of copper ports	5 x 100BASE-TX	8 x 100BASE-TX
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3x Flow Control	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3x Flow Control
Redundancy functions	Redundant DC power supply	Redundant DC power supply
Configuration	DIP switch for signal contact	DIP switch for signal contact
Diagnostics	Signal contact	Signal contact
MAC table (large)	2000 addresses	2000 addresses
Jumbo frame size	1536 bytes	1516 bytes
Supply voltage	9 … 48 VDC	9 … 48 VDC
Power consumption (max.)	4 W	5.3 W
ESD (contact/air discharge)	8 KV / 15 KV	8 KV / 15 KV
Connection technology (communication)	5 x RJ-45	8 x RJ-45
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	50 x 120 x 105 mm	50 x 120 x 162 mm
Approvals	CE; KC; cULus OrdLoc	CE; KC; cULus OrdLoc
Data sheet and further information, see:	wago.com/852-101	wago.com/852-102

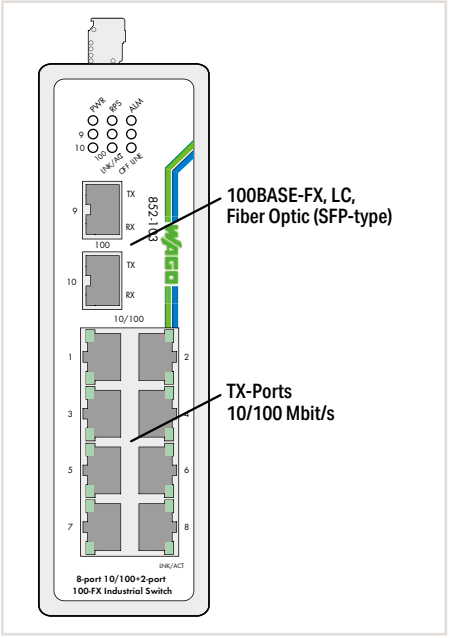
„ SFP Modules,
see page 412

„ Passive ETHERNET components,
see Section “Accessories and Tools”

„ Approvals and corresponding ratings,
see page 529 or www.wago.com

Industrial Switch



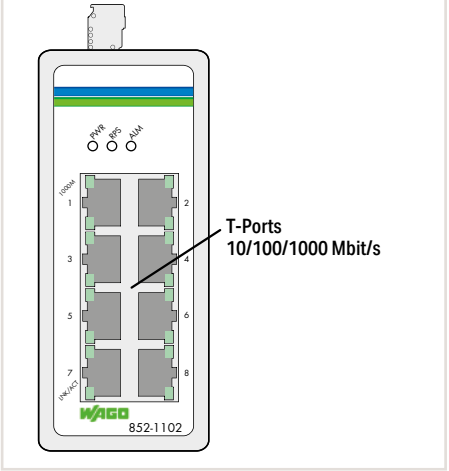


Item Description	Industrial Switch; 8-port 100BASE-TX; 2-slot 100BASE-FX
Item No.	852-103
Order Text	Industrial Switch; 8Port; 2-Slot 100BASE-FX
Technical Data	
Switching mode	Store-and-forward, non-blocking
Number of copper ports	8 x 100BASE-TX
Number of FOC ports	2 x 100BASE-FX
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX/FX; IEEE 802.3x Flow Control
Redundancy functions	Redundant DC power supply
Configuration	DIP switch for signal contact
Diagnostics	Signal contact
MAC table (large)	2000 addresses
Jumbo frame size	1536 bytes
Supply voltage	9 … 48 VDC
Power consumption (max.)	6.1 W
ESD (contact/air discharge)	8 KV / 15 KV
Connection technology (communication)	8 x RJ-45; 2 x SFP
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	50 x 120 x 162 mm
Approvals	CE; KC; cULus OrdLoc
Data sheet and further information, see:	wago.com/852-103

7

Industrial Switch





Item Description	Industrial Switch; 8-port 1000BASE-T
Item No.	852-1102
Order Text	Industrial Switch; 8-Port Gb

Technical Data	
Switching mode	Store-and-forward, non-blocking
Number of copper ports	8 x 1000BASE-T
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3x Flow Control; IEEE 802.3az Energy Efficient Ethernet; IEEE 802.1p Prioritization
Redundancy functions	Redundant DC power supply
Configuration	DIP switch for signal contact
Diagnostics	Signal contact
MAC table (large)	8000 addresses
Jumbo frame size	9 kB
Supply voltage	9 … 57 VDC
Power consumption (max.)	6 W
ESD (contact/air discharge)	8 KV / 15 KV
Connection technology (communication)	8 x RJ-45
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	50 x 120 x 105 mm
Approvals	CE; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-1102

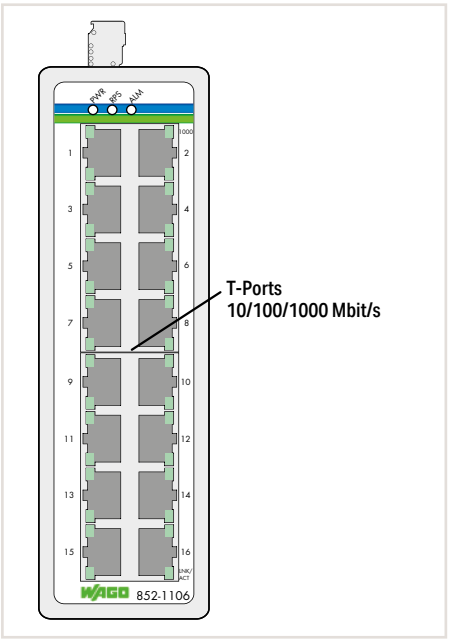
*pending

„ Passive ETHERNET components, see Section “Accessories and Tools”

„ Approvals and corresponding ratings, see page 529 or www.wago.com

Industrial Switch





Item Description	Industrial Switch; 16-port 1000BASE-T
Item No.	852-1106
Order Text	Industrial Switch; 16-Port Gb

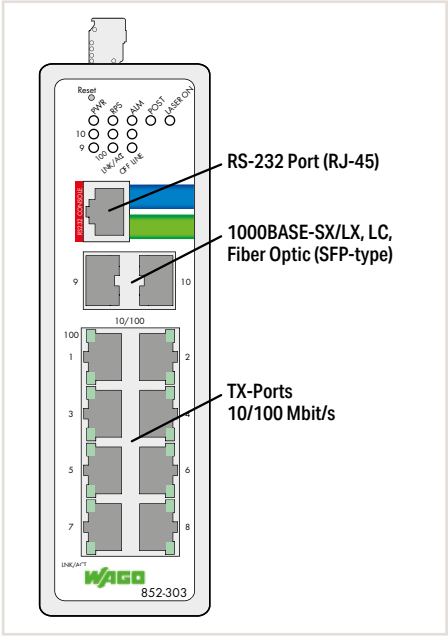
Technical Data	
Switching mode	Store-and-forward, non-blocking
Number of copper ports	16 x 1000BASE-T
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX/FX; IEEE 802.3ab 1000BASE-T; IEEE 802.3x Flow Control; IEEE 802.3az Energy Efficient Ethernet; IEEE 802.1p Prioritization
Redundancy functions	Redundant DC power supply
Configuration	DIP switch for signal contact
Diagnostics	Signal contact
MAC table (large)	8000 addresses
Jumbo frame size	10 KB
Supply voltage	12 … 60 VDC
Power consumption (max.)	12 W
Connection technology (communication)	16 x RJ-45
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	50 x 120 x 162 mm
Approvals	CE; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-1106

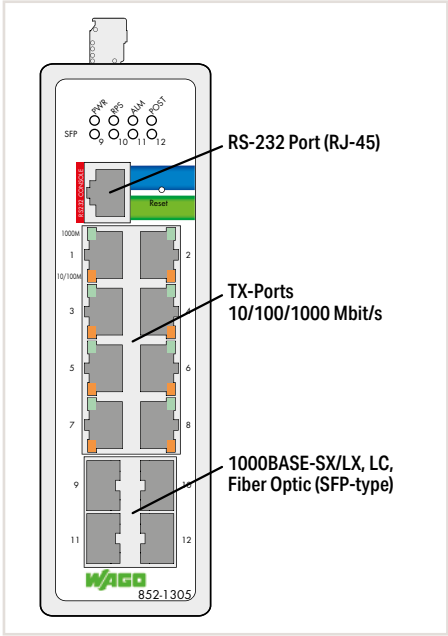
*pending

Industrial Managed Switch



Figure: 852-303



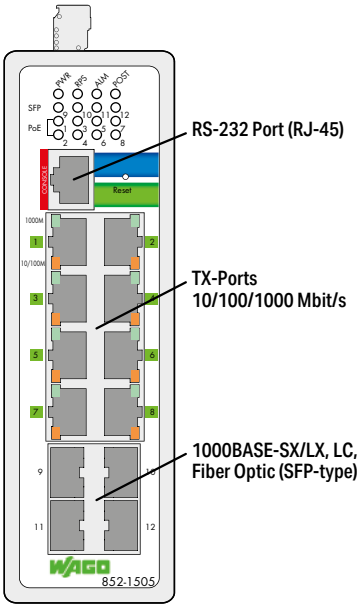


Item Description	Industrial Managed Switch; 8-port 100BASE-TX; 2-slot 1000BASE-SX/LX	Industrial Managed Switch; 8-port 1000BASE-T; 4-slot 1000BASE-SX/LX
Item No.	**852-303**	**852-1305**
Order Text	Industrial Managed Switch; 8Port; 2-Slot 1000BASE-SX/LX	Industrial Managed Switch; 8-Port Gb; 4-Slot 1000BASE-SX/LX
Technical Data		
Switching mode	Store-and-forward, non-blocking	Store-and-forward, non-blocking
Number of copper ports	8 x 100BASE-TX	8 x 1000BASE-T
Number of FOC ports	2 x 100BASE-FX / 1000BASE-SX/LX	4 x 1000BASE-SX/LX
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX/FX; IEEE 802.3z 1000BASE-SX/LX; IEEE 802.3x Flow Control; IEEE 802.1w Rapid Spanning Tree Protocol (RSTP); IEEE 802.1q VLAN Tagging; IEEE 802.1ab Link Layer Discovery Protocol (LLDP); IEEE 802.1p Prioritization; IEEE 802.1x Port Authentication; ITU-T G8032v1/v2 Ethernet Ring Protection Switching (ERPS)	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3z 1000BASE-SX/LX; IEEE 802.3x Flow Control; IEEE 802.1w Rapid Spanning Tree Protocol (RSTP); IEEE 802.1q VLAN Tagging; IEEE 802.1ab Link Layer Discovery Protocol (LLDP); IEEE 802.1p Prioritization; IEEE 802.1x Port Authentication; ITU-T G8032v1/v2 Ethernet Ring Protection Switching (ERPS)
Redundancy functions	Redundant DC power supply; STP; RSTP; MSTP; Jet Ring < 300 ms; Xpress Ring < 20 ms; Dual Homing < 20 ms; Dual Ring; ERPSv2 < 50 ms; LCAP	Redundant DC power supply; STP; RSTP; MSTP; Jet Ring < 300 ms; Xpress Ring < 20 ms; Dual Homing < 20 ms; Dual Ring; ERPSv2 < 50 ms; LCAP
Configuration	DIP switch for signal contact; Web-Based-Management; Command Line Interface; SNMPv1/v2c/v3	DIP switch for signal contact; Web-Based-Management; Command Line Interface; SNMPv1/v2c/v3
Diagnostics	Signal contact; Modbus TCP; Port status; Port statistics; Port load; Traffic monitor; SFP information; Syslog; Mail alarm; SNMP traps	Signal contact; Modbus TCP; Port status; Port statistics; Port load; Traffic monitor; SFP information; Syslog; Mail alarm; SNMP traps
MAC table (large)	16,000 addresses	16,000 addresses
Jumbo frame size	10 KB	10 KB
Supply voltage	12 … 60 VDC	12 … 60 VDC
Power consumption (max.)	12 W	12 W
ESD (contact/air discharge)	8 KV / 15 KV	8 KV / 15 KV
Connection technology (communication)	8 x RJ-45; 2 x SFP; 1 x RJ-45 (RS-232)	8 x RJ-45; 4 x SFP; 1 x RJ-45 (RS-232)
Communication standards	IEEE802.3x (in full duplex mode)	IEEE802.3x (in full duplex mode)
Surrounding air temperature (operation)	–40 … +70 °C	–40 … +70 °C
Dimensions W x H x D	50 x 120 x 162 mm	50 x 120 x 162 mm
Approvals	CE; DNV GL; cULus OrdLoc*	CE; DNV GL; DNV; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-303	wago.com/852-1305
	*pending	*pending

„ SFP Modules, see page 412

Industrial Managed Switch





Item Description	**Industrial Managed Switch; 8-port 1000BASE-T; 4-slot 1000BASE-SX/LX; Extended temperature; 8 * Power over Ethernet**
Item No.	**852-1505**
Order Text	Industrial Managed Switch; 8-Port Gb; 4-Slot 1000BASE-SX/LX; EXT; 8PoE

Technical Data

Switching mode	Store-and-forward, non-blocking
Number of copper ports	8 x 1000BASE-T; 8 x PoE+ (Power over Ethernet)
Number of FOC ports	4 x 1000BASE-SX/LX
Communication standards	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3z 1000BASE-SX/LX; IEEE 802.3ad Port Trunk with LACP; IEEE 802.3x Flow Control; IEEE 802.1d Spanning Tree Protocol (STP); IEEE 802.1w Rapid Spanning Tree Protocol (RSTP); IEEE 802.1s Multiple Spanning Tree Protocol (MSTP); IEEE 802.1q VLAN Tagging; IEEE 802.1p Prioritization; IEEE 802.1x Port Authentication; IEEE 802.1ab Link Layer Discovery Protocol (LLDP); IEEE 802.3ad Port Trunk with LACP; IEEE 1588v2 Precision Time Protocol (PTP); IEEE 802.3af Power over Ethernet (PoE); IEEE 802.3at High Power over Ethernet (PoE+); ITU-T G8032v1/v2 Ethernet Ring Protection Switching (ERPS)
Redundancy functions	Redundant DC power supply; STP; RSTP; MSTP; Jet Ring < 300 ms; Xpress Ring < 20 ms; Dual Homing < 20 ms; Dual Ring; ERPSv2 < 50 ms; LCAP
Configuration	DIP switch for signal contact; Web-Based-Management; Command Line Interface; SNMPv1/v2c/v3
Diagnostics	Signal contact; Modbus TCP; Port status; Port statistics; Port load; Traffic monitor; SFP information; Syslog; Mail alarm; SNMP traps
MAC table (large)	16,000 addresses
Jumbo frame size	10 KB
Supply voltage	48 … 57 VDC
Power consumption (max.)	18 W; 258 W with 8 PoE+
ESD (contact/air discharge)	8 KV / 15 KV
Connection technology (communication)	8 x RJ-45; 2 x SFP; 1 x RJ-45 (RS-232)
Communication standards	IEEE802.3x (in full duplex mode)
Surrounding air temperature (operation)	–40 … +70 °C
Dimensions W x H x D	50 x 120 x 162 mm
Approvals	CE; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-1505

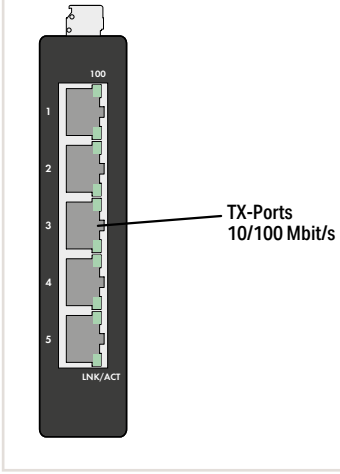
*pending

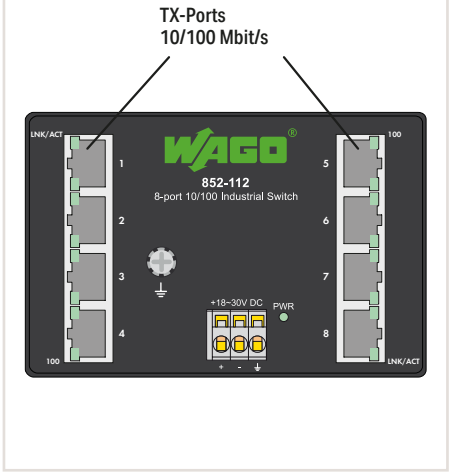
7

Industrial Eco Switch



Figure: 852-111





Item Description	Industrial Eco Switch; 5-port 100BASE-TX	Industrial Eco Switch; 8-port 100BASE-TX
Item No.	**852-111**	**852-112**
Order Text	Industrial Eco Switch; 5Port	Industrial Eco Switch; 8Port
Technical Data		
Switching mode	Store-and-forward, non-blocking	Store-and-forward, non-blocking
Number of copper ports	5 x 100BASE-TX	8 x 100BASE-TX
Supported profiles	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3x Flow Control	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3x Flow Control
MAC table (large)	2000 addresses	2000 addresses
Jumbo frame size	1536 bytes	1536 bytes
Supply voltage	18 … 30 VDC	18 … 30 VDC
Power consumption (max.)	3 W	3 W
ESD (contact/air discharge)	4 KV / 8 KV	4 KV / 8 KV
Connection technology (communication)	5 x RJ-45	8 x RJ-45
Surrounding air temperature (operation)	–40 … +70 °C	–40 … +70 °C
Dimensions W x H x D	24 x 74 x 110 mm	110 x 24 x 74 mm
Approvals	CE; KC; DNV GL; DNV (only with DNV mounting adapter); cULus OrdLoc	CE; KC; cULus OrdLoc
Data sheet and further information, see:	wago.com/852-111	wago.com/852-112

Accessories	Item No.	Page
DNV mounting adapter	**852-9101**	413

„ DNV mounting adapter,
see page 413

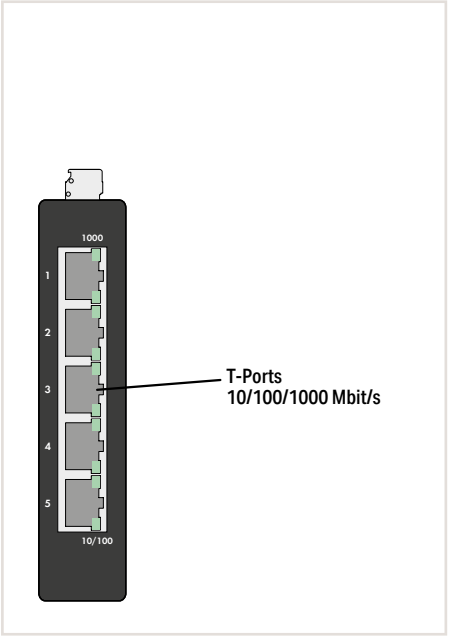
„ Passive ETHERNET components,
see Section “Accessories and Tools”

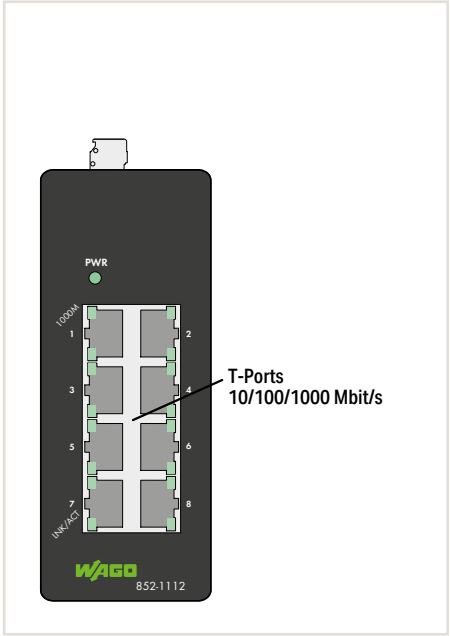
„ Approvals and corresponding ratings,
see page 529 or www.wago.com

Industrial Eco Switch



Figure: 852-1112





Item Description	Industrial Eco Switch; 5-port 1000BASE-T	Industrial Eco Switch; 8-port 1000BASE-T
Item No.	**852-1111**	**852-1112**
Order Text	Industrial Eco Switch; 5-Port Gb	Industrial Eco Switch; 8-Port Gb
Technical Data		
Switching mode	Store-and-forward, non-blocking	Store-and-forward, non-blocking
Number of copper ports	5 x 1000BASE-T	8 x 1000BASE-T
Supported profiles	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3x Flow Control; IEEE 802.3az Energy Efficient Ethernet; IEEE 802.1p Prioritization	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3x Flow Control; IEEE 802.3az Energy Efficient Ethernet; IEEE 802.1p Prioritization
MAC table (large)	8000 addresses	8000 addresses
Jumbo frame size	9 kB	9 kB
Supply voltage	9 … 48 VDC	9 … 57 VDC
Power consumption (max.)	3 W	6 W
ESD (contact/air discharge)	4 KV / 8 KV	8 KV / 15 KV
Connection technology (communication)	5 x RJ-45	8 x RJ-45
Surrounding air temperature (operation)	–40 … +70 °C	0 … +60 °C
Dimensions W x H x D	24 x 74 x 110 mm	50 x 100 x 116 mm
Approvals (*pending)	CE; DNV GL; DNV (only with DNV mounting adapter); cULus OrdLoc*	CE; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-1111	wago.com/852-1112

Accessories	Item No.	Page
DNV mounting adapter	852-9101	413

*pending

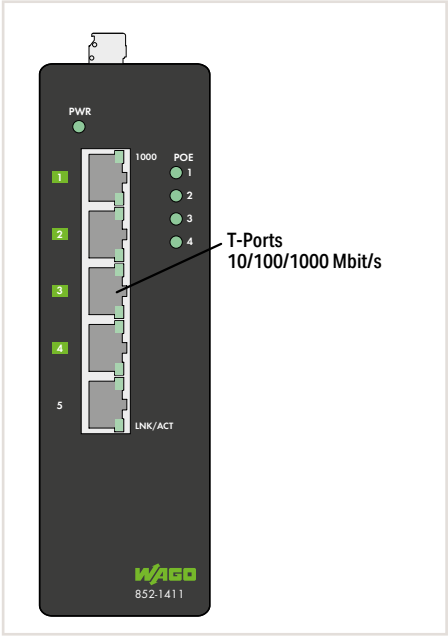
*pending

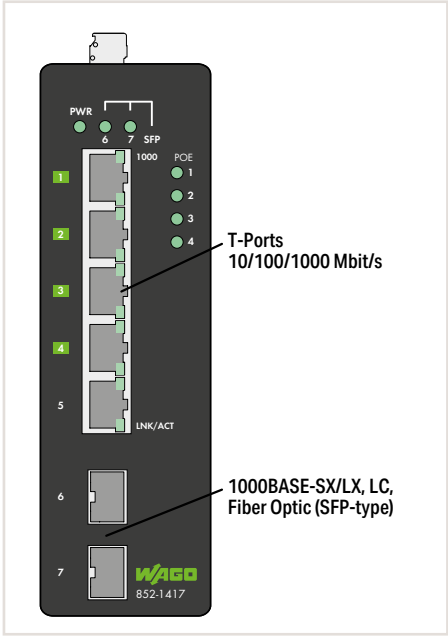
7

Industrial Eco Switch



Figure: 852-1417





Item Description	Industrial Eco Switch; 5-port 1000BASE-T; Extended temperature; 4 * Power over Ethernet	Industrial Eco Switch; 5-port 1000BASE-T; 2-slot 1000BASE-SX/LX; Extended temperature; 4 * Power over Ethernet
Item No.	**852-1411**	**852-1417**
Order Text	Industrial Eco Switch; 5Port Gb; EXT; 4PoE	Industrial Eco Switch; 5Port Gb; 2-Slot 1000BASE-SX/LX; EXT; 4PoE
Technical Data		
Number of copper ports	5 x 1000BASE-T; 8 x PoE+ (Power over Ethernet)	5 x 1000BASE-T; 8 x PoE+ (Power over Ethernet)
Number of FOC ports		2 x 1000BASE-SX/LX
Supported profiles	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE 802.3ab 1000BASE-T; IEEE 802.3x Flow Control; IEEE 802.3af Power over Ethernet (PoE); IEEE 802.3at High Power over Ethernet (PoE+); IEEE 802.1p Prioritization	IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX/FX; IEEE 802.3ab 1000BASE-T; IEEE 802.3z 1000BASE-SX/LX; IEEE 802.3x Flow Control; IEEE 802.3af Power over Ethernet (PoE); IEEE 802.3at High Power over Ethernet (PoE+); IEEE 802.1p Prioritization
Topology	Star	Star
Jumbo frame size	10 KB	10 KB
MAC table (large)	8000 addresses	8000 addresses
Supply voltage	24 … 57 VDC	24 … 57 VDC
Power consumption (max.)	13 W; 133 W with 4 PoE	14 W; 134 W with 4 PoE
Connection technology (communication)	5 x RJ-45	5 x RJ-45; 2 x SFP
Surrounding air temperature (operation)	−40 … +70 °C	−40 … +70 °C
Dimensions W x H x D	50 x 120 x 160 mm	50 x 120 x 160 mm
Approvals	CE; cULus OrdLoc*	CE; cULus OrdLoc*
Data sheet and further information, see:	wago.com/852-1411	wago.com/852-1417
	*pending	*pending

7

„ SFP Modules, see page 412

„ Passive ETHERNET components, see Section “Accessories and Tools”

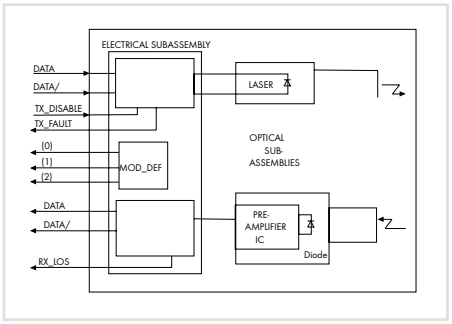
„ Approvals and corresponding ratings, see page 529 or www.wago.com

Industrial Switches – Accessories
SFP Modules

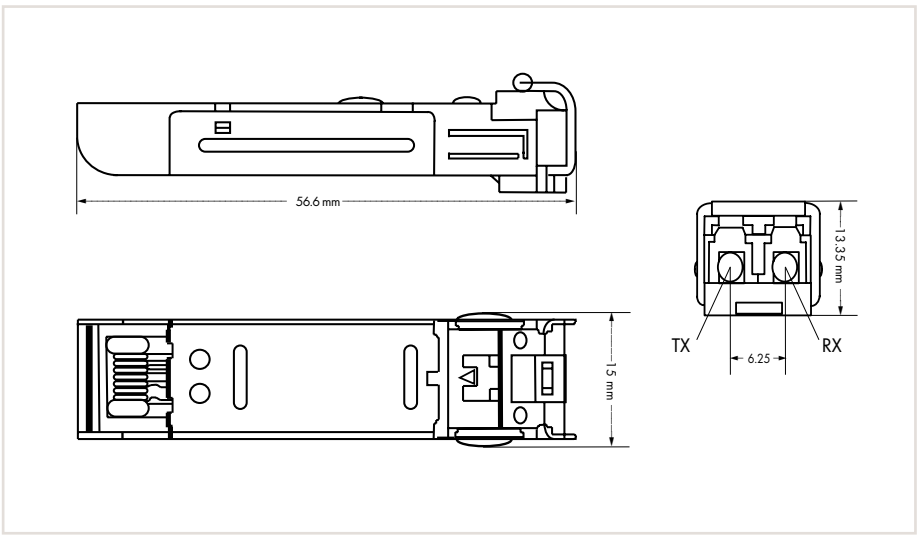
Features:

- Duplex LC optical connector
- Small Form-Factor Pluggable (SFP) industry-standard design
- Compliant with Fast ETHERNET standard and Gigabit ETHERNET standard IEEE802.3z
- Differential LVPECL inputs and outputs
- Supply voltage: 3.3 V
- TTL signal detect indicator
- Hot-pluggable capability









Item Description	SFP Module; 100BASE	SFP Module 1000BASE; Extended temperature; DDM
Version	FX Multi-Mode 1310 nm LC; 2 km	SX Multi-Mode 850 nm LC; 0.55 km
Item No.	852-201/107-002	852-1200
Order Text	SFP Module 2: 1310nm; 100BASE-FX Multi-Mode LC; 2 km	SFP Module 1000BASE; SX Multi-Mode 850 nm LC; 0.55 km; EXT; DDM
Technical Data		
Wavelength	1310 nm	850 nm
Multi-mode fiber	62.5/125 µm; 50/125 µm	62.5/125 µm; 50/125 µm
Lengths (max.)	2 km	300 m; 550 m
Laser type	Laser class 1 per EN 60825-1	Laser class 1 per EN 60825-1
Other		Supports "Digital Diagnostics Monitoring"
Surrounding air temperature (operation)	–40 … +70 °C	–40 … +85 °C
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	13.4 x 13.3 x 56.6 mm
Data sheet and further information, see:	wago.com/852-201/107-002	wago.com/852-1200

Item Description	SFP Module; 100BASE	SFP Module 1000BASE; Extended temperature; DDM	
Version	FX Single-Mode 1310 nm LC; 30 km	LX Single-Mode 1310 nm LC; 10 km	ZX Single-Mode 1550 nm LC; 80 km
Item No.	852-201/107-030	852-1210	852-1280
Order Text	SFP Module 30: 1310nm; 100BASE-FX Single-Mode LC; 30 km	SFP Module 1000BASE; LX Single-Mode 1310 nm LC; 10 km; EXT; DDM	SFP Module 1000BASE; ZX Single-Mode 1550 nm LC; 80 km; EXT; DDM
Technical Data			
Wavelength	1310 nm	1310 nm	1550 nm
Single-mode fiber	9/125 µm	9/125 µm	
Lengths (max.)	30 km	10 km	80 km
Laser type	Laser class 1 per EN 60825-1	Laser class 1 per EN 60825-1	
Other		Supports "Digital Diagnostics Monitoring"	
Surrounding air temperature (operation)	0 °C … +60 °C	–40 … +85 °C	
Dimensions W x H x D	13.4 x 13.3 x 56.6 mm	13.4 x 13.3 x 56.6 mm	
Data sheet and further information, see:	wago.com/852-201/107-030	wago.com/852-1210	wago.com/852-1280

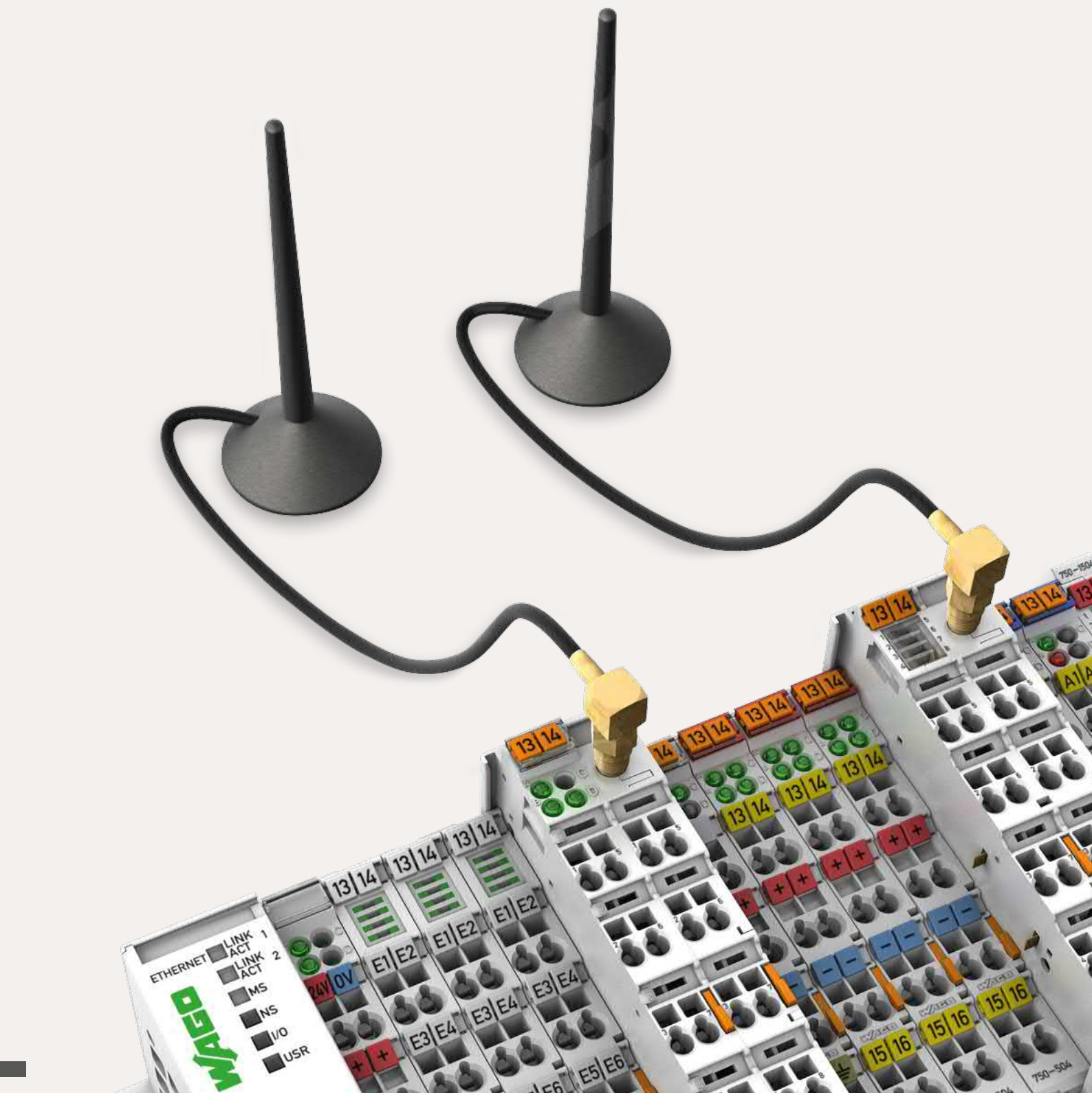
Industrial Switches – Accessories
DNV Mounting Adapter with Marine Approval





Item Description	DNV Mounting Adapter; for 852-111/852-1111 Industrial Switches with maritime approval
Item No.	852-9101
Order Text	DNV Mounting Adapter; Switches
Technical Data	
Dimensions W x H x D	20 x 9.6 x 102.2 mm
Weight	32.8 g
Data sheet and further information, see:	wago.com/852-9101

7



Radio Technology

Radio Technology

- *Bluetooth*®
- WLAN
- EnOcean®

Wireless Technology – *Bluetooth*®, WLAN and EnOcean® Components
Contents

		Page
General Product Information		416
Interfaces and Types		417
Application and Installation Instructions		418

		Description	Item No.	
		Wireless ETHERNET Gateway	758-918	420
WLAN		WAGO Radio Adapter	750-921	421
enocean®		I/O System 750, Communication Module, EnOcean Radio Receiver	750-642	422
		Radio Transmitter, EnOcean® easyfit PTM 250		423
		2-Channel Lighting Control	758-940/001-000	
		4-Channel Lighting Control	758-940/003-000	
		2-Channel Blind Control	758-940/002-000	
		4-Channel Blind Control	758-940/004-000	
		Accessories		424
		Antennas		

8

Radio Technology
General Product Information

Wireless Technology in the Industrial Environment

Wireless technology can support wired applications or enable completely new applications.
In mobile or movable systems, wireless technology is the first choice when greater distances or obstacles must be overcome. It is an alternative for applications in which wired solutions are not economical or technically feasible.

Various wireless technologies can be used depending on the application.

Bluetooth® – Robust, Flexible, High-Performance

Well-known in consumer electronics, *Bluetooth*® technology is also well-suited to industrial use with its internationally approved frequency range, a very robust transmission technology (frequency hopping), real-time response and a range of up to 400 m. It makes wireless process data communication between two stations possible (point-to-point communication), and also enables the setup of a piconet in which a *Bluetooth*® master can communicate with up to seven slaves, e.g., decentralized mobile sensors. In addition, *Bluetooth*® can be used as the radio system for commissioning.
Features:

- Secure transmission (encrypted)
- AFH (Adaptive Frequency Hopping)
- Adaptive transmission power
- Uses the license-free 2.4 GHz frequency band

WLAN – Full IT Integration

WLAN makes it easy to setup a wireless transmission link for ETHERNET protocols. This can be standard ETHERNET protocols, e.g., for communication between a smartphone and automation components. Industrial fieldbus protocols such as PROFINET, Modbus TCP or Ethernet/IP can also be used to link mobile equipment with stationary equipment. Ranges up to 400 m are possible depending on the transmission technology used.

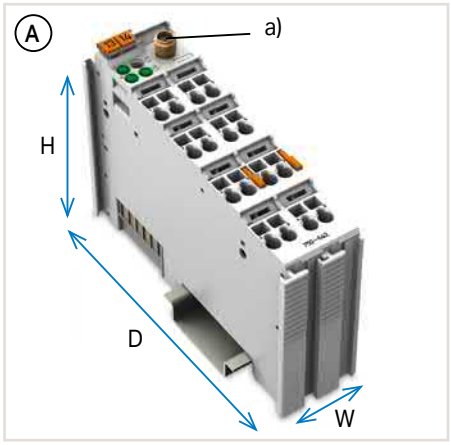
EnOcean® – The Radio Standard in Building Automation

Wireless switches and sensors based on EnOcean® technology harvest available energy to power themselves, e.g., kinetic energy from actuating a switch or sensors powered by ambient light. This energy harvesting completely eliminates maintenance of the radio transmitter at a range of up to 300 m in open air (30 m in buildings).

Advantages:

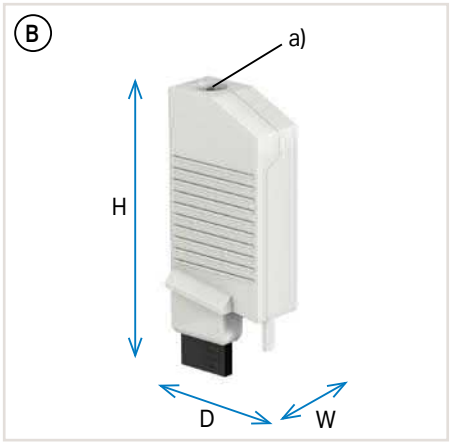
- Branch and application-specific – always the right radio system
- Industrial design: high-performance, rugged and safe
- Tightly integrated into WAGO automation technology

Radio Technology
Interfaces and Types



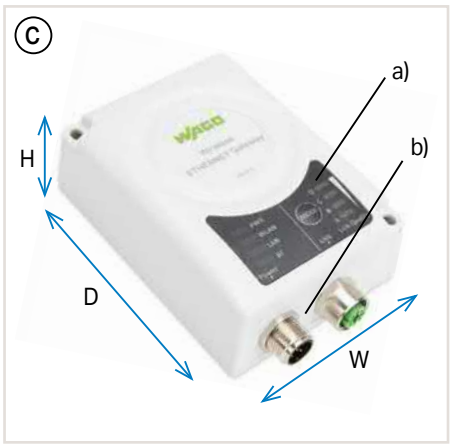
Communication Module for I/O System (A)

- For use with:
  - Controller (PFC)
  - Fieldbus coupler (FC), 750 Series I/O System
- Antenna connection (a)
- W x H x D (mm) 24 x 72 x 100, plus approx. 6.5 mm of excess length with antenna socket



Radio Adapter (B)

- For use with:
  - PFC, 750 XTR Series PFC, FC, 750 XTR Series FC
  - Signal Conditioners, 2857 and 857 Series
- Integrated antenna
- Diagnostic LED (a)
- W x H x D (mm) 15 x 50 x 19



ETHERNET Gateway (C)

- Integrated converter from ETHERNET protocols to radio technology
- Integrated antenna
- Diagnostic LEDs (a)
- Connections with M12 connectors (b)
- Protection class: IP65
- W x H x D (mm) 66 x 36.2 x 91



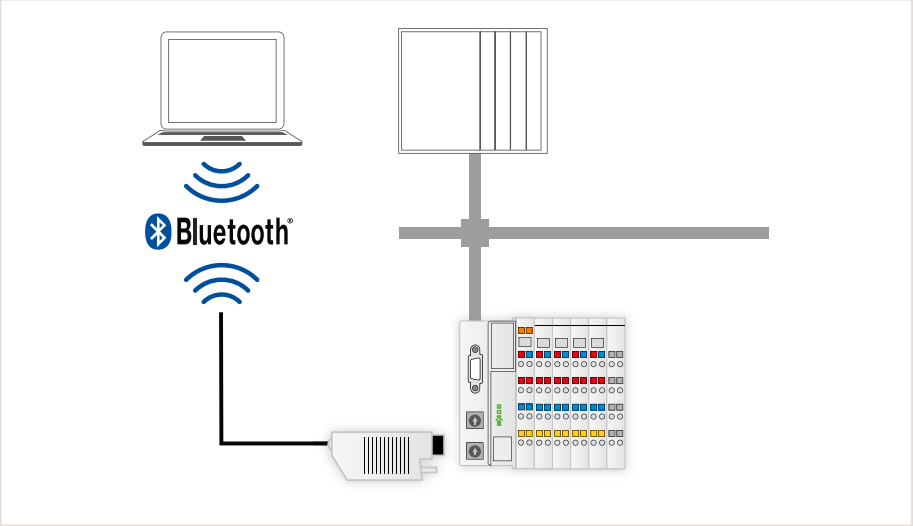
Switch Inserts (D)

- Universal switch inserts for standard switch series in building automation
- Compatible with manufacturer programs from BERKER, GIRA, JUNG, MERTEN

Radio Technology
Application and Installation Instructions

Wireless Engineering

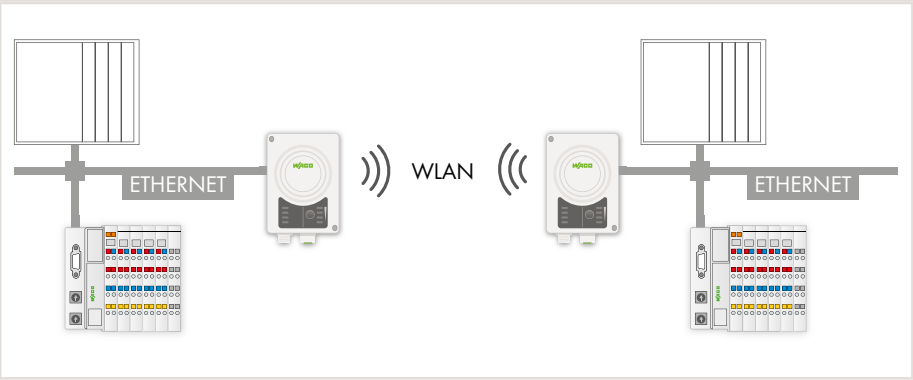
- Commissioning, maintenance
- Connect WAGO software on a PC/notebook to a product's service interface
- Controllers
- Controllers XTR
- Fieldbus couplers, I/O System 750
- Fieldbus couplers, I/O System 750 XTR
- Temporary install via compact *Bluetooth*® Adapter



Tunneling ETHERNET Fieldbuses

- Point-to-point connection (between two nodes), e.g., for connecting mobile units to a central controller or for connecting stationary stations
- Tunneling PROFINET, Modbus TCP, Ethernet/IP, etc., via *Bluetooth*® wireless technology or WLAN
- Process data coupling
- Range: up to 400 m in open air





8

Radio Technology
Application and Installation Instructions

Connecting Mobile Systems

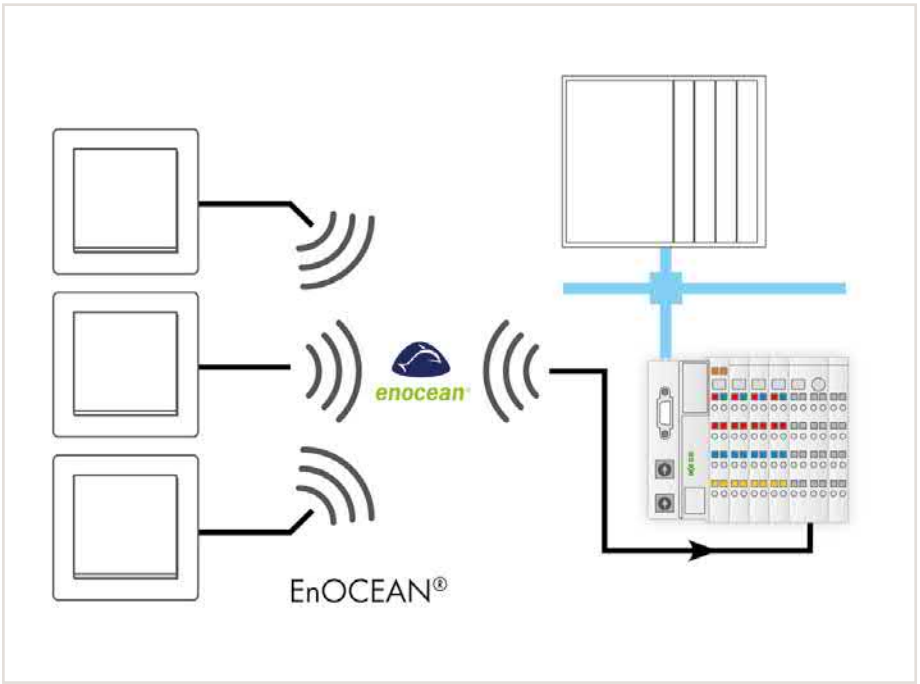
- Tunneling ETHERNET telegrams via *Bluetooth*® radio technology or WLAN
- Point-to-point connection (between two nodes), e.g., for coupling a mobile unit with a stationary basic system
- Process data coupling
- Range: up to 400 m in open air





Integration into the WAGO-I/O-SYSTEM via EnOcean Radio Technology

- Radio receiver in the I/O module
- Operation on:
  - Controllers
  - Fieldbus couplers
- Range: Up to 300 m in open air, approx. 30 m in buildings



8

WLAN ETHERNET Gateway



Power connector:
M12 plug, A-coded



1: Vin + (9 ... 30 VDC)
2: Digital input GND
3: Vin GND (0 V)
4: Digital input + (9 ... 30 VDC)
5: Functional ground

ETHERNET connector:
M12 socket, D-coded



1: Transmit +
2: Receive +
3: Transmit -
4: Receive -

Item Description	Wireless ETHERNET Gateway
Item No.	**758-918**
Order Text	Wireless ETHERNET Gateway
Technical Data	
Radio technology	*Bluetooth*®: 4.0; WLAN: 802.11a/b/g/d/e/i/h
Topology	Peer-to-peer connection
Security authentication	WLAN: WPA/WPA2 PSK; LEAP; PEAP
Security encryption	WLAN: none; WEP64; WEP128; TKIP; AES/CCMP
Frequency band	ISM band; 2.4 GHz (*Bluetooth*®, WLAN); ISM band; GHz (WLAN)
Transmission range	Up to 400 m*
Antenna	Internal directional antenna
Supply voltage	24 VDC (9 ... 30 V)
Connectors	- ETHERNET: M12 connector, D-coded, - Supply: M12 connector, A-coded
Configuration	Simple push-button operation and Web-Based Management
Number of inputs	1 (trigger input: 9 ... 30 VDC)
Surrounding air temperature (operation)	–30 ... +65 °C
Dimensions W x H x D	67.8 × 33.2 x 92.7
Protection type	IP65
Approvals	CE
Data sheet and further information, see:	wago.com/758-918

*The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore, range specifications within buildings can only represent typical values which can normally be achieved. More detailed information is available in the manual.

The Wireless ETHERNET Gateway simplifies creation of a wireless transmission link for ETHERNET protocols (e.g., PROFINET, MODBUS/TCP, Ethernet/IP).
The gateway is used as a cable substitute to create a robust, industry-proven *Bluetooth*® or WLAN link between two automation devices.
The gateway supports various configurations and can therefore also be operated as an access point.
Both IP65 housing and internal directional antenna allow the gateway to be used in harsh industrial environments. Simple push-button operation rapidly connects two Wireless ETHERNET Gateways.
Additional settings can be made via Web-Based Management.

Note:
Two Wireless ETHERNET Gateways of the same type are required to establish a peer-to-peer connection.

„ Marking strips, felt-tip pen, see Section "Accessories and Tools"

„ IP67 cables and pluggable connectors, see Section "Accessories and Tools"

Bluetooth® Adapter





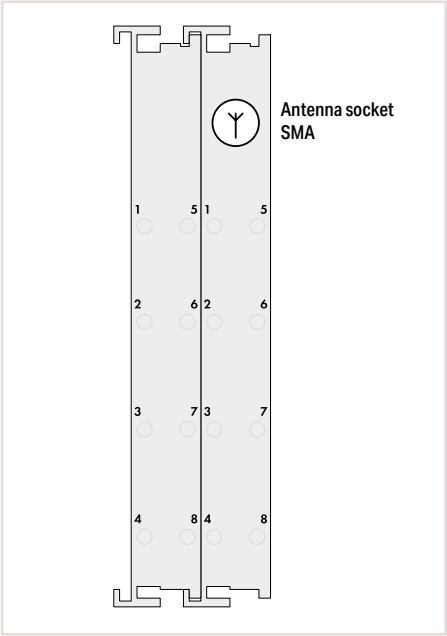
Item Description	*Bluetooth*® Adapter
Item No.	**750-921**
Order Text	*Bluetooth*® Adapter
Technical Data	
Transmission range	20 m in open air (Class 2)*
Data transmission rate	9600 … 115,000 bit/s
Frequency range	ISM band; 2402 … 2483 MHz
Type of communication	Peer-to-peer connection
Supported profiles	Serial Port Profile (SPP)
Radio technology	*Bluetooth*® 2.1
Antenna	Integrated
Connectors	4-pole service connectors
Configuration	AT commands (e.g., via HyperTerminal)
Function	Master or slave
LED	Operating mode
Security encryption	128-bit encryption
Surrounding air temperature (operation)	–20 … +60 °C
Dimensions W x H x D	15 x 50 x 19 mm
Approvals	*Bluetooth*® approval; CE
Data sheet and further information, see:	wago.com/750-921

*The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore, range specifications within buildings can only represent typical values which can normally be achieved. More detailed information is available in the manual.

The *Bluetooth*® Adapter wirelessly connects a notebook computer with *Bluetooth*® functionality to the service interface of the fieldbus coupler/controller. It also provides an active connection to a controller.
As a cable substitute, the *Bluetooth*® Adapter allows communication between two controllers, as well as between fieldbus couplers/controllers via WAGO Software Tools.
The adapter is supplied via both service interface and power supply of the coupler/controller.

Radio Receiver EnOcean





Item Description	Radio Receiver EnOcean
Version	**Standard**
Item No.	**750-642**
Order Text	Radio Receiver EnOcean

Technical Data	
Antenna	External via SMA socket
Frequency band	868.3 MHz
Transmission range	Up to 300 m in open field (30 m typical in buildings, see manual)*
Transmission protocol (radio telegram)	EnOcean
Supply voltage (system)	5 VDC; via data contacts
Current consumption – system supply (5 V)	80 mA
Data width (internal)	1 x 24-bit input/output (3-byte user data); 1 x 8-bit control/status
Surrounding air temperature (operation)	0 … +55 °C
Dimensions W x H x D	24 x 72 x 100 mm
Approvals	CE; KC; cULus OrdLoc/HazLoc; IECEx ATEX/IECEx
Data sheet and further information, see:	wago.com/750-642

Accessories	Item No.	Page
External antenna	758-910	424

*The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore, range specifications within buildings can only represent typical values which can normally be achieved. More detailed information is available in the manual.

This radio receiver obtains radio telegrams from maintenance-free, self-powered and wireless switches/sensors based on EnOcean radio technology.
The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy.
The LED (RSSI) indicates a sufficient input level.

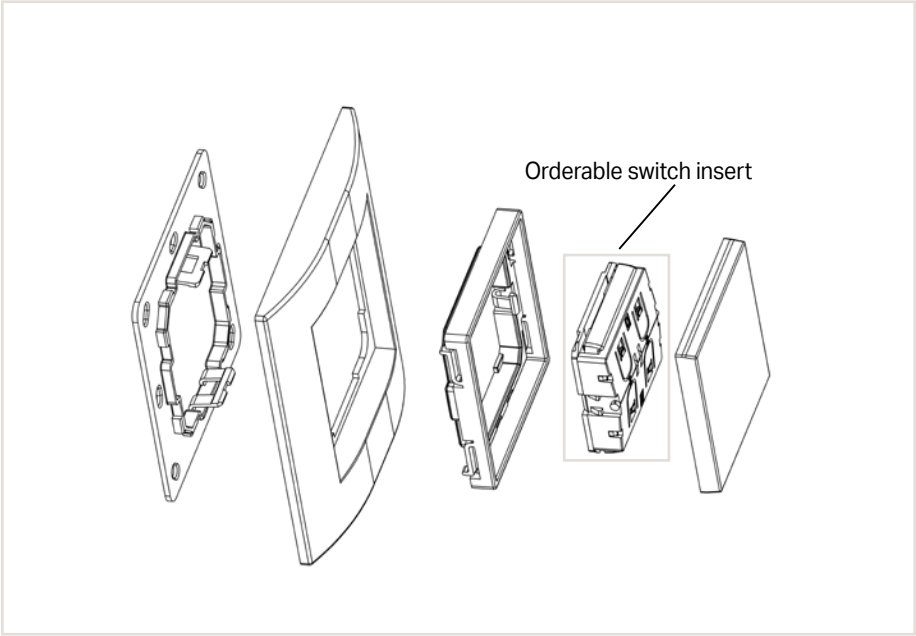
Preprogrammed function blocks for WAGO Controllers make integration easy.

„ Mini-WSB marker card and mounting accessories, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 522 or www.wago.com

Radio Transmitter; EnOcean easyfit PTM 250





Item Description	Radio Transmitter; EnOcean easyfit PTM 250			
Version	**2-channel lighting control**	**4-channel lighting control**	**2-channel blind control**	**4-channel blind control**
Item No.	**758-940/001-000**	**758-940/003-000**	**758-940/002-000**	**758-940/004-000**
Order Text	Radio Transmitter; EnOcean easyfit PTM 250; 2-Channel Light	Radio Transmitter; EnOcean easyfit PTM 250; 4-Channel Light	Radio Transmitter; EnOcean easyfit PTM 250; 2-Channel Sunblind	Radio Transmitter; EnOcean easyfit PTM 250; 4-Channel Sunblind

Technical Data				
Integrated radio transmitter	EnOcean PTM 200			
Radio technology	EnOcean 868 MHz; RPS type 2			
Range	300 m in open air; 30 m (typ.) within buildings*			
Antenna	Integrated			
Total installation height	14 mm (frame lies directly on surface)			
Dimensions of rocker/frame cut-out/center plate	50 x 50 mm / 55 x 55 mm / 71 x 71 m			
Assembly	Flat surface; glued (double-sided mounting film enclosed) or screwed			
Color	Pure white			
Rocker switch variant	Rocker switch with neutral middle position	Series rocker switch	Rocker switch with neutral middle position	Series rocker switch
Relative humidity	95 % (non condensing)			
Surrounding air temperature (operation)	–25 … +65 °C			
Compatibility	BERKER, GIRA, JUNG, MERTEN			
Approvals	R&TTE, CE			
Data sheet and further information, see:	wago.com/758-940			

PTM 250 is a universal, extremely flat function switch insert with maintenance-free energy generator. The universal switch insert fits in numerous frame programs from various installation material suppliers. The base plate can be glued or screwed into position for easy attachment to glass as well as plaster. Integration into the frame is similar to universal inserts for antenna sockets.

Delivered without frame; frames must be ordered separately from the desired manufacturer program!

*The maximum range in the field decreases with use in buildings and changes depending on the building materials used and the spatial geometry. Therefore, range specifications within buildings can only represent typical values which can normally be achieved. More detailed information is available in the manual.

External Antenna





Item Description	Magnetic-Mount Antenna, GSM 900/1800; External antenna	Magnetic-Mount Antenna, WLAN/*Bluetooth*® 2.4 GHz; External antenna
Item No.	**758-910**	**758-912**
Order Text	Magnetic-Mount Antenna, GSM 900/1800; External antenna	Magnetic-Mount Antenna, WLAN/*Bluethooth*®; External antenna
Technical Data		
Frequency band	870 … 960 MHz; 1710 … 1880 MHz	2400 … 2485 MHz
VSWR	< 1.5	
Gain	0 dB	2 dBi
Power (max.)	20 W	
Cable length	250 cm	250 cm
Connector	SMA angled plug + ferrite bead	SMA angled plug
Data sheet and further information, see:	wago.com/758-910	wago.com/758-912

Notes on operating the antenna with WAGO EnOcean Radio Receivers:

- The antenna is to be mounted on a plate measuring at least 25 x 25 cm.
- The distance of interfering sources to the antenna and antenna line must be at least 30 cm and the free space between the antenna and the next wall must be at least 35 cm.
- The antenna cable should, under no circumstances, be bent sharply, since irreversible damage may result to the antenna line (RG174 bending radius > 15 mm).



Sensor/Actuator Boxes

Sensor/Actuator Boxes

- M8 and M12 sensor/actuator boxes
- Passive signal acquisition and output at the machine level
- Fully encapsulated

Sensor/Actuator Boxes
Contents

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Standards and Rated Conditions				429
Approvals				429
Interfaces and Types				430
		Description	Item No.	
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		M12 Sensor/Actuator Box; 4-way, 4-pole; 10 m connecting cable	757-244/000-010	
		M12 Sensor/Actuator Box; 6-way, 4-pole; 5 m connecting cable	757-264/000-005	432
		M12 Sensor/Actuator Box; 6-way, 4-pole; 10 m connecting cable	757-264/000-010	
		M12 Sensor/Actuator Box; 8-way, 4-pole; 5 m connecting cable	757-284/000-005	433
		M12 Sensor/Actuator Box; 8-way, 4-pole; 10 m connecting cable	757-284/000-010	
		M12 Sensor/Actuator Box; 8-way, 4-pole; 25 m connecting cable	757-284/000-025	
		M12 Sensor/Actuator Box; 4-way, 5-pole; 5 m connecting cable	757-245/000-005	434
		M12 Sensor/Actuator Box; 4-way, 5-pole; 10 m connecting cable	757-245/000-010	
		M12 Sensor/Actuator Box; 6-way, 5-pole; 5 m connecting cable	757-265/000-005	434
		M12 Sensor/Actuator Box; 6-way, 5-pole; 10 m connecting cable	757-265/000-010	
		M12 Sensor/Actuator Box; 8-way, 5-pole; 5 m connecting cable	757-285/000-005	435
		M12 Sensor/Actuator Box; 8-way, 5-pole; 10 m connecting cable	757-285/000-010	
		M12 Sensor/Actuator Box; 8-way, 5-pole; 25 m connecting cable	757-285/000-025	
	M12 Sensor/Actuator Boxes with M23 Connector	M12 Sensor/Actuator Box; 4-way; 4-pole; M23 connector	757-144	436
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		M12 Sensor/Actuator Box; 8-way; 5-pole; M23 connector; without LED	757-185/100-000	
	M8 Sensor/Actuator Boxes with Cable Connection	M8 Sensor/Actuator Box; 4-way, 3-pole; 2 m connecting cable	757-443/000-002	440
		M8 Sensor/Actuator Box; 4-way, 3-pole; 5 m connecting cable	757-443/000-005	
		M8 Sensor/Actuator Box; 4-way, 3-pole; 10 m connecting cable	757-443/000-010	
		M8 Sensor/Actuator Box; 6-way, 3-pole; 5 m connecting cable	757-463/000-005	440
		M8 Sensor/Actuator Box; 6-way, 3-pole; 10 m connecting cable	757-463/000-010	
		M8 Sensor/Actuator Box; 8-way, 3-pole; 5 m connecting cable	757-483/000-005	441
		M8 Sensor/Actuator Box; 8-way, 3-pole; 10 m connecting cable	757-483/000-010	
		M8 Sensor/Actuator Box; 10-way, 3-pole; 5 m connecting cable	757-403/000-005	441
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	M8 Sensor/Actuator Boxes with M16 Connector	M8 Sensor/Actuator Box; 4-way; 3-pole; M16 connector	757-343	442
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	Accessories Marking cards, marking strips, protective caps, spacer modules, interconnecting cables			444

Sensor/Actuator Boxes
General Product Information

For Signal Acquisition at the Machine Level

Passive M8/M12 sensor/actuator boxes are placed close to the process and acquire signals at the machine level. They can be used under very harsh environmental conditions and establish the connection between sensors/actuators and the controller via molded or detachable cables. Use of standardized pluggable connections supports sensor and actuator plug & play, while the use of trunk cables replaces the individual wiring of I/O signals to automation components in the control cabinet. Cabling is well-organized and minimized.

Signal Acquisition in Exceptionally Harsh Conditions

WAGO's sensor/actuator boxes with molded cable (72 hours at 1 m water depth) have an extremely robust design and meet both IP67 and IP68 protection standards. This design makes them ideal for applications where signals must be recorded in extreme environments (temperature, shock, vibration) without a control cabinet. They're also excellent alternatives when the use of an active IP67 I/O system would not be cost-effective due to a low signal count or the simple signal conditions (only digital signal acquisition/output).

Plug-&-Play Connection Technology

The IP67 sensor/actuator boxes with a removable connecting cable (M16 or M23 pluggable connector) are ideal for areas where frequent easy disconnection and reconnection are required (e.g., transport, modification, service).

Fixed Trunk Cable

The IP68 sensor/actuator boxes with molded cables are preferred when challenging cable paths do not allow the use of preassembled M16/M23 cables.

Extreme Mechanical Performance

A system/machine is exposed to severe mechanical and thermal influences. It is important to process its signals despite severe vibrations and shocks. The sensor/actuator boxes are used at the machine level. Full encapsulation safeguards system operation, so that even extreme vibration and temperature loads do not degrade signal acquisition and power supply via the connecting cable to the controller or other automation components located in the non-critical control cabinet area.

Flexible Assembly

The sensor/actuator boxes can be mounted directly on the machine. Extensive engineering ensures compliance with standardized specifications from CNOMO guidelines regarding the spacing of assembly drill holes that are often used in passive distribution boxes or sensor/actuator boxes. An optional adapter is available that can be used to mount two modules seamlessly side by side. This has the advantage of maintaining a defined distance for proper routing of the sensor/actuator cables and of avoiding contamination points.

Advantages:

- Rugged, simple and compact extension for IP20 automation components
  - For stricter requirements on environmental conditions
  - For plug-and-play connector technology when needed
  - For simpler cable installation in the form of trunk cables
- High-quality PUR connection cables (drag chains compatible, halogen-free)
- Fully encapsulated (resistance and leak-proof)
- Flange sockets (metal design)
- Surrounding air temperature (operation): -25 … +80°C
- Status LEDs

Sensor/Actuator Boxes
Item Number Key

Explanation of item number key's components

Series
Item No.: 757-abc/x00-0yy

a: Design
1: M12 sensor/actuator box with M23 connector
2: M12 sensor/actuator box with cable connector
3: M8 sensor/actuator box with M16 connector
4: M8 sensor/actuator box with cable connector

b: Number of M8/M12 connectors
4: 4 ea.
6: 6 ea.
8: 8 ea.
0: 10 ea.

c: Pole number
3: 3-pole
4: 4-pole
5: 5-pole

x00: Status LEDs
100: Without status LEDs

0yy: Length of connecting cable
002: 2 m
005: 5 m
010: 10 m
025: 25 m

Standards and Rated Conditions

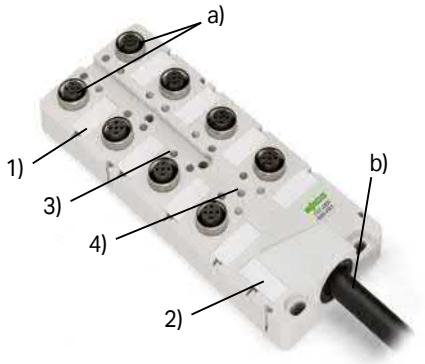
General Specifications	
Electrical Data	
Contact resistance (max.)	10 mΩ
Supply voltage	10 … 30 VDC
Current carrying capacity (signal connections)	2 A
Current carrying capacity (supply connections)	9 A (M12) or 6 A (M8)
Signal characteristic	PNP
Mechanical Data	
Protection type	
Sensor/actuator boxes with cable connection	IP68 (72 hours at 1 m water depth)
Sensor/actuator boxes with M16/M23 connection	IP67
Surrounding air temperature (operation)	-25 … +80 °C
Mounting	Screw mount
Mounting position	Any
Vibration resistance	5g per IEC 60068-2-6
Shock resistance	49g per IEC 60068-2-27
Material Data	
Housing material	PA 66 (UL 94 V0); RAL 7035; silicon and halogen free
Encapsulation	Fully encapsulated with conformal coating (UL 94 V0)
Connecting cable	Suitable for drag chains

Approvals

Overview of the approvals in the item comparison in Section 11, Technical Section, or online at www.wago.com

Sensor/Actuator Boxes
Interfaces and Types

(A)

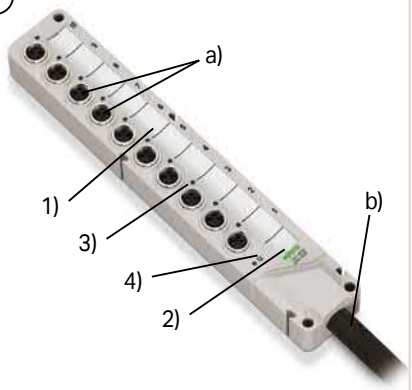


(1) Sensor/actuator marking
(2) Module marking
(3) LED status indicator (by channel), yellow
(4) LED operating indicator module, green

Housing design (A)

- M12 sensor/actuator box with cable connection
- Sensor/actuator M12 sockets (a)
- Connection technology (trunk cable): Fixed connecting cable (b)

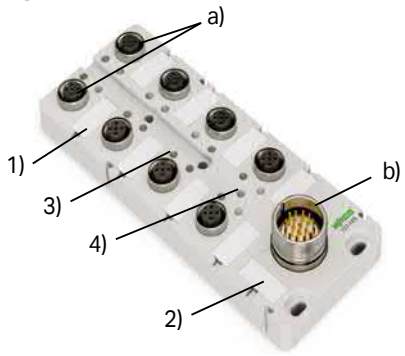
(B)



Housing design (B)

- M8 sensor/actuator box with cable connection
- Sensor/actuator M8 sockets (a)
- Connection technology (trunk cable): Fixed connecting cable (b)

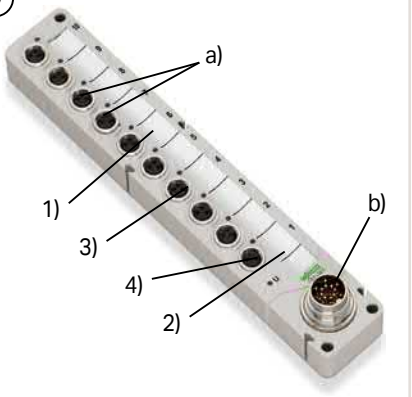
(C)



Housing design (C)

- M12 sensor/actuator box with M23 connector
- Sensor/actuator connections M12 (a)
- Connection technology (trunk cable): M23 plug (b)

(D)



Housing design (D)

- M8 sensor/actuator box with M16 connector
- Sensor/actuator connections M8 (a)
- Connection technology (trunk cable): M16 plug (b)

(E)



Spacer module (E)

- Optional accessory
- For seamless assembly of two side-by-side sensor/actuator boxes
- Defined distance for proper cable connection
- Covers contamination points
- W x H x D (mm):
  10-way: 20 x 16 x 175
  8-way: 20 x 16 x 152
  6-way: 20 x 16 x 123
  4-way: 20 x 16 x 117

(F)



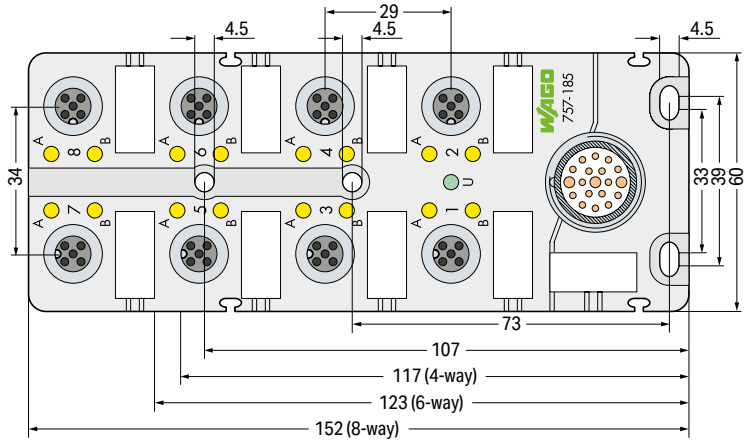
Protection class (F)

- All modules are fully encapsulated
- IP67/68 protection class
- Printing on back of module details pin assignment

Sensor/Actuator Boxes
Interfaces and Types

Dimensions and Mounting Dimensions of M12 Sensor/Actuator Boxes

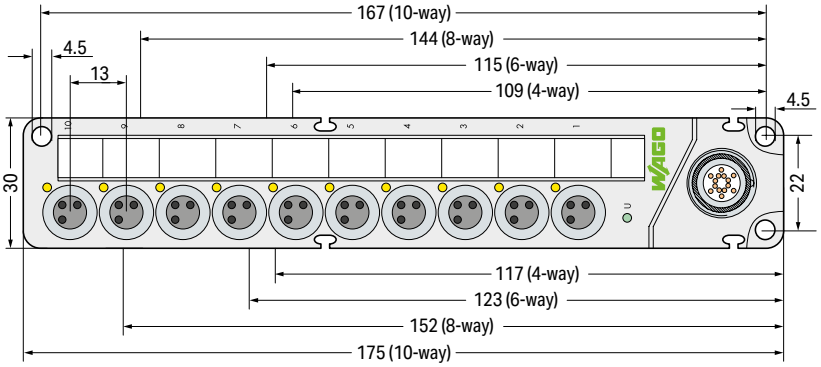
The dimensions also apply to M12 sensor/actuator boxes with cable connection.



Dimensions in mm

Dimensions and Mounting Dimensions of M8 Sensor/Actuator Boxes

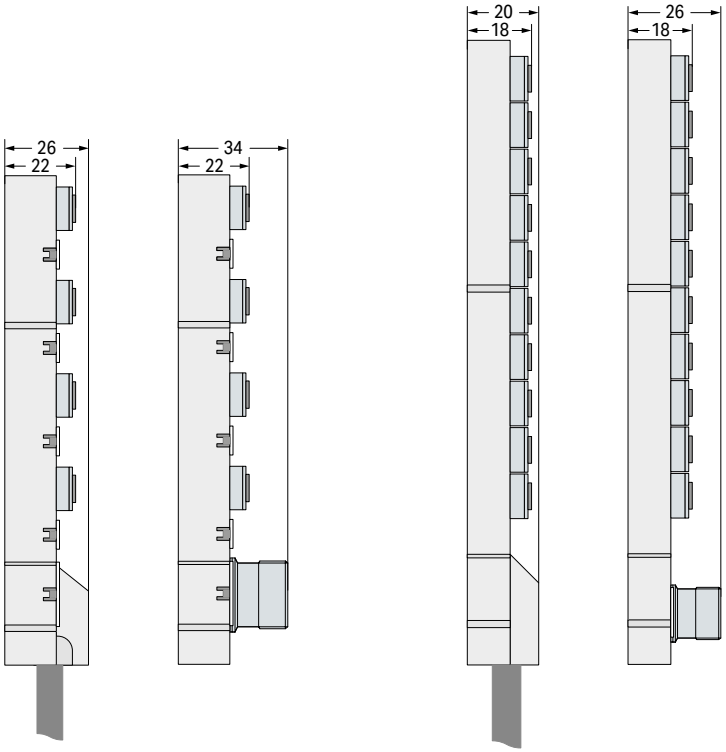
The dimensions also apply to M8 sensor/actuator boxes with cable connection.



Dimensions in mm

Dimensions:

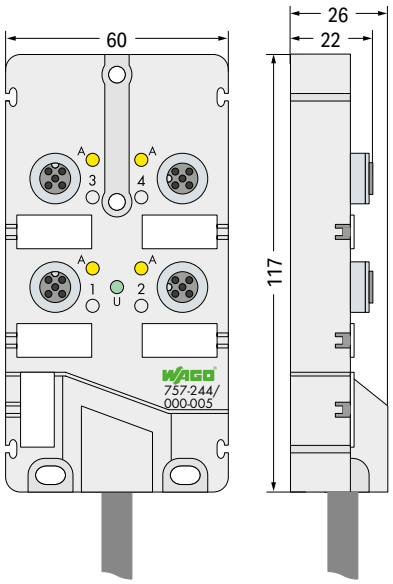
Depth of M12 sensor/actuator boxes or M8 sensor/actuator boxes

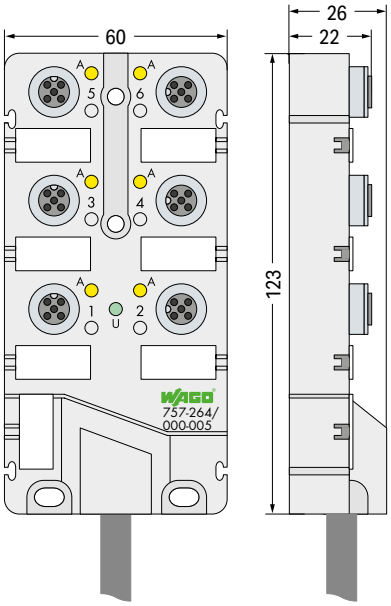


M12 Sensor/Actuator Box; 4-Pole; With Connecting Cable



Figure: 757-284/000-005





Item Description	M12 Sensor/Actuator Box; 4-port; 4-pole		M12 Sensor/Actuator Box; 6-port; 4-pole	
Version	5 m connecting cable	10 m connecting cable	5 m connecting cable	10 m connecting cable
Item No.	757-244/000-005	757-244/000-010	757-264/000-005	757-264/000-010
Order Text	M12 S/A-Box; 4port; 4pole; 5m	M12 S/A-Box; 4port; 4pole; 10m	M12 S/A-Box; 6port; 4pole; 5m	M12 S/A-Box; 6port; 4pole; 10m

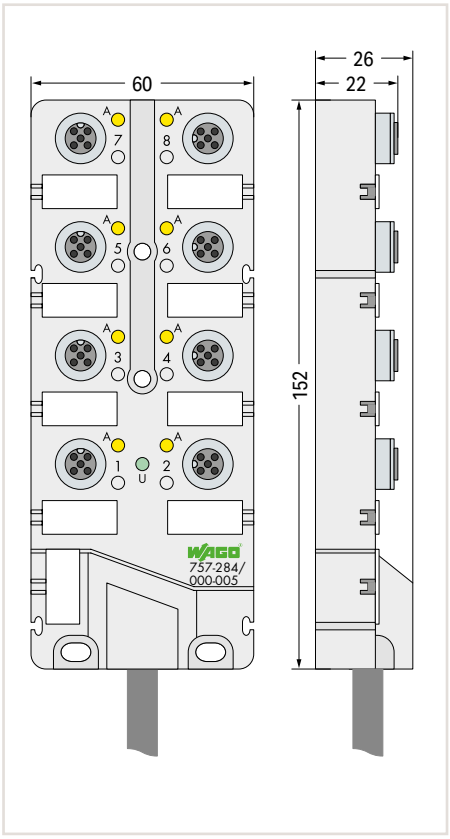
Technical Data				
Connection technology: inputs/outputs	4 x socket M12; 4-pole; including GND		6 x socket M12; 4-pole; including GND	
Number of poles	4 (1 signal per contact)		4 (1 signal per contact)	
Connection technology: trunk cable	Fixed connecting cable		Fixed connecting cable	
Length of connecting cable	5 m	10 m	5 m	10 m
Dimensions W x H x D	60 x 26 x 117 mm		60 x 26 x 123 mm	
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.		E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	
Data sheet and further information, see:	wago.com/757-244		wago.com/757-264	

Accessories	Item No.	Page	Item No.	Page
Marker card	757-011	444	757-011	444
Felt-tip pen	210-110	444	210-110	444
Spacer module	757-040	444	757-060	444
M12 protective cap	756-8102	444	756-8102	444

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„ IP67 cables and pluggable connectors, see Section “Accessories and Tools”

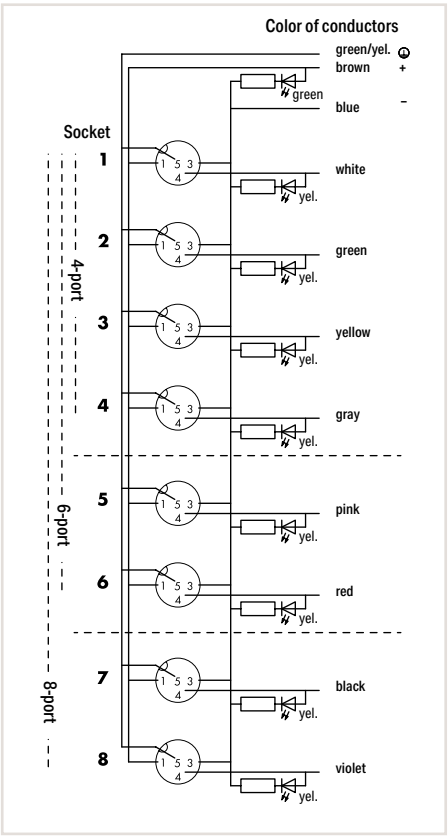
„ Approvals and corresponding ratings, see page 529 or www.wago.com



M12 Sensor/Actuator Box; 8-port; 4-pole		
5 m connecting cable	10 m connecting cable	25 m connecting cable
757-284/000-005	757-284/000-010	757-284/000-025
M12 S/A-Box; 8port; 4pole; 5m	M12 S/A-Box; 8port; 4pole; 10m	M12 S/A-Box; 8port; 4pole; 25m

8 x socket M12; 4-pole; including GND		
4 (1 signal per contact)		
Fixed connecting cable		
5 m	10 m	25 m
60 x 26 x 152 mm		
E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.		
wago.com/757-284		

Item No.	Page
757-011	444
210-110	444
757-080	444
756-8102	444

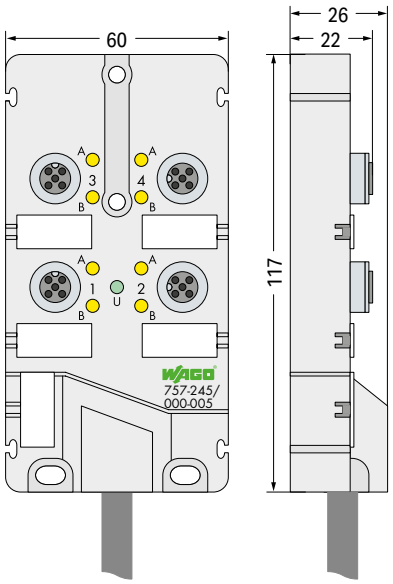


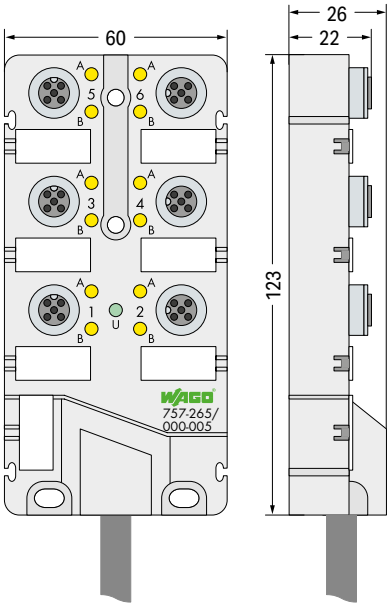
Circuit Diagram: Sensor/Actuator Box; 4-Pole

M12 Sensor/Actuator Box; 5-Pole; With Connecting Cable



Figure: 757-285/000-005





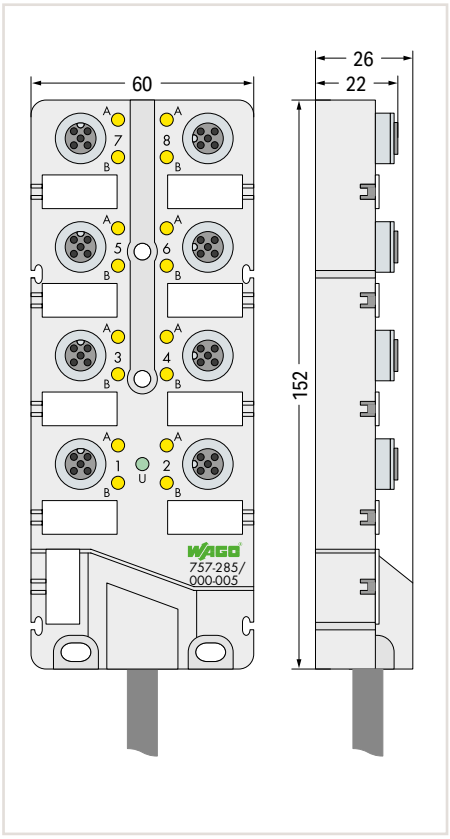
Item Description	M12 Sensor/Actuator Box; 4-port; 5-pole		M12 Sensor/Actuator Box; 6-port; 5-pole	
Version	5 m connecting cable	10 m connecting cable	5 m connecting cable	10 m connecting cable
Item No.	757-245/000-005	757-245/000-010	757-265/000-005	757-265/000-010
Order Text	M12 S/A-Box; 4port; 5pole; 5m	M12 S/A-Box; 4port; 5pole; 10m	M12 S/A-Box; 6port; 5pole; 5m	M12 S/A-Box; 6port; 5pole; 10m
Technical Data				
Connection technology: inputs/outputs	4 x socket M12; 5-pole; including GND		6 x socket M12; 5-pole; including GND	
Number of poles	5 (2 signals per contact)		5 (2 signals per contact)	
Connection technology: trunk cable	Fixed connecting cable		Fixed connecting cable	
Length of connecting cable	5 m	10 m	5 m	10 m
Dimensions W x H x D	60 x 26 x 117 mm		60 x 26 x 123 mm	
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.		E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	
Data sheet and further information, see:	wago.com/757-245		wago.com/757-265	

Accessories	Item No.	Page	Item No.	Page
Marker card	757-011	444	757-011	444
Felt-tip pen	210-110	444	210-110	444
Spacer module	757-040	444	757-060	444
M12 protective cap	756-8102	444	756-8102	444

9

„ IP67 cables and pluggable connectors, see Section “Accessories and Tools”

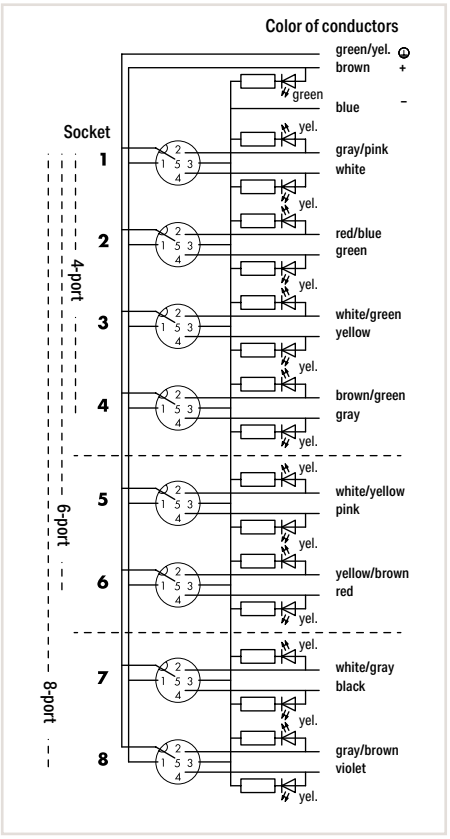
„ Approvals and corresponding ratings, see page 529 or www.wago.com



M12 Sensor/Actuator Box; 8-port; 5-pole		
5 m connecting cable	**10 m connecting cable**	**25 m connecting cable**
757-285/000-005	**757-285/000-010**	**757-285/000-025**
M12 S/A-Box; 8port; 5pole; 5m	M12 S/A-Box; 8port; 5pole; 10m	M12 S/A-Box; 8port; 5pole; 25m

8 x socket M12; 5-pole; including GND		
5 (2 signals per contact)		
Fixed connecting cable		
5 m	10 m	25 m
60 x 26 x 152 mm		
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.		
wago.com/757-285		

Item No.	Page
757-011	444
210-110	444
757-080	444
756-8102	444

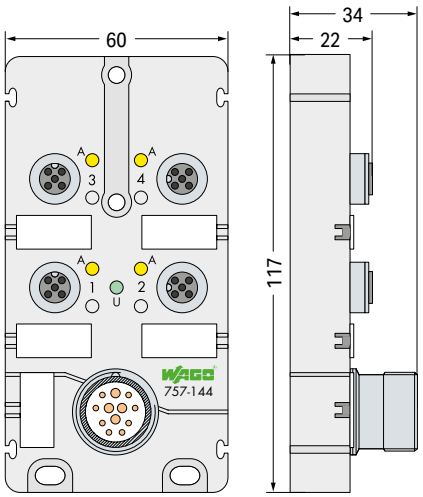


Circuit Diagram: Sensor/Actuator Box; 5-Pole

9

M12 Sensor/Actuator Box; 4-Pole; With M23 Connector





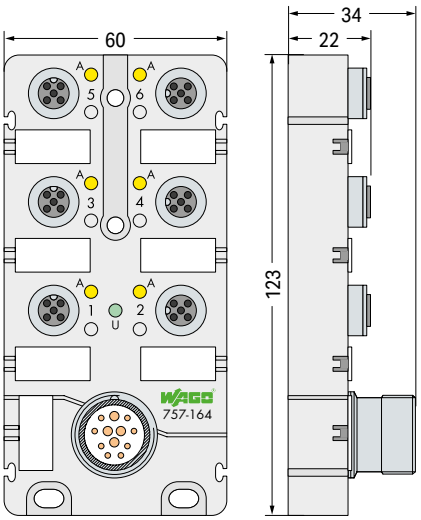


Figure: 757-184

Item Description	M12 Sensor/Actuator Box; 4-port; 4-pole; M23 connector	M12 Sensor/Actuator Box; 6-port; 4-pole; M23 connector
Item No.	757-144	757-164
Order Text	M12 S/A-Box; 4port; 4pole; M23	M12 S/A-Box; 6port; 4pole; M23
Technical Data		
Connection technology: inputs/outputs	4 x socket M12; 4-pole; including GND	6 x socket M12; 4-pole; including GND
Number of poles	4 (1 signal per contact)	4 (1 signal per contact)
Connection technology: trunk cable	M23 plug; 12-pole	M23 plug; 12-pole
Dimensions W x H x D	60 x 34 x 117 mm	60 x 34 x 123 mm
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
Data sheet and further information, see:	wago.com/757-144	wago.com/757-164

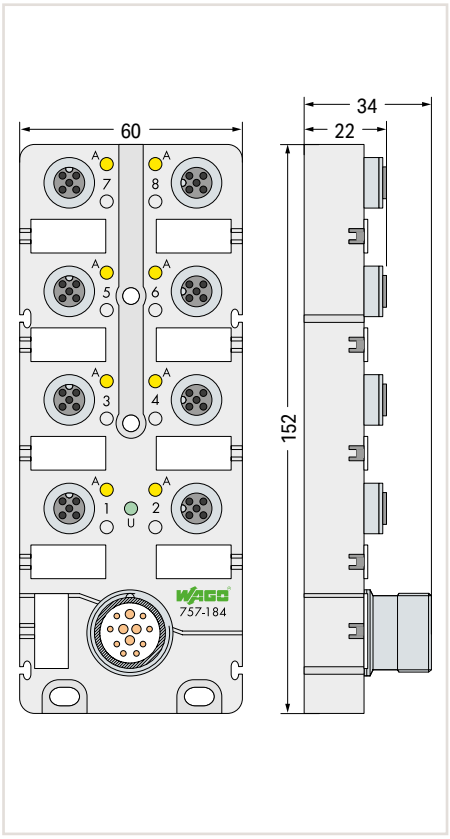
Accessories	Item No.	Page	Item No.	Page
Marker card	757-011	444	757-011	444
Felt-tip pen	210-110	444	210-110	444
Spacer module	757-040	444	757-060	444
M12 protective cap	756-8102	444	756-8102	444

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„ Interconnecting cables, M23 socket, see page 445

„ IP67 cables and pluggable connectors, see Section “Accessories and Tools”

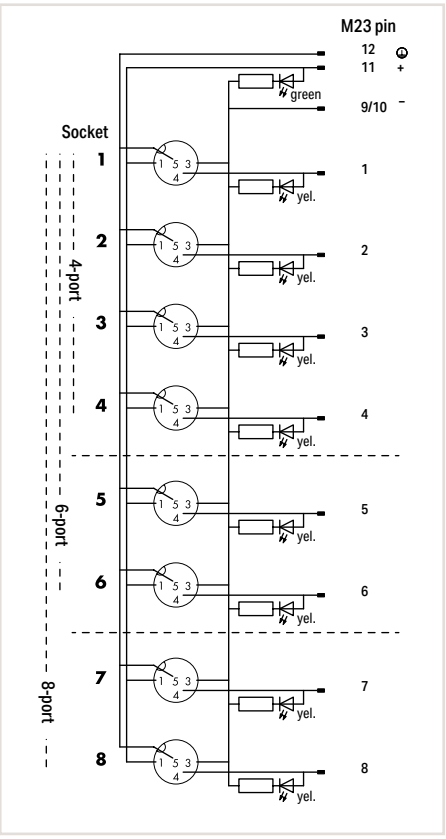
„ Approvals and corresponding ratings, see page 529 or www.wago.com



M12 Sensor/Actuator Box; 6-port; 4-pole; M23 connector
757-184
M12 S/A-Box; 8port; 4pole; M23

8 x socket M12; 4-pole; including GND
4 (1 signal per contact)
M23 plug; 12-pole
60 x 34 x 152 mm
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
wago.com/757-184

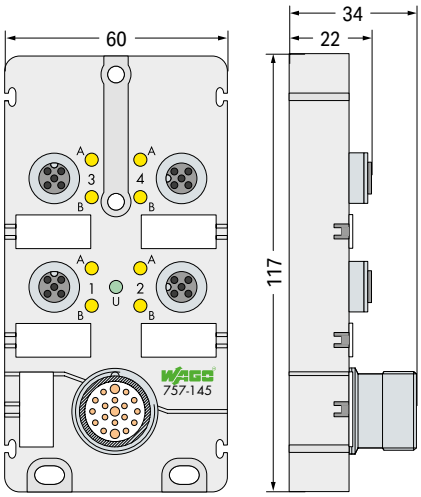
Item No.	Page
757-011	444
210-110	444
757-080	444
756-8102	444



Circuit Diagram: Sensor/Actuator Box; 4-Pole

M12 Sensor/Actuator Box; 5-Pole; With M23 Connector





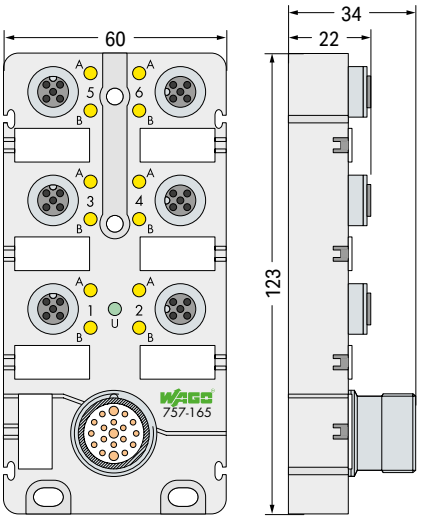


Figure: 757-185

Item Description	M12 Sensor/Actuator Box; 4-port; 5-pole; M23 connector	M12 Sensor/Actuator Box; 6-port; 5-pole; M23 connector
Version		
Item No.	**757-145**	**757-165**
Order Text	M12 S/A-Box; 4port; 5pole; M23	M12 S/A-Box; 6port; 5pole; M23

Technical Data		
Connection technology: inputs/outputs	4 x socket M12; 5-pole; including GND	6 x socket M12; 5-pole; including GND
Number of poles	5 (2 signals per contact)	5 (2 signals per contact)
Connection technology: trunk cable	M23 plug; 19-pole	M23 plug; 19-pole
Dimensions W x H x D	60 x 34 x 117 mm	60 x 34 x 123 mm
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
Data sheet and further information, see:	wago.com/757-145	wago.com/757-165

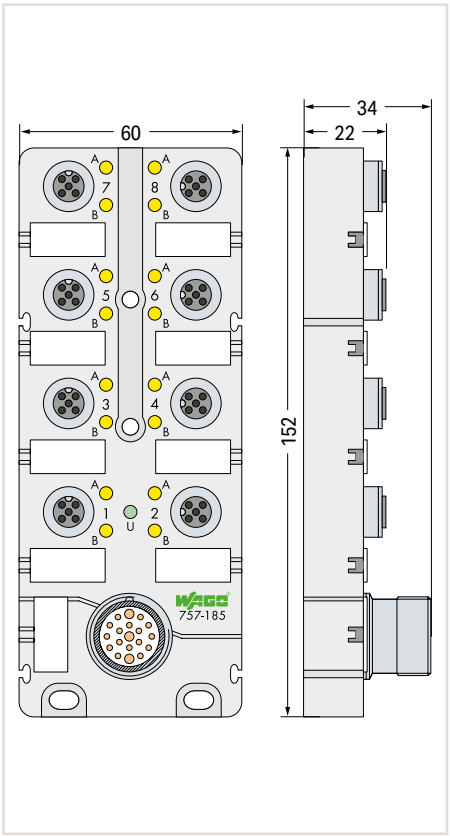
Accessories	Item No.	Page	Item No.	Page
Marker card	**757-011**	444	**757-011**	444
Felt-tip pen	**210-110**	444	**210-110**	444
Spacer module	**757-040**	444	**757-060**	444
M12 protective cap	**756-8102**	444	**756-8102**	444

9

„ Interconnecting cables, M23 socket, see page 445

„ IP67 cables and pluggable connectors, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 529 or www.wago.com

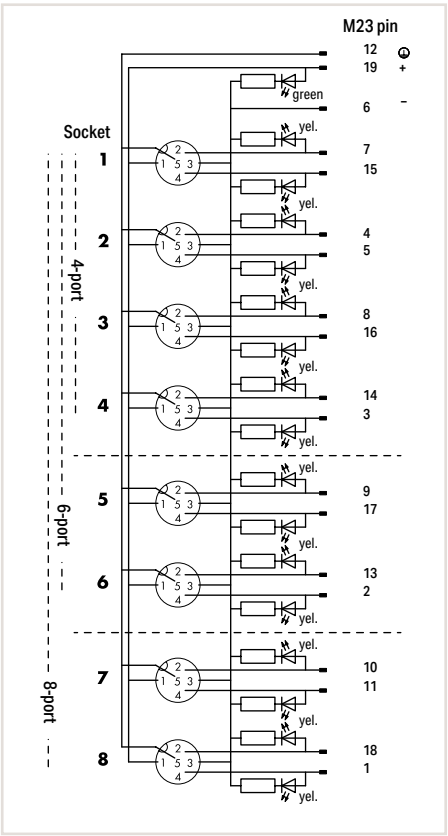


M12 Sensor/Actuator Box; 8-port; 5-pole; M23 connector	
	without LED
757-185	757-185/100-000
M12 S/A-Box; 8port; 5pole; M23	M12 S/A-Box; 8port; 5pole; M23; NL

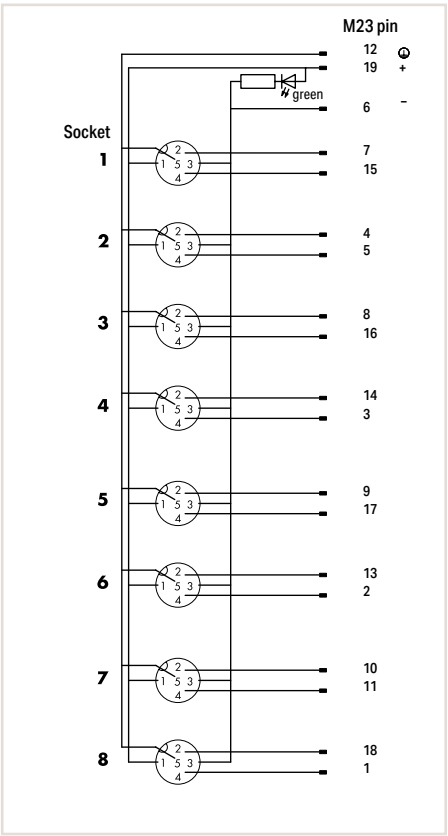
8 x socket M12; 5-pole; including GND
5 (2 signals per contact)
M23 plug; 19-pole
60 x 34 x 152 mm
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
wago.com/757-185 / wago.com/757-185/100-000

Item No.	Page
757-011	444
210-110	444
757-080	444
756-8102	444

The 757-185/100-000 Module has no status LEDs and can therefore also transmit analog signals!



Circuit Diagram: Sensor/Actuator Box; 5-Pole

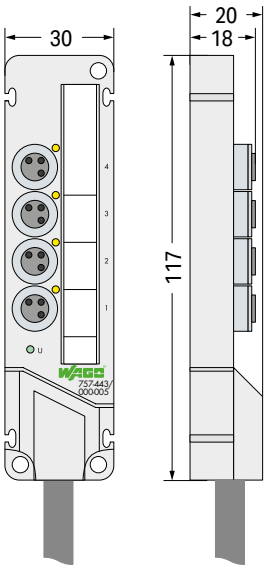


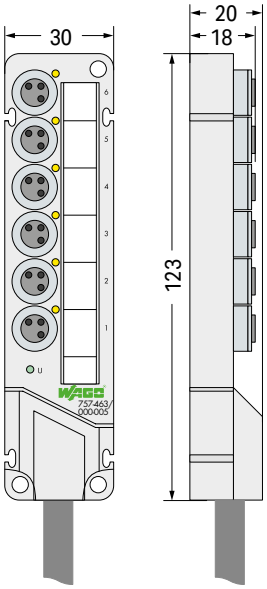
Circuit Diagram: Sensor/Actuator Box; 5-Pole; without LED

M8 Sensor/Actuator Box; 3-Pole; With Connecting Cable



Figure: 757-403/000-005



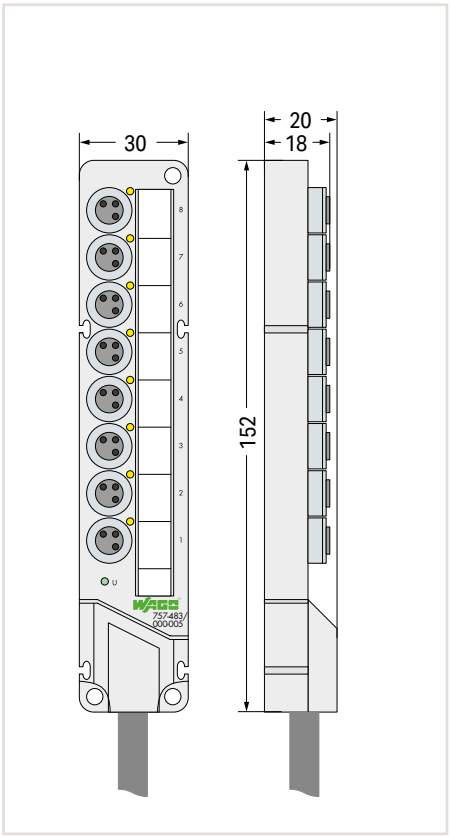


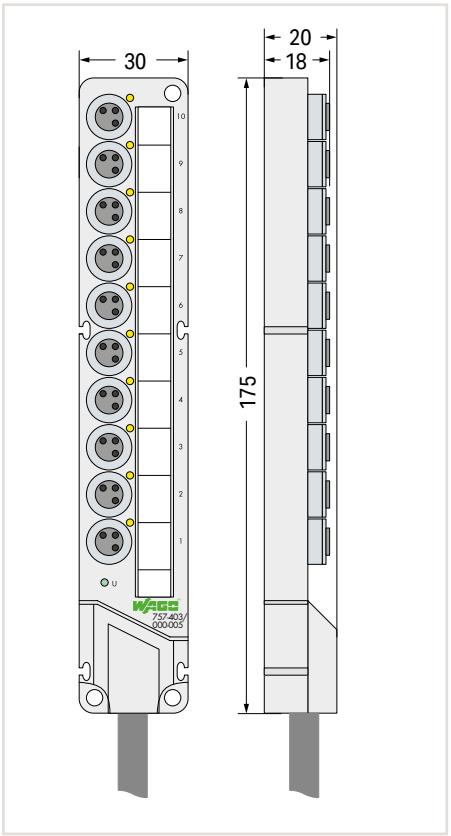
Item Description	M8 Sensor/Actuator Box; 4-port; 3-pole			M8 Sensor/Actuator Box; 6-port; 3-pole	
Version	2 m connecting cable	5 m connecting cable	10 m connecting cable	5 m connecting cable	10 m connecting cable
Item No.	757-443/000-002	757-443/000-005	757-443/000-010	757-463/000-005	757-463/000-010
Order Text	M8 S/A-Box; 4port; 3pole; 2m	M8 S/A-Box; 4port; 3pole; 5m	M8 S/A-Box; 4port; 3pole; 10m	M8 S/A-Box; 6port; 3pole; 5m	M8 S/A-Box; 6port; 3pole; 10m
Technical Data					
Connection technology: inputs/outputs	4 x M8 socket; 3-pole			6 x M8 socket; 3-pole	
Number of poles	3 (1 signal per contact)			3 (1 signal per contact)	
Connection technology: trunk cable	Fixed connecting cable			Fixed connecting cable	
Length of connecting cable	2 m	5 m	10 m	5 m	10 m
Dimensions W x H x D	30 x 20 x 117 mm			30 x 20 x 123 mm	
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.			E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	
Data sheet and further information, see:	wago.com/757-443			wago.com/757-463	

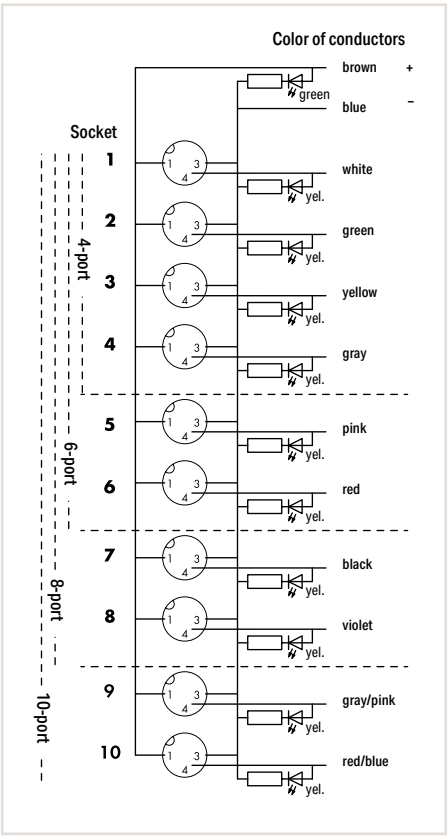
Accessories	Item No.	Page	Item No.	Page
Marking strip	757-041	444	757-061	444
Felt-tip pen	210-110	444	210-110	444
Spacer module	757-040	444	757-060	444
M8 protective cap	756-8101	444	756-8101	444

„ IP67 cables and pluggable connectors, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 529 or www.wago.com







Circuit Diagram: Sensor/Actuator Box; 3-Pole

M8 Sensor/Actuator Box; 8-port; 3-pole	
5 m connecting cable	10 m connecting cable
757-483/000-005	757-483/000-010
M8 S/A-Box; 8port; 3pole; 5m	M8 S/A-Box; 8port; 3pole; 10m

M8 Sensor/Actuator Box; 10-port; 3-pole	
5 m connecting cable	10 m connecting cable
757-403/000-005	757-403/000-010
M8 S/A-Box; 10port; 3pole; 5m	M8 S/A-Box; 10port; 3pole; 10m

8 x M8 socket; 3-pole	
3 (1 signal per contact)	
Fixed connecting cable	
5 m	10 m
30 x 20 x 152 mm	
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	
wago.com/757-483	

Item No.	Page
757-081	444
210-110	444
757-080	444
756-8101	444

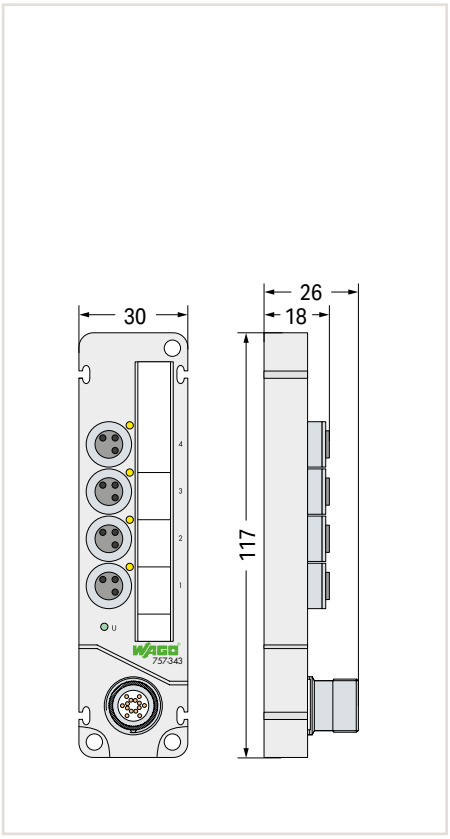
10 x M8 socket; 3-pole	
3 (1 signal per contact)	
Fixed connecting cable	
5 m	10 m
30 x 20 x 175 mm	
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	
wago.com/757-403	

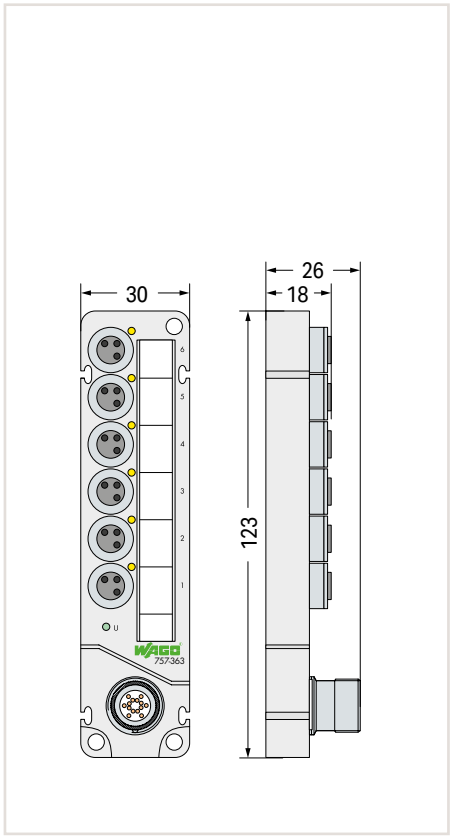
Item No.	Page
757-001	444
210-110	444
757-000	444
756-8101	444

M8 Sensor/Actuator Box; 3-Pole; With M16 Connector



Figure: 757-303





Item Description	M8 Sensor/Actuator Box; 4-port; 3-pole; M16 connector	M8 Sensor/Actuator Box; 6-port; 3-pole; M16 connector
Item No.	757-343	757-363
Order Text	M8 S/A-Box; 4port; 3pole; M16	M8 S/A-Box; 6port; 3pole; M16
Technical Data		
Connection technology: inputs/outputs	4 x M8 socket; 3-pole	6 x M8 socket; 3-pole
Number of poles	3 (1 signal per contact)	3 (1 signal per contact)
Connection technology: trunk cable	M16 plug; 14-pole	M16 plug; 14-pole
Dimensions W x H x D	30 x 26 x 117 mm	30 x 26 x 123 mm
Approvals	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.	E 175199; UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
Data sheet and further information, see:	wago.com/757-343	wago.com/757-363

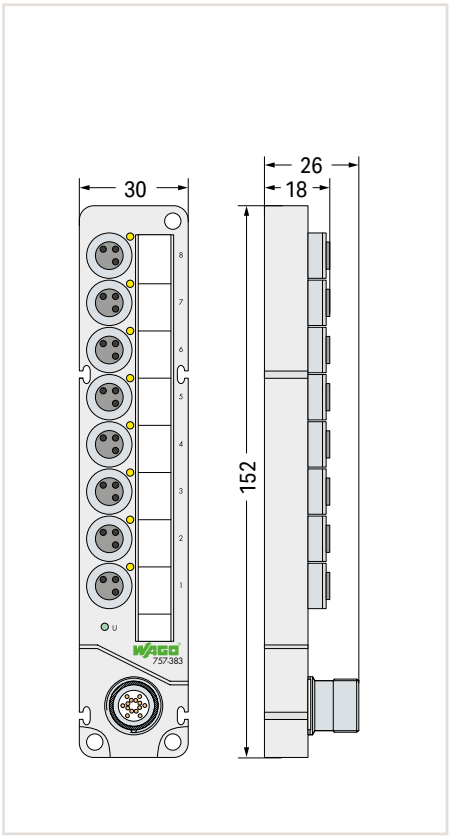
Accessories	Item No.	Page	Item No.	Page
Marking strip	757-041	444	757-061	444
Felt-tip pen	210-110	444	210-110	444
Spacer module	757-040	444	757-060	444
M8 protective cap	756-8101	444	756-8101	444

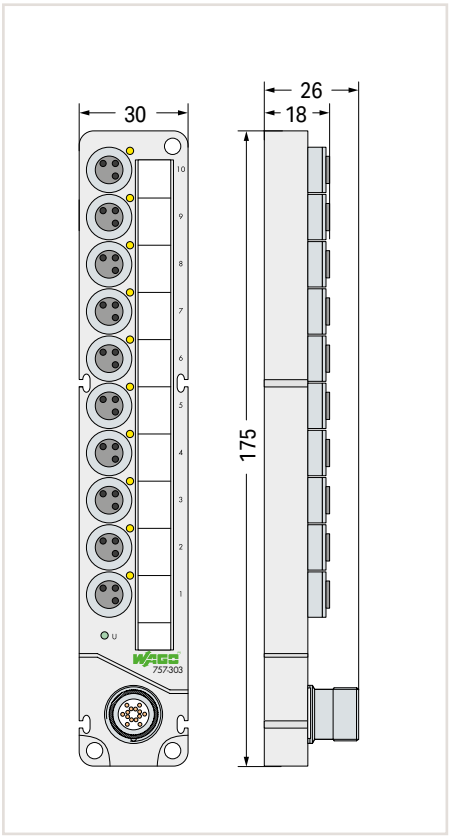
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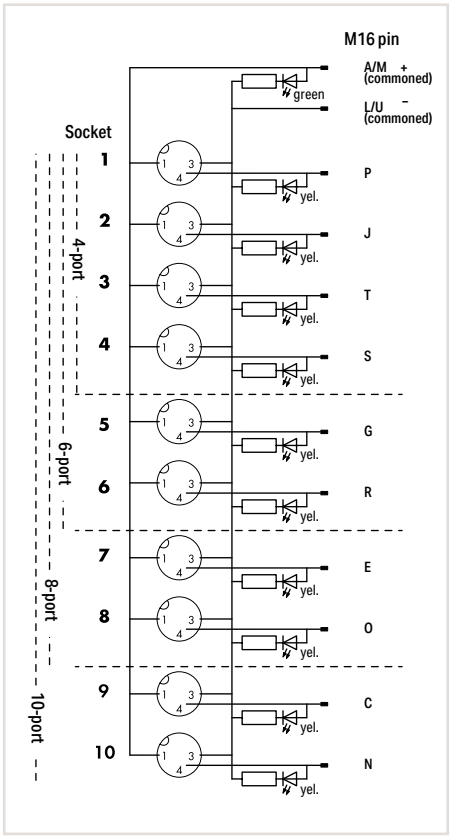
„ Interconnecting cables, M16 socket, see page 445

„ IP67 cables and pluggable connectors, see Section "Accessories and Tools"

„ Approvals and corresponding ratings, see page 529 or www.wago.com







Circuit Diagram: Sensor/Actuator Box; 3-Pole

M8 Sensor/Actuator Box; 8-port; 3-pole; M16 connector
757-383
M8 S/A-Box; 8port; 3pole; M16

8 x M8 socket; 3-pole
3 (1 signal per contact)
M16 plug; 14-pole
30 x 26 x 152 mm
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
wago.com/757-383

Item No.	Page
757-081	444
210-110	444
757-080	444
756-8101	444

M8 Sensor/Actuator Box; 10-port; 3-pole; M16 connector
757-303
M8 S/A-Box; 10port; 3pole; M16

10 x M8 socket; 3-pole
3 (1 signal per contact)
M16 plug; 14-pole
30 x 26 x 175 mm
E 175199; cULus UL 508; Class 2 Equipment These components are designed to be supplied through Class 2 power supplies per UL 1310 or Class 2 transformers per UL 1585.
wago.com/757-303

Item No.	Page
757-001	444
210-110	444
757-000	444
756-8101	444

Sensor/Actuator Boxes; Accessories



Marker card; not stretchable; snap-on type		
	Item No.	Pack. Unit
for M12 Sensor/Actuator Box	757-011	1



Marking strip; cut to defined length; not stretchable; plain; snap-on type		
for M8 Sensor/Actuator Box	Item No.	Pack. Unit
4-port	757-041	100
6-port	757-061	100
8-port	757-081	100
10-port	757-001	100



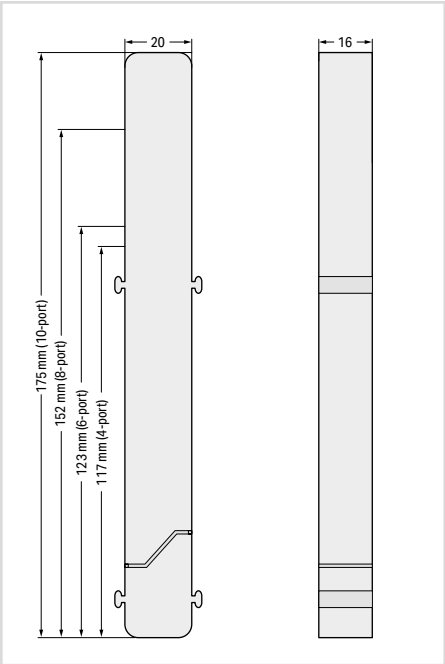
Felt-tip pen		
	Item No.	Pack. Unit
for permanent marking	210-110	1

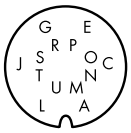


Protective cap (for covering unused sensor/actuator ports)		
	Item No.	Pack. Unit
M8 protective cap	756-8101	10
M12 protective cap	756-8102	10



Spacer module for sensor/actuator box		
	Item No.	Pack. Unit
4-port	757-040	10
6-port	757-060	10
8-port	757-080	10
10-port	757-000	10



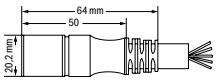


14-pole

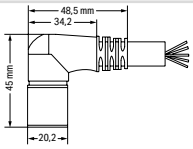
Pin A, L: 0.75 mm²
Pin C … J, N … T: 0.34 mm²

A	brown	N	pink-brown
C	white-pink	O	violet
E	black	P	white
G	rose	R	red
J	green	S	gray
L	blue	T	yellow
M	bridged with A	U	bridged with L









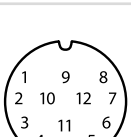
Operating voltage	150 V
Operating current	6 A (0.75 mm²); 4 A (0.34 mm²)
Rated surge voltage	1.2 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−30 … +90 °C
Protection type	IP67
Cable diameter	9.1 mm ±0.2

Interconnecting cable; 14-pole; M16 socket (straight)

Cable Length	Item No.	Pack. Unit
5 m	756-3205/140-050	1
10 m	756-3205/140-100	1
15 m	756-3205/140-150	1

Interconnecting cable; 14-pole; M16 socket (angled)

Cable Length	Item No.	Pack. Unit
5 m	756-3206/140-050	1
10 m	756-3206/140-100	1
15 m	756-3206/140-150	1

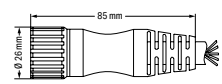


12-pole

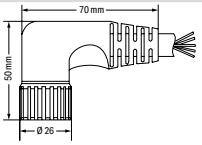
Pin 9, 11, 12: 1.00 mm²;
Pin 1 … 8: 0.34 mm²

1	white	9	blue
2	green	10	bridged with 9
3	yellow	11	brown
4	gray	12	green-yellow
5	rose		
6	red		
7	black		
8	violet		









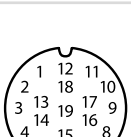
Operating voltage (max.)	300 V
Operating current	8 A
Rated surge voltage	≥ 2.0 kV rms
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +80 °C
Protection type	IP67
Cable diameter	9.3 mm ±0.3

Interconnecting cable; 12-pole; M23 socket (straight)

Cable Length	Item No.	Pack. Unit
5 m	756-3201/120-050	1
10 m	756-3201/120-100	1
15 m	756-3201/120-150	1

Interconnecting cable; 12-pole; M23 socket (angled)

Cable Length	Item No.	Pack. Unit
5 m	756-3202/120-050	1
10 m	756-3202/120-100	1
15 m	756-3202/120-150	1

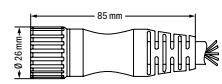


19-pole

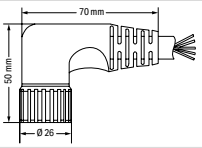
Pin 6, 12, 19: 1.00 mm²;
Pin 1 … 5, 7 … 11, 13 … 19: 0.34 mm²

1	violet	11	black
2	red	12	green-yellow
3	gray	13	yellow-brown
4	red-blue	14	brown-green
5	green	15	white
6	blue	16	yellow
7	gray-pink	17	rose
8	white-green	18	gray-brown
9	white-yellow	19	brown
10	white-gray		









Operating voltage (max.)	300 V
Operating current	10 A (6, 12, 19 contacts); 8 A (remaining contacts)
Rated surge voltage	≥ 2.0 kV rms
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +80 °C
Protection type	IP67
Cable diameter	11.6 mm ±0.3

Interconnecting cable; 19-pole; M23 socket (straight)

Cable Length	Item No.	Pack. Unit
5 m	756-3203/190-050	1
10 m	756-3203/190-100	1
15 m	756-3203/190-150	1

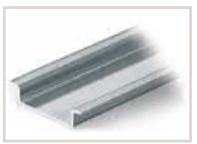
Interconnecting cable; 19-pole; M23 socket (angled)

Cable Length	Item No.	Pack. Unit
5 m	756-3204/190-050	1
10 m	756-3204/190-100	1
15 m	756-3204/190-150	1



Accessories and Tools

Accessories and Tools
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Power Supplies

Additional Technical Data at www.wago.com

	Item Number	Output	Input Voltage Range	Functional Description
Pro – Professional and Efficient Power Supplies with Extra Power				
	787-819	12 VDC (11 … 18 V) / 6 A	1 x 85 … 264 VAC 120 … 373 VDC	• TopBoost provides up to 60 A of additional output for 50 ms • PowerBoost offers up to 200% output power for four seconds • DC OK contact and stand-by input • Clear operating status indication via LED • Up to 94% efficiency • Surrounding air temperature: –25 … +70°C (device start at –40°C, type-tested) • Slim design and versatile mounting options • Pluggable CAGE CLAMP® connectors • Approvals: UL 508, UL 60950 • LineMonitor for parameter setting and input/output monitoring [a]
	787-821	12 VDC (11 … 18 V) / 10 A		
	787-831	12 VDC (11 … 18 V) / 15 A		
	787-818	24 VDC (22 … 29.5 V) / 3 A		
	787-822	24 VDC (22 … 29.5 V) / 5 A		
	787-832	24 VDC (22 … 29.5 V) / 10 A		
	787-834	24 VDC (22 … 29.5 V) / 20 A		
	787-833	48 VDC (33 … 52 V) / 5 A		
	787-835	48 VDC (33 … 52 V) / 10 A		
	787-840	24 VDC (22.8 … 28.8 V) / 10 A	2/3 x 340 … 550 VAC 480 … 780 VDC	
	787-842	24 VDC (22.8 … 28.8 V) / 20 A		
	787-844	24 VDC (22.8 … 28.8 V) / 40 A		
	787-850 [a]	24 VDC (22.8 … 28.8 V) / 10 A		
	787-852 [a]	24 VDC (22.8 … 28.8 V) / 20 A		
	787-854 [a]	24 VDC (22.8 … 28.8 V) / 40 A		
	787-845	48 VDC (39 … 53 V) / 10 A		
	787-847	48 VDC (39 … 53 V) / 20 A		
Classic – Robust Power Supplies with Integrated TopBoost				
	787-1601 [b]	12 VDC (11.5 … 14.5 V) / 2 A	1/2 x 85 … 264 VAC 120 … 372 VDC	• Slim design • Integrated TopBoost (787-16xx with ≥ 120 W) • DC OK signal/contact • Clear operating status indication via LED • Marking field for device identification • Up to 93% efficiency • Surrounding air temperature: –25 … +70°C (device start at –40°C, type-tested) • Pluggable CAGE CLAMP® connectors • Approvals: UL 508, UL 60950, GL • Approval: EN 60335-1 [b]
	787-1611 [b]	12 VDC (11.5 … 14.5 V) / 4 A		
	787-1621 [b]	12 VDC (11.5 … 14.5 V) / 7 A		
	787-1631	12 VDC (11.5 … 15 V) / 15 A		
	787-1602 [b]	24 VDC (23 … 28.5 V) / 1 A		
	787-1606 [b]	24 VDC (23 … 28.5 V) / 2 A		
	787-1616 [b]	24 VDC (23 … 28.5 V) / 4 A		
	787-1616/000-1000 [b]	24 VDC (23 … 28.5 V) / 3.8 A LPS		
	787-1622 [b]	24 VDC (23 … 28.5 V) / 5 A		
	787-1632	24 VDC (23 … 28.5 V) / 10 A		
	787-1634	24 VDC (23 … 28.5 V) / 20 A		
	787-1623 [b]	48 VDC (40 … 56 V) / 2 A		
	787-1633	48 VDC (40 … 56 V) / 5 A		
	787-1635	48 VDC (40 … 56 V) / 10 A		
	787-1628	24 VDC (23 … 28.5 V) / 5 A	1/2 x 180 … 500 VAC 254 … 780 VDC	
	787-1638	24 VDC (23 … 28.5 V) / 10 A		
	787-1640	24 VDC (23 … 28.5 V) / 10 A	2/3 x 320 … 575 VAC 450 … 800 VDC	
	787-1642	24 VDC (23 … 28.5 V) / 20 A		
	787-1644	24 VDC (23 … 28.5 V) / 40 A		
Eco – Economical Power Supplies for Standard Applications				
	787-712 [c]	24 VDC (22 … 28 V) / 2.5 A	1 x 85 … 264 VAC 130 … 373 VDC	• Economical and robust metal housing • Clear operating status LED indication and optional DC OK contact • Up to 90% efficiency • Surrounding air temperature: –25 … +70°C • Overhead mounting possible • Approvals: UL 508, UL 60950 • Approvals: ATEX/IEC Ex, Zone 2 or Class I Div. 2 [c]
	787-722 [c]	24 VDC (22 … 28 V) / 5 A		
	787-732 [c]	24 VDC (22 … 28 V) / 10 A		
	787-734	24 VDC (22 … 28 V) / 20 A	1 x 90 … 264 VAC 130 … 373 VDC	
	787-736	24 VDC (22 … 28 V) / 40 A		
	787-738	24 VDC (22 … 28 V) / 6.25 A	2/3 x 360 … 460 VAC	
	787-740	24 VDC (24 … 28 V) / 10 A		
	787-2742	24 VDC (22 … 28 V) / 20 A	2/3 x 340 … 575 VAC 460 … 800 VDC	
	787-2744	24 VDC (24 … 28 V) / 40 A		
	787-1701	12 VDC (10 … 14 V) / 2 A	1 x 90 … 264 VAC 125 … 375 VDC	• Budget-friendly for basic applications • Flexible mounting via DIN-rail adapter • Flexible installation via screw-mount clips • Up to 84% efficiency • Approvals: UL 508, UL 60950, EN 60335-1
	787-1711	12 VDC (10 … 14 V) / 4 A		
	787-1721	12 VDC (10 … 14 V) / 8 A		
	787-1702	24 VDC (22 … 26 V) / 1.25 A		
	787-1712	24 VDC (22 … 26 V) / 2.5 A		
	787-1722	24 VDC (22 … 26 V) / 5 A		
	787-1732	24 VDC (22 … 26 V) / 10 A		

Power Supplies

Additional Technical Data at www.wago.com

	Item Number	Output	Input Voltage Range	Functional Description
COMPACT Power – Compact and High-Performance Power Supplies				
	787-1001	12 VDC (10.8 … 18 V) / 2 A	1 x 85 … 264 VAC 120 … 373 VDC	• Compact, low-profile design • Ideal for decentralized applications • Clear operating status indication via LED • Up to 88% efficiency • Surrounding air temperature: –25 … +60°C (device start at –40°C, type-tested) • Overhead mounting permitted • Approvals: UL 508, UL 60950, GL
	787-1011	12 VDC (10.5 … 15.5 V) / 4 A		
	787-1021	12 VDC (10.5 … 15.5 V) / 6.5 A		
	787-1017	18 VDC (15 … 28 V) / 2.5 A		
	787-1002	24 VDC (22.8 … 26.4 V) / 1.3 A		
	787-1012	24 VDC (22.8 … 26.4 V) / 2.5 A		
	787-1022	24 VDC (22.8 … 26.4 V) / 4 A		
	787-1020	5 VDC (4.5 … 8.5 V) / 5.5 A		
	787-1102	24 VDC (22.8 … 26.4 V) / 1.3 A		
	787-1112	24 VDC (22.8 … 26.4 V) / 2.5 A		
	787-1122	24 VDC (22.8 … 26.4 V) / 4 A		
	787-1202	24 VDC (22 … 26 V) / 1.3 A	1 x 90 … 264 VAC 125 … 375 VDC	• Budget-friendly for basic applications • Mounting on DIN-rail and flexible installation via screw-mount clips • Removable front plate improves cooling in alternative mounting positons • Up to 90% efficiency • Surrounding air temperature: –25 … +70°C • Approvals: UL 508, UL 60950, EN 60335-1
	787-1212	24 VDC (22 … 26 V) / 2.5 A		
	787-1216	24 VDC (22 … 26 V) / 4.2 A		
	787-1226	24 VDC (22 … 26 V) / 6 A		
IP67 Power – Reliable Power Supply for Distributed Automation				
	787-6716	24 VDC /4 A	1x 90 … 264 VAC	• IP67 protection • PowerBoost offers up 150% output power for four seconds • Efficiency: 92.3% • Surrounding air temperature: –40 … +85°C
Safety Transformers – Robust and Low-Profile DIN-Rail-Mount Modules				
	787-974	12/24 VAC (0 … 24 V) / 40 VA	110/230 VAC (0 … 230 V)	• Robust housing for easy and vibration-proof DIN-rail mounting • Surrounding air temperature: –25 … +55°C • Approval: UL 5085
	787-976	12/24 VAC (0 … 24 V) / 63 VA		
Fan Control				
	787-914	22 VDC (12 … 22 V) / 1 A	1 x 90 … 264 VAC 130 … 373 VDC	• Adjustable output voltage: 12 … 22 VDC, front side by tool and analog signal 0 … 10 V • Easy mounting on DIN-rail • Flexible installation via screw-mount clips
DC/DC Converters – Dependable Power Supply for Specialty Voltages				
	787-2801	5 VDC / 0.5 A	24 VDC (10 … 30 V)	• Full commoning of the supply voltage with both 857 and 2857 Series • DC OK contact • Approvals: UL 508, UL 60950
	787-2802	10 VDC / 0.5 A	24 VDC (15 … 30 V)	
	787-2803	24 VDC / 0.5 A	48 VDC (40 … 55 V)	
	787-2805	12 VDC / 0.5 A	24 VDC (15 … 30 V)	
	787-2810	5 / 10 / 12 VDC, adjustable / 0.5 A	24 VDC (10 … 30 V)	
	787-1014	24 VDC / 2 A	110 VDC (77 … 140 V)	• Electrically isolated output • Suitable for railway applications per EN 50155 • Approvals: UL 508, UL 60950 (except 787-1015/0072-0000)
	787-1014/072-000	24 VDC / 2 A	72 VDC (40 … 90 V)	
	787-1015/072-000	12 VDC / 4 A	72 VDC (40 … 90 V)	
	787-1650	12 VDC / 4 A	24 VDC (18 … 60 V)	
Uninterruptible Power Supplies (UPS) – Reliably Compensate for Long Power Outages				
	787-870	24 VDC (20 … 25.5 V) / 10 A	24 VDC	• Slim UPS charger and controller with convenient visualization and configuration • Optional power supply with integrated UPS charger and controller (787-1675) • Battery control technology for predictive maintenance that extends battery life • Pluggable CAGE CLAMP® connectors • Approvals: UL 508, UL 60950
	787-875	24 VDC (20 … 25.5 V) / 20 A		
	787-1675	23 … 28.5 VDC (mains operation) 18.5 … 27.5 VDC (battery operation) / 5 A	1/2 x 85 … 264 VAC 110 … 370 VDC	
	787-1671	24 VDC / max. 5 A / 0.8 Ah	24 VDC	
	787-876	24 VDC / max. 7.5 A / 1.2 Ah		
	787-871	24 VDC / max. 20 A / 3.2 Ah		
	787-872	24 VDC / max. 40 A / 7 Ah		
	787-873	24 VDC / max. 40 A / 12 Ah		

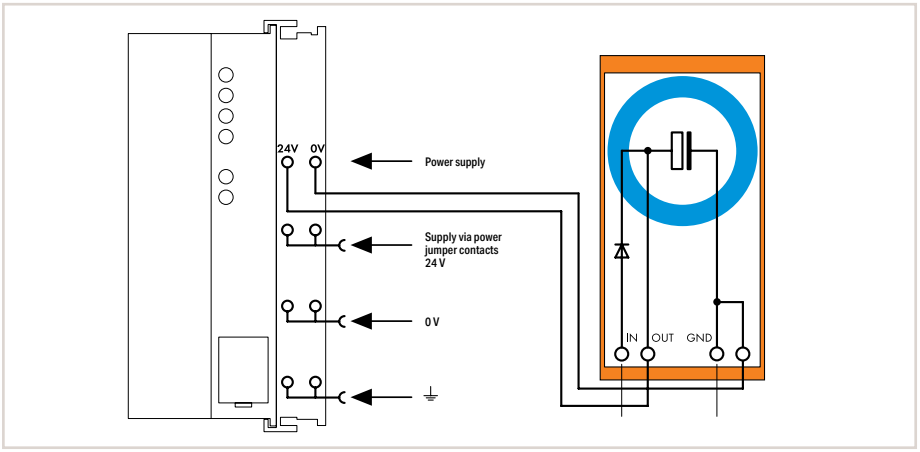
Power Supplies

Additional Technical Data at www.wago.com

	Item Number	Output	Input Voltage Range	Functional Description
Capacitive Buffer Modules – Short-Term Power Reserves for Power Outages and Load Variations				
	787-880	24 VDC (20.4 … 24 V) / 10 A	24 VDC	• Maintenance-free, high-energy gold caps • Integrated diodes for decoupling buffered loads from unbuffered loads • Parallel connections possible • Indication via LED and contact • Configurable switch-on threshold • Surrounding air temperature: –10 … +50°C • Pluggable CAGE CLAMP® connectors • Approval: UL 508
	787-881	24 VDC (20.4 … 24 V) / 20 A		
Redundancy Modules – Reliably Increase Power Supply Stability				
	787-1685	24 VDC / 20 A, max. 40 A	2 x 24 VDC	• Integrated power diodes or MOSFET (787-1685 only) with overload capability • Solutions for 12/24/48 VDC supply, up to 76 A • Parallel connections possible, reverse voltage protection • Clear operating status LED indication and optional signal contact • Surrounding air temperature: –25 … +70°C (787-1685: cold start at –40°C) • Approvals: UL 508, UL 60950
	787-885	24 VDC / 20 A, max. 40 A		
	787-886	48 VDC / 20 A, max. 40 A	2 x 48 VDC	
	787-783	9 … 54 VDC / 12.5 A, max. 25 A	2 x 9 … 54 VDC	
	787-785	9 … 54 VDC / 40 A, max. 76 A		
Electronic Circuit Breakers – Compact and Precise ECBs for DC Circuits				
	787-2861/100-000	1 x 24 VDC / 1 A	24 VDC	• One channel with preset nominal current • Two, four or eight channels with a six-stage adjustable nominal current • Slim design, communication capability • High switch-on capacity reduces false tripping • Surrounding air temperature: –25 … +70°C • Approvals: UL 508, UL 2367, UL 61010, GL • Optional active current limitation [d] • With potential-free signal contact [e] • Specialty configuration [f] • Communication via IO-Link protocol [g]
	787-2861/200-000	1 x 24 VDC / 2 A		
	787-2861/400-000	1 x 24 VDC / 4 A		
	787-2861/600-000	1 x 24 VDC / 6 A		
	787-2861/800-000	1 x 24 VDC / 8 A		
	787-2861/108-020	1 x 24 VDC / 1 … 8 A		
	787-1662	2 x 24 VDC / 2 … 10 A		
	787-1662/106-000	2 x 24 VDC / 1 … 6 A		
	787-1662/000-054 [e, f]	2 x 24 VDC / 2 … 10 A		
	787-1662/004-1000 [d]	2 x 24 VDC / 3.8 A		
	787-1662/006-1000 [d]	2 x 24 VDC / 0.5 … 6 A		
	787-1664	4 x 24 VDC / 2 … 10 A		
	787-1664/106-000	4 x 24 VDC / 1 … 6 A		
	787-1664/000-004 [f]	4 x 24 VDC / 2 … 10 A		
	787-1664/000-054 [e, f]	4 x 24 VDC / 2 … 10 A		
	787-1664/000-080 [g]	4 x 24 VDC / 2 … 10 A		
	787-1664/004-1000 [d]	4 x 24 VDC / 3.8 A		
	787-1664/006-1000 [d]	4 x 24 VDC / 0.5 … 6 A		
	787-1664/212-1000 [d]	4 x 24 VDC / 2 … 12 A		
	787-1664/006-1054 [d, e, f]	4 x 24 VDC / 0.5 … 6 A		
	787-1668	8 x 24 VDC / 2 … 10 A		
	787-1668/106-000	8 x 24 VDC / 1 … 6 A		
	787-1668/000-004 [f]	8 x 24 VDC / 2 … 10 A		
	787-1668/000-054 [e, f]	8 x 24 VDC / 2 … 10 A		
	787-1668/000-080 [g]	8 x 24 VDC / 2 … 10 A		
	787-1668/006-1000 [d]	8 x 24 VDC / 0.5 … 6 A		
	787-1668/006-1054 [d, e, f]	8 x 24 VDC / 0.5 … 6 A		
	787-1664/000-100	4 x 12 VDC / 2 … 10 A	12 VDC	
	787-1662/000-250 [e]	2 x 48 VDC / 2 … 10 A	48 VDC	
	787-1664/000-200	4 x 48 VDC / 2 … 10 A		
	787-1664/000-250 [e]	4 x 48 VDC / 2 … 10 A		
	787-1668/000-200	8 x 48 VDC / 2 … 10 A		
	787-1668/000-250 [e]	8 x 48 VDC / 2 … 10 A		

Backup Capacitor Module and DC/DC Converter





Item Description	Component module with capacitor; 1 module; Capacity: 10 mF; Nominal voltage: 24 VDC
Item No.	288-824

Technical Data

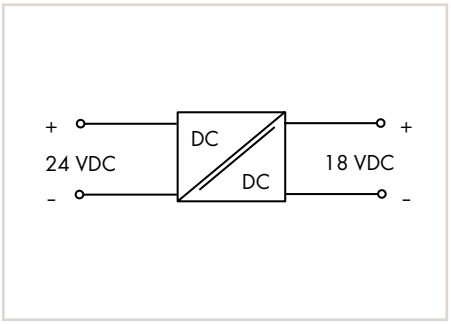
Nominal input voltage (DC) max.	24 VDC (+25 %)
Input current Ii (max.)	1 A
Nominal capacity	10 mF
Weight	104.4 g
Dimensions W x H x D	38 x 81 x 85 mm; height from upper-edge of DIN-rail
Conductor connection	CAGE CLAMP® (236 Series)
Conductor cross sections	0.08 … 2.5 mm² / 28 … 12 AWG
Strip length	5 … 6 mm / 0.24 inch
Data sheet and further information, see:	wago.com/288-824

This back-up capacitor module smoothes unstable 24 VDC power supplies for electronic modules in case the voltage tolerances mentioned in our data sheets cannot be ensured. Reasons for voltage transients could be:

- Power interruptions (switching transients) on primary side
- Overloads on secondary side
- Switching of inductive or capacitive loads
- The back-up capacitor module is connected between the 24 V power supply and the electronic device to be protected.

Notice:
Using insufficiently smoothed and unregulated single-phase power supplies may lead to voltage increases by the back-up capacitor module.



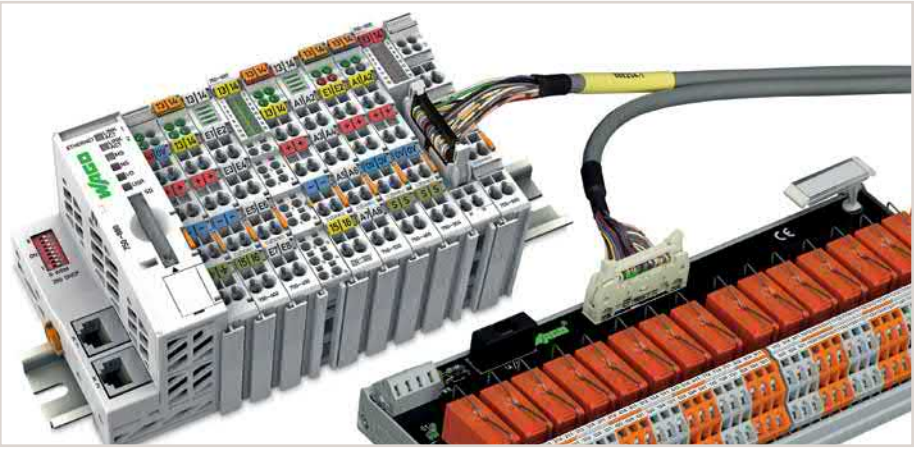


Item Description	DC/DC Converter; Input voltage: 24 VDC; Output voltage: 18 VDC; Output current: 0.4 A
Item No.	288-895

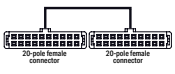
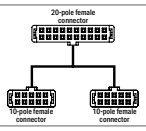
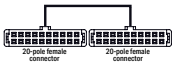
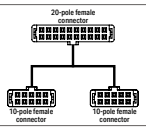
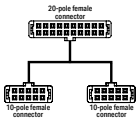
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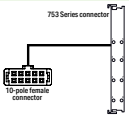
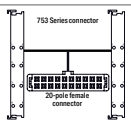
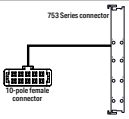
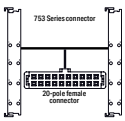
Nominal input voltage (DC) max.	24 VDC
Input Voltage Range	18 … 36 VDC
Nominal output voltage (DC)	18 VDC (±2 %)
Output nominal current	0.4 A
Efficiency	82 %
Short-circuit-protected	Yes
Surrounding air temperature (operation)	–25 … +70 °C
Weight	76 g
Dimensions W x H x D	50 x 25 x 85 mm; height from upper-edge of DIN-rail
Conductor connection	CAGE CLAMP® (256 Series)
Conductor cross sections	0.08 … 2.5 mm² / 28 … 12 AWG (THHN, THWN)
Strip length	5 … 6 mm / 0.24 inch
Data sheet and further information, see:	wago.com/288-895

Interface Modules for System Wiring



I/O modules equipped with a ribbon cable connector provide easy and fast connection of WAGO interface modules to the WAGO-I/O-SYSTEM. WAGO's pre-assembled system cables eliminate discrete wiring, while reducing costs for system wiring applications. Furthermore, modules can be pre-wired, also allowing the connection level to be relocated.

WAGO-I/O-SYSTEM 750				WAGO System Cables		WAGO Interface Modules	
	I/O Module	Item No.		System Cable	Item No.	Interface Module	Item No.
DI		750-1400	16-Channel Digital Input; 24 VDC; 3 ms; Ribbon cable		706-3057/300-xxx (see page 452)		Input Module; 20-pole; T16ES: **289-614, 704-2004, 704-2024, 704-2044, 704-2054***
		750-1402	16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; Ribbon cable		706-7753/302-xxx (see page 452)		Input Module; 10-pole; T8ES: **289-611, 704-2003***
DO		750-1500	16-Channel Digital Output; 24 VDC; 0.5 A; Ribbon cable		706-3057/300-xxx (see page 452)		Output Module; 20-pole; T16S: 704-5004, 704-5014, 704-5024, 704-5034, 704-5044, 704-5054, 704-5064, 704-5074* or Input Module; 20-pole; Relay Module; 16 channels
		750-1501	16-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching; Ribbon cable		706-7753/302-xxx (see page 452)		Relay Module; 8 channels T8S: 704-5003, 704-5013* or Input Module; 10-pole
DI/DO		750-1502	8-Channel Digital Input/ Output; 24 VDC; 0.5 A; Ribbon cable		706-7753/302-xxx (see page 452)		Input Module; 10-pole; T8ES: **289-611, 704-2003***
							Relay Module; 8 channels T8S: 704-5003, 704-5013* or Input Module; 10-pole

WAGO-I/O-SYSTEM 753				WAGO System Cables		WAGO Interface Modules	
	I/O Module	Item No.		System Cable	Item No.	Interface Module	Item No.
DI		753-430 753-431 753-436 753-437	8 DI 8 DI 8 DI 8 DI		706-7753/300-xxx (see page 453)		Input Module; 10-pole; T8ES: **289-611, 704-2003***
		753-430 (x2) 753-431 (x2) 753-436 (x2) 753-437 (x2)	2 x 8 DI 2 x 8 DI 2 x 8 DI 2 x 8 DI		706-7753/301-xxx (see page 453)		Input Module; 20-pole; T16ES: **289-614, 704-2004, 704-2024, 704-2044, 704-2054***
DO		753-530	8 DO		706-7753/300-xxx (see page 453)		Relay Module; 8 channels T8S: 704-5003, 704-5013* or Input Module; 10-pole
		753-530 (x2)	2 x 8 DO		706-7753/301-xxx (see page 453)		Relay Module; 16 channels T16S: 704-5004, 704-5014, 704-5024, 704-5034, 704-5044, 704-5054, 704-5064, 704-5074* or Input Module; 20-pole

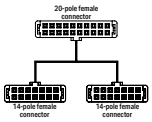
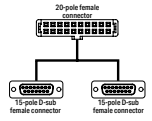
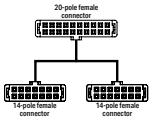
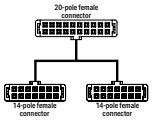
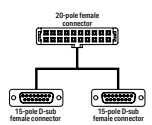
*For additional technical data, visit www.wago.com.

Interface Adapter for System Wiring



WAGO Interface Adapter, 857 Series

WAGO's Interface Adapter quickly connects the WAGO-I/O-SYSTEM (PLC) to 857 Series Relay/Optocoupler Modules via pre-assembled WAGO System Cables (706 Series).
This eliminates cumbersome discrete wiring between 750 Series I/O Modules and 857 Series Relays/Optocouplers.
As a result, both installation time and costs are reduced.
Depending on the application, WAGO's Interface Adapters can be used with D-sub or ribbon cable connectors.
They feature both status indicator
and integrated test ports for each channel.
The interface adapters are simply plugged into the 857 Series Relay/Optocoupler Modules via jumper slot. Furthermore, the WAGO Interface Adapter features locking devices for secure connection.

WAGO-I/O-SYSTEM 750				WAGO System Cables		WAGO Interface Adapters	
	I/O Module	Item No.		System Cable	Item No.	Interface Adapter	Item No.
DI		750-1400	16-Channel Digital Input; 24 VDC; 3 ms; Ribbon cable		706-7753/304-xxx*		Item No.: **857-982***; **Interface Adapter; 14-pole; High-side switching output**
		750-1402	16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; Ribbon cable				
DO		750-1500	16-Channel Digital Output; 24 VDC; 0.5 A; Ribbon cable		706-7753/306-xxx*		Item No.: **857-986***; **Interface Adapter; 15-pole; High-side switching input**
		750-1501	16-Channel Digital Output; 24 VDC; 0.5 A; Low-side switching; Ribbon cable		706-7753/304-xxx*		Item No.: **857-981***; **Interface Adapter; 14-pole; High-side switching input**
DI/DO		750-1502	8DI 8DO 24 VDC 0.5 A; Ribbon cable		706-7753/304-xxx*		Item No.: **857-982***; **Interface Adapter; 14-pole; High-side switching output**
							Item No.: **857-981***; **Interface Adapter; 14-pole; High-side switching input**
					706-7753/306-xxx*		Item No.: **857-986***; **Interface Adapter; 15-pole; High-side switching input**

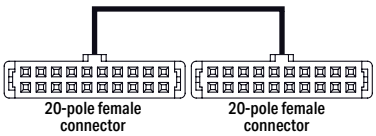
*For additional technical data, visit www.wago.com.

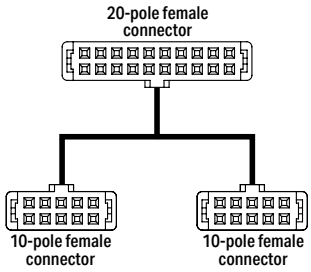
10

System Cable
for 289, 704 Series, in Connection with the WAGO-I/O-SYSTEM 750
706 Series









System Cable; for Schneider TSX; 16 digital inputs or outputs

Length	Item No.	Pack. Unit
1 m	706-3057/300-100	1
2 m	706-3057/300-200	1
2 m (UL listed)	706-3057/1300-300	1
3 m	706-3057/300-300	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with HE 10 pluggable connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole HE 10 pluggable connector.

System Cable; for WAGO-I/O-SYSTEM, 753 Series; 8 digital inputs and 8 digital outputs

Length	Item No.	Pack. Unit
1 m	706-7753/302-100	1
2 m	706-7753/302-200	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with HE 10 pluggable connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules (16-channel) featuring a 10-pole HE 10 pluggable connector.
For example, this cable connects two relay modules (8-channel) to a WAGO I/O Module.

Technical Data

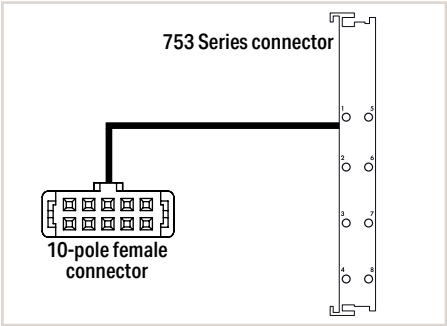
Connectors	2 x 20-pole connector per DIN 41651	1 x 20-pole / 2 x 10-pole connector per DIN 41651
Wire cross section	0.14 mm2 LiYY	0.14 mm2 LiYY
Color code	per DIN VDE 47100	per DIN VDE 47100
Current per wire (max.)	1 A	1 A
Surrounding air temperature (operation)	–25 … +70 °C	–25 … +70 °C
Protection type	IP20	IP20

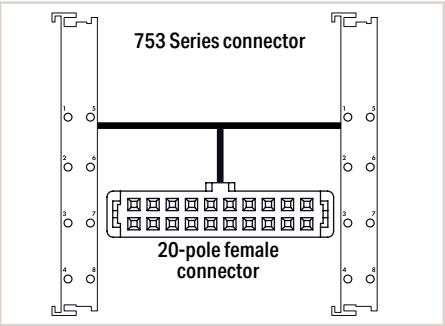
System Cable
for 289, 704 Series, in Connection with the WAGO-I/O-SYSTEM 753

706 Series









System Cable; for WAGO-I/O-SYSTEM, 753 Series; 8 digital inputs or outputs

Length	Item No.	Pack. Unit
1 m	706-7753/300-100	1
2 m	706-7753/300-200	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with a pluggable connector (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring 10-pole connectors.

System Cable; for WAGO-I/O-SYSTEM, 753 Series; 16 digital inputs or outputs

Length	Item No.	Pack. Unit
2 m	706-7753/301-200	1

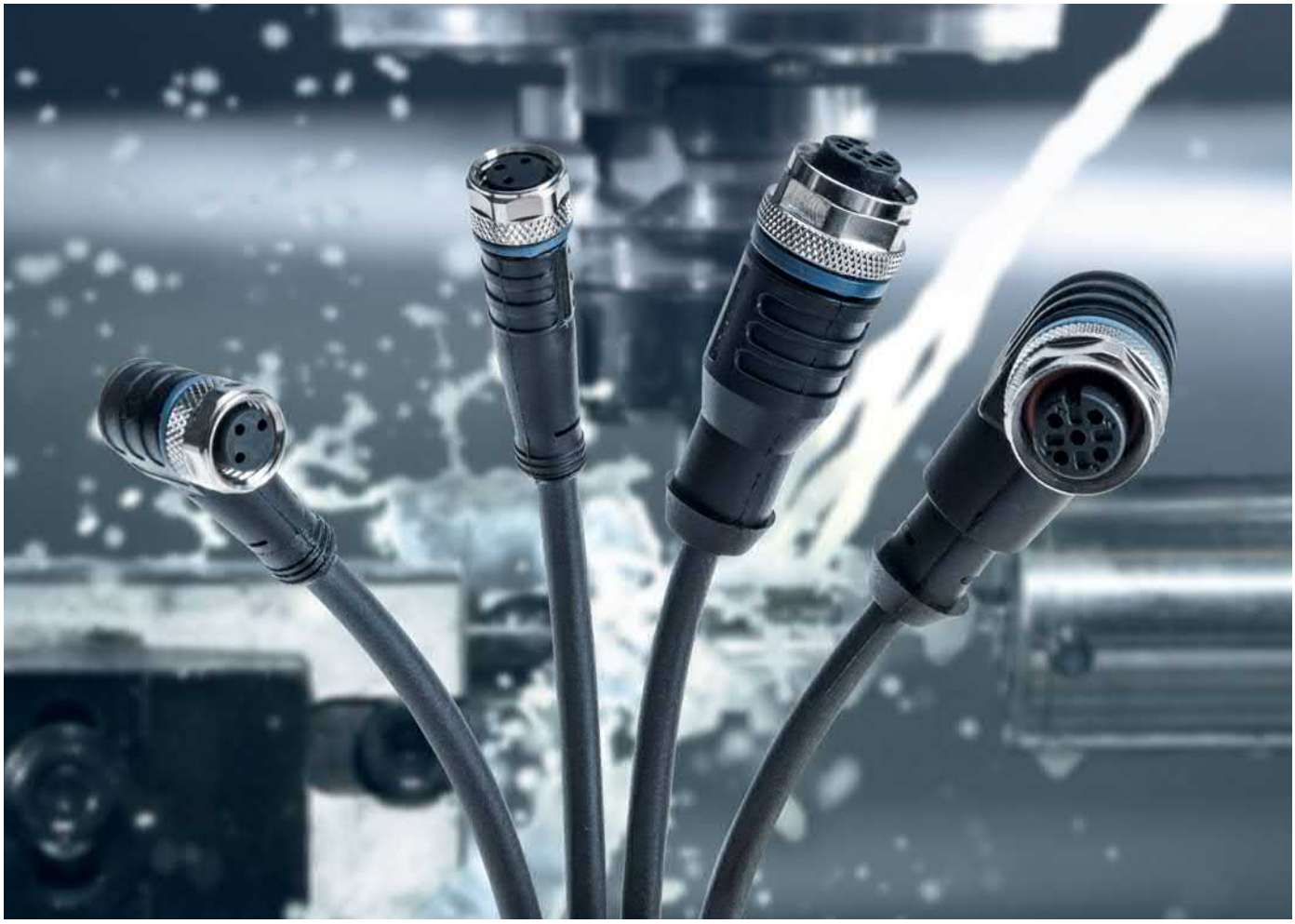
WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with a pluggable connector (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring 20-pole connectors.
For example, this cable connects two WAGO I/O Modules to one relay output module (16-channel).

Technical Data

Connectors	Plug (753 Series) / 10-pole connector per DIN 41651	Plug (753 Series) / 20-pole connector per DIN 41651
Wire cross section	0.14 mm2 LiYY	0.14 mm2 LiYY
Color code	per DIN VDE 47100	per DIN VDE 47100
Current per wire (max.)	1 A	1 A
Surrounding air temperature (operation)	−25 … +70 °C*	−25 … +70 °C*
Protection type	IP20	IP20

* Observe the surrounding air temperature (operation) of the WAGO I/O Modules used.

IP67 Cables and Pluggable Connectors



The 756 Series offers a wide range of accessories for connecting inductive or capacitive proximity switches, photoelectric sensors, flow monitors, limit switches, pressure switches, etc.
The cables not only protect against the ingress of dust and water, but also provide protection against self-loosening due to vibration in the form of a constructive "brake" due to the design of their coupling nuts. Injected cable entries also offer a kink protection function.

A distinction is made between cables assembled on one or both ends. Cables assembled on one end are often used where an exact cable length can not be determined or the installation of cables with connectors proves to be very difficult. These free-end cables therefore offer an individual possibility to adapt to the respective requirements as needed. In contrast, cables assembled on both sides reduce installation and installation times and therefore offer cost advantages in particular.

Sensor/Actuator Cable; Fitted on One End

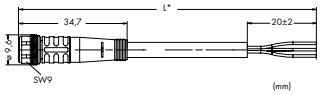
M8 Socket



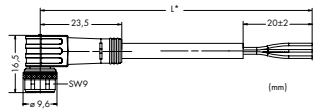
3-pole

Pin 1 … 4: 0.34 mm²
1 brown (+)
3 blue (-)
4 black (S)









Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

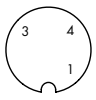
Sensor/Actuator Cable; M8 socket (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5101/030-015	10
3-pole	5 m	756-5101/030-050	10
3-pole	10 m	756-5101/030-100	10

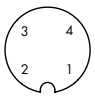
Sensor/Actuator Cable; M8 socket (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5102/030-015	10
3-pole	5 m	756-5102/030-050	10
3-pole	10 m	756-5102/030-100	10

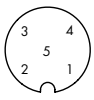
M12 Socket



3-pole



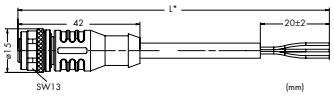
4-pole



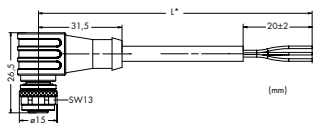
5-pole

Pin 1 … 5: 0.34 mm²
1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray









Operating voltage	250 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole; shielded)

Sensor/Actuator Cable; M12 socket (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5301/030-015	10
3-pole	5 m	756-5301/030-050	10
3-pole	10 m	756-5301/030-100	10
4-pole	1.5 m	756-5301/040-015	10
4-pole	5 m	756-5301/040-050	10
4-pole	10 m	756-5301/040-100	10
5-pole	1.5 m	756-5301/050-015	10
5-pole	5 m	756-5301/050-050	10
5-pole	10 m	756-5301/050-100	10
5-pole; shielded	1.5 m	756-5301/060-015	10
5-pole; shielded	5 m	756-5301/060-050	10
5-pole; shielded	10 m	756-5301/060-100	10

Sensor/Actuator Cable; M12 socket (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5302/030-015	10
3-pole	5 m	756-5302/030-050	10
3-pole	10 m	756-5302/030-100	10
4-pole	1.5 m	756-5302/040-015	10
4-pole	5 m	756-5302/040-050	10
4-pole	10 m	756-5302/040-100	10
5-pole	1.5 m	756-5302/050-015	10
5-pole	5 m	756-5302/050-050	10
5-pole	10 m	756-5302/050-100	10
5-pole; shielded	1.5 m	756-5302/060-015	10
5-pole; shielded	5 m	756-5302/060-050	10
5-pole; shielded	10 m	756-5302/060-100	10

Sensor/Actuator Cable; Fitted on One End

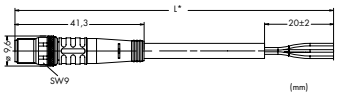
M8 Plug



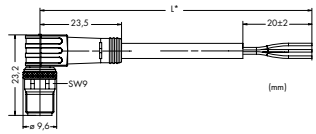
3-pole

Pin 1 ... 4: 0.34 mm²
1 brown (+)
3 blue (-)
4 black (S)









Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

Sensor/Actuator Cable; M8 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5111/030-015	10
3-pole	5 m	756-5111/030-050	10
3-pole	10 m	756-5111/030-100	10

Sensor/Actuator Cable; M8 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5112/030-015	10
3-pole	5 m	756-5112/030-050	10
3-pole	10 m	756-5112/030-100	10

M12 Plug



3-pole (Pin 2: n.c.)

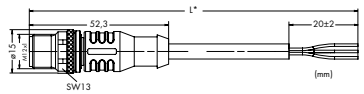


5-pole

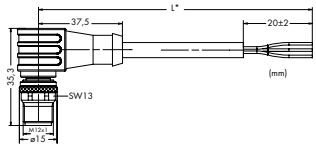
4-pole

Pin 1 ... 5: 0.34 mm²
1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray









Operating voltage	250 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole; shielded)

Sensor/Actuator Cable; M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5311/030-015	10
3-pole	5 m	756-5311/030-050	10
3-pole	10 m	756-5311/030-100	10
4-pole	1.5 m	756-5311/040-015	10
4-pole	5 m	756-5311/040-050	10
4-pole	10 m	756-5311/040-100	10
5-pole	1.5 m	756-5311/050-015	10
5-pole	5 m	756-5311/050-050	10
5-pole	10 m	756-5311/050-100	10
5-pole; shielded	1.5 m	756-5311/060-015	10
5-pole; shielded	5 m	756-5311/060-050	10
5-pole; shielded	10 m	756-5311/060-100	10

Sensor/Actuator Cable; M12 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1.5 m	756-5312/030-015	10
3-pole	5 m	756-5312/030-050	10
3-pole	10 m	756-5312/030-100	10
4-pole	1.5 m	756-5312/040-015	10
4-pole	5 m	756-5312/040-050	10
4-pole	10 m	756-5312/040-100	10
5-pole	1.5 m	756-5312/050-015	10
5-pole	5 m	756-5312/050-050	10
5-pole	10 m	756-5312/050-100	10
5-pole; shielded	1.5 m	756-5312/060-015	10
5-pole; shielded	5 m	756-5312/060-050	10
5-pole; shielded	10 m	756-5312/060-100	10

Sensor/Actuator Cable; Fitted on One End

M12 Plug

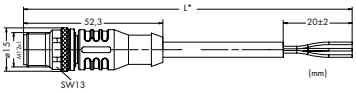


8-pole, shielded

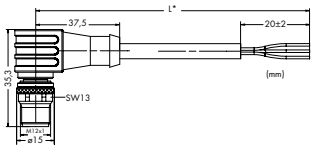
Pin 1 ... 8: 0.25 mm²

1	white
2	brown
3	green
4	yellow
5	gray
6	rose
7	blue
8	red
Shield	









Operating voltage	250 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 … +90 °C
Protection type	IP67
Cable diameter	6.3 mm ±0.2

Sensor/Actuator Cable; M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
8-pole; shielded	1.5 m	756-5311/090-015	10
8-pole; shielded	5 m	756-5311/090-050	10
8-pole; shielded	10 m	756-5311/090-100	10

Sensor/Actuator Cable; M12 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
8-pole; shielded	1.5 m	756-5312/090-015	10
8-pole; shielded	5 m	756-5312/090-050	10
8-pole; shielded	10 m	756-5312/090-100	10

Sensor/Actuator Cable; Fitted on both ends

M8 Socket



3-pole

M8 Plug

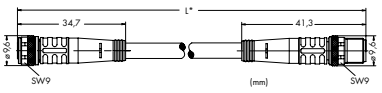


3-pole

Pin 1 ... 4: 0.34 mm²
1 brown (+)
3 blue (-)
4 black (S)

Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	–25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

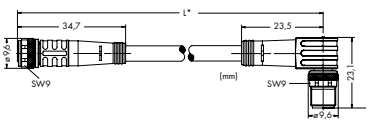




Sensor/Actuator Cable; M8 socket (straight) – M8 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5201/030-010	10
3-pole	2 m	756-5201/030-020	10

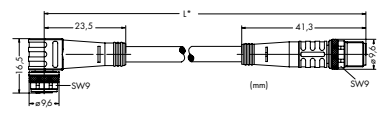




Sensor/Actuator Cable; M8 socket (straight) – M8 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5202/030-010	10
3-pole	2 m	756-5202/030-020	10

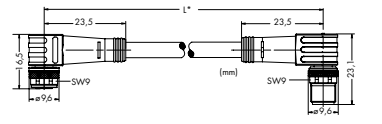




Sensor/Actuator Cable; M8 socket (angled) – M8 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5203/030-010	10
3-pole	2 m	756-5203/030-020	10





Sensor/Actuator Cable; M8 socket (angled) – M8 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5204/030-010	10
3-pole	2 m	756-5204/030-020	10

M8 Socket



3-pole

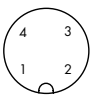


4-pole

M12 Plug



3-pole (Pin 2: n.c.)

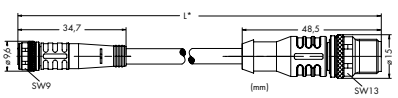


4-pole

Pin 1 ... 4: 0.34 mm²
1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)

Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	–25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

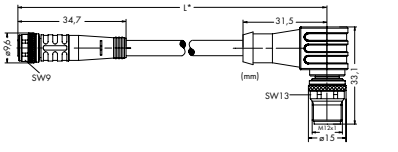




Sensor/Actuator Cable; M8 socket (straight) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5507/030-010	10
3-pole	2 m	756-5507/030-020	10
4-pole	1 m	756-5507/040-010	10
4-pole	2 m	756-5507/040-020	10



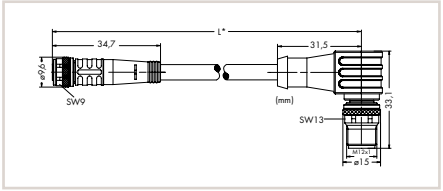


Sensor/Actuator Cable; M8 socket (straight) – M12 plug (angled)

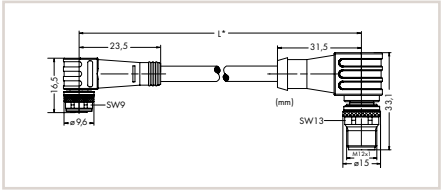
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5508/030-010	10
3-pole	2 m	756-5508/030-020	10
4-pole	1 m	756-5508/040-010	10
4-pole	2 m	756-5508/040-020	10

Sensor/Actuator Cable; Fitted on both ends









Sensor/Actuator Cable; M8 socket (angled) – M12 plug (straight)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5509/030-010	10
3-pole	2 m	756-5509/030-020	10
4-pole	1 m	756-5509/040-010	10
4-pole	2 m	756-5509/040-020	10

Sensor/Actuator Cable; M8 socket (angled) – M12 plug (angled)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5510/030-010	10
3-pole	2 m	756-5510/030-020	10
4-pole	1 m	756-5510/040-010	10
4-pole	2 m	756-5510/040-020	10

M12 Socket



3-pole

M8 Plug

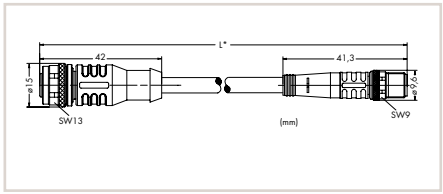


3-pole

Pin 1 ... 4: 0.34 mm²
1 brown (+)
3 blue (-)
4 black (S)

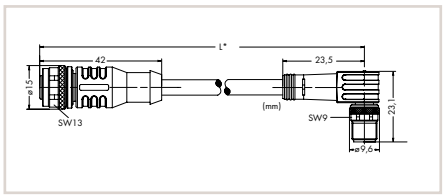
Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	−25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2





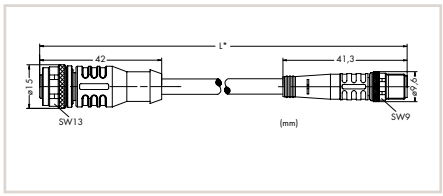
Sensor/Actuator Cable; M12 socket (straight) – M8 plug (straight)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5501/030-010	10
3-pole	2 m	756-5501/030-020	10





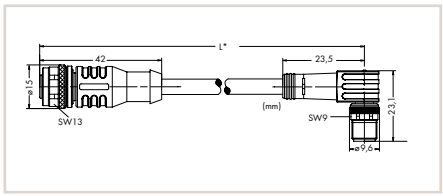
Sensor/Actuator Cable; M12 socket (straight) – M8 plug (angled)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5502/030-010	10
3-pole	2 m	756-5502/030-020	10





Sensor/Actuator Cable; M12 socket (angled) – M8 plug (straight)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5503/030-010	10
3-pole	2 m	756-5503/030-020	10





Sensor/Actuator Cable; M12 socket (angled) – M8 plug (angled)			
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5504/030-010	10
3-pole	2 m	756-5504/030-020	10

10

Sensor/Actuator Cable; Fitted on both ends

M12 Socket



3-pole (Pin 2: n.c.)
4-pole



5-pole

M12 Plug



3-pole (Pin 2: n.c.)
4-pole



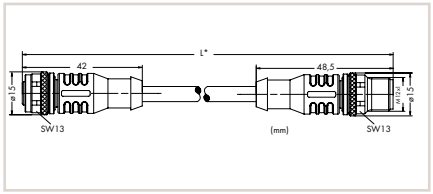
5-pole

Pin 1 ... 5: 0.34 mm²

1	brown (+)
2	white (Ö)
3	blue (-)
4	black (S)
5	gray

Operating voltage	250 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	2.5 kV (3-, 4-pole); 1.5 kV (5-pole)
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	–25 ... +90 °C
Protection type	IP67
Cable diameter	4.3 mm ±0.2 (3-pole); 4.7 mm ±0.2 (4-pole); 5.0 mm ±0.2 (5-pole); 6.5 mm ±0.2 (5-pole; shielded)

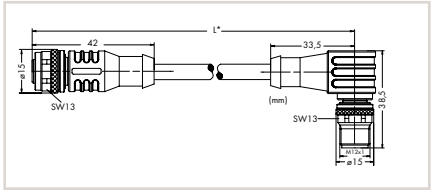




Sensor/Actuator Cable; M12 socket (straight) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5401/030-010	10
3-pole	2 m	756-5401/030-020	10
4-pole	1 m	756-5401/040-010	10
4-pole	2 m	756-5401/040-020	10
5-pole	1 m	756-5401/050-010	10
5-pole	2 m	756-5401/050-020	10
5-pole; shielded	1 m	756-5401/060-010	10
5-pole; shielded	2 m	756-5401/060-020	10

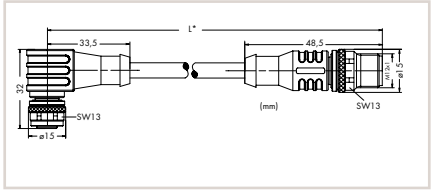




Sensor/Actuator Cable; M12 socket (straight) – M12 plug (angled)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5402/030-010	10
3-pole	2 m	756-5402/030-020	10
4-pole	1 m	756-5402/040-010	10
4-pole	2 m	756-5402/040-020	10
5-pole	1 m	756-5402/050-010	10
5-pole	2 m	756-5402/050-020	10
5-pole; shielded	1 m	756-5402/060-010	10
5-pole; shielded	2 m	756-5402/060-020	10

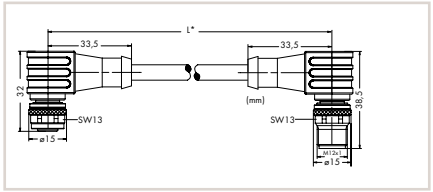




Sensor/Actuator Cable; M12 socket (angled) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5403/030-010	10
3-pole	2 m	756-5403/030-020	10
4-pole	1 m	756-5403/040-010	10
4-pole	2 m	756-5403/040-020	10
5-pole	1 m	756-5403/050-010	10
5-pole	2 m	756-5403/050-020	10
5-pole; shielded	1 m	756-5403/060-010	10
5-pole; shielded	2 m	756-5403/060-020	10

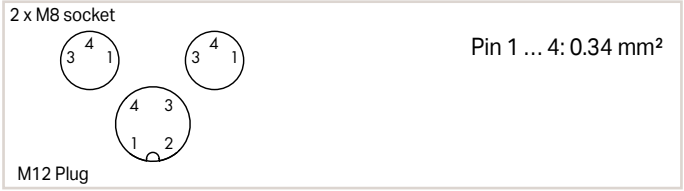




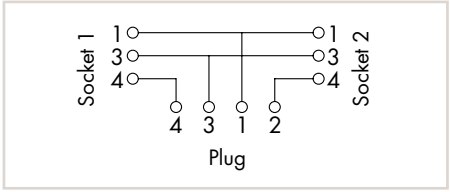
Sensor/Actuator Cable; M12 socket (angled) – M12 plug (angled)

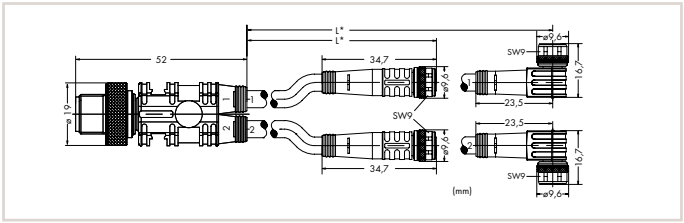
Pole No.	Cable Length	Item No.	Pack. Unit
3-pole	1 m	756-5404/030-010	10
3-pole	2 m	756-5404/030-020	10
4-pole	1 m	756-5404/040-010	10
4-pole	2 m	756-5404/040-020	10
5-pole	1 m	756-5404/050-010	10
5-pole	2 m	756-5404/050-020	10
5-pole; shielded	1 m	756-5404/060-010	10
5-pole; shielded	2 m	756-5404/060-020	10

Sensor/Actuator Cable; Fitted on Both Ends; Distribution Connector









Operating voltage	60 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	1.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	–25 ... +90 °C
Protection type	IP67
Cable diameter	4.1 mm ±0.2

Sensor/Actuator Cable; 2 x M8 socket (straight) – M12 plug (straight)

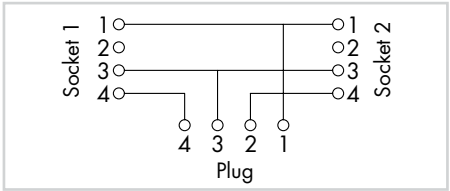
Pole No.	Cable Length	Item No.	Pack. Unit
4-pole	1 m	756-5513/040-010	10
4-pole	2 m	756-5513/040-020	10

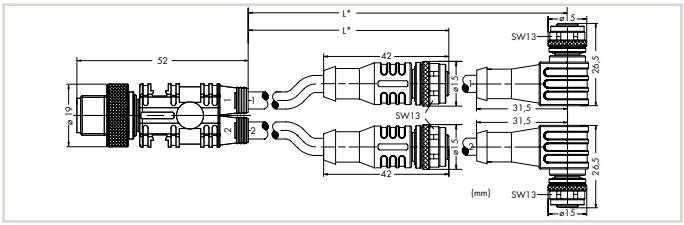
Sensor/Actuator Cable; 2 x M8 socket (angled) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
4-pole	1 m	756-5514/040-010	10
4-pole	2 m	756-5514/040-020	10









Operating voltage	250 VAC/DC
Operating current	4 A (max.)
Rated surge voltage	2.5 kV
Drag chain suitability	≥ 2 million bending cycles
Surrounding air temperature (operation), dynamic	–25 ... +90 °C
Protection type	IP67
Cable diameter	4.7 mm ±0.2

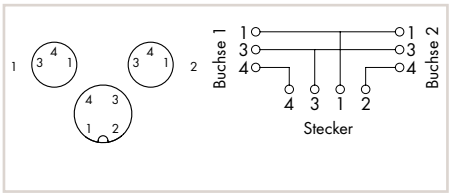
Sensor/Actuator Cable; 2 x M12 socket (straight) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
4-pole	1 m	756-5516/040-010	10
4-pole	2 m	756-5516/040-020	10

Sensor/Actuator Cable; 2 x M12 socket (angled) – M12 plug (straight)

Pole No.	Cable Length	Item No.	Pack. Unit
4-pole	1 m	756-5517/040-010	10
4-pole	2 m	756-5517/040-020	10

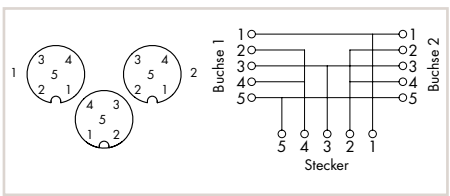




Distribution Connector M8/M12

	Item No.	Pack. Unit
Accessories; M12/M8 Distribution Connector	756-9301/040-000	1





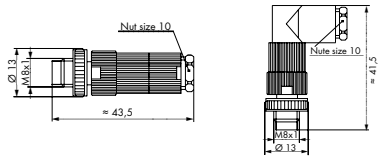
Distribution Connector M12/M12

	Item No.	Pack. Unit
Accessories; M12/M12 Distribution Connector	756-9301/050-000	1

10

Configurable Connectors







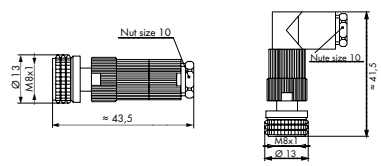
3-pole

Connectable cable:
Ø 4 … 5 mm
0.14 … 0.34 mm²

M8 Plug, Straight and Angled

	Item No.	Pack. Unit
Configurable Connectors; 3-pole; M8 plug (straight); IDC technology	756-9102/030-000	5
Configurable Connectors; 3-pole; M8 plug (angled); IDC technology	756-9105/030-000	5







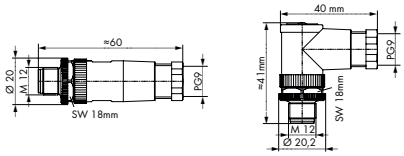
3-pole

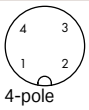
Connectable cable:
Ø 4 … 5 mm
0.14 … 0.34 mm²

M8 Socket, Straight and Angled

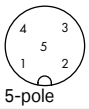
	Item No.	Pack. Unit
Configurable Connectors; 3-pole; M8 socket (straight); IDC technology	756-9112/030-000	5
Configurable Connectors; 3-pole; M8 socket (angled); IDC technology	756-9115/030-000	5







4-pole



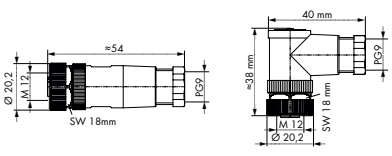
5-pole

Connectable cable:
Ø 4 … 6 mm/0.25 … 0.75 mm² (Screw clamp technology)
Ø 4 … 6 mm/0.14 … 0.50 mm² (Spring clamp technology)

M12 Plug, Straight and Angled

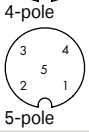
	Item No.	Pack. Unit
Configurable Connectors; 4-pole; M12 plug (straight); Screw connection technology	756-9201/040-000	5
Configurable Connectors; 4-pole; M12 plug (angled); Screw connection technology	756-9204/040-000	5
Configurable Connectors; 4-pole; M12 plug (straight); Spring clamp technology	756-9202/040-000	5
Configurable Connectors; 4-pole; M12 plug (angled); Spring clamp technology	756-9205/040-000	5
Configurable Connectors; 5-pole; M12 plug (straight); Screw connection technology	756-9201/050-000	5
Configurable Connectors; 5-pole; M12 plug (angled); Screw connection technology	756-9204/050-000	5
Configurable Connectors; 5-pole; M12 plug (straight); Spring clamp technology	756-9202/050-000	5
Configurable Connectors; 5-pole; M12 plug (angled); Spring clamp technology	756-9205/050-000	5







4-pole



5-pole

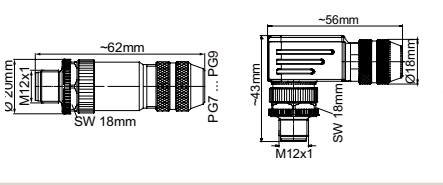
Connectable cable:
Ø 4 … 6 mm/0.25 … 0.75 mm² (Screw clamp technology)
Ø 4 … 6 mm/0.14 … 0.50 mm² (Spring clamp technology)

M12 Socket, Straight and Angled

	Item No.	Pack. Unit
Configurable Connectors; 4-pole; M12 socket (straight); Screw connection technology	756-9211/040-000	5
Configurable Connectors; 4-pole; M12 socket (angled); Screw connection technology	756-9214/040-000	5
Configurable Connectors; 4-pole; M12 socket (straight); Spring clamp technology	756-9212/040-000	5
Configurable Connectors; 4-pole; M12 socket (angled); Spring clamp technology	756-9215/040-000	5
Configurable Connectors; 5-pole; M12 socket (straight); Spring clamp technology	756-9212/050-000	5
Configurable Connectors; 5-pole; M12 socket (angled); Spring clamp technology	756-9215/050-000	5

Configurable Shielded Connectors



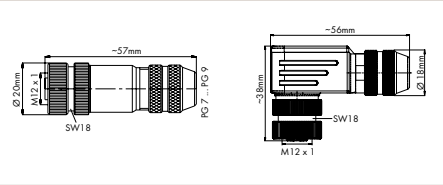


Connectable cable:
Ø 6 ... 8 mm
0.14 ... 0.5 mm²

M12 Plug, Straight and Angled

	Item No.	Pack. Unit
Configurable Connectors; 5-pole; Shielded; M12 plug (straight); A-coded; Spring clamp technology	756-9207/060-000	1
Configurable Connectors; 4-pole; Shielded; M12 plug (straight); D-coded; Spring clamp technology	756-9501/060-000	1
Configurable Connectors; 5-pole; Shielded; M12 plug (angled); A-coded; Spring clamp technology	756-9211/060-000	1
Configurable Connectors; 4-pole; Shielded; M12 plug (angled); D-coded; Spring clamp technology	756-9501/040-000	1



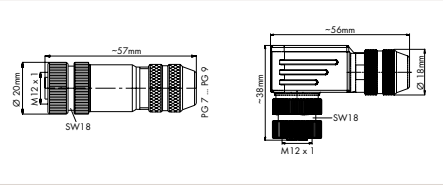


Connectable cable:
Ø 6 ... 8 mm
0.14 ... 0.5 mm²

M12 Socket, Straight and Angled

	Item No.	Pack. Unit
Configurable Connectors; 5-pole; Shielded; M12 socket (straight); Spring clamp technology	756-9208/060-000	1
Configurable Connectors; 5-pole; Shielded; M12 socket (angled); Spring clamp technology	756-9210/060-000	1



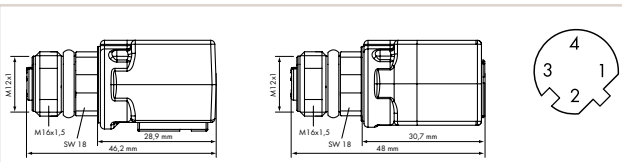


Connectable cable:
Ø 6 ... 8 mm
0.14 ... 0.75 mm²

M12 Socket, Straight and Angled

	Item No.	Pack. Unit
Configurable Connectors; 8-pole; Shielded; M12 socket (straight); Screw connection technology	756-9211/090-000	1
Configurable Connectors; 8-pole; Shielded; M12 socket (angled); Screw connection technology	756-9214/090-000	1

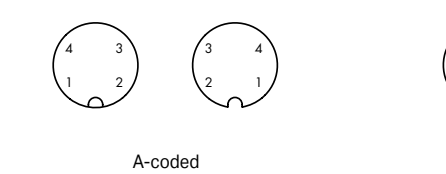




Adapter M12 Socket/ RJ-45 Socket

	Item No.	Pack. Unit
Adapter M12 socket; D-coded/ RJ-45 socket; angled	756-9503/040-000	1
Adapter M12 socket; D-coded/ RJ-45 socket; straight	756-9504/040-000	1





M12 Panel Feed-through Connector

	Item No.	Pack. Unit
M12 panel feed-through connector; 4-pole; M12 socket; A-coded	756-9217/050-000	1
M12 panel feed-through connector; 5-pole; M12 socket; B-coded	756-9406/050-000	1

Torque Wrench M8 and M12; Assembly Kit







Assembly kit for pre-assembled IP67 cables and hex nut connectors (756 Series), consists of:

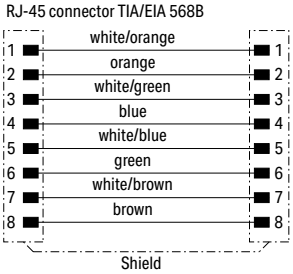
- Tool kit
- Torque screwdriver with adjustable torque (window scale)
- Adjustment tool for changing the torque
- Socket wrench SW9 (for M8 cable assemblies)
- Socket wrench SW13 (for M12 cable assemblies)

A torque specification of 0.6 Nm for M8 connectors and 1.0 Nm for M12 connectors is required for 756 Series Cables and Connectors.

Torque Wrench M8 and M12; Assembly Kit		
	Item No.	Pack. Unit
	206-701	1

Torque range	0,4 … 1 Nm ±6 %
Material	
Handle	Polypropylene (PP) for hard zone; Thermoplastic elastomers (TPE) for soft zone
Allen key	Polyamide (PA), glass-fiber-reinforced; Chrome-vanadium-molybdenum steel (CrMoV) (1.2381)
Adjustment tool	Cellulose acetate; Chrome-vanadium-molybdenum steel (CrMoV) (1.2381)
Color	Black
Standards/specifications	EN ISO 6789; BS EN 26789; ASME B107.14.M

ETHERNET Cable; Cat. 6A S/FTP







Item Description	ETHERNET Cable; Cat. 6A; RJ-45; RJ-45			ETHERNET Cable; Cat. 6A; RJ-45; RJ-45		
Version				Axial unlocking		
	Cable Length	Item No.	Pack. Unit	Cable Length	Item No.	Pack. Unit
	0.5 m	756-1250/1013-005	1	0.5 m	756-1250/1023-005	1
	1 m	756-1250/1013-010	1	1 m	756-1250/1023-010	1
	2 m	756-1250/1013-020	1	2 m	756-1250/1023-020	1
	3 m	756-1250/1013-030	1	3 m	756-1250/1023-030	1
	5 m	756-1250/1013-050	1	5 m	756-1250/1023-050	1
	7.5 m	756-1250/1013-075	1	7.5 m	756-1250/1023-075	1
	10 m	756-1250/1013-100	1	10 m	756-1250/1023-100	1

Technical Data	
Transmission	10 Gbit/s (500 MHz)
Operating voltage	80 V
Operating current	720 mA
Rated surge voltage	500 V (wire/wire/screen rms 50 Hz 1 min)
Insulation resistance	≥ 1x108 Ωxkm
Resistance of conductor	< 142 Ω/km
Surrounding air temperature (operation)	−40 … +80 °C (static and moving)
Bending radius	10 mm (min.)
Bending cycles	≥ 8500
Cable	S/FTP 4x2xAWG26/7
Overall shield	Overlapped aluminum-laminated foil and tinned copper braid (PiMF)
Conductor	Bare copper wire (7 x 0.16 mm)
Conductor insulation	Halogen-free PE
Outer jacket	LSOH TPE; halogen-free per IEC 60754-2; flame-retardant per IEC 60332-1; low-smoke per IEC 61034
Color	Green (RAL 6018)
Cable diameter	Ø 6.2 mm ±0.2
Plug	2 x Cat. 6A RJ-45
Contact material	CuZn
Contact plating	CuNi/Au; 50 µin gold plating
Mech. service life	> 1200 mating cycles
Data sheet and further information, see:	wago.com/756-1250

Short description:
- Halogen-free TPE
- Cat. 6A S/FTP
- Highly flexible
- 50 µin gold plating in the contact area
- Mechanically/electrically tested
- 4C Channel Link Test
- Wrap-around label for clear traceability
- Easy plug unlocking (756-1250/1023-xxx)

Bluetooth® Adapter





Item Description	*Bluetooth*® Adapter
Item No.	750-921
Order Text	*Bluetooth*® Adapter
Technical Data	
Transmission range	20 m in open air (Class 2)*
Data transmission rate	9600 … 115000 bit/s
Frequency range	ISM band; 2402 … 2483 MHz
Type of communication	Peer-to-peer connection
Supported profiles	Serial Port Profile (SPP)
Radio technology	*Bluetooth*® 2.1
Antenna	Integrated
Connectors	4-pole service connectors
Configuration	AT commands (e.g., via HyperTerminal)
Function	Master or slave
LED	Operating mode
Security encryption	128-bit encryption
Surrounding air temperature (operation)	–20 … +60 °C
Dimensions W x H x D	15 x 50 x 19 mm
Approvals	*Bluetooth*® *approval; 1*
Data sheet and further information, see:	wago.com/750-921

*The maximum range in the field decreases within buildings and varies depending on building materials and spatial geometry. Therefore, range specifications within buildings can only represent a typical value that can normally be achieved. More detailed information is available in the manual.

The *Bluetooth*® Adapter wirelessly connects a notebook computer with *Bluetooth*® functionality to the service interface of the fieldbus coupler/controller. It also provides an active connection to a controller.
As a cable substitute, the *Bluetooth*® Adapter allows communication between two controllers, as well as between fieldbus couplers/controllers via WAGO Software Tools.
The adapter is supplied via both service interface and power supply of the coupler/controller.

WAGO Communication Cables



Item Description	RS-232 Communication Cable; RS-232 (D-sub; 9-pole); Service Interface I/O System 750
Item No.	750-920
Order Text	Communication Cable
Technical Data	
Connectors	4-pole service connectors
Cable Length	2.5 m
Surrounding air temperature (operation)	0 … +55 °C
Protection type	IP20
Data sheet and further information, see:	wago.com/750-920

This communication cable connects the engineering software to the controller or fieldbus coupler.

NOTICE: The communication cable must not be connected or removed when energized.



Item Description	USB Communication Cable; USB-A; Service Interface I/O System 750	
Version	2.5 m	5 m
Item No.	750-923	750-923/000-001
Order Text	CONF-CABLE; USB; 2.5m	CONF-CABLE; USB; 5m
Technical Data		
USB specification	2.0 compatible/full-speed device	
Operating system	Microsoft® Windows® 2000; Microsoft® Windows® XP Professional; Microsoft® Windows® Vista®; Microsoft® Windows® 7	
USB interface	Type A/m	
Cable Length	2.5 m	5 m
Surrounding air temperature (operation)	–25 … +70 °C	
Approvals	CE	
Data sheet and further information, see:	wago.com/750-923	

This USB communication cable connects the engineering software to the controller or fieldbus coupler.

Notice: A specific firmware version is required to connect the 759-923 USB Communication Cable to some particular controllers.

Memory Cards





Item Description	Memory Card microSD; SLC-NAND; 2 GB; Temperature range: −40 … +90 °C	Memory Card SD; SLC-NAND; 2 GB; Temperature range: −40 … +90 °C
Item No.	758-879/000-3102	758-879/000-001
Technical Data		
Memory	2 GB (SLC)	2 GB (SLC)
Read/write cycles (max.)	17 MB/s / 20 MB/s	16 Mb/s / 22 Mb/s
MTBF	4,000,000 hrs.	4,000,000 hrs.
service life	2,000,000 program/operating cycles	2,000,000 program/operating cycles
Surrounding air temperature (operation)	−40 … +90 °C	-45 … +90 °C
Surrounding air temperature (storage)	−40 … +90 °C	-45 … +90 °C
Relative humidity	95 %; non condensing	95 %; non condensing
Dimensions W x H x D	15 x 11 x 1 mm	24 x 32 x 2.1 mm
Vibration resistance	15g	15g
Shock resistance	50g	50g (operating), 1000g (not operating)
Data transmission rate	Up to 20 MB/s	Up to 22 MB/s

Antennas



Self-Adhesive Antenna; with 2.5 m cable and SMA straight plug; GSM/UMTS/LTE/Bluetooth®/ WLAN; 699-960, 1710-2690 MHz	
Item No.	758-961
Technical Data	
Frequency band	699 … 960 MHz 1710 … 2690 MHz
Dimensions W x H	117 x 12 mm
Cable length	2.5 m
Cable type	RG174
Gain	2.15 dBi
VSWR	< 1.5
Connector	SMA straight plug



Theft-Proof Antenna; with 1 m cable and SMA straight plug; GSM/UMTS/BT/WLAN; 850/900/1800/1900/2100/2400 MHz	
Item No.	758-962
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions W x H	29 x 52 mm
Cable length	1 m
Cable type	RG174
Gain	2 dBi
VSWR	< 2
Connector	SMA straight plug



Rod Antenna; with 1 m cable and SMA straight plug; GSM UMTS; 850/900/1800/1900/2100 MHz	
Item No.	758-963
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions (height)	298 mm
Cable length	1 m
Cable type	RG58
Gain	2.2 dBi
VSWR	< 1.6
Connector	SMA straight plug



Magnetic-Mount Antenna; with 2.5 m cable and SMA straight plug; GSM UMTS; 850/900/1800/1900/2100 MHz	
Item No.	758-965
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions (height)	88 mm
Cable length	2.5 m
Cable type	RG174
Gain	2.2 dBi
VSWR	< 2
Connector	SMA straight plug

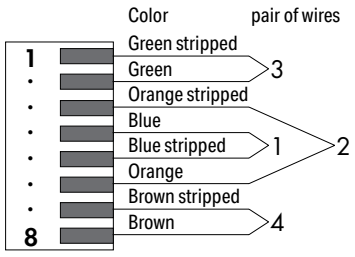


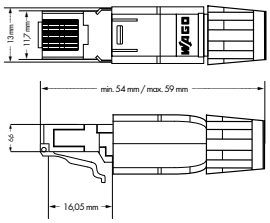
Theft-Proof Combination Antenna; with 2.5 m cable and SMA straight plug; GSM UMTS; 850/900/1800/1900/2100 MHz	
Item No.	758-966
Technical Data	
Frequency band	850 / 900 / 1800 / 1900 / 2100 MHz
Dimensions W x H	29 x 52 mm
Cable length	2.5 m
Cable type	RG174
Gain	2 dBi
VSWR	< 2
Connector	SMA straight plug

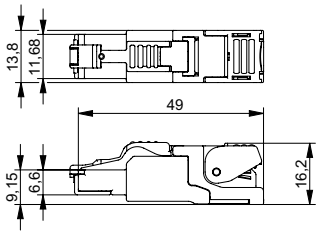
ETHERNET Connector; Code T568A









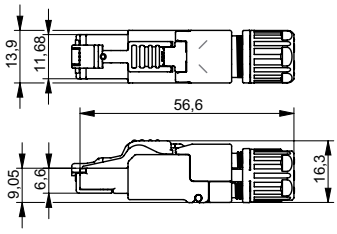


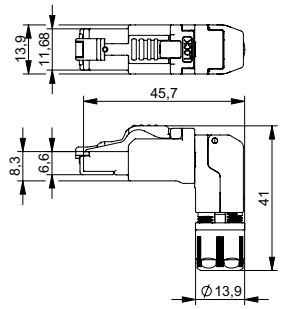
Item Description	ETHERNET Connector; RJ-45; Cat. 5; Straight; Code T568A	ETHERNET Connector; RJ-45; Cat. 6A; Straight; Code T568A	
Version	AWG22	AWG22	AWG24
Item No.	750-975	750-977/000-011	750-977/000-021
Order Text	Connector ETHERNET; RJ45; Cat.5; 180°; T568A AWG22	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568A; AGW22	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568A; AGW24
Technical Data			
Cable category	Cat. 5e	Cat. 6A	
Data transmission rate (max.)	1 GBit/s	10 GBit/s	
Code	TiA-568A	TiA-568A	
Cable exit	180°	180°	
Pole No.	8	8	
Housing material	Plastic	Zinc die-cast	
Mating cycles	> 1000	> 750	
Conductor connection	IDC (Insulation Displacement Contact)	IDC (Insulation Displacement Contact)	
Conductor cross sections	Solid: 0.13 … 0.24 mm² / 26/1 … 23/1 AWG; Stranded: 0.14 … 0.36 mm² / 26/7 … 22/7 AWG	Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG
Cable jacket diameter	4.5 … 8 mm	5.5 … 9 mm	
Cable strain relief	Screw clamp connection		
Shield connection	> 180°	360°	
Surrounding air temperature (operation)	–20 … +70 °C	–40 … +85 °C	
Surrounding air temperature (storage)	–40 … +70 °C	–40 … +85 °C	
Relative humidity	95 %; non condensing	95 %; non condensing	
Protection type	IP20	IP20	
Standards/specifications	Basic standard: IEC 60603-7 RJ-45 Category 5; CD ISO/IEC 11801: 2002; EN 50173: 2002; EIA/TIA 568A: 2002; UL 1863	IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
Approvals	Marine		
Data sheet and further information, see:	wago.com/750-975	wago.com/750-977/000-011	wago.com/750-977/000-021

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ETHERNET Connector; RJ-45; Cat. 6A; Straight; Code T568A; Strain relief	
AWG22	**AWG24**
750-978/000-011	**750-978/000-021**
Connector ETHERNET; RJ-45; Cat.6A; 180°; T568A; AGW22; Strain relief	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568A; AGW24; Strain relief

ETHERNET Connector; RJ-45; Cat. 6A; Angled; Code T568A; Strain relief	
AWG22	**AWG24**
750-979/000-011	**750-979/000-021**
Connector ETHERNET; RJ-45; Cat.6A; 90°; T568A; AGW22; Strain relief	Connector ETHERNET; RJ-45; Cat.6A; 90°; T568A; AGW24; Strain relief

Cat. 6A	
10 GBit/s	
TiA-568A	
180°	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG
5.5 … 10 mm	
Screw clamp connection	
360°	
−40 … +85 °C	
−40 … +85 °C	
95 %; non condensing	
IP20	
IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	

Cat. 6A	
10 GBit/s	
TiA-568A	
90°; selectable position	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG
5.5 … 10 mm	
Screw clamp connection	
360°	
−40 … +85 °C	
−40 … +85 °C	
95 %; non condensing	
IP20	
IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	

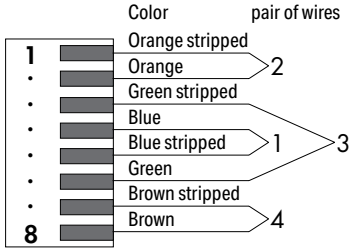
wago.com/750-978/000-011	wago.com/750-978/000-021

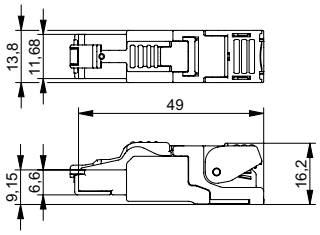
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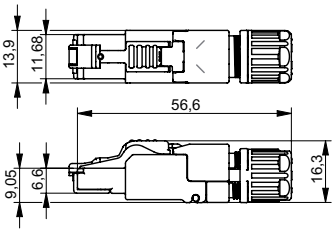
ETHERNET Connector; Code T568B







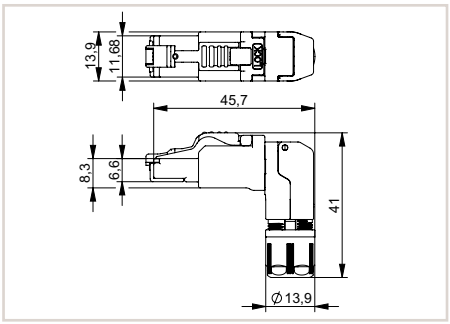




Item Description	ETHERNET Connector; RJ-45; Cat. 6A; Straight; Code T568B		ETHERNET Connector; RJ-45; Cat. 6A; Straight; Code T568B; Strain relief	
Version	AWG22	AWG24	AWG22	AWG24
Item No.	750-977/000-012	750-977/000-022	750-978/000-012	750-978/000-022
Order Text	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568B; AWG22	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568B; AWG24	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568B; AWG22; Strain relief	Connector ETHERNET; RJ-45; Cat.6A; 180°; T568B; AWG24; Strain relief
Technical Data				
Cable category	Cat. 6A		Cat. 6A	
Data transmission rate (max.)	10 GBit/s		10 GBit/s	
Code	TiA-568B		TiA-568B	
Cable exit	180°		180°	
Pole No.	8		8	
Housing material	Zinc die-cast		Zinc die-cast	
Mating cycles	> 750		> 750	
Conductor connection	IDC (Insulation Displacement Contact)		IDC (Insulation Displacement Contact)	
Conductor cross sections	Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG	Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG
Cable jacket diameter	5.5 … 9 mm		5.5 … 10 mm	
Cable strain relief			Screw clamp connection	
Shield connection	360°		360°	
Surrounding air temperature (operation)	–40 … +85 °C		–40 … +85 °C	
Surrounding air temperature (storage)	–40 … +85 °C		–40 … +85 °C	
Relative humidity	95 %; non condensing		95 %; non condensing	
Protection type	IP20		IP20	
Standards/specifications	IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043		IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	
Approvals				
Data sheet and further information, see:	wago.com/ 750-977/000-012	wago.com/ 750-977/000-022	wago.com/ 750-978/000-012	wago.com/ 750-978/000-022

10





ETHERNET Connector; RJ-45; Cat. 6A; Angled; Code T568B; Strain relief	
AWG22	**AWG24**
750-979/000-012	**750-979/000-022**
Connector ETHERNET; RJ-45; Cat.6A; 90°; T568B; AWG22; Strain relief	Connector ETHERNET; RJ-45; Cat.6A; 90°; T568B; AWG24; Strain relief

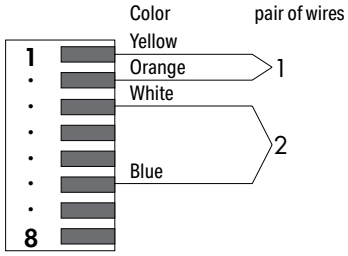
Cat. 6A	
10 GBit/s	
TiA-568B	
90°; selectable position	
8	
Zinc die-cast	
> 750	
IDC (Insulation Displacement Contact)	
Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG	Solid: 0.13 … 0.21 mm² / 26/1 … 24/1 AWG; Stranded: 0.11 … 0.23 mm² / 27/7 … 24/7 AWG
5.5 … 10 mm	
Screw clamp connection	
360°	
−40 … +85 °C	
−40 … +85 °C	
95 %; non condensing	
IP20	
IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043	

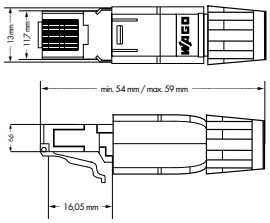
wago.com/ 750-979/000-012	wago.com/ 750-979/000-022

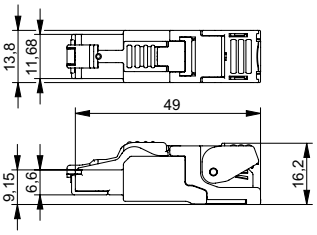
PROFINET Connector







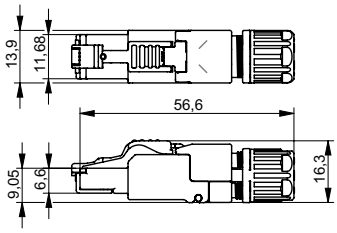


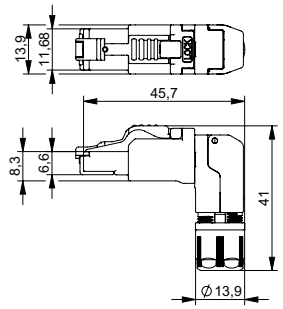


Item Description	PROFINET Connector ; RJ-45; Cat. 5; Straight	PROFINET Connector ; RJ-45; Cat. 6A; Straight
Version	**AWG 22**	**AWG 22**
Item No.	**750-976**	**750-977/000-013**
Order Text	Connector PROFINET; RJ-45; Cat.5; 180°; AWG22	Connector PROFINET; RJ-45; Cat.6A; 180°; AWG22
Technical Data		
Cable category	Cat. 5e	Cat. 6A
Data transmission rate (max.)	100 MBit/s	100 MBit/s
Code	PROFINET	PROFINET
Cable exit	180°	180°
Pole No.	8	8
Housing material	Plastic	Zinc die-cast
Mating cycles	> 1000	> 750
Conductor connection	IDC (Insulation Displacement Contact)	IDC (Insulation Displacement Contact)
Conductor cross sections	Solid: 0.13 … 0.24 mm² / 26/1 … 23/1 AWG; Stranded: 0.14 … 0.36 mm² / 26/7 … 22/7 AWG	Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG
Cable jacket diameter	4.5 … 8 mm	5.5 … 9 mm
Cable strain relief	Screw clamp connection	
Shield connection	>180°	360°
Surrounding air temperature (operation)	–20 … +70 °C	–40 … +85 °C
Surrounding air temperature (storage)	–40 … +70 °C	–40 … +85 °C
Relative humidity	95 %; non condensing	95 %; non condensing
Protection type	IP20	IP20
Standards/specifications	Basic standard: IEC 60603-7 RJ-45 Category 5; CD ISO/IEC 11801: 2002; EN 50173: 2002; EIA/TIA 568A: 2002; UL 1863	IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
Approvals	Marine	
Data sheet and further information, see:	wago.com/750-976	wago.com/750-977/000-013









PROFINET Connector ; RJ-45; Cat. 6A; Straight; Strain relief
AWG 22
750-978/000-013
Connector PROFINET; RJ-45; Cat.6A; 180°; AWG22; Strain relief

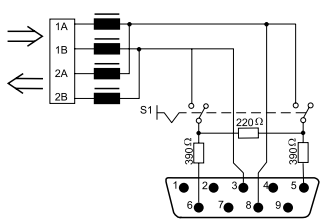
Cat. 6A
100 MBit/s
PROFINET
180°
8
Zinc die-cast
> 750
IDC (Insulation Displacement Contact)
Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG
5.5 … 10 mm
Screw clamp connection
360°
−40 … +85 °C
−40 … +85 °C
95 %; non condensing
IP20
IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
wago.com/750-978/000-013

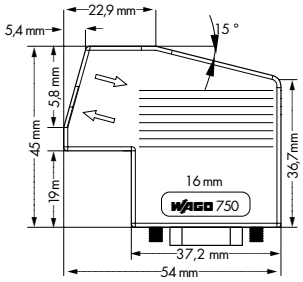
PROFINET Connector ; RJ-45; Cat. 6A; Angled; Strain relief
AWG 22
750-979/000-013
Connector PROFINET; RJ-45; Cat.6A; 90°; AWG22; Strain relief

Cat. 6A
100 MBit/s
PROFINET
90°; selectable position
8
Zinc die-cast
> 750
IDC (Insulation Displacement Contact)
Solid: 0.21 … 0.32 mm² / 24/1 … 22/1 AWG; Stranded: 0.11 … 0.36 mm² / 27/7 … 22/7 AWG
5.5 … 10 mm
Screw clamp connection
360°
−40 … +85 °C
−40 … +85 °C
95 %; non condensing
IP20
IEC60603-7-51; ISO/IEC 11801; IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
wago.com/750-979/000-013

PROFIBUS Fieldbus Connector





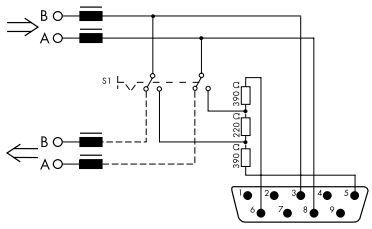


Item Description	PROFIBUS Fieldbus Connector; D-sub; 9-pole
Item No.	750-960
Order Text	Connector PROFIBUS; DSub-M; 9P

Technical Data	
Double cable entry point	min. 4.5 mm Ø/ max. 9.5 mm Ø
Data transmission rate (max.)	12 Mbit/s
Terminating resistor	Integrated switch
Housing color	Light gray
Protection type	IP20
Surrounding air temperature (operation)	0 … +60 °C
Surrounding air temperature (storage)	−25 … +85 °C
Relative humidity	95 %; non condensing
Conductor connection	CAGE CLAMP® terminal strip with locking slides (218 Series)
Conductor cross sections	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible
Approvals	Marine; OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-960

Accessories	Item No.	Page
Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade	210-719	504
Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade	210-720	504

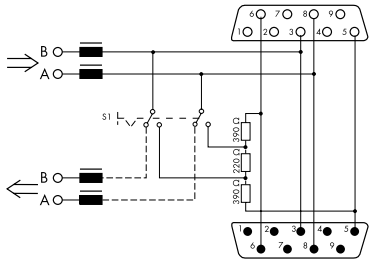
PROFIBUS Fieldbus Connector



Male connector

Figure: 750-971

Female connector

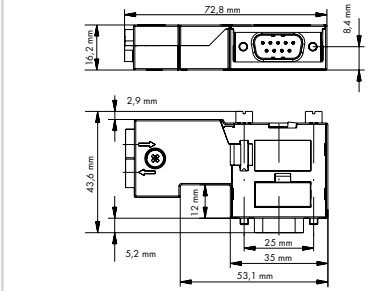


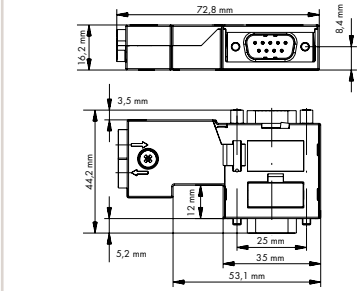
Male connector

Figure: 750-972









Item Description	PROFIBUS Fieldbus Connector; D-sub; 9-pole	PROFIBUS Fieldbus Connector; with D-sub male and female connectors; 9-pole
Item No.	**750-971**	**750-972**
Order Text	Connector PROFIBUS; DSub-M; 9P	Connector PROFIBUS; DSub-M; 9P; PG-Int

Technical Data

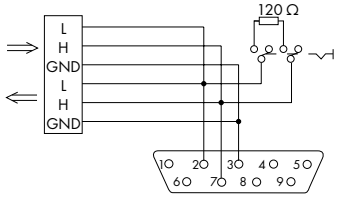
Double cable entry point	8.5 mm Ø	8.5 mm Ø
Data transmission rate (max.)	12 Mbit/s	12 Mbit/s
Terminating resistor	Integrated switch	Integrated switch
Housing color	Light gray	Light gray
Protection type	IP20	IP20
Surrounding air temperature (operation)	-25 … +70 °C	-25 … +70 °C
Surrounding air temperature (storage)	–25 … +85 °C	–25 … +85 °C
Relative humidity	95 %; non condensing	95 %; non condensing
Conductor connection	CAGE CLAMP® terminal strip with locking slides (218 Series)	CAGE CLAMP® terminal strip with locking slides (218 Series)
Conductor cross sections	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible
Data sheet and further information, see:	wago.com/750-971	wago.com/750-972

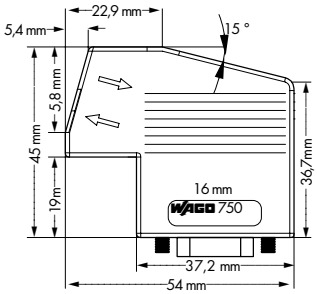
Accessories	Item No.	Page	Item No.	Page
Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade	210-719	504	210-719	504

This fieldbus connector can be connected to a programming tool without interrupting the connection to the PROFIBUS device.

CANopen Fieldbus Connector







Item Description	CANopen Fieldbus Connector; with D-sub female connector; 9-pole
Item No.	750-963
Order Text	Connector CANopen; DSub-F; 9P

Technical Data	
Double cable entry point	min. 4.5 mm Ø/ max. 9.5 mm Ø
Data transmission rate (max.)	1 Mbd
Terminating resistor	Integrated switch
Housing color	Light gray
Protection type	IP20
Surrounding air temperature (operation)	0 … +60 °C
Surrounding air temperature (storage)	−25 … +85 °C
Relative humidity	95 %; non condensing
Conductor connection	CAGE CLAMP® terminal strip with locking slides (218 Series)
Conductor cross sections	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible
Approvals	Marine; OrdLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-963

Accessories	Item No.	Page
Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade	210-719	504
Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade	210-720	504

10

INTERBUS Fieldbus Connector

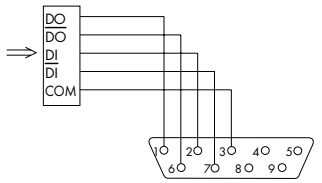


Figure: 750-961

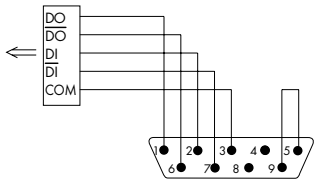
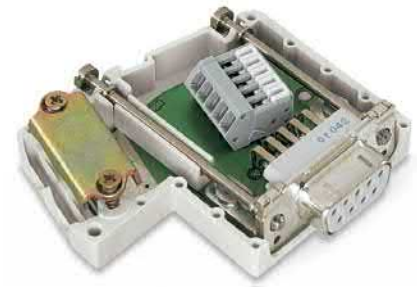
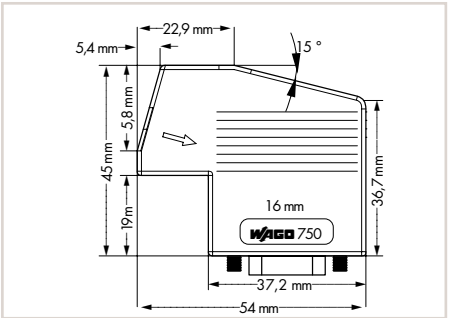
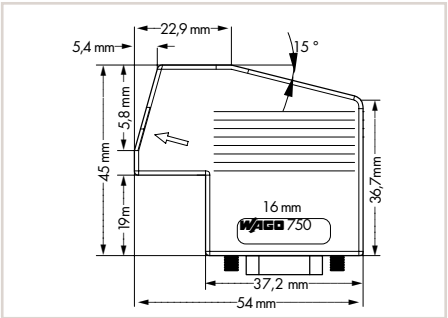


Figure: 750-962







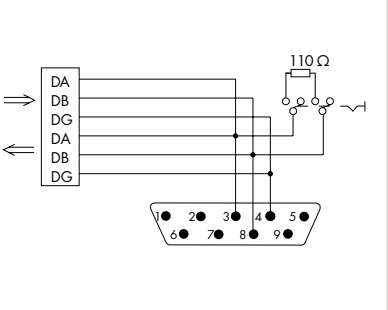


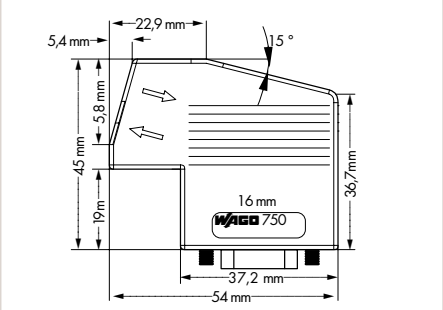
Item Description	INTERBUS Fieldbus Connector (IN); with D-sub female connector; 9-pole	INTERBUS Fieldbus Connector (OUT); with D-sub male connector; 9-pole
Item No.	750-961	750-962
Order Text	Connector INTERBUS; DSub-F; 9P	Connector INTERBUS; DSub-M; 9P
Technical Data		
Double cable entry point	min. 4.5 mm Ø/ max. 9.5 mm Ø	min. 4.5 mm Ø/ max. 9.5 mm Ø
Data transmission rate (max.)	2 Mbd	2 Mbd
Housing color	Light gray	Light gray
Protection type	IP20	IP20
Surrounding air temperature (operation)	0 … +60 °C	0 … +60 °C
Surrounding air temperature (storage)	−25 … +85 °C	−25 … +85 °C
Relative humidity	95 %; non condensing	95 %; non condensing
Conductor connection	CAGE CLAMP® terminal strip with locking slides (218 Series)	CAGE CLAMP® terminal strip with locking slides (218 Series)
Conductor cross sections	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible
Approvals	cULus OrdLoc/HazLoc; ATEX/IECEx	cULus OrdLoc/HazLoc; ATEX/IECEx
Data sheet and further information, see:	wago.com/750-961	wago.com/750-962

Accessories	Item No.	Page	Item No.	Page
Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade	210-719	504	210-719	504
Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade	210-720	504	210-720	504

CC-Link Fieldbus Connector







Item Description	CC-Link Fieldbus Connector; with D-sub male connector; 9-pole
Item No.	**750-965**
Order Text	Connector CC-Link; DSub-M; 9P

Technical Data	
Double cable entry point	min. 4.5 mm Ø/ max. 9.5 mm Ø
Terminating resistor	Integrated switch
Housing color	Light gray
Protection type	IP20
Surrounding air temperature (operation)	0 … +60 °C
Surrounding air temperature (storage)	−25 … +85 °C
Relative humidity	95 %; non condensing
Conductor connection	CAGE CLAMP® terminal strip with locking slides (218 Series)
Conductor cross sections	0.08 … 0.5 mm² / 28 … 20 AWG; limited connection 0.75 mm² / 18 AWG possible
Approvals	cULus OrdLoc
Data sheet and further information, see:	wago.com/750-965

Accessories	Item No.	Page
Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade	210-719	504
Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade	210-720	504

10

System Enclosures



1. Stainless steel
2. Sheet steel
3. Cast aluminum
4. Polyester
5. Sheet steel with cable entry plates

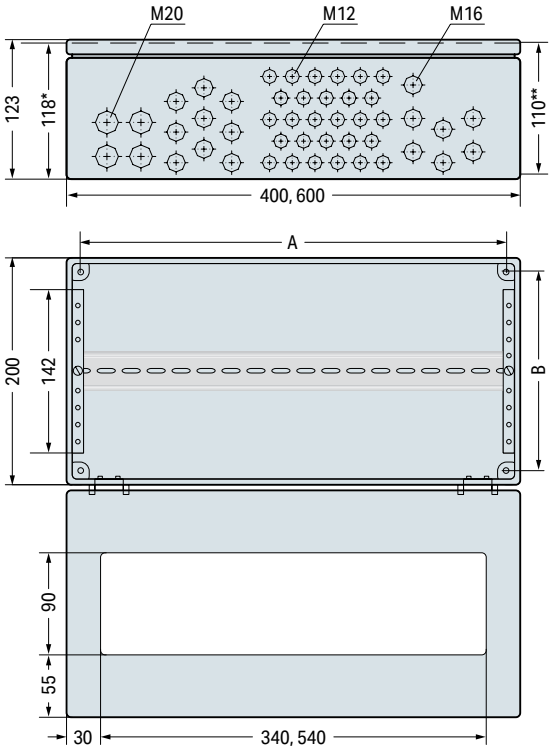
The increasing importance of the application of industrial fieldbus systems in various process engineering areas, such as the chemical and food industry, equally calls for enclosures to protect both the system technology used and the products to be produced.

For this reason, WAGO offers system enclosures that allow the use of the WAGO-I/O-SYSTEM 750/753 in systems exposed to severe environmental conditions. Each enclosure version is available in four different sizes and features the appropriate number of cable grips with metric thread or cable entry plates.

10

Stainless-Steel System Enclosure





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Item Description	IP65 System Enclosure; Stainless steel		
Version	WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip	WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip	WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip
Item No.	850-804	850-804/000-001	850-805
Order Text	SST Enclosure; 14301 400mm CG5	SST Enclosure; 14301 400mm CG1	SST Enclosure; 14301 600mm CG6

Technical Data			
Number of M12 cable grips	28	32*	67
Number of M16 cable grips	16	13*	19
Number of M20 cable grips	4	2*	4
Recommended assembly dimension (A x B)	376 x 176 mm		576 x 176 mm
Dimensions W x H x D	400 x 123 x 200 mm		600 x 123 x 200 mm
Number of I/O modules	≤ 24**		≤ 40**
Data sheet and further information, see:	wago.com/850-804		wago.com/850-805

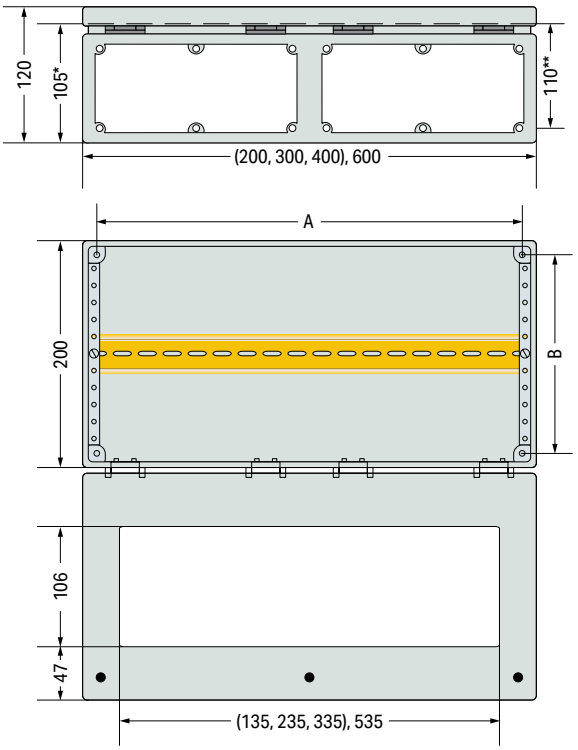
Accessories	Item No.
Pole mounting	850-903

*Cable grip configuration differs from standard.
**Both fieldbus coupler and end module are part of the system. This applies to 12 mm wide I/O modules. I/O modules with a width of 24 mm count as two I/O modules.

Included:
- Stainless steel enclosure 1.4301 streak finish
- Hinged cover 90°, (850-804/000-001: 180°), with cellular rubber gasket made of natural rubber, and 2–3 quick disconnects
- Hinges made of chromed GdZn (Gadulinium Zinc) with M5 countersunk screws
- Macrolon inspection glass
- Metric cable glands (brass, nickel-plated), incl. blind plugs
- M12 fitting, cable diameter 5 ... 6 mm
- M16 fitting, cable diameter 5 ... 9 mm
- M20 fitting, cable diameter 9 ... 13 mm
- 1 x DIN 35/7.5 rail

Sheet-Steel System Enclosure





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Item Description	IP65 System Enclosure; Sheet steel (RAL 7035); without flange plate			
Version	WxHxD (200x120x200 mm)	WxHxD (300x120x200 mm)	WxHxD (400x120x200 mm)	WxHxD (600x120x200 mm)
Item No.	850-814/002-000	850-815/002-000	850-816/002-000	850-817/002-000
Order Text	STE Enclosure; RAL7035 200mm	STE Enclosure; RAL7035 300mm	STE Enclosure; RAL7035 400mm	STE Enclosure; RAL7035 600mm

Technical Data				
Recommended assembly dimension (A x B)	160 x 160	260 x 160	360 x 160	560 x 160
Dimensions W x H x D	200 x 120 x 200 mm	300 x 120 x 200 mm	400 x 120 x 200 mm	600 x 120 x 200 mm
Number of I/O modules	≤ 8*	≤ 16*	≤ 24*	≤ 40*
Data sheet and further information, see:	wago.com/ 850-814/002-000	wago.com/ 850-815/002-000	wago.com/ 850-816/002-000	wago.com/ 850-817/002-000

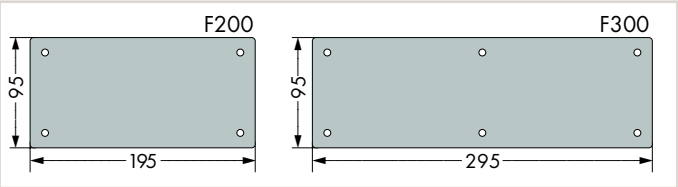
Accessories: Flange Plates	Number of flange plates that can be fitted			
Size 195 x 95 mm: F200; F200-1; F200-2; F204	1	-	2	-
Size 295 x 95 mm: F300; F300-1; F300-2; F304	-	1	-	2

Accessories	Item No.
Wall mount	850-904

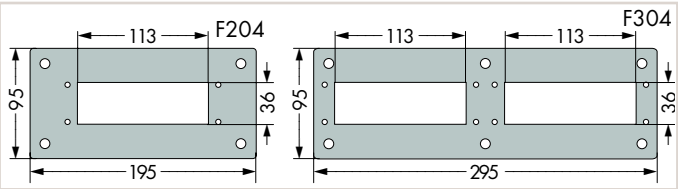
*Both fieldbus coupler and end module are part of the system. This applies to 12 mm wide I/O modules. I/O modules with a width of 24 mm count as two I/O modules.

Included:
- Powder-coated, sheet steel enclosure
- Box with narrow beveled edge, sturdy gutter profile
- Hinged cover 180° (PA), with foam PU seal and 2–3 quick disconnects
- Quick-release fasteners in plastic bushes
- Mounting holes (incl. sealing plugs)
- Large Macrolon inspection glass
- Removable, yellow-chromized interior profiles
- Galvanized DIN-35/7.5 rail (contact with enclosure), adjustable in 12.5 mm spacing
- Grounding lug for cover and flanges with quick-release ribbon cable connectors
- Light gray (RAL 7035)

Flange Plate and Cable Entry Plate



Flange Plate; RAL7035; without cut-out		
	Width x Height	Item No.
F200 Flange Plate RAL7035 WCO	195 x 95 mm	850-818/002-000
F300 Flange Plate RAL7035 WCO	295 x 95 mm	850-819/002-000



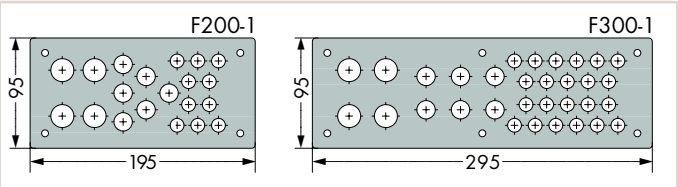
Flange Plate; RAL7035; with cut-out		
	Width x Height	Item No.
F204 Flange Plate RAL7035 1CO	195 x 95 mm	850-818/002-005
F304 Flange Plate RAL7035 2CO	295 x 95 mm	850-819/002-005



Illustration: Flange Plate F204 with Cable Entry Plate KDP 22

Cable Entry Plate	
	Item No.
KDP 22 Cable Entry Plate; 16 x Size 1, 4 x Size 2, 2 x Size 3	850-820/000-001
KDP 29 Cable Entry Plate; 29 x Size 1	850-820/000-002

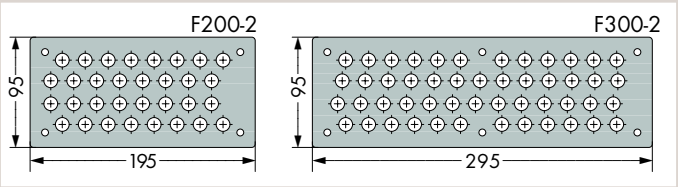
Cable entry plate, polyamide
Size 1: Cable diameter 3.0 … 6.5 mm
Size 2: Cable diameter 5.0 … 9.2 mm
Size 3: Cable diameter 8.0 … 12.5 mm



Flange Plate; RAL7035; M20, M16, M12 bore holes		
	Width x Height	Item No.
F200-1 Flange Plate RAL7035 HO1; 4 x M20, 6 x M16, 10 x M12	195 x 95 mm	850-818/002-001
F300-1 Flange Plate RAL7035 HO5; 4 x M20, 6 x M16, 22 x M12	295 x 95 mm	850-819/002-001



Flange Plate; RAL7035; M20, M16, M12 cable grips		
	Width x Height	Item No.
F200-1 Flange Plate RAL7035 CG8; 4 x M20, 6 x M16, 10 x M12	195 x 95 mm	850-818/002-002
F300-1 Flange Plate RAL7035 CG9; 4 x M20, 6 x M16, 22 x M12	295 x 95 mm	850-819/002-002



Flange Plate; RAL7035; M12 bore holes		
	Width x Height	Item No.
F200-2 Flange Plate RAL7035 HO4; 32 x M12	195 x 95 mm	850-818/002-003
F300-2 Flange Plate RAL7035 HO6; 50 x M12	295 x 95 mm	850-819/002-003

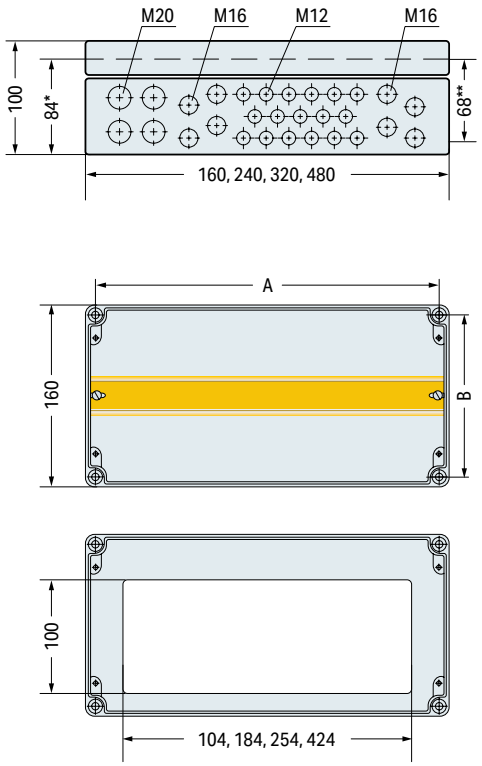


Similar to illustration

Flange Plate; RAL7035; M12 cable grips		
	Width x Height	Item No.
F200-2 Flange Plate RAL7035 HO2; 32 x M12	195 x 95 mm	850-818/002-004
F300-2 Flange Plate RAL7035 CG12; 50 x M12	295 x 95 mm	850-819/002-004

Aluminum System Enclosure





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Item Description	IP65 System Enclosure; Aluminum			
Version	**Enclosure type in RAL 7032**			
Item No.	**850-825**	**850-826**	**850-827**	**850-828**
Order Text	ALU Enclosure; RAL7032 160mm CG11	ALU Enclosure; RAL7032 240mm CG7	ALU Enclosure; RAL7032 320mm CG10	ALU Enclosure; RAL7032 480mm CG4
Version	**Enclosure type in RAL 7035**			
Item No.		**850-826/002-000**	**850-827/002-000**	**850-828/002-000**
Order Text		ALU Enclosure; RAL7035 240mm CG7	ALU Enclosure; RAL7035 320mm CG10	ALU Enclosure; RAL7035 480mm CG4

Technical Data				
Number of M12 cable grips	9	14	17	35
Number of M16 cable grips	-	4	8	10
Number of M20 cable grips	4			
Recommended assembly dimension (A x B)	142 x 142 mm	222 x 142 mm	302 x 142 mm	462 x 142 mm
Dimensions W x H x D	160 x 100 x 160 mm	240 x 100 x 160 mm	320 x 100 x 160 mm	480 x 100 x 160 mm
Number of I/O modules	≤ 4*	≤ 11*	≤ 18*	≤ 31*
Data sheet and further information, see:	wago.com/850-825	wago.com/850-826	wago.com/850-827	wago.com/850-828

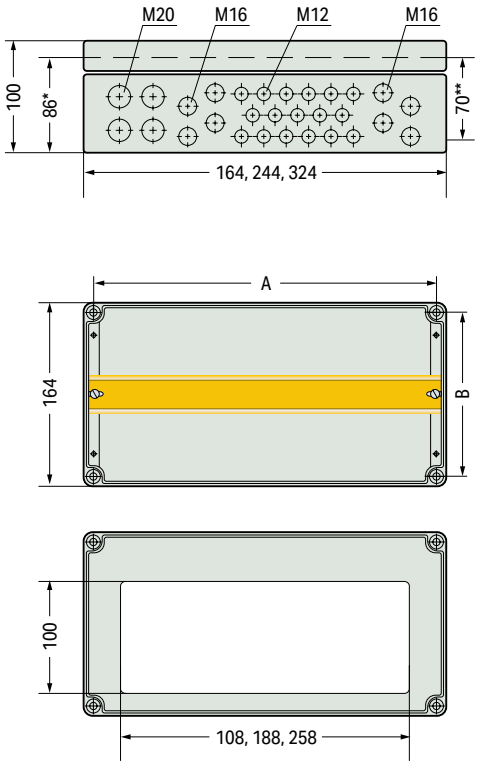
Accessories	Item No.
Pole mounting	850-903

*Both fieldbus coupler and end module are part of the system. This applies to 12 mm wide I/O modules. I/O modules with a width of 24 mm count as two I/O modules.

Included:
- Aluminum enclosure, G AL Si 12 alloy / DIN 1725
- Stainless steel cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable glands (brass, nickel-plated), incl. blind plugs
- M12 fitting, cable diameter 5 … 6 mm
- M16 fitting, cable diameter 5 … 9 mm
- M20 fitting, cable diameter 9 … 13 mm
- 1x DIN-35/7.5 rail
- Tongue and groove system, seal with groove in enclosure cover
- Oil and petroleum-resistant neoprene round chord seal
- Grounding link in enclosure
- Pebble gray RAL 7032 or light gray RAL 7035

Polyester System Enclosure





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Item Description	IP65 System Enclosure; Polyester (RAL 7032)		
Version	WxHxD (164x100x164 mm); 9 x M12, 4 x M20	WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip
Item No.	850-834	850-835	850-836
Order Text	POL Enclosure; RAL7032 164mm CG11	POL Enclosure; RAL7032 244mm CG7	POL Enclosure; RAL7032 324mm CG10

Technical Data			
Number of M12 cable grips	9	14	17
Number of M16 cable grips	-	4	8
Number of M20 cable grips	4		
Recommended assembly dimension (A x B)	142 x 142 mm	222 x 142 mm	302 x 142 mm
Dimensions W x H x D	164 x 100 x 164 mm	244 x 100 x 164 mm	324 x 100 x 164 mm
Number of I/O modules	≤ 4*	≤ 11*	≤ 18*
Data sheet and further information, see:	wago.com/850-834	wago.com/850-835	wago.com/850-836

Accessories	Item No.
Pole mounting	850-903

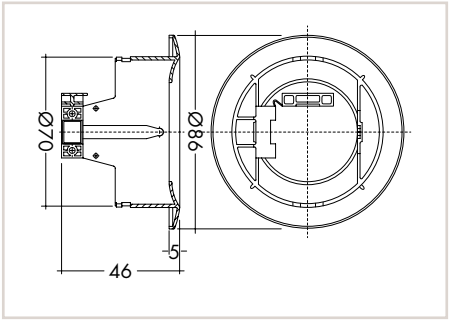
*Both fieldbus coupler and end module are part of the system. This applies to 12 mm wide I/O modules. I/O modules with a width of 24 mm count as two I/O modules.

Included:
- Polyester enclosure, glass-fiber-reinforced, halogen-free, as V0 version (self-extinguishing)
- Polyamide cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable grips (polyamide PA 6), incl. blind plugs
- M12 fitting, cable diameter 5 … 6 mm
- M16 fitting, cable diameter 5 … 9 mm
- M20 fitting, cable diameter 9 … 13 mm
- 1x DIN-35/7.5 rail
- Oil and petroleum-resistant neoprene round chord seal
- Pebble gray, RAL 7032

DALI Multi-Sensor

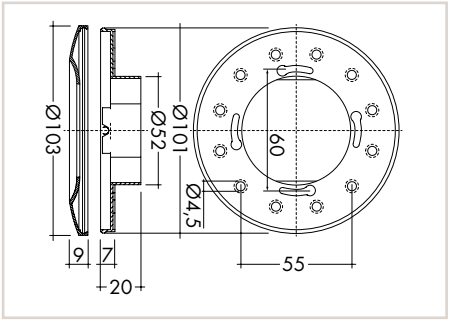
Ceiling Installation





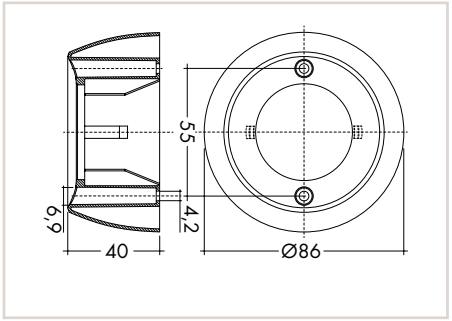
Box Installation





Surface Mount





The WAGO DALI MSensor 02 is paired with DALI Master I/O modules (753-647 or 750-641) and has been designed for the following key applications:

- Individual offices
- Open-plan offices
- Training/Presentation rooms
- Corridors, passageways and garages

This multi-sensor features both a motion/presence detector and a light sensor. As an option, the sensor can be operated via remote control (from Tridonic). The sensor enables both motion/presence detection and daylight-dependent lighting control, both of which can also be deactivated.

Addressing is performed via rotary switch or WAGO DALI Configurator. Parameters can be adjusted individually via WAGO DALI Configurator.
Power supply is provided via the DALI line.
The number of sensors, which can be operated on a DALI line, depends on the total power consumption of the specific devices and the address range for the actuators and sensors. Due to the capacity of the DALI bus, a maximum of 16 DALI sensor couplers may be operated on a DALI Multi-Master Module (753-647).

Installation notes:

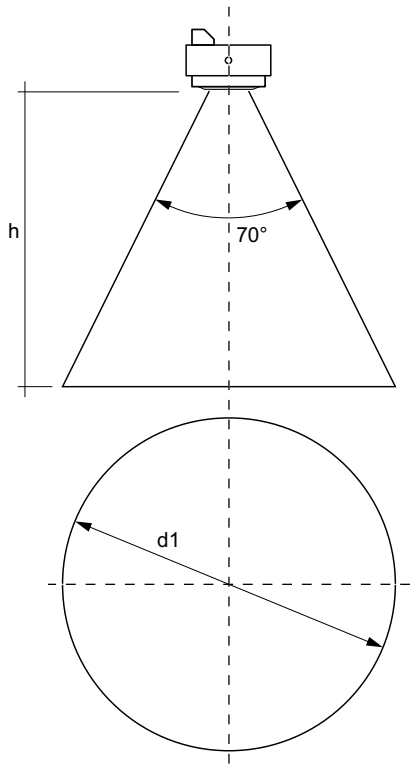
- The DALI MSensor 02 is supplied directly via DALI line.
- DALI is not SELV (Safety Extra Low Voltage). The installation instructions for mains voltage therefore apply.
- The detection range of the sensor must be within the lighting area of the controlled luminaires.
- The detection ranges of the sensors must not overlap as this may influence the lighting control.
- When installed at a height other than the recommended installation height (2.5 m), the presence and light sensor might show different characteristics. If installed at a higher height, the sensitivity is reduced; the range is reduced when installed at a lower height.
- Heaters, fans, printers and copiers located in the detection range may cause incorrect presence detection.

Item Description	DALI MSensor 02 5DPI 41rc (ceiling installation)	DALI MSensor 02 5DPI 41w (box installation)	DALI MSensor 02 5DPI 41rs (surface mount)
Item No.	2851-8301	2851-8302	2851-8303
Technical Data			
Diameter of detection range when installed at a height of 2.5 m	5 m		
Extension of the detection range	2 m (if mounted at a height of 2.5 m and swiveled through 15°)		-
Swivel design	Yes		No
Swivel range	± 15°		-
Detection angle	360°		
Light measurement at the sensor head	10 ... 650 lx (The measured value at the sensor head corresponds to approx. 15 to 2,000 lux on the surface measured.)		
Remote control range	5 m		
Data sheet and further information, see:	wago.com/2851-8301	wago.com/2851-8302	wago.com/2851-8303

Technical Data	
Power supply	via DALI line
Current consumption	6 mA from DALI line
Surrounding air temperature (operation)	0 … +50 °C
Surrounding air temperature (storage)	−25 … +55 °C
Protection type	IP20
Wire type and cross section	Solid or fine-stranded wires ranging from 0.5 to 1.5 mm² (20 … 16 AWG)

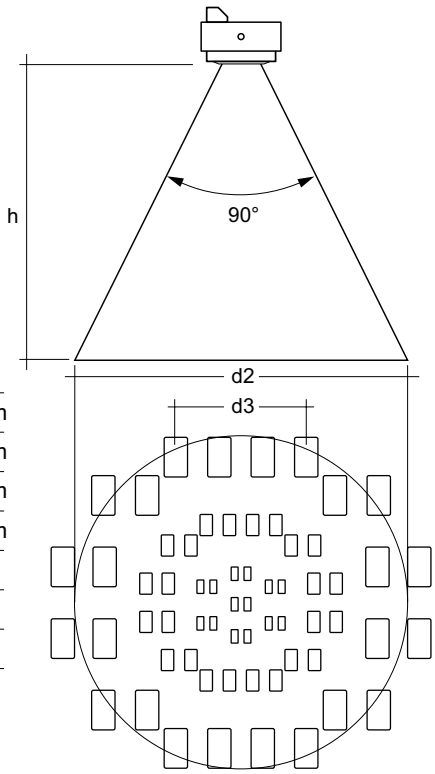
Technical Data	
General Settings	
Motion detector	Switching, on/off
Lighting control	Switching
Setpoint (lighting control)	150 lx
Power-on setting	No action
Bright-out timeout	10 min
Bright-out threshold	150 %
Control speed	4
Switch-on value	Automatic (calculated)
Rotary switch	0, broadcast
Motion Detector Settings	
Fade-in time	< 0.7 s
Presence value	Regulated
Run-on time	20 min
Fade time	5.6 s
Absence value	3 %
Switch-off delay	10 min
Fade-off time	5.6 s
Manual-off	10 min

Light Detection



h *	d1	d2	d3
1,7m	2,4m	3,4m	1,36m
2,0m	2,8m	4,0m	1,60m
2,3m	3,2m	4,6m	1,84m
2,5m	3,5m	5,0m	2,00m
2,7m	3,8m	5,4m	-
3,0m	4,2m	6,0m	-
3,5m	4,9m	7,0m	-
4,0m	5,6m	8,0m	-

Motion Detection (d2) and Presence Detection (d3)

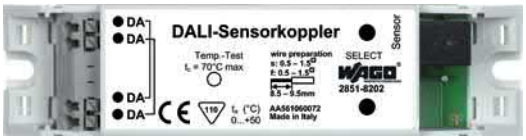


*The recommended maximum room height for office applications is 3 m and for corridor applications 4 m, for example.

Calculation of the diameter:
d = 2 x tan (0.5 x α) x h

WAGO DALI Multi-Sensor Kit

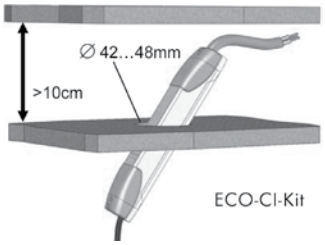
DALI Sensor Coupler



MULTI 3 CI Sensor



Eco CI Kit



The WAGO DALI Multi-Sensor Kit is paired with the WAGO 753-647 DALI Multi-Master Module and includes the following three components:

- DALI Sensor Coupler (also available individually)
- Eco CI Kit
- MULTI 3 CI Sensor

The DALI Sensor Coupler connects the MULTI 3 CI Sensor to a DALI bus system. For this, the MULTI 3 CI Sensor is connected to the DALI Sensor Coupler via RJ-10 socket. DALI terminals connect the DALI Sensor Coupler to both the DALI network and WAGO DALI Module.
The Eco CI Kit contains two covers, which can be used as touch guards and strain relief for cables within the ceiling installation of the DALI Sensor Coupler. The MULTI 3 CI Sensor has a motion and light sensor, enabling both motion detection and daylight-dependent lighting control. Power supply to the DALI Sensor Coupler is provided via DALI line. The DALI Sensor Coupler transmits measured values from the connected sensor channels as telegrams to the WAGO DALI Module via DALI line. Parameters can be adjusted individually via WAGO DALI Configurator.

The number of sensors, which can be operated on a DALI line, depends on the total power consumption of the specific devices and the address range for the actuators and sensors. Due to the capacity of the DALI bus, a maximum of 16 DALI Sensor Couplers may be operated on a DALI Multi-Master Module (753-647).
Assembly

Sensor Connection
The MULTI 3 CI Sensor is connected to a 4-pole RJ-10 socket (4P4C), which is marked as "Sensor" on the housing cover.
For easy connection, the sensor plug is equipped with a quick-connect latch. Only one MULTI 3 CI Sensor must be connected to sensor coupler.

Ceiling Installation
For installation outside of a lighting fixture (e.g., suspended ceiling), the Eco CI Kit must also be attached to both sides of the unit to ensure strain relief and touch protection. The DALI Sensor Coupler can also be installed in lighting fixtures. The installation spaces available in lighting fixtures can be used, as the dimensions correspond to those of an electronic ballast.

Note:

The DALI Sensor Coupler is also available individually, allowing the unit to be combined with other multi-sensor models from OSRAM.

WAGO DALI Multi-Sensor Kit	
Delivery type	Item No.
Set includes: DALI Sensor Coupler, MULTI 3 CI Sensor, Eco CI Kit	2851-8201
DALI Sensor Coupler	2851-8202

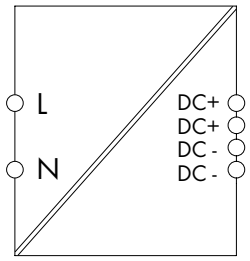
DALI Sensor Coupler	
Power supply	via DALI line
Current consumption	5 mA (from the DALI line)
Input signal voltage/current	according to MULTI 3 CI Sensor
Conductor connection	Inputs: for MULTI 3 CI Sensor's modular plug 4p4c (RJ-10); Sensor cable length (max.): 5 m; DALI connection: Push-wire connectors; Strip length: 8.5 … 9.5 mm
Conductor cross sections	0.5 … 1.5 mm² (s + f-st)
Dimensions W x H x D	118 x 21 x 30 mm
Weight	35 g
Surrounding air temperature (operation)	0 … +50 °C
Surrounding air temperature (storage)	−25 … +70 °C
Relative humidity	5 … 93 %; non-condensing
Protection type	IP20
Approvals	CE

Eco CI Kit	
Installation opening diameter	42 … 48 mm
Minimum suspended ceiling distance	25 mm

MULTI 3 CI Sensor	
Maximum total length of signal line (incl. all connections to the control units)	100 m
Dimensions (diameter x H)	50 x 25 mm
Light sensor detection range	20 … 600 lx (measured at sensor), beam angle approx. 90°
Recommended installation height	2 … 4 m
Motion detection range	Cone-shaped, beam angle approx. 80°, depending on installation level 4 … 8 m

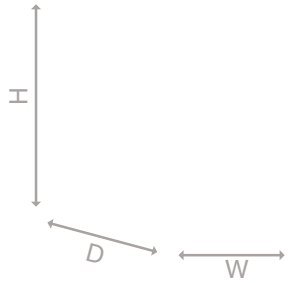
Switched-Mode Power Supply; for DALI Module; Compact; 1-Phase
787 Series





Switched-Mode Power Supply; for DALI Module (753-647); 1-phase; Output voltage: 18 VDC; Output current: 1.1 A

Item No.	Pack. Unit
787-1007	1



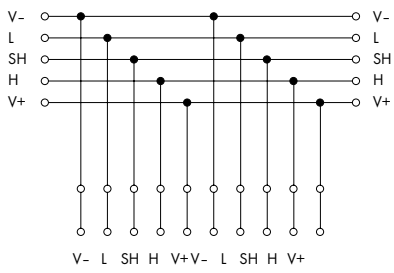
Short description:
The 787-1007 Switched-Mode Power Supply is specially designed to supply the 753-647 DALI Multi-Master Module. The 787-1007 features a 54 mm wide DIN-rail-mount enclosure with input voltage range of 85 to 264 VAC (120 ... 373 VAC). The power supply provides an output voltage of 18 VDC and a maximum output current of 1100 mA. This allows several DALI Multi-Master Modules to be supplied in parallel. The maximum current per DALI line is limited to 200 mA in each DALI Multi-Master Module.

Features:
- Supplies up to five 753-647 DALI Multi-Master Modules*
- Suitable for protection class II equipment
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards/ boxes

*Note:
The 787-1007 Power Supply must be operated in a DALI network with interconnected 753-647 DALI Multi-Master Module. Otherwise the connected DALI devices will be destroyed.

Input	
Phases	1
Nominal input voltage Ui nom	100 … 240 VAC
Input Voltage Range	85 … 264 VAC; 120 … 373 VDC
Nominal mains frequency range	44 … 66 Hz; 0 Hz
Input current Ii	≤ 0.4 A (230 VAC); ≤ 0.6 A (110 VAC)
Inrush current	≤ 30 A (NTC)
Mains failure hold-up time	≥ 80 ms (230 VAC); > 10 ms (110 VAC)
Output	
Nominal output voltage Vo nom	18 VDC
Default setting	18 VDC
Nominal output current Io nom	1.1 A (18 VDC); max. 0.8 A (18 VDC) in any mounting position
Adjustment accuracy	≤ 2 %
Residual ripple	≤ 100 mV (peak-to-peak)
Current limitation	1.1 x Io nom (typ.)
Overload behavior	Constant current
Signaling and Communication	
Status indication	Green LED (Uo)
Efficiency/Power Losses	
Power loss Pl	≤ 3 W (230 VAC; no load); ≤ 6 W (230 VAC; nominal load)
Efficiency	≥ 80 %
Fuse Protection	
Internal fuse	2 AT
Required backup fusing	An external DC fuse is required for the DC input voltage.
Recommended backup fusing	Circuit breaker 10 A (C characteristic), 16 A (B characteristic) or higher
Safety and Protection	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class	II
Protection type	IP20 (per EN 60529)
Feedback voltage	≤ 20 VDC
Short-circuit-protected	Yes
Open-circuit-proof	Yes
MTBF	> 500,000 h (per IEC 61709)
Connection Data	
Connection type	Input/output
Connection technology	CAGE CLAMP®
WAGO Connector	WAGO 740 Series
Solid conductor	0.08 … 2.5 mm² / 28 … 12 AWG
Fine-stranded conductor	0.08 … 2.5 mm² / 28 … 12 AWG
Strip length	6 … 7 mm / 0.24 … 0.28 inch
Geometric Data	
Width	54 mm / 2.126 inch
Height	89 mm / 3.504 inch
Depth	59 mm / 2.323 inch
Depth from upper-edge of DIN-rail	55 mm / 2.165 inch
Mechanical Data	
Mounting type	DIN-35 rail (EN 60715)
Material Data	
Weight	170 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +60 °C
Surrounding air temperature (storage)	–25 … +80 °C
Relative humidity	5 … 96 % (no condensation permissible)
Pollution degree	2
Climatic category	3K3 (per EN 60721)
Standards and Specifications	
Standards/specifications	EN 60950-1; EN 61204-3; UL 508; DNV GL

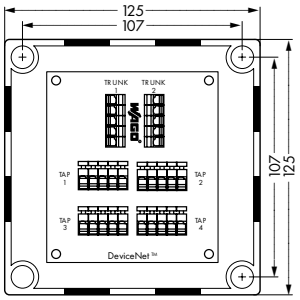
Multi Port Device Tap for DeviceNet

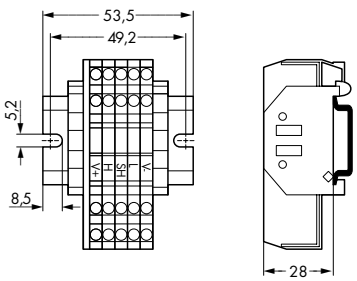






For DeviceNet, a terminating resistor must be connected to each end of the trunk cable. A metal film resistor with the following values must be used: 121 Ohm ± 1 %, ¼ W.
Do not connect terminating resistors to the end of a drop cable, but only to the ends of the trunk cable.





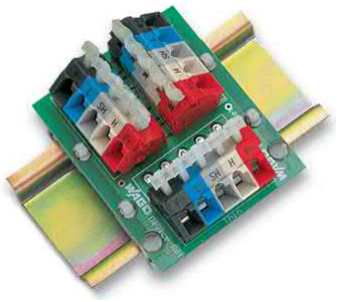
Item Description	Multi Port Device Tap; 2 trunk cables (input, output); 4 drop cables; IP65/NEMA 4 housing	Multi Port Device Tap; 2 trunk cables (input, output); 2 drop cables; Open style
Item No.	810-900/000-001	810-901/000-001
Technical Data		
Wire connection for trunk cables	2 x 256-405 (PCB terminal blocks)	
Wire connection for drop cables	4 x 255-405 (PCB terminal blocks)	
Housing	with cable entry holes	
Terminal block		5 x 280-633
End terminal block		2 x 249-116
DIN-rail		DIN 35, slotted
Conductor cross sections	0.08 … 2.5 mm² / 28 … 12 AWG	0.08 … 2.5 mm² / 28 … 12 AWG
Cable diameter (trunk cable)	10 … 14 mm Ø	
Cable diameter (drop cable)	6 … 12 mm Ø	
Degree of protection	IP65/NEMA 4	
Data sheet and further information, see:	wago.com/810-900/000-001	wago.com/810-901/000-001

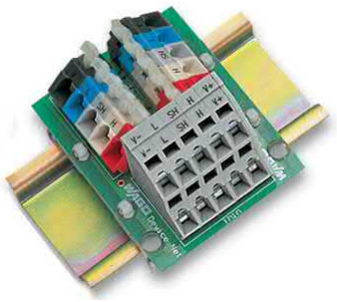
Accessories	Item No.	Pack. Unit	Item No.	Pack. Unit
Cable grip for trunk cable 10 …14 mm Ø	810-900/001-000	1		
Cable grip for drop cable 6 … 12 mm Ø	810-900/002-000	1		
Terminating resistor	810-900/003-000	200	810-900/003-000	200
Test adapter for miniature banana plug	810-900/004-000	1	810-901/001-000	1

*when using the cable grip (available as accessories)

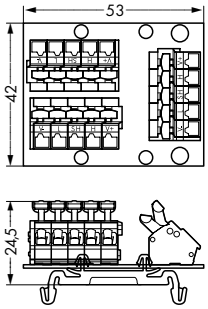
10

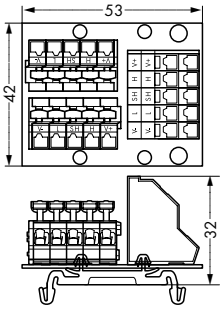
Multi Port Device Tap for DeviceNet





For DeviceNet, a terminating resistor must be connected to each end of the trunk cable. A metal film resistor with the following values must be used: 121 Ohm ± 1 %, ¼ W.
Do not connect terminating resistors to the end of a drop cable, but only to the ends of the trunk cable.





Item Description	Multi Port Device Taps with Mounting Foot; 2 trunk cables (input, output); 1 drop cable; Open style	Multi Port Device Taps with Mounting Foot; 2 trunk cables (input, output); 2 drop cables; Open style
Item No.	810-902/000-001	810-902/000-002
Technical Data		
Wire connection for trunk cables	2 x 5 x 256 Series (PCB terminal blocks)	2 x 5 x 256 Series (PCB terminal blocks)
Wire connection for drop cables	1 x 5 x 256 Series (PCB terminal blocks)	1 x 5 x 736 Series (PCB terminal blocks)
Conductor cross sections	0.08 … 2.5 mm² / 28 … 12 AWG	0.08 … 2.5 mm² / 28 … 12 AWG
Data sheet and further information, see:	wago.com/810-902/000-001	wago.com/810-902/000-002

Accessories	Item No.	Pack. Unit	Item No.	Pack. Unit
Terminating resistor	810-900/003-000	200	810-900/003-000	200
Test adapter for miniature banana plug	810-901/001-000	1	810-901/001-000	1

Shield Connection System, 790 Series
Application and Installation Instructions



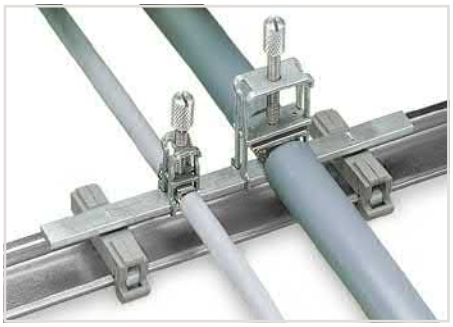
Carrier with grounding foot* (790-113), 45 mm long, busbar 90° to the rail

*for all shield clamping saddle sizes



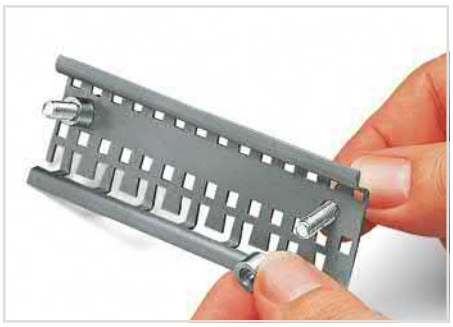
Carrier with grounding foot* (790-114), 45 mm long, busbar parallel to the rail

*for all shield clamping saddle sizes

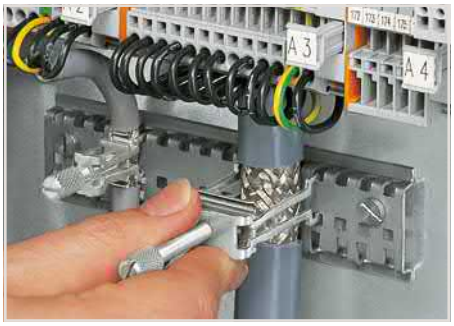


Carrier with grounding foot* (790-115), 125 mm long, busbar parallel to the rail

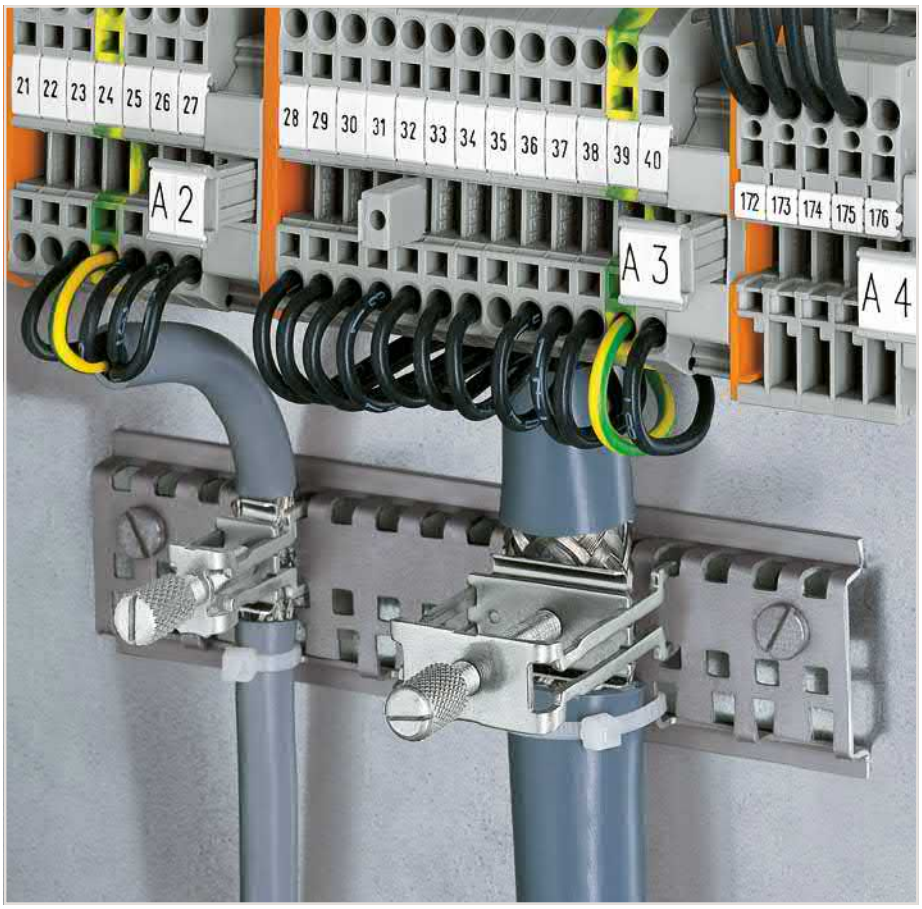
*for all shield clamping saddle sizes

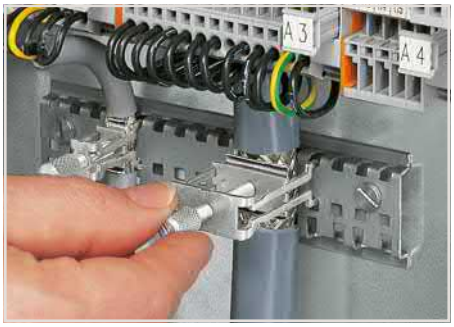


Securing a spacer sleeve to a specialty slotted DIN-rail.

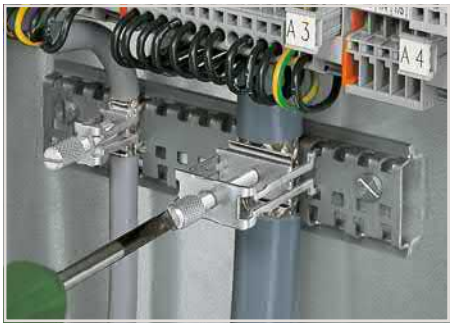


Securing an additional shield clamping saddle.





Tightening/removing a shield clamping saddle.



After connection, tighten the knurled screw to complete the installation. Recommended tightening torque: 0.5 Nm



To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

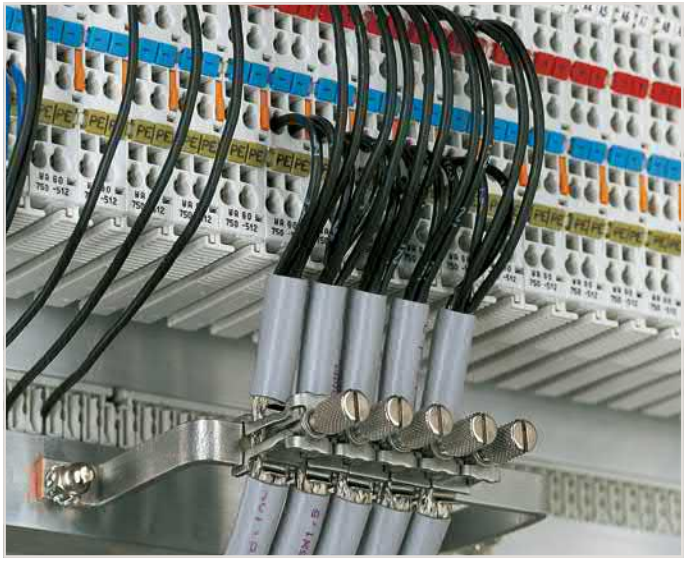
Shield Connection System, 790 Series
Application and Installation Instructions



Carrier with grounding foot – busbar parallel to the rail



Insulated mounting carriers for a common shield reference potential, independent of housing potential

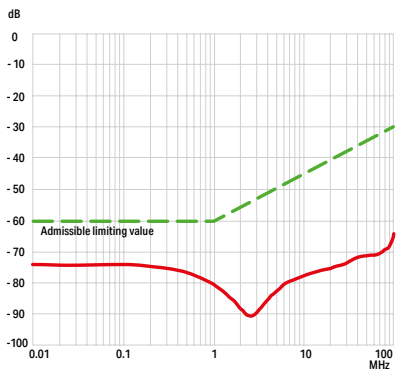


U-shaped (10 x 3) mm copper busbar



Snap shield clamping saddles into any metal plate (max. thickness: 3 mm).

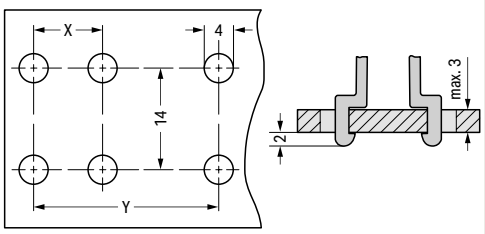
Negative Shield Attenuation



WAGO's shield connection system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable.

Hole Dimensions for Panel Mounting

Shield clamping saddle size	
Distance	X
11 mm	9.5 mm
Distance	Y
19 mm	17.5 mm
27 mm	25.5 mm
43 mm	41.5 mm



Additionally, the spring material is part of the clamping saddle, providing a good electrical connection (the system also acts as a partial strain relief). The spring element integrated in the shield clamping saddle compensates deformation and settling that results from a connected shield.

10

Shield Clamping Saddle
790 Series



Shield clamping saddle; 11 mm wide; Connectable shield diameter: up to 8 mm

Item No.	Pack. Unit
790-108	50 (10)



Shield clamping saddle; 19 mm wide; Connectable shield diameter: 7 … 16 mm

Item No.	Pack. Unit
790-116	50 (10)



Shield clamping saddle; 27 mm wide; Connectable shield diameter: 6 … 24 mm

Item No.	Pack. Unit
790-124	50 (10)



Shield clamping saddle; 43 mm wide; Connectable shield diameter: 22 … 40 mm

Item No.	Pack. Unit
790-140	50 (10)

Installation

The shield clamping saddle is shipped ready for direct connection to the (10 x 3) mm busbar or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation. Maximum tightening torque: 0.5 Nm

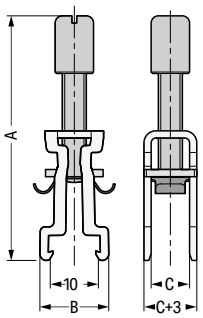


Removal

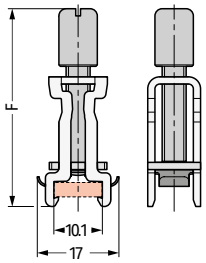
To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.



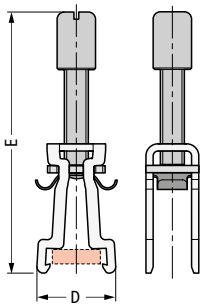
Delivery position – for direct snapping



Snapping position closed



Release position



Dimensions in mm

Item No.	A	B	C	D	E	F
790-108	51	15	8	16	55	42
790-116	53	15	16	16	57	45
790-124	78	15	24	16	83	58
790-140	97	15	40	16	100	73

Spring-Equipped Shield Clamping Saddle
790 Series



Shield clamping saddle; 3 … 8 mm diameter; 12.4 mm wide		
	Item No.	Pack. Unit
	790-208	50



Shield clamping saddle; 6 … 16 mm diameter; 21.8 mm wide		
	Item No.	Pack. Unit
	790-216	25



Shield clamping saddle; 6 … 20 mm diameter; 30 mm wide		
	Item No.	Pack. Unit
	790-220	25



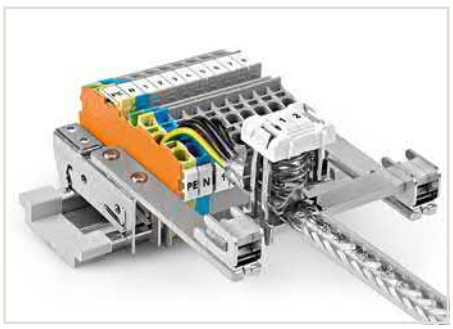
Mounting a clamping saddle on a specialty slotted DIN-rail (790-145).
When releasing the saddle, do not place your finger under the clamping spring!



Removing the shield clamping saddle.



Shield clamping saddle contacts shield conductor and specialty slotted DIN-rail (790-145).



Application example

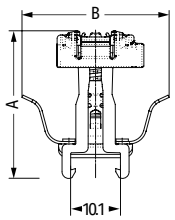


Labeling using a marking strip.

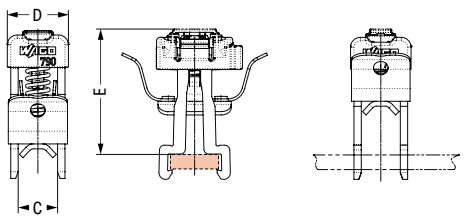


Labeling using WMB markers.

Delivery position



Mounting position



Dimensions in mm

Item No.	A	B	C	D	E*
790-208	30	29.9	8	12.4	25.8
790-216	34.6	28.3	16	21.8	30.2
790-220	45.6	28.3	24	30	41.2

*Height with WMB marker

10

Shield Clamp and Shield Termination
791 and 709 Series







Insert the shield termination into the female plug using the operating tool.

Shield clamp; Connectable shield diameter: 1.5 … 6.5 mm; Height: 40 mm (max.); 10 mm wide

Item No.	Pack. Unit
791-107	50

Shield termination; includes cable ties for 5 … 10 mm shield diameter; 60 mm long

Item No.	Pack. Unit
709-350	100 (25)

Shield clamp; Connectable shield diameter: 5 … 11 mm; Height: 47 mm (max.); 17 mm wide

Item No.	Pack. Unit
791-111	50

Shield termination; includes cable ties for 5 … 10 mm shield diameter; 150 mm long

Item No.	Pack. Unit
709-352	100 (25)

Shield clamp; Connectable shield diameter: 10 … 17 mm; Height: 63 mm (max.); 23 mm wide

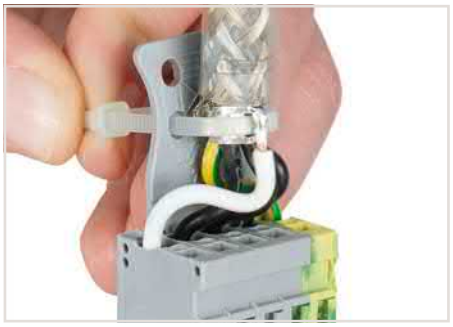
Item No.	Pack. Unit
791-117	50

Shield clamp; Connectable shield diameter: 16 … 24 mm; Height: 78 mm (max.); 30 mm wide

Item No.	Pack. Unit
791-124	50



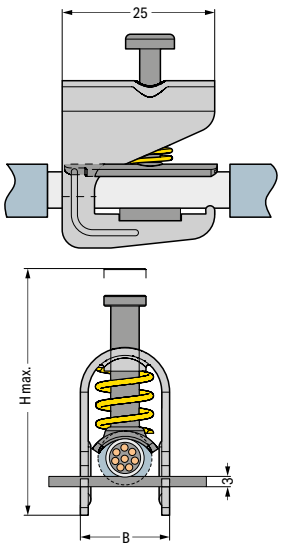
Fit the shield termination to the shield cable.



Secure both shield cable and shield termination to the strain relief plate using cable ties.



Shield termination connected to an X-COM® female plug



Dimensions in mm

10

Accessories for Shield Connection Systems

















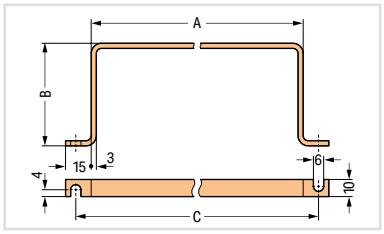






Item Description					
Carrier with grounding foot				**Item No.**	**Pack. Unit**
Carrier with grounding foot; Busbar parallel to the rail; 15 mm long; Copper (10 x 3) mm; suitable for shield clamping saddles (790-108)				790-110	25
Carrier with grounding foot; Busbar parallel to the rail; 25 mm long; Copper (10 x 3) mm; suitable for shield clamping saddles (790-108; 790-116) and shield clamps (791-111; 791-117)				790-112	25
Carrier with grounding foot; Busbar 90° to the DIN-rail; 45 mm long; Copper (10 x 3) mm; suitable for shield clamping saddles (790 Series)				790-113	25
Carrier with grounding foot; Busbar parallel to the DIN-rail; 45 mm long; Copper (10 x 3) mm; suitable for shield clamping saddles (790 Series) and shield clamps (791 Series)				790-114	25
Carrier with two grounding feet				**Item No.**	**Pack. Unit**
Carrier with two grounding feet; Busbar parallel to the DIN-rail; 125 mm long; Copper (10 x 3) mm				790-115	25
Busbar				**Item No.**	**Pack. Unit**
Busbar; tin-plated; 1000 mm long; Copper (10 x 3) mm				210-133	1
Busbar; tin-plated; 30 mm long; Copper (10 x 3) mm				790-133	20
Busbar; tin-plated; 50 mm long; Copper (10 x 3) mm				790-134	20
DIN-rail; specialty slotted				**Item No.**	**Pack. Unit**
DIN-rail; specialty slotted; 1000 mm long; tin-plated				790-145	1
Spacer sleeve; for DIN-rail; suitable for M5-size screw; specialty slotted				790-144	200 (100)
Insulated mounting foot				**Item No.**	**Pack. Unit**
Insulated mounting foot; for busbar with M4 x 8 mm screw				790-100	50 (25)
Insulated mounting foot; for busbar with (3.5 x 9) mm sheet metal screw				790-101	50 (25)
U-shaped busbar; suitable for 750 Series I/O Modules	**A**	**B**	**C**	**Item No.**	**Pack. Unit**
U-shaped busbar; Copper (10 x 3) mm; for 5 I/O	63	60	83	790-190	25 (5)
U-shaped busbar; Copper (10 x 3) mm; for 8 I/O	100	60	118	790-191	25
U-shaped busbar; Copper (10 x 3) mm; for 5 I/O	63	35	83	790-192	25
U-shaped busbar; Copper (10 x 3) mm; for 5 I/O	100	35	118	790-193	25

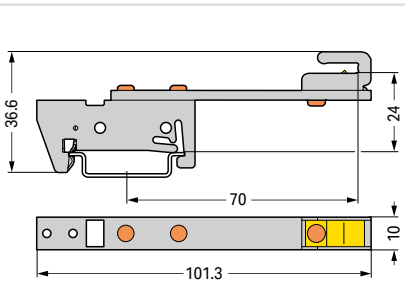
Dimensions in mm



Busbar Carrier
790 Series



Dimensions in mm

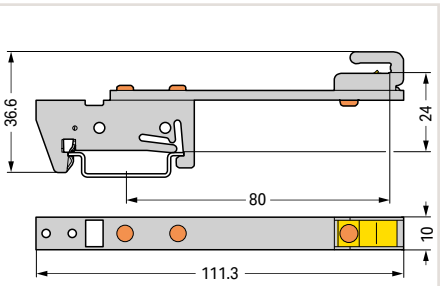


Busbar carrier; for (10 x 3) mm copper busbars; single side; straight; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-300	10



Dimensions in mm

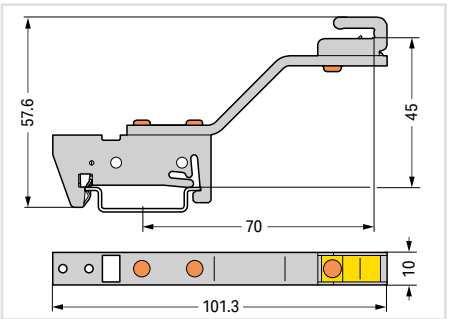


Busbar carrier; for (10 x 3) mm copper busbars; single side; straight; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-302	10



Dimensions in mm

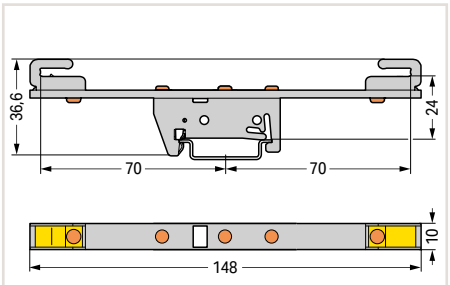


Busbar carrier; for (10 x 3) mm copper busbars; single side; angled; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-301	10



Dimensions in mm

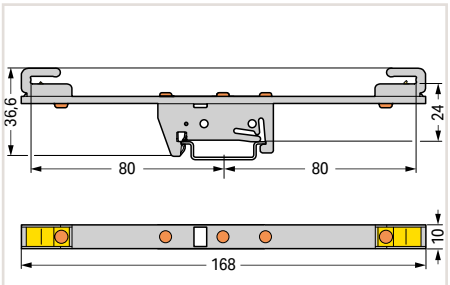


Busbar carrier; for (10 x 3) mm copper busbars; both sides; straight; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-310	10



Dimensions in mm

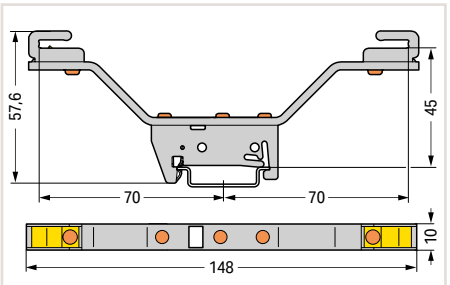


Busbar carrier; for (10 x 3) mm copper busbars; both sides; straight; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-312	10



Dimensions in mm



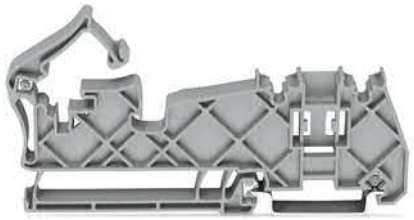
Busbar carrier; for (10 x 3) mm copper busbars; both sides; angled; snaps onto DIN-35 rail

Item No.	Pack. Unit
790-311	10

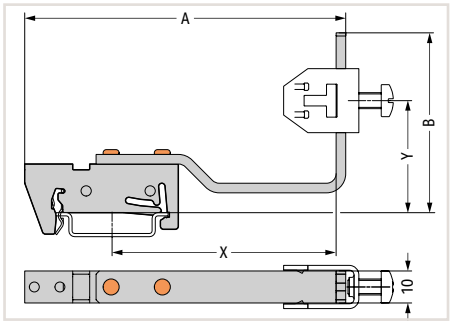
Busbar Carrier
790 Series







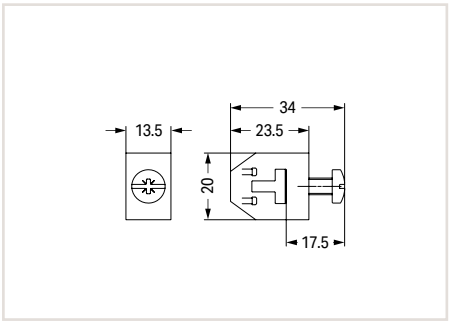
Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; flexible; snaps onto DIN-35 rail

	Item No.	Pack. Unit
	790-350/790-398	12
	790-352/790-398	12
	790-360/790-398	12
	790-362/790-398	25

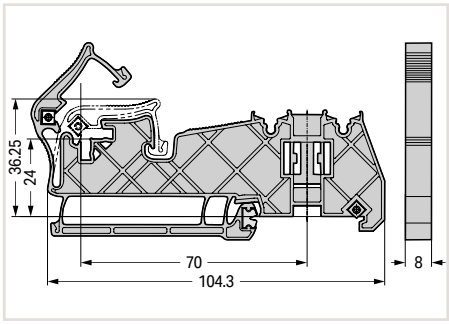
Dimensions in mm



T-connector; for (10 x 3) mm copper busbars

	Item No.	Pack. Unit
	790-398	10

Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; no contact to DIN-rail; insulated

Color	Item No.	Pack. Unit
gray	790-400	20

Dimensions in mm

Item No.	A	B	X	Y
790-350/790-398	100	56	70	15 … 52
790-352/790-398	100	99	70	15 … 92
790-360/790-398	115	56	85	15 … 52
790-362/790-398	115	99	85	15 … 92



Horizontal mounting position of the busbar



Horizontal mounting position of the busbar



Vertical mounting position of the busbar



Vertical mounting position of the busbar

Mini-WSB Marking Card; as Card and Mini-WSB Inline; for Smart Printer; on Reel





Mini-WSB Marking Card; as card; not stretchable; plain; snap-on type		
Color	Item No.	Pack. Unit
white	248-501	5
yellow	248-501/000-002	5
red	248-501/000-005	5
blue	248-501/000-006	5
gray	248-501/000-007	5
orange	248-501/000-012	5
light green	248-501/000-017	5
green	248-501/000-023	5
violet	248-501/000-024	5



Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 … 5.2 mm; plain; snap-on type		
Color	Item No.	Pack. Unit
white	2009-145	1



Mini-WSB Marking Card; as card; with marking; not stretchable; horizontal marking; snap-on type				
Marking	No. of Markings	Color	Item No.	Pack. Unit
0V	100x	blue	247-506/000-006	5
0V	100x	white	247-506	5
-	100x	blue	247-507/000-006	5
-	100x	white	247-507	5
24 V	100x	red	247-508/000-005	5
24 V	100x	white	247-508	5
+	100x	red	247-509/000-005	5
+	100x	white	247-509	5
⏚	100x	light green	247-552/000-017	5
⏚	100x	white	247-552	5
PE	100x	light green	248-578/000-017	5
PE	100x	white	248-578	5
A0 A1 … A8 A9	10x	white	247-510	5
E0 E1 … E8 E9	10x	white	247-511	5
X0 X1 … X8 X9	10x	white	247-512	5
00 … 09	10x	white	247-513	5
10 … 19	10x	white	247-514	5
20 … 29	10x	white	247-515	5
30 … 39	10x	white	247-516	5
40 … 49	10x	white	247-517	5
50 … 59	10x	white	247-518	5
60 … 69	10x	white	247-519	5
70 … 79	10x	white	247-520	5
80 … 89	10x	white	247-521	5
90 … 99	10x	white	247-522	5
00 … 49	2x	white	247-523	5
50 … 99	2x	white	247-524	5
100 … 149	2x	white	247-525	5
150 … 199	2x	white	247-526	5
200 … 249	2x	white	247-527	5
250 … 299	2x	white	247-528	5
300 … 349	2x	white	247-529	5
350 … 399	2x	white	247-530	5
400 … 449	2x	white	247-531	5
450 … 499	2x	white	247-532	5
500 … 549	2x	white	247-533	5
550 … 599	2x	white	247-534	5
600 … 649	2x	white	247-535	5
650 … 699	2x	white	247-536	5
700 … 749	2x	white	247-537	5
750 … 799	2x	white	247-538	5
800 … 849	2x	white	247-539	5
850 … 899	2x	white	247-540	5
900 … 949	2x	white	247-541	5
950 … 999	2x	white	247-542	5
.0 … .7 / frei	10x/20x	white	247-543	5
.0 … .7 /-	10x/20x	white	247-544	5
.0 … .7 /-	10x/20x	blue	247-544/000-006	5
.0 … .7 /+	10x/20x	white	247-545	5
.0 … .7 /+	10x/20x	red	247-545/000-005	5
.0 … .7 /N	10x/20x	white	247-546	5
.0 … .7 /N	10x/20x	blue	247-546/000-006	5
.0 … .7 /L	10x/20x	white	247-547	5

Marking Card and Group Marker Carrier



Marking Card; as DIN A4 sheet; plain		
	Item No.	Pack. Unit
	750-100	1



Figure: 750-103

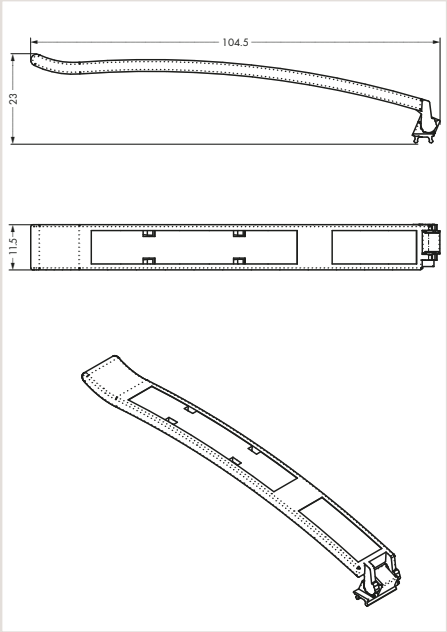




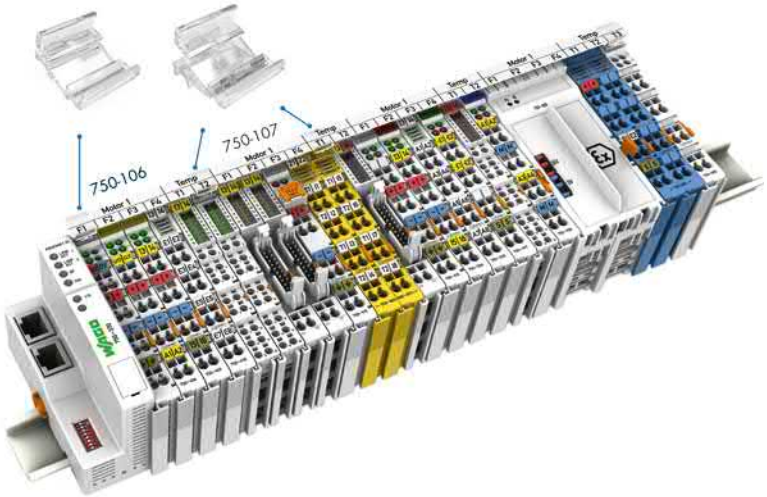
Figure: 750-106



Figure: 750-107

Item Description	Group Marker Carrier	Group Marker Carrier	
		4 LEDs (max.)	8/16 LEDs (max.)
Item No.	750-103	750-106	750-107
Technical Data			
Dimensions W x D	11.5 x 104.5 mm		
Material	Polycarbonate	Polycarbonate	
Weight	2.84 g	0.4 g	
Data sheet and further information, see:	wago.com/750-103	wago.com/750-106	wago.com/750-107

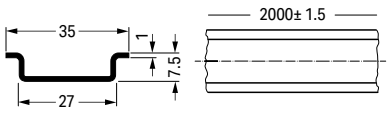
Accessories	Item No.	Item No.
Marking strip; on reel; 7.5 mm wide; not stretchable; plain, snap-on type	709-178	
Marking Card; as DIN A4 sheet; plain	750-105	
Marking strip; on reel; not stretchable; plain; snap-on type		2009-110
WMB Inline; for Smart Printer; on reel; stretchable 5 … 5.2 mm; plain; snap-on type		2009-115



Steel DIN-Rail



Dimensions in mm

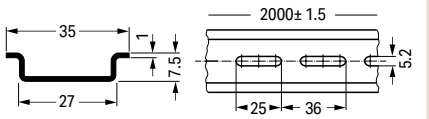


Steel DIN-rail; unslotted;
IN 76 A (based on 1 m length);
35 x 7.5 mm; 1 mm thick, 2 m long

	Item No.	Pack. Unit
per EN 60715	210-113	10
similar to EN 60715	210-505	1



Dimensions in mm

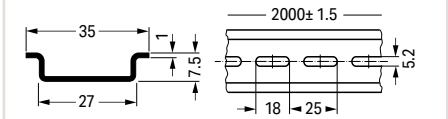


Steel DIN-rail; slotted;
IN 76 A (based on 1 m length);
35 x 7.5 mm; 1 mm thick; 2 m long;
25 mm hole width; 36 mm hole spacing

	Item No.	Pack. Unit
per EN 60715	210-112	10 (1)
similar to EN 60715	210-504	1



Dimensions in mm

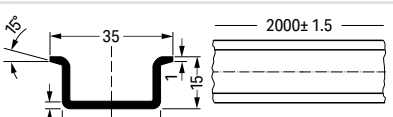


Steel DIN-rail; slotted;
IN 76 A (based on 1 m length);
35 x 7.5 mm; 1 mm thick; 2 m long;
18 mm hole width; 25 mm hole spacing

	Item No.	Pack. Unit
per EN 60715	210-115	1



Dimensions in mm

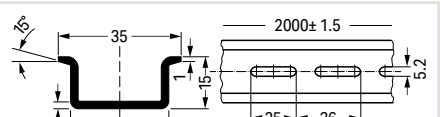


Steel DIN-rail; unslotted;
IN 125 A (based on 1 m length);
35 x 15 mm; 1.5 mm thick; 2 m long

	Item No.	Pack. Unit
per EN 60715	210-114	10
similar to EN 60715	210-506	1



Dimensions in mm

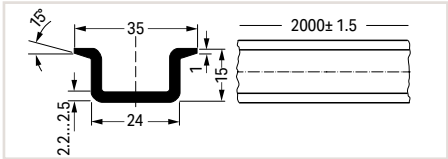


Steel DIN-rail; slotted;
IN 125 A (based on 1 m length);
35 x 15 mm; 1.5 mm thick; 2 m long;
25 mm hole width; 36 mm hole spacing

	Item No.	Pack. Unit
per EN 60715	210-197	10
similar to EN 60715	210-508	1



Dimensions in mm



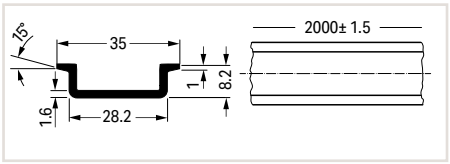
Steel DIN-rail; unslotted;
IN 125 A (based on 1 m length);
35 x 15 mm; 2.3 mm thick; 2 m long

	Item No.	Pack. Unit
per EN 60715	210-118	10

Aluminum DIN-Rail; Copper DIN-Rail; Angled Support Bracket; Rail End Cap



Dimensions in mm

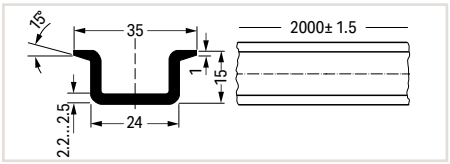


Aluminum DIN-rail; unslotted;
IN 76 A (based on 1 m length);
35 x 8.2 mm; 1.6 mm thick; 2 m long

	Item No.	Pack. Unit
similar to EN 60715	210-196	10



Dimensions in mm

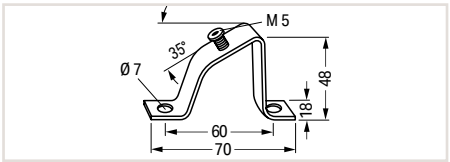


Copper DIN-rail; unslotted;
IN 309 A (based on 1 m length);
35 x 15 mm; 2.3 mm thick; 2 m long

	Item No.	Pack. Unit
similar to EN 60715	210-198	10



Dimensions in mm



Angled support bracket

	Item No.	Pack. Unit
without screw	210-148	10
M5 x 8 screw	210-149	100 (20)

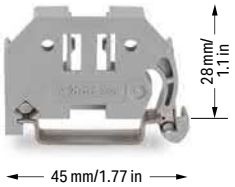




Rail end cap; for DIN-35 rail (7.5 mm high)

Color	Item No.	Pack. Unit
gray	209-109	50 (25)

Screwless End Stop





Screwless end stop; 6 mm wide		
Color	Item No.	Pack. Unit
gray	249-116	100 (25)

Screwless end stop; 14 mm wide		
Color	Item No.	Pack. Unit
gray	249-197	10

Screwless end stop; 10 mm wide		
Color	Item No.	Pack. Unit
gray	249-117	50 (25)

Snap on – that's it! Assembling the new WAGO Screwless End Stop is as simple and quick as snapping a WAGO Rail-Mount Terminal Block onto the DIN-rail.

Tool free!

A tool-free design allows rail-mount terminal blocks to be safely and economically secured against any movement on all DIN-35 rails per DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).

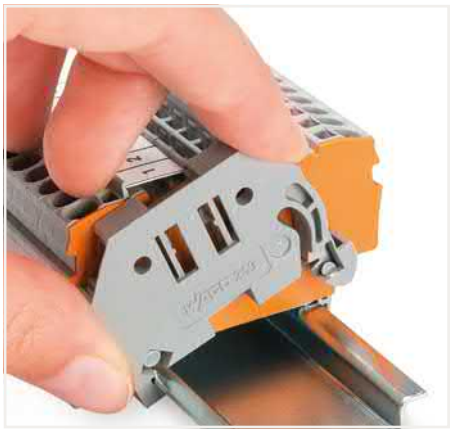
Entirely without screws!

The "secret" to a perfect fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

Simply snap on – that's it!

In addition, costs are significantly reduced when using large numbers of end stops.

Additional benefit: Three marker slots for all WAGO Rail-Mount Terminal Block Marking Systems and one snap-in hole for WAGO's adjustable height group marker carriers offer individual marking options.



Snapping an end stop onto the DIN-rail.



Removing an end stop from the DIN-rail.

Operating Tool and Cable Cutter





Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade

Item No.	Pack. Unit
210-719	50 (1)

Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

Item No.	Pack. Unit
210-720	50 (1)

Operating tool with a partially insulated shaft; Type 3; (5.5 x 0.8) mm blade

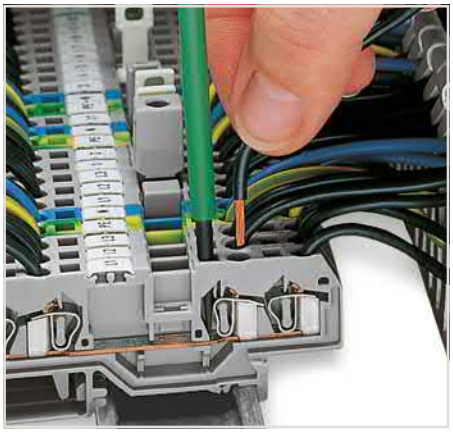
Item No.	Pack. Unit
210-721	25 (1)

Set of operating tools with a partially insulated shaft; **Type 1; (2.5 x 0.4) mm blade; Type 2; (3.5 x 0.5) mm blade; Type 3; (5.5 x 0.8) mm blade**

Item No.	Pack. Unit
210-722	1

Cable cutter; for copper and aluminum cables up to 35 mm²

Item No.	Pack. Unit
206-118	1



The blade dimensions of the above-listed operating tools with a partially insulated shaft are ideal for easy operation of front-entry terminal blocks.



Cutting a cable.

Cable Stripper



Cable knife; for Ø 8 … 28 mm / 0.31 … 1.10 inch; with a unique, changeable cable bracket system; including cable bracket		
	Item No.	Pack. Unit
	206-1403	1

Accessories		
	Item No.	Pack. Unit
Spare inside blade	206-1418	1
Spare hook blade	206-1419	1



Cable bracket		
	Item No.	Pack. Unit
for Ø 4 … 16 mm / 0.16 … 0.63 inch	206-1411	1
for Ø 8 … 28 mm / 0.31 … 1.10 inch	206-1412	1
for Ø 27 … 35 mm / 1.06 … 1.38 inch	206-1413	1
for Ø 35 … 50 mm / 1.38 … 1.97 inch	206-1414	1
for Ø 50 … 70 mm / 1.97 … 2.75 inch	206-1415	1



Cable knife set; for Ø 4 … 70 mm / 0.16 … 2.75 inch; including all cable brackets in a Sortimo® Box		
	Item No.	Pack. Unit
	206-1400	1



In-socket cable stripper; for Ø 8 … 13 mm / 5/16 … 1/2 inch		
	Item No.	Pack. Unit
	206-1441	1



Product features:
- Extra long design and improved force transmission simplifies stripping in deep device connection sockets
- Special four-blade design for an even more precise round cut
- No cutting depth adjustment required
- TiN-coated blades, TÜV/GS tested
- Ø 8 … 13 mm / 5/16 … 1/2 inch
- Strips all standard round cables, including NYM 3 x 1.5 mm² … 5 x 2.5 mm²



Universal cable stripper; for Ø 8 … 13 mm / 5/16 … 1/2 inch		
	Item No.	Pack. Unit
	206-1442	1



Product features:
- Secure grip achieved with soft padding for non-slip grips
- Technically improved functionality
- New locking mechanism prevents the unwanted opening of the tool
- Absolutely straightforward, quick and easy longitudinal cuts – with innovative internal cable duct
- Redesigned blade layout and intake to stop cable waste from jamming the tool
- Durable and ergonomically designed pocket clip
- Ø 8 … 13 mm / 5/16 … 1/2 inch



Data cable stripper; for Ø 4.5 … 10 mm / 3/16 … 3/8 inch		
	Item No.	Pack. Unit
	206-1451	1





Product features:
- Strip outer insulation and foil sheathing with one tool
- Ideal for stripping PVC-insulated data cables with thin insulation (e.g., Cat 5, Cat 6, Cat 7, twisted-pair cables)
- TiN-coated blades
- Ø 4.5 … 10 mm / 3/16 … 3/8 inch

Cable Stripper; Wire Stripper





The stripping pliers for sensor cables have a blade geometry specially designed for sensor cables with a smaller cross section and a working range from Ø 3.2 mm (for stranded cables and round cables with Ø 3.2 mm … 4.4 mm / 0.13 … 0.17 inch).

The stripping pliers for control cables are designed for stronger cables from Ø 4.4 mm (for stranded cables and round cables with Ø 4.4 mm … 7 mm / 0.17 … 0.27 inch).

These stripping pliers quickly and safely strip cables for connecting, e.g., sensor/actuator distribution boxes, bus couplers and pluggable connectors.

Suitable for:
- Halogen-free PUR sensor/actuator cables
- Highly flexible TPE-U cables
- Control cables
- PUR cables
- PUR/PVC cables
- PVC cables
- Multi-core cables
- Shielded and unshielded cables

Stripping pliers; for sensor cables		
	Item No.	Pack. Unit
	206-1481	1

Accessories		
	Item No.	Pack. Unit
Replacement blade set; for Ø 3.2 … 4.4 mm / 0.13 … 0.17 inch	206-1491	1

Stripping pliers; for control cables		
	Item No.	Pack. Unit
	206-1482	1

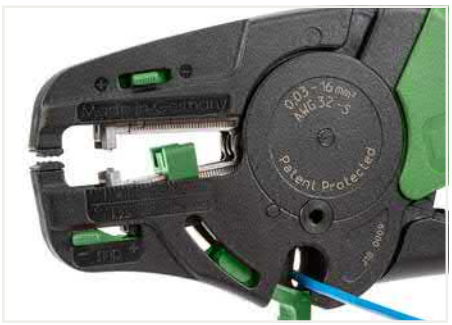
Accessories		
	Item No.	Pack. Unit
Replacement blade set; for Ø 4.4 … 7 mm / 0.17 … 0.27 inch	206-1492	1

Never use this tool on or near live electrical circuits!



Wire stripper “Quickstrip Vario”; 0.03 … 16 mm²/ 34 … 6 AWG		
	Item No.	Pack. Unit
	206-1125	1

Accessories		
	Item No.	Pack. Unit
Blade set; Standard; 0.03 … 16 mm² / 34 … 6 AWG	206-1126	1
Blade set; V-blade; 0.14 … 4 mm² / 24 … 12 AWG	206-1127	1
Blade set; Oval blade; 10 … 16 mm² / 8 … 6 AWG	206-1128	1
Spare stripping stop	206-1129	1
Spare cut protector	206-1131	1
Spare clamping jaws	206-1132	1



Cutting a conductor.



Partially stripping a conductor.

Wire Stripper:
- Automatically adjust to conductor size
- Stripping blades cause no damage to conductor strands
- Gripping pressure of jaws adjusts automatically to conductor insulation diameter
- Clamping jaws and stripping blades automatically open once the stripping process is completed – no splaying of the conductor strands
- Exact strip length may be set by sliding black setting stop
- Stripping blades can be replaced
- Self-sharpening, fully protected cutter (replaceable)
- Entire body made of glass-fiber-reinforced polyamide
- Cutting capacity of the wire cutter of fine-stranded conductors up to 16 mm² (6 AWG)

Test and Measurement Device
206 Series



Multi-Tester; digital multimeter with non-contact voltage tester

Item No.	Pack. Unit
206-810	1



Clamp-Multi-Tester

Item No.	Pack. Unit
206-816	1



Testboy; with integrated flashlight, non-contact voltage tester

Item No.	Pack. Unit
206-804	1



Additional Multi-Tester features:
- Contact-less voltage test AC >100 V (optical and acoustical)
- Resistance measurement up to 20 MΩ
- Acoustical continuity test
- Diode test
- Data hold function
- Auto power-off function
- LED torch lamp function
- CAT IV 600 V
- TÜV/GS tested and approved
- IEC/EN 61010-1 (DIN VDE 0411)



Voltage testing in control cabinet:
- Additional Clamp-Multi-Tester features:
- DC and AC current up to 600 A
- True RMS and min./max. value measurement
- DC and AC voltage up to 600 V
- Manual or automatic measurement range selection
- Resistance up to 60 MΩ
- Capacitance measurement, acoustical continuity test
- Diode test, data hold function
- Large LCD with backlight
- LED measuring point lighting
- CAT III 600 V overvoltage protection
- IEC/EN 61010-1 (DIN VDE 0411)
- Includes batteries, measurement leads and carrying bag



A device that will reliably detect AC voltage in cables, sockets, fuses, switches, outlets and other installations.
Testboy can detect the following:
- Live conductors
- Cable breaks
- Blown fuses (in cartridges or holders)
- Defective switches
- Defective lamps in strings of lights



Current measurement in a control cabinet

Test and Measurement Devices
206 Series



Profi-LCD+; 2-pole voltage tester with LCD display; removable 4 mm Ø test probes

Item No.	Pack. Unit
206-707	1



Profi-LED+; 2-pole voltage tester with LED display; removable 4 mm Ø test probes

Item No.	Pack. Unit
206-706	1



Spare test probes; 4 mm Ø (2 pieces)

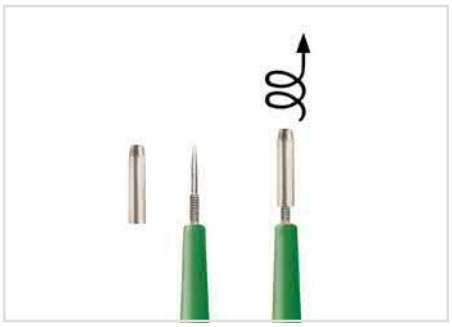
Item No.	Pack. Unit
206-808	25



Additional Profi-LCD+ features:
- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- RDC/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO® and CEE sockets
- LED torch lamp function
- Automatic backlight
- Auto power-off function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Additional Profi-LED+ features:
- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- RDC/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO® and CEE sockets
- LED torch lamp function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Profi-LED+:
- Improved socket contact via 4 mm Ø test probes
- Removable test probes for small test ports (suitable for all WAGO Terminal Blocks)

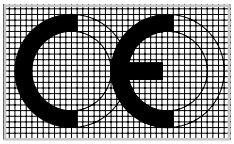






Technical Section

Technical Section
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Immunity for Marine Applications **Test** IEC 61000-4-2 ESD	Electromagnetic Compatibility and Mechanical Strength (Marine Applications)	535
IEC 61131-1 EN 61131-1 Programmable Logic Controllers – Part 1: General Information	Specifications and Test Results	536
	Electrical Engineering Laboratory: Product Safety for Our Customers	540
	WAGO Seminars	542

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Approvals Overview
Controllers – PFC100/200, PFC200 XTR, Controllers 750, Controllers 750 XTR

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
KR (Korean Register of Shipping)	HMB05880-AC001
LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
NK (Nippon Kaiji Kyokai)	TA17255M
Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA (Registro Italiano Navale)	ELE343217XG
cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex		Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
PFC100/PFC200 [1]														
750-8100	PFC100; 2ETH; Eco	■		■		■				■			■	78
750-8101	PFC100; 2ETH	■		■		■				■			■	79
750-8102	PFC100; 2ETH RS	■		■		■				■			■	79
750-8207	PFC200; 2ETH RS 3G												□	85
750-8208	PFC200; 2ETH RS CAN DPM	■				■				■			□	86
750-8212	PFC200; G2; 2ETH RS	■		■						■			□	80
750-8213	PFC200; G2; 2ETH CAN	■		■						■			□	81
750-8214	PFC200; G2; 2ETH RS CAN	■		■						■			□	82
750-8215	PFC200; G2; 4ETH CAN USB	■		■						□			□	83
750-8216	PFC200; G2; 2ETH RS CAN DPS	■		■						■			□	84
PFC200 XTR [1]														
750-8202/040-000	PFC200; 2ETH RS; XTR	■		■		■		■		■		■	■	100
750-8202/040-001	PFC200; 2ETH RS; Tele; XTR	■		■		■		■		■		■	■	100
750-8206/040-000	PFC200; 2ETH RS CAN DPS; XTR	■		■		■		■		■		■	■	101
750-8206/040-001	PFC200; 2ETH RS CAN DPS; Tele; XTR	■		■		■		■		■		■	■	101
Controllers 750 [1]														
750-806	Controller DeviceNet	■	■	■	■	■	■	■	■	■	■	■	■	116
750-815/300-000	Controller Modbus®; RS485; 115.2kBd	■		■	■	■	■	■	■	■	■		■	117
750-816/300-000	Controller Modbus®; RS232; 115.2kBd	■		■	■	■	■	■	■	■	■		■	117
750-829	Controller BACnet MS/TP			■									■	115
750-831	Controller BACnet/IP					■				■			■	114
750-833	Controller PROFIBUS Slave	■	■	■	■	■	■	■	■	■	■	■	■	118
750-837	Controller CANopen; M1; MCS	■	■	■	■	■	■	■	■	■	■	■	■	119
750-838	Controller CANopen; M1; DSub	■	■	■	■	■	■	■	■	■	■	■	■	119
750-842	Controller ETHERNET; G1	■	■	■	■	■	■	■	■	■	■	■	■	112
750-843	Controller ETHERNET; G1; Eco	■	■	■	■	■	■	■	■	■	■	■	■	112
750-852	Controller ETHERNET; G3; Eco	■		■						■			■	111
750-862	Controller Modbus TCP; G4; Eco	■		■						■			□	111
750-880	Controller ETHERNET; G3; SD	■	■	■	■	■	■	■	■	■	■	■	■	108
750-881	Controller ETHERNET; G3	■	■	■	■	■	■	■	■	■	■	■	■	109
750-882	Controller ETHERNET; G3; MR	■	■	■	■	■	■	■	■	■	■	■	■	110
750-885	Controller ETHERNET; G3; SD; MR	■	■	■						■			■	110
750-889	Controller KNX/IP			■						■			■	113
750-890	Controller Modbus TCP; G4; SD	■		■						■			□	109
750-891	Controller Modbus TCP; G4	■		■						■			□	109
Controllers 750 XTR [1]														
750-838/040-000	Controller CANopen; M3 DSub XTR	■		■		■		■		■		■	■	127
750-880/040-000	Controller ETHERNET; G3; SD; XTR	■		■		■		■		■		■	■	126
750-880/040-001	Controller ETHERNET; G3; SD; Tele; XTR	■		■		■		■		■		■	■	126

[1] Notice: WAGO's 750-626 Filter Module is mandatory for marine approval (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

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Approvals Overview
Fieldbus Couplers – I/O System 750; Fieldbus Connectors

Versions with an extended temperature range (Item No. with Suffix /025-…) see the following pages

cULus LISTED	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA	RINA (Registro Italiano Navale)	ELE343217XG
Ex	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	See Page
Fieldbus Couplers – I/O System 750 [1]		**Ex**			**Marine Approvals**								**UL**	
750-303	FC PROFIBUS; G1; 12MBd	■	■	■	■	■	■	■	■	■	■	■	■	149
750-304	FC INTERBUS	■	■	■									■	160
750-306	FC DeviceNet	■	■	■	■	■	■	■	■	■	■	■	■	155
750-307	FC CANopen	■	■	■									■	156
750-310	FC CC-Link	■	■	■									■	161
750-315/300-000	FC Modbus®; RS485; 115.2kBd	■		■	■	■	■		■	■	■		■	159
750-316/300-000	FC Modbus®; RS232; 115.2kBd	■		■	■	■	■		■	■	■		■	159
750-331	FC PROFIBUS; FOC; 1.5MBd												■	150
750-333	FC PROFIBUS; G2; 12MBd	■	■	■	■	■	■	■	■	■	■	■	■	149
750-337	FC CANopen; MCS	■	■	■	■	■	■	■	■	■	■	■	■	156
750-338	FC CANopen; DSub	■	■	■	■	■	■			■	■		■	157
750-342	FC ETHERNET; G1	■	■	■	■	■	■	■	■	■	■	■	■	152
750-343	FC PROFIBUS; 12MBd; Eco	■	■	■	■	■	■	■	■	■	■	■	■	150
750-344	FC INTERBUS; 500kbit/s; Eco	■	■	■									■	160
750-346	FC DeviceNet; Eco	■	■	■									■	155
750-347	FC CANopen; MCS; Eco	■	■	■	■	■	■	■	■	■	■	■	■	157
750-348	FC CANopen; DSub; Eco	■	■	■	■	■	■	■	■	■	■	■	■	157
750-351	FC Sercos®	■	■	■	■	■		■	■	■	■	■	■	158
750-352	FC ETHERNET; G3	■	■	■	■	■	■	■	■	■	■	■	■	151
750-354	FC EtherCAT®	■	■	■									■	154
750-362	FC Modbus TCP; G4	■		■						■			□	151
750-375	FC PROFINET; G3; Adv	■		■		■				■			■	148
750-377	FC PROFINET; G3; Eco; Adv	■		■		■				■			■	148
Fieldbus Connectors														
750-960	PROFIBUS Fieldbus Connector; with D-sub male connector; 9-pole	■	■	■	■	■	■	■	■	■	■	■	■	478
750-961	INTERBUS Fieldbus Connector (IN); with D-sub female connector; 9-pole	■	■	■									■	481
750-962	INTERBUS Fieldbus Connector (OUT); with D-sub male connector; 9-pole	■	■	■									■	481
750-963	CANopen Fieldbus Connector; with D-sub female connector; 9-pole	■	■		■	■	■	■	■	■	■	■	■	480
750-965	CC-Link Fieldbus Connector; with D-sub male connector; 9-pole												■	482
750-975	ETHERNET RJ-45 connector, IP20; ETHERNET 10/100 Mbit/s; for field assembly				■	■	■	■	■	■	■	■		472
750-976	PROFINET RJ-45 connector, IP20; ETHERNET 10/100 Mbit/s; for field assembly					■				■				476

[1] Notice: WAGO's 750-626 Filter Module is mandatory for marine approval (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
Digital Input Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex		Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Digital Input Modules														
750-400	2DI; 24 VDC; 3ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	165
750-401	2DI; 24 VDC; 0.2ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	171
750-402	4DI; 24 VDC; 3ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	166
750-403	4DI; 24 VDC; 0.2ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	171
750-405	2DI; 230 VAC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	188
750-406	2DI; 120 VAC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	188
750-407	2DI; 220 VDC												■*	187
750-408	4DI; 24 VDC; 3ms; LSS	■*	■*	■*	■*	■*	■*	■*		■*	■*		■*	174
750-409	4DI; 24 VDC; 0.2ms; LSS	■*	■*	■*									■*	177
750-410	2DI; 24 VDC; 3ms; Proxi Sensor	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	179
750-411	2DI; 24 VDC; 0.2ms; Proxi Sensor	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	179
750-412	2DI; 48 VDC; 3ms	■*	■*	■*									■*	185
750-414	4DI; 5 VDC; 0.2ms			■*									■*	164
750-415	4DI; 24 VAC/VDC; 20ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	183
750-418	2DI; 24 VDC; 3ms; Acknol; Diagn	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	165
750-421	2DI; 24 VDC; 3ms; Diagn	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	166
750-422	4DI; 24 VDC; Pulse Extention	■*	■*	■*									■*	182
750-423	4DI; 24 VAC/VDC; 50ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	183
750-424	2DI; Intruder Detection	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	181
750-425	2DI; NAMUR	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	180
750-427	2DI; 110 VDC	■*	■*	■*									■*	187
750-428	4DI; 42 VAC/VDC; 20ms	■*	■*	■*									■*	184
750-430	8DI; 24 VDC; 3ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	168
750-431	8DI; 24 VDC; 0.2ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	173
750-432	4DI; 24 VDC; 3ms; 2-wire	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	167
750-433	4DI; 24 VDC; 0.2ms	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	172
750-435 [2]	1DI; NAMUR; Ex i	■	■	■	■	■		■	■	■	■		■	311
750-436	8DI; 24 VDC; 3ms; LSS	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	175
750-437	8DI; 24 VDC; 0.2ms; LSS	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	178
750-438 [2]	2DI; NAMUR; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	311
750-439 [2]	8DI; NAMUR; Ex i	■	■	■	■	■		■	■	■	■	■	■	312
750-1400	16DI; 24 VDC; 3ms; Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	■	169
750-1402	16DI; 24 VDC; 3ms; LSS; Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	■	176
750-1405	16DI; 24 VDC; 3ms	■	■	■	■	■	■	■	■	■	■	■	■	169
750-1406	16DI; 24 VDC; 0.2ms	■	■	■	■	■	■	■		■	■	■	■	173
750-1407	16DI; 24 VDC; 3ms; LSS	■	■	■	■	■	■	■	■	■	■	■	■	176
750-1415	8DI; 24 VDC; 3ms; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	168
750-1416	8DI; 24 VDC; 0.2ms; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	173
750-1417	8DI; 24 VDC; 3ms; LSS; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	175
750-1418	8DI; 24 VDC; 0.2ms; LSS; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	178
750-1420	4DI; 24 VDC; 3ms; 3-wire	■	■	■	■	■	■	■	■	■	■	■	■	167
750-1421	4DI; 24 VDC; 0.2ms; 3-wire	■	■	■	■	■	■	■	■	■	■	■	■	172
750-1422	4DI; 24 VDC; 3ms; LSS; 3-wire	■	■	■	■	■	■	■	■	■	■	■	■	174
750-1423	4DI; 24 VDC; 0.2ms; LSS; 3-wire	■	■	■	■	■	■	■	■	■	■	■	■	177
750-1425	8DI; PTC	■		■		■				■			■	190
753-429	2DI; 60 VDC; 3ms	■	■	■									■	186
753-434	8DI; 5/12 VDC; 0.2ms	■	■	■		■				■			■	164
753-440	4DI; 120/230 VAC	■	■	■									■	189

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.
[2] This I/O module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!
■ Approval is available. □ Approval is pending.

Approvals Overview
Digital Output Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
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	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
	RINA (Registro Italiano Navale)	ELE343217XG
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	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Digital Output Modules														
750-501	2DO; 24 VDC; 0.5A	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	195
750-502	2DO; 24 VDC; 2A	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	196
750-504	4DO; 24 VDC; 0.5A	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	198
750-506	2DO; 24 VDC; 0.5A; Diagn	■*	■*	■*									■*	197
750-508	2DO; 24 VDC; 2A; Diagn	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	197
750-509	2DO; 230 VAC; 0.3A; SSR	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	206
750-512	2RO; 250 VAC; 2A; Relay2NO	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	208
750-513	2RO; 250 VAC; 2A; Pot-free; Relay2NO	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	209
750-514	2RO; 125 VAC; 0.5A; Pot-free; Relay2CO				■*	■*	■*	■*	■*	■*	■*	■*	■*	207
750-515	4RO; 250 VAC; 2A; Pot-free; Relay4NO	■								■				210
750-516	4DO; 24 VDC; 0.5A; LSS	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	200
750-517	2RO; 250 VAC; 1A; Pot-free; Relay2CO	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	208
750-519	4DO; 5 VDC; 20mA		■	■									■	194
750-523	1RO; 230 VAC; 16A; Pot-free; Relay1NO				■	■	■	■	■	■	■	■	■	211
750-530	8DO; 24 VDC; 0.5A	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	201
750-531	4DO; 24 VDC; 0.5A; 2-wire	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	199
750-532	4DO; 24 VDC; 0.5A; Diagn	■	■	■	■	■	■	■	■	■	■	■	■	200
750-534	8DO; 12 VDC; 1A	■*	■*	■*		■*				■			■*	194
750-535 [2)]	2DO; 24 VDC; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	314
750-536	8DO; 24 VDC; 0.5A; LSS	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	201
750-537	8DO; 24 VDC; 0.5A; Diagn	■*	■*	■*	■*	■*	■*	■*	■*	■*	■	■*	■*	201
750-538 [2)]	2RO; 100 VAC/ 30 VDC; Pot-free; Relay2CO; Ex i	■	■	■		■				■			■	315
750-539 [2)]	4DO; 24 VDC; Valve; Ex i	■								■				314
750-1500	16DO; 24 VDC; 0.5A; Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	■	204
750-1501	16DO; 24 VDC; 0.5A; LSS; Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	■	205
750-1502	8DIO; 24 VDC; 0.5A; Ribbon Cable	■	■	■	■	■	■	■	■	■	■	■	■	203
750-1504	16DO; 24 VDC; 0.5A	■	■	■	■	■	■	■	■	■	■	■	■	204
750-1505	16DO; 24 VDC; 0.5A; LSS	■	■	■	■	■	■	■	■	■	■	■	■	205
750-1506	8DIO; 24 VDC; 0.5A	■	■	■	■	■	■	■	■	■	■	■	■	203
750-1515	8DO; 24 VDC; 0.5A; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	202
750-1516	8DO; 24 VDC; 0.5A; LSS; 2-wire	■	■	■	■	■	■	■	■	■	■	■	■	202
753-540	4DO; 230 VAC; 0.25A; SSR	■	■	■									■	206

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.
[2)] This I/O module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!
■ Approval is available. □ Approval is pending.

Approvals Overview
Analog Input Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
KR (Korean Register of Shipping)	HMB05880-AC001
LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
NK (Nippon Kaiji Kyokai)	TA17255M
Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA (Registro Italiano Navale)	ELE343217XG
cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Analog Input Modules														
750-450	4AI; RTD; Adjust	■	■	■	■	■	■	■	■	■	■	■	■	237
750-451	8AI; RTD; Adjust	■	■	■	■	■	■	■	■	■	■	■	■	237
750-452	2AI; 0-20mA; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	214
750-453	4AI; 0-20mA; SE	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	216
750-454	2AI; 4-20mA; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	217
750-455	4AI; 4-20mA; SE	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	224
750-456	2AI; ±10 VDC; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	227
750-457	4AI; ±10 VDC; SE	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	228
750-458	8AI; TC; Adjust	■		■		■				■			■	239
750-459	4AI; 0-10 VDC; SE	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	230
750-461	2AI; Pt100/RTD	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	234
750-463	4AI; RTD;-30°C...+150°C	■	■	■									■	237
750-464	2/4AI; RTD; Adjust	■	■	■	■	■	■	■	■	■	■	■	■	236
750-465	2AI; 0-20mA; SE	■*	■	■*									■*	215
750-466	2AI; 4-20mA; SE	■*	■	■*									■*	219
750-467	2AI; 0-10 VDC; SE	■*	■	■*									■*	229
750-468	4AI; 0-10 VDC; SE	■	■	■	■	■		■	■	■	■	■	■	230
750-469	2AI; TC K; Diagn	■*	■	■*	■*	■*		■*	■*	■*	■*	■*	■*	238
750-470	2AI; 0-20mA; SE	■	■	■	■	■	■	■	■	■	■	■	■	215
750-471	4AI; U/I; Diff; Galv	■	■	■	■	■				■			■	233
750-472	2AI; 0-20mA; SE; 16bits	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	216
750-473	2AI; 4-20mA; SE	■	■	■	■	■	■	■	■	■	■	■	■	220
750-474	2AI; 4-20mA; SE; 16bits	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	221
750-475	2AI; 0-1A AC/DC; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	226
750-476	2AI; ±10 VDC; SE; 16bits	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	228
750-477	2AI; 0-10 VAC/VDC; Diff	■*	■	■*									■*	232
750-478	2AI; 0-10 VDC; SE; 16bits	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	229
750-479	2AI; ±10 VDC; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	227
750-480	2AI; 0-20mA; Diff	■*	■	■*									■*	214
750-481/003-000 [2]	2AI; RTD; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	318
750-482	2AI; 4-20mA HART	■*	■	■*									■*	222
750-483	2AI; 0-30 VDC; Diff	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	232
750-484 [2]	2AI; 4-20mA HART; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	317
750-484/000-001 [2]	2AI 4-20mA HART NAMUR NE43 Ex i													317
750-485 [2]	4AI; 4-20mA; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	316
750-486 [2]	4AI; 0/4-20mA; NE43; Ex i	■		■		■				■			■	316
750-487/003-000 [2]	2AI; TC; Ex i	■	■	■	■	■	■	■			■	■	■	318
750-491	1AI; DMS												□	240
750-492	2AI; 4-20mA; Diff	■*	■	■*									■*	218
750-493	3-PHASE POM; 480VAC 1A	■	■	■									■	241
750-494	3-PHASE POM; 480VAC 1A	■	■	■		■				■			■	242
750-495	3-PHASE POM; 690VAC 1A					■				■				244
750-496	8AI; 0/4-20mA; SE	■		■		■				■			■	225
750-497	8AI; 0-10 V/±10 VDC; SE			■		■				■			■	231

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.

[2] This I/O module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
Analog Output Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

cULus LISTED	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
Ex	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals							UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Analog Output Modules														
750-550	2AO; 0-10 VDC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	252
750-552	2AO; 0-20mA	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	248
750-553	4AO; 0-20mA	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	249
750-554	2AO; 4-20mA	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	250
750-555	4AO; 4-20mA	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	251
750-556	2AO; ±10 VDC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	254
750-557	4AO; ±10 VDC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	254
750-559	4AO; 0-10 VDC	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	253
750-560	2AO; 0-10 VDC; 10Bit; 100mW/ 24V	■	■	■									■	252
750-562	2AO; 0-10 V/±10 VDC; 16bits	■	■	■									■	255
750-563	2AO; 0/4-20mA; 16bits; 6-18 VDC	■	■	■		■				■			■	251
750-585 [2)]	2AO; 0-20mA; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	319
750-586 [2)]	2AO; 4-20mA; Ex i	■	■	■		■				■			■	319

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.

[2)] This I/O module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
Function, Technology and Communication Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-...) see the following pages

	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Function, Technology and Communication Modules														
750-404	Up/Down Counter	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	258
750-511	2PWM; 24 VDC; 0.1A; 250Hz	■	■	■									■	261
750-630	SSI Interface; 24bits; 125kHz; Gray	■	■	■		■				■			■	262
750-631/000-004	Inc. Encoder; RS422; 16bits			■									■	264
750-632	Proportional Valve Module	■		■		■				■			■	274
750-633 [2)]	Up/Down Counter; Ex i	■	■	■		■				■	■		■	320
750-635	Digital impulse interface	■*	■	■*									■*	266
750-637	Inc. Encoder; RS422; 32bits	■	■	■	■	■	■	■	■	■	■	■	■	264
750-638	2Up/Down Counter; 16bits; 500Hz	■*	■	■*									■*	260
750-640	RTC Module	■	■	■									■	267
750-642	Radio Receiver EnOcean	■	■	■									■	284
750-643	MP-Bus Master	■	■	■									■	288
750-645	2VIB VRMS/SPM Multi	■	■	■									■	268
750-650	RS232 C Interface; 9600Bd	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	278
750-651	TTY Interface; 9600Bd; N; 8/1			■	■	■	■	■	■	■	■	■	■	283
750-652	RS232/485 Interface	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	282
750-653	RS485 Interface	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	280
750-654	Data Exchange Interface				■	■	■	■	■	■	■	■	■	294
750-655	AS-Interface Master	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	291
750-657	IO-Link Master	■		■									■	292
750-658	CAN Gateway	■		■		■				■	■		■	293
750-660/000-001	8FDI; 24 VDC; PROFIsafe	■	■	■									■	300
750-661/000-003	4FDI; 24 VDC; PROFIsafe V2 iPar	■*	■	■*		■*				■			■*	301
750-662/000-003	8FDI; 24 VDC; PROFIsafe V2 iPar	■*	■	■*		■*				■			■*	301
750-663/000-003	4F-Ex i DI; 24 VDC; PROFIsafe V2 iPar	■	■	■		■				■			■	305
750-665/000-001	4FDI/4FDO; 24 VDC; 0.5A; PROFIsafe	■	■	■									■	300
750-666/000-003	4FDI/2FDO; 24 VDC; 10A; PROFIsafe V2 iPar	■*	■	■		■*				■			■*	302
750-667/000-003	4FDI/4FDO; 24 VDC; 2A; PROFIsafe V2 iPar	■*	■	■*		■*				■			■*	303
750-670	Stepper Controller; RS422/24 VDC; 20mA	■	■	■									■	269
750-671	Stepper Controller; 24 VDC; 1.5A	■	■											270
753-646	KNX/EIB/TP1 Interface				■	■	■	■	■	■	■	■	■	285
753-647	DALI Multi-Master					■				■			■	286
753-648	LON® FTT Interface			■									■	287

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.

[2)] This I/O module shall only be used in connection with the 24 VDC Ex i supply module (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
Supply and Segment Modules – I/O System 750/753

Versions with an extended temperature range (Item No. with Suffix /025-…) see the following pages

cULus	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
ABS	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
BV	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
DNV GL	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
KR	KR (Korean Register of Shipping)	HMB05880-AC001
LR	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
NK	NK (Nippon Kaiji Kyokai)	TA17255M
PRS	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA	RINA (Registro Italiano Navale)	ELE343217XG
HazLoc	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
BRA-Ex	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
ATEX/IECEx	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	See Page
Supply and Segment Modules		**Ex**					**Marine Approvals**						**UL**	
750-600	End Module	■	■	■	■	■	■	■	■	■	■	■	■	342
750-601 [3]	Power Supply; 24 VDC; Fuse	■	■	■	■	■	■	■	■	■	■	■	■	325
750-602 [3]	Power Supply; 24 VDC	■*	■	■*	■*	■*	■*	■	■*	■*	■	■*	■*	324
750-603	Potential Distribution; 8*24V	■*	■	■*	■*	■*		■	■*	■*	■*	■*	■*	332
750-604	Potential Distribution; 8*0V	■*	■	■*	■*	■*		■	■*	■*	■*	■*	■*	332
750-606	Power Supply; 24 VDC; Diagn; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	310
750-609	Power Supply; 230 VAC; Fuse	■	■	■	■	■	■	■	■	■	■	■	■	329
750-610 [3]	Power Supply; 24 VDC; Fuse; Diagn	■	■	■	■	■	■	■	■	■	■	■	■	325
750-611	Power Supply; 230 VAC; Fuse; Diagn	■	■	■	■	■	■	■	■	■	■	■	■	329
750-612 [4]	Power Supply; 0-230 VAC/VDC	■*	■	■*	■*	■*	■*	■	■*	■*	■	■*	■*	327
750-613 [1]	System Power Supply; 24 VDC	■	■	■	■	■	■	■	■	■	■	■	■	326
750-614	Potential Distribution	■*	■	■*	■*	■*	■*	■*	■*	■*	■*	■*	■*	331
750-615	Power Supply; 120 VAC; Fuse	■	■	■									■	328
750-616	Distance Module	■	■	■	■	■	■	■	■	■	■	■	■	341
750-617	Power Supply; 24 VAC; Fuse												■	328
750-621	Distance Module	■	■	■									■	341
750-622	Binary Spacer Module	■	■	■									■	339
750-623	Power Supply; 24/5-15 VDC	■	■	■	■	■	■	■	■	■	■		■	324
750-624	Field Supply Filter; 24 VDC	■	■	■	■	■	■	■	■	■	■	■	■	334
750-625/000-001	Power Supply; 24 VDC; Ex i	■	■	■	■	■	■	■	■	■	■	■	■	310
750-626	Supply Filter; 24 VDC	■	■	■	■	■	■	■	■	■	■	■	■	336
750-627	Bus Extension End Module				■					□	■		■	338
750-628	Bus Extension Coupler Module				■					□	■		■	338
750-1605	Potential Distribution; 16*24V	■	■	■	■	■	■	■	■	■	■	■	■	333
750-1606	Potential Distribution; 16*0V	■	■	■	■	■	■	■	■	■	■	■	■	333
750-1607	Potential Distribution; 8*24V/8*0V	■	■	■	■	■	■	■	■	■	■	■	■	333
753-620	DALI Multi-Master DC/DC-Converter					■				■			■	330
753-629/020-000	Spacer Module; Passive												■	340
753-1629	Spacer Module; Active												■	340

*Approval also applies to WAGO's I/O module variant equipped with 753 Series Pluggable Connector.
[1] Notice: WAGO's 750-626 Filter Module is mandatory for marine approval (observe power supply instructions)!
[3] Notice: WAGO's 750-624 Filter Module is mandatory for marine approval (observe power supply instructions)!
[4] Notice: WAGO's 750-626 Filter Module is mandatory for marine approval at 24 VDC power supply (observe power supply instructions)!
■ Approval is available. □ Approval is pending.

Approvals Overview
I/O System 750; Versions with an extended temperature range

Surrounding air temperature (operation): –20 … +60 °C

cULus LISTED	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
Ex	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex		Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Controllers PFC100/PFC200 [1]														
750-8101/025-000	PFC100; 2ETH; T	■		■		■				■			■	79
750-8102/025-000	PFC100; 2ETH RS; T	■		■		■				■			■	79
750-8207/025-000	PFC200; 2ETH RS 3G												□	85
750-8207/025-001	PFC200; 2ETH RS 3G												□	85
750-8208/025-000	PFC200; 2ETH RS CAN DPM	■				■				■			□	86
750-8208/025-001	PFC200; 2ETH RS CAN DPM	■				■				■			□	86
750-8212/025-000	PFC200; G2; 2ETH RS; T	■		■						■			■	80
750-8212/025-001	PFC200; G2; 2ETH RS; Tele; T	■		■						■			■	80
750-8212/025-002	PFC200; G2; 2ETH RS; Tele; T; Eco	■		■						■			■	80
750-8216/025-000	PFC200; G2; 2ETH RS CAN DPS; T	■		■						■			■	84
750-8216/025-001	PFC200; G2; 2ETH RS CAN DPS; Tele; T	■		■						■			■	84
Controllers 750 [1]														
750-815/325-000	Controller Modbus®; RS485; 115.2kBd; T	■		■	■	■	■	■	■	■	■		■	117
750-833/025-000	Controller PROFIBUS Slave; T	■	■	■	■	■	■	■	■	■	■	■	■	118
750-880/025-000	Controller ETHERNET; G3; SD; T	■	■	■	■	■	■	■	■	■	■	■	■	108
750-880/025-001	Controller ETHERNET; G3; SD; Tele; T	■	■	■	■	■	■	■	■	■	■	■	■	108
750-880/025-002	Controller ETHERNET; G3; SD; Tele; T; Eco	■	■	■	■	■	■	■	■	■	■	■	■	108
750-885/025-000	Controller ETHERNET; G3; SD; MR; T	■	■	■						■			■	110
Fieldbus Couplers														
750-333/025-000	FC PROFIBUS; G2; 12MBd; T	■	■	■	■	■	■	■	■	■	■	■	■	149
750-337/025-000	FC CANopen; MCS; T	■	■	■	■	■	■	■	■	■	■	■	■	156
750-375/025-000	FC PROFINET; G3; Adv; T	■		■		■				■			■	148
750-377/025-000	FC PROFINET; G3; Eco; Adv; T	■		■		■				■			■	148
Digital Input Modules														
750-400/025-000	2DI; 24 VDC; 3ms; T	■	■	■	■	■	■	■	■	■	■	■	■	165
750-402/025-000	4DI; 24 VDC; 3ms; T	■	■	■	■	■	■	■	■	■	■	■	■	166
750-408/025-000	4DI; 24 VDC; 3ms; LSS; T	■	■	■	■	■	■	■		■	■		■	174
750-430/025-000	8DI; 24 VDC; 3ms; T	■	■	■	■	■	■	■	■	■	■	■	■	168
Digital Output Modules														
750-504/025-000	4DO; 24 VDC; 0.5A; T	■	■	■	■	■	■	■	■	■	■	■	■	198
750-504/025-800	4DO; 24 VDC; 0.5A; IF; T	■	■	■	■	■	■	■	■	■	■	■	■	198
750-530/025-000	8DO; 24 VDC; 0.5A; T	■	■	■	■	■	■	■	■	■	■	■	■	201

[1] Notice: WAGO's 750-626/…-… Filter Module is mandatory for marine approval (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

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Approvals Overview
I/O System 750; Versions with an extended temperature range

Surrounding air temperature (operation): –20 … +60 °C

cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
KR (Korean Register of Shipping)	HMB05880-AC001
LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
NK (Nippon Kaiji Kyokai)	TA17255M
Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA (Registro Italiano Navale)	ELE343217XG
cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals							UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Analog Input Modules														
750-451/025-000	8AI; RTD; Adjust; T	■	■	■	■	■	■	■	■	■	■	■	■	237
750-454/025-000	2AI; 4-20mA; Diff; T	■	■	■	■	■	■	■	■	■	■	■	■	217
750-454/025-003	2AI; 4-20mA; Diff; T; EM	■	■	■	■	■	■	■	■	■	■	■	■	217
750-455/025-000	4AI; 4-20mA; SE; T	■	■	■	■	■	■	■	■	■	■	■	■	224
750-457/025-000	4AI; ±10 VDC; SE; T	■	■	■	■	■	■	■	■	■	■	■	■	228
750-461/025-000	2AI; Pt100/RTD; T	■	■	■	■	■	■	■	■	■	■	■	■	234
750-465/025-000	2AI; 0-20mA; SE; T	■	■	■									■	215
750-466/025-000	2AI; 4-20mA; SE; T	■	■	■									■	219
750-468/025-000	4AI; 0-10 VDC; SE; T	■	■	■	■	■		■	■	■	■	■	■	230
750-482/025-000	2AI; 4-20mA HART; T	■	■	■									■	222
750-493/025-000	3-PHASE POM; 480VAC 1A; T	■	■	■									■	241
750-494/025-000	3-PHASE POM; 480VAC 1A; T	■	■	■		■				■			■	242
750-494/025-001	3-PHASE POM; 480VAC 5A; T	■	■	■		■				■			■	242
Analog Output Modules														
750-552/025-000	2AO; 0-20mA; T	■	■	■	■	■	■	■	■	■	■	■	■	248
750-554/025-000	2AO; 4-20mA; T	■	■	■	■	■	■	■	■	■	■	■	■	250
750-559/025-000	4AO; 0-10 VDC; T	■	■	■	■	■	■	■	■	■	■	■	■	253
Function/Technology and Communication Modules														
750-638/025-000	2Up/Down Counter; 16bits; 500Hz; T	■	■	■									■	260
750-652/025-000	RS232/485 Interface; T	■	■	■	■	■	■	■	■	■	■	■	■	282
750-653/025-000	RS485 Interface; T	■	■	■	■	■	■	■	■	■	■	■	■	280
750-653/025-018	RS485 Interface; 9600Bd; N; 8/1	■	■	■	■	■	■	■	■	■	■	■	■	280
Supply and Segment Modules														
750-600/025-000	End Module; T	■	■	■	■	■	■	■	■	■	■	■	■	342
750-602/025-000 [3]	Power Supply; 24 VDC; T	■	■	■	■	■	■	■	■	■	■	■	■	324
750-626/025-000	Supply Filter; 24 VDC; T	■	■	■	■	■	■	■	■	■	■	■	■	336
750-626/025-001	Supply Filter; 24 VDC; HI; T	■	■	■	■	■	■	■	■	■	■	■	■	336

[3] Notice: WAGO's 750-624 Filter Module is mandatory for marine approval (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
I/O System 750 XTR

Surrounding air temperature (operation): −40 … +70 °C

c UL us LISTED	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
Ex	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex		Marine Approvals					UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Fieldbus Couplers – I/O System 750 XTR [1]														
750-333/040-000	FC PROFIBUS; G2; 12 MBd; XTR	■	■	■	■	■	■	■	■	■	■	■	■	352
750-338/040-000	FC CANopen; DSub; XTR	■	■	■	■	■	■	■	■	■	■	■	■	354
750-352/040-000	FC ETHERNET; G3; XTR	■	■	■	■	■	■	■	■	■	■	■	■	353
Digital Input Modules XTR														
750-407/040-000	2DI; 220 VDC; XTR	■	■	■	■	■	■	■	■	■	■	■	■	359
750-427/040-000	2DI; 110 VDC; XTR	■	■	■	■	■	■	■	■	■	■	■	■	358
750-429/040-001	2DI; 60 VDC; 3ms; XTR	■	■	■	■	■	■	■	■	■	■	■	■	358
750-430/040-000	8DI; 24 VDC; 3ms;; XTR	■	■	■	■	■	■	■	■	■	■	■	■	355
750-431/040-000	8DI; 24 VDC; 0.2ms; XTR	■	■	■	■	■	■	■	■	■	■	■	■	357
750-439/040-000 [2]	8DI; NAMUR; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	386
750-1405/040-000	16DI; 24 VDC; 3ms; XTR	■	■	■	■	■	■	■	■	■	■	■	■	356
750-1415/040-000	8DI; 24 VDC; 3ms; 2-wire; XTR	■	■	■	■	■	■	■	■	■	■	■	■	355
750-1416/040-000	8DI; 24 VDC; 0.2ms; 2-wire; XTR	■	■	■	■	■	■	■	■	■	■	■	■	357
Digital Output Modules XTR														
750-508/040-000	2DO; 24 VDC; 2A; Diagn; XTR	■	■	■	■	■	■	■	■	■	■	■	■	360
750-517/040-000	2RO; 250 VAC; 1A; Relay2CO; XTR	■	■	■	■	■	■	■	■	■	■	■	■	362
750-535/040-000 [2]	2DO; 24 VDC; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	387
750-537/040-000	8DO; 24 VDC; 0.5A; Diagn; XTR	■	■	■	■	■	■	■	■	■	■	■	■	360
750-1515/040-000	8DO; 24 VDC; 0.5A; 2-wire; XTR	■	■	■	■	■	■	■	■	■	■	■	■	361
Analog Input Modules XTR														
750-453/040-000	4AI; 0-20mA; SE; XTR	■	■	■	■	■	■	■	■	■	■	■	■	363
750-455/040-000	4AI; 4-20mA; SE; XTR	■	■	■	■	■	■	■	■	■	■	■	■	363
750-457/040-000	4AI; ±10 VDC; SE; XTR	■	■	■	■	■	■	■	■	■	■	■	■	365
750-464/040-000	2/4AI; RTD; Adjust; XTR	■	■	■	■	■	■	■	■	■	■	■	■	367
750-468/040-000	4AI; 0-10 VDC; SE; XTR	■	■	■	■	■	■	■	■	■	■	■	■	365
750-469/040-000	2AI; TC; Adjust; XTR	■	■	■	■	■	■	■	■	■	■	■	■	367
750-481/040-000 [2]	2AI; RTD; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	390
750-483/040-000	2AI; 0-30 VDC; Diff; XTR	■	■	■	■	■	■	■	■	■	■	■	■	368
750-484/040-000 [2]	2AI; 4-20mA HART; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	389
750-486/040-000 [2]	4AI; 0/4-20mA; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	388
750-492/040-001	2AI; 4-20mA; Diff; NE43; XTR	■	■	■	■	■	■	■	■	■	■	■	■	364
750-495/040-000	3-PHASE POM; 690VAC 1A; XTR	■	■	■	■	■	■	■	■	■	■	■	■	368
750-495/040-001	3-PHASE POM; 690VAC 5A; XTR	■	■	■	■	■	■	■	■	■	■	■	■	368
750-495/040-002	3-PHASE POM; 690VAC R.C.; XTR	■	■	■	■	■	■	■	■	■	■	■	■	368
Analog Output Modules XTR														
750-557/040-000	4AO; ±10V DC; XTR	■	■	■	■	■	■	■	■	■	■	■	■	370
750-559/040-000	4AO; 0-10V DC; XTR	■	■	■	■	■	■	■	■	■	■	■	■	370
750-563/040-000	2AO; 0/4-20mA; 16Bit; 6-18 VDC; XTR	■	■	■	■	■	■	■	■	■	■	■	■	369
750-585/040-000 [2]	2AO; 0-20mA; Ex i; XTR	■	■	■	■	■	■	■	■	■	■	■	■	391

[1] Notice: WAGO's 750-626/040-000 Filter Module is mandatory for marine approval (observe power supply instructions)!

[2] This I/O module shall only be used in connection with the 24 VDC Ex i XTR supply module (observe power supply instructions)!

■ Approval is available. □ Approval is pending.

Approvals Overview
I/O System 750 XTR

Surrounding air temperature (operation): −40 … +70 °C

	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex		Marine Approvals						UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Function/Technology Modules XTR														
750-404/040-003	Counter; Adjust; XTR	■		■		■		■		■		■	■	371
750-630/040-001	SSI Interface; Adjust; XTR	■		■		■		■		■		■	■	372
750-633/040-000 [2]	Up/Down Counter; Ex i; XTR	■		■		■		■		■		■	■	392
750-637/040-001	Inc. Encoder; 24 VDC; Diff; 32Bit; XTR	■		■		■		■		■		■	■	373
Communication Modules XTR														
750-652/040-000	RS232/485 Interface; XTR	■		■		■		■		■		■	■	374
750-658/040-000	CAN Gateway; XTR	■		■		■		■		■		■	■	375
Supply and Segment Modules XTR														
750-600/040-000	End Module; XTR	■		■		■		■		■		■	■	383
750-601/040-000	Power Supply; 24 VDC; Fuse; XTR	■		■		■		■		■		■	■	376
750-602/040-000	Power Supply; 24 VDC; XTR	■		■		■		■		■		■	■	376
750-606/040-000	Power supply; 24 VDC; Ex i; XTR	■		■		■		■		■		■	■	385
750-610/040-000	Power Supply; 24 VDC; Fuse Diagn; XTR	■		■		■		■		■		■	■	377
750-612/040-000	Power Supply; 0-230 VAC/VDC; XTR	■		■		■		■		■		■	■	377
750-613/040-000	System Power Supply; 24 VDC; XTR	■		■		■		■		■		■	■	377
750-614/040-000	Potential distribution; XTR	■		■		■		■		■		■	■	379
750-616/040-000	Distance Module; XTR	■		■		■		■		■		■	■	382
750-624/040-000	Field supply filter; 24 VDC; HI; XTR	■		■		■		■		■		■	■	380
750-624/040-001	Field Supply Filter; 24 VDC; HI; NC; XTR	■		■		■		■		■		■	■	380
750-626/040-000	Supply Filter; 24 VDC; HI; XTR	■		■		■		■		■		■	■	381
750-1605/040-000	Potential Distribution; 16*24V; XTR	■		■		■		■		■		■	■	378
750-1606/040-000	Potential Distribution; 16*0V; XTR	■		■		■		■		■		■	■	378

[1] Notice: WAGO's 750-626/040-000 Filter Module is mandatory for marine approval (observe power supply instructions)!
[2] This I/O module shall only be used in connection with the 24 VDC Ex i XTR supply module (observe power supply instructions)!
■ Approval is available. □ Approval is pending.

Approvals Overview
Operation and Monitoring – Touch Panels

	cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
	ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
	BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
	DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS
	KR (Korean Register of Shipping)	HMB05880-AC001
	LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
	NK (Nippon Kaiji Kyokai)	TA17255M
	Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18; TE/2190/880590/18
	RINA (Registro Italiano Navale)	ELE343217XG
	cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
	INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	Ex			Marine Approvals								UL	See Page
		ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	
Touch Panels; *e!DISPLAY 7300T*														
762-3000	Web Panel; WP; 4.3; 480x272; PIO1					■				■			■	66
762-3001	Web Panel; WP; 5.7; 640x480; PIO1					■				■			■	66
762-3002	Web Panel; WP; 7.0; 800x480; PIO1					■				■			■	67
762-3003	Web Panel; WP 10.1 1280x800 PIO1					■				■			■	67
Touch Panels; 600 Standard Line														
762-4101	Web Panel; TP600; 4.3; 480x272; PIO1; WP												□	58
762-4102	Web Panel; TP600; 5.7; 640x480; PIO1; WP												□	59
762-4103	Web Panel; TP600; 7.0; 800x480; PIO1; WP												□	60
762-4104	Web Panel; TP600; 10.1; 1280x800; PIO1; WP												□	61
762-4201/8000-001	Visu Panel; TP600; 4.3; 480x272; PIO2; VP												□	58
762-4202/8000-001	Visu Panel; TP600; 5.7; 640x480; PIO2; VP												□	59
762-4203/8000-001	Visu Panel; TP600; 7.0; 800x480; PIO2; VP												□	60
762-4204/8000-001	Visu Panel; TP600; 10.1; 1280x800; PIO2; VP												□	61
762-4301/8000-002	Control Panel; TP600; 4.3; 480x272; PIO3; CP												□	58
762-4302/8000-002	Control Panel; TP600; 5.7; 640x480; PIO3; CP												□	59
762-4303/8000-002	Control Panel; TP600; 7.0; 800x480; PIO3; CP												□	60
762-4304/8000-002	Control Panel; TP600; 10.1; 1280x800; PIO3; CP												□	61
Touch Panels; 600 Advanced Line														
762-5203/8000-001	Visu Panel; TP600; 7.0; 800x480; PIO2; VP												□	62
762-5204/8000-001	Visu Panel; TP600; 10.1; 1280x800; PIO2; VP												□	63
762-5303/8000-002	Control Panel; TP600; 7.0; 800x480; PIO3; CP												□	62
762-5304/8000-002	Control Panel; TP600; 10.1; 1280x800; PIO3; CP												□	63
Touch Panels; 600 Marine Line														
762-6201/8000-001	Control Panel; TP600; 4.3; 480x272; PIO2; VP									□			□	64
762-6202/8000-001	Control Panel; TP600; 5.7; 640x480; PIO2; VP									□			□	64
762-6203/8000-001	Control Panel; TP600; 7.0; 800x480; PIO2; VP									□			□	65
762-6204/8000-001	Control Panel; TP600; 10.1; 1280x800; PIO2; VP									□			□	65

■ Approval is available. □ Approval is pending.

11

Approvals Overview
Infrastructure – Industrial Switches, Sensor/Actuator Boxes

Variants upon Request (Item No. with Suffix /...-...)

cULus OrdLoc	E175199 Sec. 1, UL 508, UL 61010
ABS (American Bureau of Shipping)	19-HG1821926-PDA; 18-HG1778162-PDA; 19-HG1821812-PDA
BV (Bureau Veritas)	13453/D0 BV, 30389/B0 BV
DNV (Det Norske Veritas) GL (Germanischer Lloyd)	TAA0000194; TAA00000Y7; TAA00001J4; TAA00001FS; A-14050
KR (Korean Register of Shipping)	HMB05880-AC001
LR (Lloyd's Register)	02/20026 (E5); 17/20073 (E2)
NK (Nippon Kaiji Kyokai)	TA17255M
Polski Rejestr Statkow	TE/2210/880590/18; TE/2215/880590/18; TE/2214/880590/18
RINA (Registro Italiano Navale)	ELE343217XG
cULus HazLoc	E198726 Sec. 1, ANSI/ISA 12.12.01 E480271 Sec. 1, AEx UL60079
INMETRO	TÜV 12.1297 X; TÜV 14.1911 X
TÜV	07ATEX554086 X; IECEx TUN 09.0001 X 12ATEX106032 X; IECEx TUN 12.0039 X 14ATEX148929 X; IECEx TUN 14.0035 X 17ATEX193969 X; IECEx TUN 16.0046 X 17ATEX196484 X; IECEx TUN 17.0005 X DEKRA 11ATEX0203 X

Item No.	Item Description	ATEX/IECEx	BRA-Ex	HazLoc	RINA	PRS	NK	LR	KR	DNV GL	BV	ABS	OrdLoc	See Page
Industrial Switches		**Ex**								**Marine Approvals**			**UL**	
852-101	Industrial Switch; 5 Ports 100BASE-TX												■	402
852-102	Industrial Switch; 8 Ports 100BASE-TX												■	402
852-103	Industrial Switch; 8 Ports; 2 Slots 100BASE-FX												■	403
852-111	Industrial Eco Switch; 5 Ports 100BASE-TX									■ [5]			■	408
852-112	Industrial Eco Switch; 8 Ports 100BASE-TX												■	408
852-303	Industrial Managed Switch; 8 Ports 100BASE-TX; 2 Slots 1000BASE-SX/LX									■			□	406
852-1102	Industrial Switch; 8 Ports 1000BASE-T												□	404
852-1106	Industrial Switch; 16 Ports 1000BASE-T												□	405
852-1111	Industrial Eco Switch; 5 Ports 1000BASE-T									■ [5]			□	409
852-1112	Industrial Eco Switch; 8 Ports 1000BASE-T												□	409
852-1305	Industrial Managed Switch; 8 Ports 1000BASE-T; 4 Slots 1000BASE-SX/LX									■			□	406
852-1411	Industrial Eco Switch; 5 Ports 1000BASE-T; 4 * Power over Ethernet												□	410
852-1417	Industrial Eco Switch; 5 Ports 1000BASE-T; 2 Slots 1000BASE-SX/LX; 4 * Power over Ethernet												□	410
852-1505	Industrial-Managed-Switch; 8-Port 1000BASE-T; 4-Slot 1000BASE-SX/LX; 8 * Power over Ethernet												□	407
Sensor/Actuator Boxes														
757-144	M12 Sensor/Actuator Box; 6 Ports; 4 Poles												■	436
757-145	M12 Sensor/Actuator Box; 4 Ports; 5 Poles; M23												■	438
757-164	M12 Sensor/Actuator Box; 6 Ports; 4 Poles; M23												■	436
757-165	M12 Sensor/Actuator Box; 6 Ports; 5 Poles; M23												■	438
757-184	M12 Sensor/Actuator Box; 6 Ports; 4 Poles; M23												■	437
757-185	M12 Sensor/Actuator Box; 8 Ports; 5 Poles; M23												■	439
757-244/000-xxx	M12 Sensor/Actuator Box; 4 Ports; 4 Poles												■	432
757-245/000-xxx	M12 Sensor/Actuator Box; 4 Ports; 5 Poles												■	434
757-264/000-xxx	M12 Sensor/Actuator Box; 6 Ports; 4 Poles												■	432
757-265/000-xxx	M12 Sensor/Actuator Box; 6 Ports; 5 Poles												■	434
757-284/000-xxx	M12 Sensor/Actuator Box; 8 Ports; 4 Poles												■	433
757-285/000-xxx	M12 Sensor/Actuator Box; 8 Ports; 5 Poles												■	435
757-303	M8 Sensor/Actuator Box; 10 Ports; 3 Poles; M16												■	443
757-343	M8 Sensor/Actuator Box; 4 Ports; 3 Poles; M16												■	442
757-363	M8 Sensor/Actuator Box; 6 Ports; 3 Poles; M16												■	442
757-383	M8 Sensor/Actuator Box; 8 Ports; 3 Poles; M16												■	443
757-403/000-xxx	M8 Sensor/Actuator Box; 10 Ports; 3 Poles												■	441
757-443/000-xxx	M8 Sensor/Actuator Box; 4 Ports; 3 Poles												■	440
757-463/000-xxx	M8 Sensor/Actuator Box; 6 Ports; 3 Poles												■	440
757-483/000-xxx	M8 Sensor/Actuator Box; 8 Ports; 3 Poles												■	441

[5] DNV approval is only granted in combination with WAGO's 852-9101 DIN-Rail Adapter

■ Approval is available. □ Approval is pending.

11

Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

PUSH-IN CAGE CLAMP®







Push-in CAGE CLAMP® terminates the following copper conductors:
solid



stranded



fine-stranded, also with tinned single strands



fine-stranded, tip-bonded



fine-stranded, with ferrule (gastight crimped)



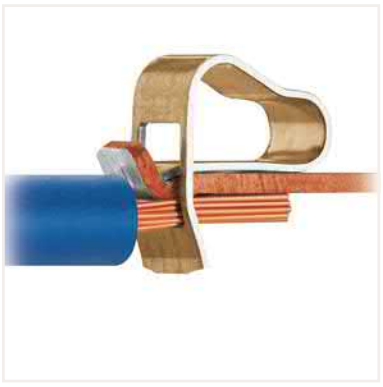
fine-stranded, with pin terminal (gastight crimped)

The universal connection with an additional advantage: Push-in connection Terminate solid and stranded, as well as ferruled conductors, by simply pushing them in – no tools required.

Termination for all conductor types:
- Open clamping unit.
- Insert the conductor.
- Release clamp – done!

CAGE CLAMP®







CAGE CLAMP® terminates the following copper conductors:
solid



stranded



fine-stranded, also with tinned single strands



fine-stranded, tip-bonded



fine-stranded, with ferrule (gastight crimped)



fine-stranded, with pin terminal (gastight crimped)

The universal connection for solid, stranded and fine-stranded conductors

Termination:
- Open clamping unit.
- Insert the conductor.
- Release clamp – done!

Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

POWER CAGE CLAMP®







POWER CAGE CLAMP® terminates the following copper conductors: solid



stranded



fine-stranded, also with tinned single strands

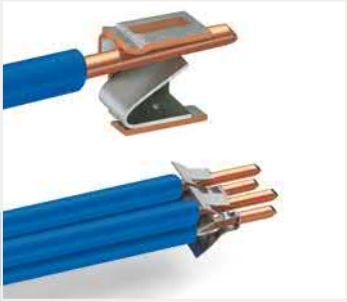


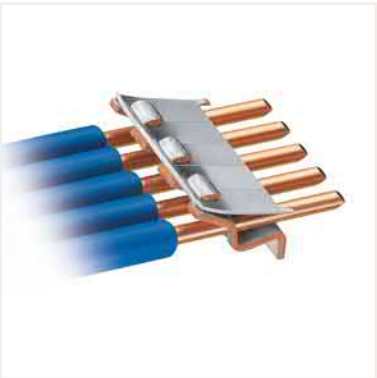
fine-stranded, with ferrule (gastight crimped)

The universal connection for conductors larger than 35 mm² (2 AWG)

Termination:
- Open clamp by turning a T-wrench counter-clockwise.
- Press the integrated latch to open clamping unit for hands-free wiring.
- Insert the conductor.
- A short counter-clockwise rotation closes the clamp, securing the conductor.

PUSH WIRE®







PUSH WIRE® terminates the following copper conductors: solid

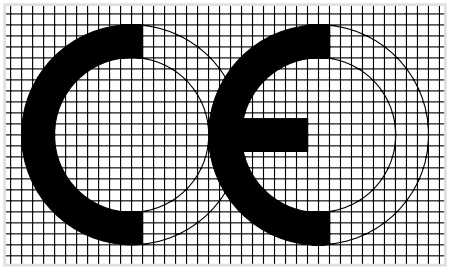
PUSH WIRE® connection for solid and stranded conductors (depending on the model used)

Termination:
Tool-free, twist-free terminations for solid and rigid stranded conductors – simply push into unit.

CE Marking and EU Directives

CE Conformity Marking

The CE conformity marking consists of the characters "CE" with the following script:



Communauté Européenne
(European Community)

The CE conformity marking must be applied to all electrical equipment; should on-unit marking not be possible, mark the smallest packaging unit. With this marking, manufacturers attest conformity of their products to relevant directives.

In addition to the CE marking, manufacturers provide an EU "Declaration of Conformity" for their products. This declaration of conformity must be retained and submitted to a national surveillance authority upon request.

EU directives are legally binding specifications for the European Union. Their goal is aligning legal and administrative specifications in the various EU member countries, in order to prevent trading hindrances arising from different national specifications.

In order to launch a product on the market, it must comply with the relevant directives. Several directives may apply for one single product, for example, EMC and low voltage directives.

Low Voltage Directive (LVD)

The safety of electrical equipment is guaranteed by the Low Voltage Directive (LVD). The LVD covers all electrical equipment operating with a voltage between 50 and 1000 VAC and between 75 and 1500 VDC. Products falling within the scope of the LVD that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependant on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the LVD. The LVD doesn't apply to basic components.

EMC Directive

The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

Machinery Directive

The Machinery Directive does not apply to WAGO products.

Explosive Atmospheres Directive (ATEX)

Directive for devices and protective systems intended for use in hazardous locations.

Radio Equipment Directive

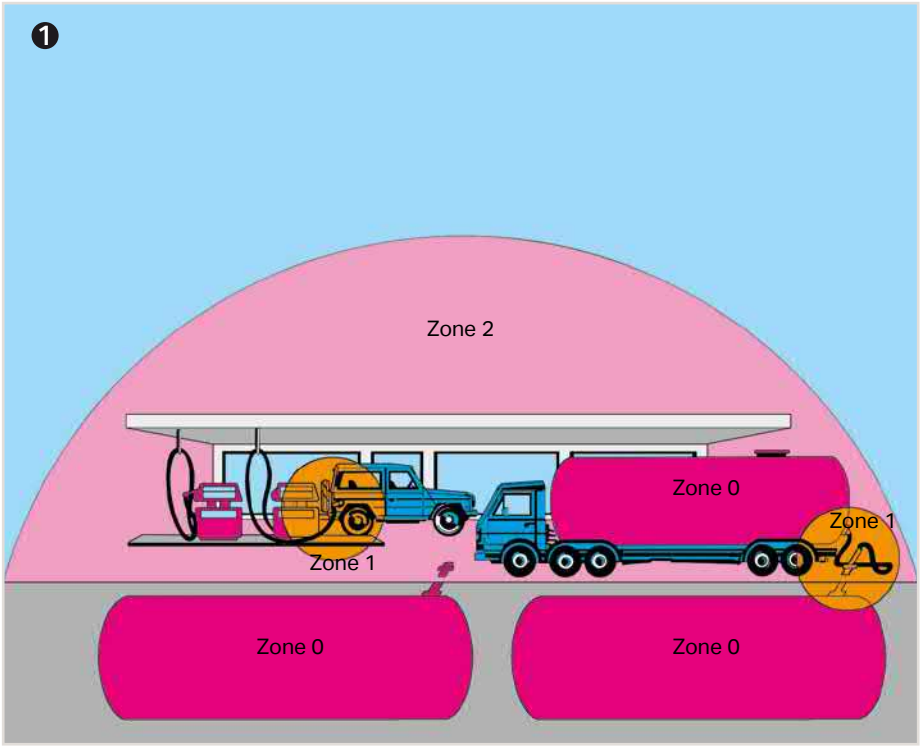
A device or relevant component thereof, capable of communication by emitting and/or receiving radio waves utilizing the spectrum allocated to terrestrial/space radio communication, falls within the scope of the Radio Equipment Directive. As such, these devices and components are tested and labeled accordingly. This label implicitly includes both Low Voltage and EMC Directives, since the Radio Equipment Directive also encompasses the safety targets for both of these directives.

General Technical Information
for Electrical Equipment Used in Hazardous Areas

Hazardous Areas

Hazardous areas are zones in which the atmosphere may become explosive. An explosive atmosphere is a mixture of flammable substances in the form of gases, vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other well-known standards rank hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:



❶ Hazardous areas due to explosive gases, vapors and mists

Zone 0

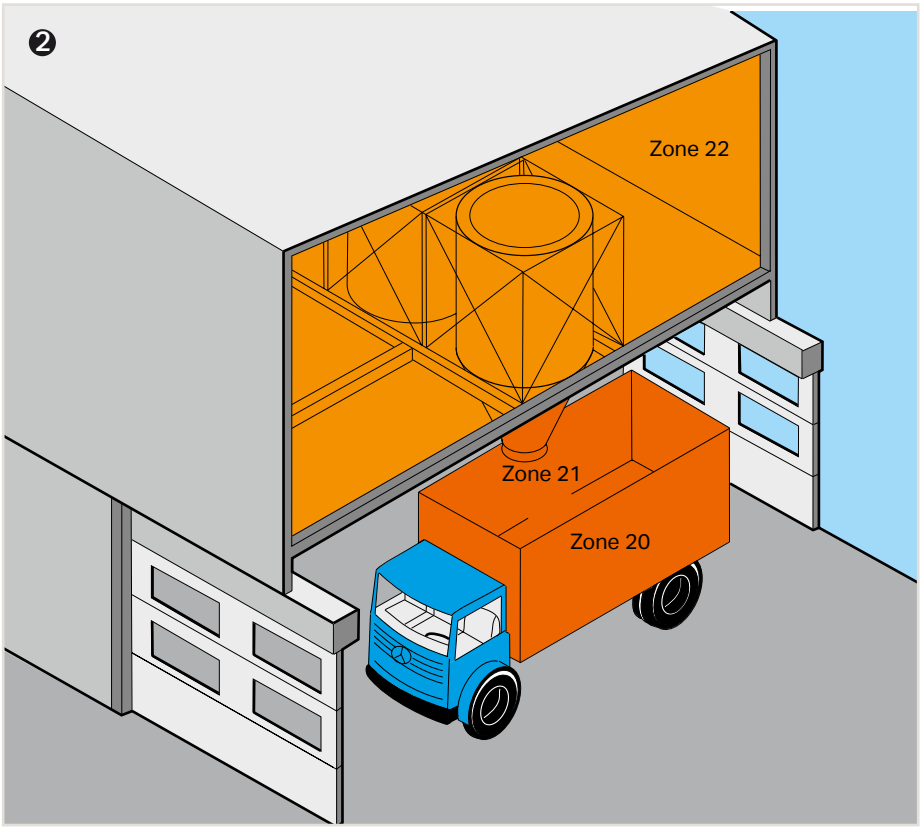
Areas in which an explosive atmosphere is present continuously, for long periods or frequently.

Zone 1

Areas in which an explosive atmosphere is likely to occur occasionally during normal operation.

Zone 2

Areas in which an explosive atmosphere is likely to occur rarely or only for a short period during normal operation.



❷ Hazardous areas due to explosive dust/air mixtures

Zone 20

Areas in which an explosive atmosphere due to dust/air mixtures is present continuously, for long periods or frequently and in which dust deposits of known or excessive thickness may form. Dust deposits alone do not constitute a Zone 20.

Zone 21

Areas in which the occurrence of an explosive atmosphere due to dust/air mixtures is to be expected occasionally and in which deposits or layers of combustible dust can generally be present.

Zone 22

Areas in which an explosive atmosphere due to dust/air mixtures is not likely to occur during normal operation and, if it occurs, will only exist for a short period, or in which accumulations or layers of combustible dust are present.

Please refer to the manuals for more information on explosion protection.

Electromagnetic Compatibility and Mechanical Strength
(Industrial and Residential Environments)

Immunity for Industrial Environments per EN 61000-6-2

Test		Test Value	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	Electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 ... 2.0 GHz	A
		1V/m: 2.0 ... 2.7 GHz	A
EN 61000-4-4	Burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	Surge	Data: - / 1 kV (line : line – line : ground)	B
		DC supply: 0.5 kV / 0.5 kV (line : line – line : ground)	B
		AC supply: 1 kV / 2 kV (line : line – line : ground)	B
EN 61000-4-6	RF interference	10 V/m, 80 % AM (0.15 ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m, 50/60Hz	A
	*)	Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.	

Emission Standard for Residential Environments per EN 61000-6-3

Test		Limits (Quasi-Peak)	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(µV)	150 ... 500 kHz	
		56 dB(µV)	500 kHz ... 5 MHz	
		60 dB(µV)	5 ... 30 MHz	
EN 55016-2-1	DC supply/data lines,	79 dB(µV)	150 ... 500 kHz	
	conducted	73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(µV/m)	30 ... 230 MHz	10 m
		37 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	84 ... 74 dB(µV)	150 ... 500 kHz	
	Mains connection, conducted	74 dB(µV)	500 kHz ... 30 MHz	

Emission Standard for Industrial Environments per EN 61000-6-4

Test		Limits (Quasi-Peak)	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(µV)	150 ... 500 kHz	
		73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(µV/m)	30 ... 230 MHz	10 m
		47 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	97 ... 87 dB(µV)	150 ... 500 kHz	
	Mains connection, conducted	87 dB(µV)	500 kHz ... 30 MHz	

Mechanical Strength per EN 61131-2

Test		Frequency Range	Limits
IEC 60068-2-6	Vibration	5 Hz ≤ f < 9 Hz	1.75 mm amplitude (permanent)
			3.5 mm amplitude (short term)
		9 Hz ≤ f < 150 Hz	0.5g (permanent)
			1g (short term)
		Note on vibration test:	
		a) Frequency change: max. 1 octave/minute	
		b) Vibration direction: 3 axes	
IEC 60068-2-27	Shock		15g
		Note on shock test:	
		a) Type of shock: half sine	
		b) Shock duration: 11 ms	
		c) Shock direction: 3x in positive and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

Electromagnetic Compatibility and Mechanical Strength
(Marine Applications)

Immunity for Marine Applications per Class Guideline DNVGL-CG-0339 (Harmonized with IACS E10)

Test	EMC Class [1]	Designation	Test Value	Performance Criterion [2]
IEC 61000-4-2	A and B	ESD	6 kV (contact) 8 kV (air)	B
IEC 61000-4-3	A and B	Electromagnetic fields	10 V/m; 80 MHz ... 2 GHz	A
IEC 61000-4-4	A and B	Burst	1 kV (data ports) 2 kV (power supply/ground ports)	B
IEC 61000-4-5	A and B	Surge	0.5 kV; line-to-line 1.0 kV; line-to-ground	B
IEC 61000-4-6	A B	RF interference	3 V r.m.s.; 150 kHz ... 80 MHz; 80 % AM at 1000 Hz 10 V r.m.s.; 2/3/4/6.2/8.2/12.6/16.5/18.8/22/25 MHz (spot frequencies)	A
Performance test	A and B	AF disturbances (harmonics)	3 V r.m.s.; 2 W; 50 Hz ... 10 kHz	A
Performance test	-	High voltage	775 VDC 1500 VAC	-
[1]	EMC Class A: All locations except bridge and open deck EMC Class B: All locations including bridge and open deck			
[2]	Performance criteria A: The device must work in accordance with the regulations during and after the test. Performance criteria B: The device must work in accordance with the regulations after the test.			

Emission Standard for Marine Applications per Class Guideline DNVGL-CG-0339 (Harmonized with IACS E10)

Test	EMC Class [1]	Emission	Frequency Range	Limits (Quasi-Peak)	Distance
Performance test	A	radiated	0.15 ... 30 MHz	80 ... 50 dBµV/m	3 m
			30 ... 100 MHz	60 ... 54 dBµV/m	3 m
			100 ... 2000 MHz (except 156 ... 165 MHz)	54 dBµV/m 24 dBµV/m	3 m
Performance test	A	conducted	10 ... 150 kHz	120 ... 69 dBµV	
			150 ... 500 kHz	79 dBµV	
			0.50 ... 30 MHz	73 dBµV	
Performance test	B	radiated	150 ... 300 kHz	80 ... 52 dBµV/m	3 m
			0.30 ... 30 MHz	52 ... 34 dBµV/m	3 m
			30 ... 2000 MHz (except 156 ... 165 MHz)	54 dBµV/m 24 dBµV/m	3 m
Performance test	B	conducted	10 ... 150 kHz	96 ... 50 dBµV	
			150 ... 350 kHz	60 ... 50 dBµV	
			0.35 ... 30 MHz	50 dBµV	
[1]	EMC Class A: All locations except bridge and open deck EMC Class B: All locations including bridge and open deck				

Mechanical Strength per Class Guideline DNVGL-CG-0339 (Harmonized with IACS E10)

Test	Vibration Class	Frequency Range	Amplitude	Location
IEC 60068-2-6	A	2 Hz (+3/-0) ≤ f < 13.2 Hz 13.2 Hz ≤ f < 100 Hz	1.0 mm (peak value) 0.7g (acceleration)	On bulkheads, beams, deck, bridge
IEC 60068-2-6	B	2 Hz (+3/-0) ≤ f < 25 Hz 25 Hz ≤ f < 100 Hz	1.6 mm (peak value) 4.0g (acceleration)	On machinery such as internal combustion engines, compressors, pumps, including piping on such machinery
		40 Hz ≤ f < 2000 Hz	10g (acceleration)	Only for equipment installed on the exhaust gas pipes of diesel engines
IEC 60068-2-6	C	2 Hz (+3/-0) ≤ f < 15 Hz 15 Hz ≤ f < 50 Hz	2.6 mm (peak value) 2.3g (acceleration)	Masts

Specifications and Test Results

The following standards apply to the design and application of the electrical components contained in this catalog:

DIN VDE 0100
Construction of high-current installations with nominal voltages up to 1000 V

EN 50110-1
VDE 0105-1
Operation of electrical installations

IEC 61140
EN 61140
VDE 0140-1
Protection against electric shock – Common aspects for installation and equipment

IEC 60664-1
EN 60664-1
VDE 0110-1
Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests

IEC 60204-1
EN 60204-1
VDE 0113-1
Safety of machinery – Electrical equipment of machines – Part 1: General requirements

EN 50178
VDE 0160
Electronic equipment for use in power installations

IEC 62305-1
EN 62305-1
VDE 0185-305-1
Protection against lightning – Part 1: General principles

IEC 60060-1
HD 588.1 S1
VDE 0432-1
High-voltage test techniques – Part 1: General specifications and test requirements

IEC 60085
EN 60085
VDE 0301-1
Electrical insulation – Thermal evaluation and designation

IEC 60529
EN 60529
VDE 0470-1
Degrees of protection provided by enclosures (IP code)

IEC 60603-1
EN 60603-1
Connectors for frequencies below 3 MHz for use with printed boards – Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality

IEC 61984
EN 61984
VDE 0627
Connectors – Safety requirements and tests

IEC 60999-1
EN 60999-1
VDE 0609-1
Connecting devices – Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm2 up to 35 mm2

IEC 60617-2
EN 60617-2
Graphical symbols for diagrams – Part 2: Symbol elements, qualifying symbols and other symbols having general application

IEC 61558-1
EN 61558-1
VDE 0570-1
Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests

IEC 60669-2-1
EN 60669-2-1
VDE 0632-2-1
Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches

IEC 60947-7-1
EN 60947-7-1
VDE 0611-1
Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors

IEC 60998-2-2
EN 60998-2-2
VDE 0613-2-2
Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units

IEC 60947-1
EN 60947-1
VDE 0660-100
Low-voltage switchgear and controlgear – Part 1: General rules

IEC 60947-5-6
EN 60947-5-6
VDE 0660-212
Low-voltage switchgear and controlgear – Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)

IEC 60439-1
EN 60439-1
VDE 0660-500
Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies

IEC 60555-1
EN 60555 Part 1
VDE 0838-1
Disturbances in supply systems caused by household appliances and similar electrical equipment; Part 1: definitions

IEC 60715
EN 60715
Dimensions of low-voltage switchgear and controlgear – Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

IEC 60950-1
EN 60950-1
VDE 0805-1
Information technology equipment – Safety Part 1: General requirements

IEC 60127-6
EN 60127-6
VDE 0820-6
Miniature fuses – Part 6: Fuse-holders for miniature fuse-links

EN 50155
VDE 0115-200
Railway applications – Electronic equipment used on rolling stock

EN 50090-2-2
VDE 0829-2-2
Home and Building Electronic Systems (HBES) – Part 2-2: System overview – General technical requirements; German version

IEC 60099-1
EN 60099-1
VDE 0675-1
Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems

IEC 61643-1
EN 61643-11
VDE 0675-6-11
Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and tests

IEC 61643-21
EN 61643-21
VDE 0845-3-1
Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods

IEC 61508-1
EN 61508-1
VDE 0803-1
Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General requirements

IEC 62061
EN 62061
VDE 0113-50
Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems

Interfaces – Fieldbuses

DIN 66259-1
Electrical characteristics for unbalanced double-current interchange circuits

EN 50325-1
Industrial communications subsystem based ISO 11898 (CAN) for controller-device interfaces – Part 1: General requirements

IEC 61784-1
EN 61784-1
Industrial communication networks – Profiles – Part 1: Fieldbus profiles

IEC 61158-2
EN 61158-2
Industrial communication networks – Fieldbus specifications – Part 2: Physical layer specification and service definition

IEC 61158-6-x
EN 61158-6-x
DIN EN 61158-6-x
Industrial communication networks – Fieldbus specifications – Part 6-x

Explosion Protection

IEC 60079-0
EN 60079-0
VDE 0170-1
Electrical apparatus for explosive gas atmospheres – Part 0: General requirements

IEC 60079-7
EN 60079-7
VDE 0170-6
Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

IEC 60079-11
EN 60079-11
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IEC 60079-14
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IEC 60068-2-6
EN 60068-2-6
VDE 0468-2-6
Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)

IEC 60068-2-27
EN 60068-2-27
Basic environmental testing procedures – Part 2: Tests
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IEC 60068-2-42
EN 60068-2-42
Environmental testing – Part 2-42: Tests – Test Kc: Sulfur dioxide test for contacts and connections

IEC 60068-2-43
EN 60068-2-43
Environmental testing – Part 2-43: Tests – Test Kd: Hydrogen sulphide test for contacts and connections

EMC Requirements

IEC 61000-6-1
EN 61000-6-1
VDE 0839-6-1
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IEC 61000-6-2
EN 61000-6-2
VDE 0839-6-2
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IEC 61000-6-3
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VDE 0839-6-3
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IEC/CISPR 11
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– Limits and methods of measurement

IEC/CISPR 22
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VDE 0878-22
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IEC/CISPR 24
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IEC 61326-3-1
EN 61326-3-1
VDE 0843-20-3-1
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IEC 61131-2
EN 61131-2
VDE 0411-500
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IEC 61131-3
EN 61131-3
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IEC 61810-1
EN 61810-1
VDE 0435-201
Electromechanical elementary relays – Part 1: General requirements

IEC 61810-2
EN 61810-2
VDE 0435-120
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IEC 61810-5
EN 50205
VDE 0435-2022
Electromechanical non-specified time all-or-nothing relays – Part 5: Insulation coordination

IEC 60255-5
EN 60255-5
VDE 0435-130
Electrical relays – Part 5: Insulation coordination for measuring relays and protection equipment – Requirements and tests

UL Directives

UL 1059; ANSI 1059
Rail-Mount Terminal Blocks

UL 486E
Equipment wiring terminals for use with aluminum and/or copper conductors

UL 508
Industrial control equipment

ANSI/ISA12.12.01
Nonincendive electrical equipment for use in Class I and Class II, Division 2 and Class III hazardous (classified) locations

Ship Classifications

ABS (American Bureau of Shipping)
Steel Vessels
Part 4: Vessel Systems and Machinery

BV (Bureau Veritas)
Rules for the classification of steel ships and offshore units

DNV (Det Norsk Veritas)
Det Norsk Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norsk Veritas' Offshore Standards: 2007

GL (Germanischer Lloyd)
Rules for Classification and Construction
VI Additional Rules and Guidelines
7 Guidelines for the Performance of Type Test
2 Test Requirements for Electrical/Electronic Devices and Systems

LR (Lloyd's Register)
Type Approval System
Test Specification Number1

RINA (Registro Italiano Navale)
Rules for the classification of ships
Part C – Machinery, systems and fire protection Ch.3, Sect.6, Table1

BSH (Federal Maritime and Hydrographic Agency)
Certificate measuring the safe distance to the standard magnetic and steering magnetic compass in accordance with ISO R 695 and DIN EN 60945 Section 11.2

KR (Korean Register of Shipping)
List of approved Manufacturers And Type Approval Equipment; Pt.6, Ch.1, Sec.3 of the Rules for Classification, Steel Ships

NKK (Nippon Kaiji Kyokai)
Guidance for the approval and type approval of materials and equipment for marine use

PRS (Polski Rejestr Statkow)
Publication No.11/P
Enviromental Tests on Marine Equipment

Electrical Engineering Laboratory
Product Safety for Our Customers

To use terminal blocks globally, they must satisfy certain standards and obtain test certificates.

These requirements apply to every manufacturer. WAGO also performs its own tests to increase standards and offer greater reliability with its products. Products undergo different mechanical, electrical and climatic testing, including the following examples.

WAGO Test Lab

These tests confirm that WAGO's products can be used safely and reliably both on the European market and anywhere in the world for a wide variety of applications. We place great value on this, starting in development. As a result, we can present verifiably high levels of product safety and reliability while ensuring the fulfillment and accuracy of technical data, which are the highest priorities for our customers and users worldwide.

On December 22, 2009, our test lab was accredited by the German Accreditation Association (Deutsche Gesellschaft für Akkreditierung GmbH) in accordance with DIN EN ISO/IEC 17025.

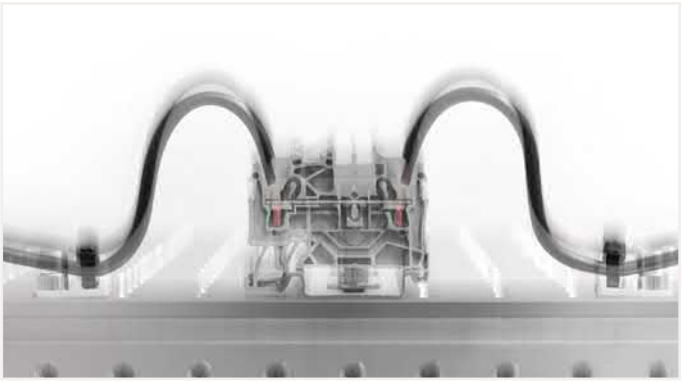
Pull-Out Test (per EN 60947-7-1, EN 60998-2-2)

In the pull-out force test, a conductor is pulled on until it is removed from the clamping unit. The design of the terminals means that extraction only occurs after the standard pull-out force has been exceeded many times over.



Vibration Test (per IEC/EN 60068-2-6)

Depending on the application, such as railway (per EN 61373) or marine (per GL, LR, DNV), there are various testing requirements to determine if the long-term effects of vibrations degrade electrical connections. The test specimen is subjected to different loads on three axes in an electrodynamic vibration system. The amplitude, the acceleration and, in particular, the frequency of the vibration vary during the test. The test values are increased multiple times over the standard values to meet specific customer requirements.



Shock Test (per IEC/EN 60068-2-27)

The shock test is very similar to the vibration test except that single shocks are applied to the test specimen, instead of continuous vibrations. Shock tests are usually performed, for example, at an acceleration of 20g over a period of 11 ms. Tests for special requirements often call for much higher values and are also conducted in our laboratory. WAGO's single-deck TOPJOB® S Rail-Mount Terminal Blocks, for example, pass shock tests up to 500 g.



Voltage Drop Test under Bending Stress (per EN 60947-7-1, EN 60999-1)

The voltage drop test under bending stress simulates mechanical stress on the clamping unit. In everyday use, this stress can occur during installation, for example, when an electrician shoves connected conductors to the side in order to access a specific component. The quality of the clamping unit when moving a connected conductor can be validated by the constantly stable measured value of the voltage drop.



DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27, 32423 Minden

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Elektrische und mechanische Prüfungen an Klemmen und Steckverbinder sowie Umweltsimulation

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 18.12.2014 mit der Akkreditierungsnummer D-PL-19704-01 und ist gültig bis 17.12.2019. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 5 Seiten.

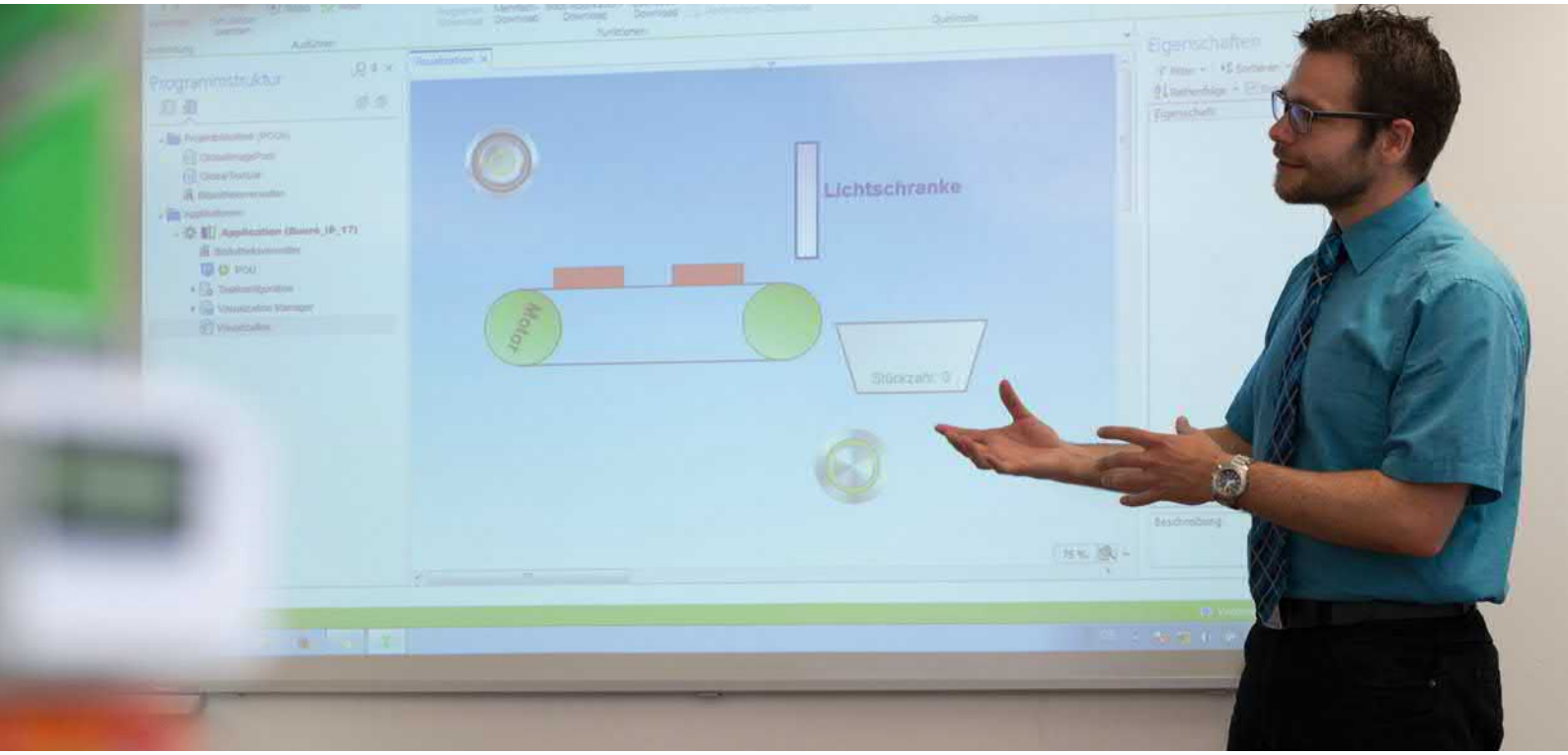
Registrierungsnummer der Urkunde: **D-PL-19704-01-00**

Frankfurt am Main, 18.12.2014

Im Auftrag Dipl.-Ing. (FH) Ralf Egner
Abteilungsleiter

Siehe Hinweise auf der Rückseite

WAGO Seminars
Learn Today – Benefit Tomorrow



Setting the Bar with Your Goals

Product-Related and Customer-Specific Seminars



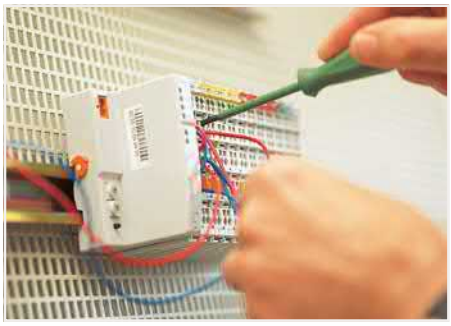
Small Groups

The small class sizes of WAGO training seminars ensures that no question goes unanswered and no one is overlooked.



Teamwork

Learning as a group is very effective. Ideas can be discussed and exchanged while experiences can be shared – all for the benefit of the participants.



Practical Topics

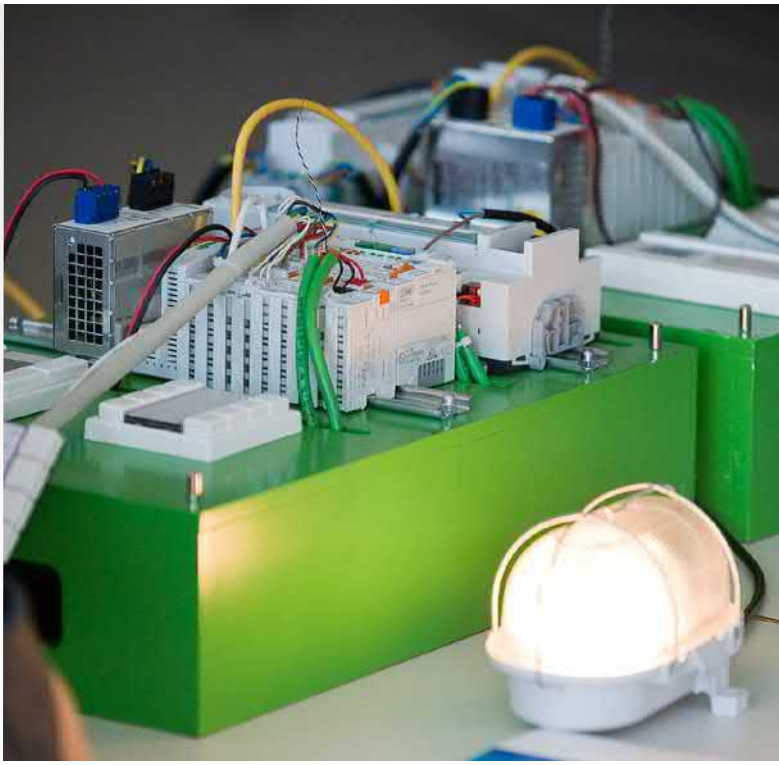
Experience has shown that practice makes perfect. This is why the focus of every WAGO training seminar is on practical, hands-on learning.

WAGO Seminars
Benefit from First-Hand Knowledge and Expertise – Training Straight from the Source!

Our instructors are specialists who know all the ins and outs of WAGO's products. This ensures that the time devoted to each WAGO training seminar is an effective investment in expanding your own expertise.

Request your registration form by email:
training@wago.com

Contact your local WAGO office.



Product-Related Seminars

We regularly offer product-related seminars on the following topics:

- Building and industrial automation
- Programming of automation components
- Fieldbus systems

Current Seminars:
www.wago.com

Customer-Specific Seminars

In addition to these "open" seminars, we also offer seminars specially tailored to your organization and its particular needs.

Upon request, we can also conduct these courses at your location.

Special Corporate Seminars



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Indexes and Addresses
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Notes

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