# Automation Technology

Full Line Catalog, Volume 3 – Edition 2021/2022

3

# WAGO Full Line Catalogs


## Volume 1, WAGO Rail-Mount Terminal Blocks and Connectors

- 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 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, Edge Devices
- Modular I/O-SYSTEM IP20, I/O-SYSTEM IP67
- 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

# WAGO Automation Technology

## Solutions & Software

### Solutions

- Cloud Solutions
- Reusable, customizable software applications

1

### 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 Edge Computing

### Touch Panels 600 Standard Line

- High-performance touch panels with resistive touch-screens
- 10.9 … 54.7 cm (4.3 … 21.5")
- Models include Control, Visu or Web Panels for display of *e!COCKPIT* visualizations

### Touch Panels 600 Advanced Line

- High-performance touch panels with capacitive touch-screens and glass surfaces
- 18 … 54.7 cm (7 … 21.5")
- Models include Control or Visu Panels

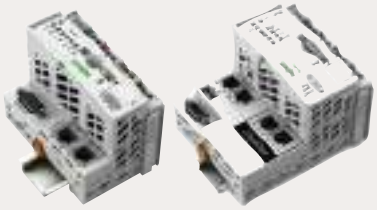
### Touch Panels 600 Marine Line

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

## Controllers

### Controllers PFC100/PFC200

5.1



- 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

5.2

- 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

5.3

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

## I/O Systems

### I/O System Advanced

6

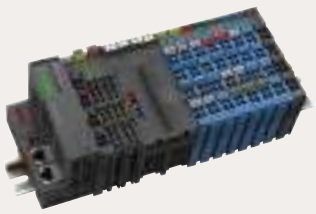
- Open, innovative and future-proof industrial automation
- Short reaction times and high signal transmission synchronicity
- Fast ETHERNET fieldbuses – EtherCAT®

### I/O System – 750 and 753 Series

7

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

### I/O System – 750 XTR Series



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

## Infrastructure

### Industrial Switches

10

- Copper cable
- Fiber optic cable
- Ring redundancy

### Radio Technology

11

- *Bluetooth*®
- WLAN
- EnOcean®

### Sensor/Actuator Boxes

12

- 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")
- Versions include Web Panels for display of CODESYS V2 or *e!COCKPIT* visualizations

3

## Edge Computing

- Versions include Edge Controllers or Edge Computers
- Perfect in-the-field data usage
- Easy cloud connection
- Equipped for high security

4

## Controllers 750 XTR

5.4

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

## Starter Kits

5.5

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 KNX IP
with Touch Panel 600

5

## I/O System Field

9

Automate and network modular machines for the future:
- Ethernet-based fieldbus standards (EtherCAT®, EtherNet/ IPTM, PROFINET)
- Integrated Bluetooth interface (Android/iOS App), OPC UA Server, Webserver
- IO-Link master and devices

## Accessories
## Tools

13

# Solutions

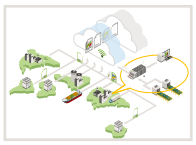
### Cloud Solutions

- "Internet of Things" (IoT) applications

### Software Applications

- Reusable, customizable solutions

# Solutions
## Cloud Solutions, Software Applications



# 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

Digitalization 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 digitalization 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 for plant availability and process optimization.

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

### Scalable Solution Thanks to Our Reliable Partner

With M&M as a member of the WAGO Group, WAGO has a partner for holistically developing industrial and technical software solutions, which also allows customer-specific applications to be implemented. 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 WAGO products. We offer a range of complete industry-specific solutions such as ***flex***ROOM®, that 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 better 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. Start by contacting us, we'll be happy to assist you.

**Your Benefits:**

- Solutions for digitalization
- 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

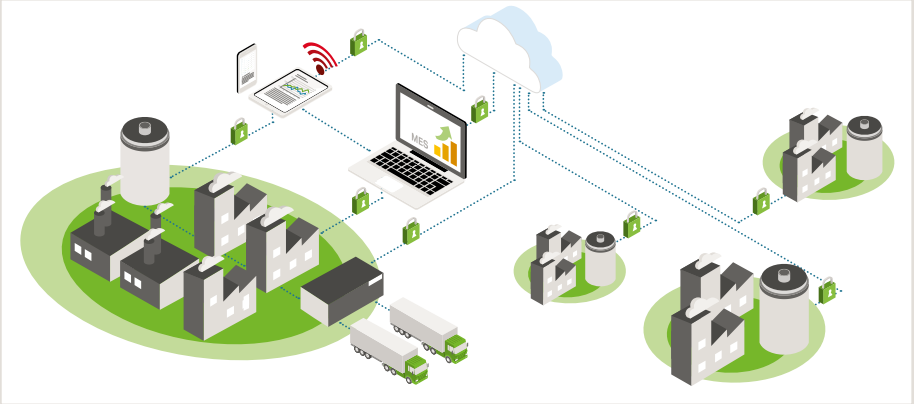
WAGO's universal cloud solutions are suitable for a wide variety of applications. These solutions offer:

**WAGO Cloud:**

- Collecting and saving 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. For our modular energy data acquisition, 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 designing 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

WAGO Cloud lets you collect and centrally manage data from various machines.

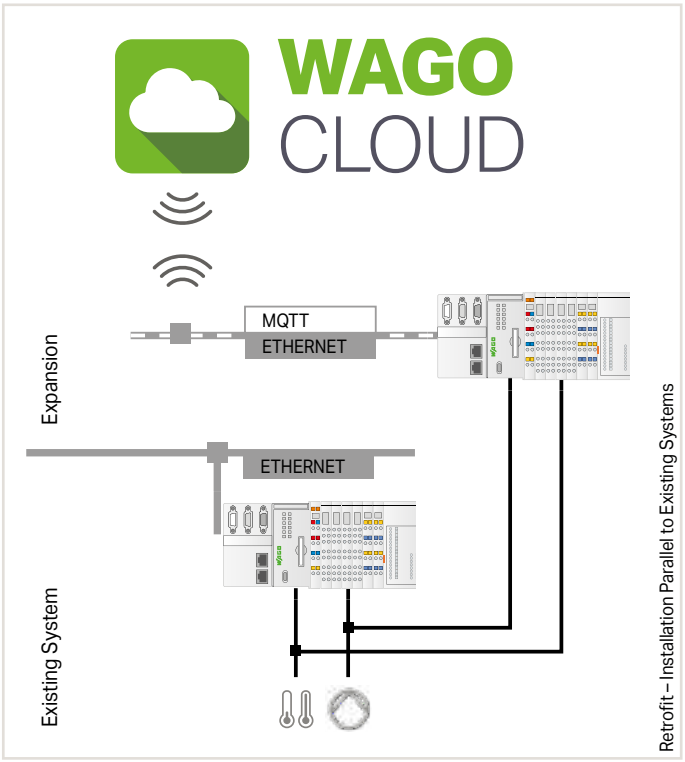
It also allows you to manage and monitor WAGO's controllers along with their data and applications. WAGO Cloud is hosted on Microsoft's Azure Cloud. Combining simplicity with usability, WAGO Cloud was designed so that people without IT experience can use it.

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

### How does machine data get to WAGO Cloud?

A WAGO PFC Controller or Touch Panel acts as a gateway, collecting and sending data to WAGO Cloud. Users log into their user interface on the Web portal, where they can use various applications and access functions like visualizations, controller and user management and 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 and select what data is sent to the cloud? No problem! Configure the WAGO PFC Controller and specify what data to send to the cloud (or not) via IEC programming.





**Illustrations: Data Transfer to WAGO Cloud**
The WAGO PFC Controller acts as a gateway for existing systems that it can easily expand. Various protocols allow the controller to collect and transmit data to the WAGO Cloud via TLS-encrypted MQTT connection. If a new system is installed and the WAGO PFC Controller is used, it can send the data directly to the cloud.

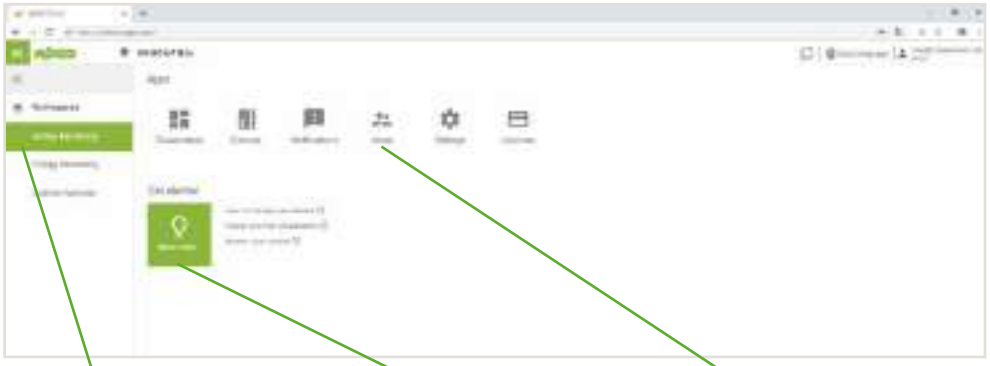
**What advantages does WAGO Cloud offer?**

- **Simplicity**
  **The solution is intuitive thanks to a clear functional range.** Within minutes, you can send data to the cloud, without extensive IT expertise.
- **Flexibility**
  **Customize your cloud solution at any time and from any place.** For instance, you can double your number of controllers from one day to the next without affecting performance and availability. Would you like a special expansion? We offer that as a project service through customized cloud expansions.
- **Everything from a Single Source**
  **Take advantage of the benefits of WAGO Cloud – software as a service.** Save time by leaving the tasks of infrastructure, security platform and application management 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.

**Easy to Use:**

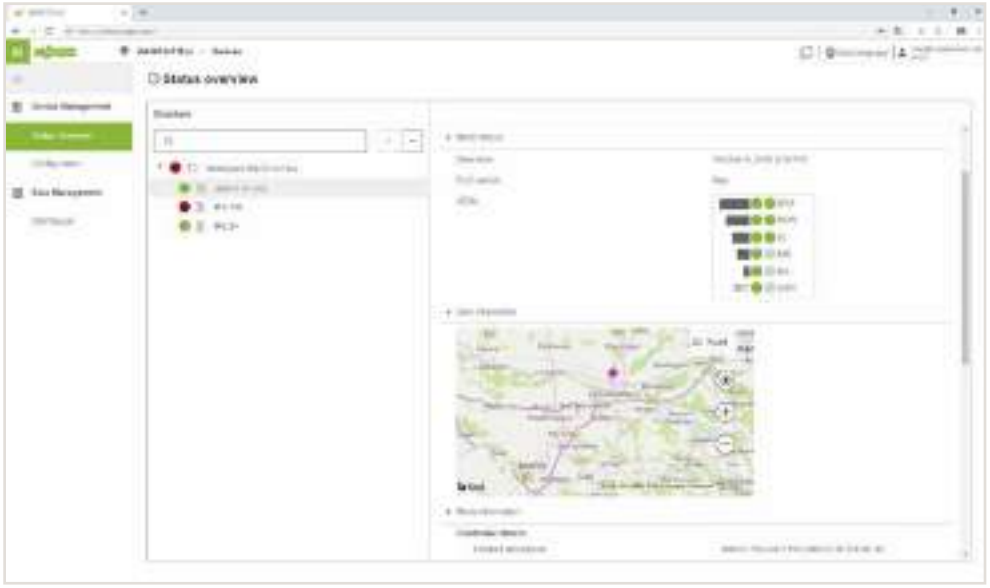
- Let us guide you in creating cloud projects.

**Relevant Functions:**

- Only see the features that you have access to.

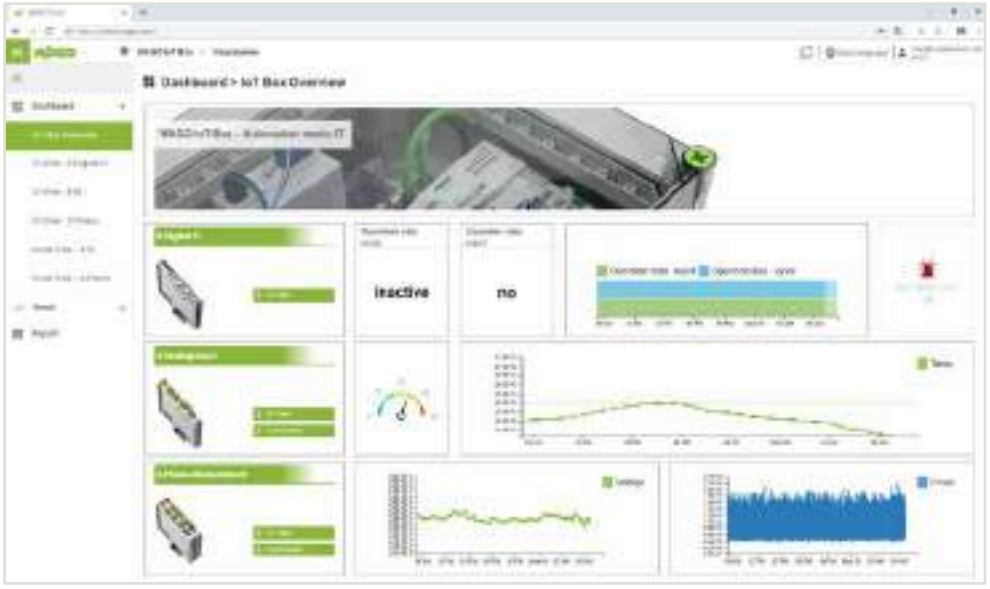
**Controller Status Overview:**

See your connected and disconnected controllers, as well as relevant connection details.



**Dashboard:**

Create your own custom dashboard, use both graphics and trends.



# WAGO Cloud

1

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

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 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?**

Try 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 WAGO's controllers, you can get started in just a few minutes.

After that, you book license 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 license points are almost depleted, you will receive a notice to reload your points account soon.

You can find an overview of the functions we currently offer in the following table. There are various tiers for each individual function – depending on how many components you need – such as the number of connected controllers.

| | | |
|---|---|---|
| | **Trial Period** | • Try WAGO Cloud for free for 30 days (limited test points).<br>• Points account may be exceeded after the trial period. |

| | **Functions** | | |
|---|---|---|---|
| **Data Management** | Data Package | • Connect the WAGO PFC Controller to the cloud.<br>• Transfer data from the controller to the cloud.<br>• Mount devices and data.<br>• Visualize data. | • Basic package, required for using WAGO Cloud<br>• Minimum purchase: 50 license points/month<br>• 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.<br>• Manage your own firmware application catalog.<br>• Replace firmware on the device.<br>• Install application updates. | • 1 license point/update |
| | Remote Visu Access | • Access local configurations and visualizations remotely (diagnostics, monitoring and 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** |

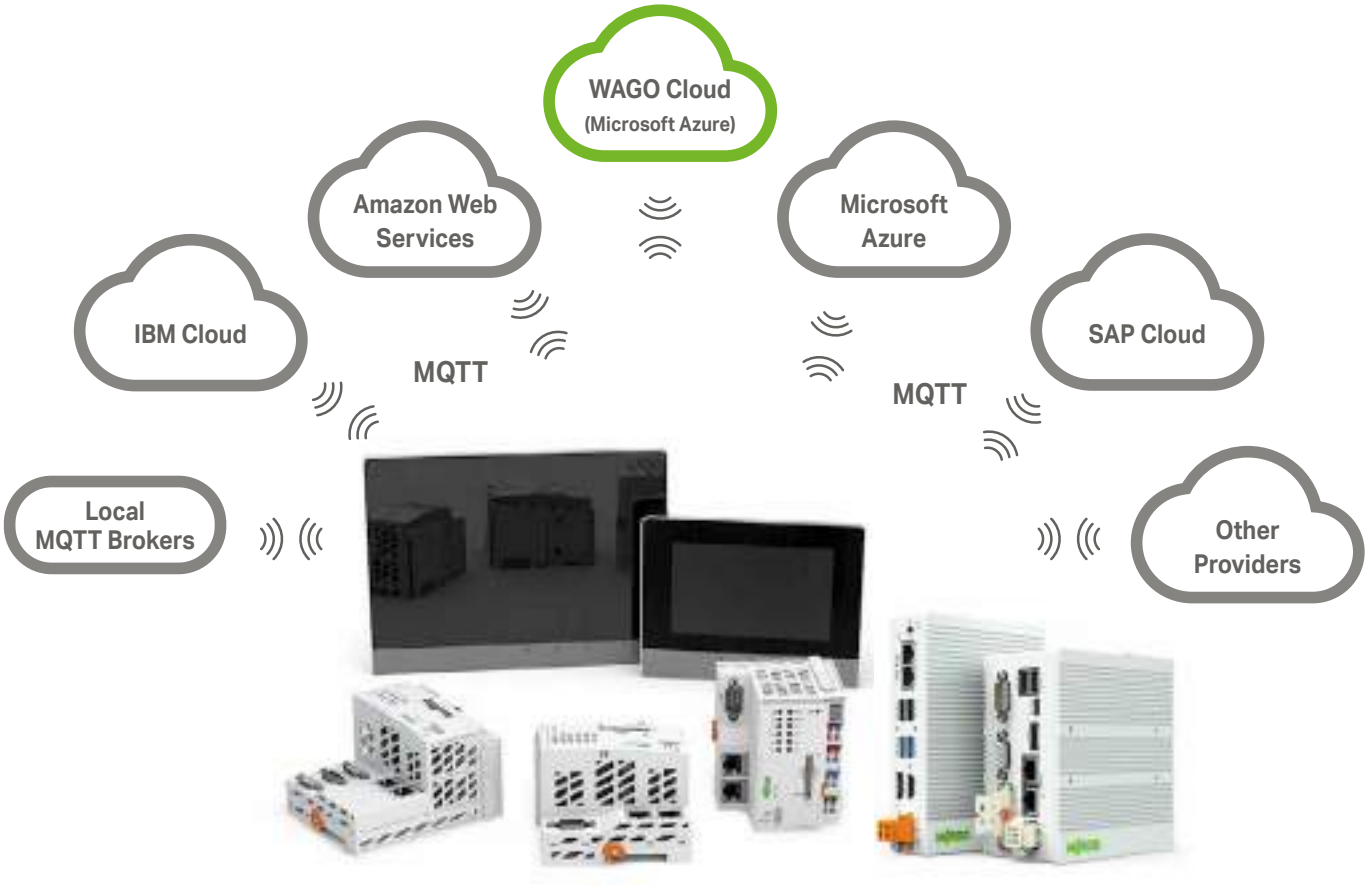
Redeem license points at: https://cloud.wago.com/

# Cloud Connectivity via MQTT

**Recording, digitizing and linking data profitably...**

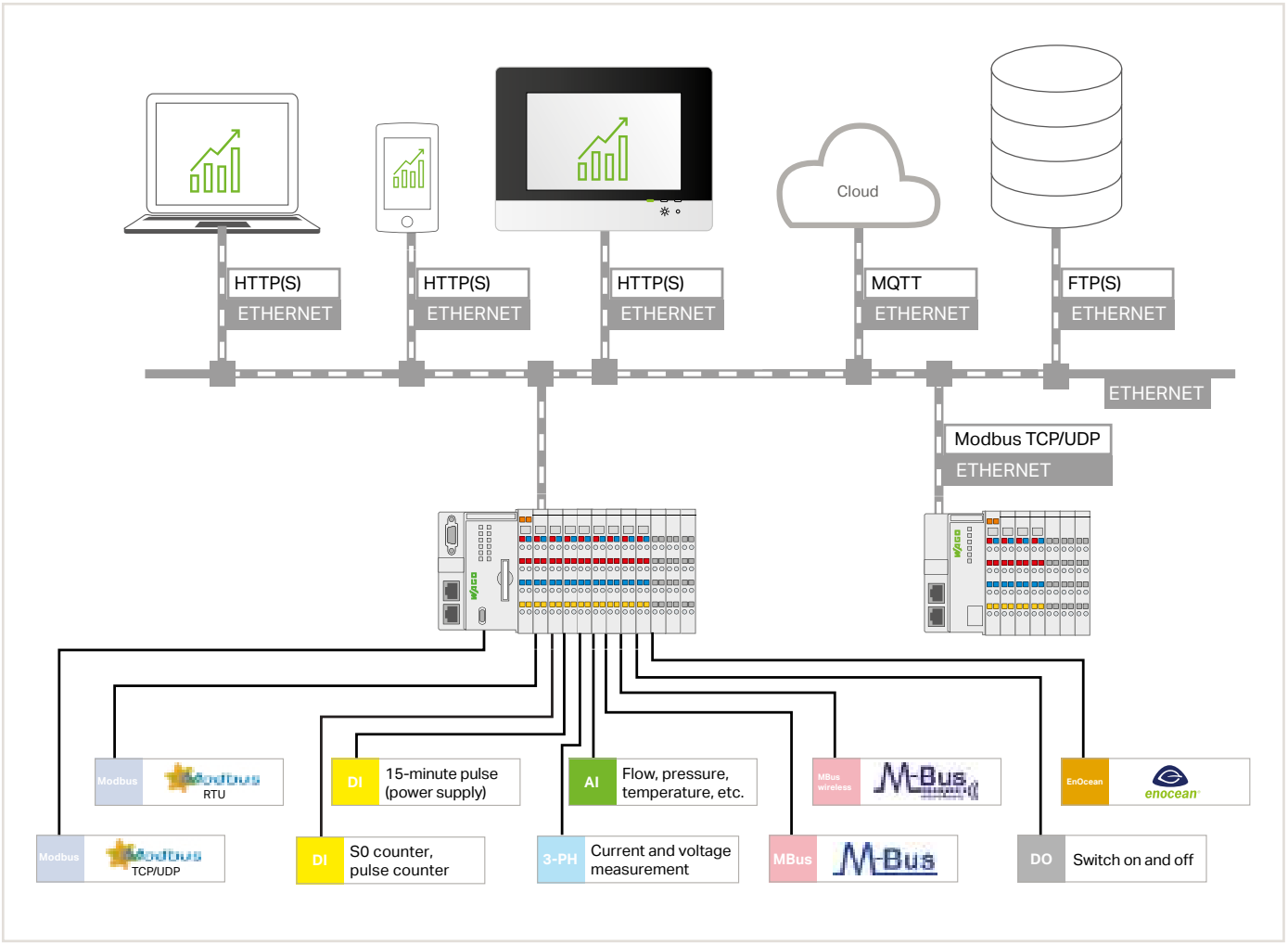
...this is the core concept behind Industry 4.0. Field level connection is established with the open WAGO I/O System 750, 750 XTR or Advanced, and a WAGO PFC Controller or Touch Panel 600 sends data to the cloud or a local MQTT broker. Once in the cloud, data can be aggregated and used for analysis. This capability creates tremendous added value for your company – whether it's 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 future-proof. Communication between PFCs and cloud suppliers is performed via the MQTT protocol and encrypted via TLS 1.2.
Cloud connection data is configured via Web-Based Management (WBM). WAGO *e!COCKPIT* includes appropriate libraries for specifying the variables for transfer to the cloud in the PLC program, allowing the PLC programmer to maintain 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 a wide variety of interfaces, WAGO's controllers also provide the perfect foundation for an IoT gateway.
They can collect numerous field signals, communicate in many industrial protocols and even enable cloud connection of sensors and actuators that themselves have no Web interface. Thanks to the standardized MQTT protocol, it is possible to connect to cloud providers such as Microsoft Azure, Amazon Web Services, IBM Cloud and SAP Cloud. Of course, other MQTT brokers or solutions like WAGO Cloud can also be connected. Cloud connectivity has been a standard feature of the PFC Controllers since firmware version 11; the required library has been included in *e!COCKPIT* since version V1.4. With firmware version V12 and higher, WAGO's Touch Panels 600 supply the connection; from version V1.5 on, *e!COCKPIT* contains the required libraries.




Cloud connectivity is possible with all PFC100 and PFC200 Controllers, Touch Panels 600 and Edge Devices.

# WAGO Energy Data Management




With WAGO's Energy Data Management solution, you can record and visualize your measurement data for different media and influencing variables (as well as the key figures calculated from it) in no time. Continuous acquisition and monitoring provide the basis for resource-efficient energy usage – the environment will thank you, and your operating costs will be minimized. As an added bonus, conformity with DIN EN 50001 for energy evaluation is part of the package.
WAGO Energy Data Management consists of Web-based application software combined with a modular control system. It records measurement data for different media along with influencing variables for energy monitoring – all are processed for additional analysis, archiving and reporting. The software automatically detects different signals from the connected meters and sensors, making them available to additional energy analysis tools via simple parameter settings. This insight guides you in optimizing energy consumption in your building or production facility – either locally or across the globe.

**Your Benefits:**

- Ready to go in a few easy steps
- No programming experience required
- Integrated cloud connectivity

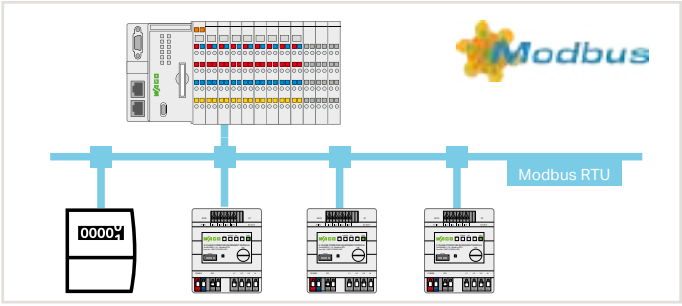
| Item Description | |
|---|---|
| | Item No. |
| **Energy Data Management Application; Single License; Online Activation** | **2759-206/261-1000** |
| **Energy Data Management Visualization; Single License; Online Activation** | **2759-207/271-1000** |
| Compatible Controllers/Touch Panels | |
| Controller PFC200; G2 | **750-821x** |
| Controller PFC200; G2; XTR | **750-821x/000-040** |
| Touch Panel 600 Standard Line; PIO3 | **762-43xx/8000-002** |
| Touch Panel 600 Advanced Line; PIO3 | **762-53xx/8000-002** |

A single license allows installation on one controller/touch panel.
One license per controller/touch panel is required.

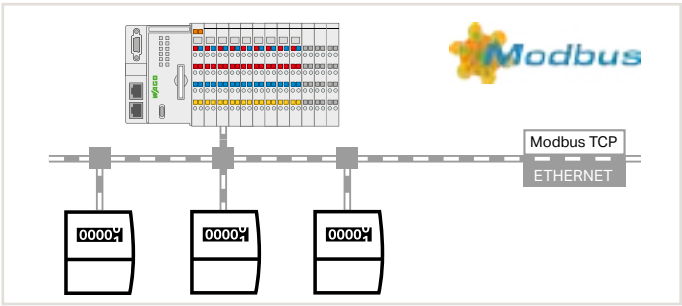
| | |
|---|---|
| Delivery type | License certificate by email (software available for download) |
| Data sheet and additional information, see: | wago.com/2759-206/261-1000<br>wago.com/2759-207/271-1000<br>wago.com/energy-data-management |

The "Energy Data Management" software is a pre-programmed application based on the *e!COCKPIT* Development Environment and can be used for both PFC200 G2 Controllers or Touch Panels 600.

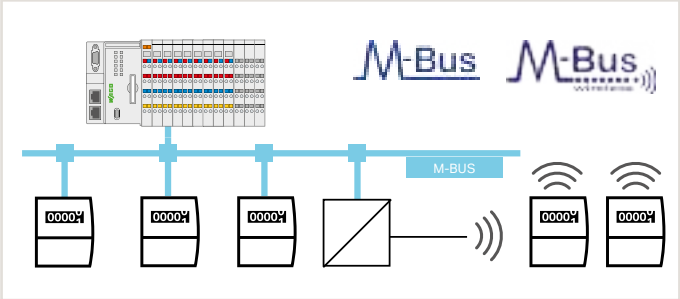
To download the application and license to the device, WAGOupload software is required, which can be obtained free of charge from the WAGO homepage. Internet connection may be required for license activation.



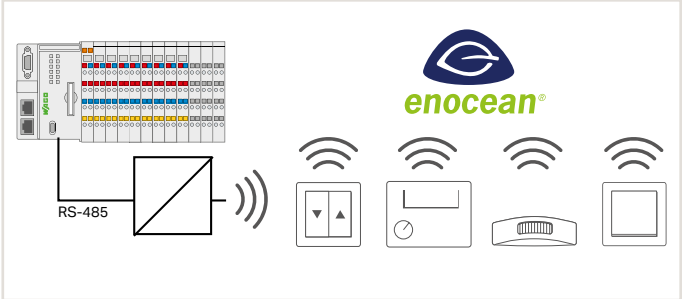

Energy Data Collection with Remote Devices via Modbus RTU




Energy Data Collection with Remote Devices via Modbus TCP




Measured Value Acquisition via M-Bus



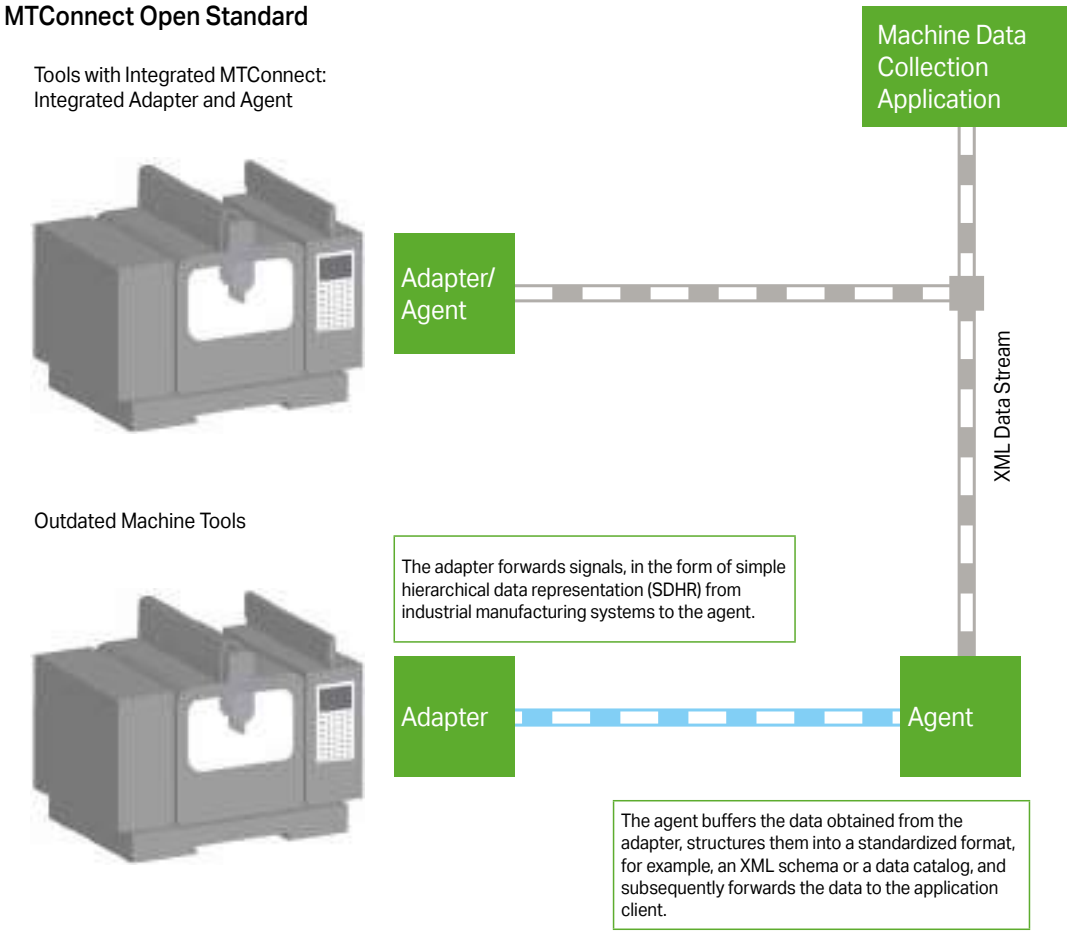

Data Acquisition via EnOcean®

The products listed below are typically used in conjunction with the "Energy Data Management" Application. Detailed information about the products, as well as other variants and accessories, can be found in our Full Line Catalog, Volume 3 or Volume 4.

| Energy Data Management | | |
|---|---|---|
| **Required Products** | **Description** | **Item No.** |
| **Software Licenses** | | |
| WAGO Cloud; 100 license points | Licenses to use WAGO Cloud as a data collector with data visualization; the number of required license points depends on the functions used and the data volume (for details see www.wago.com/cloud). | 2759-1061/651-010 |
| WAGO Cloud; 500 license points | | 2759-1061/651-050 |
| WAGO Cloud; 1000 license points | | 2759-1061/651-100 |
| **Digital I/O Modules** | | |
| 4-Channel Digital Input; 24 VDC; 3 ms | E.g., for recording the PSC effective power pulse | 750-402 |
| 4-Channel Digital Output; 24 VDC; 0.5 A | E.g., for switching outputs when alarm thresholds are reached | 750-504 |
| 8-Channel Digital Output; 24 VDC; 0.5 A | | 750-530 |
| **Analog I/O Modules** | Recording temperature, pressure, flow meters and other analog signals | |
| 8-Channel Analog Input; Resistance Measurement; Adjustable | | 750-451 |
| 8-Channel Analog Input; 0/4 … 20 mA; Single-Ended | | 750-496 |
| 8-Channel Analog Input; 0 … 10 VDC/±10 V; Single-Ended | | 750-497 |
| 2-Channel Analog Input; 0 … 20 mA; Differential Input | | 750-452 |
| 4-Channel Analog Input; Voltage/Current; Differential Input; Electrically Isolated Channels | | 750-471 |
| **Power Measurement Modules** | Power measurement directly connected to the controller | |
| 3-Phase Power Measurement Module; 480 VAC; 1 A | With split-core or plug-in current transformers | 750-494 |
| 3-Phase Power Measurement Module; 690 VAC; 1 A | With split-core or plug-in current transformers | 750-495 |
| 3-Phase Power Measurement Module; 690 VAC; 0.5 A | With split-core or plug-in current transformers | 750-495/000-001 |
| 3-Phase Power Measurement; 690 VAC; RTC | With Rogowski coils | 750-495/000-002 |
| **Communication and Technology Modules** | | |
| M-Bus Master | Reading in separately recorded meter readings via M-Bus | 753-649 |
| RS-232/RS-485 Serial Interface | Reading in data via RS-232 or RS-485 gateways (e.g., EnOcean®) | 750-652 |
| 2-Channel Up/Down Counter; 24 VDC; 16-bit; 500 Hz | Recording S0 and pulse counters | 750-638 |
| **Power Supplies** | | |
| Compact Power Supply; Switched-Mode; 1-Phase | 24 VDC output voltage; 2.5 A output current | 787-1012 |
| Pro 2 Power Supply; 1- or 3-Phase | 24 VDC output voltage; 5 … 40 A output current | 2787-2xxx |
| **Distributed Power Measurement Modules** | For distributed energy acquisition via Modbus RTU | |
| 3-Phase Power Measurement Module; Input: Current Transformer (1 A) | | 2857-570/024-001 |
| 3-Phase Power Measurement Module; Input: Current Transformer (5 A) | | 2857-570/024-005 |
| 3-Phase Power Measurement Module; Input: Rogowski Coil | | 2857-570/024-000 |
| **Gateways** | | |
| STC65-RS-485 EVC EnOcean® Receiver/Sender with RS-485 EVC Interface | Gateway for the acquisition of EnOcean® signals | 2852-7101 |
| WLAN ETHERNET Gateway; 2.4 GHz | Gateway for creating wireless ETHERNET connections | 758-916 |

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






WAGO offers an economical solution for integrating the machine data of existing systems into higher-level analytic software applications.
WAGO's DigitalTAP™ 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, license-free MTConnect® standard, the machine information is formatted in a standardized table and uses proven Internet protocols for 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/applica-tioncontroller |
| Supported Modules | Digital Input/Output 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 Input 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 |

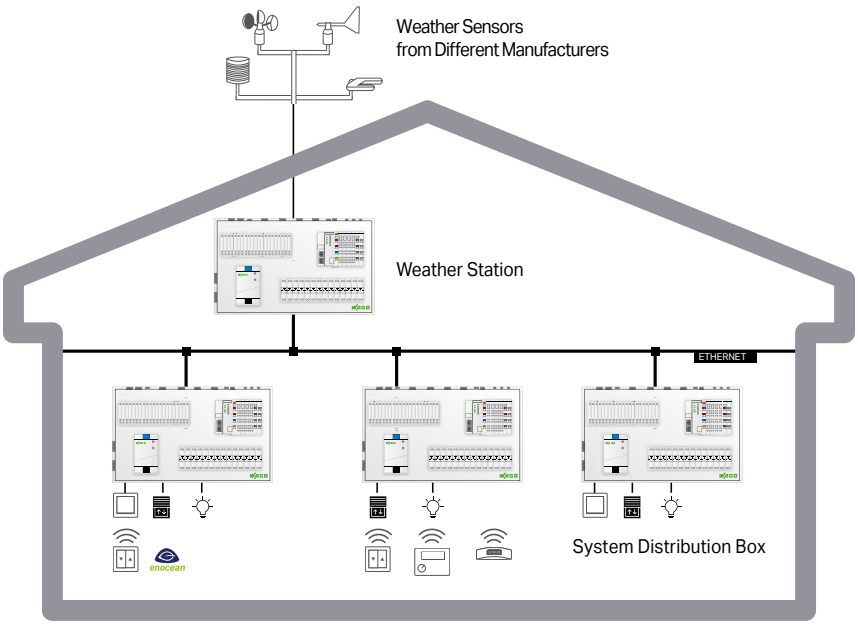
750-8101/000-010

## MTConnect

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

# WAGO *flex*ROOM® Application
## A Flexible Room Solution






### Our Solution

Planning, commissioning and building operation must demonstrate maximum efficiency and a high degree of adaptability. Pre-configured programs and pre-defined hardware significantly streamline planning and commissioning. The more applications created within a project, the greater the benefit. Flexible building operation (e.g., conversions and room remodeling) via special maintenance programs eliminates external service costs because the user can make their own changes.
Install, commission and configure according to project specifications – WAGO ***flex***ROOM® combines these strengths into a standard module. The integrated control unit and application software are precisely tailored to room requirements.

### Parameter Setting

For each room, parameters can be individually stored for lighting, shading and room control. All parameters are cyclically saved either directly in the distribution box or on a separate computer via network connection. A higher-level management station accesses the distribution box parameters via the open Modbus TCP/IP protocol. This ensures that all modifications can be implemented on site or via the management station. BACnet or KNX IP systems can also be connected via Modbus TCP/IP.

### Configuring – Not Programming

Each WAGO ***flex***ROOM® Distribution Box has a Web interface. Both the commissioning technician and end user can configure the controls for each room via Web browser, regardless of the user's location and the distribution box in use. Complete wall relocations, room assignments, lighting and shading groups can be changed from the parameter interface. No additional software is required.

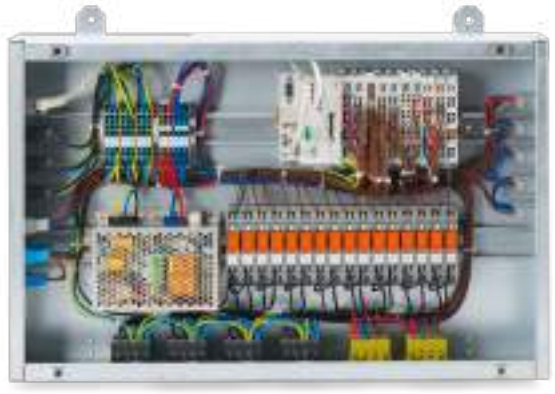

| Item Description | |
|---|---|
| | Item No. |
| ***flex***ROOM Application; Single License; Online Activation | 2759-2110/261-1000 |
| Weather Station Application; Single License; Online Activation | 2759-241/261-1000 |
| Compatible Controller | |
| Controller PFC200; G2; 2ETH RS | 750-8212 |

A single license allows installation on one controller.
One license per controller is required.

| | |
|---|---|
| Delivery type | License certificate by email (software available for download) |
| Data sheet and additional information, see: | wago.com/2759-2110/261-1000<br>wago.com/2759-241/261-1000<br>wago.com/room-automation |

The "***flex***ROOM" or "Weather Station" software is a pre-programmed application based on the ***e!****COCKPIT* Development Environment and can be used for PFC200 G2 Controllers.

To download the application and the license to the device, the WAGOupload software is required, which can be obtained free of charge from the WAGO homepage. Internet connection may be required for license activation.



**Benefits:**

The distribution box is delivered ready to operate and can be installed directly in a suspended ceiling or a sub-floor. Room segment configuration is performed directly in the distribution box via standard Web browser. No expert knowledge is required to configure rooms or convert them later. Several ***flex***ROOM® Distribution Boxes can be wired into a building automation network via ETHERNET to automate a building area, a floor or an entire office section. A standard Web browser also establishes communication between the distribution boxes. If electrical distribution boxes are present, ***flex***ROOM® components can also be installed or retrofitted during facility renovation. Space conversion costs are reduced with ***flex***ROOM® because expenses are transparent and predictable.

| Number of Room Segments | Subsystems (support for other subsystems upon request) | | | | Office Areas (Segments) | | | | | Special Areas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Inputs | | Outputs | | | Inputs | | | Outputs | | |
| | DALI | SMI | EnOcean | KNX | Multi-sensors (conventional) | Dew point detectors | Lighting (DALI) | Sun protection (SMI) | Heating/cooling | Light switches | Sunblind switches | Dew point detectors | Lighting (relays) | Sun protection (relays) | Heating/cooling |
| 8 segments | x | x | x | x | x | 8 | x | x | 8 | - | - | - | - | - | - |
| 8 segments and 4 special areas | x | x | x | x | x | 8 | x | x | 8 | 8 | 4 | 4 | 4 | 4 | 4 |
| 16 segments | x | x | x | x | x | 16 | x | x | 16 | - | - | - | - | - | - |
| 16 segments and 4 special areas | x | x | x | x | x | 16 | x | x | 16 | 8 | 4 | 4 | 4 | 4 | 4 |
| 24 segments | x | x | x | x | x | 24 | x | x | 24 | - | - | - | - | - | - |
| 24 segments and 8 special areas | x | x | x | x | x | 24 | x | x | 24 | 16 | 8 | 8 | 8 | 8 | 8 |

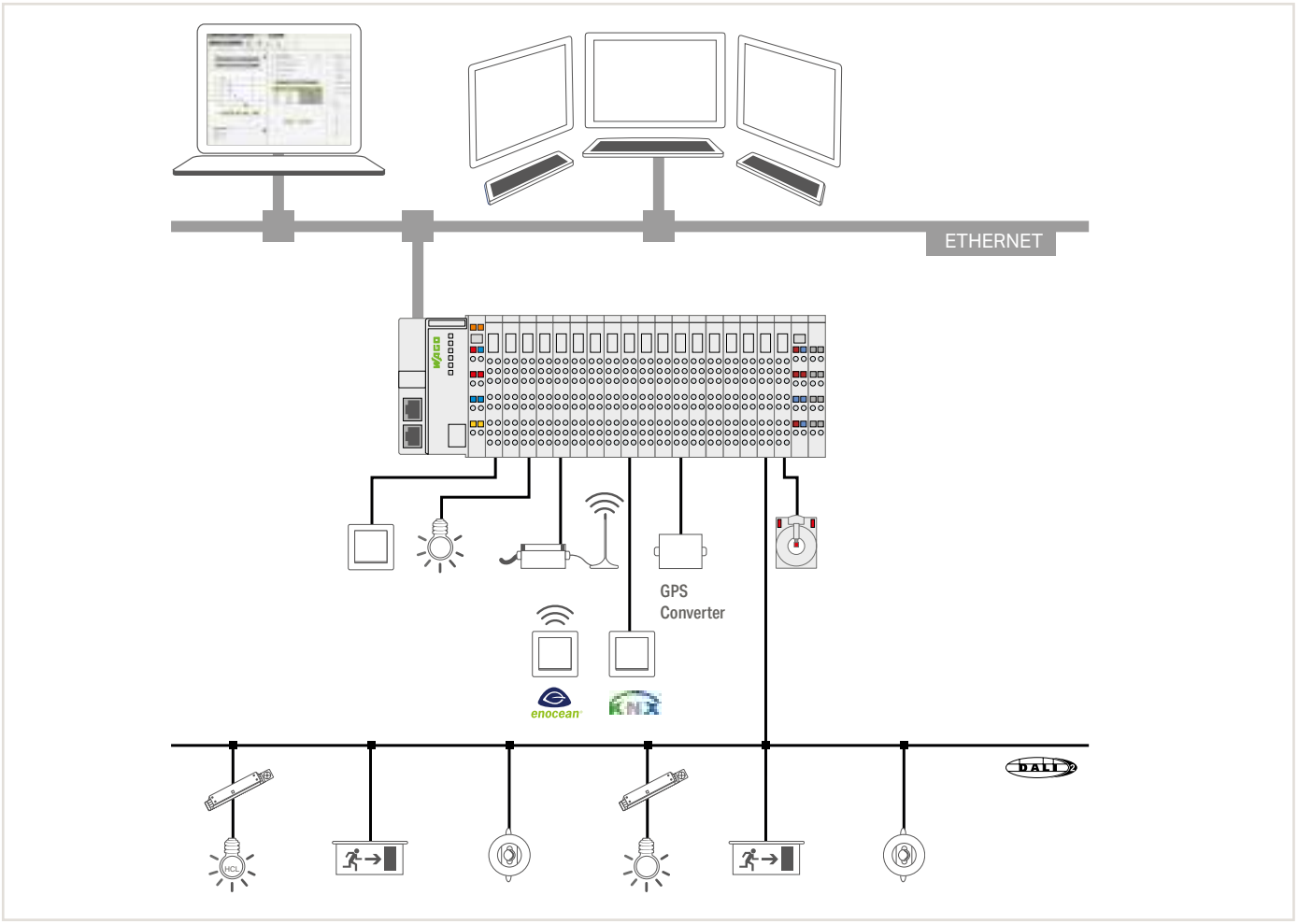
Note: The table displays only a portion of the different ***flex***ROOM® Distribution Box versions that are available. For more information, please visit www.flexROOM.com.

The products listed below are typically used in conjunction with the "***flex***ROOM" Application. Detailed information about the products, as well as other variants and accessories, can be found in our Full Line Catalog, Volume 3 or Volume 4.

| ***flex***ROOM® Application | | |
|---|---|---|
| **Required Products** | **Description** | **Item No.** |
| **I/O System** | | |
| Serial Interface Module RS-232/RS-485 | Connects to devices with a serial interface (e.g., weather sensors, EnOcean receivers) | 750-652 |
| End Module | Properly terminates the I/O bus | 750-600 |
| Power Supply 24 VDC, 2.5 A | Supplies both controllers and modules | 787-1012 |
| **I/O Modules** | | |
| Digital Input Modules | Connect to push-buttons, switches and sensors with a potential-free contact | 75x-4xx, 750-14xx |
| Digital Output Modules | Connect to digital actuators and relays | 75x-5xx, 750-15xx |
| Relay Module | For lamp loads | 788-354 |
| Relay Module | For sunblind actuators | 788-304 |
| Analog Input Modules | Connect to sensors with analog output signal (0 ... 10 V) | 75x-4xx |
| Analog Output Modules | Connect to actuators with analog control signal (0 ... 10 V) | 750-5xx |
| **DALI** | | |
| DALI Multi-Master Module | Connects to a maximum of 64 DALI actuators (ECGs) and a maximum of 16 DALI multi-sensors (max. 64 sensor addresses) | 753-647 |
| DALI Multi-Master DC/DC Converter | Supplies (24 VDC/18 VDC) one DALI Multi-Master Module | 753-620 |
| Power Supply to DALI Multi-Master | Supplies a maximum of five DALI Multi-Master Modules | 787-1007 |
| DALI-2 Certified Sensors and other DALI Sensors | DALI compatibility list available at www.wago.com/room-automation | |
| **SMI** | | |
| SMI Master | Connects to a maximum of 16 SMI drives (230 VAC) | 753-1630 |
| SMI Master LoVo | Connects to a maximum of 16 SMI low-voltage drives (24 VDC) | 753-1631 |
| **EnOcean** | | |
| EnOcean Receiver | Receiver with serial interface for EnOcean switches, sensors and room control units | 2852-7101 |
| EnOcean Repeater | Improves coverage – further information on planning can be found at www.enocean.com | 2852-7102 |
| EnOcean Light Push-Button (2 Channels) | For one light circuit | 758-940/001-000 |
| EnOcean Light Push-Button (4 Channels) | For two light circuits | 758-940/003-000 |
| EnOcean Sunblind Button (2 Channels) | For one blind | 758-940/002-000 |
| EnOcean Sunblind Button (4 Channels) | For two blinds | 758-940/004-000 |
| EnOcean Room Control Unit, SR04 P | With integrated temperature sensor and rotary wheel for setpoint correction, for surface mounting | 2852-7112 |
| EnOcean Room Control Unit with LCD, SR06-LCD | With integrated temperature sensor and buttons for setpoint correction, for 55 x 55 switch programs | 2852-7113 |
| **KNX** | | |
| KNX TP1 Module | Connects to KNX TP1 components (e.g., room control units and buttons) | 753-646 |

# WAGO Lighting Management Application






WAGO Lighting Management is a proven solution based on predefined hardware and preconfigured software, which greatly simplifies planning, commissioning and operation.
The basic idea: WAGO Lighting Management is ready for the vastly different light requirements of 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. Virtual rooms allow both conversions and remodeling to be implemented quickly and simply via Web configuration.
A separate HTML5 user interface is available for convenient and intuitive operation of WAGO Lighting Management. Operation is optimized for display on different end devices, such as tablets, smartphones and touch panels.

| Item Description | | |
|---|---|---|
| | | Item No. |
| **Lighting Management Application; Single License; Online Activation** | | **2759-204/261-1000** |
| **Lighting Management Visualization; Single License; Online Activation** | | |
| Visualization – S | 1 controller | **2759-2101/271-1000** |
| Visualization – M | up to 3 controllers | **2759-2102/271-1000** |
| Visualization – L | up to 10 controllers | **2759-2103/271-1000** |
| Compatible Controllers/Touch Panels | | |
| Controller PFC200; G2; 2ETH RS | | **750-8212** |
| Touch Panel 600 Advanced Line; PIO3 | | **762-53xx/8000-002** |

A single license allows installation on one controller/touch panel.
One license per controller/touch panel is required.

| | |
|---|---|
| Delivery type | License certificate by email (software available for download) |
| Data sheet and additional information, see: | wago.com/2759-204/261-1000<br>wago.com/2759-210x/271-1000<br>wago.com/lighting-management |

The "Lighting Management" software is a pre-programmed application based on the *e!COCKPIT* Development Environment and can be used for both PFC200 G2 Controllers or Touch Panels 600.

To download the application and the license to the device, the WAGOupload software is required, which can be obtained free of charge from the WAGO homepage. Internet connection may be required for license activation.

The products listed below are typically used in conjunction with the "Lighting Management" Application. Detailed information about the products, as well as other variants and accessories, can be found in our Full Line Catalog, Volume 3 or Volume 4.

| Lighting Management Application | | |
|---|---|---|
| **Required Products** | **Description** | **Item No.** |
| **Base Unit** | | |
| DALI Multi-Master | 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. | 753-647 |
| End Module | An end module must be snapped onto the assembly at the end of a fieldbus node. | 750-600 |
| Power Supply to I/O Node | 24 VDC power supply to controllers and additional modules | 787-1012 |
| Power Supply to DALI Multi-Master | Supplies a maximum of five DALI Multi-Master modules | 787-1007 |
| **Extension for Inputs/Buttons** | | |
| 16-Channel Digital Input; 24 VDC; 3 ms | For 1...16 light button/switch inputs; max. 4 extensions per base package | 750-1405 |
| **Extension for Outputs/Actuators** | | |
| 16-Channel Digital Output; 24 VDC; 0.5 A | For 1 … 16 actuators/lamps/relays/ECG control; max. 2 extensions per base package | 750-1504 |
| Socket with Relay and Status Indicator; 1 Make Contact; 24 VDC | Light switching via relay | 788-357 |
| **Extension for EnOcean Radio** | | |
| RS-232/-485 Serial Interface | Serial interface connects to STC65-RS-485 EVC EnOcean Radio Transmitter/Receiver (for 1 … 64 rocker switches) | 750-652 |
| EnOcean Receiver/Transmitter | Receives EnOcean radio signals and transmits them to the I/O node | 2852-7101 |
| EnOcean Repeater | Extends the transmission range (for more planning information, visit the EnOcean website) | 2852-7102 |
| Radio Transmitter; EnOcean easyfit PTM 250; 2-Channel Lighting Control | 1 … 2 or 1 … 4 signals; range of 30 meters from the radio receiver in buildings | 758-940/001-000 |
| Radio Transmitter; EnOcean easyfit PTM 250; 4-Channel Lighting Control | | 758-940/003-000 |
| **Extension for External Time Request** | | |
| Real-Time Clock Module | Time synchronization module, if no time server connection is possible | 750-640 |
| GPS DCF Converter | Converter/external receiver for time synchronization | 2852-7901 |
| **Extension for Energy Data Measurement** | | |
| 3-Phase Power Measurement; 690 VAC | The 3-Phase Power Measurement Module (750-495) measures electrical data in a three-phase supply network. | 750-495/xxx-xxx |
| Current and Voltage Connections | Pre-assembled terminal block assemblies for easy connection and short-circuiting of current transformers (for current transformers, see Full Line Catalog, Volume 4) | 2007-8874; 2007-8877 |
| **Extension for KNX Buttons** | | |
| KNX/EIB/TP1 Interface | Connects KNX buttons to the I/O node; max. 1 module per base package | 753-646 |
| **Extension for Sensors (DALI-2)** | | |
| DALI Sensor; PD11-BMS-FLAT | LOW BAY Sensor for offices (2 … 5 m) | 2852-7210 |
| DALI Sensor; PD4-BMS-GH | HIGH BAY Sensor for warehouses (5 … 16 m) | 2852-7213 |
| DALI Sensor; PD4N-BMS | MID BAY Sensor for open-plan offices, underground garages, entrance halls, production facilities (2 … 10 m) | 2852-7214 |
| Adapter; AP Assembly Kit IP54; Accessories for 2852-7214 | Accessories for surface mounting of the PD4N-BMS (B.E.G.) | 2852-7215 |
| DALI Sensor; MSensor G3 SRC 30 PIR 5DPI WH | LOW BAY Sensor for offices (up to 5 m) | 2852-7220 |
| DALI Sensor; MSensor G3 SSM 30 10DPI WH | MID BAY Sensor for high-ceiling rooms (up to 10 m) | 2852-7221 |
| DALI Sensor; IR Quattro HD DALI-2 | LOW/MID BAY Sensor for offices (2.5 … 10 m) | 2852-7230 |
| DALI Sensor; IR Quattro SLIM XS DALI-2 | LOW BAY Sensor for offices, slim design (2.5 … 4 m) | 2852-7231 |
| DALI Sensor; IS3360 MX HIGH BAY DALI-2 | HIGH BAY Sensor for industrial buildings, circular detection range (4 … 14 m) | 2852-7232 |
| DALI Sensor; IS345 MX HIGH BAY DALI-2 | HIGH BAY Sensor for industrial buildings, rectangular detection range (4 … 14 m) | 2852-7233 |
| DALI XC G3 (DALI-2) | Push-button coupler connects 4 conventional push-buttons to DALI | 2852-7225 |
| **DALI Sensors** | | |
| DALI Multi-Sensor Kit | Brightness measurement and motion sensor: Kit connects to a DALI bus system | 2851-8201 |
| DALI Sensor Coupler | Sensor coupler connects MULTI-3-CI Sensors to DALI (max. 16 DALI Sensor Couplers per 753-647 DALI Multi-Master) | 2851-8202 |
| DALI HIGHBAY ADAPTER + HIGH BAY | Brightness measurement and motion sensor for large installation heights (3 … 13 m) | 2852-7207, 2852-7201 |
| DALI HIGHBAY ADAPTER + VISION | Motion sensor for large areas, open offices, hallways or warehouses | 2852-7207, 2852-7202 |
| DALI LS/PD LI | Motion sensor for office lighting (1 … 5 m) | 2852-7203 |
| DALI Sensor Coupler HF LS LI + | Light and recessed ceiling sensor: combined daylight and motion detection, motion detection via radar | 2852-7205 |
| Radar Sensor HF LS LI | | 2852-7206 |
| 4p4c Connection Cable, 50 cm | | 2852-7208 |
| DALI XC | Push-button coupler connects 4 conventional push-buttons to DALI | 2852-7301 |
| DALI Sensor Coupler E | Sensor coupler connects standard sensors to DALI | 2852-7204 |

# Module Type Package (MTP)

1

Modular systems are becoming increasingly common in manufacturing and process engineering. Fluctuating quantities and highly specialized products require efficient production in small quantities. In other industries (e.g., shipbuilding), modular systems are used where simple integration into higher-level systems for a dedicated task is the key to success.

The following requirements must be met:
- Rapid creation of new systems by reusing ready-made modules
- Simple adaptation of existing systems to changing operating conditions (plug & produce)
  - E.g., product change – requires other modules
  - E.g., capacity change – requires more or less modules of the same type
  - E.g., maintenance/repair – requires module replacement
- Interface standardization

**Solution: MTP**

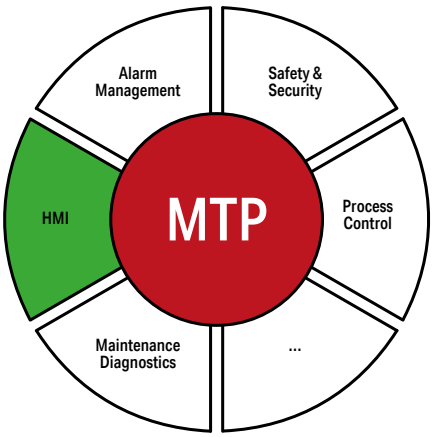
With the Module Type Package (MTP), properties of process modules are functionally described – regardless of manufacturer and technology. The self-contained modules, which can come from different manufacturers, are easily reused and interconnected into complex overall systems with little effort. Functionalities encapsulated within the modules reduce dependencies among each other, ensuring largely interference-free behaviors.

An MTP includes the following information:
- Description of the data objects
- Description of the control image
- In the future: Description of services, etc.

This description file can be read in and processed by higher-level systems, such as visualization or process control systems, called "Process Orchestration Layer" (POL) in the following. Based on this information:
- the variable lists/process control points can be displayed and, if necessary, input options are offered
- the pictures can be interpreted and displayed in their respective style.

Processes can be modified without much engineering effort and production quantities can be easily adapted by adding or removing modules.

The VDI/VDE/NAMUR 2658 standard adopted jointly by NAMUR, ZVEI and VDMA addresses these requirements. It makes it possible to meet the increasing requirements of digitalization within Industry 4.0 by defining how to describe system modules and how to integrate these into the process control technology of the entire system in a standardized manner.




**Your Benefits:**

- Simple integration of system modules into control and visualization systems
- Dynamic adaptation without extensive engineering
- Uniform look and feel – even with modules from different manufacturers

| Item Description | |
|---|---|
| ***e!COCKPIT* MTP; Single License; Online Activation** | **Item No.** |
| *e!COCKPIT* add-on license for generating MTPs, single license per PC | 2759-120/1121-1000 |
| **Library MTP; Single License; Online Activation** | |
| Library license to easily create programs for modules to be exported as MTP; single license per controller/touch panel | 2759-208/211-1000 |
| Compatible Controllers/Touch Panels | |
| Controller PFC200; G2 | 750-821x |
| Controller PFC200; G2; XTR | 750-821x/000-040 |
| Touch Panel 600 Standard Line* | 762-4xxx/xxx-xxx |
| Touch Panel 600 Advanced Line* | 762-5xxx/xxx-xxx |
| Touch Panel 600 Marine Line* | 762-6xxx/xxx-xxx |

Depending on the factory license, the following additional license may be required:
*e!RUNTIME*; IEC-61131 Runtime Environment; 600

| | |
|---|---|
| Minimum *e!COCKPIT* version | V1.6 |
| Delivery type | License certificate by email (software available for download) |
| Data sheet and additional information, see: | wago.com/2759-120/1121-1000<br>wago.com/2759-208/211-1000 |

An Internet connection to the PC that's equipped with *e!COCKPIT* may be required for license activation.

The simple creation of the MTP at the touch of a button requires the use of a licensed library per controller. Additionally, an engineering add-on license is required for each PC. The software is available online for download via *e!COCKPIT*, or alternatively via the download area of the WAGO homepage.

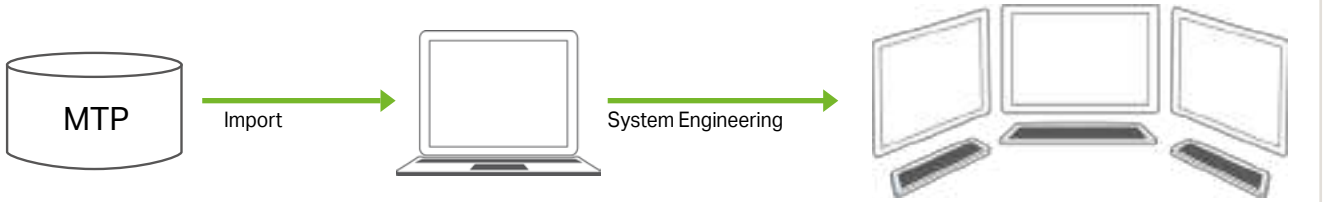
**The engineering of a system modeled with MTP occurs in two steps:**

**1. Module engineering (project-independent)**

- Defining information technology interfaces (process control points)
- Creating the control logic
- Creating the control images


**2. System engineering (project-related)**

- Integration of the modules into the POL
- Parameterization of the modules
- Network engineering
- Coordination and procedure control of the modules among themselves (orchestration)




WAGO offers a complete automation system consisting of a modular control system with I/O modules for almost every signal, a touch panel portfolio and a matching engineering system. With the WAGO Library MTP, it is possible to automate modules, and with ***e!****COCKPIT* and an additional add-on at the push of a button, the MTP module description can be easily integrated into a wide variety of visualization and control systems.

The following products are typically used in conjunction with the Module Type Package (MTP) solution. Detailed information about the products, as well as other variants and accessories, can be found in our Full Line Catalog, Volume 3 or Volume 4.

| Module Type Package (MTP) | | |
|---|---|---|
| **Required Products** | **Description** | **Item No.** |
| **Software Licenses** | | |
| *e!COCKPIT* | Engineering software license for programming both controllers and touch panels; different license forms | 2759-101/1110-xxxx |
| *e!RUNTIME*; **IEC-61131 Runtime Environment; 600** | License to upgrade a touch panel (hardware version PIO2) to a control panel | 2759-216/211-1000 |
| **Power Supplies** | | |
| Compact Power Supply; Switched-Mode; 1-Phase | 24 VDC output voltage; 2.5 A output current | 787-1012 |
| Pro 2 Power Supply; 1- or 3-Phase | 24 VDC output voltage; 5 … 40 A output current | 2787-2xxx |

xx is a placeholder for the exact item number. A detailed overview can be found in our current Full Line Catalog, Volume 3 or Volume 4.

# Controller Redundancy Master Library

1

**Description:**
Increase availability in central ship alarm systems with WAGO's Application-Based Controller Redundancy (ACR).
The licensed software library (2759-245/211-1000) and an ***e!COCKPIT*** redundancy framework allows you to easily program and operate redundant master PLCs in single point of failure (SPOF) tolerant systems.
A large number of the available 750 Series I/O Modules can be integrated into the system via Smart Couplers. These decentralized PLCs automatically recognize the input and output modules, which makes commissioning easy. The redundant communication of the two Master PLCs and the Smart Couplers is performed either via two separate networks (Dual-LAN) or a ring topology.
These Master PLCs (2nd generation PFC200) communicates with higher-level SCADA systems, for example, via the Modbus TCP protocol.
The application notes (a2020003 and a2020004) describe the practical use of the library and define the application area and the maximum number of participants within the system.

**Benefits:**
- Easy commissioning of the entire system with WAGO's standard hardware
- Simple/slow control loops can be mapped (Alarm & Monitoring, Data Acquisition, Slow Running Processes)
- Low switchover time (per marine classification society requirements)
- Use of complex modules such as HART or DALI

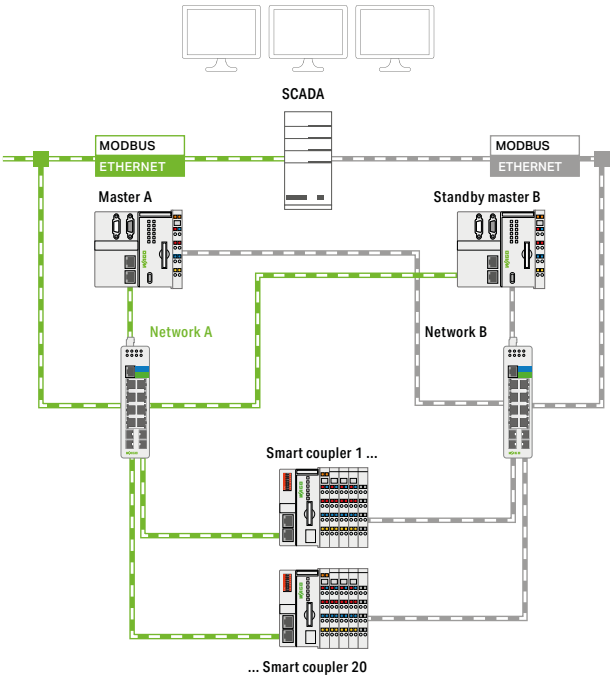
**Benefits:**
- With the application redundancy concept, WAGO provides you with a redundant framework for simple and economical system integration in ship technology.
- You save engineering effort and can focus on your application.

Licensing:
To use the "WagoAppRedundancyMaster.library," a "Controller Redundancy Master Library" license (2759-245/211-1000) must be purchased for each Master PLC. An SD card image in the redundancy framework is available for the Smart Couplers.

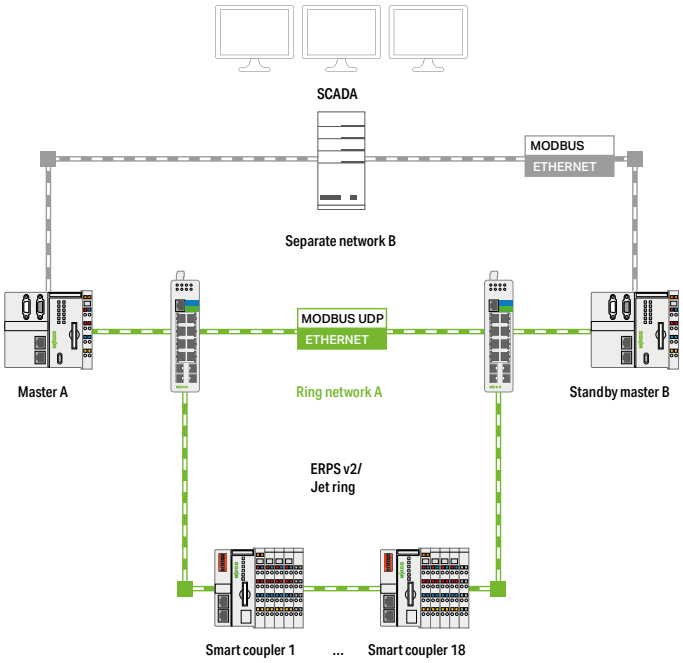
Use:
Enter the "Controller Redundancy Master Library" license into ***e!COCKPIT***, assign it to a device and load both the license and project into the device. No other steps are required.

Note:
Register here to download the redundancy framework and test ACR free of charge for 30 days.

**Controller Redundancy in the DUAL LAN**




**Controller Redundancy in the SINGLE LAN**

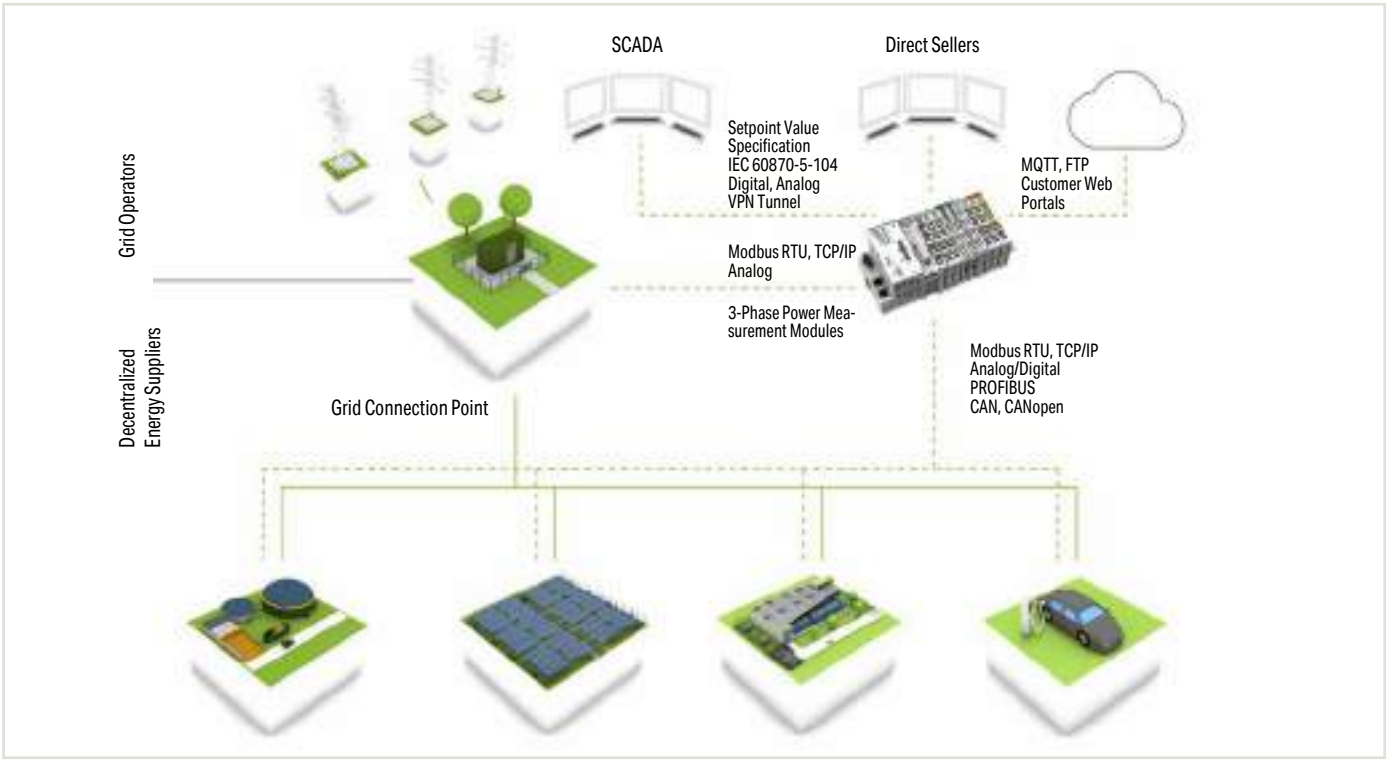



| Item Description | |
|---|---|
| **Controller Redundancy Master Library** | **Item No.** |
| Single License; Online Activation | 2759-245/211-1000 |
| **Recommended Controller** | |
| PFC200; G2; 2ETH RS | 750-8212 |

| | |
|---|---|
| Delivery type | License certificate by email (software available for download) |
| Data sheet and additional information, see: | wago.com/2759-245/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one computer.

# WAGO Power Plant Control Library




The WAGO Power Plant Control Library is an ***e!COCKPIT*** library with a control algorithm for the active and/or reactive power in energy generation plants.

The control algorithm for active and/or reactive power and corresponding setpoint specifications required by the operator can be adjusted during operation per IEC 60870 by, e.g., telecontrol technology.
The controller compares the specified setpoint values with the actual values measured at the network connection point and provides the calculated correction variables for the energy generation plant.

This library can be used on second-generation PFC200 Controllers and is certified per VDE-AR-N 4110 or 4120.

The library can be used for a 30 day trial period at no cost, after which a license for the respective controller is required.
The license can be separately purchased under Item Number 2759-203/211-1000.

**Functions:**

- Pfix, Qfix: Fixed active/reactive power specifications
- P(f): Frequency-dependent active power regulation
- P(Uoff): Active power ramp – restart after network failure
- Q(P): Reactive power control per active power characteristic
- Q(U): Reactive power control per voltage characteristic
- Q(Udb): Reactive power control per voltage characteristic with voltage limiting function
- cosφfix: Fixed displacement factor specification
- PSM, QSM: Slave mode, looping through the external active/reactive power specifications

| Item Description | |
|---|---|
| **WAGO Power Plant Control Library** | **Item No.** |
| Single License; Online Activation | **2759-203/211-1000** |
| Compatible Controllers | |
| Controller PFC200; G2; 2ETH RS; Tele; T | **750-8212/025-001** |
| Controller PFC200; G2; 2ETH RS; Tele; T; ECO | **750-8212/025-002** |
| Controller PFC200; G2; 2ETH RS CAN DPS; Tele; T | **750-8216/025-001** |

A single license allows installation on one controller.
One license per controller is required.

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.6 |
| Certification | VDE-AR-N 4110 / 4120 |
| Delivery type | License certificate per email |
| Data sheet and additional information, see: | wago.com/2759-203/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.

# WAGO Gateway Application

1

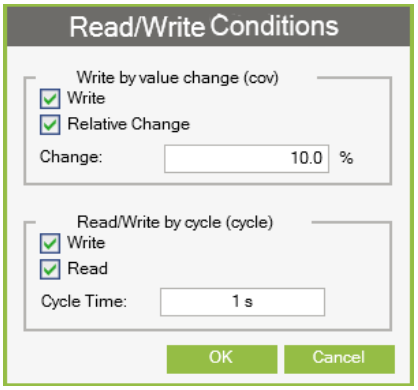
With the new WAGO Gateway Application, it is possible to implement information exchange between different bus systems. This is supported by a user-friendly interface, so no programming is necessary – nothing but configuring connections.

**Benefits:**

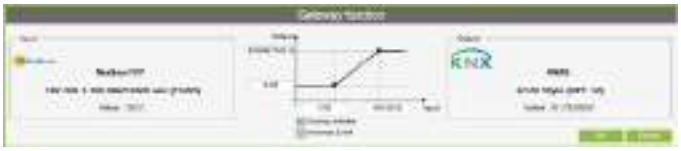
- Exchange of information between the bus systems:
  - Modbus TCP
  - Modbus UDP
  - Modbus RTU
  - KNX
- Commissioning time reduced through interface-supported configuration instead of programming
- Easily manage up to 255 KNX data points per KNX module via ETS import and export

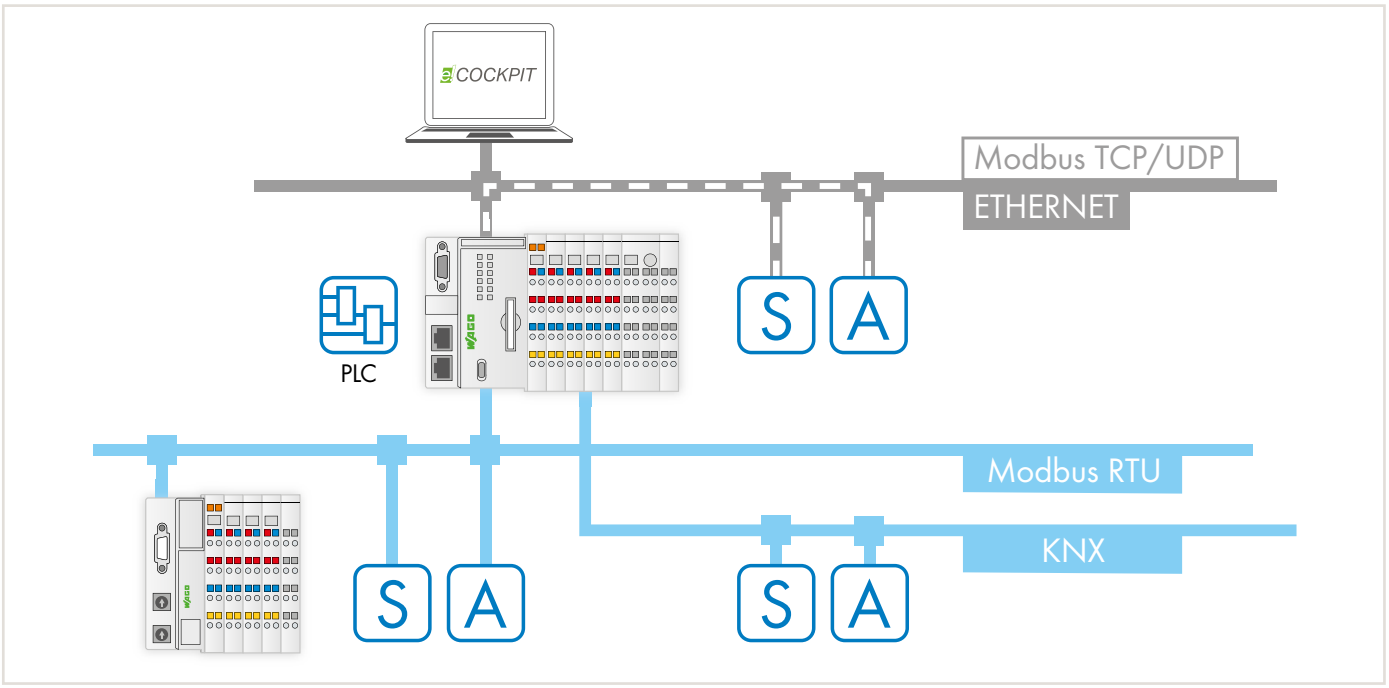
**Function in Detail:**

- 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<br>Download at www.wago.com |
| Compatible Controller | |
| PFC200; G2; 2ETH RS | 750-8212 |

You can find detailed information on the controllers in Section Controller PFC200.

# 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 and 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

# Software
## General Product Information

2

### 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 during operation.

### 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

CODESYS

All WAGO Controllers are equipped with the high-performing CODESYS industry-standard development environment. This enables software development in both 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 advanced paradigms, such as object-oriented programming (OOP), or modern visualization technologies, are available.

### 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.
WAGO's pre-made software solutions can be found in Section 1.

### Open to Proven Standards

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

### Extensive Import and Export Functionality

WAGO's 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 WAGO's software portfolio. For example, these plug-ins can be used to measure energy or easily configure a DALI network.

**Your Benefits:**

- 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

WAGO 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<br>• Component selection | • Configuration<br>• Parameterization<br>• Programming<br>• Simulation<br>• Visualization | • Testing<br>• Diagnostics | • Updating<br>• (Remote) maintenance<br>• Monitoring<br>• Controlling, regulating, operating and monitoring |

### Engineering Software

Quickly implementing complex machine functions is critical in modern mechanical engineering applications. WAGO's 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

COCKPIT

### Runtime Software

Machines 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. 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

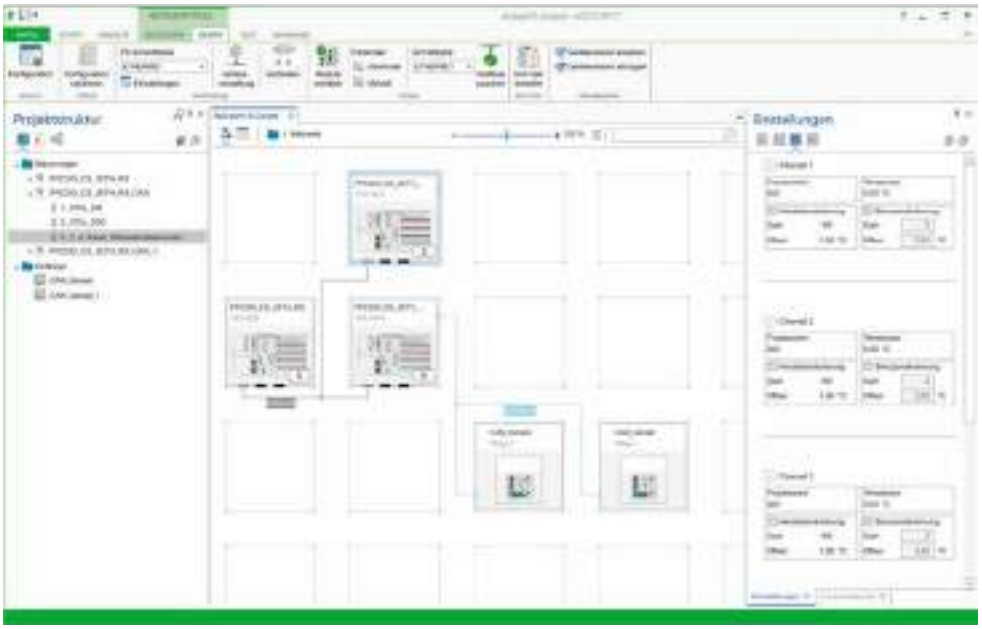
### Mobile Software (Apps)

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



2

WAGO Automation Software ***e!****COCKPIT* 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 the 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, to commissioning – all in one software package.

Use the programming tool to handle all important automation tasks, and implement especially complex projects quickly and easily.

| *e!COCKPIT* | | | | |
|---|---|---|---|---|
| **License Type** | **Number of PCs** | **Item No.** | **Order Text** | |
| Workstation license | 2 | **2759-0101/1110-2002** | ***e!COCKPIT***; Workstation License | Can be installed on up to two computers (e.g., a 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 × 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 additional 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 state-of-the-art operating tools and workspaces, such as:
- 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 extensive 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 machine operation and monitoring are standard. Today, HMI-based design is a critical factor that influences the purchase of an entire automation line. ***e!****COCKPIT* employs drag and 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 and CSS

### Diagnostics

Being acutely aware of the automation network's current status is vital for rapid fault localization and debugging – 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* SVN

**Source Code Management and Revision:**

The ***e!****COCKPIT* SVN add-on provides an integrated connection to the software versioning system Apache® Subversion® (SVN). SVN is a tool for version and revision control of current or historical versions of documents. This version control system tracks and controls changes to the program source code and other information stored as computer files. It is most commonly used in software development when a team works on the same files. The add-on integrates seamlessly into the ***e!****COCKPIT* Engineering Software.



**Benefits:**

- Change logging: Changes can always be traced.
- Compare different revisions.
- Restore old revisions: Accidental changes to files can be undone at any time.
- Archive specific revisions: An older version can always be restored.
- Simultaneously work in several branches of a development project.

**Main Functions:**

The SVN functions are integrated directly into ***e!****COCKPIT* and expand the corresponding menus and icons so that the following properties of the documents are directly visible:
- Object has been added
- Object with conflict
- Object has been deleted
- Object was changed
- Normal object
- Object has deleted sub-objects
- Object is ignored during transfer
- External object
- Unversioned object

**Functions:**

The following functions can be performed via ***e!****COCKPIT*:
- Import project into Subversion®
- Connect the project archive to Subversion®
- Separate project from Subversion®
- Check out object for editing
- Transfer
- Compare object
  - Comparison with HEAD revision
  - Comparison with revision
  - Comparison with project on server
- Add
- Integration of external files
- Ignore
- Subversion® info
- Show properties
- Show log
- Undo change (to specific revision)
- Update file (to specific revision)
- Merge changes

| Item Description | |
|---|---|
| ***e!****COCKPIT* SVN | Item No. |
| Single license | 2759-401/1420-1000 |

A single license allows installation on one computer.

Subversion® is a trademark of the Apache Software Foundation.

| | |
|---|---|
| Minimum ***e!****COCKPIT* version | V1.6.1 |
| Hard disk space | 50 MB |
| Delivery type | Installation file (download) |
| For data sheet and additional information, see: | wago.com/2759-401/1421-1000 |

An Internet connection to your PC may be required for license activation.

# *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.

**Benefits:**

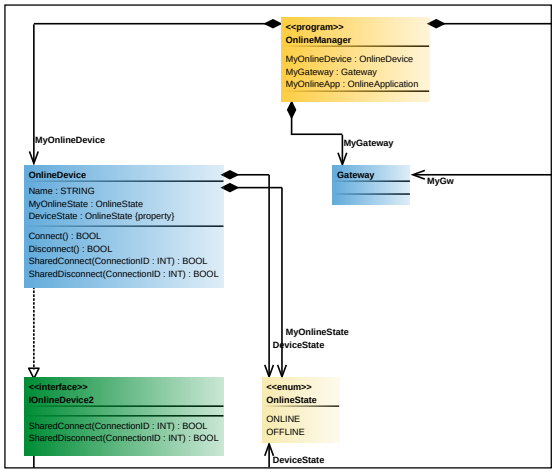
- Improved readability of the program code via clear class and behavior diagrams in standardized form
- Reduce programming errors by generating program code from UML diagrams
- Easier debugging through online data in the state diagram

**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:

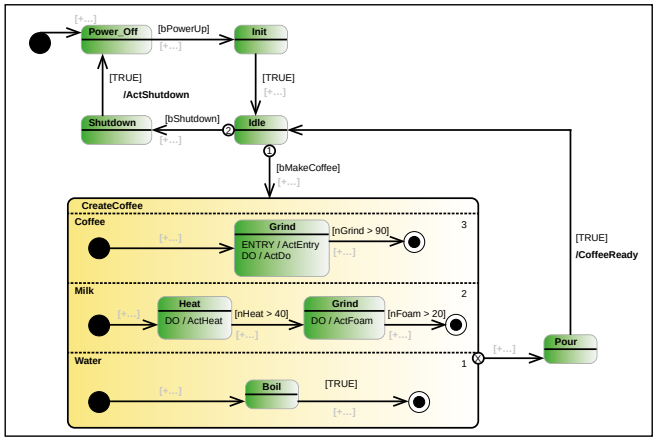
- Class (POU)
- Interface
- Variable declaration
- Property
- Method
- Generalization
- Realization relationship
- Association
- Composition

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

A single license allows installation on one computer.

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

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.



**Benefits:**

- 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 uses of the name

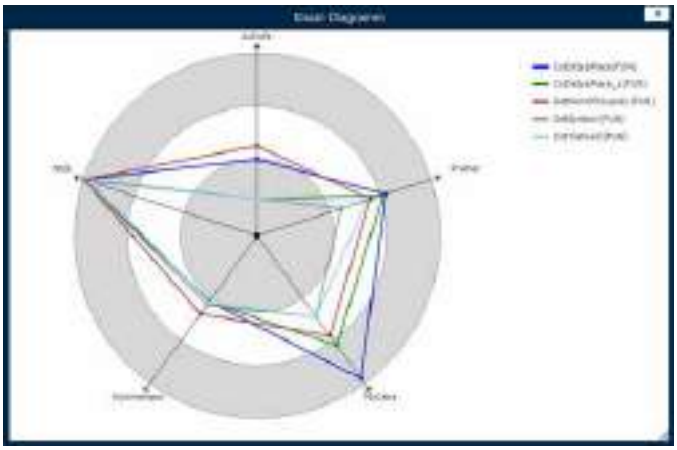
Additionally, the following analytics can be performed with ***e!****COCKPIT* Static Analysis:
- Discover unreachable parts of the code
- Find empty objects
- Find empty instructions
- Find useless declarations
- Conversions
- Write access to input variables
- Rules for operators
- Rules for FOR and 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 | |
|---|---|
| ***e!****COCKPIT* Static Analysis | Item No. |
| Single license | 2759-403/1420-1000 |

A single license allows installation on one computer.

| | |
|---|---|
| Minimum ***e!****COCKPIT* version | V1.4.0 |
| Hard disk space | 30 MB |
| Delivery type | Installation file (download) |
| For data sheet and additional 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.

**Benefits:**

- Measure both machine code's runtime behavior and code coverage right at the beginning of the development phase
- Detect runtime problems at an early stage
- 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 | |
|---|---|
| ***e!COCKPIT*** Profiler | Item No. |
| Single license | 2759-404/1420-1000 |

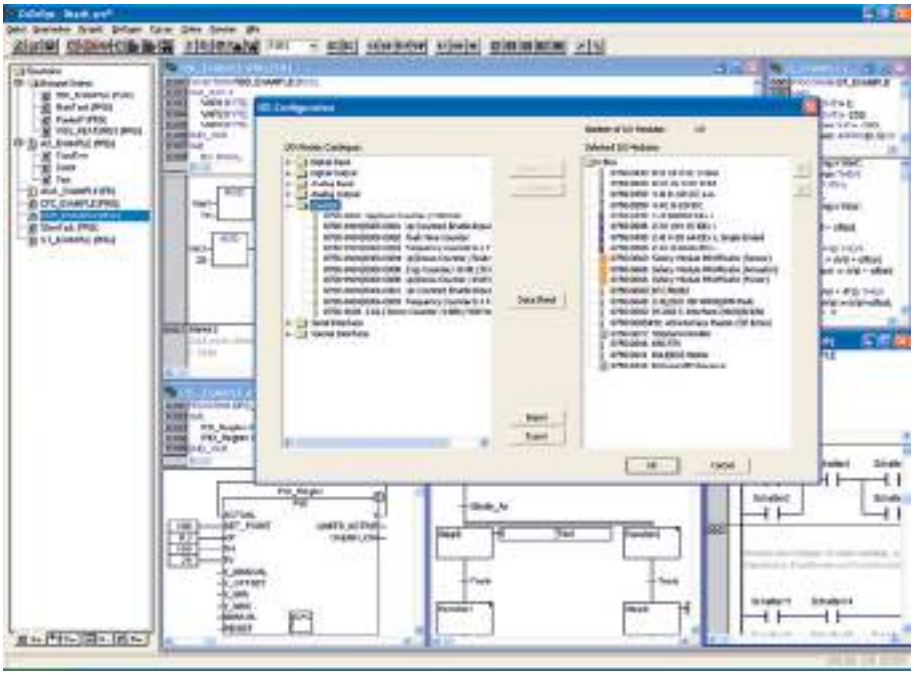
A single license allows installation on one computer.

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.4.0 |
| Hard disk space | 30 MB |
| Delivery type | Installation file (download) |
| For data sheet and additional 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 the WAGO I/O System 750's controllers.

WAGO-I/O-PRO runs in compliance 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 demands on control program development, e.g., reusability and modularization.
- Efficiently translate between programming languages
- Automatic variable declaration
- Library management

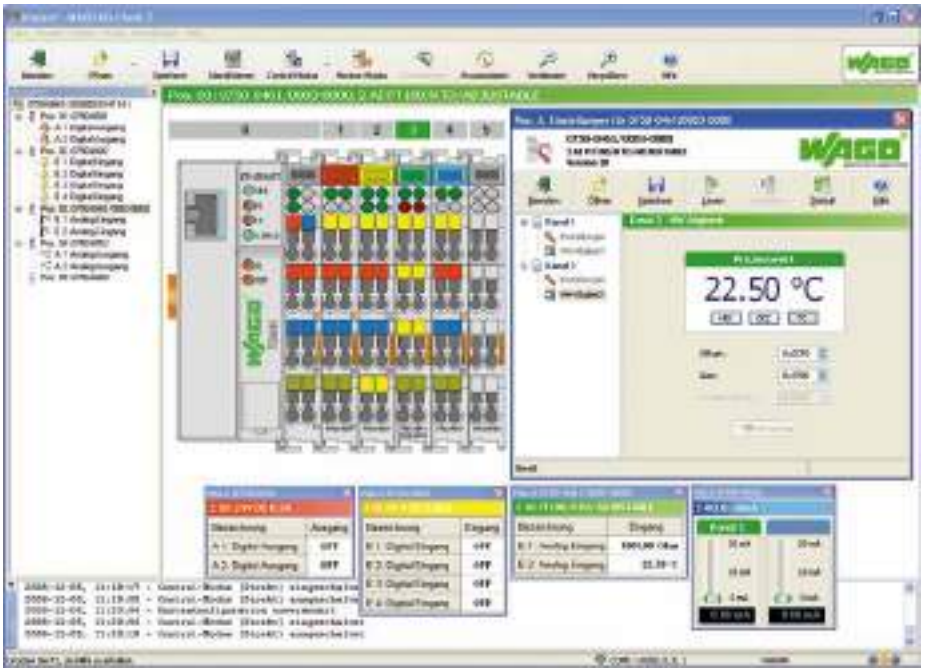
Integrated test and diagnostic functions also streamline and accelerate the steps for implementing PLC projects.
- Online status display using the program code
- Offline simulation
- Integrated process visualization
- Record and graphically display project variables

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

| 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; 32-bit (x86) or 64-bit (x64) |
| Memory | 1 GB of 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) |
| For data sheet and additional information, see: | wago.com/759-333 |

# WAGO-I/O-*CHECK*




WAGO-I/O-CHECK is an easy-to-use Windows application for operating and displaying a WAGO I/O System 750's node without connecting to a fieldbus system.
The software reads the configuration from the node and displays it graphically on the screen. This graphic can be printed together with a configuration list as documentation.

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

For some types of interface, Pt100 and thermocouple modules, application-specific settings can be made, such as the baud rate or sensor types.

The coupler must be connected to a free 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 node.

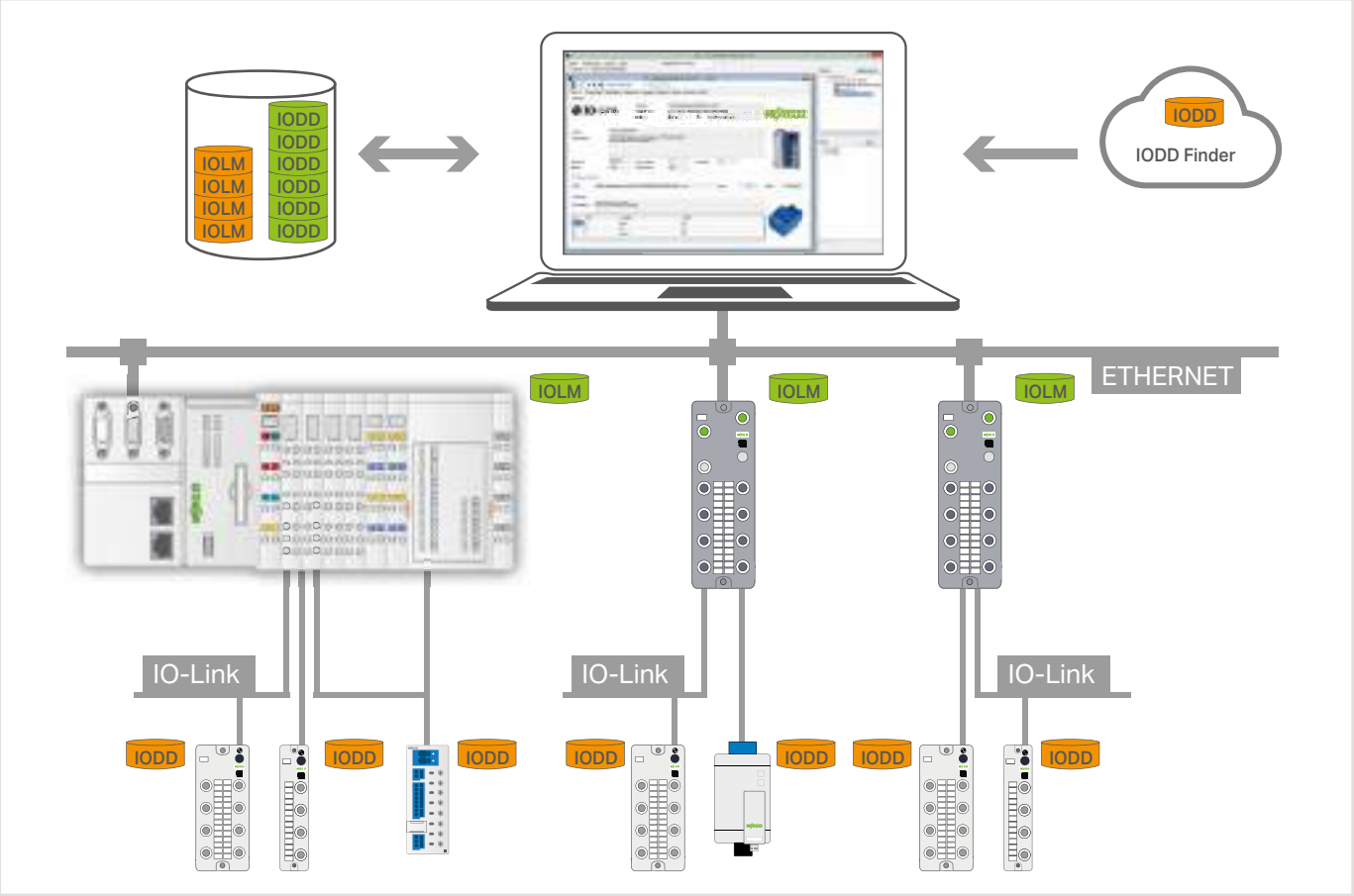
| WAGO-I/O-*CHECK* | | |
|---|---|---|
| **Version** | **Delivery Type** | **Item No.** |
| RS-232 Set | CD-ROM and serial communication cable | 759-302 |
| USB Set | CD-ROM and USB communication cable | 759-302/000-923 |
| CD | CD-ROM | 759-920 |

| | |
|---|---|
| Supported operating systems | Windows 7; Windows 10 |
| **System Requirements** | |
| Processor | 1 GHz or higher; 32-bit (x86) or 64-bit (x64) |
| Memory | 1 GB of 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) |
| For data sheet and additional information, see: | wago.com/759-302 |

Windows® is a registered trademark of Microsoft Corporation.

# WAGO IO-Link Configurator, WAGO-I/O-*CHECK*






The WAGO IO-Link Configurator enables configuration and parameterization, as well as operation and monitoring of WAGO IO-Link Masters in the WAGO I/O System 750 and WAGO I/O System Field and, in particular, the WAGO IO-Link devices connected to them.

Additionally, IO-Link devices from all third-party manufacturers can be completely configured and operated via the WAGO IO-Link Configurator, as long as they comply with the IO-Link specification.
The process data of a product can be graphically visualized and stored in trend curves. Up to eight elements can be selected for visualization, and the data can be recorded for up to 24 hours.

Device description files for the IO-Link Masters (IOLM) or IO-Link Devices (IODD) can be used to integrate new devices into the tool at any time. Convenient access to the IODD finder of the IO-Link user organization is available for the IODDs. It allows an automated and selective download of IODDs when integrating new IO-Link devices.

WAGO IO-Link Configurator can be used either as a standalone program or integrated into engineering systems with a TCI interface and WAGO-I/O-CHECK.

An integrated IODD viewer allows detailed insight into the IODD device description.

The license is assigned to the respective PC on which it is installed (workstation license).

| Item Description | |
|---|---|
| **WAGO IO-Link Configurator** | **Item No.** |
| Single License; Online Activation | 2759-106/1121-1000 |

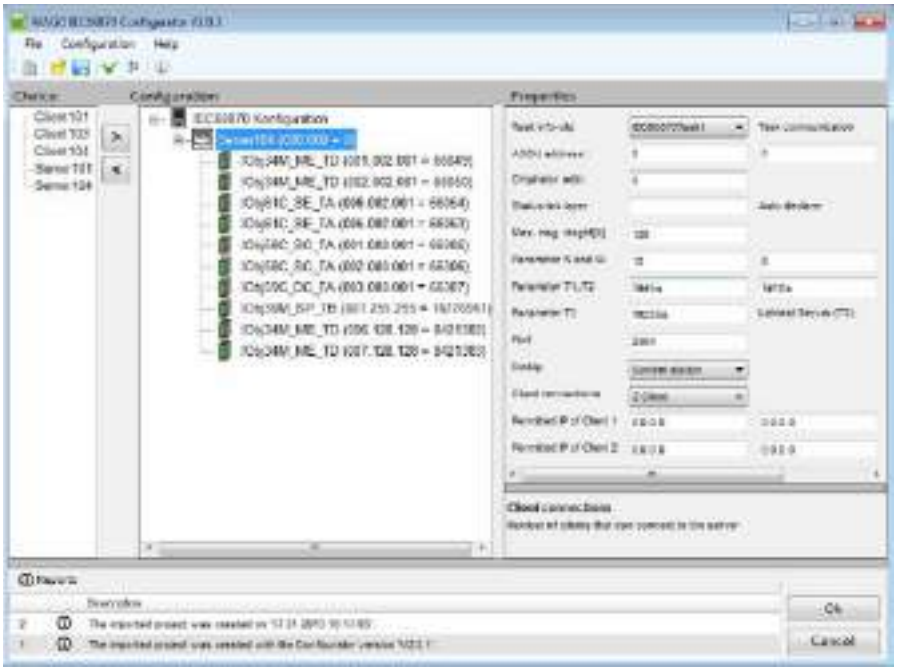
A single license allows installation on one device.

Every additional device requires its own license.

| | |
|---|---|
| Operating system | Windows 7 or higher |
| Memory | 2 GB or larger |
| Processor | 1 GHz with 32 bits or 64 bits |
| Free hard disk space | 150 MB |
| Screen resolution | 800 x 600 pixels |
| Delivery type | License certificate by email (necessary library provided via *e!COCKPIT*) |
| For data sheet and additional information, see: | wago.com/2759-106/1121-1000 |

Internet connection is required for license activation.

# WAGO IEC 60870 Configurator



The WAGO 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.

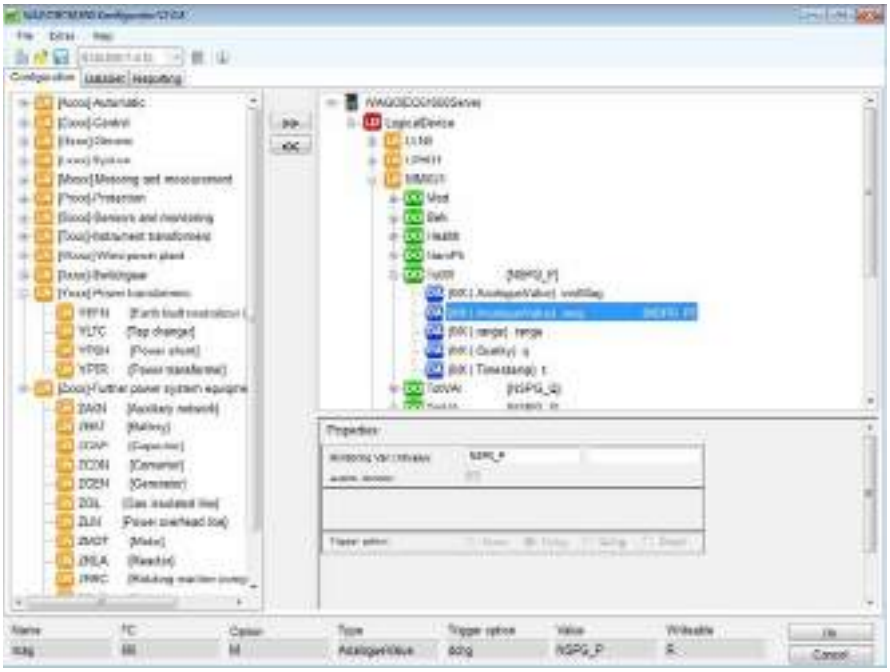
An IEC 60870-5-104 Server can simultaneously maintain up to four connections to the control system (client).

IEC 60870-5 can be used in co-existence with other services such as IEC61850, DNP3 and Modbus®.
The combination of different client/server protocols allows for individual gateway functions within the system boundaries.

| WAGO 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<br>IEC 60870-5-103 Client<br>IEC 60870-5-104 Server and Client |
| Supported Controllers | |
| Controllers PFC200 | 750-8212/025-001<br>750-8216/025-001 |
| Controllers PFC200 XTR | 750-8202/040-001<br>750-8206/040-001 |
| Controllers 750 | 750-890/025-001<br>750-890/025-002 |
| Controller 750 XTR | 750-890/040-001 |

# WAGO IEC 61850 Configurator



The WAGO 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.

IEC 61850 can be used in co-existence with other services such as IEC 60870-5, DNP3 and Modbus®.
The combination of different client/server protocols allows for individual gateway functions within the system boundaries.

*MMS = Manufacturing Messaging Specification

| WAGO 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 Controller IEC 61850 Server | |
| Controller 750 | 750-872 |
| Supported Controllers IEC 61850 Server and Client | |
| Controllers PFC200 | 750-8212/025-001<br>750-8212/025-002<br>750-8216/025-001<br>750-8217/025-001 |
| Controllers PFC200 XTR | 750-8202/040-001<br>750-8206/040-001 |
| Controllers 750 | 750-890/025-001<br>750-890/025-002 |
| Controller 750 XTR | 750-890/040-001 |

# WAGO DNP3 Configurator

The WAGO 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 slaves.

Cyclical time synchronization of the telecontrol substation (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 the 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.

The WAGO DNP3 Slave can simultaneously maintain connections to up to four DNP3 masters.

DNP3 can be used in co-existence with other services such as IEC 60870-5, IEC 61850 and Modbus®.
The combination of different client/server protocols allows for individual gateway functions within the system boundaries.

| WAGO 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 | 750-8212/025-001<br>750-8212/025-002<br>750-8216/025-001<br>750-8217/025-001 |
| Controllers PFC200 XTR | 750-8202/040-001<br>750-8206/040-001 |
| Controllers 750 | 750-890/025-001<br>750-890/025-002 |
| Controller 750 XTR | 750-890/040-001 |
| Baud rates | 300; 600; 1200; 2400; 4800; 9600; 19200; 38400 |
| Number of control stations | 4 (max.) |

# WAGO SMI Configurator


The WAGO SMI Configurator is a 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.

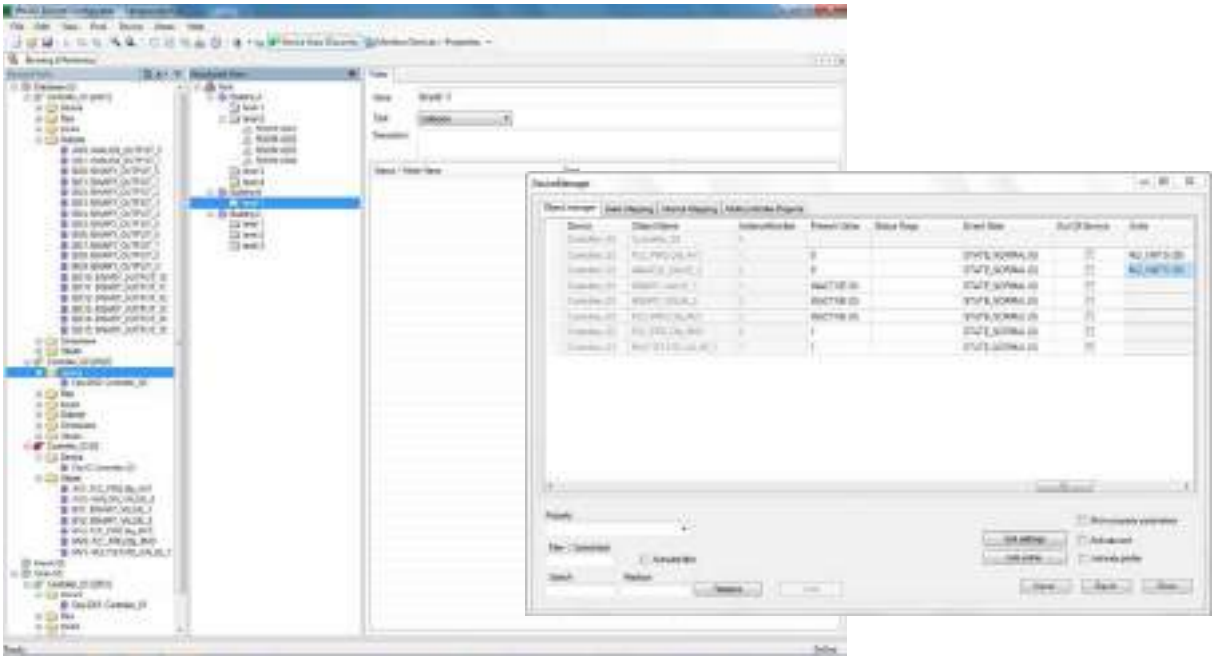
You can directly transfer all module settings of an SMI master module to any number of additional SMI master modules with the "Transfer settings" function. Furthermore, you have the option of using the SMI Configurator to generate project documentation and display the log data of a selected SMI master 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 Framework 4.0 |
| Other system requirements | .NET Framework 4.0 |
| Delivery type | Download |

# WAGO BACnet Configurator



The WAGO 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, 750-831 and 750-832, as well as the BACnet/IP PFC200 Controller (750-8212/000-100), which is programmed via ***e!****COCKPIT*.

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.

| WAGO BACnet Configurator |
| --- |
| The WAGO BACnet Configurator can be downloaded for free at: www.wago.com |

| | |
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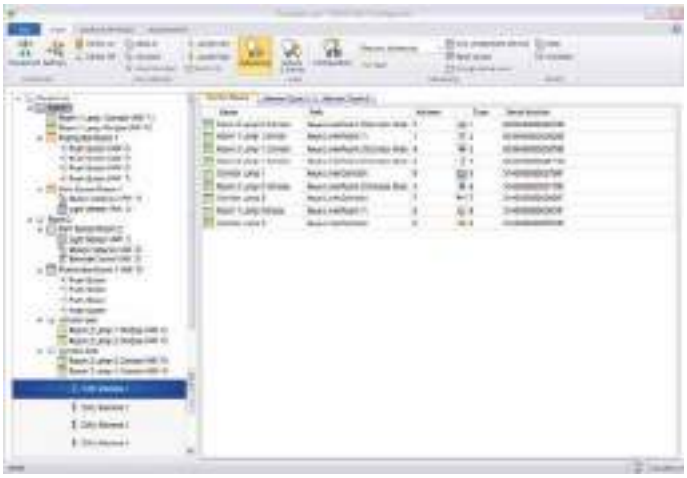
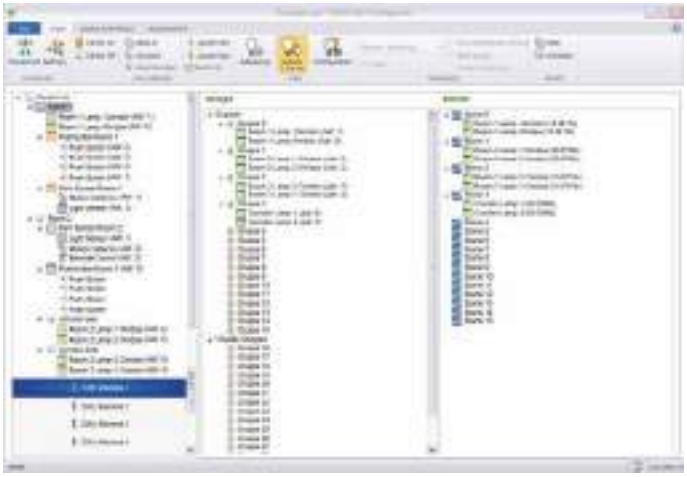
| Supported operating systems | Windows 7; Windows 10 |

# WAGO DALI Configurator







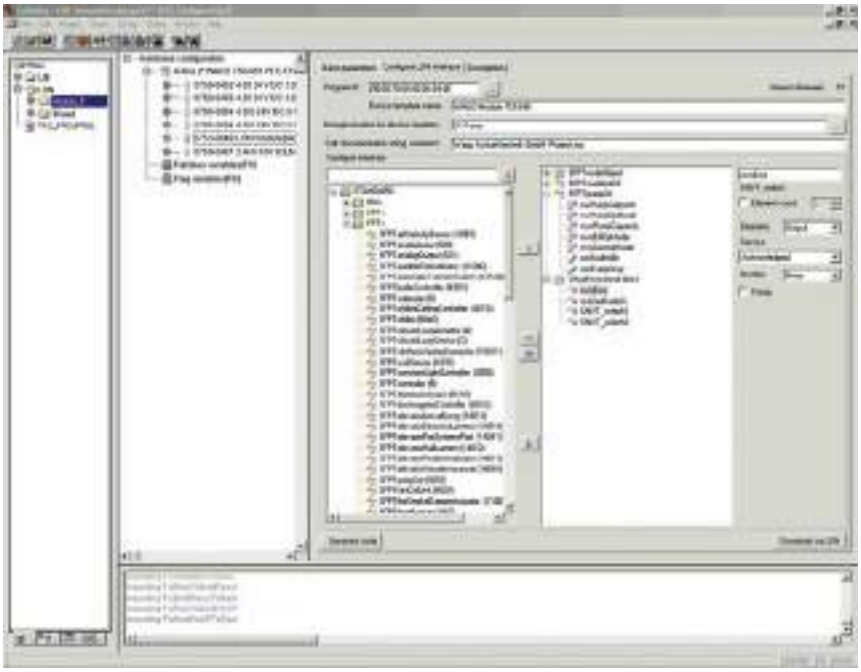
The WAGO DALI Configurator simplifies commissioning of a DALI network via 753-647 DALI Multi-Master. The configurator is available as a stand-alone Windows application or for use with WAGO-I/O-CHECK Software.

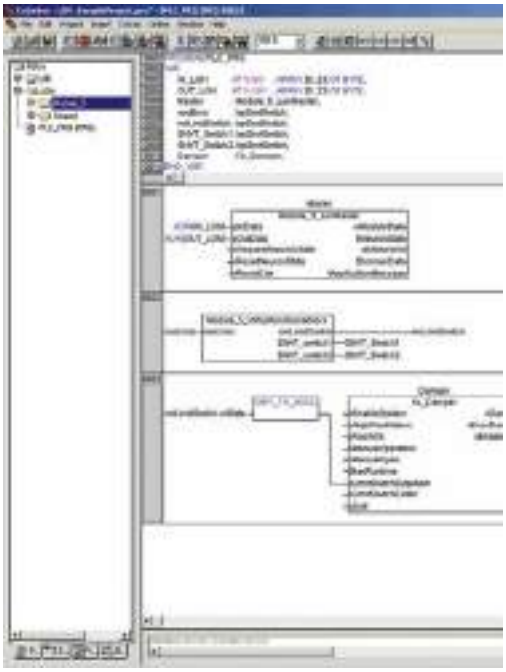
It provides the following functions: easy commissioning, configuration, service, support and maintenance of a DALI network.
Comprehensive backup & restore features, as well as an offline configuration option for the entire DALI network (including ECGs and sensors) are available.

| WAGO DALI Configurator |
| --- |
| The WAGO 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 WAGO 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.

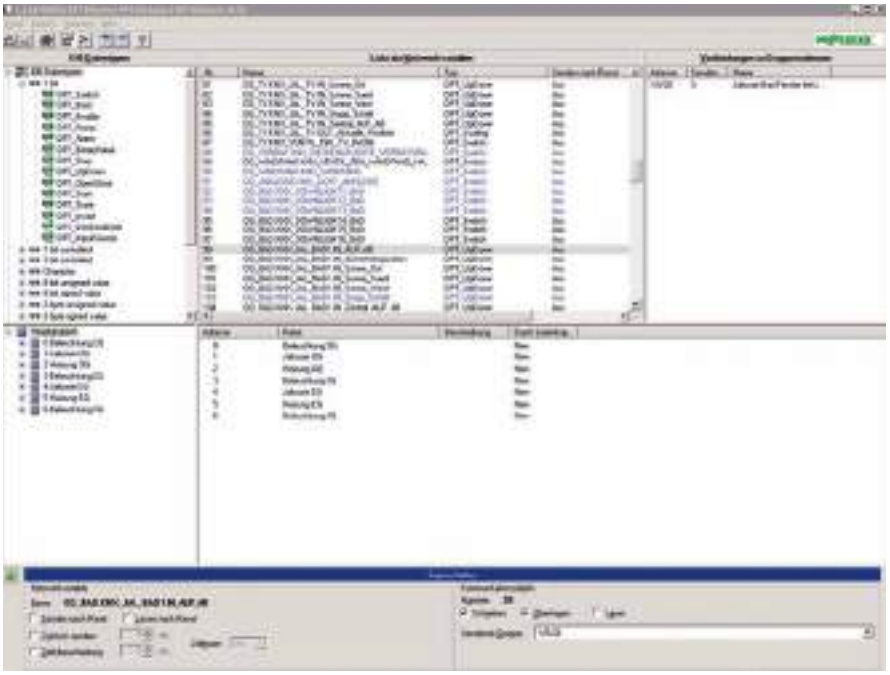
Network variables of any type can be defined. In addition to standard network variable types (SNVTs) and standard configuration property types (SCPTs), user-defined types (UNVTs/UCPTs) and LonMark® functional profiles (FPTs) are also supported. Network variables are defined using the types and objects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

| WAGO LON® Configurator |
| --- |
| The WAGO 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 interface and configuration data when controller is started
- Configuration check and test
- Generates XIF files

# 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 users to select their favorite procedure.

| WAGO ETS Plug-in |
| --- |
| The WAGO ETS Plug-in can be downloaded for free at:<br>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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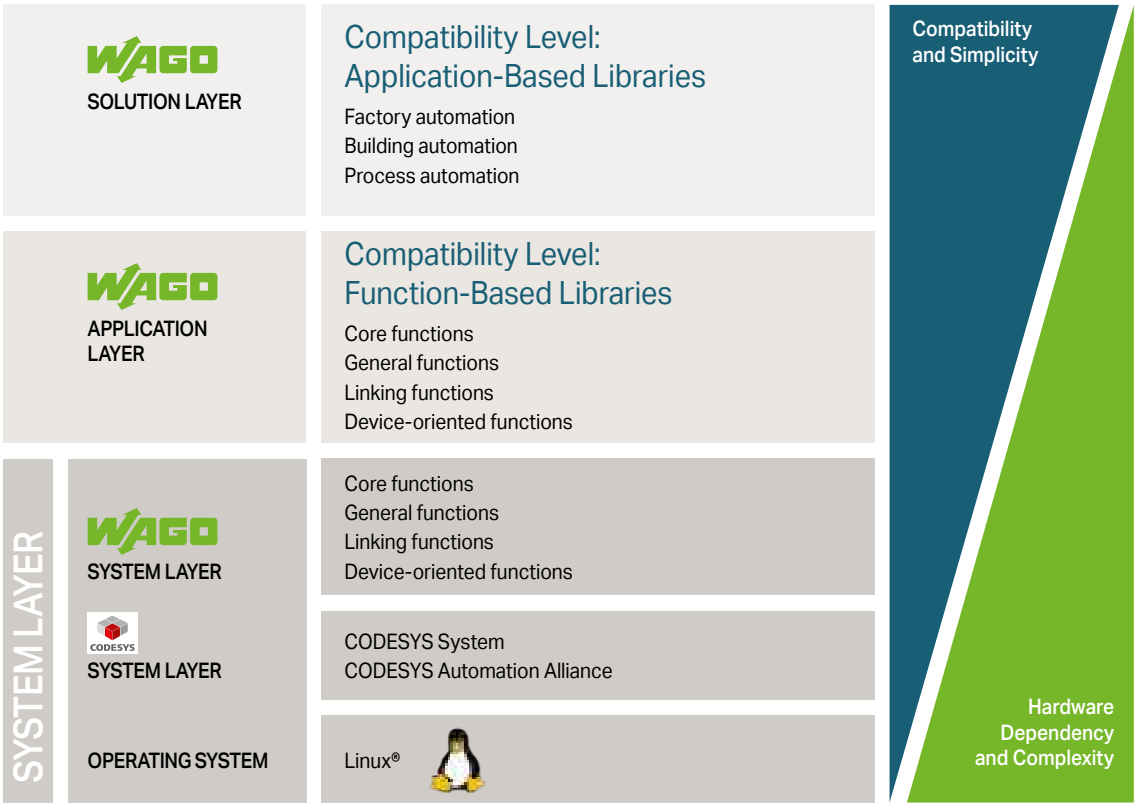
# Runtime Software – Libraries
# *e!COCKPIT* (based on CODESYS V3)




2

**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**

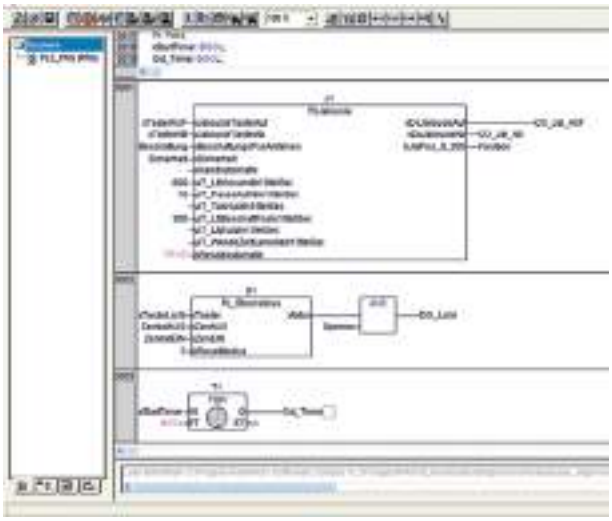
Comprehensive, tried-and-tested software function blocks (IEC libraries) expedite development. Thus, ***e!COCKPIT*** is supplemented with comprehensive IEC libraries.

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 |

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





### Room Applications

Integrated into WAGO-I/O-PRO Software

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

- Lighting
- Dimming
- Lighting scenes
- Constant light control
- Sun protection
- Shading
- Other applications


### Application Notes

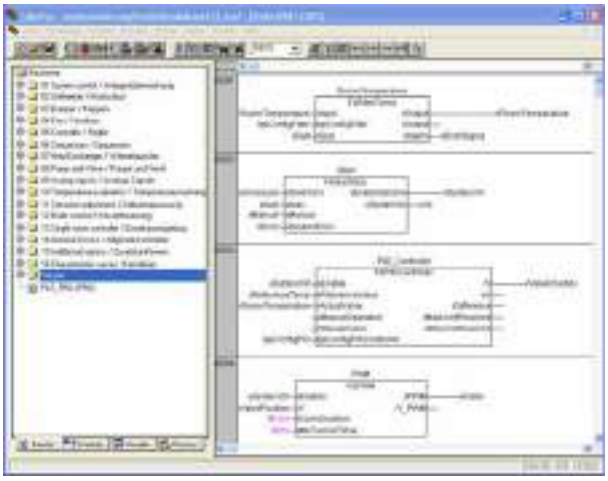
Download: Current application notes available at:
www.wago.com

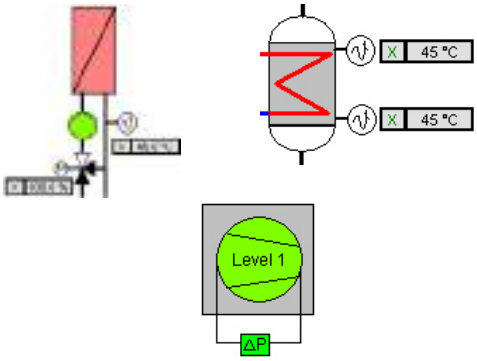
The application notes contain function blocks (FBs) for communication applications.

- 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)







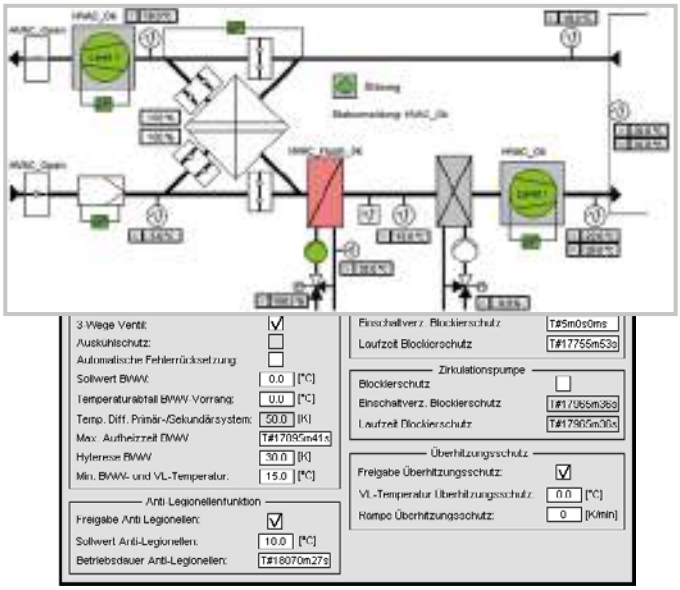

Graphical elements for HVAC applications

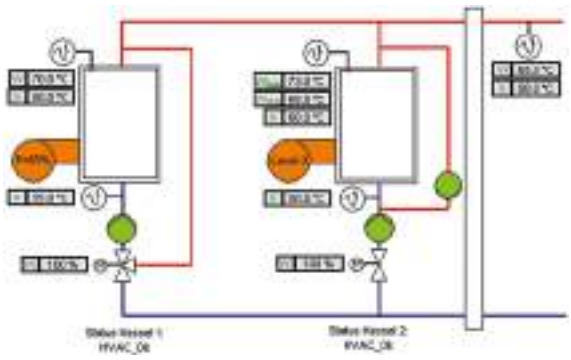
**Heating, Ventilation, Air Conditioning**

Integrated into WAGO-I/O-PRO Software

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

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

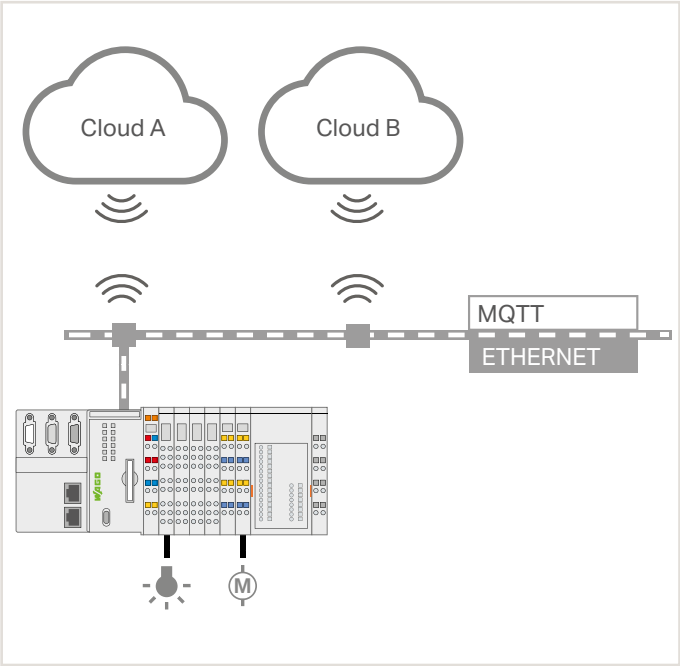
**System Macros**

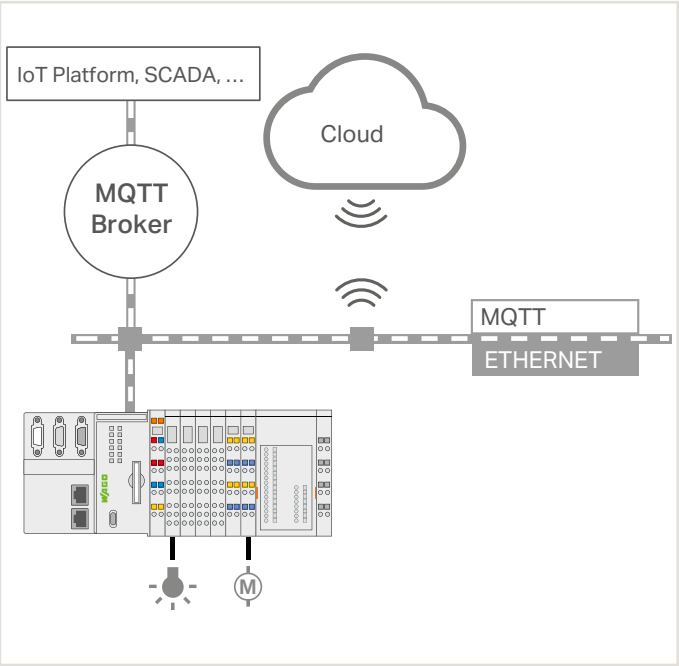
Download: Current application notes available at:
www.wago.com

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

# Runtime Software
## *e!RUNTIME*; Multi-Cloud Connectivity






**Function:**
MQTT is a powerful IoT protocol that has become standard in many industrial automation applications. Both PFC200 Controller (Generation 2) and Touch Panel 600 support an MQTT connection by default. "Multi-Cloud Connectivity" enables the parallel connection of a device to two different cloud systems, IoT platforms or MQTT brokers, allowing different tasks to be implemented in the appropriate cloud application. For example, device management can be performed within WAGO Cloud. At the same time, specific tasks can be implemented in another cloud-based solution, e.g., IBM Watson, Amazon Web Services (AWS) or other specialized IoT platform. Data can also be split up, allowing critical data to go to a local MQTT broker and less critical data to a cloud.

**Your Benefits:**
- More options and flexibility
- Simple error analysis via configuration in WBM, programming in ***e!COCKPIT***
- Taking advantage of two cloud solutions/IoT platforms

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a PFC200 Controller (Generation 2)/Edge Device/Touch Panel and load both the license and project into the device. No other installation steps are required.

| Item Description | |
|---|---|
| ***e!RUNTIME***; Multi-Cloud Connectivity | Item No. |
| Single License; Online Activation | 2759-248/211-1000 |

A single license allows installation on one device.
One license per device is required.

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.7 |
| Minimum firmware version | 17 |
| Delivery type | License certificate by email (necessary library provided via ***e!COCKPIT***) |
| For data sheet and additional information, see: | wago.com/2759-248/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.

# Runtime Software
## *e!RUNTIME*; Sparkplug

**Function:**
MQTT is a powerful IoT protocol that has become standard in many industrial automation applications. WAGO's PFC200 Controller (Generation 2) supports the MQTT protocol and the Sparkplug specification that defines both topic and payload, allowing the controller to exchange data directly with Sparkplug-enabled systems (e.g., SCADA). This requires a license for the controller.

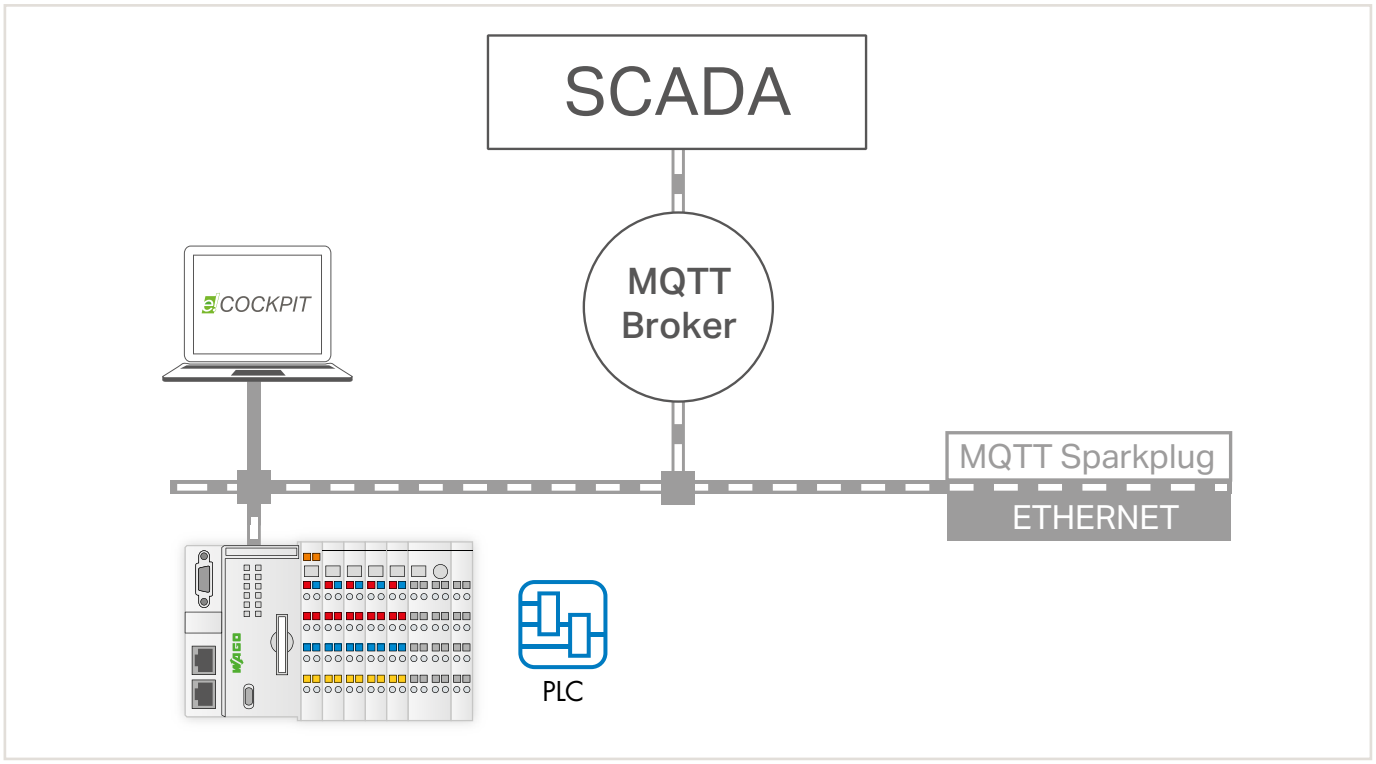
Configuration is performed via the controller's Web-Based Management and the variables to be transmitted or received are defined by the ***e!COCKPIT*** Engineering Software and its library.

**Benefits:**
- The PFC200 communicates directly with Sparkplug-enabled systems (e.g., SCADA) without requiring any additional gateway.

**Use:**
- Enter the license into ***e!COCKPIT***, assign it to a controller and load both the license and project into the controller. No other installation steps are required.

**Technical Data:**
- Sparkplug B payload
- Publish data
- Subscribe to data






| Item Description | |
|---|---|
| ***e!RUNTIME*; Sparkplug** | **Item No.** |
| Single License; Online Activation | 2759-247/211-1000 |
| Compatible Devices | |
| Controller PFC200; G2 | 750-821x |
| Touch Panel 600; Control Panel | 762-x3xx/8000-002 |
| Edge Controller | 752-8303/8000-002 |

Besides the basic controller variants listed here, the license can also be used on these controllers' variants. For details, see the product information of the corresponding controller.
For detailed information on the controllers and touch panels, go to: www.wago.com/item-numbers

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.5.0 |
| Minimum firmware version | 12 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-247/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
The single license allows installation on one controller.
Every additional device requires its own license.

# Runtime Software
## *e!RUNTIME*; IEC-61131 Runtime Environment; 600

**Function:**
This license allows a properly prepared device to expand into a programmable logic controller (PLC). A PLC is a device in which logical connections and operations are programmed, typically in graphical or textual languages adhering to IEC 61131-3. This can be either a device in a standard housing for control cabinet installation or a device with a completely different form factor (e.g., a touch panel).

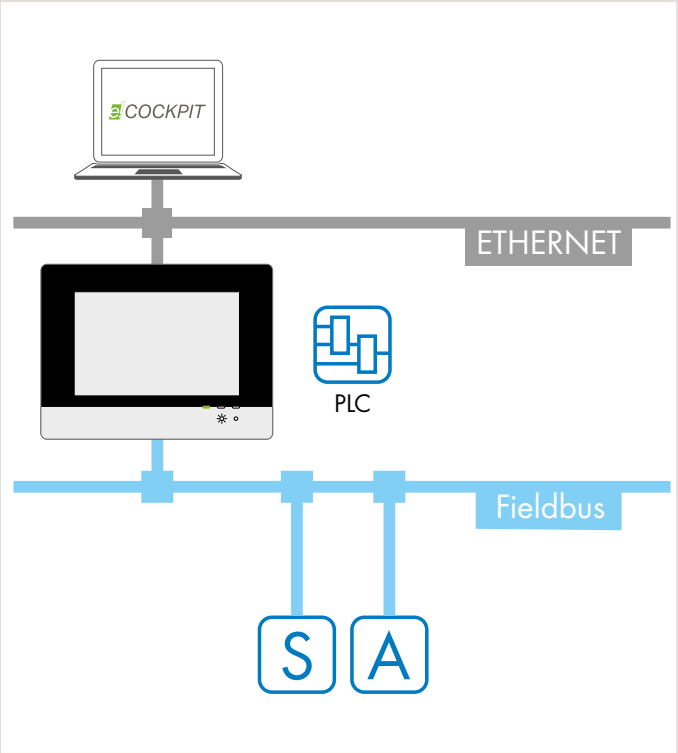
The ***e!COCKPIT*** Engineering Software is used for programming, which in addition to pure programming is also responsible for configuring devices and creating visualization projects.

**Technical Data:**
- PLC functionality per IEC 61131-3
- Performance dependent on target platform
- Multitasking operation

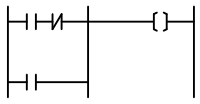
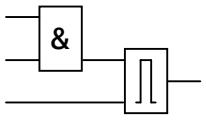
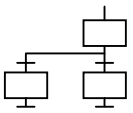
**Benefits:**
- Controlling processes
- Reading in data via a fieldbus
- Very compact automation solutions by combining several functions into one device (e.g., controlling and visualizing)

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the device. No other installation steps are required.

**Programming:**
Programming the control function may also be performed in different graphical or textual programming languages.




| Textual | |
|---|---|
| **Instruction List** | **Structured Text** |
| LD VAR_1 Load value of Var_1<br>AND %IX1.0 AND input 1.0<br>OR %QX2.1 OR output 2.1<br>ST Var_4 Save result in Var_4 | IF Bed1 THEN<br>Z := -1;<br>ELSE<br>Z := 1<br>END_IF |

| Graphical | | |
|---|---|---|
| **Ladder Diagram** | **Function Block** | **Sequential Function Chart** |
|  |  |  |

| Item Description | |
|---|---|
| ***e!RUNTIME***; IEC-61131 Runtime Environment; 600 | Item No. |
| Single License; Online Activation | 2759-216/211-1000 |
| Compatible Touch Panels | |
| Touch Panel 600 Standard Line; PIO2 | 762-42xx/8000-001 |
| Touch Panel 600 Advanced Line; PIO2 | 762-52xx/8000-001 |
| Touch Panel 600 Marine Line; PIO2 | 762-62xx/8000-001 |

xx is a wildcard; the license applies to all Touch Panel sizes.

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.5.1 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-216/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one device.
One license per device is required.

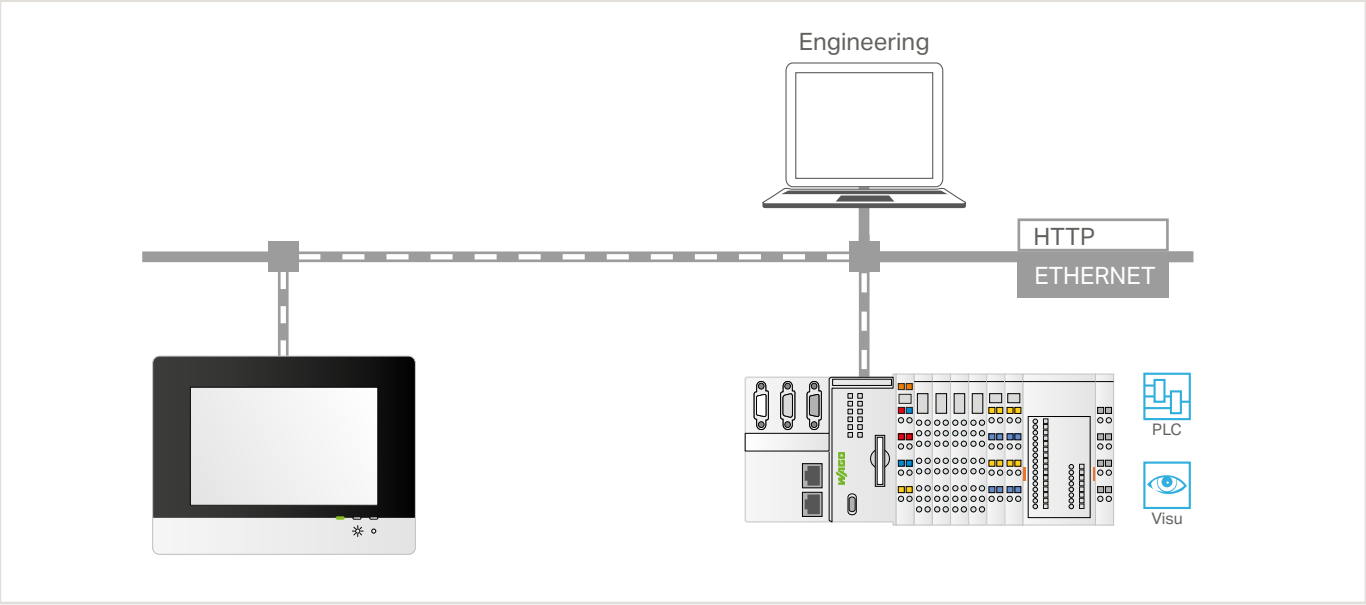
# Runtime Software
## *e!RUNTIME*; MicroBrowser

**Function:**
The MicroBrowser extends the application range of the Touch Panels 600. With the ***e!****RUNTIME* MicroBrowser license, each Touch Panel can also now display the Java-based visualization of CS2.3 Controllers.

**Benefits:**
- MicroBrowser integration also allows the customer to use the powerful Touch Panel 600 in previous systems.

**Use:**
Enter the license into ***e!****COCKPIT* or WAGOupload, assign it to a Touch Panel and load the license into the device. No other installation steps are required.






| Item Description | |
|---|---|
| ***e!RUNTIME*** MicroBrowser | Item No. |
| Single License; Online Activation | 2759-230/211-1000 |
| Compatible Devices | |
| Touch Panel 600 Standard Line | 762-4xxx/xxxx-xxxx |
| Touch Panel 600 Advanced Line | 762-5xxx/xxxx-xxxx |
| Touch Panel 600 Marine Line | 762-6xxx/xxxx-xxxx |

xx is a wildcard; the license applies to all Touch Panel sizes.

| | |
|---|---|
| Other required software | Firmware version 18 or higher (Touch Panel 600) |
| Delivery type | License certificate via email (the firmware already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-230/211-1000 |

An Internet connection to the PC that's equipped with ***e!****COCKPIT* or the WAGOupload tool may be required for license activation.
A single license allows installation on one device.
One license per device is required.

# Runtime Software
## *e!RUNTIME*; EtherNet/IP™ Scanner

**Function:**
EtherNet/IP™ is one of the leading industrial ETHERNET fieldbus systems in the USA. It adapts the "Common Industrial Protocol" (CIP) known from standard fieldbuses to standard ETHERNET and has become a standard in many industrial automation applications. Some WAGO devices can be operated as EtherNet/IP™ scanners to provide fieldbus master functionality. This requires that the devices are equipped with a license.

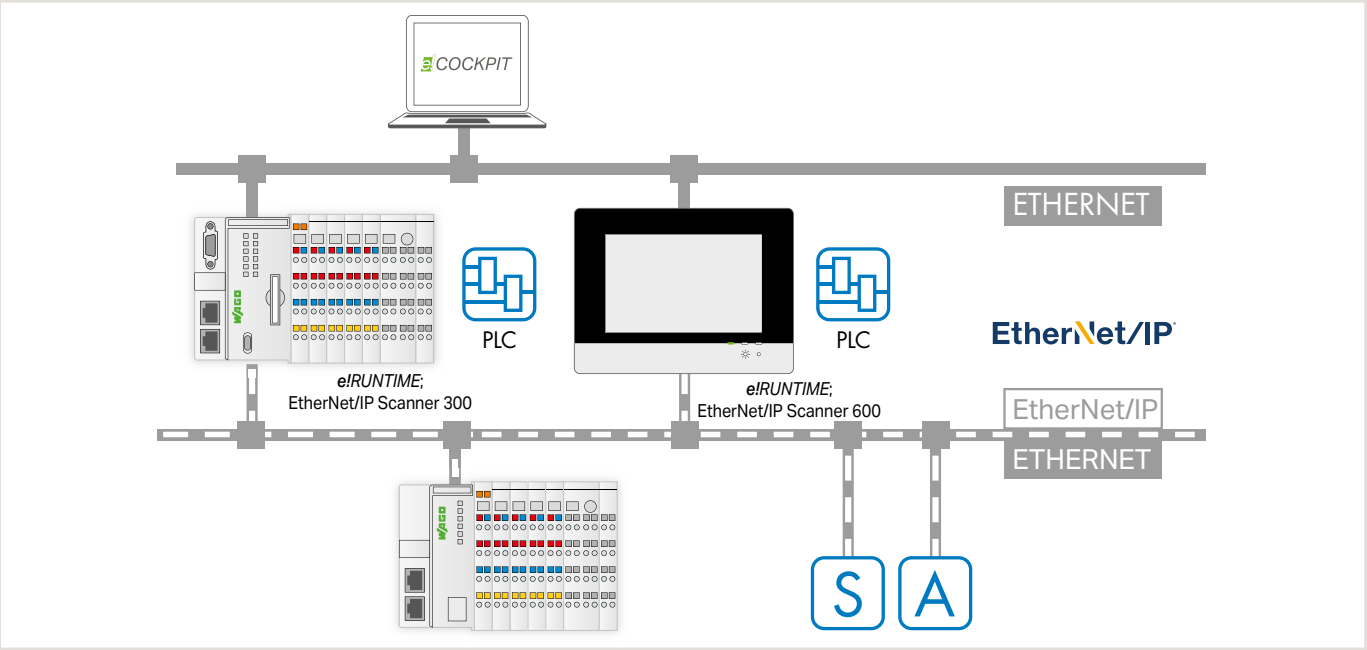
The EtherNet/IP™ system is configured via special configuration dialogs in the *e!COCKPIT* Engineering Software. These specify:
- That the device should function as an EtherNet/IP™ scanner
- What field devices should be addressed
- On which control program variables the process values are to be mapped
- Which communication parameters must be observed and
- What parameter values should be sent to the slaves upon startup

Besides the protocol stack in the form of a library, the runtime system also provides components for direct access to the EtherNet/IP™ services (e.g., for reading and writing attributes).

**Benefits:**
- Using the device as an EtherNet/IP™ scanner (master)
- Controlling WAGO slaves with the EtherNet/IP™ fieldbus system, e.g., the EtherNet/IP™ Fieldbus Coupler of the WAGO I/O System 750
- Controlling additional field devices that can be addressed as EtherNet/IP™ adapters and which can be declared in *e!COCKPIT*, e.g., via a standardized device description

**Use:**
Enter the license into *e!COCKPIT*, assign it to a device and load both the license and project into the device. No other installation steps are required.

**Technical Data:**
- EDS import
- Device status display
- Connection error display
- Connection types:
  - Class 1 (I/O messaging)
  - Class 3 (explicit messaging)
  - Unconnected message (UCMM)
- I/O connection types:
  - Point-to-point and multicast
  - Cyclic transmission
  - Exclusive owner, listen only, input only




| Item Description | |
|---|---|
| ***e!RUNTIME* EtherNet/IP™ Scanner 300** | **Item No.** |
| Single License; Online Activation | 2759-273/211-1000 |
| Compatible Controllers* | |
| Controller PFC200; G2 | 750-821x |

| Item Description | | |
|---|---|---|
| ***e!RUNTIME* EtherNet/IP™ Scanner 600** | | **Item No.** |
| Single License; Online Activation | | 2759-276/211-1000 |
| Compatible Devices | | |
| Hardware Configuration PIO 3 | Touch Panel 600 Standard Line** | 762-43xx/8000-002 |
| | Touch Panel 600 Advanced Line** | 762-53xx/8000-002 |
| Hardware Configuration PIO 2 | Touch Panel 600 Standard Line *** | 762-42xx/8000-001 |
| | Touch Panel 600 Advanced Line *** | 762-52xx/8000-001 |
| | Touch Panel 600 Marine Line *** | 762-62xx/8000-001 |
| WAGO Edge Controller | | 752-8303/8000-002 |

| | |
|---|---|
| Minimum *e!COCKPIT* version | V1.8 |
| Delivery type | Licence certificate via email (*e!COCKPIT* already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-273/211-1000<br>wago.com/2759-276/211-1000 |

An Internet connection to the PC that's equipped with *e!COCKPIT* may be required for license activation.
Single license allows installation on one device.
One license per device is required.

ETHERNET/IP™ is a registered trademark of the Open DeviceNet Vendor Association, Inc (ODVA).

*Besides the basic controller variants listed here, the license can also be used on these controllers' variants. For details, see the product information of the corresponding controller.
**xx is a wildcard, the license applies to all Touch Panel sizes.
***The prerequisite for using the EtherNet/IP™ Scanner is the license equipment of the device with a PLC license as Control Panel.

# Runtime Software
## *e!RUNTIME*; EtherCAT Master

**Function:**
EtherCAT is a powerful real-time ETHERNET fieldbus system that has become standard in many industrial automation applications. Some WAGO devices can be operated as an EtherCAT Master. This requires a license.

The EtherCAT system is configured via special configuration dialogs in the *e!COCKPIT* Engineering Software. These specify:
- That the device 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

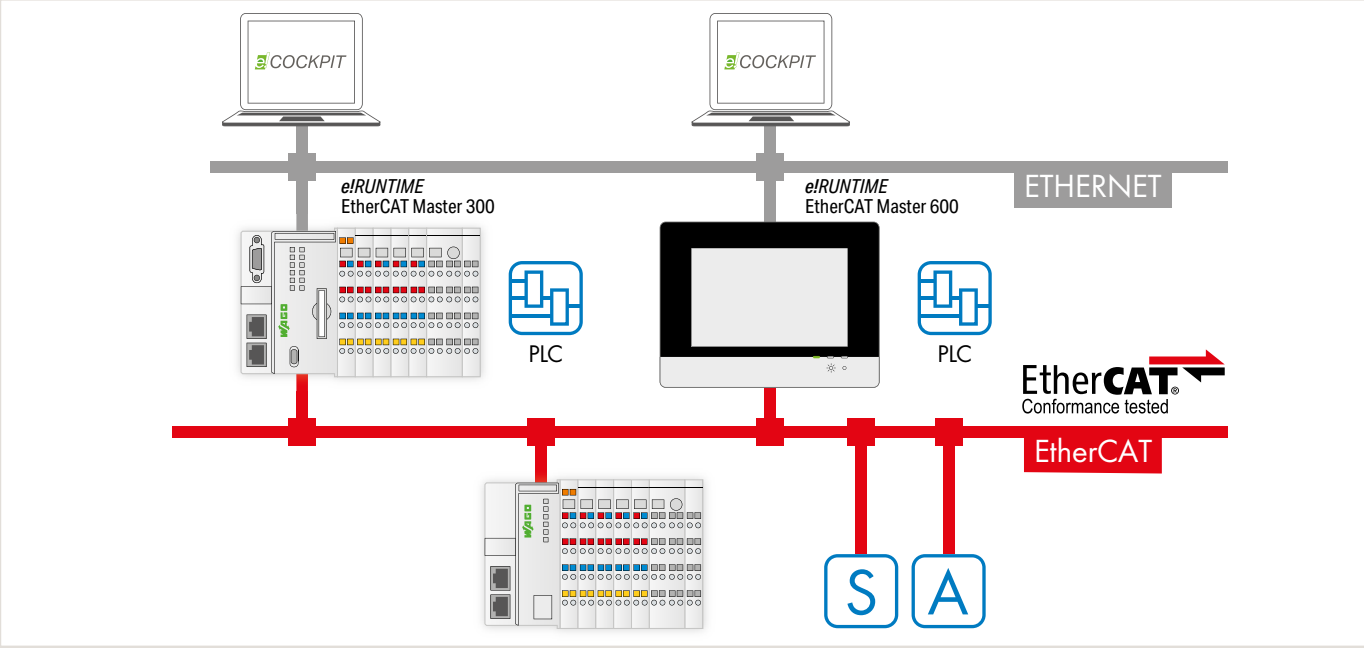
Besides the protocol stack in the form of a library, the runtime system also provides components for direct access to the ETHERNET interface and diagnostics.

**Benefits:**
- Using the device 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:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the device. 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; Online Activation | 2759-263/211-1000 |
| Compatible Controller* | |
| Controller PFC200; G2 | 750-821x |

| Item Description | | |
|---|---|---|
| ***e!RUNTIME*** **EtherCAT Master 600** | | **Item No.** |
| Single License; Online Activation | | 2759-266/211-1000 |
| Compatible Devices | | |
| Hardware Configuration PIO 3 | Touch Panel 600 Standard Line** | 762-43xx/8000-002 |
| | Touch Panel 600 Advanced Line** | 762-53xx/8000-002 |
| Hardware Configuration PIO 2 | Touch Panel 600 Standard Line *** | 762-42xx/8000-001 |
| | Touch Panel 600 Advanced Line *** | 762-52xx/8000-001 |
| | Touch Panel 600 Marine Line *** | 762-62xx/8000-001 |
| WAGO Edge Controller | | 752-8303/8000-002 |

| | |
|---|---|
| Minimum *e!COCKPIT* version | V1.5.0 |
| Delivery type | Licence certificate via email (*e!COCKPIT* already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-263/211-1000<br>wago.com/2759-266/211-1000 |

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

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

*Besides the basic controller variants listed here, the license can also be used on these controllers' variants. For details, see the product information of the corresponding controller.
**xx is a wildcard, the license applies to all Touch Panel sizes.
***To use the EtherCAT Master, a PLC license as Control Panel is required on the device.

# Runtime Software
## *e!RUNTIME*; BACnet/IP

**Function:**
"Building Automation and Control Networks" (BACnet) is a data transfer protocol for building automation that simplifies communication between products from different manufacturers.
The PFC200 Controller (2nd generation) or WAGO Touch Panel can be operated as a BACnet building controller and supports the B-BC device profile with all major BACnet objects and interoperability building blocks (BIBBs). The device communicates via BACnet/IP and offers the functionality of a BACnet Client and BACnet Server.

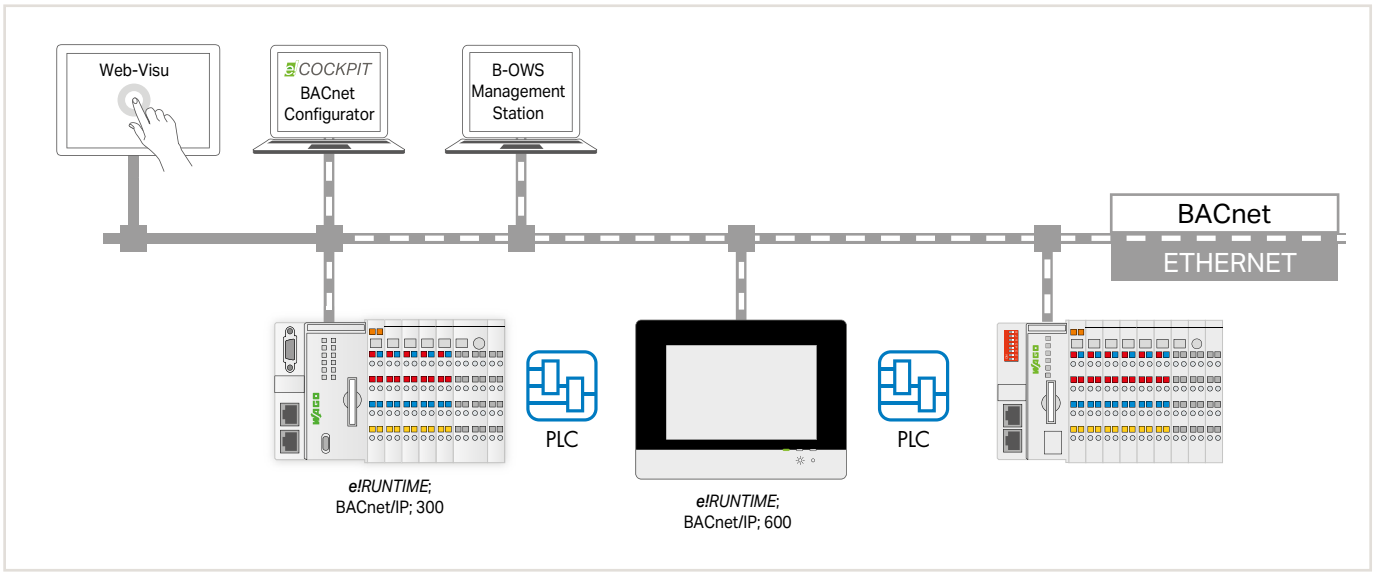
To use BACnet/IP, it is necessary to equip the device with a license.

The BACnet network is configured using the WAGO BACnet Configurator and the *e!COCKPIT* Engineering Software.

**Benefits:**
- Use the device as a BACnet Building Controller (B-BC)
- Control and detect distributed I/O signals from WAGO BACnet/IP Couplers via BACnet Fieldbus Protocol
- Data exchange with other BACnet Devices as a BACnet Client or Server

**Use:**
Enter the license into *e!COCKPIT*, assign it to a device and load both the license and project into the controller. No other installation steps are required.

**Technical Data:**
See "Protocol Implementation Conformance Statement" (PICS)




| Item Description | |
|---|---|
| ***e!RUNTIME*; BACnet/IP; 300; without limitation of the BACnet objects*** | **Item No.** |
| Single License; Online Activation | 2759-283/211-1000 |
| ***e!RUNTIME*; BACnet/IP; 300; M; up to 256 BACnet objects** | |
| Single License; Online Activation | 2759-2283/211-1000 |
| Compatible Controllers | |
| PFC200; G2; 4ETH | 750-8210 |
| PFC200; G2; 2ETH 2SFP | 750-8211 |
| PFC200; G2; 2ETH RS | 750-8212 |
| PFC200; G2; 2ETH CAN | 750-8213 |
| PFC200; G2; 2ETH RS CAN DPS | 750-8216 |
| PFC200; G2; 2ETH RS; 4G | 750-8217 |

| Item Description | | |
|---|---|---|
| ***e!RUNTIME*; BACnet/IP; 600; without limitation of the BACnet objects*** | | **Item No.** |
| Single License; Online Activation | | 2759-286/211-1000 |
| ***e!RUNTIME*; BACnet/IP; 600; M; up to 256 BACnet objects** | | |
| Single License; Online Activation | | 2759-2286/211-1000 |
| Compatible Devices | | |
| Hardware Configuration PIO 3 | Touch Panel 600 Standard Line | 762-43xx/8000-002 |
| | Touch Panel 600 Advanced Line | 762-53xx/8000-002 |
| | Touch Panel 600 Marine Line | 762-63xx/8000-002 |
| WAGO Edge Controller | | 752-8303/8000-002 |

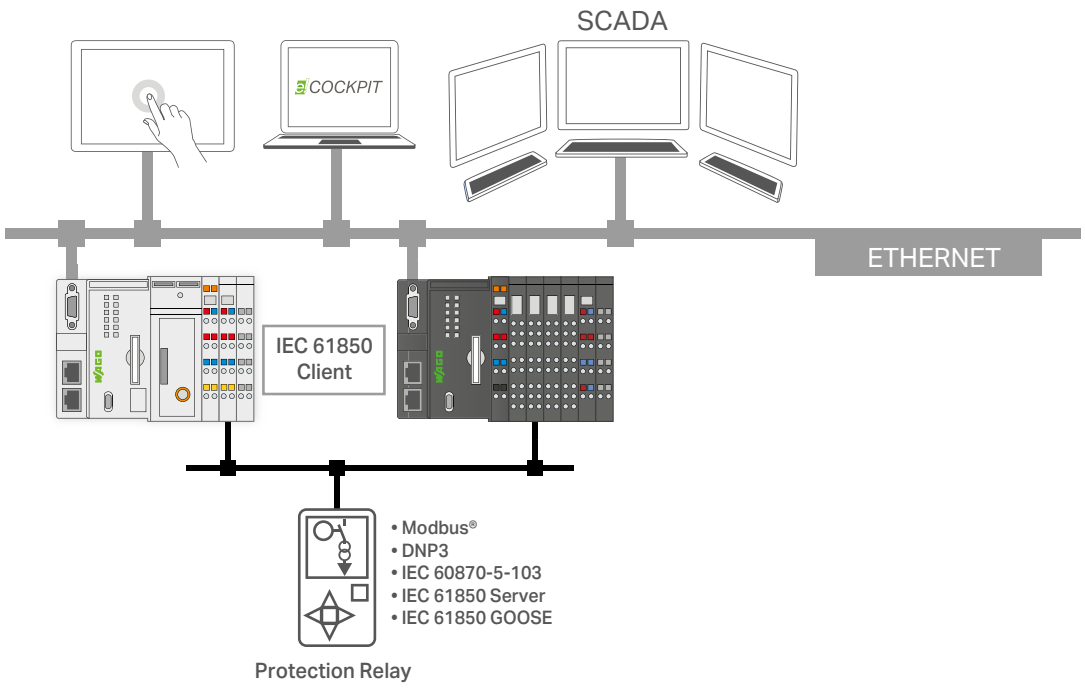
*Number of BACnet objects: without limitation – but depends on the application used

| | |
|---|---|
| Minimum firmware version | Firmware (16) |
| Minimum *e!COCKPIT* version | V1.6.1 |
| Delivery type | Licence certificate via email (*e!COCKPIT* already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-0283/211-1000<br>wago.com/2759-0286/211-1000 |

An Internet connection to the PC that's equipped with *e!COCKPIT* may be required for license activation.
A single license allows installation on one device.
One license per device is required.

BACnet® is a registered trademark of the American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE).

# Runtime Software
## *e!RUNTIME*; IEC 61850 Client 300






**Function:**
The parameters for communication per the IEC 61850 Protocol can be set with a configurator that is integrated into the ***e!COCKPIT*** Software.

The configurator sets up the reading of IEC 61850 object data from protection devices, for example. If the configuration of the third-party device is available in IEC-61850 SCL exchange format, it can be read in using the configurator's import functions. Alternatively, it is also possible to read the configuration from the third-party device using the configurator's online browsing function.

With this license, the IEC 61850 Protocol can be activated on the client. This permits the creation of gateways that convert one protocol into another, e.g., allowing protection devices to be read out via IEC 61850 and data to be transmitted to the network control system via IEC 60870-5-104.

The IEC 61850 Client processes data from up to 4 servers with each 10 requests.

**Your Benefits:**
Use the controller as a telecontrol master (client) to read data from IEC 61850 Protection Devices (servers) and process it locally in the controller. Create a gateway application to use this client function to forward read data to a higher-level control system or cloud. This may require additional software licenses, such as the WAGO IEC 60870 Slave, DNP 3 Slave, Sparkplug or WAGO Cloud.

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the controller. No other installation steps are required.

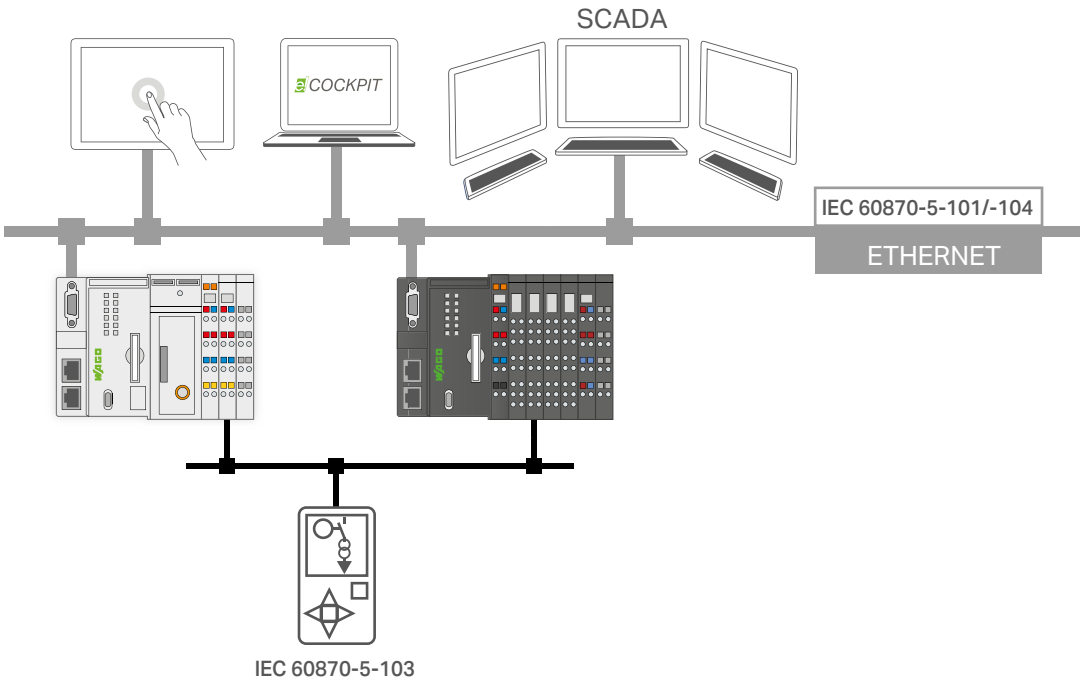
**Technical Data:**
See Product Manual "Planning the IEC 61850 Protocol with the Telecontrol Configurator and ***e!COCKPIT***."

| Item Description | |
|---|---|
| ***e!RUNTIME*; IEC 61850 Client 300** | **Item No.** |
| Single License; Online Activation | **2759-2243/211-1000** |
| Compatible Controllers | |
| PFC200; G2; 4ETH RS | **750-8210** |
| PFC200; G2; 4ETH RS; T | **750-8210/025-000** |
| PFC200; G2; 4ETH RS; XTR | **750-8210/040-000** |
| PFC200; G2; 2ETH 2SFP | **750-8211** |
| PFC200; G2; 2ETH 2SFP; XTR | **750-8211/040-000** |
| PFC200; G2; LTE 2ETH RS | **750-8217** |
| PFC200; G2; LTE 2ETH RS; T | **750-8217/025-000** |

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.8 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-2243/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one controller.
One license per controller is required.

# Runtime Software
## *e!RUNTIME*; IEC 60870 Slave




**Function:**
The parameters for communication per the IEC 60870 Protocol can be set with a configurator integrated into the ***e!COCKPIT*** Software.
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.
With this license, the IEC 60870-5-101 and -104 Protocols can be activated on the slave, and the protocol -103 activated on the master only. 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.
The time on the telecontrol substation (slave) can be directly synchronized via either the IEC 60870 Protocol with object 103 or via (S)NTP.
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 the control direction.

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

**Your Benefits:**
Use the PFC200 Controller as a telecontrol substation (slave) on an IEC 60870-5-101/-104 Control System (master).
Process data from one or more IEC 60870-5-103 Protection Devices (slaves) with the PFC200 Controller (master).
Create a gateway application to transfer data from IEC 60870-5-103 Protection Devices to an IEC 60870-5-101/-104 Control System.

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the controller. No other installation steps are required.

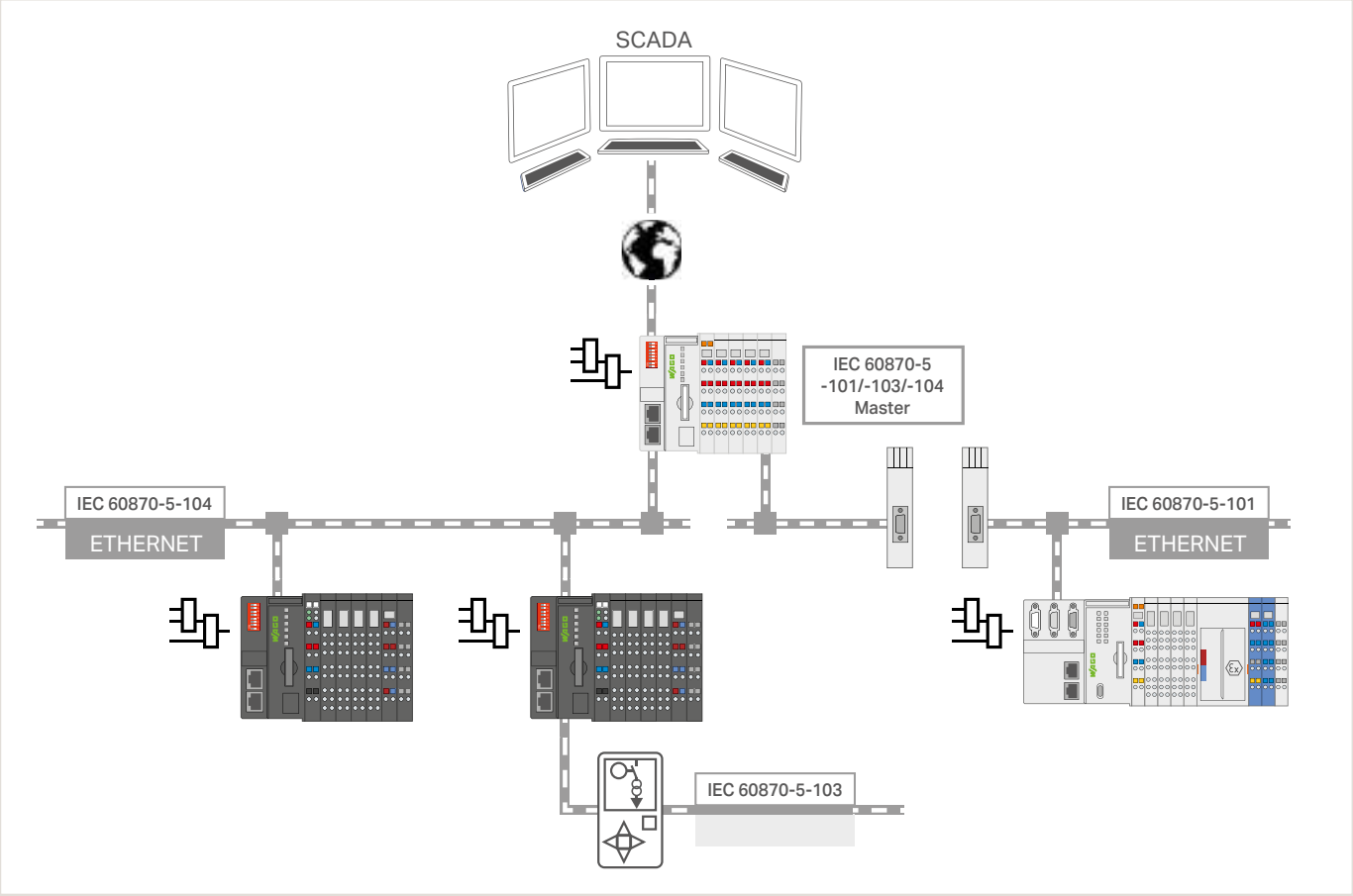
**Technical Data:**
See Section "Functionality of the WAGO Protocol Library according to IEC 60870-5-101, and -104" in Product Manual "Planning DNP3 / IEC 60870 with the Telecontrol Configurator and ***e!COCKPIT***."

| Item Description | |
|---|---|
| ***e!RUNTIME*; IEC 60870 Slave** | **Item No.** |
| Single License; Online Activation | 2759-290/211-1000 |
| Compatible Controllers | |
| PFC200; G2; 4ETH RS | 750-8210 |
| PFC200; G2; 4ETH RS; T | 750-8210/025-000 |
| PFC200; G2; 4ETH RS; XTR | 750-8210/040-000 |
| PFC200; G2; 2ETH 2SFP | 750-8211 |
| PFC200; G2; 2ETH 2SFP; XTR | 750-8211/040-000 |
| PFC200; G2; LTE 2ETH RS | 750-8217 |
| PFC200; G2; LTE 2ETH RS; T | 750-8217/025-000 |

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.7 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-290/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one controller.
One license per controller is required.

# Runtime Software
## *e!RUNTIME*; IEC 60870 Master 300




**Function:**
The parameters for communication per the IEC 60870 Protocol can be set with a configurator integrated into the ***e!COCKPIT*** Software.
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.
With this license, the IEC 60870-5-101, -103 and -104 Protocols can be activated on the master. 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.

IEC 60870-101/-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 received with or without a time stamp. This also applies to information objects in the control direction.

The IEC 60870-5 Master can support connections to up to 16 IEC 60870-5 Slave Devices.

**Your Benefits:**
Use the controller as a telecontrol master to read data from IEC-60870-5-101/-104 Field Devices or IEC-60870-5-103 Protection Devices (slaves) and process it locally in the controller.
Create a gateway application to use this master function to forward read data to a higher-level control system or cloud. This may require additional software licenses, such as the WAGO IEC 60870 Slave, DNP 3 Slave, Sparkplug or WAGO Cloud.

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the controller. No other installation steps are required.

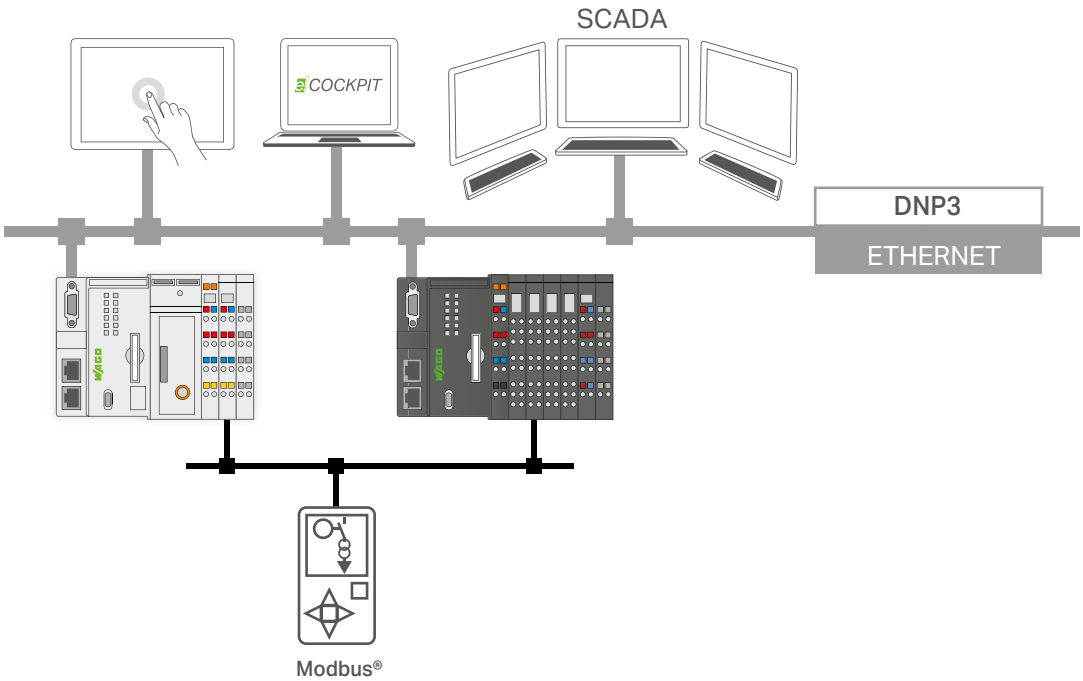
**Technical Data:**
See Section "Functionality of the WAGO Protocol Library according to IEC 60870-5-101, and -104" in Product Manual "Planning the IEC 60870 Protocol with the Telecontrol Configurator and ***e!COCKPIT***."

| Item Description | |
|---|---|
| ***e!RUNTIME***; IEC 60870 Master 300 | Item No. |
| Single License; Online Activation | 2759-293/211-1000 |
| Compatible Controllers | |
| PFC200; G2; 4ETH RS | 750-8210 |
| PFC200; G2; 4ETH RS; T | 750-8210/025-000 |
| PFC200; G2; 4ETH RS; XTR | 750-8210/040-000 |
| PFC200; G2; 2ETH 2SFP | 750-8211 |
| PFC200; G2; 2ETH 2SFP; XTR | 750-8211/040-000 |
| PFC200; G2; LTE 2ETH RS | 750-8217 |
| PFC200; G2; LTE 2ETH RS; T | 750-8217/025-000 |

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.8 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-293/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one controller.
One license per controller is required.

# Runtime Software
## *e!RUNTIME*; DNP3 Slave




**Function:**
The DNP3 Configurator is part of the ***e!COCKPIT*** Software. With this license, the DBP3 Protocol can be activated on the slave. 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 slaves.
Cyclical time synchronization of the telecontrol substation (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 the 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.

**Your Benefits:**
Use the PFC200 Controller as a telecontrol substation (slave) on an DNP3 Control System (master) via TCP, UDP or serially.
Create a gateway application to transfer data, e.g., from Modbus® Field Devices to a DNP3 Control System.

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the controller. No other installation steps are required.

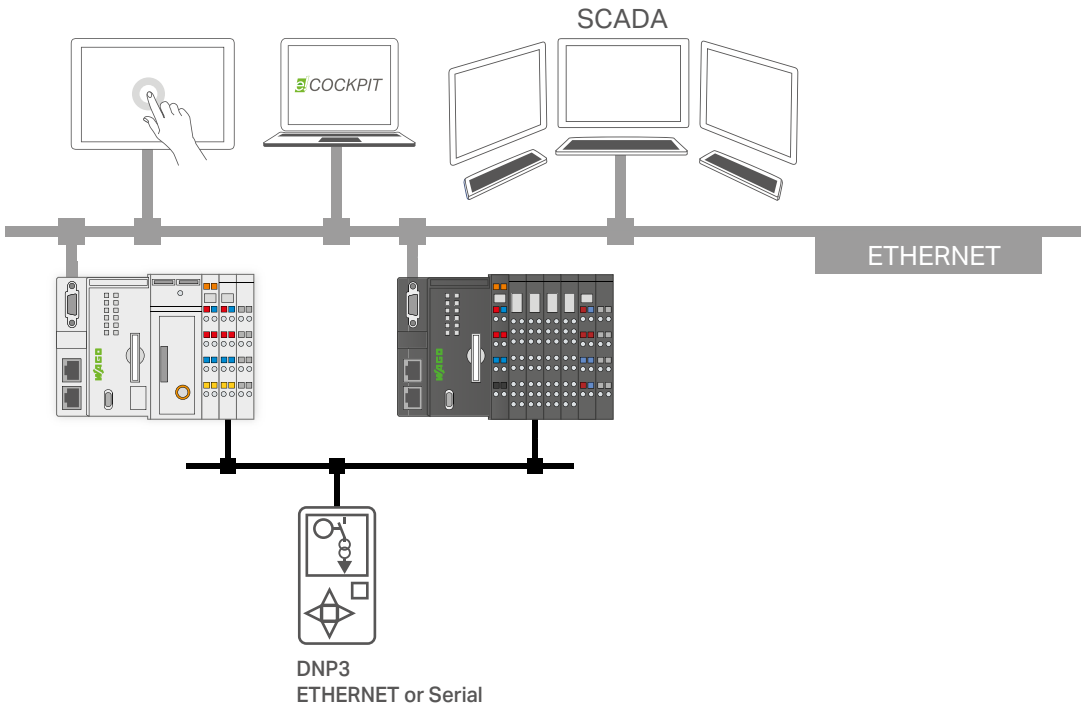
**Technical Data:**
See the document "***e!RUNTIME*** DNP3 Slave Device Profile" on www.wago.com.

| Item Description | |
|---|---|
| ***e!RUNTIME*; DNP3 Slave** | **Item No.** |
| Single License; Online Activation | 2759-2290/211-1000 |
| Compatible Controllers | |
| PFC200; G2; 4ETH RS | 750-8210 |
| PFC200; G2; 4ETH RS; T | 750-8210/025-000 |
| PFC200; G2; 4ETH RS; XTR | 750-8210/040-000 |
| PFC200; G2; 2ETH 2SFP | 750-8211 |
| PFC200; G2; 2ETH 2SFP; XTR | 750-8211/040-000 |
| PFC200; G2; LTE 2ETH RS | 750-8217 |
| PFC200; G2; LTE 2ETH RS; T | 750-8217/025-000 |

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.7 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-2290/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one controller.
One license per controller is required.

# Runtime Software
## *e!RUNTIME*; DNP3 Master; 300






**Function:**
The DNP3 Configurator is part of the ***e!COCKPIT*** Software. With this license, the DNP3 Protocol can be activated on the master. 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. As an alternative to manually configuring connections to DNP3 Slaves, it is also possible to use a description file to import the configurations in the standard DNP3 XML device profile format.

In performance class 300, the master can maintain connections to up to four DNP3 Slaves, thereby working as TCP or serial DNP3 Master. Up to 10000 events from connected DNP3 Slaves can be saved in the controller's internal RAM or on the SD card.

In the monitoring direction, the WAGO DNP3 Master can receive digital, analog and count values from the slave. Both digital and analog values can be sent in the 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.

**Your Benefits:**
Use of the PFC200 Controller as a DNP3 Master to read and process data from DNP3 Slaves (field devices) via TCP, UDP or serially.
Create a gateway application to transfer data from DNP3 Slaves (field devices) and other protocols (e.g., IEC 60870, Modbus®).

**Use:**
Enter the license into ***e!COCKPIT***, assign it to a device and load both the license and project into the controller. No other installation steps are required.

**Technical Data:**
See the document "***e!RUNTIME*** DNP3 Master Device Profile" on www.wago.com.

| Item Description | |
|---|---|
| ***e!RUNTIME***; DNP3 Master; 300 | Item No. |
| Single License; Online Activation | 2759-2293/211-1000 |
| Compatible Controllers | |
| PFC200; G2; 4ETH RS | 750-8210 |
| PFC200; G2; 4ETH RS; T | 750-8210/025-000 |
| PFC200; G2; 4ETH RS; XTR | 750-8210/040-000 |
| PFC200; G2; 2ETH 2SFP | 750-8211 |
| PFC200; G2; 2ETH 2SFP; XTR | 750-8211/040-000 |
| PFC200; G2; LTE 2ETH RS | 750-8217 |
| PFC200; G2; LTE 2ETH RS; T | 750-8217/025-000 |

| | |
|---|---|
| Minimum ***e!COCKPIT*** version | V1.7 |
| Delivery type | Licence certificate via email (***e!COCKPIT*** already contains the software itself) |
| For data sheet and additional information, see: | wago.com/2759-2293/211-1000 |

An Internet connection to the PC that's equipped with ***e!COCKPIT*** may be required for license activation.
A single license allows installation on one controller.
One license per controller is required.

# WAGO WebVisu App
## For Mobile System Operation/Monitoring



With the WAGO 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 "Apple Store" or "Google Play™."

Download on the App Store

GET IT ON Google play

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 Play™ 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,<br>Android version 4.2 or later |
| Compatibility | iPhone; iPad and iPad Air;<br>Android smartphones and tablets |
| For additional information, see: | wago.com/webvisu |

# WAGO I/O Field App

For Maintenance, Diagnostics, Operation and Monitoring of Installed WAGO I/O System Field Modules

I/O Field



The WAGO I/O Field App allows you to display product information, make settings and adjust parameters for both fieldbus modules and IO-Link hubs.

Communication is performed via the *Bluetooth*® interface of a WAGO I/O System Field Module once a Data Matrix code has been scanned to select the product.

The current measured values of a port can be displayed (temperature, voltage, current and states) and configured (e. g., operating mode, filters).

- Identification via Data Matrix codes
- Communication via *Bluetooth*®
- Download of IODDs (IODD finder)
- Access to all process and parameter data
- Simulating inputs
- Forcing outputs (DO)
- Management of datasheets, manuals etc.
- User and rights management



| WAGO I/O Field App |
|---|
| Download: Apple Store or Google Store |

| System Requirements | |
|---|---|
| Operating system | iOS version 11.0 or later,<br>Android version 6.0 or later |
| Compatibility | iPhone; iPad and iPad Air;<br>Android smartphones and tablets |
| For additional information, see: | wago.com/IOField |

# Accessories

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

| RS-232 Communication Cable; RS-232 (D-Sub 9-Pole); WAGO I/O System 750 Service Interface | | |
|---|---|---|
| Length | Item No. | PU |
| 1 m | 750-920 | 1 |

| *Bluetooth*® Adapter; WAGO I/O System 750 Service Interface | | |
|---|---|---|
| | Item No. | PU |
| | 750-921 | 1 |


# Operation and Monitoring

### Touch Panels 600 Standard Line

- High-performance Touch Panels with resistive touchscreens
- 10.9 … 54.7 cm (4.3 … 21.5″)
- Models include Control, Visu or Web Panels for display of e!COCKPIT visualizations

### Touch Panels 600 Advanced Line

- High-performance Touch Panels with capacitive touchscreens and glass surfaces
- 18 … 54.7 cm (7 … 21.5")
- Models include Control or Visu Panels

### Touch Panels 600 Marine Line

- High-performance Touch Panels with resistive touchscreens
- Ideal for marine applications
- 10.9 … 25.7 cm (4.3 … 10.1″)
- Models include Control or Visu Panels

### Edge Computing

- Models include Edge Controllers or Edge Computers
- Perfect in-the-field data usage
- Easy cloud connection
- Equipped for high security

Section 4 ►

### Controllers 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 5.1 ►►

### Starter Kits

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

- Controller PFC100 or PFC200
- Controller 750 KNX IP
- Touch Panel 600

Section 5.5 ►►►►►►

# Operation and Monitoring
## Contents



| | Display | CPU | Web Browser | Modbus (TCP, UDP) | EtherNet/IP | EtherCAT | BACnet/IP | CANopen | IoT Protocols | Hardware | Display Diagonal | Item No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  **Touch Panels 600 Standard Line** | Resistive touchscreen | Cortex A9 | x | M/S | S | M* | x* | M/S | x | PIO3; Control Panel | 10.9 cm (4.3") | 762-4301/8000-002 | 76 |
| | | | x | M/S | S | M* | x* | M/S | x | | 14.5 cm (5.7") | 762-4302/8000-002 | 77 |
| | | | x | M/S | S | M* | x* | M/S | x | | 18 cm (7.0") | 762-4303/8000-002 | 78 |
| | | | x | M/S | S | M* | x* | M/S | x | | 25.7 cm (10.1") | 762-4304/8000-002 | 79 |
| | | | x | M/S | S | M* | x* | M/S | x | | 39.6 cm (15.6") | 762-4305/8000-002 | 80 |
| | | | x | M/S | S | M* | x* | M/S | x | | 54.7 cm (21.5") | 762-4306/8000-002 | 81 |
| | | | x | M | | M* | | | | PIO2; Visu Panel | 10.9 cm (4.3") | 762-4201/8000-001 | 76 |
| | | | x | M | | M* | | | | | 14.5 cm (5.7") | 762-4202/8000-001 | 77 |
| | | | x | M | | M* | | | | | 18 cm (7.0") | 762-4203/8000-001 | 78 |
| | | | x | M | | M* | | | | | 25.7 cm (10.1") | 762-4204/8000-001 | 79 |
| | | | x | M | | M* | | | | | 39.6 cm (15.6") | 762-4205/8000-001 | 80 |
| | | | x | M | | M* | | | | | 54.7 cm (21.5") | 762-4206/8000-001 | 81 |
| | | | x | | | | | | | PIO1; Web Panel | 10.9 cm (4.3") | 762-4101 | 76 |
| | | | x | | | | | | | | 14.5 cm (5.7") | 762-4102 | 77 |
| | | | x | | | | | | | | 18 cm (7.0") | 762-4103 | 78 |
| | | | x | | | | | | | | 25.7 cm (10.1") | 762-4104 | 79 |
|  **Touch Panels 600 Advanced Line** | Capacitive touchscreen with a glass surface | Cortex A9 | x | M/S | S | M* | x* | M/S | x | PIO3; Control Panel | 18 cm (7.0") | 762-5303/8000-002 | 82 |
| | | | x | M/S | S | M* | x* | M/S | x | | 25.7 cm (10.1") | 762-5304/8000-002 | 83 |
| | | | x | M/S | S | M* | x* | M/S | x | | 39.6 cm (15.6") | 762-5305/8000-002 | 84 |
| | | | x | M/S | S | M* | x* | M/S | x | | 54.7 cm (21.5") | 762-5306/8000-002 | 85 |
| | | | x | M | | M* | | | | PIO2; Visu Panel | 18 cm (7.0") | 762-5203/8000-001 | 82 |
| | | | x | M | | M* | | | | | 25.7 cm (10.1") | 762-5204/8000-001 | 83 |
| | | | x | M | | M* | | | | | 39.6 cm (15.6") | 762-5205/8000-001 | 84 |
| | | | x | M | | M* | | | | | 54.7 cm (21.5") | 762-5206/8000-001 | 85 |
|  **Touch Panels 600 Marine Line** | Resistive touchscreen, marine version | Cortex A9 | x | M/S | S | M* | x* | M/S | x | PIO3; Control Panel | 10.9 cm (4.3") | 762-6301/8000-002 | 86 |
| | | | x | M/S | S | M* | x* | M/S | x | | 14.5 cm (5.7") | 762-6302/8000-002 | 87 |
| | | | x | M/S | S | M* | x* | M/S | x | | 18 cm (7.0") | 762-6303/8000-002 | 88 |
| | | | x | M/S | S | M* | x* | M/S | x | | 25.7 cm (10.1") | 762-6304/8000-002 | 89 |
| | | | x | M | | M* | | | | PIO2; Visu Panel | 10.9 cm (4.3") | 762-6201/8000-001 | 86 |
| | | | x | M | | M* | | | | | 14.5 cm (5.7") | 762-6202/8000-001 | 87 |
| | | | x | M | | M* | | | | | 18 cm (7.0") | 762-6203/8000-001 | 88 |
| | | | x | M | | M* | | | | | 25.7 cm (10.1") | 762-6204/8000-001 | 89 |
|  **Touch Panels *e!DISPLAY 7300T*** | Resistive touchscreen | Cortex A8 | x | | | | | | | Web Panel | 10.9 cm (4.3") | 762-3000 | 90 |
| | | | x | | | | | | | | 14.5 cm (5.7") | 762-3001 | 91 |
| | | | x | | | | | | | | 18 cm (7.0") | 762-3002 | 92 |
| | | | x | | | | | | | | 25.7 cm (10.1") | 762-3003 | 93 |



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

3

# 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 advanced 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 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 – these are the core ideas of Industry 4.0. Using a dedicated library, WAGO's Control Panels become IoT controllers that send data from the field level to the cloud. Once in the cloud, this data can be aggregated and used for analysis. This capability creates tremendous added value for your company – whether it's 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 future-proof.

### 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. Thanks to custom-developed clamps, the front of the display meets lofty IP65 protection standards. 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 WAGO's Touch Panels have status LEDs that indicate operating status and provide operational feedback. A customized configuration interface is available for customizing 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's Touch Panels have an integrated proximity sensor, allowing the visualization to be automatically re-displayed from the energy-saving screensaver. An integrated sensor simultaneously detects ambient lighting levels for automatic brightness control.

### Integrated PLC

In the "Control Panel" function, the devices offer an integrated PLC functionality, 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. Data to be displayed is read in via standardized bus systems (e.g., Modbus TCP).

### Open-Source Software and Linux®

We unite what belongs together: High-performance WAGO Hardware and the future-proof Linux® Operating System. For complex tasks, you can choose between programming in IEC 61131 or directly under 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.

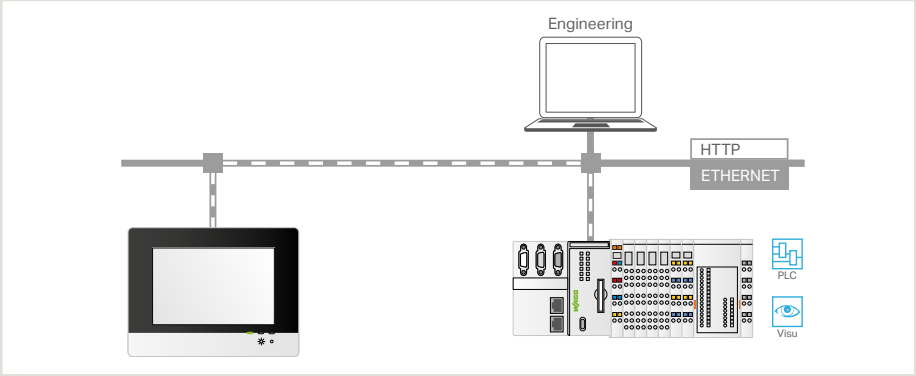
**Benefits:**

- 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

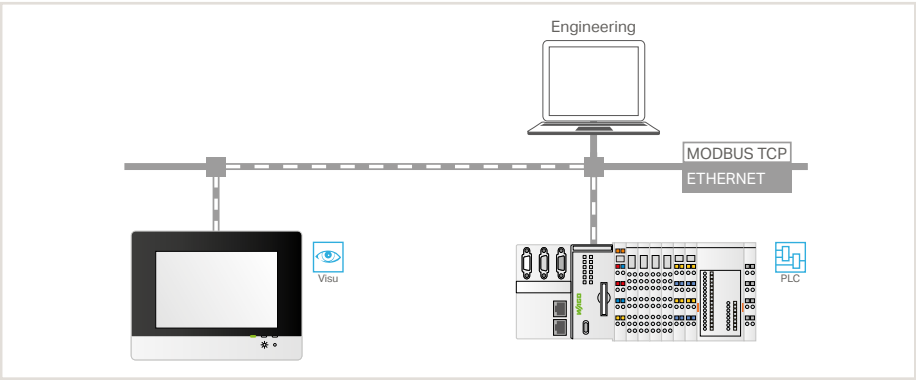
### Web Panels

The operating and display devices in the "Web Panel" software configuration are provided with a Web browser for accessing and displaying controllers with integrated Web visualization via standard Web protocols. 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.



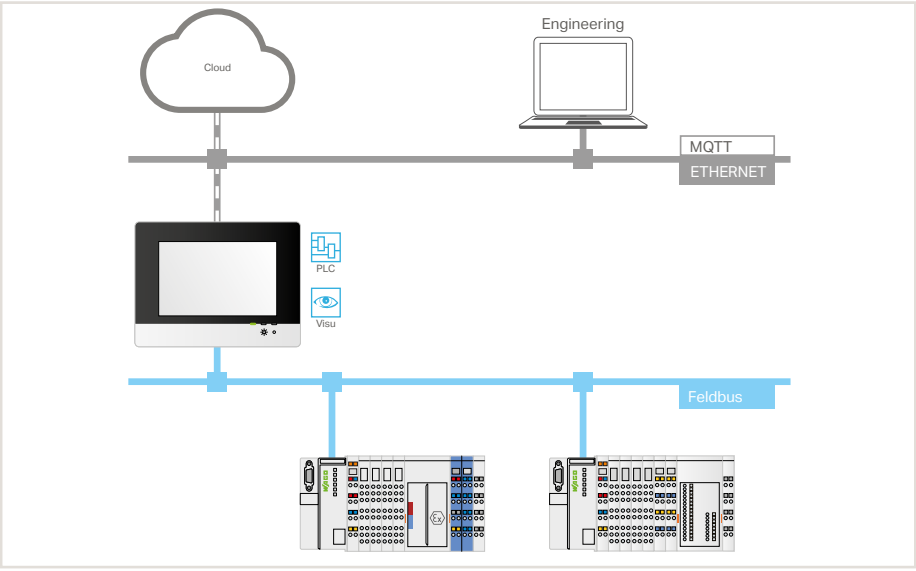

### Visu Panels

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 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, providing a very compact 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.

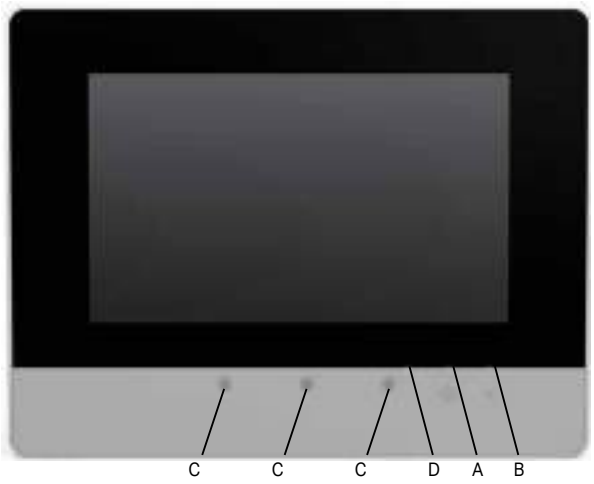


# Operation and Monitoring
## Interfaces and Types

### Touch Panels Standard Line

By default, WAGO's Touch Panels are equipped with resistive touchscreens. In addition, they have two capacitive buttons (A and B) for on-device brightness settings. A 3-color 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).

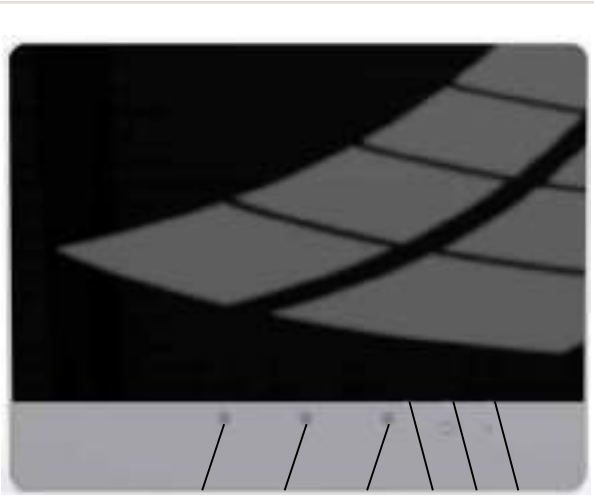
Available sizes:
- 10.9 cm (4.3")
- 14.5 cm (5.7")
- 18 cm (7.0")
- 25.7 cm (10.1")
- 39.6 cm (15.6")
- 54.7 cm (21.5")




### Touch Panels Advanced Line

In contrast to the standard version, these devices are equipped with a capacitive touchscreen and a glass surface. This allows gesture recognition, e.g., swiping for turning pages or enlarging. In addition, the glass front features greater mechanical and chemical resistance. Operation while wearing gloves is also possible.

Available sizes:
- 18 cm (7.0")
- 25.7 cm (10.1")
- 39.6 cm (15.6")
- 54.7 cm (21.5")




### Touch Panels Marine Line

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

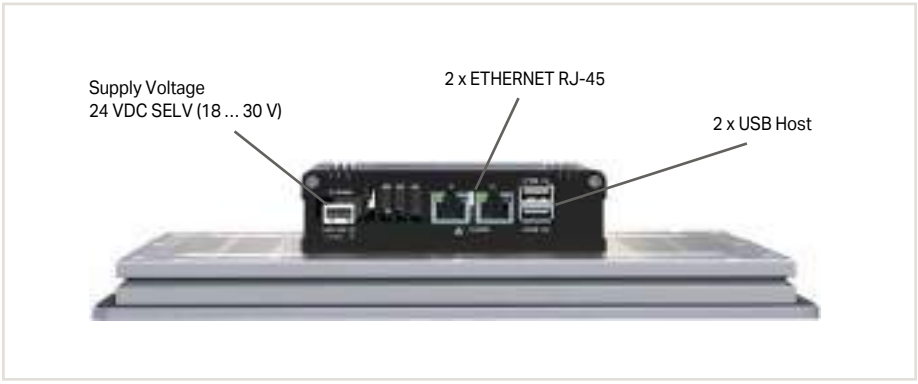
Available sizes:
- 10.9 cm (4.3")
- 14.5 cm (5.7")
- 18 cm (7.0")
- 25.7 cm (10.1")

# Operation and Monitoring
## Interfaces and Types

### Hardware Configuration PIO1

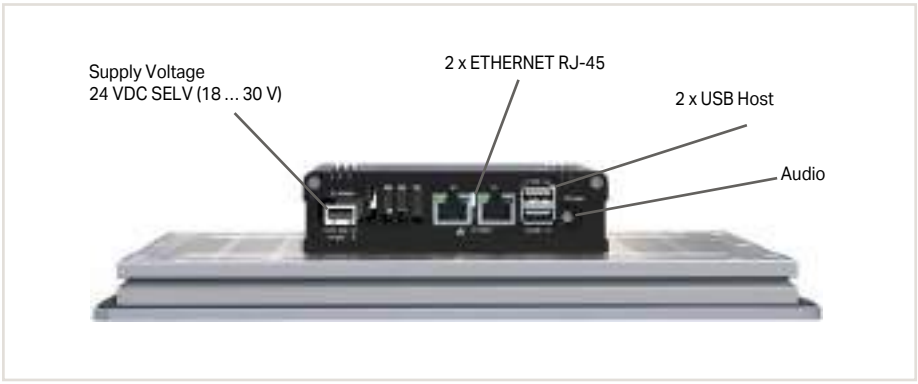
Besides the power supply connection, devices with the PIO1 hardware configuration provide:
- 2 x ETHERNET port for connecting to field devices and the engineering tool
- 2 x USB port for optional connection of a USB stick, mouse or keyboard

Devices of this type are primarily used as Web Panels.




### Hardware Configuration PIO2

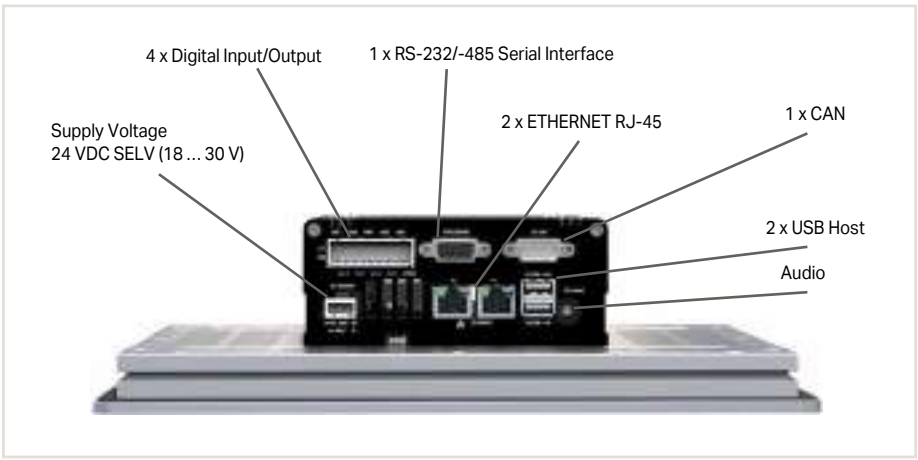
The PIO2 hardware configuration contains the same connections as PIO1 hardware. In addition, the devices are equipped with an audio interface for connecting headphones or a loudspeaker. Devices of this type are primarily used as Visu Panels.




### 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:
- 1 x CAN for controlling field devices
- 1 x RS-232/485 interface for controlling field devices with a serial interface
- 4 x digital input/output 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 features.




### Common Control Elements

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

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

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

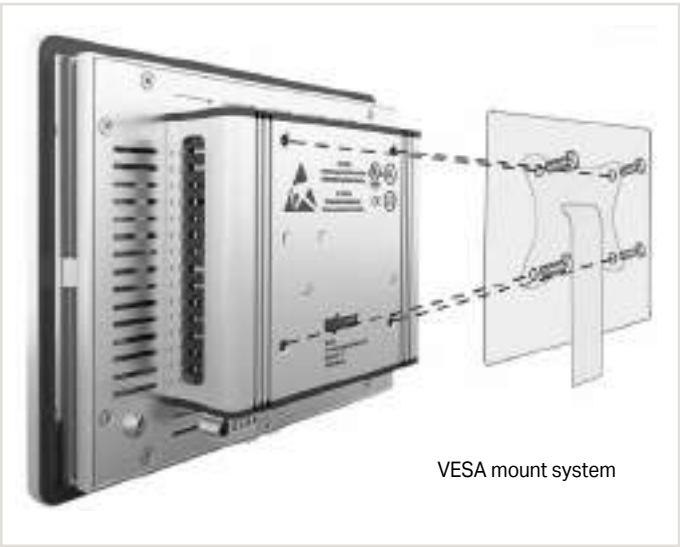
# Operation and Monitoring
## Application and Installation Instructions

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.

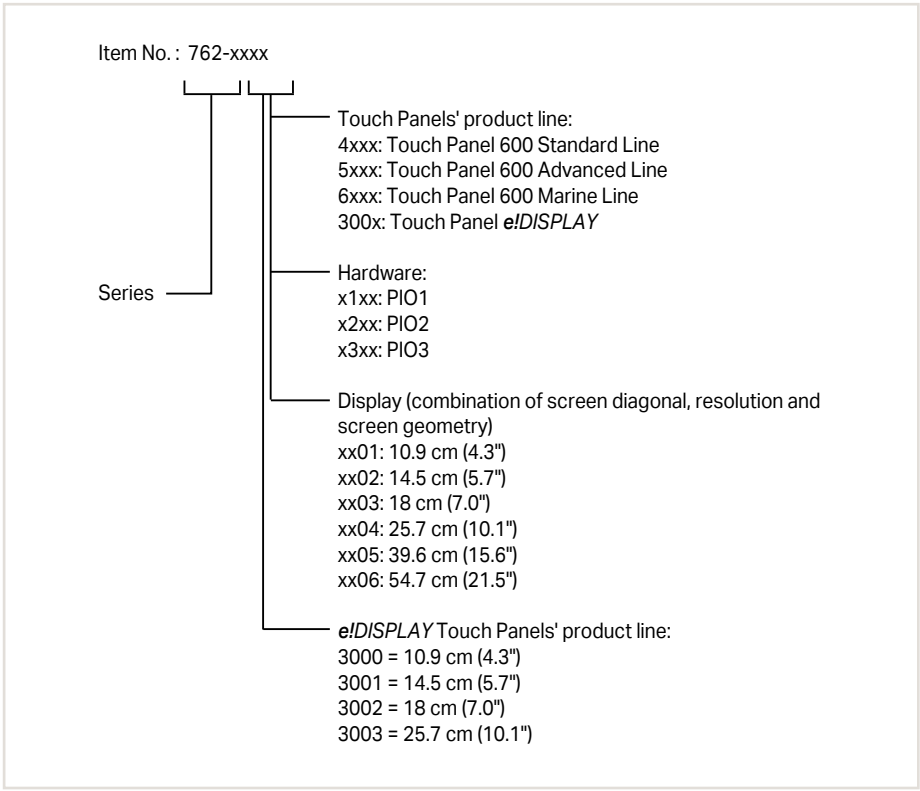



VESA mount system

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 an item number key's components




## Standards and Rated Conditions

| General Technical Data | |
|---|---|
| Operating system | Linux® |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor |
| Durability | 100,000 activations with touch pen |
| Supply voltage | 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

For approvals overview (item comparison), see Section 14 (Technical Section) or visit www.wago.com.

# Touch Panels ▸ Standard Line ▸ 10.9 cm (4.3 Inches)

3

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel | PIO1 Hardware Configuration; 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 | Resistive touchscreen | | |
| Display diagonal | 10.9 cm (4.3 Inches) | | |
| Contrast ratio | 600:1 | | |
| Aspect ratio | 16:9 | | |
| Display colors | 16 million colors | | |
| Graphics resolution | (480 x 272) px | | |
| Viewing angle (horizontal/vertical) | 80° / 80° | | |
| Brightness | 500 cd/m² | | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) | Web browser (HTML5) |
| 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 | ARM® Cortex™ A9 | | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | | |
| Input current (typ.) | 310 mA, without USB load; 575 mA, with USB load | 290 mA, without USB load; 555 mA, with USB load | |
| Operating power | 6.0 W, without USB load; 11.5 W, with USB load | 5.8 W, without USB load; 11.3 W, with USB load | |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | | |
| Approvals | CE; Marine; 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.** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 | |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 | |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 | |

# Touch Panels ▶ Standard Line ▶ 14.5 cm (5.7 Inches)

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel | PIO1 Hardware Configuration; 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 | Resistive touchscreen | | |
| Display diagonal | 14.5 cm (5.7 Inches) | | |
| Contrast ratio | 300:1 | | |
| Aspect ratio | 4:3 | | |
| Display colors | 262,000 colors | | |
| Graphics resolution | (640 x 480) px | | |
| Viewing angle (horizontal/vertical) | 80° / 80° | | |
| Brightness | 630 cd/m² | | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) | Web browser (HTML5) |
| 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 | ARM® Cortex™ A9 | | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | | |
| Input current (typ.) | 360 mA, without USB load; 640 mA, with USB load | 340 mA, without USB load; 620 mA, with USB load | |
| Operating power | 7.0 W, without USB load; 12.0 W, with USB load | 6.8 W, without USB load; 11.8 W, with USB load | |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | | |
| Approvals | CE; Marine; 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.** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 | |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 | |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 | |

# Touch Panels ▸ Standard Line ▸ 17.8 cm (7 Inches)

3

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel | PIO1 Hardware Configuration; 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 | Resistive touchscreen | | |
| Display diagonal | 17.8 cm (7 Inches) | | |
| Contrast ratio | 800:1 | | |
| Aspect ratio | 16:9 | | |
| Display colors | 16 million colors | | |
| Graphics resolution | (800 x 480) px | | |
| Viewing angle (horizontal/vertical) | 89° / 89° | | |
| Brightness | 450 cd/m² | | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) | Web browser (HTML5) |
| 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 | ARM® Cortex™ A9 | | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | | |
| Input current (typ.) | 460 mA, without USB load; 760 mA, with USB load | 420 mA, without USB load; 720 mA, with USB load | |
| Operating power | 8.8 W, without USB load; 13.9 W, with USB load | 8.6 W, without USB load; 13.7 W, with USB load | |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | | |
| Approvals | CE; Marine; 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.** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 | |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 | |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 | |

# Touch Panels ▸ Standard Line ▸ 25.7 cm (10.1 Inches)

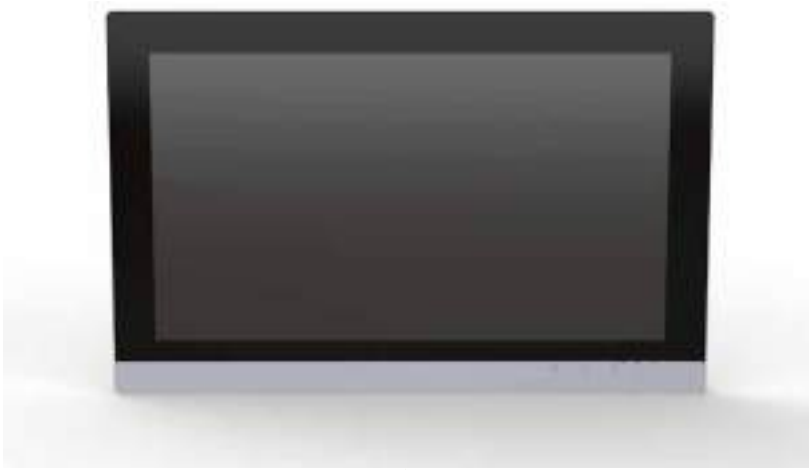
| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel | PIO1 Hardware Configuration; Web Panel |
|---|---|---|---|
| **Item No.** | **762-4304/8000-002** | **762-4204/8000-001** | **762-4104** |
| **Order Text** | **TP600; 10.1; 1280x800; PIO3; CP** | **TP600; 10.1; 1280x800; PIO2; VP** | **TP600; 10.1; 1280x800; PIO1; WP** |
| Technical Data | | | |
| Display | Resistive touchscreen | | |
| Display diagonal | 25.7 cm (10.1 Inches) | | |
| Contrast ratio | 800:1 | | |
| Aspect ratio | 16:9 | | |
| Display colors | 16 million colors | | |
| Graphics resolution | (1280 x 800) px | | |
| Viewing angle (horizontal/vertical) | 85° / 85° | | |
| Brightness | 800 cd/m² | | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) | Web browser (HTML5) |
| 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 | ARM® Cortex™ A9 | | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | | |
| Input current (typ.) | 640 mA, without USB load; 940 mA, with USB load | 620 mA, without USB load; 920 mA, with USB load | |
| Operating power | 11.8 W, without USB load; 17.0 W, with USB load | 11.6 W, without USB load; 16.8 W, with USB load | |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | | |
| Approvals | CE; Marine; 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.** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 | |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 | |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 | |

# Touch Panels ▸ Standard Line ▸ 39.6 cm (15.6 Inches)



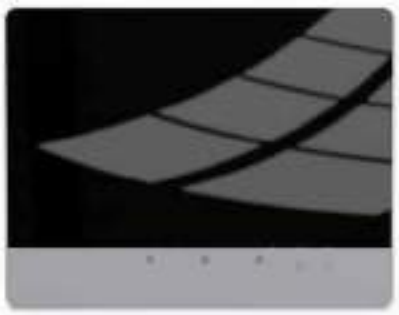
| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-4305/8000-002** | **762-4205/8000-001** |
| **Order Text** | **TP600; 15.6; 1920x1080; PIO3; CP** | **TP600; 15.6; 1920x1080; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen | |
| Display diagonal | 39.6 cm (15.6 Inches) | |
| Contrast ratio | 800:1 | |
| Display colors | 16.7 million colors | |
| Graphics resolution | (1920 x 1080) px | |
| Viewing angle (horizontal/vertical) | 85° / 85° | |
| Brightness | 500 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 | (420 x 283 x 78) mm | (420 x 283 x 58) mm |
| Panel cutout (W x H) | (406 x 268) mm | |
| Mounting type | Clamping elements (included) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 450 mA, without USB load; 679 mA, with USB load | 430 mA, without USB load; 658 mA, with USB load |
| Operating power | 10.8 W, without USB load; 16.3 W, with USB load | 10.3 W, without USB load; 15.8 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; cULus OrdLoc | |
| Data sheet and further information, see: | wago.com/762-4305/8000-002 | wago.com/762-4205/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▶ Standard Line ▶ 54.7 cm (21.5 Inches)



| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-4306/8000-002** | **762-4206/8000-001** |
| **Order Text** | **TP600; 21.5; 1920x1080; PIO3; CP** | **TP600; 21.5; 1920x1080; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen | |
| Display diagonal | 54.7 cm (21.5 Inches) | |
| Contrast ratio | 1000:1 | |
| Display colors | 16.7 million colors | |
| Graphics resolution | (1920 x 1080) px | |
| Viewing angle (horizontal/vertical) | 89° / 89° | |
| Brightness | 350 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 | (554 x 358 x 78) mm | (554 x 358 x 58) mm |
| Panel cutout (W x H) | (540 x 344) mm | |
| Mounting type | Clamping elements (included) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 350 mA, without USB load; 579 mA, with USB load | 330 mA, without USB load; 558 mA, with USB load |
| Operating power | 8.4 W, without USB load; 13.9 W, with USB load | 7.9 W, without USB load; 13.4 W, with USB load |
| Surrounding air temperature (operation) | 0 … 45 °C (when mounted vertically; −0 … +40 °C, other mounting positions) | |
| Approvals | CE; cULus OrdLoc | |
| Data sheet and further information, see: | wago.com/762-4306/8000-002 | wago.com/762-4206/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

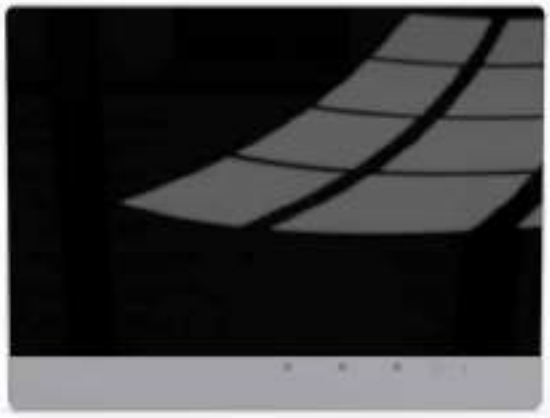
# Touch Panels ▸ Advanced Line ▸ 17.8 cm (7 Inches)





| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; 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 | Multitouch glass front; Capacitive touchscreen with a glass surface | |
| Display diagonal | 17.8 cm (7 Inches) | |
| Contrast ratio | 800:1 | |
| Aspect ratio | 16:9 | |
| Display colors | 16 million colors | |
| Graphics resolution | (800 x 480) px | |
| Viewing angle (horizontal/vertical) | 89° / 89° | |
| Brightness | 450 cd/m² | |
| Controls | Capacitive (glass); 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 460 mA, without USB load; 760 mA, with USB load | 420 mA, without USB load; 720 mA, with USB load |
| Operating power | 8.8 W, without USB load; 13.9 W, with USB load | 8.6 W, without USB load; 13.7 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-5303/8000-002 | wago.com/762-5203/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▶ Advanced Line ▶ 25.7 cm (10.1 Inches)



| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; 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 | Multitouch glass front; Capacitive touchscreen with a glass surface | |
| Display diagonal | 25.7 cm (10.1 Inches) | |
| Contrast ratio | 800:1 | |
| Aspect ratio | 16:9 | |
| Display colors | 16 million colors | |
| Graphics resolution | (1280 x 800) px | |
| Viewing angle (horizontal/vertical) | 85° / 85° | |
| Brightness | 800 cd/m² | |
| Controls | Capacitive (glass); 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 640 mA, without USB load; 940 mA, with USB load | 620 mA, without USB load; 920 mA, with USB load |
| Operating power | 11.8 W, without USB load; 17.0 W, with USB load | 11.6 W, without USB load; 16.8 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-5304/8000-002 | wago.com/762-5204/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

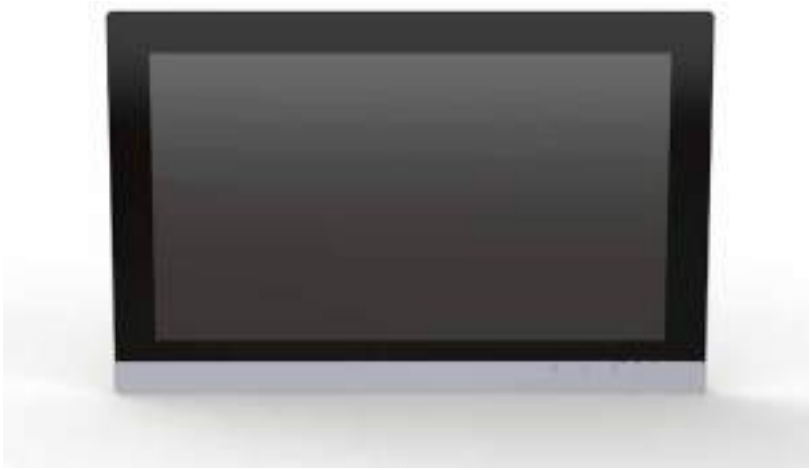
# Touch Panels ▸ Advanced Line ▸ 39.6 cm (15.6 Inches)

3

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-5305/8000-002** | **762-5205/8000-001** |
| **Order Text** | **TP600; 15.6; 1920x1080; PIO3; CP** | **TP600; 15.6; 1920x1080; PIO2; VP** |
| Technical Data | | |
| Display | Multitouch glass front; Capacitive touchscreen with a glass surface | |
| Display diagonal | 39.6 cm (15.6 Inches) | |
| Contrast ratio | 800:1 | |
| Display colors | 16.7 million colors | |
| Graphics resolution | (1920 x 1080) px | |
| Viewing angle (horizontal/vertical) | 85° / 85° | |
| Brightness | 500 cd/m² | |
| Controls | Capacitive (glass); 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 | (420 x 283 x 78) mm | (420 x 283 x 58) mm |
| Panel cutout (W x H) | (406 x 268) mm | |
| Mounting type | Clamping elements (included) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 450 mA, without USB load; 679 mA, with USB load | 430 mA, without USB load; 658 mA, with USB load |
| Operating power | 10.8 W, without USB load; 16.3 W, with USB load | 10.3 W, without USB load; 15.8 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; cULus OrdLoc | |
| Data sheet and further information, see: | wago.com/762-5305/8000-002 | wago.com/762-5205/8000-001 |

| **Accessories** | **Item No.** | **Item No.** |
|---|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▶ Advanced Line ▶ 54.7 cm (21.5 Inches)





| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-5306/8000-002** | **762-5206/8000-001** |
| **Order Text** | **TP600; 21.5; 1920x1080; PIO3; CP** | **TP600; 21.5; 1920x1080; PIO2; VP** |
| Technical Data | | |
| Display | Multitouch glass front; Capacitive touchscreen with a glass surface | |
| Display diagonal | 54.7 cm (21.5 Inches) | |
| Contrast ratio | 1000:1 | |
| Display colors | 16.7 million colors | |
| Graphics resolution | (1920 x 1080) px | |
| Viewing angle (horizontal/vertical) | 89° / 89° | |
| Brightness | 350 cd/m² | |
| Controls | Capacitive (glass); 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | 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 | (554 x 358 x 78) mm | (554 x 358 x 58) mm |
| Panel cutout (W x H) | (540 x 344) mm | |
| Mounting type | Clamping elements (included) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 350 mA, without USB load; 579 mA, with USB load | 330 mA, without USB load; 558 mA, with USB load |
| Operating power | 8.4 W, without USB load; 13.9 W, with USB load | 7.9 W, without USB load; 13.4 W, with USB load |
| Surrounding air temperature (operation) | 0 … 45 °C (when mounted vertically; −0 … +40 °C, other mounting positions) | |
| Approvals | CE; cULus OrdLoc | |
| Data sheet and further information, see: | wago.com/762-5306/8000-002 | wago.com/762-5206/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▸ Marine Line ▸ 10.9 cm (4.3 Inches)

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-6301/8000-002** | **762-6201/8000-001** |
| **Order Text** | **TP600; 4.3; 480x272; PIO3; CP** | **TP600; 4.3; 480x272; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen (black front) | |
| Display diagonal | 10.9 cm (4.3 Inches) | |
| Contrast ratio | 600:1 | |
| Aspect ratio | 16:9 | |
| Display colors | 16 million colors | |
| Graphics resolution | (480 x 272) px | |
| Viewing angle (horizontal/vertical) | 80° / 80° | |
| Brightness | 500 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) | |
| Interfaces (USB) | 2 x USB-Host 2.0 (Typ A) | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 310 mA, without USB load; 575 mA, with USB load | 290 mA, without USB load; 555 mA, with USB load |
| Operating power | 6.0 W, without USB load; 11.5 W, with USB load | 5.8 W, without USB load; 11.3 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-6301/8000-002 | wago.com/762-6201/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▶ Marine Line ▶ 14.5 cm (5.7 Inches)

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-6302/8000-002** | **762-6202/8000-001** |
| **Order Text** | **TP600; 5.7; 640x480; PIO3; CP** | **TP600; 5.7; 640x480; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen (black front) | |
| Display diagonal | 14.5 cm (5.7 Inches) | |
| Contrast ratio | 300:1 | |
| Aspect ratio | 4:3 | |
| Display colors | 262,000 colors | |
| Graphics resolution | (640 x 480) px | |
| Viewing angle (horizontal/vertical) | 80° / 80° | |
| Brightness | 630 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB | ***e!****RUNTIME*: 32 MB / 128 MB / - |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) | |
| Interfaces (USB) | 2 x USB-Host 2.0 (Typ A) | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 360 mA, without USB load; 640 mA, with USB load | 340 mA, without USB load; 620 mA, with USB load |
| Operating power | 7.0 W, without USB load; 12.0 W, with USB load | 6.8 W, without USB load; 11.8 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-6302/8000-002 | wago.com/762-6202/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▸ Marine Line ▸ 17.8 cm (7 Inches)



| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-6303/8000-002** | **762-6203/8000-001** |
| **Order Text** | **TP600; 7.0; 800x480; PIO3; CP** | **TP600; 7.0; 800x480; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen (black front) | |
| Display diagonal | 17.8 cm (7 Inches) | |
| Contrast ratio | 800:1 | |
| Aspect ratio | 16:9 | |
| Display colors | 16 million colors | |
| Graphics resolution | (800 x 480) px | |
| Viewing angle (horizontal/vertical) | 89° / 89° | |
| Brightness | 450 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) | |
| Interfaces (USB) | 2 x USB-Host 2.0 (Typ A) | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 460 mA, without USB load; 760 mA, with USB load | 420 mA, without USB load; 720 mA, with USB load |
| Operating power | 8.8 W, without USB load; 13.9 W, with USB load | 8.6 W, without USB load; 13.7 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-6303/8000-002 | wago.com/762-6203/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▶ Marine Line ▶ 25.7 cm (10.1 Inches)

| Version | PIO3 Hardware Configuration; Control Panel | PIO2 Hardware Configuration; Visu Panel |
|---|---|---|
| **Item No.** | **762-6304/8000-002** | **762-6204/8000-001** |
| **Order Text** | **TP600; 10.1; 1280x800; PIO3; CP** | **TP600; 10.1; 1280x800; PIO2; VP** |
| Technical Data | | |
| Display | Resistive touchscreen (black front) | |
| Display diagonal | 25.7 cm (10.1 Inches) | |
| Contrast ratio | 800:1 | |
| Aspect ratio | 16:9 | |
| Display colors | 16 million colors | |
| Graphics resolution | (1280 x 800) px | |
| Viewing angle (horizontal/vertical) | 85° / 85° | |
| Brightness | 800 cd/m² | |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor | |
| Communication | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus TCP Master/Slave; CANopen; Modbus (UDP); RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME* (prerequisite: ***e!****RUNTIME* PLC 600 license); Modbus TCP Master/Slave (prerequisite: ***e!****RUNTIME* PLC 600 license); EtherCAT Master, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license); BACnet/IP, **requires an additional license** (prerequisite: ***e!****RUNTIME* PLC 600 license) |
| 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 | ARM® Cortex™ A9 | |
| Main memory (RAM)/internal memory (flash) | 2 GB / 4 GB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 32 MB / 128 MB / - | |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) | |
| Interfaces (USB) | 2 x USB-Host 2.0 (Typ A) | 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 type | Clamping elements (included) or VESA mount (4 x M4x8) | |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection | |
| Input current (typ.) | 640 mA, without USB load; 940 mA, with USB load | 620 mA, without USB load; 920 mA, with USB load |
| Operating power | 11.8 W, without USB load; 17.0 W, with USB load | 11.6 W, without USB load; 16.8 W, with USB load |
| Surrounding air temperature (operation) | -20 … 55 °C (when mounted vertically; −20 … +50 °C, other mounting positions) | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/762-6304/8000-002 | wago.com/762-6204/8000-001 |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| e!RUNTIME; BACnet; 600; Single License; Online activation | 2759-286/211-1000 | 2759-286/211-1000 |
| e!RUNTIME; EtherCAT Master; 600; Single License; Online activation | 2759-266/211-1000 | 2759-266/211-1000 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |
| e!RUNTIME; IEC 61131 runtime environment; 600; Single License; Online activation | | 2759-216/211-1000 |

# Touch Panels ▸ *e!DISPLAY 7300T* ▸ 10.9 cm (4.3 Inches)

762-3000

| Version | Web Panel |
|---|---|
| **Item No.** | **762-3000** |
| **Order Text** | **WP; 4.3; 480x272; PIO1** |

| Technical Data | |
|---|---|
| Display | Resistive touchscreen |
| Display diagonal | 10.9 cm (4.3 Inches) |
| Contrast ratio | 600:1 |
| Aspect ratio | 16:9 |
| Display colors | 16 million colors |
| Graphics resolution | (480 x 272) px |
| Viewing angle (horizontal/vertical) | 80° / 80° |
| Brightness | 500 cd/m² |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor |
| Communication | Web browser (CODESYS2) |
| ETHERNET protocols | DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH |
| Operating system | Linux® |
| Processor | ARM® Cortex™ A8 600 MHz |
| Main memory (RAM)/internal memory (flash) | 512 MB / 1024 MB |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) |
| Interfaces (USB) | 2 x USB host 2.0 (type A) |
| Dimensions W x H x D | (155 x 135 x 58) mm |
| Panel cutout (W x H) | (140 x 120) mm |
| Mounting type | Clamping elements (included) or VESA mount (4 x M4x8) |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection |
| Operating power | 4.0 W (max.) |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Data sheet and further information, see: | wago.com/762-3000 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 |

# Touch Panels ▶ *e!DISPLAY 7300T* ▶ 14.5 cm (5.7 Inches)

762-3001

| | |
|---|---|
| Version | **Web Panel** |
| **Item No.** | **762-3001** |
| **Order Text** | **WP; 5.7; 640x480; PIO1** |

| Technical Data | |
|---|---|
| Display | Resistive touchscreen |
| Display diagonal | 14.5 cm (5.7 Inches) |
| Contrast ratio | 300:1 |
| Aspect ratio | 4:3 |
| Display colors | 262,000 colors |
| Graphics resolution | (640 x 480) px |
| Viewing angle (horizontal/vertical) | 80° / 80° |
| Brightness | 630 cd/m² |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor |
| Communication | Web browser (CODESYS2) |
| ETHERNET protocols | DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH |
| Operating system | Linux® |
| Processor | ARM® Cortex™ A8 600 MHz |
| Main memory (RAM)/internal memory (flash) | 512 MB / 1024 MB |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) |
| Interfaces (USB) | 2 x USB host 2.0 (type A) |
| Dimensions W x H x D | (172 x 163 x 58) mm |
| Panel cutout (W x H) | (157 x 148) mm |
| Mounting type | Clamping elements (included) or VESA mount (4 x M4x8) |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection |
| Operating power | 5.1 W (max.) |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Data sheet and further information, see: | wago.com/762-3001 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 |

# Touch Panels ▸ *e!DISPLAY 7300T* ▸ 17.8 cm (7 Inches)

762-3002



| | |
|---|---|
| Version | **Web Panel** |
| **Item No.** | **762-3002** |
| **Order Text** | **WP; 7.0; 800x480; PIO1** |

| Technical Data | |
|---|---|
| Display | Resistive touchscreen |
| Display diagonal | 17.8 cm (7 Inches) |
| Contrast ratio | 800:1 |
| Aspect ratio | 16:9 |
| Display colors | 16 million colors |
| Graphics resolution | (800 x 480) px |
| Viewing angle (horizontal/vertical) | 89° / 89° |
| Brightness | 450 cd/m² |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor |
| Communication | Web browser (CODESYS2) |
| ETHERNET protocols | DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH |
| Operating system | Linux® |
| Processor | ARM® Cortex™ A8 600 MHz |
| Main memory (RAM)/internal memory (flash) | 512 MB / 1024 MB |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) |
| Interfaces (USB) | 2 x USB host 2.0 (type A) |
| Dimensions W x H x D | (213 x 167 x 58) mm |
| Panel cutout (W x H) | (198 x 152) mm |
| Mounting type | Clamping elements (included) or VESA mount (4 x M4x8) |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection |
| Operating power | 7.3 W (max.) |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Data sheet and further information, see: | wago.com/762-3002 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 |

# Touch Panels ▶ *e!DISPLAY 7300T* ▶ 25.7 cm (10.1 Inches)

762-3003

| | |
|---|---|
| Version | **Web Panel** |
| **Item No.** | **762-3003** |
| **Order Text** | **WP; 10.1; 1280x800; PIO1** |

| Technical Data | |
|---|---|
| Display | Resistive touchscreen |
| Display diagonal | 25.7 cm (10.1 Inches) |
| Contrast ratio | 800:1 |
| Aspect ratio | 16:9 |
| Display colors | 16 million colors |
| Graphics resolution | (1280 x 800) px |
| Viewing angle (horizontal/vertical) | 85° / 85° |
| Brightness | 800 cd/m² |
| Controls | Resistive touch panel; 2 capacitive keys; proximity sensor |
| Communication | Web browser (CODESYS2) |
| ETHERNET protocols | DHCP; DNS; FTP; FTPS; HTTP; HTTPS; SSH |
| Operating system | Linux® |
| Processor | ARM® Cortex™ A8 600 MHz |
| Main memory (RAM)/internal memory (flash) | 512 MB / 1024 MB |
| Memory card type | microSD (max. 2 GB); microSDHC (max. 32 GB) |
| Interfaces (USB) | 2 x USB host 2.0 (type A) |
| Dimensions W x H x D | (293 x 223 x 58) mm |
| Panel cutout (W x H) | (278 x 208) mm |
| Mounting type | Clamping elements (included) or VESA mount (4 x M4x8) |
| Supply voltage | 24 VDC, SELV (18 … 31.2 V); with reverse voltage protection |
| Operating power | 9.9 W (max.) |
| Surrounding air temperature (operation) | 0 … 50 °C |
| Data sheet and further information, see: | wago.com/762-3003 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 |

# Accessories



| Item Description | microSD Memory Card; Temperature range: −40 … +90 °C | microSD Memory Card; Temperature range: −40 … +90 °C |
|---|---|---|
| Version | SLC-NAND; 2 GB | pSLC-NAND; 8 GB |
| Item No. | 758-879/000-3102 | 758-879/000-3108 |

**Technical Data**

| | | |
|---|---|---|
| Memory | 2 GB (SLC) | 8 GB (pSLC) |
| Read/write cycles (max.) | 20 MB/s / 17 MB/s | 48 MB/s / 45 MB/s |
| MTBF | 4,000,000 h | 2,000,000 h |
| Service life | 100,000 write cycles (per cell) | 20,000 write cycles (per cell) |
| Data storage | 10 years | 10 years |
| Surrounding air temperature (operation) | −40 … +90 °C | −40 … +90 °C |
| Surrounding air temperature (storage) | −40 … +90 °C | −40 … +90 °C |
| Relative humidity | 95 %, non-condensing | 95 %, non-condensing |
| Dimensions W x H x D | 15 x 11 x 1 mm | 15 x 11 x 1 mm |
| Vibration resistance | 15g | 15g |
| Shock resistance | 50g | 50g |

| Connection Cable | | |
|---|---|---|
| USB A-B | Item No. | PU |
| 3 m | 758-879/000-101 | 1 |

| Clamping Element; for Touch Panels | | |
|---|---|---|
| | Item No. | PU |
| 4 pcs | 762-9001 | 1 |

| Item Description | WAGO Flush-Mount Housing for Touch Panels 600 |
|---|---|
| Version | 25.7 cm (10.1") 80.0 mm |
| Item No. | 762-9324 |

**Technical Data**

| | |
|---|---|
| Dimensions W x H x D (mm) | 293 x 223 x 80 |
| Panel cutout W x H (mm) | 281 x 211 |
| Weight | 1330 g |
| Surrounding air temperature (operation) | –20 … +40 °C |



| Item Description | WAGO Flush-Mount Housing for Touch Panels 600 |
|---|---|
| Version | 39.6 cm (15.6") 80.0 mm |
| Item No. | 762-9325 |

**Technical Data**

| | |
|---|---|
| Dimensions W x H x D (mm) | 420 x 282 x 80 |
| Panel cutout W x H (mm) | 409 x 271 |
| Weight | 2120 g |
| Surrounding air temperature (operation) | –20 … +40 °C |


# Edge Computing

**Touch Panels 600; Control Panel Hardware Configuration**

- Merging of control and visualization
- 10.9 … 54.7 cm (4.3 … 21.5")

**Edge Computing**

- Models include Edge Controllers or Edge Computers
- Perfect in-the-field data usage
- Easy cloud connection
- Equipped for high security

**Controllers**

- Scalable controller family with various interfaces
- Microcontrollers

◄ Section 3

Section 5 ►

# Edge Computing
## Contents



| | CPU | Modbus (TCP, UDP) | EtherCAT | CANopen | BACnet/IP | Telecontrol Protocols | IoT Protocols | Description | Item No. | |
|---|---|---|---|---|---|---|---|---|---|---|
|  | ARM® Cortex A9; 1 GHz | **M/S** | **x*** | **x** | **x*** | **x*** | **x** | Edge Controller; 2 x ETHERNET, 2 x USB, 1 x USB-C, HDMI, CAN, DI/DO, RS-232/485, Audio; Control | **752-8303/8000-002** | 100 |
|  | Intel® Atom Quad Core E3845 1.91 GHz | | | | | | **x** | Edge Computer; 2 x ETHERNET, 4 x USB, HDMI, DP; 4GB RAM; 64GB FLASH | **752-9400** | 101 |
| | | | | | | | **x** | Edge Computer; 2 x ETHERNET, 4 x USB, HDMI, DP; 8GB RAM; 64GB FLASH | **752-9401** | 101 |

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

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# Edge Computing
## General Product Information

### Edge Computing

In many cases, transferring data from machines and systems directly to a cloud solution is resource-intensive and infeasible due to the low latency required in industrial environments. Edge computing has established itself because it combines the advantages of decentralized cloud architectures with those of a local network architecture.

### Perfectly Use Data in the Field

Intelligent processes are requiring more and more computing power, and this places corresponding demands on databases directly in the field. WAGO offers the right hardware for any edge application.

Where real-time data is involved, data processing is becoming increasingly important. More and more computing power is needed, and this places corresponding demands on databases, as well as analysis and optimization algorithms, directly in the field. WAGO offers solutions in the form of the Edge Controller and Edge Computer. These devices process applications right on the machine, offloading the controllers so they can focus on their actual control duties with low latency and a high level of determinism.

### Easy Cloud Connection

Collected data can be evaluated directly, displayed graphically and made available to WAGO Cloud, for example. Transfer may be appropriate for especially critical data, for instance. Both of the new devices have additional advantages when data needs to be buffered temporarily, for instance in mobile applications. They are based on cabinet-compatible hardware and can be powered with 24 V, making them a perfect fit for the automation environment.

### Equipped for High Security

With a large share of open source software, the devices are well equipped for cybersecurity because the large open-source community continually reviews the source code and provides bug fixes. Besides the standard VPN applications, the devices are open for special security solutions such as Tosibox and Hooc. Thus, in addition to WAGO's own VPN solution, users can also access other remote maintenance solutions with a high degree of security, in line with the #openandeasy principle. The Edge Computer also offers a TPM 2.0 chip, which provides encryption generators as well as a safe haven for certificates and keys.




docker OPC UA

# WAGO Edge Devices
## General Product Information

### WAGO Edge Controller

The Edge Controller features an ARM Cortex-A9 quad-core processor and offers an extensive selection of interfaces, including two ETHERNET ports, one CANopen port and two USB ports. It also has a serial interface and four digital inputs/outputs for connecting local devices or sensors.

**Your Benefits:**

- Easy integration into existing systems
- Space-saving installation
- Can be configured in the familiar ***e!****COCKPIT* environment



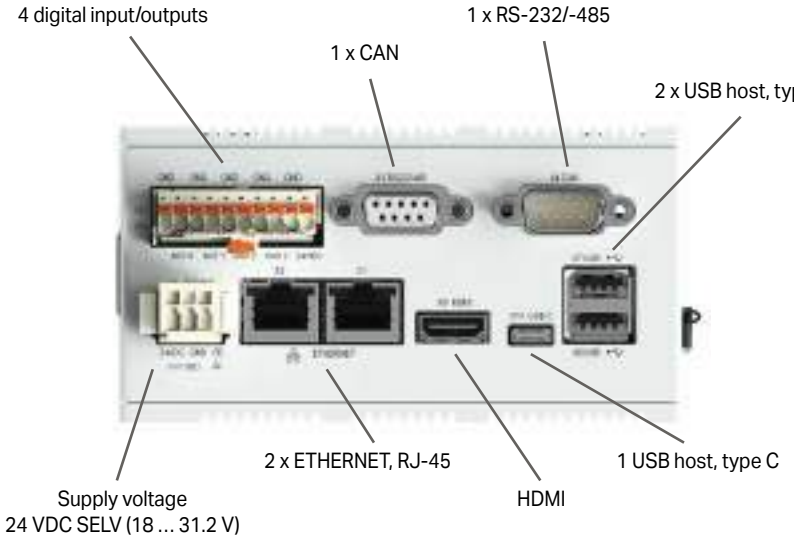
### WAGO Edge Computer

Where demands on computing power and memory are high, WAGO offers the perfect solution with the Edge Computer. It features a 1.91 GHz quad-core Atom processor and is equipped with standard Debian Linux. Users can draw on abundant resources and model entire automation processes on them.

**Your Benefits:**

- Features high computing power and scalable storage
- Compact and low-maintenance
- Allows use of standard software

# Edge Controller; 2 x ETHERNET, 2 x USB, 1 x USB-C, HDMI, CAN, DI/DO, RS-232/485, Audio; Control

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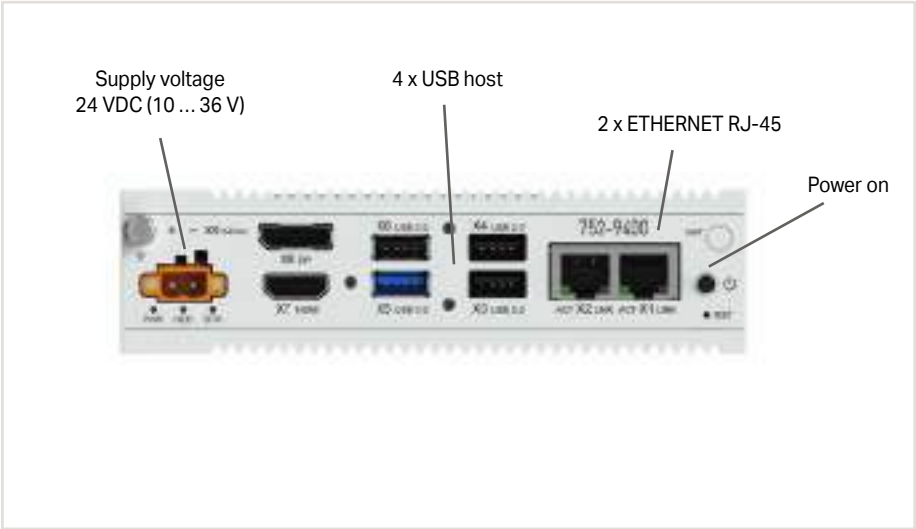
| | |
|---|---|
| Item Description | Edge Controller; 2 x ETHERNET, 2 x USB, 1 x USB-C, HDMI, CAN, DI/DO, RS-232/485, Audio; Control |
| **Item No.** | 752-8303/8000-002 |
| **Order Text** | Edge Controller |

| Technical Data | |
|---|---|
| Communication | Web Browser |
| Visualization | Web Visu; Target Visu |
| ETHERNET protocols | DHCP, DNS, FTP, FTPS, HTTP, HTTPS, SSH |
| Operating system | Real-time Linux (with RT-Preempt patch) |
| Processor | ARM®Cortex® A9 |
| Main memory (RAM) | 2 GB, DDR3 SDRAM |
| Internal memory (flash) | 4 GB, eMMC |
| Non-volatile memory (hardware) | 128 kB |
| Memory expansion | microSD (max. 2 GB), microSDHC (max. 32 GB) |
| RTC (Real-Time Clock) | Maintenance-free, buffering: min. 6 weeks |
| Connection technology: communication/fieldbus | ETHERNET: 2 x RJ-45 socket;<br>CAN: D-sub 9 plug;<br>RS-232/-485: D-sub 9 socket |
| Transmission rate | ETHERNET: 10/100 Mbit/s;<br>CAN: 1 Mbaud |
| Interfaces | 2 x USB 2.0 socket, type A; 1 x USB OTG socket, type C; HDMI; Audio |
| Onboard I/Os | 4 x DIO, configurable |
| Indicators | 3-color LED – red, green, blue; 4 x red/green LED |
| Supply voltage | SELV 24 VDC (–25 … +30 %), LPS; with reverse voltage protection |
| Input current (24 V) | 120 mA; without USB load;<br>390 mA; with USB load |
| Operating power | 2.9 W; without USB load;<br>9.4 W; with USB load |
| Dimensions (W x H x D) | 65 × 123 × 115 mm |
| Weight | 815 g |
| Housing material | Aluminum, powder-coated |
| Mounting type | DIN-35-rail mount |
| Surrounding air temperature (operation) | –20 … +60 °C |
| Surrounding air temperature (storage) | –20 … +80 °C |
| Protection type | IP20 |
| Relative humidity (without condensation) | 90 % |
| Approvals | CE |
| For data sheet and additional information, see: | wago.com/752-8303/8000-002 |

# Edge Computer; 2 x ETHERNET, 4 x USB, HDMI, DP; 4 or 8 GB RAM, 64 GB Flash




- 2 x ETHERNET interface for connecting to field devices and IT networks
- 4 x USB interface for optional connection of a USB stick, mouse or keyboard
- HDMI and display port interfaces for connecting a display

4

| Item Description | Edge Computer; 2 x ETHERNET, 4 x USB, HDMI, DP | |
|---|---|---|
| Version | 4 GB RAM, 64 GB Flash | 8 GB RAM, 64 GB Flash |
| **Item No.** | 752-9400 | 752-9401 |
| **Order Text** | EC; 2ETH, 4USB, HDMI, DP; 4GB RAM, 64GB Flash | EC; 2ETH, 4USB, HDMI, DP; 8GB RAM, 64GB Flash |

| Technical Data | | |
|---|---|---|
| Display interfaces | 1 x DisplayPort 1.2, 2560 x 1440p;<br>1 x HDMI v1.4, 1920 x 1080p @60Hz;<br>Intel® HD Graphics | |
| Visualization | Web server | |
| ETHERNET protocols | DHCP; DNS; HTTP; HTTPS; SSH; SCP; SFTP | |
| Operating system | Debian Linux 10.5 | |
| Processor | Intel® Atom Quad Core E3845 1.91 GHz | |
| Main memory (RAM) | 4 GB; DDR3L 1333 MHz | 8 GB; DDR3L 1333 MHz |
| Internal memory (flash) | 64 GB; mSATA SSD | |
| Memory expansion | Full-size mPCIe slot;<br>Drive mount for a 2.5" SSD HDD memory card (height: 9.5 mm) | |
| RTC (Real-Time Clock) | Battery type BR2032; 3 VDC | |
| Indicators | 3 x LED | |
| Connection technology: communication/fieldbus | 2 x RJ-45 1000BASE-T;<br>3 x USB 2.0 (Type A);<br>1 x USB 3.0 (Type A) | |
| Supply voltage | 24 VDC (10 … 36 V) | |
| Operating power | 30 W (typ.); 42 W (max.) | |
| Input current (24 V) | 1250 mA (typ.); 1750 mA (max.) | |
| Dimensions (W x H x D) | 40 x 150 x 105 mm | |
| Housing material | Aluminum, powder-coated | |
| Weight | 809 g | |
| Surrounding air temperature (operation) | –20 … +60 °C | |
| Surrounding air temperature (storage) | –40 … +85 °C | |
| Protection type | IP40 | |
| Relative humidity (without condensation) | 95 % | |
| Mounting type | DIN-35-rail mount | |
| Approvals | E482462 Ordinary Locations, UL62368 | |
| For data sheet and additional information, see: | wago.com/752-9400 | wago.com/752-9401 |


# Controllers

**Touch Panels 600; Control Panel Hardware Configuration**

◄◄ Section 3

**Edge Controller**

◄ Section 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 5.1 ►

**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 5.2 ►►

**Controllers 750**

- Controllers for all common fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

Section 5.3 ►►►

**Controllers 750 XTR**

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

Section 5.4 ►►►►

**Starter Kits**

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

- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

Section 5.5 ►►►►►

# Controllers
## Overview



**Benefits:**

- Fieldbus-independent – compatible with all prominent 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 Panels 600; Control Panel Hardware Configuration**

◄◄ Section 3

**Edge Controller**

◄ Section 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 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 5.2 ►

**Controllers 750**

- Controllers for all common fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

Section 5.3 ►►

**Controllers 750 XTR**

For demanding applications in which the following are critical:

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

Section 5.4 ►►►

**Starter Kits**

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

- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

Section 5.5 ►►►►

# Controllers PFC100/PFC200
## Contents



| | CPU | Modbus (TCP, UDP) | Ethernet/IPTM | EtherCAT | PROFINET | PROFIBUS | CANopen | BACnet/IP | Modbus RTU | Telecontrol Protocols | IoT Protocols | Description | Item No. Standard | Item No. Ext. Temperature | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Cortex A8; 600 MHz | M/S | S | | | | | | | | x | Controller PFC100; 2 x ETHERNET; Eco | 750-8100 | | 110 |
|  | Cortex A8; 600 MHz | M/S | S | | | | | | | | x | Controller PFC100; 2 x ETHERNET | 750-8101 | 750-8101/025-000 | 111 |
| | | M/S | S | | | | | | x | | x | Controller PFC100; 2 x ETHERNET, RS-232/-485 | 750-8102 | 750-8102/025-000 | 112 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | | x* | x | x* | x | Controller PFC200; 2nd Generation; 4 x ETHERNET | 750-8210 | 750-8210/025-000 | 113 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | | x* | x | x* | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, 2 x SFP Ports | 750-8211 | | 114 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | | x* | x | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485 | 750-8212 | 750-8212/025-000 | 115 |
| | | M/S | S | M* | | | | x* | x | x | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485; Telecontrol Technology | | 750-8212/025-001<br>750-8212/025-002 | 115 |
| | | M/S | S | M* | | | | x | x | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485; BACnet/IP | 750-8212/000-100 | | 116 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | M/S | x* | | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, CAN, CANopen | 750-8213 | | 117 |
|  | 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 | | 118 |
|  | Cortex A8; 1 GHz | M/S | S | M* | S | | M/S | | | | x | Controller PFC200; 2nd Generation; 4 x ETHERNET, CAN, CANopen, USB | 750-8215 | | 119 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | S | M/S | x* | x | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave | 750-8216 | 750-8216/025-000 | 120 |
| | | M/S | S | M* | | S | M/S | x* | x | x | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave; Telecontrol Technology | | 750-8216/025-001 | 120 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | | x* | x | x* | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, RS-232/-485, Mobile Radio Module | 750-8217 | 750-8217/025-000 | 121 |
|  | 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 | 122 |
| | | M/S | S | | | M | | | x | x | x | Controller PFC200; 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Master; Telecontrol Technology | | 750-8208/025-001 | 122 |

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/PFC200 Controllers with ***e!RUNTIME*** excel with high processing speed and multiple interfaces for parallel communication. All variants feature at least two ETHERNET ports and – depending on the model – 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 Controllers offer ample memory for your applications provided by the internal flash memory and an integrated interface for memory cards.

### Industry 4.0 / IoT

Recording, digitizing and linking data profitably – these are the core ideas of Industry 4.0. Using a dedicated library, WAGO's PFC100/PFC200 Controllers become IoT controllers that send data from the field level to the cloud. Once in the cloud, data can be aggregated and used for analysis. This capability creates tremendous added value for your company – whether it's 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 future-proof. 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 5.5.

### Link between Process Data and IT Application

The PFC100/PFC200 Controllers ideally combine real-time requirements with IT functionality. They support 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 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.

### 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 PFC100/PFC200 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. Additionally, proven CAGE CLAMP® technology ensures that all connections made in the field are quick, vibration-proof and maintenance-free. Depending on the I/O modules' granularity, the field level can be directly wired using 1-, 2-, 3- or 4-conductor technology.

### Maximum Reliability and Ruggedness

The PFC100/PFC200 Controllers are 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-proof Linux® Operating System. For complex tasks, you can choose between programming in IEC 61131 or directly under 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.

**Benefits:**

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

# Controllers PFC100/PFC200
## Variants

### 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. Select controllers are available in an extended temperature range of –20°C to +60°C.

### Eco

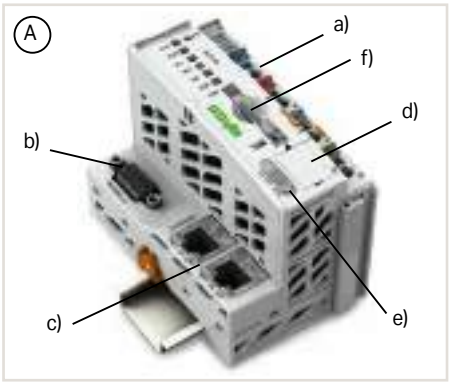
The Eco version of the PFC200 limits the number of I/O modules to four.

### Telecontrol Technology

The PFC200 models for telecontrol technology integrate the following standardized telecontrol protocols:

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

## Interfaces and Types



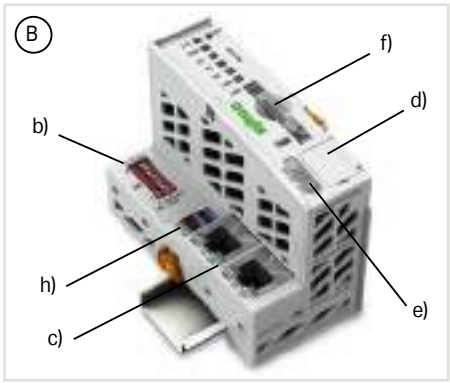

- Includes a supply module (a) to power downstream I/O modules; Connection technology (system/field supply): CAGE CLAMP®; Conductor range: 0.08 … 2.5 mm²/28 … 14 AWG
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service interface (d)
- Start/stop switch (e)

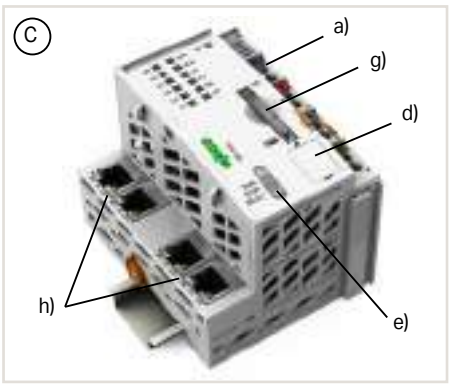
**Housing Design PFC100 (A, B)**

- microSD card slot for external storage media (f)

**Housing Design PFC200 (C, D, E, F, G, H)**

- SD card slot for external storage media (g)




**Housing Design (A)**

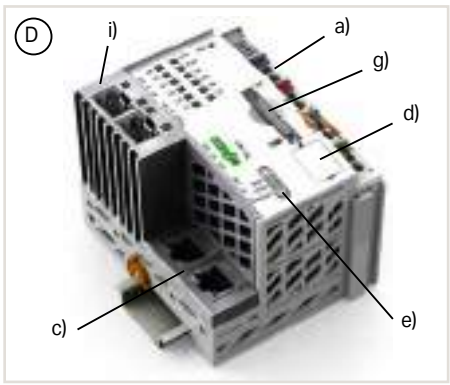
- W x H x D (mm): 61.5 x 100 x 71.9

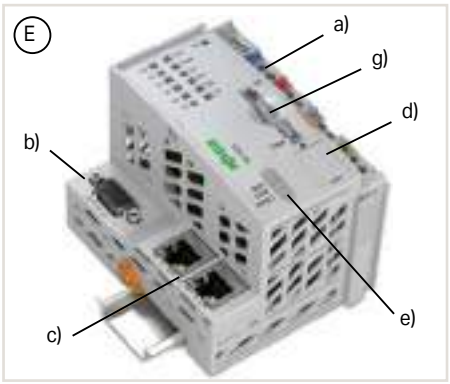
**Housing Design (B)**

- W x H x D (mm): 49.5 x 96.8 x 71.9
- Supply system connection technology (h): CAGE CLAMP®; Conductor range: 0.08 … 1.5 mm²/28 … 16 AWG

**Housing Design (C)**

- ETHERNET 4 x RJ-45 (h)
- W x H x D (mm): 78.6 x 100 x 71.9



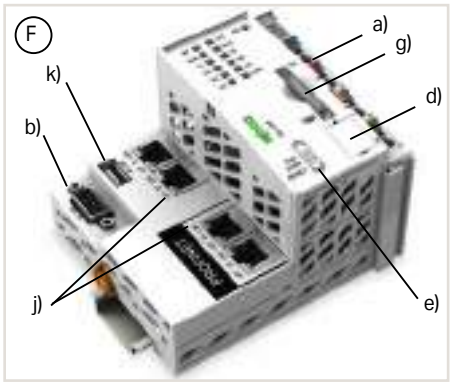




**Housing Design (D)**

- 2 x SFP port; 100BASE-FX, LC, fiber optic (SFP type) (i)
- W x H x D (mm): 78.6 x 100 x 71.9

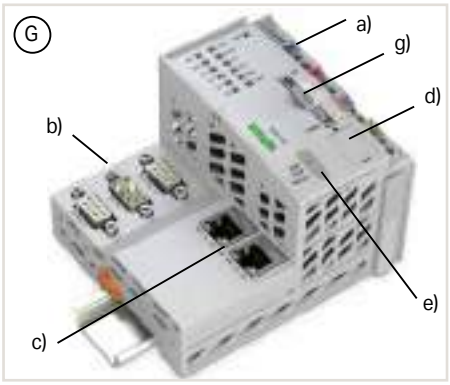
**Housing Design (E)**

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



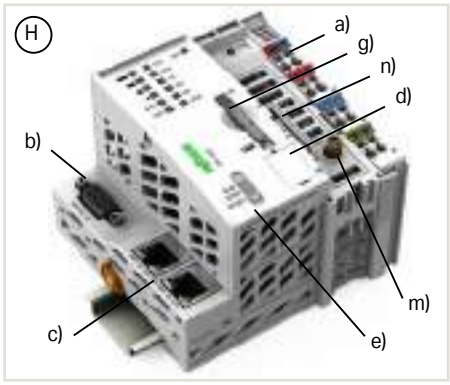

**Housing Design (F)**

- ETHERNET 4 x RJ-45 (j)
- USB interface (k)
- W x H x D (mm): 112 x 100 x 71.9




**Housing Design (G)**

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



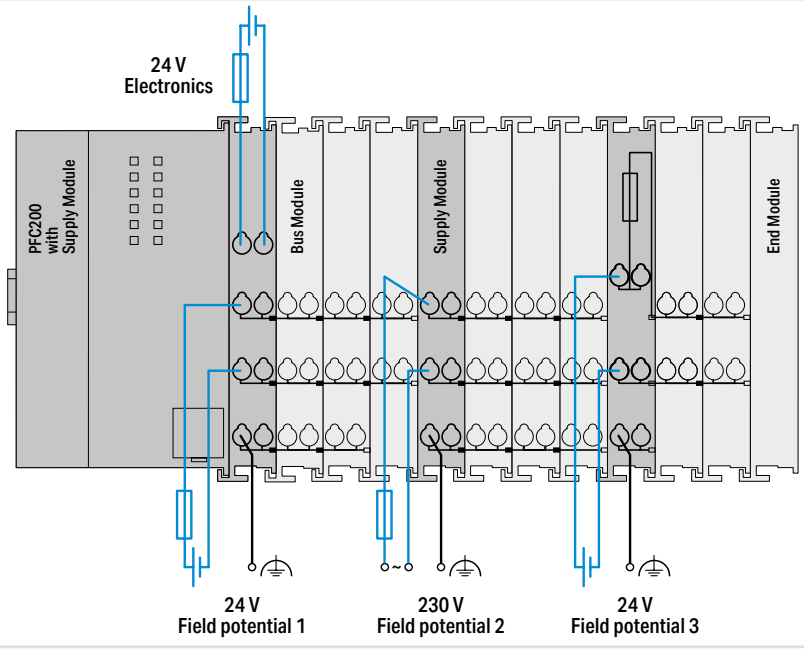

**Housing Design (H)**

- GSM antenna connection (m)
- SIM card slot (n)
- W x H x D (mm): 102.5 x 100 x 71.9

# Controllers PFC100/PFC200
## Installation Instructions

### Power Supply

The controller powers the internal electronics. 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 and customized supply configuration for a fieldbus node. Power 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. Furthermore, the current consumed for field-side supply must not exceed 10 A. A variety of power supply modules allows re-feeding, creating potential groups and implementing 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.
When operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. Furthermore, specific power and field-side power supply filters (750-626) must be provided.

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

5.1

## Item Number Key

Explanation of an item number key's components

**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 |
| x0: | 4 x ETHERNET |
| x1: | 2 x ETHERNET, 2 x SFP Port |
| 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 (–20 … +60 °C)

| |
|---|
| 000: Standard |
| 001: Telecontrol Technology |
| 002: Telecontrol Eco |

# Standards and Rated Conditions

| General Specifications | |
|---|---|
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Surrounding air temperature (storage) | -25 … 85 °C |
| Relative humidity (without condensation) | 95 % |
| Operating altitude | Without temperature derating: 0 … 2000 m; with temperature derating: 2000 … 5000 m (0.5 K/100 m); 5000 m (max.) |
| Pollution degree (5) | 2 per IEC 61131-2 |
| Vibration resistance | 4g per IEC 60068-2-6 |
| Shock resistance | 15g per IEC 60068-2-27 |
| EMC immunity to interference | Per EN 61000-6-2, marine applications |
| EMC emission of interference | Per EN 61000-6-3, marine applications |
| Protection type | IP20 |
| Mounting position | Any |
| Mounting type | DIN-35 rail |
| Housing material | Polycarbonate; polyamide 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: system supply | 2 x CAGE CLAMP® |
| Solid conductor | 0.08 … 1.5 mm² / 28 … 14 AWG |
| Fine-stranded conductor | 0.08 … 1.5 mm² / 28 … 14 AWG |
| Strip length | 5 … 6 mm / 0.2 … 0.24 inch |

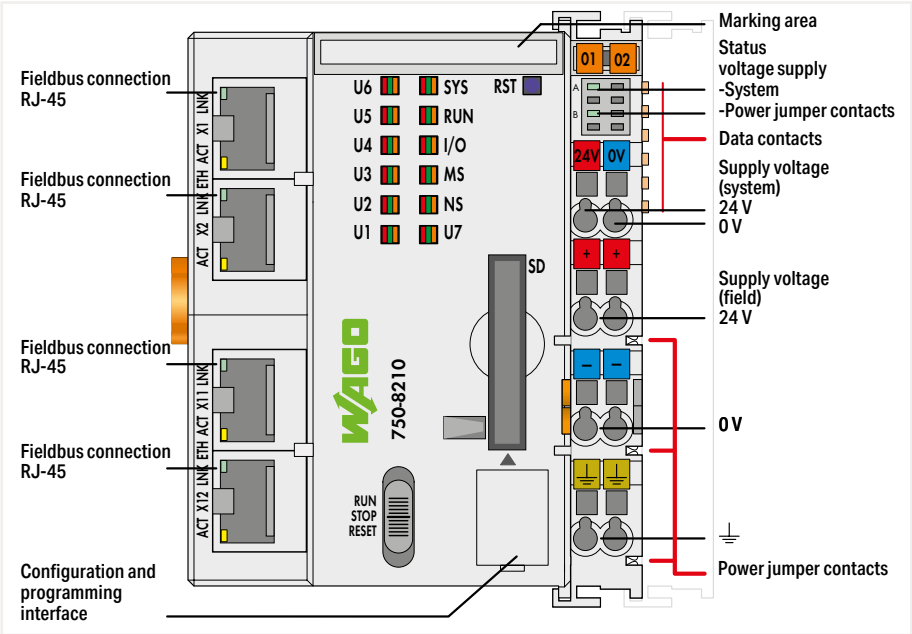
## Approvals

Overview of the approvals in the item comparison in Section 14, Technical Section, or online at www.wago.com


| | |
|---|---|
| Cables and pluggable connectors | Page 671 |
| DIN-rail | Page 706 |
| General accessories | Page 614 |
| Marking | Page 704 |
| Shield termination | Page 698 |
| Software | Page 12 |
| System enclosure | Page 683 |

# Controller PFC100 ▶ 2 x ETHERNET; ECO

750-8100




| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-8100** |
| **Order Text** | **PFC100; 2ETH; ECO** |

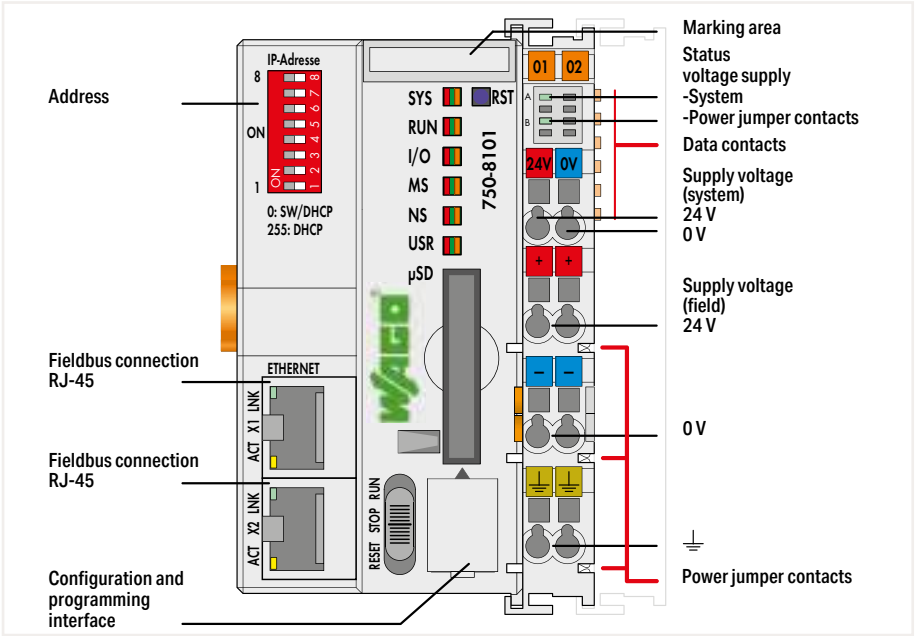
| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; MQTT |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Visualization | Web Visu |
| Programming environment | ***e!****COCKPIT* (based on CODESYS V3) |
| CPU | Cortex A8; 600 MHz |
| Operating system | Real-time Linux 3.18 (with RT-Preempt patch) |
| Main memory (RAM)/internal memory (flash)/non-volatile memory (hardware) | 256 MB / 256 MB / 64 KB |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 10 MB / 10 MB / 64 KB (Program and data memory (dynamically distributed)) |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | ***e!****RUNTIME*: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| 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 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8100 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 |

5.1

# Controller PFC100 ▸ 2 x ETHERNET

750-8101



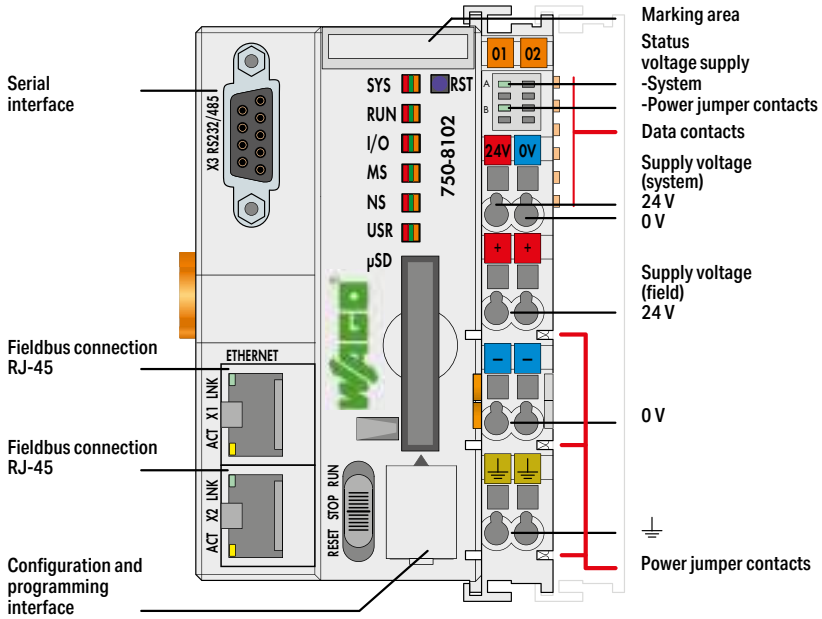

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-8101** | **750-8101/025-000** |
| **Order Text** | **PFC100; 2ETH** | **PFC100; 2ETH; T** |

| Technical Data | | |
|---|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; MQTT | |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Visualization | Web Visu | |
| Programming environment | ***e!****COCKPIT* (based on CODESYS V3) | |
| CPU | Cortex A8; 600 MHz | |
| Operating system | Real-time Linux 3.18 (with RT-Preempt patch) | |
| Main memory (RAM)/internal memory (flash)/non-volatile memory (hardware) | 256 MB / 256 MB / 64 KB | |
| Program memory/data memory/non-volatile memory (software) | ***e!****RUNTIME*: 12 MB / 12 MB / 64 KB (Program and data memory (dynamically distributed)) | |
| Number of modules per node (max.) | 250 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | ***e!****RUNTIME*: 32000 words/32000 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 | (61.5 x 100 x 71.9) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-8101 | |

| Accessories | Item No. | Item No. |
|---|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |

# Controller PFC100 ▶ 2 x ETHERNET, RS-232/-485

750-8102




| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-8102** | **750-8102/025-000** |
| **Order Text** | **PFC100; 2ETH RS** | **PFC100; 2ETH RS; T** |

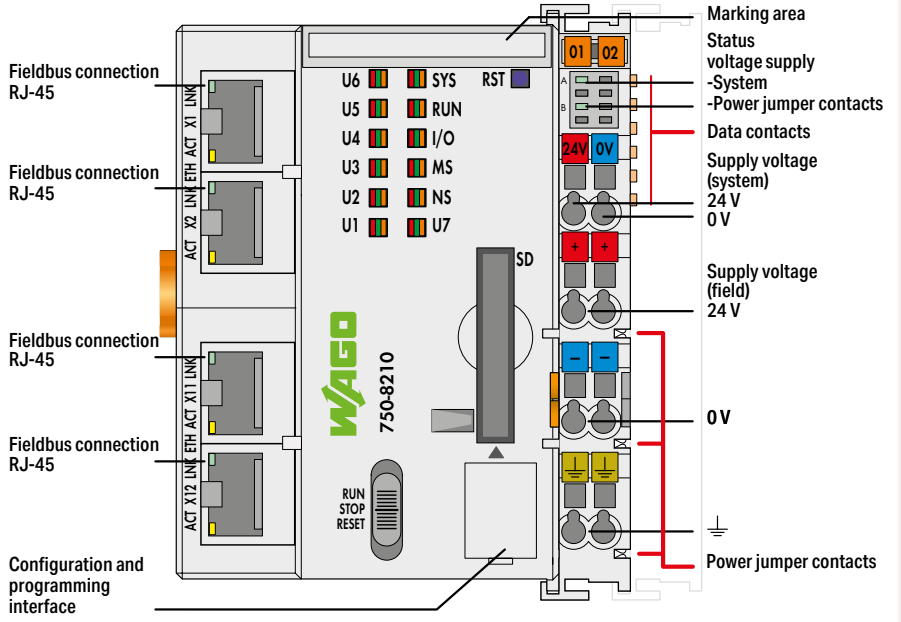
| Technical Data | | |
|---|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT | |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Visualization | Web Visu | |
| Programming environment | ***e!****COCKPIT* (based on CODESYS V3) | |
| CPU | Cortex A8; 600 MHz | |
| Operating system | Real-time Linux 3.18 (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) | ***e!****RUNTIME*: 12 MB / 12 MB / 128 KB (Program and data memory (dynamically distributed)) | |
| Number of modules per node (max.) | 250 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | ***e!****RUNTIME*: 32000 words/32000 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 | (61.5 x 100 x 71.9) mm | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-8102 | |

| Accessories | Item No. | Item No. |
|---|---|---|
| Memory Card SD Micro; 2 GByte | 758-879/000-3102 | 758-879/000-3102 |
| Memory Card SD Micro; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-3108 | 758-879/000-3108 |

5.1

# Controller PFC200 ▶ 4 x ETHERNET

750-8210



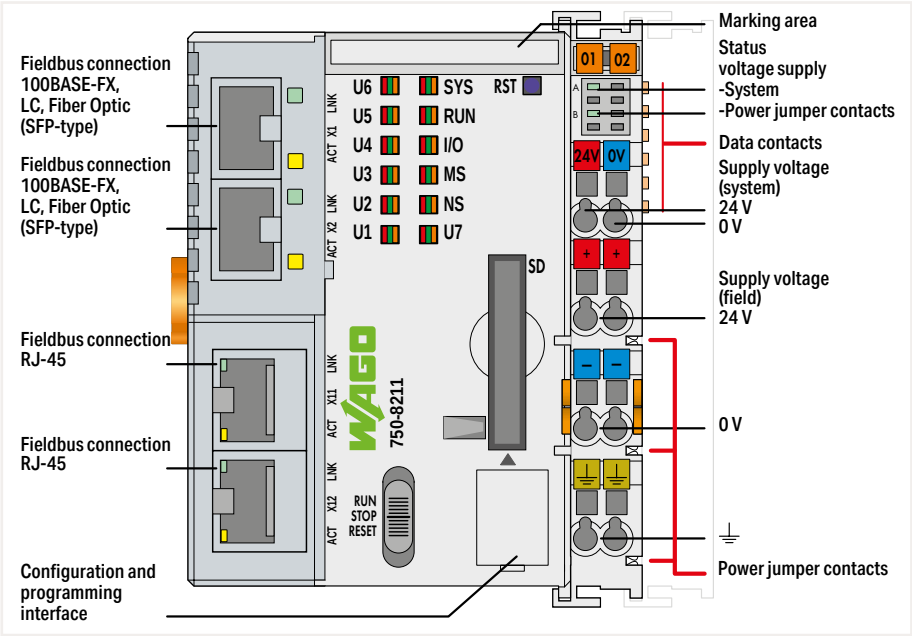

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-8210** | **750-8210/025-000** |
| **Order Text** | **PFC200; G2; 4ETH** | **PFC200; G2; 4ETH; T** |

| Technical Data | | |
|---|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!**RUNTIME*; Modbus® RTU; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols (requires an additional license on the device) | |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Telecontrol protocols | IEC 60870-5-101/-103/-104 (additional license as slave or master); IEC-61850 (additional license as Client 300); DNP3 (additional license as Slave or Master 300) | |
| Visualization | Web Visu | |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB | |
| Number of modules per node (max.) | 250 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!**RUNTIME*: 32000 words/32000 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm | |
| Approvals | CE; Marine; OrdLoc | |
| Data sheet and further information, see: | wago.com/750-8210 | |

| **Accessories** | **Item No.** | **Item No.** |
|---|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |
| e!RUNTIME; DNP3 Master; 300; Single License; Online activation | 2759-2293/211-1000 | 2759-2293/211-1000 |
| e!RUNTIME; IEC60870 Slave; Single License; Online activation | 2759-290/211-1000 | 2759-290/211-1000 |
| e!RUNTIME; DNP3 Slave; Single License; Online activation | 2759-2290/211-1000 | 2759-2290/211-1000 |
| e!RUNTIME; IEC60870 Master; 300; Single License; Online activation | 2759-293/211-1000 | 2759-293/211-1000 |
| e!RUNTIME; IEC61850 Client; 300; Single License; Online activation | 2759-2243/211-1000 | 2759-2243/211-1000 |

# Controller PFC200 ▶ 2 x ETHERNET, 2 x SFP Ports

750-8211



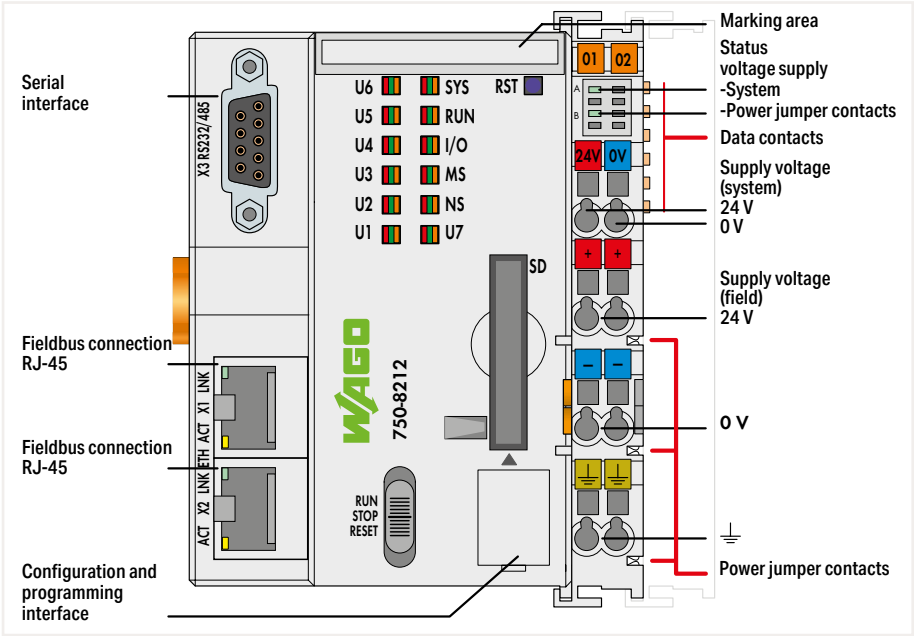

| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-8211** |
| **Order Text** | **PFC200; G2; 2ETH 2SFP** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols (requires an additional license on the device) |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Telecontrol protocols | IEC 60870-5-101/-103/-104 (additional license as slave or master); IEC-61850 (additional license as Client 300); DNP3 (additional license as Slave or Master 300) |
| Visualization | Web Visu |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!****RUNTIME*: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm |
| Approvals | CE; Marine; OrdLoc |
| Data sheet and further information, see: | wago.com/750-8211 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| SFP Module 100BASE; FX Multi-Mode 1310 nm LC; 2 km; DDM; Extreme | 852-202 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |
| e!RUNTIME; DNP3 Master; 300; Single License; Online activation | 2759-2293/211-1000 |
| e!RUNTIME; IEC60870 Slave; Single License; Online activation | 2759-290/211-1000 |
| e!RUNTIME; DNP3 Slave; Single License; Online activation | 2759-2290/211-1000 |
| e!RUNTIME; IEC60870 Master; 300; Single License; Online activation | 2759-293/211-1000 |
| e!RUNTIME; IEC61850 Client; 300; Single License; Online activation | 2759-2243/211-1000 |

# Controller PFC200 ▸ 2 x ETHERNET, RS-232/-485

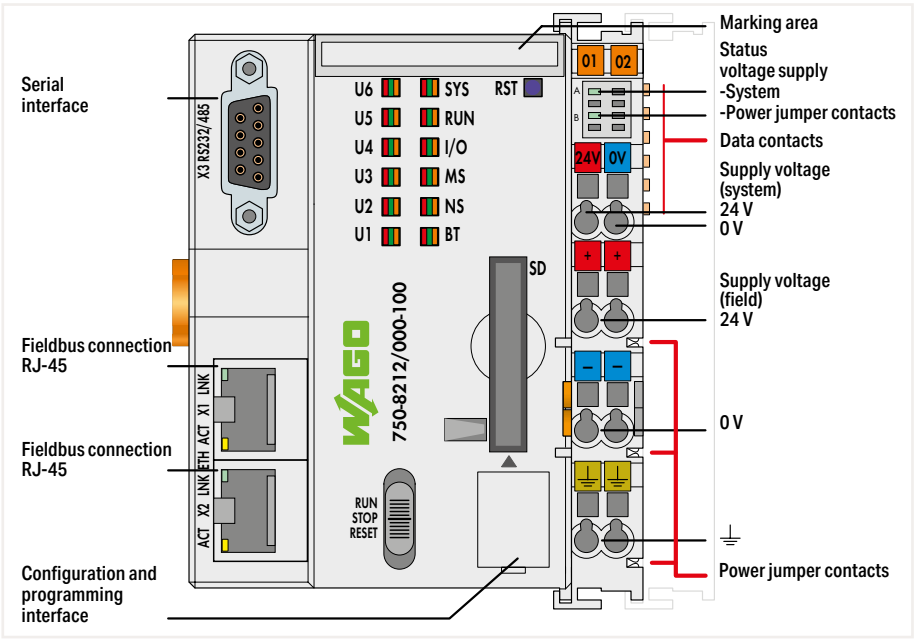
750-8212




| 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); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols | |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | | | |
| Telecontrol protocols | | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 | |
| Visualization | Web Visu | | | |
| Programming environment | ***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***: 32 MB / 128 MB / 128 KB | | | |
| Number of modules per node (max.) | 250 | | | 4 |
| Input and output (internal) process image (max.) | 1000 words/1000 words | | | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words | | | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm | | | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | | |
| Data sheet and further information, see: | wago.com/750-8212 | | | |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 | 2759-283/211-1000 | 2759-283/211-1000 | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 | 2759-263/211-1000 | 2759-263/211-1000 | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 |

# Controller PFC200 ▶ 2 x ETHERNET, RS-232/-485, BACnet/IP

750-8212/000-100



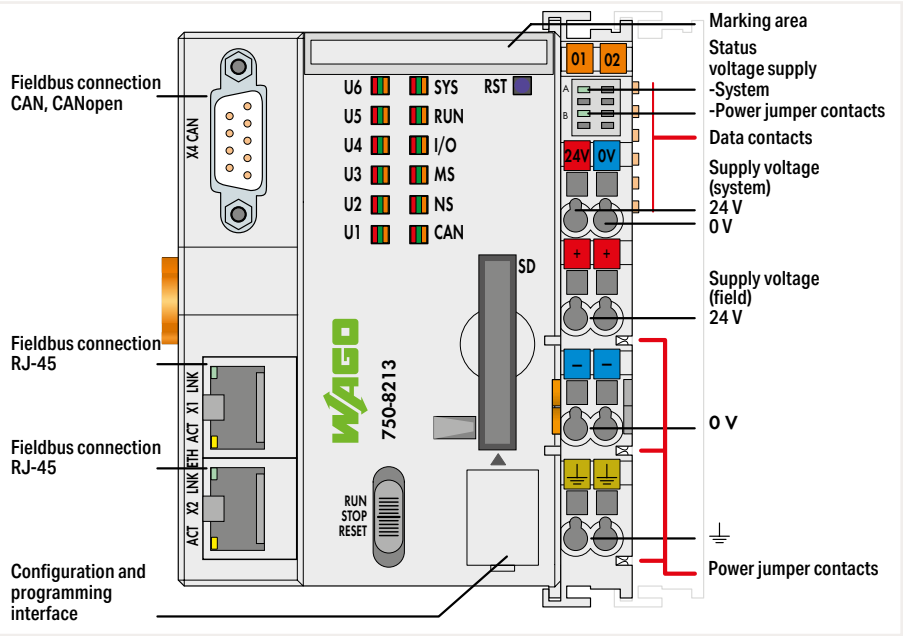

| | |
|---|---|
| Version | BACnet/IP |
| **Item No.** | **750-8212/000-100** |
| **Order Text** | **PFC200; G2; 2ETH RS; BACnet/IP** |

| Technical Data | |
|---|---|
| Communication | BACnet/IP; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Device-specific | BACnet/IP protocol: ISO 16484-5; BACnet device profile: B-BC (BACnet Building Controller); BACnet revision: 14 |
| Visualization | Web Visu |
| Programming environment | ***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) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | ***e!****RUNTIME*: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Approvals (pending) | BACnet approvals: WSPCert certification; BTL listing |
| Data sheet and further information, see: | wago.com/750-8212/000-100 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 ▸ 2 x ETHERNET, CAN, CANopen

750-8213



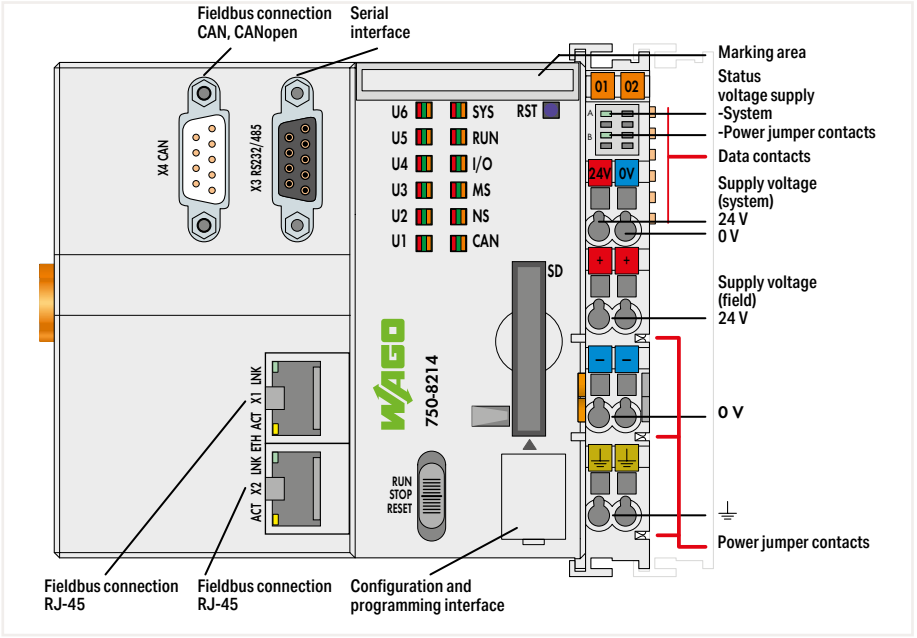

| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-8213** |
| **Order Text** | **PFC200; G2; 2ETH CAN** |

| Technical Data | |
|---|---|
| Communication | CANopen; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Visualization | Web Visu |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!****RUNTIME*: 32000 words/32000 words |
| Input and output (CAN) process image (max.) | 2000 words/2000 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8213 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 ▶ 2 x ETHERNET, RS-232/-485, CAN, CANopen

750-8214



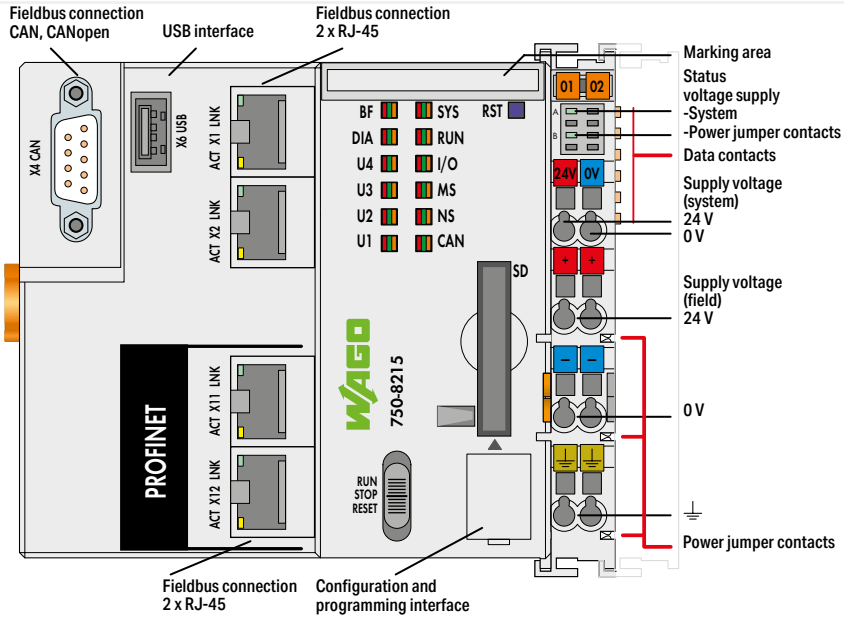

| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-8214** |
| **Order Text** | **PFC200; G2; 2ETH RS CAN** |

| Technical Data | |
|---|---|
| Communication | CANopen; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Visualization | Web Visu |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!****RUNTIME*: 32000 words/32000 words |
| Input and output (CAN) process image (max.) | 2000 words/2000 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8214 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 ▶ 4 x ETHERNET, CAN, CANopen, USB

750-8215



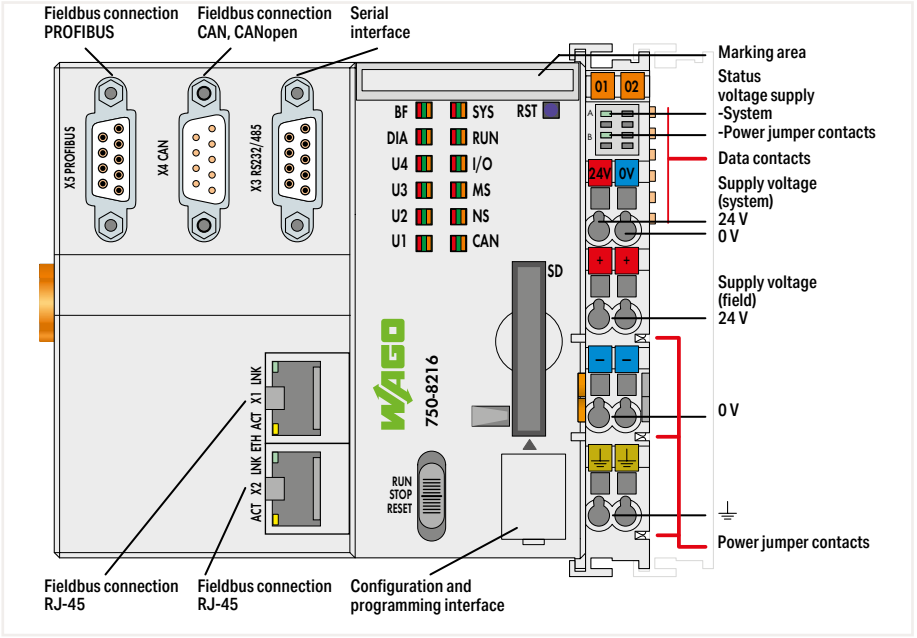

| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-8215** |
| **Order Text** | **PFC200; G2; 4ETH CAN USB** |

| Technical Data | |
|---|---|
| Communication | PROFINET RT; Modbus (TCP, UDP); ETHERNET; CANopen; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; MQTT; EtherCAT Master, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Device-specific | PROFINET IO features: PROFINET IO V2.3; Media redundancy (MRP); Shared device |
| Visualization | Web Visu |
| Programming environment | ***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) | ***e!****RUNTIME*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | ***e!****RUNTIME*: 32000 words/32000 words |
| Input and output (CAN) process image (max.) | 2000 words/2000 words |
| Input and output process image (PROFINET) (max.) | 1024 Byte/1024 Byte |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8215 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 ▶ 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave

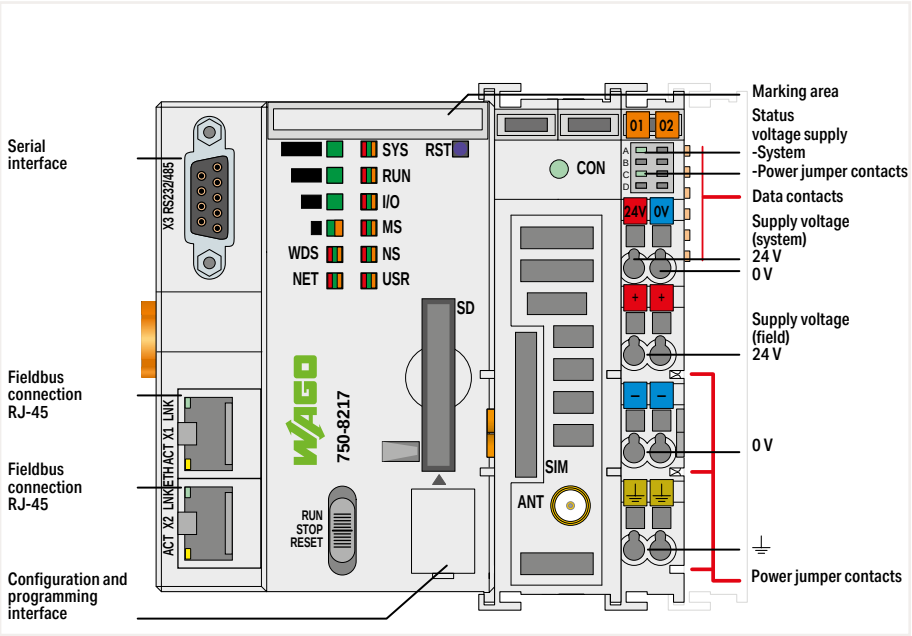
750-8216




| 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 | PROFIBUS; Modbus (TCP, UDP); ETHERNET; CANopen; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** | | PROFIBUS; Modbus (TCP, UDP); ETHERNET; CANopen; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | | |
| Telecontrol protocols | | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 |
| Visualization | Web Visu | | |
| Programming environment | ***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***: 32 MB / 128 MB / 128 KB | | CODESYS V2: 16 MB / 64 MB / 128 KB |
| Number of modules per node (max.) | 250 | | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words | | |
| Input and output (PROFIBUS )process image (max.) | 244 bytes/244 bytes | | |
| Input and output (CAN) process image (max.) | 2000 words/2000 words | | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm | | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-8216 | | |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 | 2759-283/211-1000 | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 | 2759-263/211-1000 | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 |

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

750-8217



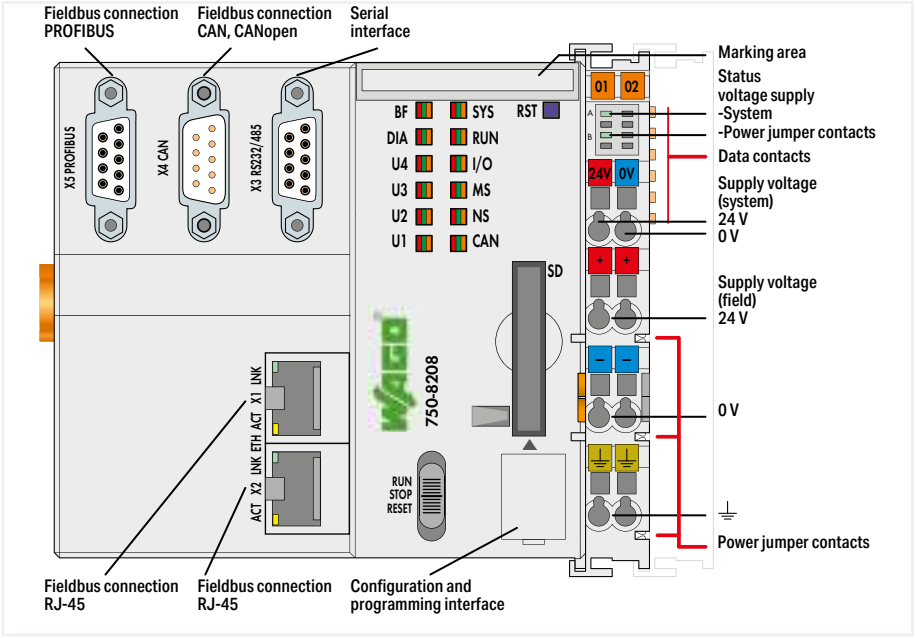

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-8217** | **750-8217/025-000** |
| **Order Text** | **PFC200; 2ETH RS 4G** | **PFC200; 2ETH RS 4G; T** |

| Technical Data | | |
|---|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; BACnet/IP, **requires an additional license**; EtherCAT Master, **requires an additional license**; Telecontrol protocols (requires an additional license on the device) | |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Telecontrol protocols | IEC 60870-5-101/-103/-104 (additional license as slave or master); IEC-61850 (additional license as Client 300); DNP3 (additional license as Slave or Master 300) | |
| Radio technology | GSM/UMTS/LTE | |
| Frequency band | GSM dual band (B3; B8); E-UTRA bands (B1; B3; B5; B7; B8; B20; B38; B40; B41) | |
| Services | GPRS connection to Internet | |
| Security encryption | OpenVPN, IPsec, firewall | |
| Visualization | Web Visu | |
| Programming environment | ***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) | ***e!RUNTIME***: 32 MB / 128 MB / 128 KB | |
| Number of modules per node (max.) | 250 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | ***e!RUNTIME***: 32000 words/32000 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (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 100 x 71.9) mm | |
| Approvals | CE; Marine | |
| Data sheet and further information, see: | wago.com/750-8217 | |

| **Accessories** | **Item No.** | **Item No.** |
|---|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |
| Magnetic foot antenna; with 2.5m cable and SMA plug; GSM/ UMTS/ LTE/ Bluetooth®/ WLAN; 698-960, 1400-1518, 1710-2700 MHz | 758-975 | 758-975 |
| e!RUNTIME; DNP3 Master; 300; Single License | 2759-2293/211-1000 | 2759-2293/211-1000 |
| e!RUNTIME; IEC60870 Slave; Single License | 2759-290/211-1000 | 2759-290/211-1000 |
| e!RUNTIME; DNP3 Slave; Single License | 2759-2290/211-1000 | 2759-2290/211-1000 |
| e!RUNTIME; IEC60870 Master; 300; Single License | 2759-293/211-1000 | 2759-293/211-1000 |
| e!RUNTIME; IEC61850 Client; 300; Single License | 2759-2243/211-1000 | 2759-2243/211-1000 |

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

750-8208




| 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; CANopen; Modbus (TCP, UDP); ETHERNET; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT | | PROFIBUS DP Master; CANopen; Modbus (TCP, UDP); ETHERNET; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; Telecontrol protocols |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | | |
| Telecontrol protocols | | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 |
| Visualization | Web Visu | | |
| Programming environment | 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 | | |
| Number of modules per node (max.) | 250 | | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words | | |
| Input and output (PROFIBUS )process image (max.) | 5000 bytes/5000 bytes | | |
| Input and output (CAN) process image (max.) | 2000 words/2000 words | | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | | |
| Input current (typ.) at nominal load (24 V) | 670 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 100 x 71.9) mm | | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-8208 | | |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 |

5.1


# Controllers PFC200 XTR

**Touch Panels 600; Control Panel Hardware Configuration**

◄◄◄ Section 3

**Edge Controller**

◄◄ Section 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 5.1

**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

**Controllers 750**

- Controllers for all common fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

Section 5.3 ►

**Controllers 750 XTR**

For demanding applications in which the following are critical:

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

Section 5.4 ►►

**Starter Kits**

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

- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

Section 5.5 ►►►

# Controllers PFC200 XTR
## Contents



| | CPU | Modbus (TCP, UDP) | Ethernet/IPTM | EtherCAT | PROFIBUS | CANopen | BACnet/IP | Modbus RTU | Telecontrol Protocols | IoT Protocols | Description | Item No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Cortex A8; 1 GHz | M/S | S | M* | | | x* | x | x* | x | Controller PFC200; 2nd Generation; 4 x ETHERNET; Extreme | 750-8210/040-000 | 130 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | x* | x | x* | x | Controller PFC200; 2nd Generation; 2 x ETHERNET, 2 x 100Base-FX; Extreme | 750-8211/040-000 | 131 |
|  | Cortex A8; 600 MHz | M/S | S | | | | | x | | x | Controller PFC200; 2 x ETHERNET, RS-232/-485; Extreme | 750-8202/040-000 | 132 |
| | | M/S | S | | | | | x | x | x | Controller PFC200; 2 x ETHERNET, RS-232/485; Telecontrol Technology; Extreme | 750-8202/040-001 | 132 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | | x* | x | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET M12, RS-232/-485; Extreme | 750-8212/040-010 | 133 |
|  | Cortex A8; 1 GHz | M/S | S | M* | | M/S | x* | x | | x | Controller PFC200; 2nd Generation; 2 x ETHERNET M12, CAN, CANopen; Extreme | 750-8213/040-010 | 134 |
|  | 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 | 135 |
| | | 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 | 135 |

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

# Controller 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 allow 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 –
the WAGO I/O System 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 systems

**Industry 4.0 / IoT**

Recording, digitizing and linking data profitably – these are the core ideas of Industry 4.0. Using a dedicated library, WAGO's PFC100/PFC200 Controllers become IoT controllers that send data from the field level to the cloud. Once in the cloud, data can be aggregated and used for analysis. This capability creates tremendous added value for your company – whether it's 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 future-proof. 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 controller incorporates 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 to 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 ensure 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 of the many 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 Controllers 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-proof Linux® Operating System. For complex tasks, you can choose between programming in IEC 61131 or directly under 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.

**Benefits:**

- 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
- Rugged and maintenance-free
- Integrated IT security standards
- IoT ready

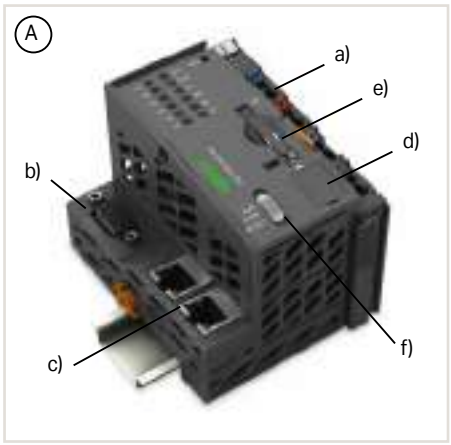
# Controller PFC200 XTR
## Variants

**Telecontrol Technology**

The PFC200 models for telecontrol technology integrate the following standardized telecontrol protocols:
- IEC 60870-5
- IEC 61850
- IEC 61400-25
- DNP3

These controllers also meet stricter requirements for immunity to impulse voltages and electromagnetic interference according to EN 60870-2-1.

## Interfaces and Types




- Includes a supply module (a) to power downstream I/O modules
- 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)

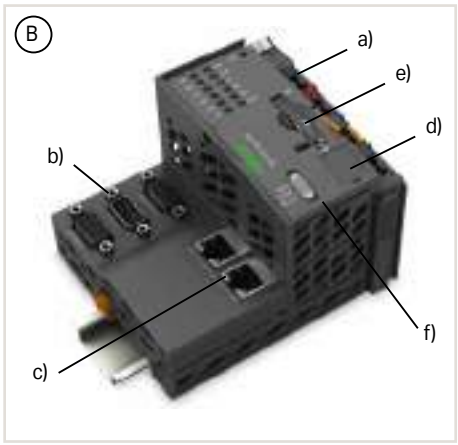
**Housing Design (A)**

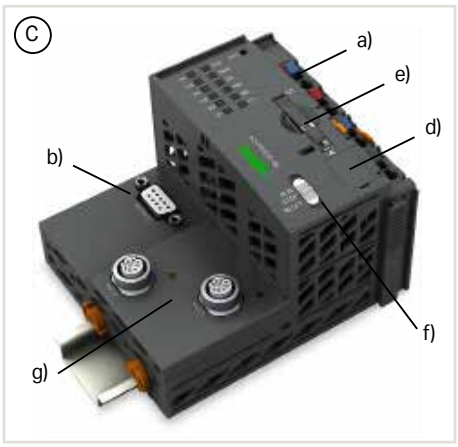
- W x H x D (mm): 78.6 x 100 x 71.9

**Housing Design (B)**

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

**Housing Design (C)**
- ETHERNET 2 x M12 connector (g)
- W x H x D (mm): 112 x 100 x 71.9




## Item Number Key

Explanation of an item number key's components

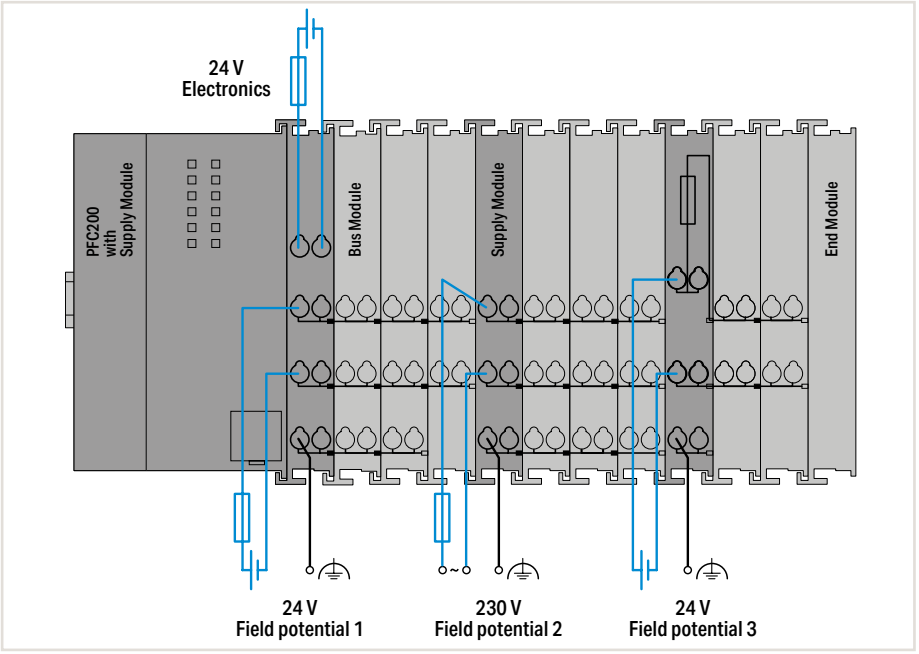
Item No.: 750-82xy/040-000

| | |
|---|---|
| 0y: | Generation 1 |
| 1y: | Generation 2 |
| x0: | 4 x ETHERNET |
| x1: | 2 x ETHERNET, 2 x SFP port |
| x2: | 2 x ETHERNET, RS-232/-485 |
| x3: | 2 x ETHERNET, CAN |
| x6: | 2 x ETHERNET, RS-232/-485, CAN, CANopen |
| | .../040-000: Standard |
| | .../040-001: Telecontrol technology |
| | .../040-010: M12 connector |

# Controller PFC200 XTR
## Installation Instructions

### Power Supply

The controller powers the internal electronics. 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 and customized supply configuration for a fieldbus node. Power 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. Furthermore, the current consumed for field-side supply must not exceed 10 A. A variety of power supply modules allows re-feeding, creating potential groups and implementing 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 (750-624/040-001 or 750-626/040-000) are ready for marine and onshore/offshore applications, as well as in telecontrol and railway systems.

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 modules are electrically isolated on the field side (i.e., electrically isolated power supply). This combination may be useful, for example, when there are only increased requirements for immunity to impulse voltages and interference, but the surrounding air temperature is not critical.

5.2

## Standards and Rated Conditions for Railway 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 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.

# Controller PFC200 XTR
## Standards and Rated Conditions

| General Specifications | |
|---|---|
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Surrounding air temperature (storage) | -40 … 85 °C |
| Relative humidity (without condensation) | 95 % |
| Relative humidity (with condensation) | Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for 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); 5000 m (max.) |
| Pollution degree (5) | 2 per IEC 61131-2 |
| 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, EN 61850-3, EN 50121-3-2, EN 50121-4, -5 |
| Protection type | IP20 |
| Mounting position | Horizontal (standing/lying); vertical |
| Mounting type | DIN-35 rail |
| Housing material | Polycarbonate; polyamide 6.6 |
| Exposure to pollutants | Per IEC 60068-2-42 and IEC 60068-2-43 |
| Connection technology: system supply | 2 x CAGE CLAMP® |
| Connection technology: field supply | 4 x CAGE CLAMP® |
| Solid conductor | 0.25 … 2.5 mm² / 24 … 14 AWG |
| Fine-stranded conductor | 0.25 … 2.5 mm² / 24 … 14 AWG |
| Strip length | 8 … 9 mm / 0.31 … 0.35 inch |
| Current carrying capacity (power jumper contacts) | 10 A |

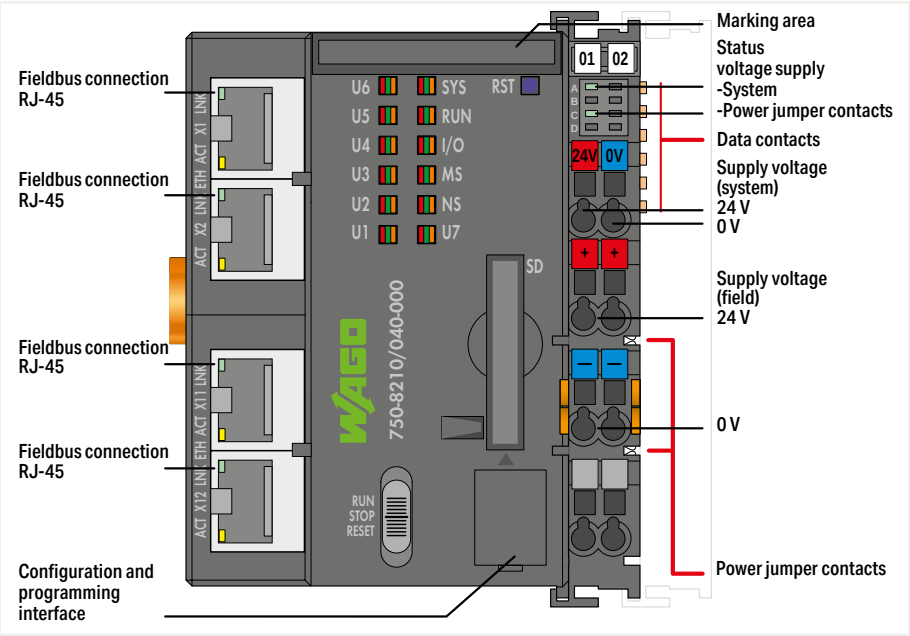
## Approvals

Overview of the approvals in the item comparison in Section 14, Technical Section, or online at www.wago.com


| | |
|---|---|
| Cables and pluggable connectors | Page 671 |
| DIN-rail | Page 706 |
| General accessories | Page 614 |
| Marking | Page 704 |
| Shield termination | Page 698 |
| Software | Page 20 |
| System enclosure | Page 683 |

# Controller PFC200 XTR ▸ 4 x ETHERNET

750-8210/040-000



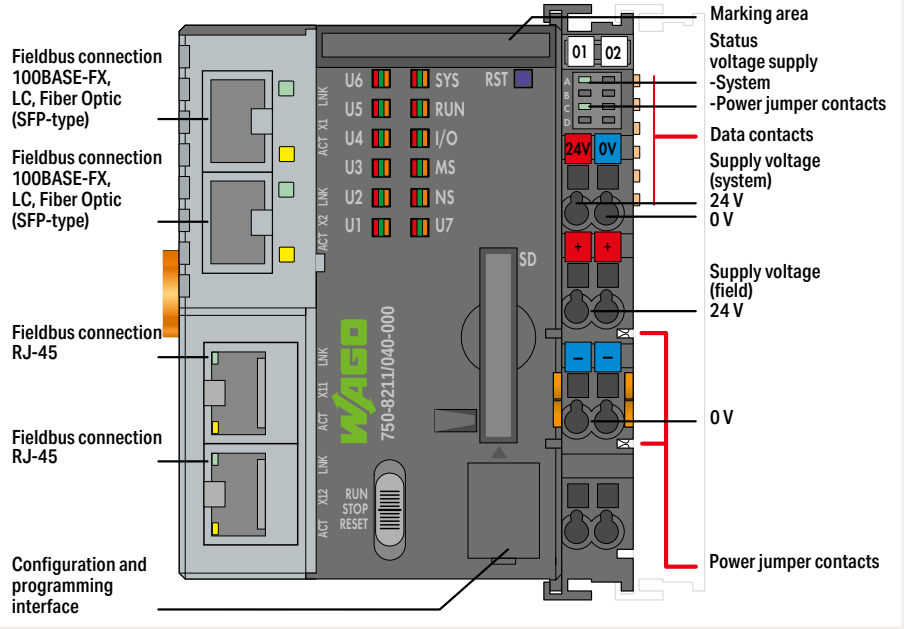

| | |
|---|---|
| Version | Extreme |
| **Item No.** | **750-8210/040-000** |
| **Order Text** | **PFC200; G2; 4ETH; XTR** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols (requires an additional license on the device) |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Telecontrol protocols | IEC 60870-5-101/-103/-104 (additional license as slave or master); IEC-61850 (additional license as Client 300); DNP3 (additional license as Slave or Master 300) |
| Visualization | Web Visu |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 64 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!****RUNTIME*: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (78.6 x 100 x 71.9) mm |
| Approvals | CE; cULus OrdLoc |
| Data sheet and further information, see: | wago.com/750-8210/040-000 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |
| e!RUNTIME; DNP3 Master; 300; Single License | 2759-2293/211-1000 |
| e!RUNTIME; IEC60870 Slave; Single License | 2759-290/211-1000 |
| e!RUNTIME; DNP3 Slave; Single License | 2759-2290/211-1000 |
| e!RUNTIME; IEC60870 Master; 300; Single License | 2759-293/211-1000 |
| e!RUNTIME; IEC61850 Client; 300; Single License | 2759-2243/211-1000 |

# Controller PFC200 XTR ▸ 2 x ETHERNET, 2 x SFP Ports

750-8211/040-000



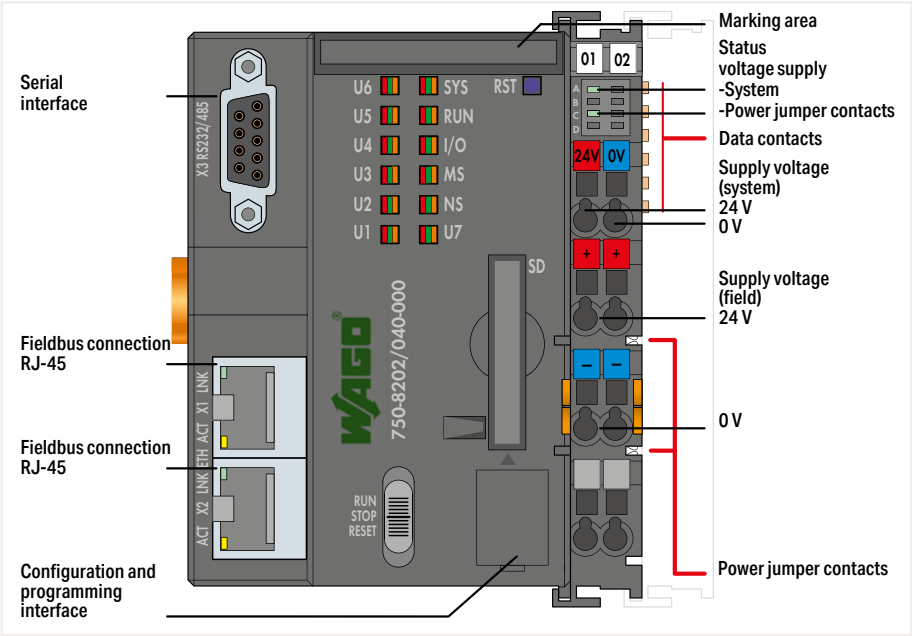

| | |
|---|---|
| Version | **Extreme** |
| **Item No.** | **750-8211/040-000** |
| **Order Text** | **PFC200; G2; 2ETH, 2SFP; XTR** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!****RUNTIME*; Modbus® RTU; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license**; Telecontrol protocols (requires an additional license on the device) |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Telecontrol protocols | IEC 60870-5-101/-103/-104 (additional license as slave or master); IEC-61850 (additional license as Client 300); DNP3 (additional license as Slave or Master 300) |
| Visualization | Web Visu |
| Programming environment | ***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*: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 64 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!****RUNTIME*: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (78.6 x 100 x 71.9) mm |
| Approvals | CE; Marine; OrdLoc |
| Data sheet and further information, see: | wago.com/750-8211/040-000 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| SFP Module 100BASE; FX Multi-Mode 1310 nm LC; 2 km; DDM; Extreme | 852-202 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |
| e!RUNTIME; DNP3 Master; 300; Single License | 2759-2293/211-1000 |
| e!RUNTIME; IEC60870 Slave; Single License | 2759-290/211-1000 |
| e!RUNTIME; DNP3 Slave; Single License | 2759-2290/211-1000 |
| e!RUNTIME; IEC60870 Master; 300; Single License | 2759-293/211-1000 |
| e!RUNTIME; IEC61850 Client; 300; Single License | 2759-2243/211-1000 |

# Controller PFC200 XTR ▶ 2 x ETHERNET, RS-232/-485

750-8202/040-000

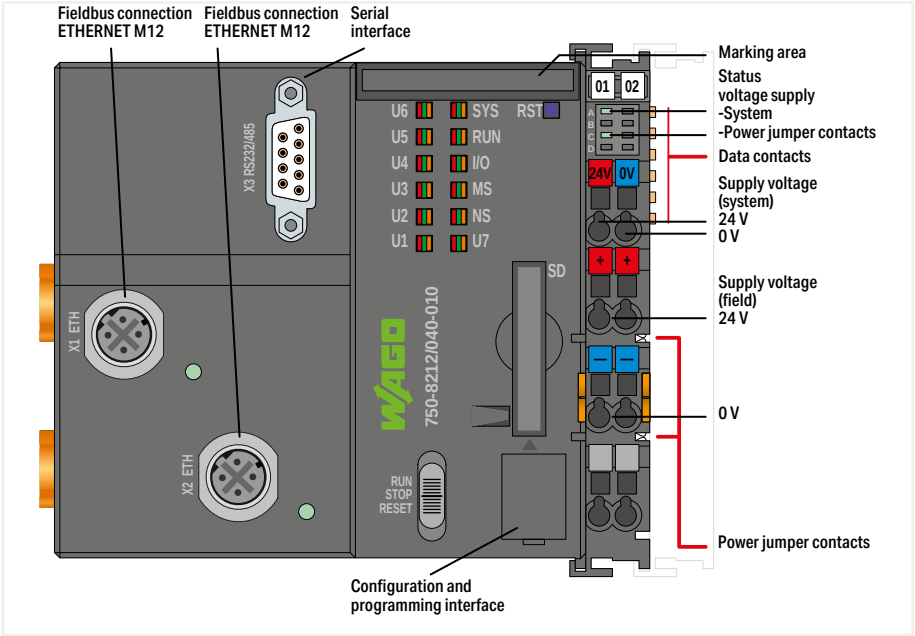



| Version | Extreme | Telecontrol Technology; Extreme |
|---|---|---|
| **Item No.** | **750-8202/040-000** | **750-8202/040-001** |
| **Order Text** | **PFC200; 2ETH RS; XTR** | **PFC200; 2ETH RS; Tele; XTR** |
| Technical Data | | |
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; Telecontrol protocols |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Telecontrol protocols | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 |
| Visualization | Web Visu | |
| Programming environment | ***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 (Program and data memory (dynamically distributed)) | |
| Number of modules per node (max.) | 64 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words | |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! | |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! | |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 | |
| Power consumption (5 V system supply) | 510 mA | |
| Total current (system supply) | 1700 mA | |
| Surrounding air temperature (operation) | -40 … 70 °C | |
| Dimensions W x H x D | (78.6 x 100 x 71.9) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-8202/040-000 | |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |

5.2

# Controller PFC200 XTR ▶ 2 x ETHERNET M12, RS-232/-485

750-8212/040-010



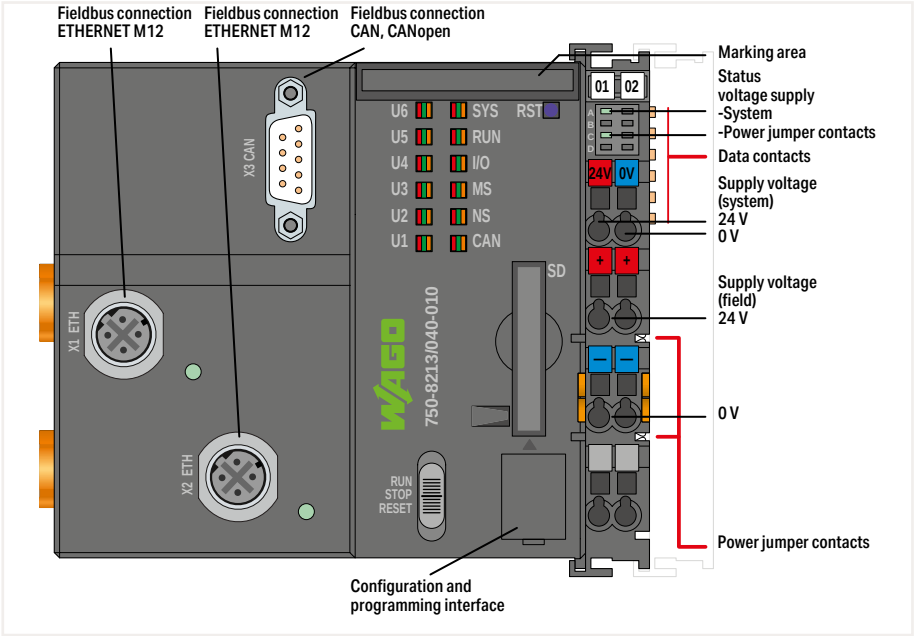

| | |
|---|---|
| Version | M12; Extreme |
| **Item No.** | **750-8212/040-010** |
| **Order Text** | **PFC200 G2 2ETH M12 RS; XTR** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Visualization | Web Visu |
| Programming environment | ***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***: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 64 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (112 x 100 x 71.9) mm |
| Approvals | CE; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8212/040-010 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 XTR ▸ 2 x ETHERNET M12, CAN, CANopen

750-8213/040-010



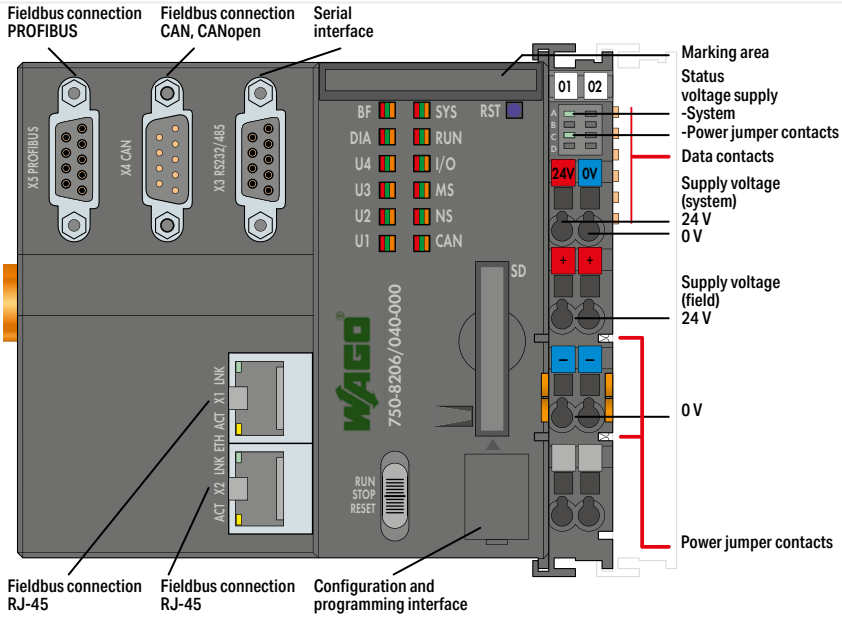

| | |
|---|---|
| Version | **M12; Extreme** |
| **Item No.** | **750-8213/040-010** |
| **Order Text** | **PFC200 G2 2ETH M12 CAN; XTR** |

| Technical Data | |
|---|---|
| Communication | CANopen; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; MQTT; EtherCAT Master, **requires an additional license**; BACnet/IP, **requires an additional license** |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH |
| Visualization | Web Visu |
| Programming environment | ***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***: 32 MB / 128 MB / 128 KB |
| Number of modules per node (max.) | 64 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words |
| Input and output (CAN) process image (max.) | 2000 words/2000 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (112 x 100 x 71.9) mm |
| Approvals | CE; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-8213/040-010 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 |
| e!RUNTIME; BACnet; 300; Single License; Online activation | 2759-283/211-1000 |
| e!RUNTIME; EtherCAT Master; 300; Single License; Online activation | 2759-263/211-1000 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller PFC200 XTR ▶ 2 x ETHERNET, RS-232/-485, CAN, CANopen, PROFIBUS Slave

750-8206/040-000




| 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 | PROFIBUS; CANopen; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT | PROFIBUS; CANopen; Modbus (TCP, UDP); ETHERNET; EtherNet/IP™ Adapter (slave), library for ***e!RUNTIME***; Modbus® RTU; RS-232 serial interface; RS-485 serial interface; MQTT; Telecontrol protocols |
| ETHERNET protocols | DHCP; DNS; NTP; FTP; FTPS; SNMP; HTTP; HTTPS; SSH | |
| Telecontrol protocols | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 |
| Visualization | Web Visu | |
| Programming environment | ***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 (Program and data memory (dynamically distributed)) | |
| Number of modules per node (max.) | 64 | |
| Input and output (internal) process image (max.) | 1000 words/1000 words | |
| Input and output (MODBUS) process image (max.) | CODESYS V2: 1000 words/1000 words; ***e!RUNTIME***: 32000 words/32000 words | |
| Input and output (PROFIBUS )process image (max.) | 244 Byte/244 Byte | |
| Input and output (CAN) process image (max.) | 2000 words/2000 words | |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! | |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! | |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 | |
| Power consumption (5 V system supply) | 600 mA | |
| Total current (system supply) | 1700 mA | |
| Surrounding air temperature (operation) | -40 … 70 °C | |
| Dimensions W x H x D | (112 x 100 x 71.9) mm | |
| Approvals | CE; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-8206/040-000 | |
| **Accessories** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 GByte; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |

# Controllers 750

**Touch Panels 600; Control Panel Hardware Configuration**

◄◄◄◄ Section 3

**Edge Controller**

◄◄◄ Section 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 5.1

**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 5.2

**Controllers 750**

- Controllers for all common fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

**Controllers 750 XTR**

For demanding applications in which the following are critical:

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

Section 5.4 ►

**Starter Kits**

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

- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

Section 5.5 ►►

# Controllers 750
## Contents



| | CPU | ETHERNET: Modbus (TCP, UDP) | ETHERNET: Ethernet/IPTM | ETHERNET: BACnet/IP | ETHERNET: KNX IP | Modbus RTU | Telecontrol Protocols | BACnet MS/TP | DeviceNet | PROFIBUS | CANopen | Description | Item No. Standard | Item No. Extended Temperature | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 32 bits | M/S | | | | | | | | | | Controller Modbus TCP; 4th Generation; 2 x ETHERNET, SD Card Slot | 750-890 | 750-890/025-000 | 142 |
| | | M/S | | | | | x | | | | | Controller Modbus TCP; 4th Generation; 2 x ETHERNET, SD Card Slot; Telecontrol Technology; Ext. Temperature | | 750-890/025-001<br>750-890/025-002 | 142 |
|   | 32 bits | M/S | | | | | | | | | | Controller Modbus TCP; 4th Generation; 2 x ETHERNET | 750-891 | | 143 |
| | | M/S | | | | | | | | | | Controller Modbus TCP; 4th Generation; ECO | 750-862 | | 144 |
|   | 32 bits | M/S | S | | | | | | | | | Controller EtherNet/IPTM; 4th Generation; 2 x ETHERNET, SD Card Slot | 750-893 | | 145 |
| | | M/S | S | | | | | | | | | Controller EtherNet/IPTM; 4th Generation; 2 x ETHERNET; ECO | 750-823 | | 146 |
|   | 32 bits | M/S | S | | | | | | | | | Controller ETHERNET; 3rd Generation; SD Card Slot; Media Redundancy | 750-885 | 750-885/025-000 | 147 |
| | | M/S | S | | | | | | | | | Controller ETHERNET; 3rd Generation; Media Redundancy | 750-882 | | 148 |
|  | 16 bits | M/S | | | | | | | | | | Controller ETHERNET; 1st Generation | 750-842 | | 149 |
| | | M/S | | | | | | | | | | Controller ETHERNET; 1st Generation; ECO | 750-843 | | 150 |
|  | 32 bits | M/S | | x | | | | | | | | Controller BACnet/IP | 750-832 | | 151 |
| | | M/S | | x | | | | | | | | Controller BACnet/IP; ECO | 750-832/000-002 | | 151 |
|  | 32 bits | M/S | | | | | | x | | | | Controller BACnet MS/TP | 750-829 | | 152 |
|  | 32 bits | M/S | | | x | | | | | | | Controller KNX/IP | 750-889 | | 153 |
|  | 16 bits | | | | | x | | | | | | Controller Modbus; RS-485; 115.2 kBd | 750-815/300-000 | 750-815/325-000 | 154 |
| | | | | | | x | | | | | | Controller Modbus; RS-232; 115.2 kBd | 750-816/300-000 | | 155 |
|  | 16 bits | | | | | | | | | S | | Controller PROFIBUS Slave | 750-833 | 750-833/025-000 | 156 |
|  | 16 bits | | | | | | | | x | | | Controller DeviceNet | 750-806 | | 157 |
|  | 16 bits | | | | | | | | | | M/S | Controller CANopen; 128/64 KB Program/ RAM; MCS | 750-837 | | 158 |
| | | | | | | | | | | | M/S | Controller CANopen; 640/832 KB Program/ RAM; MCS | 750-837/021-000 | | 158 |
| | | | | | | | | | | | M/S | Controller CANopen; 128/64 KB Program/ RAM; D-Sub | 750-838 | | 159 |
| | | | | | | | | | | | M/S | Controller CANopen; 640/832 KB Program/ RAM; D-Sub | 750-838/021-000 | | 159 |

M: Master, S: Master

# 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 provides perfect adaptation to any application.

### Building Automation

Dedicated controllers for the BACnet/IP and KNX IP bus systems are ideal for building automation applications. The wide range of I/O modules allows integration of external systems such as lighting control (DALI), sun protection (SMI), wireless switches (EnOcean) and much more.

### Marine and Onshore/Offshore Industries

International approvals coupled with industry-specific features permit use in marine applications 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 both interference immunity and emission, along with superior mechanical performance in these sensitive areas, the WAGO I/O System will readily meet the needs of other industries.

### Telecontrol Technology

Standardized IEC 60870-5, IEC 61850, IEC 61400-25 and DNP3 Telecontrol Protocols allow the Controllers 750 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 5.5.

### Link between Process Data and IT Application

WAGO's 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 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 Controllers 750 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. Additionally, proven CAGE CLAMP® technology ensures that all connections made in the field are quick, vibration-proof and maintenance-free. Depending on the I/O modules' granularity, the field level can be directly wired using 1-, 2-, 3- or 4-conductor 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.

**Benefits:**

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

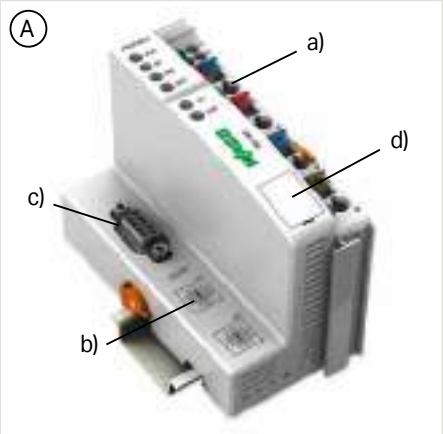
# Controllers 750
## Variants

**Extended Temperature Range**

Industrial automation technology is typically operated in temperatures ranging from 0°C to 55°C. However, some applications 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



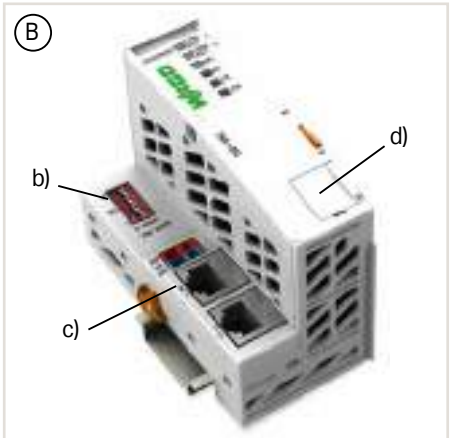

- Technical differences on the connection level; optional addressing switch (b) and fieldbus interface (c)
- Service interface (d)

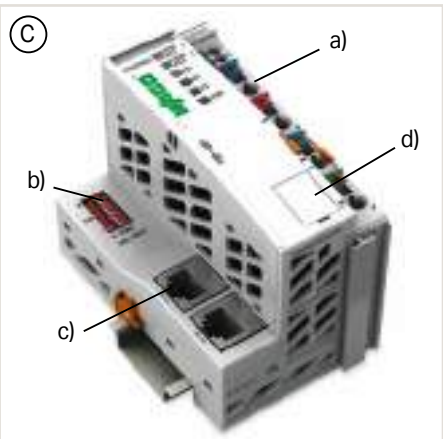
**Housing Design (A)**

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

**Housing Design Eco (B)**

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



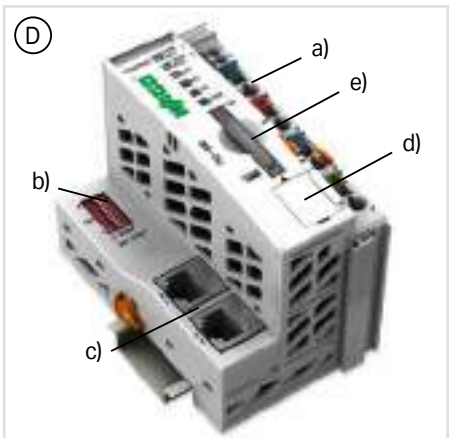




**Housing Design (C)**

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

**Housing Design (D)**

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




## Item Number Key

Explanation of an item number key's components

Item No. : 750-8xx

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

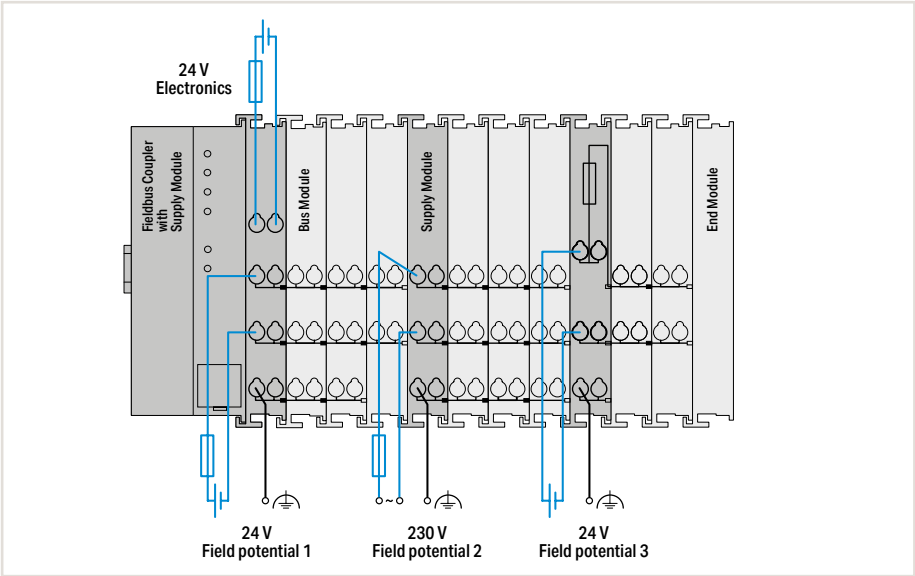
.../025-yyy: Extended temperature range (–20 ... +60 °C)

000: Standard, 001: Telecontrol technology, 002: Telecontrol technology Eco

# Controllers 750
## Installation Instructions

### Power Supply

The controller powers the internal electronics. The field-side power supply is electrically isolated via the supply module on the controller 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 and customized supply configuration for a fieldbus node.
Power 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. Furthermore, the current consumed for field-side supply must not exceed 10 A. A variety of power supply modules allows re-feeding, creating potential groups and implementing emergency stops.




### Interference-Free in Safety-Related Applications

To easily and safely perform a cost-effective and 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:**

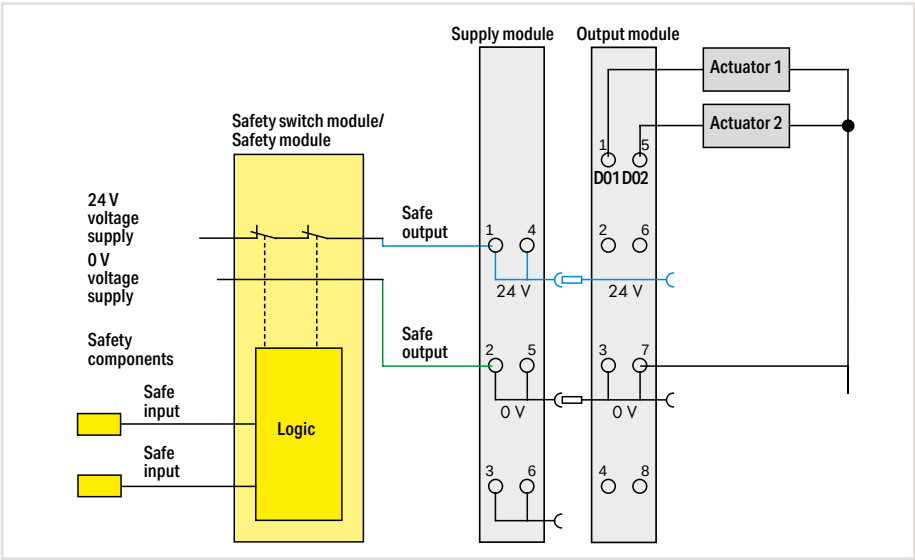
Additional steps must be implemented based on where the I/O system is installed:

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.
When operating safety-related I/O modules, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. Furthermore, specific power and field-side power supply filters (750-626) must be provided.

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




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

# Controller 750
## Standards and Rated Conditions

| General Specifications | |
|---|---|
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Surrounding air temperature (storage) | -25 … 85 °C |
| Relative humidity (without condensation) | 95 % |
| Operating altitude | Without temperature derating: 0 … 2000 m; with temperature derating: 2000 … 5000 m (0.5 K/100 m); 5000 m (max.) |
| Pollution degree (5) | 2 per IEC 61131-2 |
| Vibration resistance | 4g per IEC 60068-2-6 |
| Shock resistance | 15g per IEC 60068-2-27 |
| EMC immunity to interference | Per EN 61000-6-2, marine applications |
| EMC emission of interference | Per EN 61000-6-3, marine applications |
| Protection type | IP20 |
| Mounting position | Any |
| Mounting type | DIN-35 rail |
| Housing material | Polycarbonate; polyamide 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: system supply | 2 x CAGE CLAMP® |
| Connection technology: field supply | 6 x CAGE CLAMP® |
| Solid conductor | 0.08 … 2.5 mm² / 28 … 14 AWG |
| Fine-stranded conductor | 0.08 … 2.5 mm² / 28 … 14 AWG |
| Strip length | 8 … 9 mm / 0.31 … 0.35 inch |
| Current carrying capacity (power jumper contacts) | 10 A |

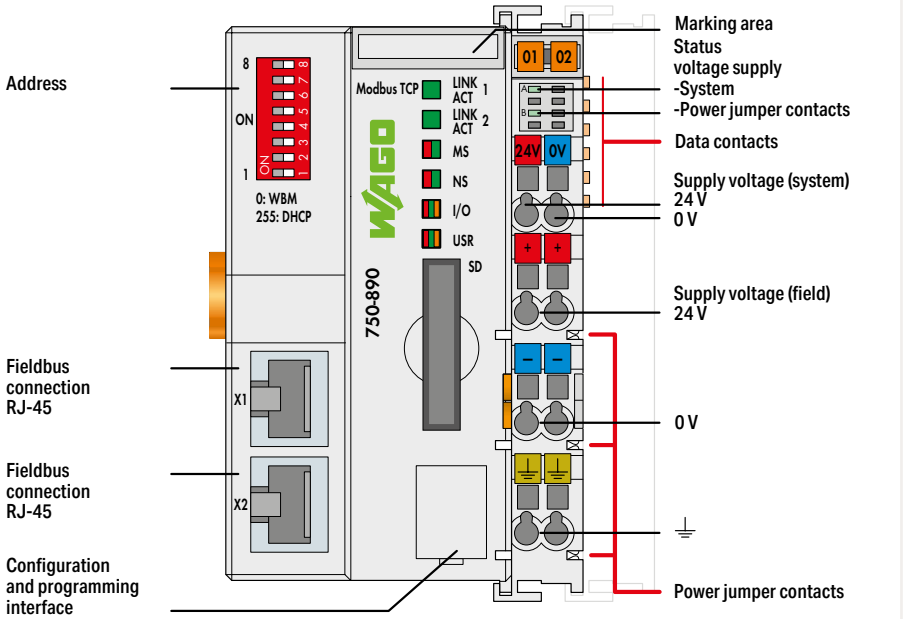
## Approvals

Overview of the approvals in the item comparison in Section 14, Technical Section, or online at www.wago.com


| | |
|---|---|
| Cables and pluggable connectors | Page 671 |
| DIN-rail | Page 706 |
| General accessories | Page 614 |
| Marking | Page 704 |
| Shield termination | Page 698 |
| Software | Page 36 |
| System enclosure | Page 683 |

# Controller 750 ▸ Modbus TCP; SD card slot

750-890

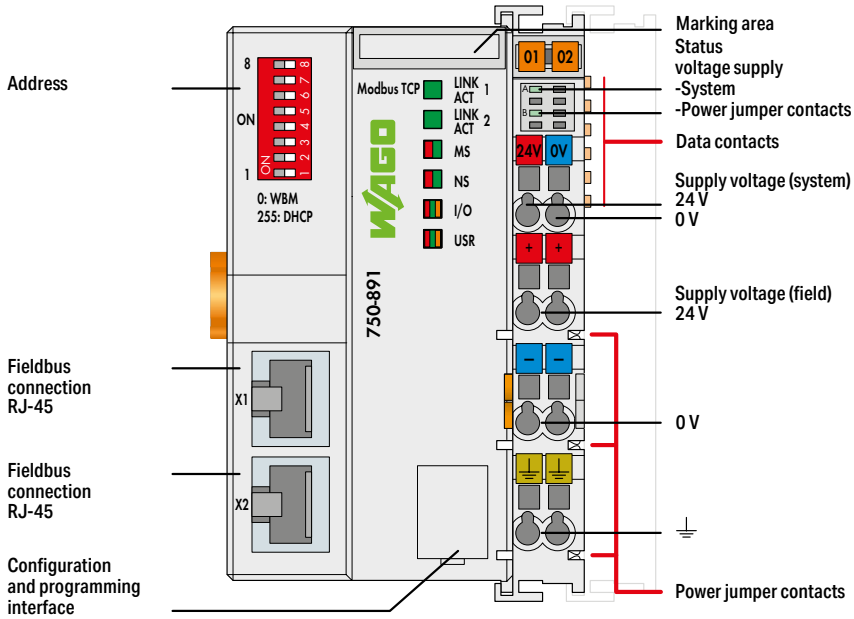



| Version | Default | Ext. Temperature | Telecontrol Technology; Ext. Temperature | Telecontrol Technology; Ext. Temperature; ECO |
|---|---|---|---|---|
| **Item No.** | **750-890** | **750-890/025-000** | **750-890/025-001** | **750-890/025-002** |
| **Order Text** | **Controller Modbus TCP; G4; 2ETH SD** | **Controller Modbus TCP; G4; 2ETH SD; T** | **Controller Modbus TCP; G4; 2ETH SD; Tele; T** | **Controller Modbus TCP; G4; 2ETH SD; Tele; T; ECO** |
| Technical Data | | | | |
| Communication | Modbus (TCP, UDP) | | Modbus (TCP, UDP); Telecontrol protocols | |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP | | | |
| Telecontrol protocols | | | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 | |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 2 x RJ-45 | | Modbus TCP/UDP: 2 x RJ-45; Telecontrol protocol IEC 60870-5-101/-103: 1 x Serial interface via I/O module; Telecontrol protocol IEC 60870-5-104: 1 x RJ-45; Telecontrol protocol IEC 61850: 1 x RJ-45; Telecontrol protocol DNP3: 1 x RJ-45 | |
| Baud rate | 10/100 Mbit/s | | | |
| Visualization | Web Visu | | | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | | | |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) | | | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 8 MB / 8 MB / 32 KB | | | |
| Number of modules per node (max.) | 250 | | | 4 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words | | | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | | | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | | | |
| Input current (typ.) at nominal load (24 V) | 500 mA | | | |
| Power consumption (5 V system supply) | 440 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 100 x 71.9) mm | | | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | | |
| Data sheet and further information, see: | wago.com/750-890 | | | |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** | **Item No.** |
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 | 758-879/000-2108 |

5.3

# Controller 750 ▸ Modbus TCP

750-891

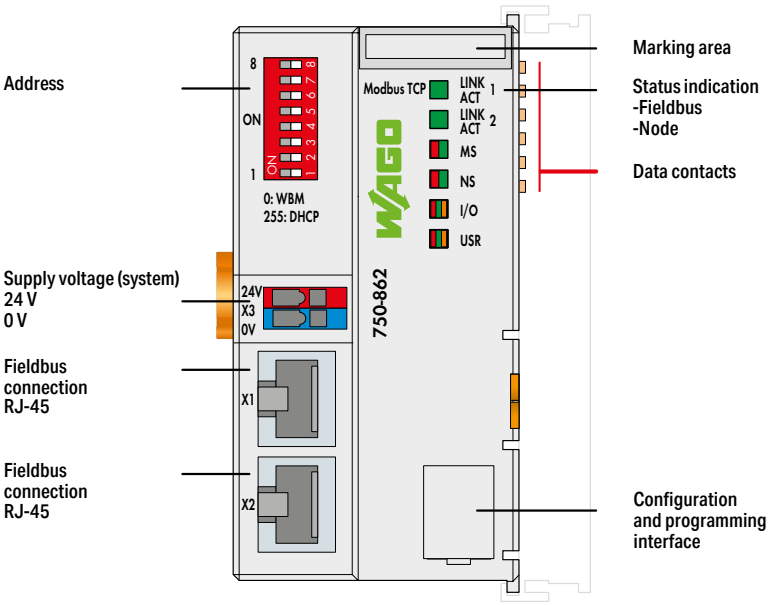



| Version | Default |
|---|---|
| **Item No.** | **750-891** |
| **Order Text** | **Controller Modbus TCP; G4; 2ETH** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP) |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 4 MB / 4 MB / 32 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 390 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-891 |

# Controller 750 ▸ Modbus TCP; ECO

750-862



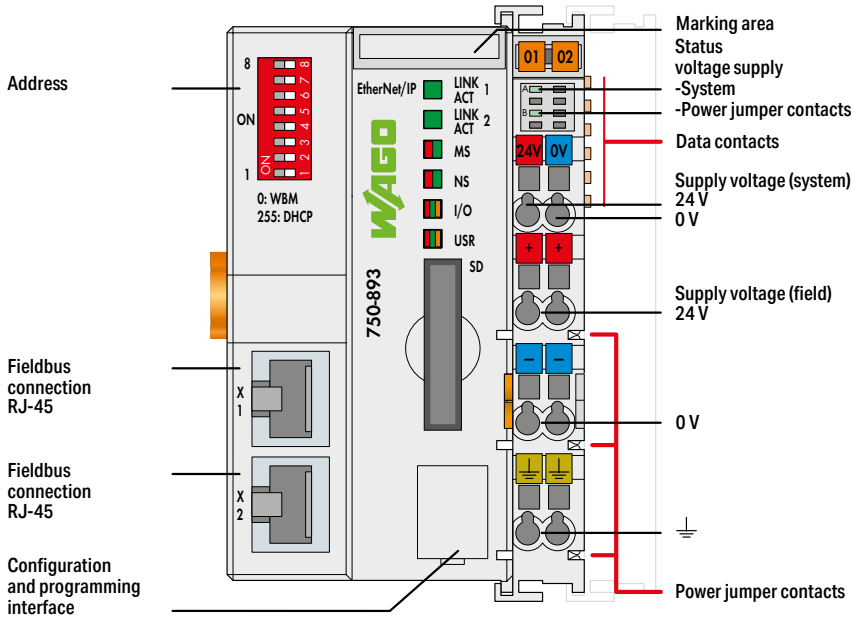

| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-862** |
| **Order Text** | **Controller Modbus TCP; G4; 2ETH; ECO** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP) |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Webserver |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 2 MB / 2 MB / 16 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 300 mA |
| Power consumption (5 V system supply) | 390 mA |
| Total current (system supply) | 700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-862 |

5.3

# Controller 750 ▶ EtherNet/IP™; SD card slot

750-893



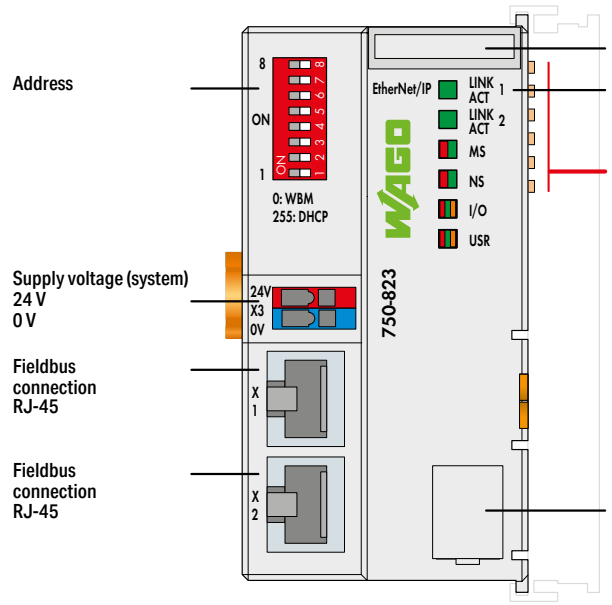

| Version | Default |
|---|---|
| **Item No.** | **750-893** |
| **Order Text** | **Controller EtherNet/IP; SD** |

| Technical Data | |
|---|---|
| Communication | EtherNet/IP™ |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 8 MB / 8 MB / 32 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 440 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-893 |

| Accessories | Item No. |
|---|---|
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller 750 ▸ EtherNet/IP™; ECO

750-823

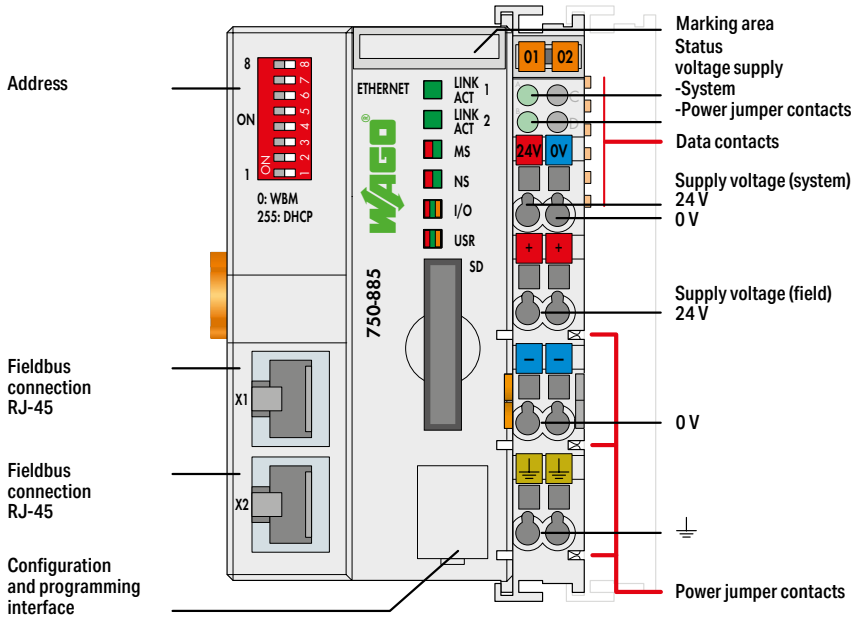



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-823** |
| **Order Text** | **Controller EtherNet/IP; ECO** |

| Technical Data | |
|---|---|
| Communication | EtherNet/IP™ |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 2 MB / 2 MB / 32 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 300 mA |
| Power consumption (5 V system supply) | 390 mA |
| Total current (system supply) | 700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-823 |

# Controller 750 ▶ 2 x ETHERNET; SD card slot; Media redundancy

750-885



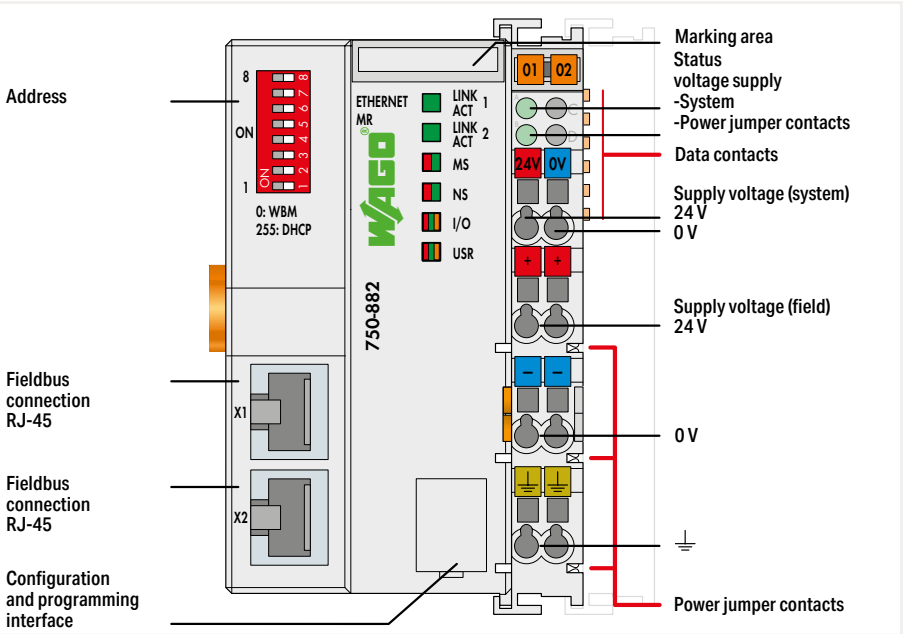

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-885** | **750-885/025-000** |
| **Order Text** | **Controller ETHERNET; G3; SD; MR** | **Controller ETHERNET; G3; SD; MR; T** |

| Technical Data | | |
|---|---|---|
| Communication | EtherNet/IP™; Modbus (TCP, UDP); ETHERNET | |
| ETHERNET protocols | HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP | |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45 | |
| Baud rate | 10/100 Mbit/s | |
| Redundancy function | Via two logically separated ETHERNET interfaces | |
| Visualization | Web Visu | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 1024 kbytes / 1024 kbytes / 32 KB | |
| Number of modules per node (max.) | 250 | |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 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 100 x 71.9) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-885 | |

| **Accessories** | **Item No.** | **Item No.** |
|---|---|---|
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |

# Controller 750 ▶ 2 x ETHERNET; Media redundancy

750-882



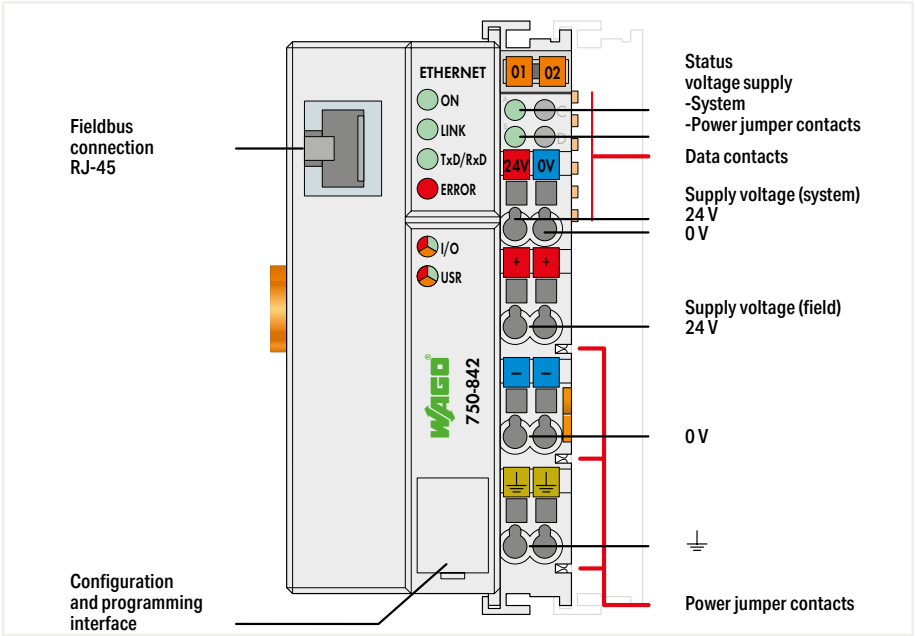

| | |
|---|---|
| Version | Default |
| Item No. | 750-882 |
| Order Text | Controller ETHERNET; G3; MR |

| Technical Data | |
|---|---|
| Communication | EtherNet/IP™; Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Redundancy function | via two logically separated ETHERNET interfaces |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 1024 kbytes / 512 kbytes / 32 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 450 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-882 |

5.3

# Controller 750 ▸ ETHERNET

750-842

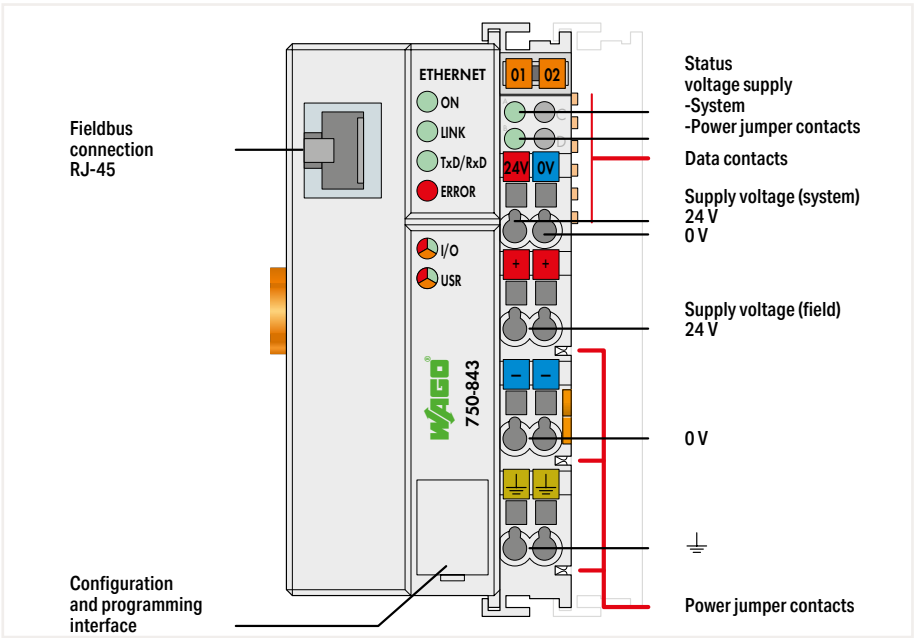



| Version | Default |
|---|---|
| **Item No.** | **750-842** |
| **Order Text** | **Controller ETHERNET; G1** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 1 x RJ-45 |
| Bus segment length (max.) | 100 m |
| Baud rate | 10 Mbit/s |
| Visualization | Without |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 128 kbytes / 64 kbytes / 8 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 200 mA |
| Total current (system supply) | 1800 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-842 |

# Controller 750 ▸ ETHERNET ECO

750-843



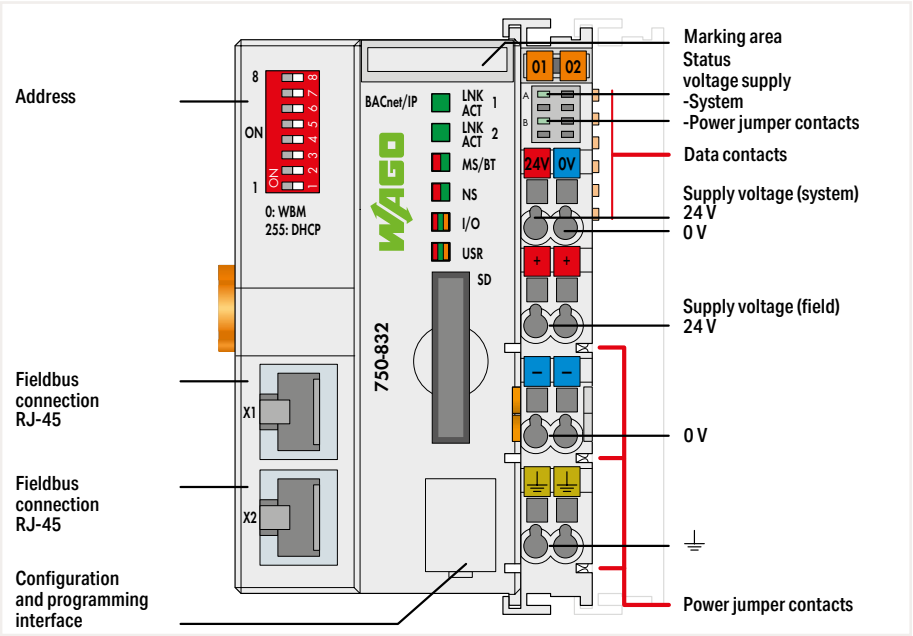

| Version | Default |
|---|---|
| **Item No.** | **750-843** |
| **Order Text** | **Controller ETHERNET; G1; ECO** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 1 x RJ-45 |
| Bus segment length (max.) | 100 m |
| Baud rate | 10 Mbit/s |
| Visualization | Without |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 64 kbytes / 64 kbytes / 8 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 200 mA |
| Total current (system supply) | 1800 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-843 |

5.3

# Controller 750 ▸ BACnet/IP; SD card slot

750-832




| Version | Default | ECO |
|---|---|---|
| **Item No.** | **750-832** | **750-832/000-002** |
| **Order Text** | **Controller BACnet/IP; G4; 2xETH; SD** | **Controller BACnet/IP; G4; 2xETH; SD; ECO** |

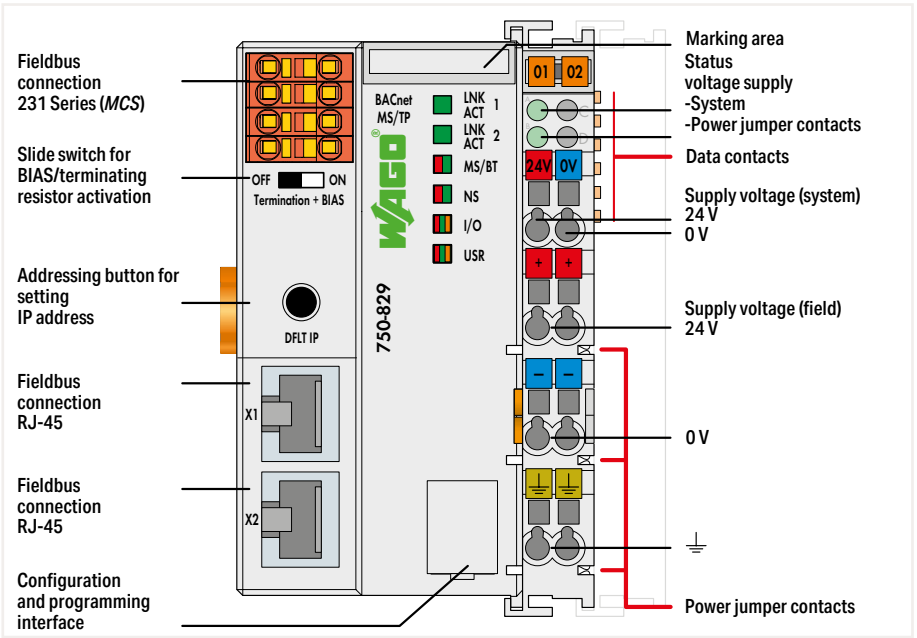
| Technical Data | | |
|---|---|---|
| Communication | BACnet/IP; Modbus (TCP, UDP) | |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP | |
| Connection technology: communication/fieldbus | BACnet/IP: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45 | |
| Baud rate | 10/100 Mbit/s | |
| Visualization | Web Visu | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) | |
| Device-specific | BACnet device profile: B-BC (BACnet building controller); BACnet revision: 12 | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 8 MB / 8 MB / 32 KB | |
| Number of modules per node (max.) | 250 | |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 440 mA | |
| Total current (system supply) | 1700 mA | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm | |
| Approvals | CE; Marine; OrdLoc/HazLoc; ATEX/IECEx; BACnet approvals: WSPCert certification; BTL listing | |
| Data sheet and further information, see: | wago.com/750-832 | |

| Accessories | Item No. | Item No. |
|---|---|---|
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 | 758-879/000-2108 |

750-832/000-002 Controllers support a maximum of 256 BACnet objects.

# Controller 750 ▸ BACnet MS/TP

750-829



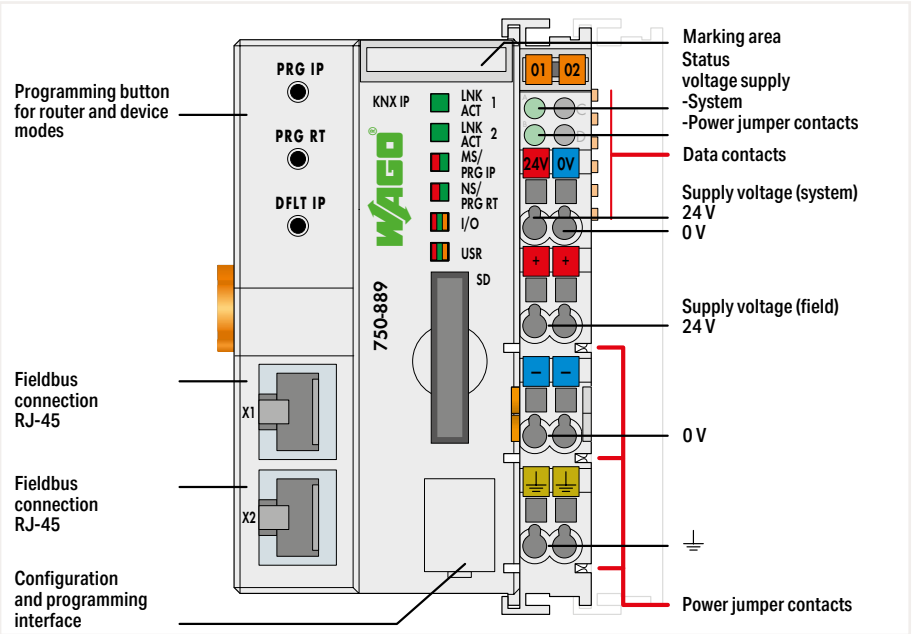

| | |
|---|---|
| Version | Default |
| Item No. | 750-829 |
| Order Text | Controller BACnet MS/TP |

| Technical Data | |
|---|---|
| Communication | BACnet MS/TP; Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP; SMTP |
| Connection technology: communication/fieldbus | BACnet MS/TP: 1 x Male connector; 4-pole; Modbus TCP/UDP: 2 x RJ-45 |
| Bus segment length (max.) | BACnet MS/TP: 1200 m; Depends on baud rate/cable (per BACnet standard) 1200 m at ≤ 76800 baud; 1000 m at > 76800 baud; ETHERNET: 100 m |
| Baud rate | BACnet MS/TP: 38.4 kBd (9600, 19200, 38400*, 57600, 76800, 115200 Bd (per BACnet standard); * Factory setting) |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Device-specific | BACnet device profile: B-BC (BACnet building controller); BACnet revision: 1.7 |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 1024 kbytes / 1024 kbytes / 32 KB |
| Number of modules per node (max.) | 99 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 450 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/750-829 |

5.3

# Controller 750 ▸ KNX/IP

750-889




| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-889** |
| **Order Text** | **Controller KNX/IP** |

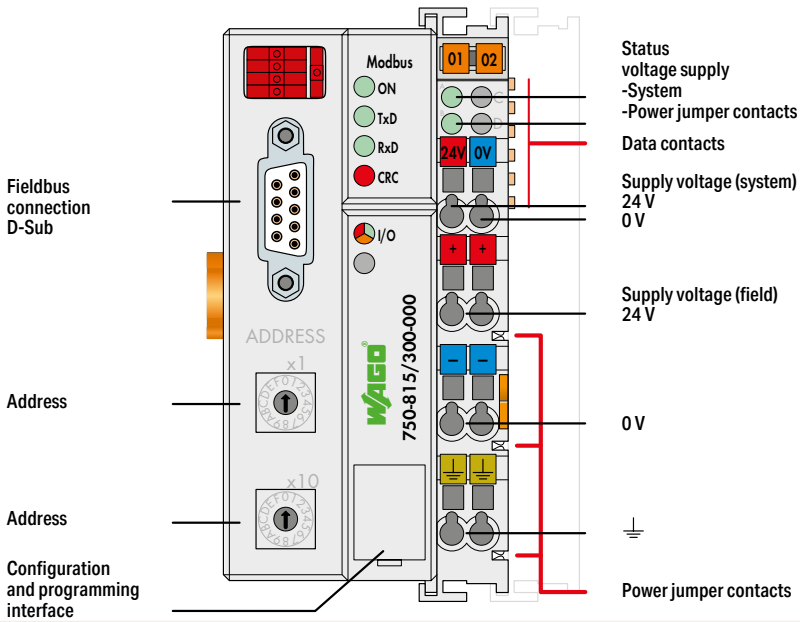
| Technical Data | |
|---|---|
| Communication | KNX IP; Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP; DHCP; DNS; AutoIP; SNTP; FTP; SNMP V3; SMTP |
| Connection technology: communication/fieldbus | KNX IP: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45 |
| Bus segment length (max.) | 100 m |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) |
| Device specification | KNX/TP1 Bus Specification: 1.0 |
| Device-specific | Number of group addresses: 254; Number of communication objects: 253 |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 1024 kbytes / 1024 kbytes / 32 KB |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 450 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| KNX certified | IP Controller: 61/8316/08; IP Router: 61/8317/08 |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/750-889 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

This controller can accommodate two KNX logic devices at the same time: Programmable controller or KNX Router in connection with. KNX/EIB/TP1 Module Commissioning (KNX-side): via ETS plug-in, 2 programming buttons

# Controller 750 ▸ MODBUS; RS-485; 115.2 kBd

750-815/300-000



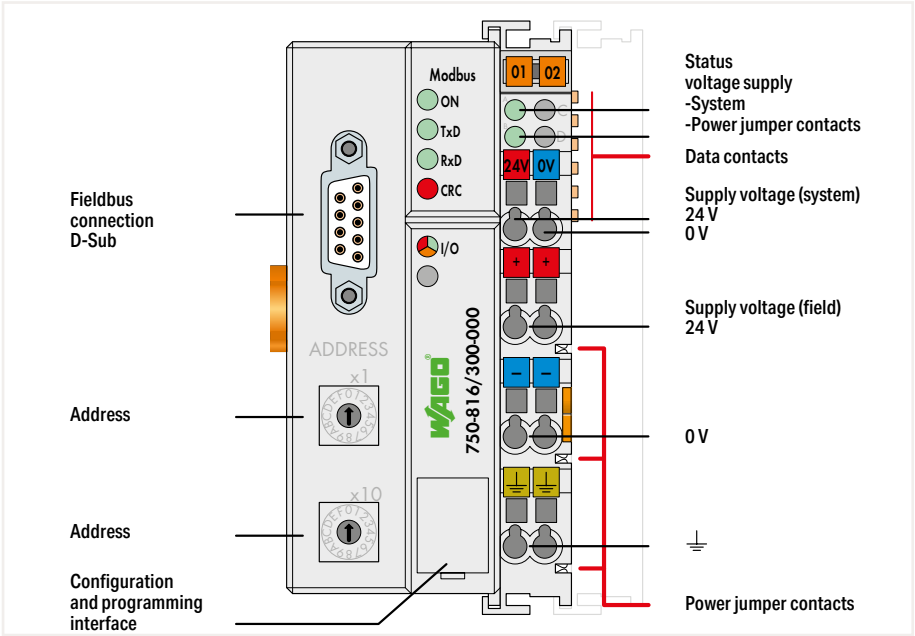

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-815/300-000** | **750-815/325-000** |
| **Order Text** | **Controller MODBUS; RS485; 115.2kBd** | **Controller MODBUS; RS485; 115.2kBd; T** |

| Technical Data | | |
|---|---|---|
| Communication | Modbus® RTU | |
| Connection technology: communication/fieldbus | Modbus RTU: 1 x D-sub 9 socket | |
| Bus segment length (max.) | 1200 m | |
| Baud rate | 150 Baud ... 115.2 kBd | |
| Number of fieldbus nodes on master (max.) | 247 | |
| Visualization | Without | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 32 kbytes / 32 kbytes / 8 KB | |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 1024 bytes/1024 bytes | |
| Memory for fieldbus input variables (max.) | 512 bytes | |
| Memory for fieldbus output variables (max.) | 512 bytes | |
| Supply voltage (system) | 24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 ... +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 350 mA | |
| Total current (system supply) | 1650 mA | |
| Surrounding air temperature (operation) | 0 ... 55 °C | -20 ... 60 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-815/300-000 | |

5.3

# Controller 750 ▸ MODBUS; RS-232; 115.2 kBd

750-816/300-000

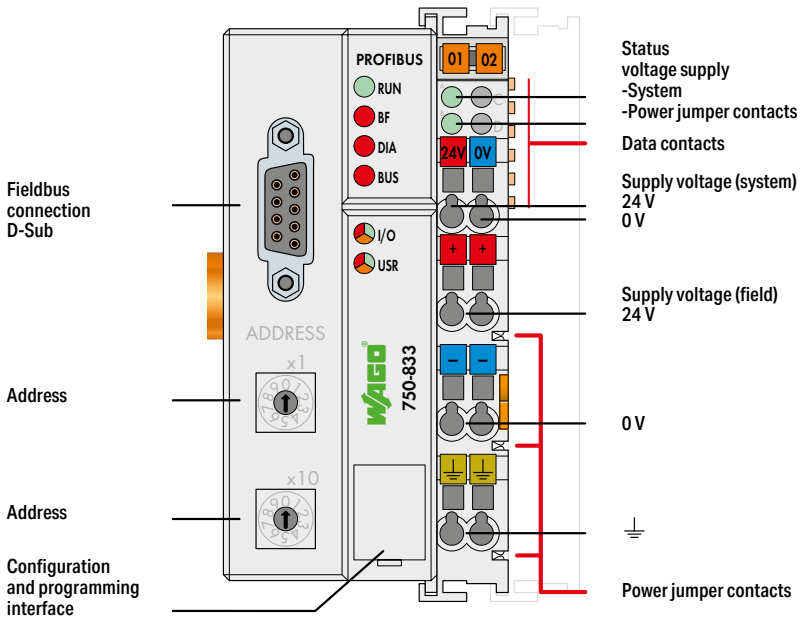



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-816/300-000** |
| **Order Text** | **Controller MODBUS; RS232; 115.2kBd** |

| Technical Data | |
|---|---|
| Communication | Modbus® RTU |
| Connection technology: communication/fieldbus | Modbus RTU: 1 x D-sub 9 socket |
| Bus segment length (max.) | 1200 m |
| Baud rate | 150 Baud ... 115.2 kBd |
| Number of fieldbus nodes on master (max.) | 247 |
| Visualization | Without |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 32 kbytes / 32 kbytes / 8 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 1024 bytes/1024 bytes |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 ... +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-816/300-000 |

# Controller 750 ▸ PROFIBUS Slave

750-833



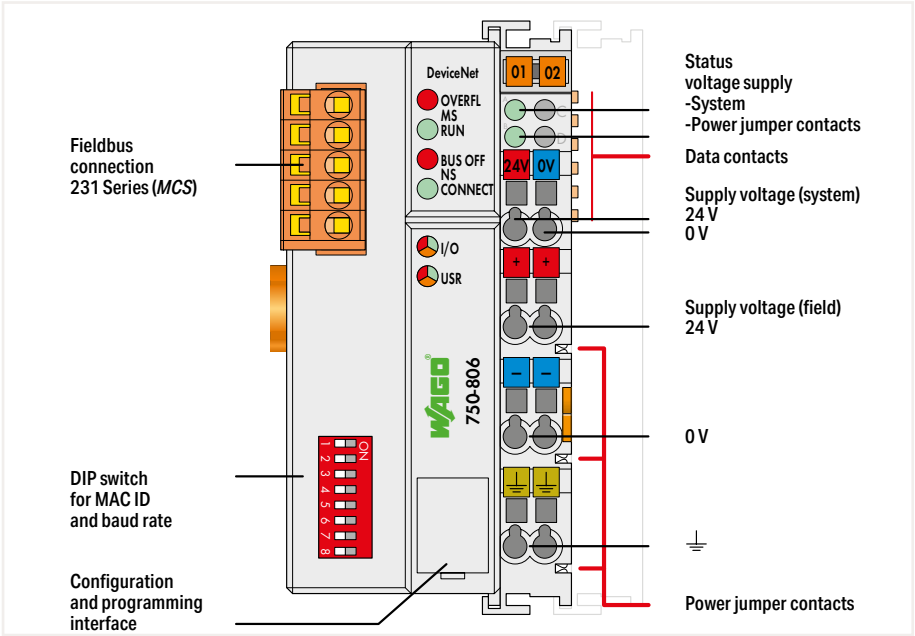

| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-833** | **750-833/025-000** |
| **Order Text** | **Controller PROFIBUS Slave** | **Controller PROFIBUS Slave; T** |

| Technical Data | | |
|---|---|---|
| Communication | PROFIBUS | |
| Connection technology: communication/fieldbus | PROFIBUS: 1 x D-sub 9 socket | |
| Bus segment length (max.) | 1200 m | |
| Baud rate | 9.6 kBd … 12 MBd | |
| Number of fieldbus nodes on master (max.) | 96 | |
| Visualization | Without | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 128 kbytes / 64 kbytes / 8 KB | |
| Number of modules per node (max.) | 63 | |
| Input and output (fieldbus) process image (max.) | 244 bytes/244 bytes | |
| Memory for fieldbus input variables (max.) | 244 bytes | |
| Memory for fieldbus output variables (max.) | 244 bytes | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 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 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-833 | |

5.3

# Controller 750 ▸ DeviceNet

750-806

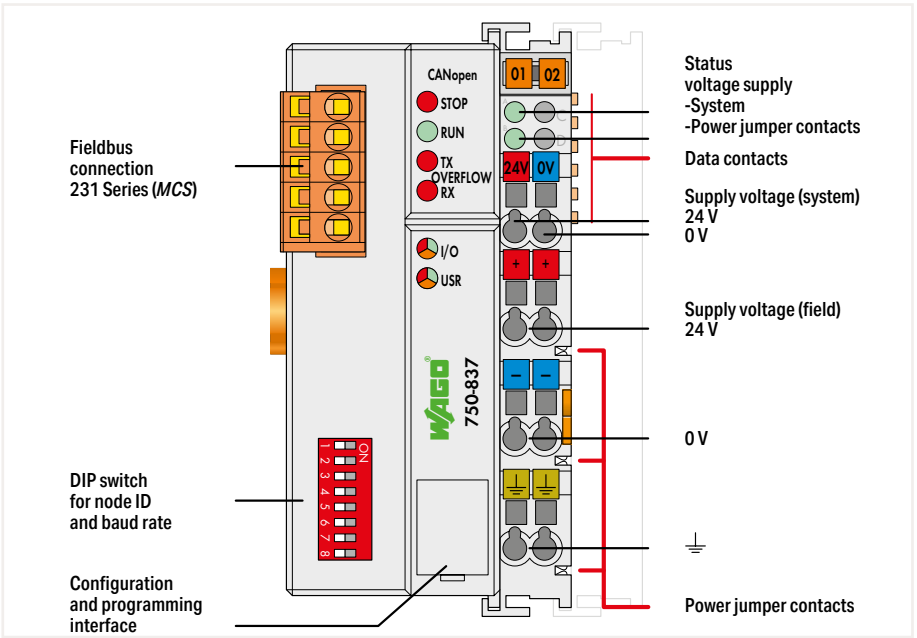



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-806** |
| **Order Text** | **Controller DeviceNet** |

| Technical Data | |
|---|---|
| Communication | DeviceNet |
| Connection technology: communication/fieldbus | DeviceNet: 1 x Male connector; 5-pole |
| Bus segment length (max.) | 500 m |
| Baud rate | 500 kBd (125 kBd, 250 kBd, 500 kBd) |
| Number of fieldbus nodes on master (max.) | 64 |
| Visualization | Without |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 128 kbytes / 64 kbytes / 8 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 1024 bytes/1024 bytes |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 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 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-806 |

# Controller 750 ▸ CANopen; MCS

750-837

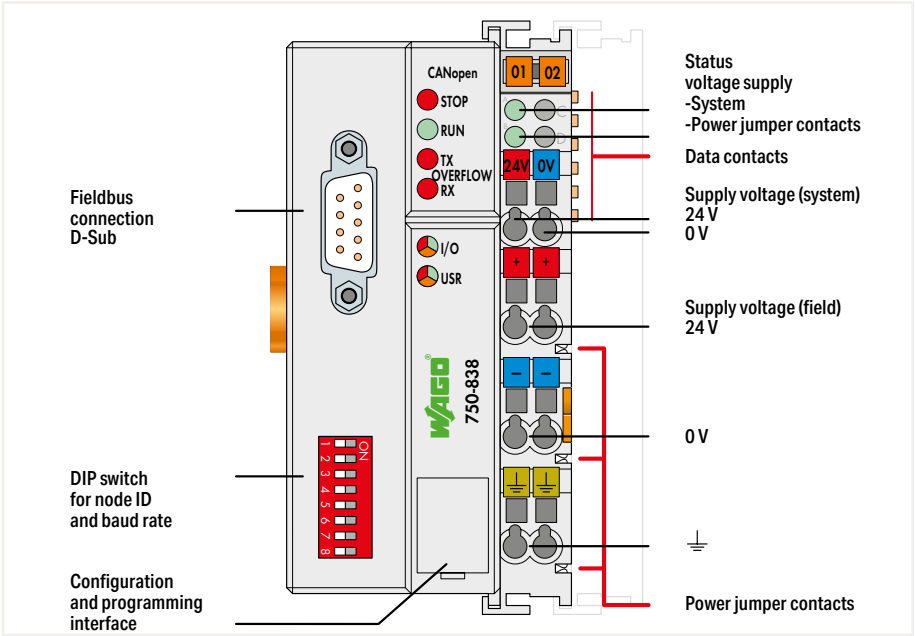



| Version | Default | 640/832 KB Program/RAM |
|---|---|---|
| **Item No.** | **750-837** | **750-837/021-000** |
| **Order Text** | **Controller CANopen; M1; MCS** | **Controller CANopen; M3; MCS** |

| Technical Data | | |
|---|---|---|
| Communication | CANopen | |
| Connection technology: communication/fieldbus | CANopen: 1 x Male connector; 5-pole | |
| Bus segment length (max.) | 1000 m | |
| Baud rate | 10 kBd ... 1 MBd | |
| Number of fieldbus nodes on master (max.) | 110 | |
| Visualization | Without | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 128 kbytes / 64 kbytes / 8 KB | CODESYS V2: 640 kbytes / 832 kbytes / 8 KB |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes | |
| Memory for fieldbus input variables (max.) | 512 bytes | |
| Memory for fieldbus output variables (max.) | 512 bytes | |
| Communication profile | DS-301 V4.01 | |
| Device profile | DS-401 V2.0; Limit value monitoring; Edge-triggered PDOs; Configurable response in the event of an error; DSP 405; NMT master can be programmed using function blocks | |
| Number of PDOs | 32 Tx / 32 Rx | |
| Number of SDOs | 2 SDO servers / 16 SDO clients | |
| Supply voltage (system) | 24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 ... +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 350 mA | |
| Total current (system supply) | 1650 mA | |
| Surrounding air temperature (operation) | 0 ... 55 °C | |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-837 | |

# Controller 750 ▸ CANopen; D-sub

750-838




| Version | Default | 640/832 KB Program/RAM |
|---|---|---|
| **Item No.** | **750-838** | **750-838/021-000** |
| **Order Text** | **Controller CANopen; M1; DSub** | **Controller CANopen; M3; DSub** |

| Technical Data | | |
|---|---|---|
| Communication | CANopen | |
| Connection technology: communication/fieldbus | CANopen: 1 x D-sub 9 plug | |
| Bus segment length (max.) | 1000 m | |
| Baud rate | 10 kBd … 1 MBd | |
| Number of fieldbus nodes on master (max.) | 110 | |
| Visualization | Without | |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) | |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 128 kbytes / 64 kbytes / 8 KB | CODESYS V2: 640 kbytes / 832 kbytes / 8 KB |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes | |
| Memory for fieldbus input variables (max.) | 512 bytes | |
| Memory for fieldbus output variables (max.) | 512 bytes | |
| Communication profile | DS-301 V4.01 | |
| Device profile | DS-401 V2.0; Limit value monitoring; Edge-triggered PDOs; Configurable response in the event of an error; DSP 405; NMT master can be programmed using function blocks | |
| Number of PDOs | 32 Tx / 32 Rx | |
| Number of SDOs | 2 SDO servers / 16 SDO clients | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 350 mA | |
| Total current (system supply) | 1650 mA | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-838 | |

# Controllers 750 XTR

**Touch Panels 600; Control Panel Hardware Configuration**

◄◄◄◄◄ Section 3

**Edge Controller**

◄◄◄◄ Section 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 5.1

**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 5.2

**Controllers 750**

- Controllers for all common fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

◄ Section 5.3

**Controllers 750 XTR**

For demanding applications in which the following are critical:

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

**Starter Kits**

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

- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

Section 5.5 ►

# Controllers 750 XTR
## Contents



| | CPU | ETHERNET: Modbus (TCP, UDP) | ETHERNET: Ethernet/IPTM | CANopen | Telecontrol Protocols: IEC 60870, IEC 61850/61400, DNP3 | Description | Item No. | |
|---|---|---|---|---|---|---|---|---|
|  | 32 bits | M/S | | | | Controller Modbus TCP; 4th Generation; 2 x ETHERNET, SD Card Slot; Extreme | 750-890/040-000 | 166 |
|  | 32 bits | M/S | S | | x | Controller ETHERNET; 3rd Generation; SD Card Slot; Telecontrol Technology; Extreme | 750-880/040-001 | 167 |
|  | 32 bits | | | M/S | | Controller CANopen; 640/832 KB Program/ RAM; D-Sub; Extreme | 750-838/040-000 | 168 |

M: Master, S: Slave

# Controllers 750 XTR
## General Product Information

**Controllers 750 XTR:**
**Taking It to the eXTReme – The Standard for 750 XTR**

With the dark gray XTR version of the Controllers 750, you will benefit from the unique added value of this system for applications that are subjected to extreme environments.

Extremely temperature-resistant, immune to interference, as well as unfazed by vibrations and impulse voltages – the WAGO I/O System 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 systems

### Marine and Onshore/Offshore Industries

International approvals coupled with industry-specific features permit use in marine applications 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 both interference immunity and emission, along with superior mechanical performance in these sensitive areas, the WAGO I/O System will readily meet the needs of other industries.

### Telecontrol Technology

Standardized IEC 60870-5, IEC 61850, IEC 61400-25 and DNP3 Telecontrol Protocols allow the Controllers 750 XTR to be used in telecontrol applications. These controllers also meet stricter requirements for immunity to impulse voltages according to 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

WAGO's 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 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 750 XTR 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 Controllers 750 is unfazed by both freezing cold down to −40°C and scorching heat up to +70°C. And this applies equally to 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 immunity to impulse voltages up to 5 kV, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths ensure trouble-free operation.

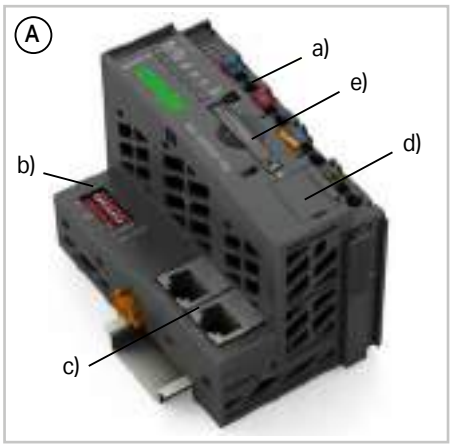
### High Mechanical Performance

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 of the many 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.

**Benefits:**

- 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



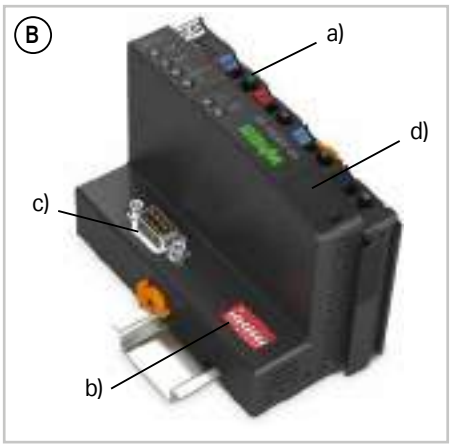

- Includes a supply module (a) to power downstream I/O modules
- Technical differences on the connection level; addressing switch (b) and fieldbus interface (c)
- Service interface (d)

**Housing Design (A)**

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

**Housing Design (B)**

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




## Item Number Key

Explanation of an item number key's components

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

| | |
|---|---|
| 3x: 16 bits | CANopen |
| 8x, 9x: 32-bit multitasking | ETHERNET |
| 001: | Telecontrol Technology |

## Standards and Rated Conditions for Railway Applications (EN 50155)

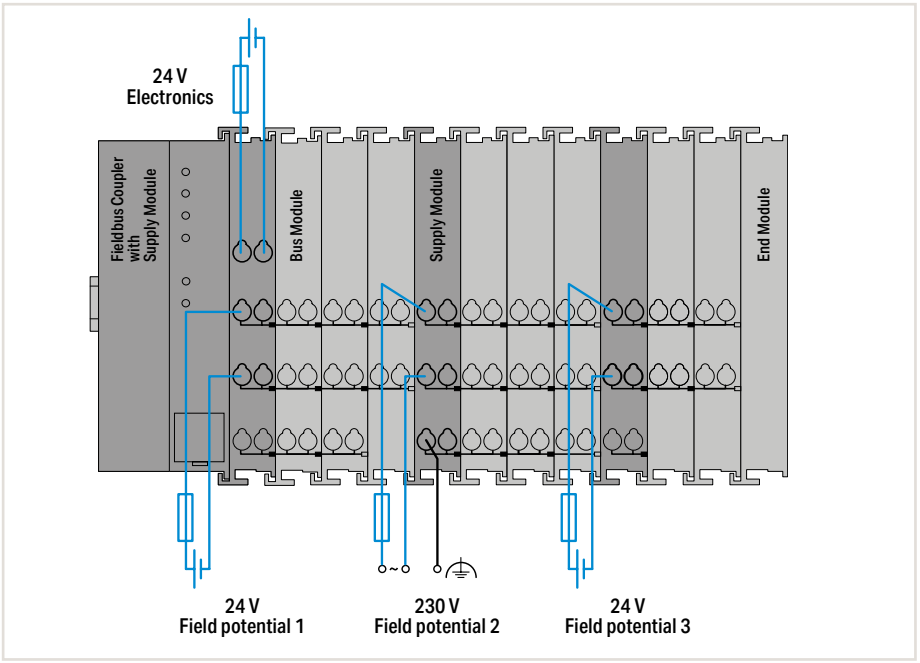
| Railway Applications (EN 50155) | Class/Standard Compliance |
|---|---|
| **4.1 Rated operating conditions** | |
| 4.1.1 Altitude above sea level | AX (EN 50125-1) |
| 4.1.2 Surrounding air temperature | TX |
| 4.1.3 Shock and vibration | 1A and 1B (EN 61373) |
| 4.1.4 Relative humidity | 95 % (coated PCBs) |
| **5.1 Power supply** | |
| 5.1.1.1 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 controller powers the internal electronics. 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 and customized supply configuration for a fieldbus node.
Power 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. Furthermore, the current consumed for field-side supply must not exceed 10 A. A variety of power supply modules allows re-feeding, creating potential groups and implementing emergency stops.




### Interference-Free in Safety-Related Applications

To easily and safely perform a cost-effective and 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 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:

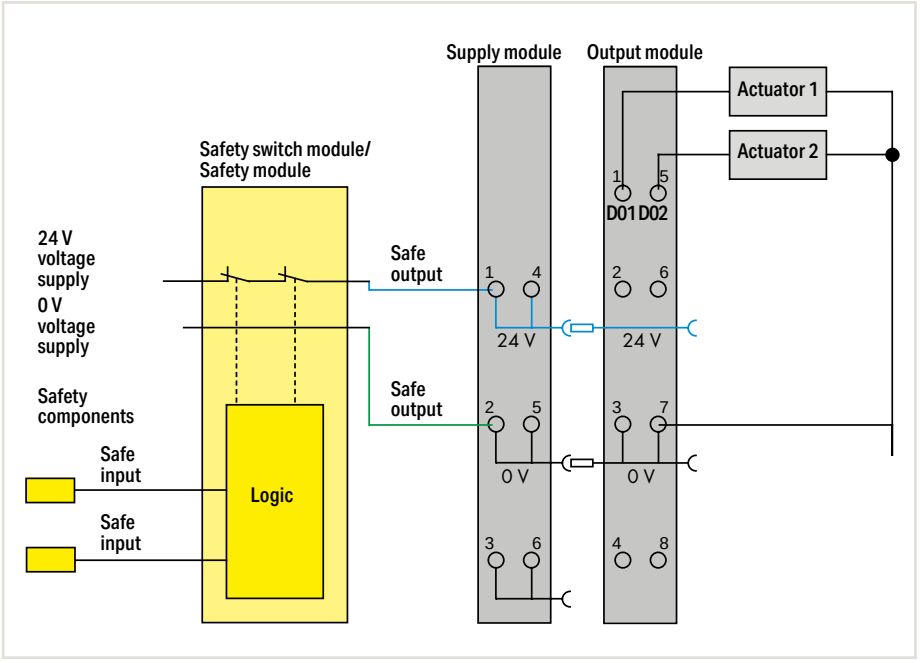
Additional steps must be implemented based on where the I/O system is installed:

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 modules are electrically isolated on the field side (i.e., electrically isolated power supply). This combination may be useful, for example, when there are only increased requirements for immunity to impulse voltages and interference, but the surrounding air temperature is not critical.



# Controller 750 XTR
## Standards and Rated Conditions

| General Specifications | |
|---|---|
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Surrounding air temperature (storage) | -40 … 85 °C |
| Relative humidity (without condensation) | 95 % |
| Relative humidity (with condensation) | Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for 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); 5000 m (max.) |
| Pollution degree (5) | 2 per IEC 61131-2 |
| 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, EN 61850-3, EN 50121-3-2, EN 50121-4, -5 |
| Protection type | IP20 |
| Mounting position | Horizontal (standing/lying); vertical |
| Mounting type | DIN-35 rail |
| Housing material | Polycarbonate; polyamide 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: system supply | 2 x CAGE CLAMP® |
| Connection technology: field supply | 4 x CAGE CLAMP® |
| Solid conductor | 0.25 … 2.5 mm² / 24 … 14 AWG |
| Fine-stranded conductor | 0.25 … 2.5 mm² / 24 … 14 AWG |
| Strip length | 8 … 9 mm / 0.31 … 0.35 inch |
| Current carrying capacity (power jumper contacts) | 10 A |

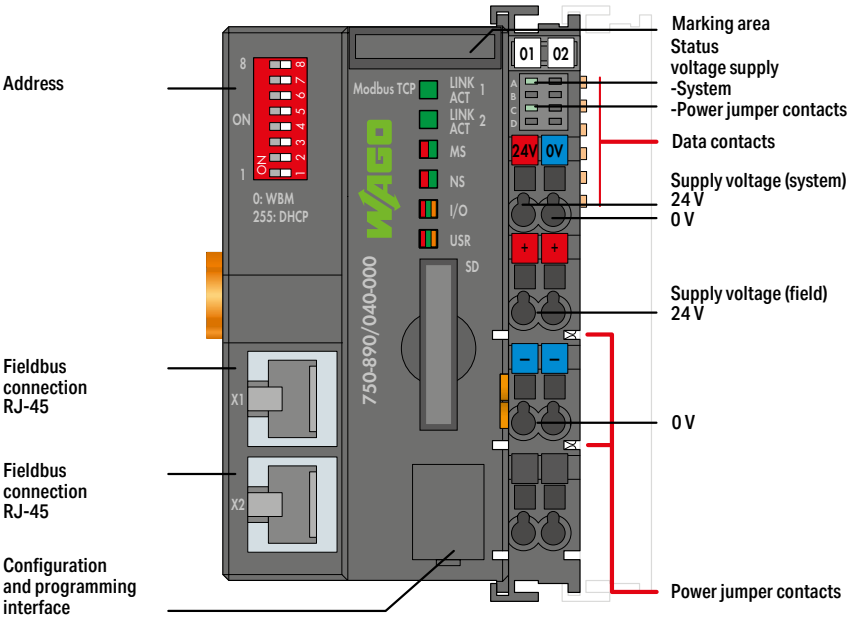
## Approvals

Overview of the approvals in the item comparison in Section 14, Technical Section, or online at www.wago.com


| | |
|---|---|
| Cables and pluggable connectors | Page 671 |
| DIN-rail | Page 706 |
| General accessories | Page 614 |
| Marking | Page 704 |
| Shield termination | Page 698 |
| Software | Page 36 |
| System enclosure | Page 683 |

# Controller 750 XTR ▸ Modbus TCP; SD card slot

750-890/040-000




| | |
|---|---|
| Version | Extreme |
| **Item No.** | **750-890/040-000** |
| **Order Text** | **Controller Modbus TCP; G4; SD; XTR** |

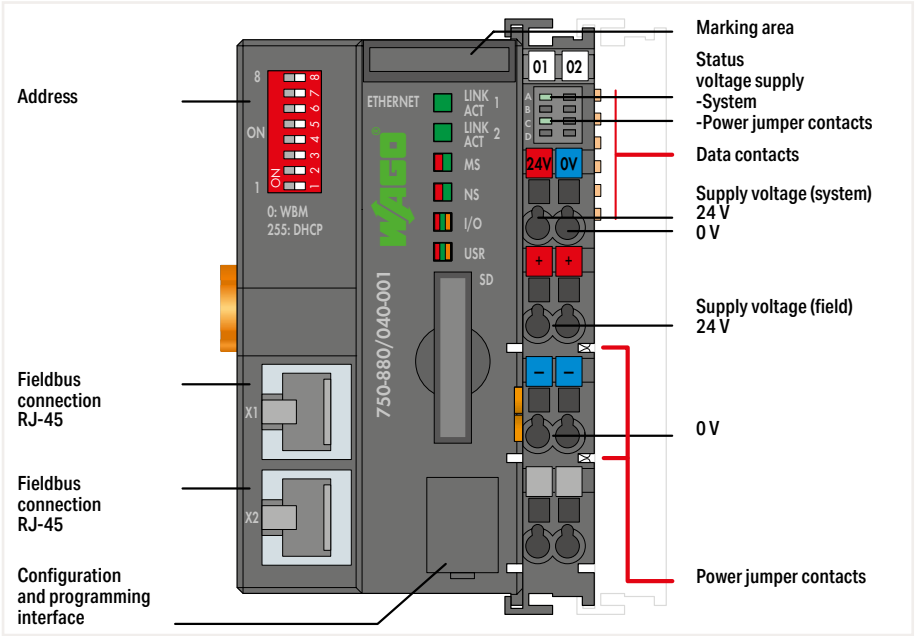
| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP) |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 8 MB / 8 MB / 32 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Power consumption (5 V system supply) | 440 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-890/040-000 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

5.4

# Controller 750 XTR ▸ 2 x ETHERNET; SD card slot

750-880/040-001



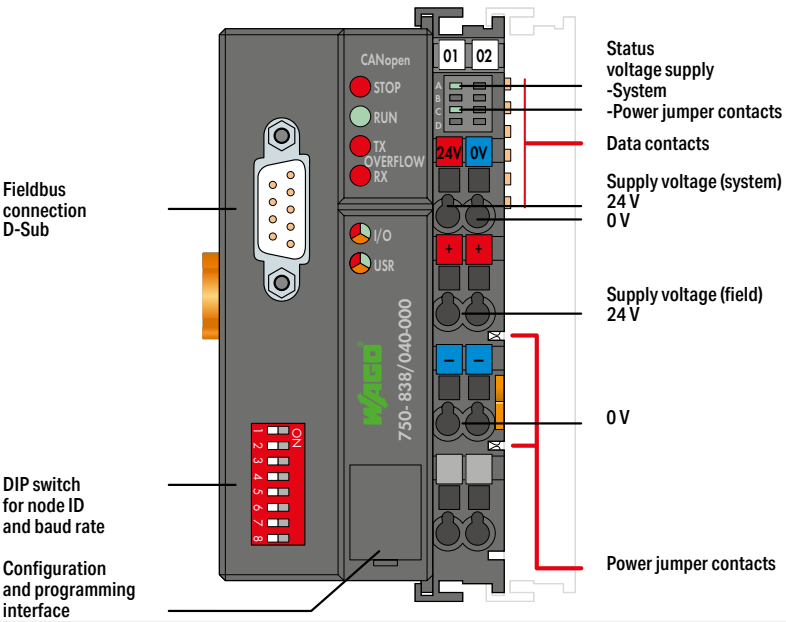

| | |
|---|---|
| Version | **Telecontrol Technology; Extreme** |
| **Item No.** | **750-880/040-001** |
| **Order Text** | **Controller ETHERNET; G3; SD; Tele; XTR** |

| | |
|---|---|
| Technical Data | |
| Communication | EtherNet/IP™; Modbus (TCP, UDP); ETHERNET; Telecontrol protocols |
| ETHERNET protocols | HTTP; BootP; DHCP; DNS; SNTP; FTP; SNMP |
| Telecontrol protocols | IEC 60870-5-101/-103/-104; IEC 61400-25; IEC 61850-7; DNP3 |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45; Telecontrol protocol IEC 60870-5-101/-103: 1 x Serial interface via I/O module; Telecontrol protocol IEC 60870-5-104: 1 x RJ-45; Telecontrol protocol IEC 61850: 1 x RJ-45; Telecontrol protocol DNP3: 1 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Visualization | Web Visu |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 1024 kbytes / 1024 kbytes / 32 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Total current for system supply: 1700 mA (surrounding air (operating) temperature < 60 °C; 1500 mA (surrounding air (operating) temperature: 60 … 70 °C); Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 … +30 %); 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 |
| Power consumption (5 V system supply) | 450 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | -40 … 70 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; schiff Marine; cULus OrdLoc/HazLoc; Ex ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-880/040-001 |

| **Accessories** | **Item No.** |
|---|---|
| Memory Card SD; SLC-NAND; 2 Gbytes; Temperature from -40 to 90 °C | 758-879/000-001 |
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Controller 750 XTR ▸ CANopen; D-sub

750-838/040-000




| | |
|---|---|
| Version | Extreme |
| **Item No.** | **750-838/040-000** |
| **Order Text** | **Controller CANopen; M3; DSub; XTR** |

| Technical Data | |
|---|---|
| Communication | CANopen |
| Connection technology: communication/fieldbus | CANopen: 1 x D-sub 9 plug |
| Bus segment length (max.) | 1000 m |
| Baud rate | 10 kBd ... 1 MBd |
| Number of fieldbus nodes on master (max.) | 110 |
| Visualization | Without |
| Programming environment | WAGO-I/O-*PRO* V2.3 (based on CODESYS V2.3) |
| Program memory/data memory/non-volatile memory (software) | CODESYS V2: 640 kbytes / 832 kbytes / 8 KB |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Memory for fieldbus input variables (max.) | 512 bytes |
| Memory for fieldbus output variables (max.) | 512 bytes |
| Communication profile | DS-301 V4.01 |
| Device profile | DS-401 V2.0; Limit value monitoring; Edge-triggered PDOs; Configurable response in the event of an error; DSP 405; NMT master can be programmed using function blocks |
| Number of PDOs | 32 Tx / 32 Rx |
| Number of SDOs | 2 SDO servers / 16 SDO clients |
| Supply voltage (system) | 24 VDC; via pluggable connector (CAGE CLAMP® connection); Derating must be observed! |
| Supply voltage (field) | 24 VDC; Power supply via pluggable connector (CAGE CLAMP® connection); Transmission via power jumper contacts; Derating must be observed! |
| Derating | Total current for system supply: 1650 mA (surrounding air (operating) temperature < 60 °C; 1250 mA (surrounding air (operating) temperature: 60 ... 70 °C); Derating (supply voltage): Surrounding air temperatures under laboratory conditions: (-25 ... +30 %); 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 |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | -40 ... 70 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-838/040-000 |

5.4

# 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 5.1

### Controllers 750

- Controllers for all prominent fieldbus systems
- Programmable per IEC 61131-3
- Readily combines with the modules of the WAGO I/O System 750

◄◄ Section 5.3

### I/O System – 750 and 753 Series

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

Section 7 ►►

### Starter Kits

To get you up and running quickly, we offer starter kits to suit the most diverse applications:
- with Controller PFC100 or PFC200
- with Controller 750 KNX IP
- with Touch Panel 600

# WAGO Starter Kits
## Contents



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

# 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.

| Item Description | Item No. |
|---|---|
| **Starter Kit; *e!COCKPIT*** | **8003-099/750-8100** |

| **The WAGO Starter Kit *e!COCKPIT* 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** |
| Memory Card microSD; 2 GB | **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; 2nd Generation; 2 x ETHERNET, RS-232/-485

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 its continual development and maintenance.

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®** | **8003-099/750-8212** |
| **The WAGO Starter Kit Linux® 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; Touch Panel 600, Advanced Line, Control Panel

The WAGO Starter Kit Touch Panel 600 contains an Advanced Control Panel 17.8 cm (7.0") with a full single-user license of the ***e!COCKPIT*** Engineering Software (based on CODESYS V3).
Required accessories for power supply, assembly and installation of the panel are included for easy commissioning.

Demo applications, which illustrate the extensive possibilities of visualization, web connectivity and programming with ***e!COCKPIT***, can be started directly from the SD card.
Additionally, a Docker® application demonstrates another option for creating applications under Linux® via open-source software.

After a successful start, both the open operating system and the full version of the engineering software are available for the free creation of applications.
WAGO's Touch Panel has 2 x LAN, 1 x RS, 1 x CAN, DI/O interfaces and supports communication protocols such as Modbus/UDP/TCP/RTU, CANopen, CAN2.0, OPC UA, MQTT.
Additional protocols, such as BACnet/IP or EtherCAT® (Master), can be licensed optionally.

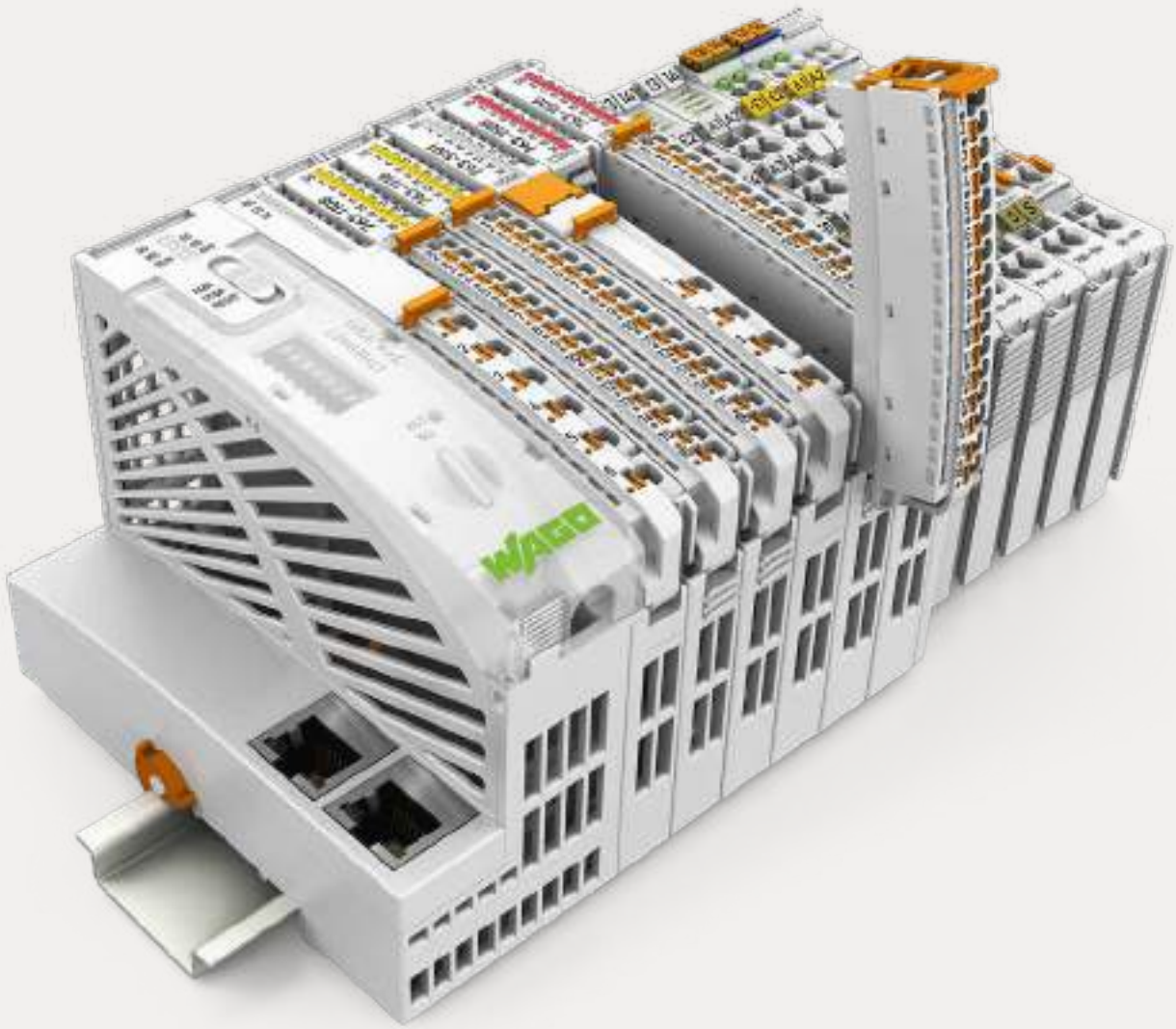
| Item Description | Item No. |
|---|---|
| **Starter Kit; Touch Panel 600, Advanced Line, Control Panel** | **8003-099/762-5303** |
| **The WAGO Starter Kit Touch Panel 600 includes:** | |
| Touch Panel 600; 17.8 cm (7.0"); 800 x 480 pixels; 2 x ETHERNET, 2 x USB, CAN, DI/DO, RS-232/485, Audio; Control Panel | **762-5303/8000-002** |
| Power Supply Classic; 24 VDC output voltage; 1 A | **787-1602** |
| Development Environment ***e!COCKPIT***; Licence for 1 PC | **2759-0101/1111-5000** |
| Memory Card microSD; pSLC-NAND; 8 GB | **758-879/000-3108** |
| Operating Tool; Type 1; (2.5 x 0.4) mm blade | **210-719** |
| Allen Wrench | |
| Cable; black/red; 2 x 0.5; 0.3 m | |
| Power Cable; 230 V | |
| Aluminum Feet; with groove | |
| Product Display; with cutout for 7" Touch Panel | |
| Mounting Accessories (Locking Clips, Mounting Brackets, M4×8 Screws) | |
| Patch Cable F/UTP; 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 via 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 via the router
- Exploit the advantages of an ETHERNET network with KNX/EIB projects via the IP controller

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

### I/O System Advanced

- Open, innovative and future-proof industrial automation
- Short reaction times and high signal transmission synchronicity
- Fast ETHERNET fieldbuses – EtherCAT®

### I/O System – 750 and 753 Series

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

Section 7 ►

### I/O System – 750 XTR Series

For demanding applications in which the following are critical:

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

Section 8 ►►

### I/O System Field

Automate and Network Modular Machines for the Future

- Ethernet-based fieldbus standards (EtherCAT®, EtherNet/ IPTM, PROFINET)
- Integrated Bluetooth® interface (Android/iOS App), OPC UA Server, Webserver
- IO-Link Master and Devices

Section 9 ►►►

# I/O System Advanced
## Contents

# WAGO I/O System Advanced
## General Product Information



**Top Performance for Industrial Automation**

Short reaction times, high signal transmission synchronicity and the ability to use fast ETHERNET fieldbuses like PROFINET, EtherCAT® and EtherNet/IP™ make WAGO's Advanced I/O System the new benchmark for high-end industrial automation systems.

The inherent strengths of the Advanced I/O System mean that more performance is on the horizon with the integration of communication protocols via TSN (Time-Sensitive Networking).

**WAGO I/O System Advanced Unites the Proven with Peak Performance**

The WAGO I/O System Advanced capitalizes on the continuous development of the proven WAGO I/O System 750, uniting its industry-proven strengths with outstanding performance in a fresh and user-friendly design.
The Advanced PFC200 Controller for WAGO's new I/O System is based on technology that is both time-tested and future-proof. This controller brings the industry-proven PFC functionalities from the WAGO I/O System 750 to the Advanced I/O System. The new controller is a bridge to various IT and OT technologies. Sending data to the cloud and leveraging all the benefits of cloud computing are straightforward, thanks to a large number of interfaces and the highest cybersecurity standards.

At the same time, operators benefit from the system's added value. Thus, programming with intuitive *e!COCKPIT* Engineering Software comes into play for automation tasks. To fulfill specialized requirements, the possibilities of the open Linux® operating systems and Docker process visualization can be used.
This gateway offers a direct start with the wide WAGO I/O System 750's product line. Thanks to a large variety of I/O modules available, the system is ready for immediate use in virtually any application.

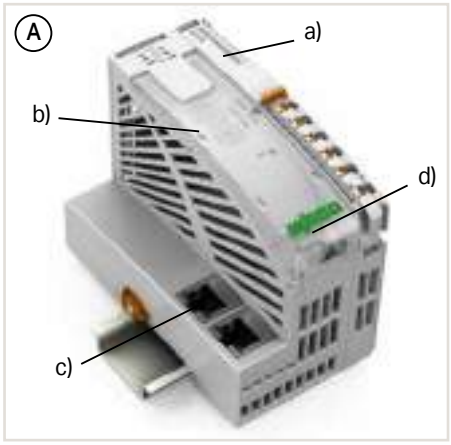
**Made for TSN**

Connectivity and speed are the foundations of modern production facilities. With the WAGO I/O System Advanced, WAGO has developed a new IP20 solution that incorporates cutting-edge technologies such as TSN and OPC UA.
This means the new Advanced I/O System readily meets all the requirements placed on a future-proof automation system.

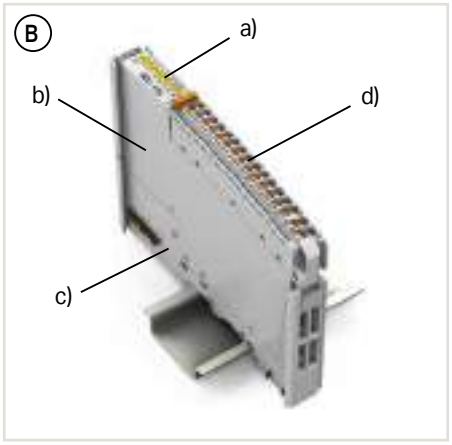
**Your Benefits:**
- An open, innovative and future-proof automation system for mechanical engineering
- The WAGO I/O System Advanced combines the proven benefits and functionality of the 750 Series with an ergonomic design, error-preventing mechanics and outstanding performance.

# WAGO I/O System Advanced
## Interfaces and Types

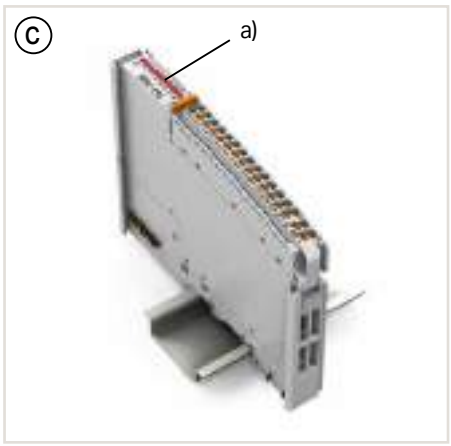


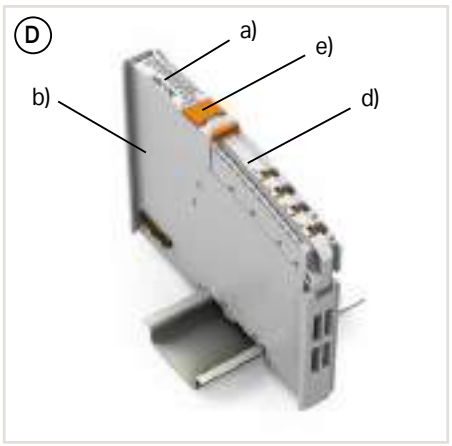



**Housing Design: Fieldbus Coupler (A)**
- Includes a supply module (a) to power downstream I/O modules
- Connection technology (system/field supply): Push-in CAGE CLAMP®; conductor cross-section, mechanical: solid/fine-stranded: 0.25 … 2.5 mm² / 22 … 14 AWG
- Address switch (b)
- Fieldbus interface 2 x RJ-45 (c)
- Service interface (d)
- W x H x D (mm): 63 x 105 x 75




**Housing Design: I/O Module (B, C)**
- Function differentiation by color coding (a) yellow = digital input; red = digital output; gray = supply
- I/O modules consist of an electronic unit (b), a base unit (c) and a pluggable wiring unit (d).
- 16 connection points (Push-in CAGE CLAMP®) Conductor cross-section (mechanical): solid/fine-stranded: 0.25 … 1.5 mm² / 22 … 16 AWG
- W x H x D (mm): 12 x 105 x 75




**Housing Design: Supply Module (D, E)**
- Supply modules consist of an electronic unit with integrated base unit (b) and pluggable wiring unit (d).
- Conductor cross-section (mechanical): solid/fine-stranded: 0.25 … 2.5 mm² / 22 … 14 AWG
- W x H x D (mm): 12 x 105 x 75

**Supply Module with Fuse Holder (D)**
- Fuse holder (e) for (5 x 20) mm fuse
- 4 connection points (Push-in CAGE CLAMP®) for field supply

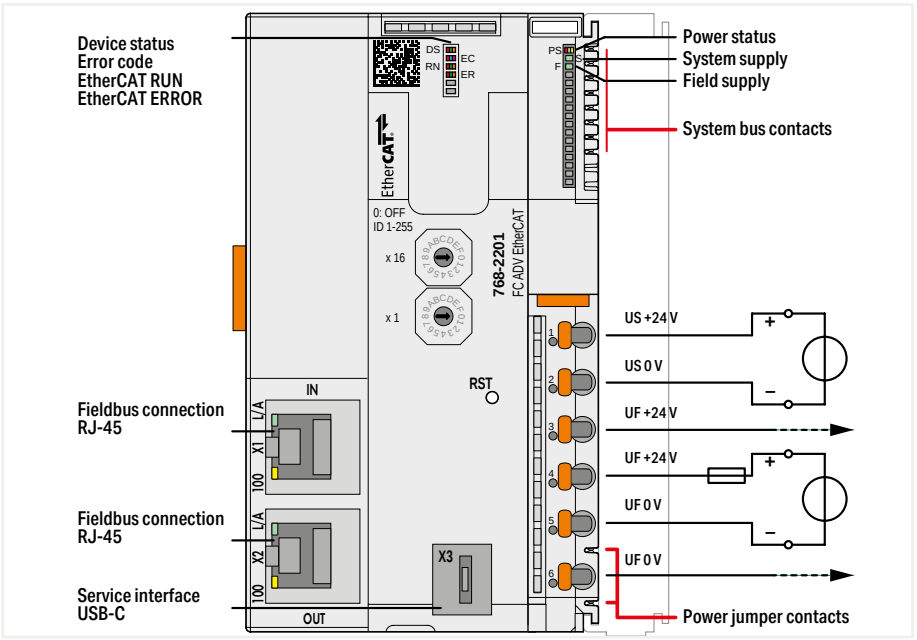

**System Power Supply (E)**
- 6 connection points (Push-in CAGE CLAMP®) for system/field supply


**Housing Design: End Module (F)**
- The end module completes the internal data bus and protects the contacts.
- W x H x D (mm): 8.5 x 105 x 75

# I/O System Advanced ▸ Fieldbus coupler



768-2201




| | |
|---|---|
| Version | **Default** |
| **Item No.** | **768-2201** |
| **Order Text** | **FC ADV ETHERCAT** |

Technical Data

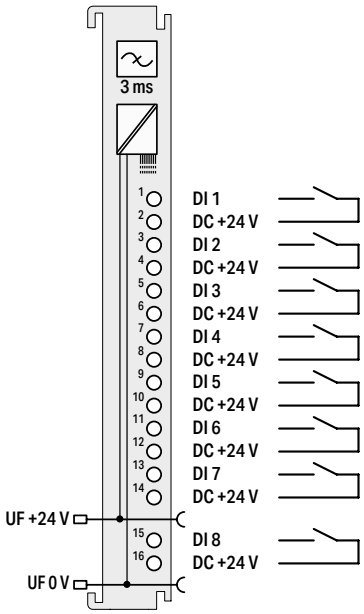
| | |
|---|---|
| Communication | EtherCAT |
| Connection technology: communication/fieldbus | EtherCAT: 2 x RJ-45 |
| Baud rate | 100 Mbit/s |
| Transmission medium (communication/fieldbus) | Shielded twisted pair S/FTP, F/FTP or SF/FTP; 100 Ω; Cat. 6 |
| Transmission performance | Class D per EN 50173 |
| Number of modules per node (max.) | 250 |
| Input and output (internal) process image (max.) | 1000 words/1000 words |
| Supply voltage (system) | 24 VDC, SELV (-25 … +30 %); US |
| Power consumption – system supply (power supply) at max. local bus supply | 900 mA |
| Power consumption – system supply (power supply) without local bus supply | 160 mA |
| Total current for system supply (local bus) max. | 3000 mA |
| Supply voltage (field) | 24 VDC, SELV (-25 … +30 %); UF |
| Current carrying capacity (power jumper contacts) | 12 A |
| Current carrying capacity (power jumper contacts) note | Requires external fusing (12.5 A fast) of the field supply |
| Isolation (field/system) | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 |
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; –25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (63 x 105 x 75) mm |
| EMC immunity to interference | Per EN 61000-6-1, -2 |
| EMC emission of interference | Per EN 61000-6-3, -4 |
| Approvals | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/768-2201 |

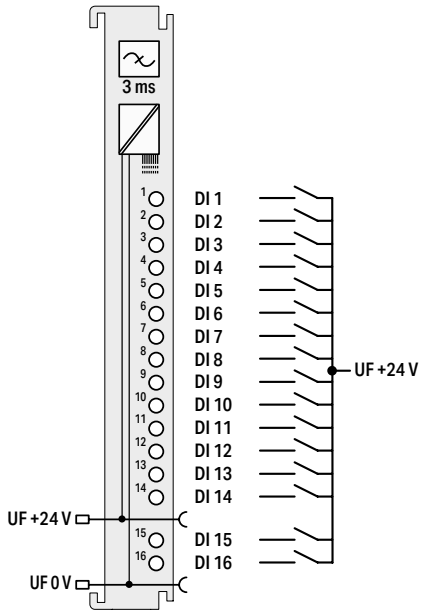
EtherCAT® is a registered trademark and patented technology of Beckhoff Automation GmbH.

# I/O System Advanced ▸ Digital input



763-1108



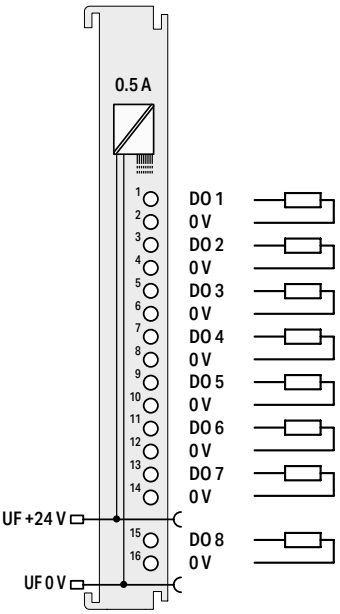

| Version | Fast | Default |
|---|---|---|
| **Item No.** | **763-1108** | **763-1116** |
| **Order Text** | **8DI ADV 24 VDC HS** | **16DI ADV 24 VDC** |

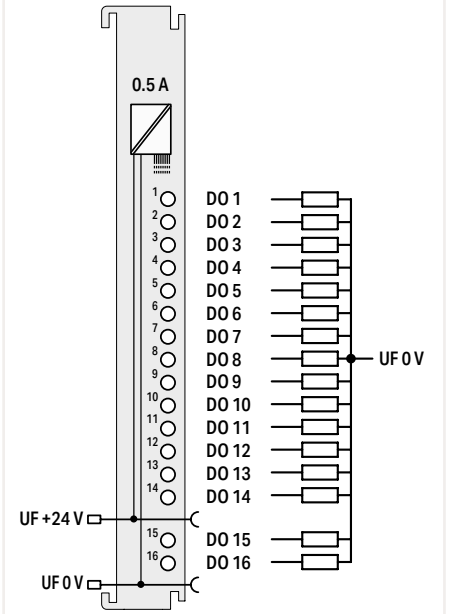
| Technical Data | | |
|---|---|---|
| Number of digital inputs | 8 | 16 |
| Signal type | Voltage | Voltage |
| Voltage signal type | 24 VDC | 24 VDC |
| Input characteristic | Type 3, per IEC 61131-2 | Type 3, per IEC 61131-2 |
| Sensor connection | 8 x (2-wire) | 16 x (1-wire) |
| Total current – sensor supply (max.) | 600 mA | |
| Input characteristic | High-side switching | High-side switching |
| Pulse width (min.) | 10 µs | |
| Delay time T_off from 1 to 0 | 6 µs | 300 µs |
| Delay time T_on from 0 to 1 | 3 µs | 300 µs |
| Input filter | 1 µs | 3 ms |
| Input current at specific input voltage | 2.4 mA at 24 V | 2.4 mA at 24 V |
| Dielectric strength | Up to ±35 V, at the digital input | Up to ±35 V, at the digital input |
| Ground reference of the inputs | Common ground (0 V) | Common ground (0 V) |
| Power consumption, field supply (module with no external load) | 14 mA | 5 mA |
| Supply voltage (field) | 24 VDC, SELV (-25 … +30 %); UF | 24 VDC, SELV (-25 … +30 %); UF |
| Power consumption (system supply) (local bus) | 47 mA | 47 mA |
| Data width | 8-bit channel status | 16-bit channel status |
| Isolation (field/system) | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 |
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (12 x 105 x 75) mm | (12 x 105 x 75) mm |
| Approvals | CE; cULus OrdLoc/HazLoc | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/763-1108 | wago.com/763-1116 |

# I/O System Advanced ▶ Digital output



763-1508



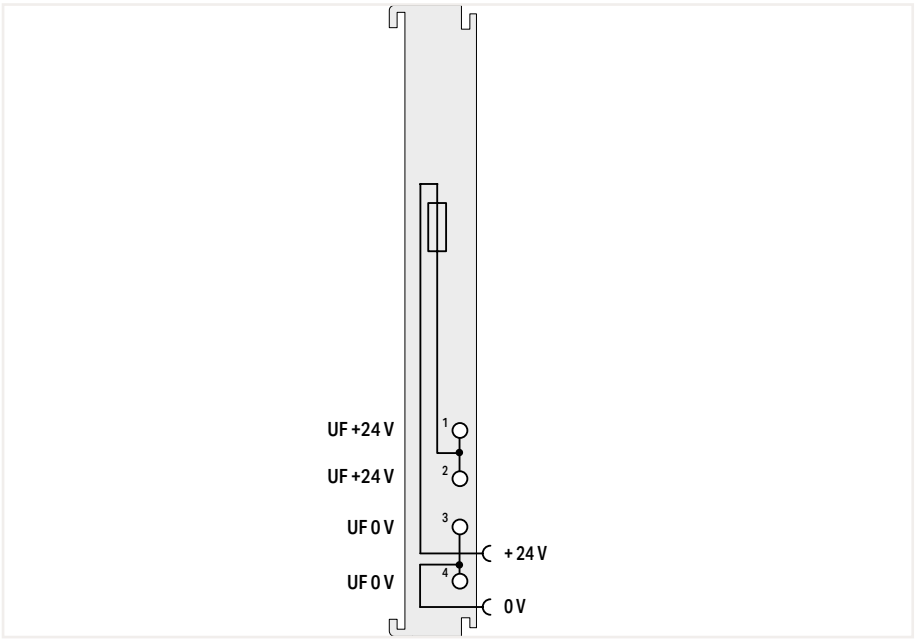




| Version | Fast | Default |
|---|---|---|
| **Item No.** | **763-1508** | **763-1516** |
| **Order Text** | **8DO ADV 24 VDC 0.5A HS** | **16DO ADV 24 VDC 0.5A** |
| Technical Data | | |
| Number of digital outputs | 8 | 8 |
| Signal type | Voltage | Voltage |
| Voltage signal type | 24 VDC | 24 VDC |
| Output characteristic | Semiconductor, push-pull | Semiconductor, high-side switching |
| Output current per channel | 0.5 A | 0.5 A |
| Output current (module) | 4 A | 8 A |
| Delay time T_off from 1 to 0 | 2 µs | |
| Delay time T_on from 0 to 1 | 2 µs | |
| Load type | Resistive: 48 Ω … 16 kΩ, at 24 V; Inductive: DC13; Lamp load: up to 5 W | Resistive: 48 Ω … 16 kΩ, at 24 V; Inductive: DC13; Lamp load: up to 5 W |
| Actuator connection | 8 x (2-wire) | 16 x (1-wire) |
| Switching frequency (max.) | 15 kHz; Resistive load | 1 kHz; Resistive load |
| Protection against incorrect wiring | Short-circuit-protected; Self-resetting | Short-circuit-protected; Self-resetting |
| Supply voltage (field) | 24 VDC, SELV (-25 … +30 %); UF | 24 VDC, SELV (-25 … +30 %); UF |
| Power consumption, field supply (module with no external load) | 24 mA | 26 mA |
| Power consumption (system supply) (local bus) | 70 mA | 75 mA |
| Data width | 8-bit channel status | 16-bit channel status |
| Ground reference of the outputs | Common ground (0 V) | Common ground (0 V) |
| Isolation (field/system) | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 |
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (12 x 105 x 75) mm | (12 x 105 x 75) mm |
| Approvals | CE; cULus OrdLoc/HazLoc | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/763-1508 | wago.com/763-1516 |

# I/O System Advanced ▸ Supply module



763-5101




| | |
|---|---|
| Version | **With fuse holder** |
| **Item No.** | **763-5101** |
| **Order Text** | **PS ADV 24 VDC FUSE** |

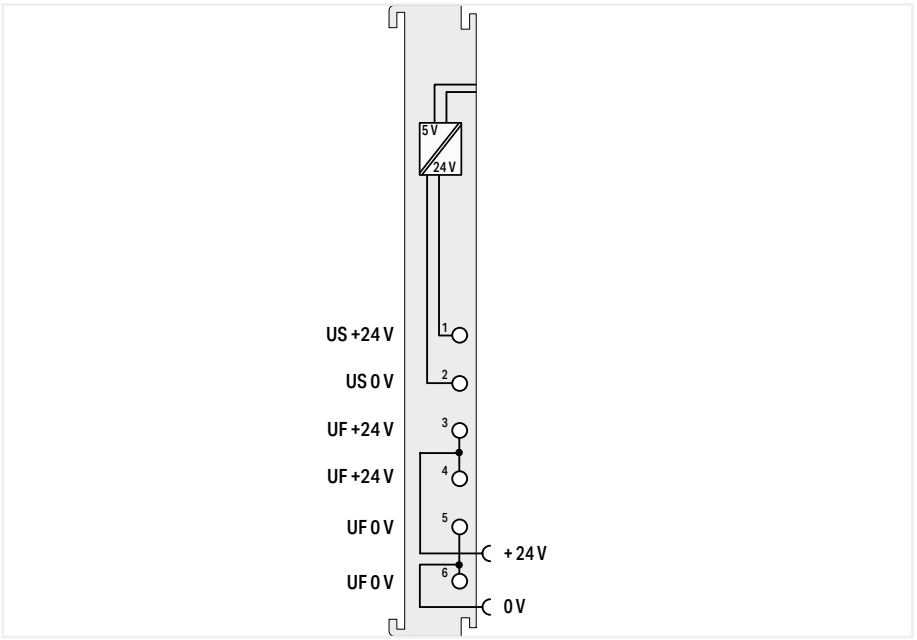
| Technical Data | |
|---|---|
| Supply voltage (field) | 24 VDC, SELV (-25 … +30 %); UF |
| Current carrying capacity (power jumper contacts) | 12 A |
| Total current for field supply (24 V) | 6 A |
| Power consumption (system supply) (local bus) | 43 mA |
| Power consumption, field supply (module with no external load) | 6 mA |
| Isolation (field/system) | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 |
| Fuse | 5 x 20; T 6.3 A (not included); PV (max.) = 1.6 W; Observe the fuse derating! |
| Data width | 2 bits; Bit 0: Power supply status (field) in front of the fuse; Bit 1: Power supply status (field) behind the fuse (at the power jumper contacts) |
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; –25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (12 x 105 x 75) mm |
| Approvals | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/763-5101 |

This I/O module provides the applied supply voltage, protected by a fuse, to the field devices connected to downstream I/O modules. An LED indicates a blown fuse failure and the field power supply status.

# I/O System Advanced ▸ System power supply



763-5120




| | |
|---|---|
| Version | System power supply |
| **Item No.** | **763-5120** |
| **Order Text** | **PS SYSTEM ADV 24 VDC** |

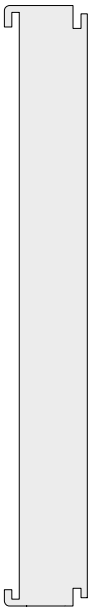
| Technical Data | |
|---|---|
| Supply voltage (system) | 24 VDC, SELV (-25 … +30 %); US |
| Power supply efficiency (typ.) at nominal load (24 V) | 95 % |
| Total current for system supply (local bus) max. | 3900 mA |
| Supply voltage (field) | 24 VDC, SELV (-25 … +30 %); UF |
| Power consumption – system supply (power supply) at max. local bus supply | 900 mA |
| Current carrying capacity (power jumper contacts) | 12 A |
| Current carrying capacity (power jumper contacts) note | Requires external fusing (12.5 A fast) of the field supply |
| Total current for field supply (24 V) | 12 A |
| Power consumption, field supply (module with no external load) | 3 mA |
| Isolation (field/system) | Min. 1000 VDC (1 min); per EN/UL 61010-2-201 |
| Data width | 1 bit; Bit 0: Power supply status (field) |
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (12 x 105 x 75) mm |
| Approvals | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/763-5120 |

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 I/O modules' power demands.

# I/O System Advanced ▸ Bus end module



763-5600



| Version | Default |
|---|---|
| **Item No.** | **763-5600** |
| **Order Text** | **End Module** |

| Technical Data | |
|---|---|
| Surrounding air temperature (operation) | -25 … 60 °C (Horizontal, typical control cabinet installation; −25 … +50 °C, other mounting positions) |
| Dimensions W x H x D | (8.5 x 105 x 75) mm |
| Approvals | CE; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/763-5600 |

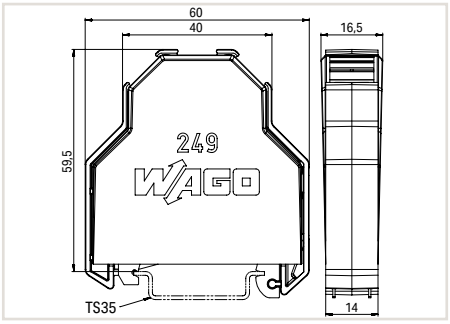
An end module must be snapped onto the assembly at the end of a fieldbus node. The end module completes the internal data bus and protects the contacts. Two fuses (e.g., for the 763-5101 Field Supply Module) can be plugged into the end module as a reserve.

# Accessories I/O System Advanced



| Screwless end stop; 14 mm wide (max. 16.5 mm); for 35 x 15 and 35 x 7.5 DIN-rails | | |
|---|---|---|
| Color | Item No. | PU |
| gray | 249-198 | 10 |

| Micro-WSB Inline; 2,000 markers per reel; plain; snap-on type | | |
|---|---|---|
| Color | Item No. | PU |
| white | 2009-141 | 1 |



# I/O System – 750 and 753 Series

### I/O System Advanced

- Open, innovative and future-proof industrial automation
- Short reaction times and high signal transmission synchronicity
- Fast ETHERNET fieldbuses – EtherCAT®

◄ Section 6

### 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 resistance
- Immunity to electromagnetic interference and impulse voltages
- Vibration and shock resistance

Section 8 ►

### I/O System Field

Automate and Network Modular Machines for the Future

- Ethernet-based fieldbus standards (EtherCAT®, EtherNet/ IPTM, PROFINET)
- Integrated Bluetooth® interface (Android/iOS App), OPC UA Server, Webserver
- IO-Link Master and Devices

Section 9 ►►

# I/O System – 750 and 753 Series
## Contents

# 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 distinguished by its universal use and extensive product portfolio. With more than 500 different modules, it is versatile and flexible enough to cover virtually any requirement in a huge variety of industries.

### 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, HVAC and much more.

### Marine and Onshore/Offshore Automation

International approvals coupled with industry-specific features permit use in marine applications 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 both interference immunity and emission, along with superior mechanical performance in these sensitive areas, the WAGO I/O System will 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. Additionally, proven CAGE CLAMP® technology ensures that all connections made in the field are quick, vibration-proof and maintenance-free. 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. These approvals even include the rigorous operating conditions that ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA, AEx and numerous other marine certifications apply to.

### 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-density wiring and direct connection.

### Maximum Reliability and Ruggedness

The WAGO I/O System is engineered and tested for use in the most demanding environments and to the highest standards, e.g., those required in marine applications. The system differs from other products that are solely intended for industrial use through its:

- 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 marker carriers (integrated or optional). 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 – compatible with all prominent 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

# I/O System – 750 and 753 Series
## Variants

### Pluggable Connector

The pluggable connectors of the WAGO I/O System 753 allow quick and safe replacement. Optional coding pins prevent plugging a connector into 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 WAGO 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, some applications 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 protecting the "life and limb" of workers 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 functions can be implemented, e.g., by presence detection or protection zone violations, using secure switches or light arrays to shut down the "risk" immediately. For this purpose, the safety signals are detected by the "yellow" safety modules and transmitted via "PROFIsafe" to the fail-safe PLC for additional processing. The result is then executed via safe actuator (e.g., output module or controller).

The unique safety characteristics 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 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 to avoid injuries to personnel and damage to facilities.

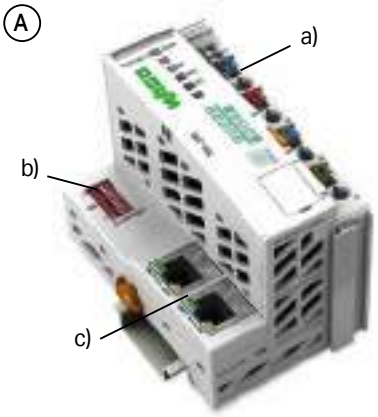
The modules within the WAGO I/O System 750 are designed for use in both non-hazardous and hazardous areas.

The direct application of fieldbus technology in hazardous areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the I/O System 750 offers a safe, easy and economical connection to the sensors/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



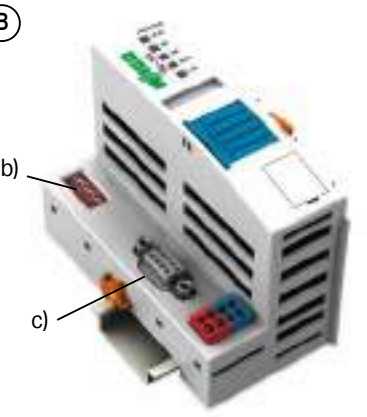

**Housing Design: Fieldbus Coupler (A)**

- Includes a 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 100 x 71.1 or
- W x H x D (mm): 61.5 x 100 x 71.9

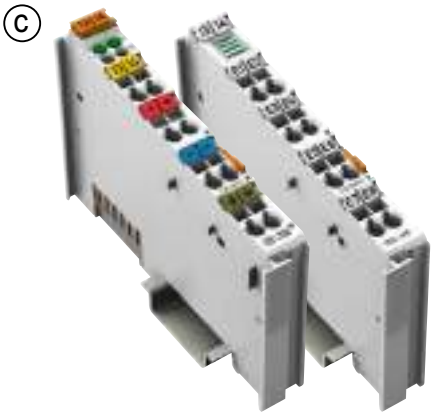
**Housing Design: Fieldbus Coupler Eco (B)**

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

B




C



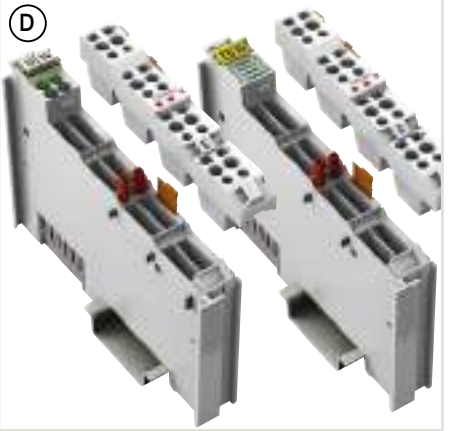
**Housing Design: 750 (C)**

- 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 100 x 69.8 (4 LEDs)
- W x H x D (mm) 12 x 100 x 69 (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 100 x 69

**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 100 x 74.1

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 100 x 69.8

**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.

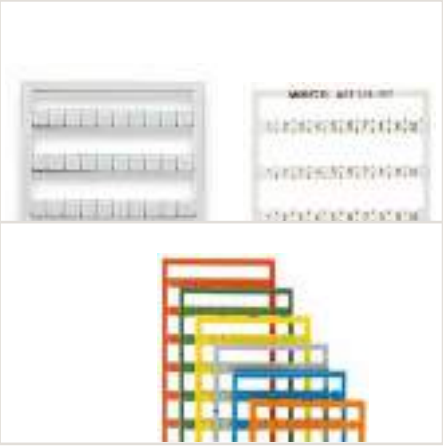
H

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



Transparent group marker carriers indicate module type by color.

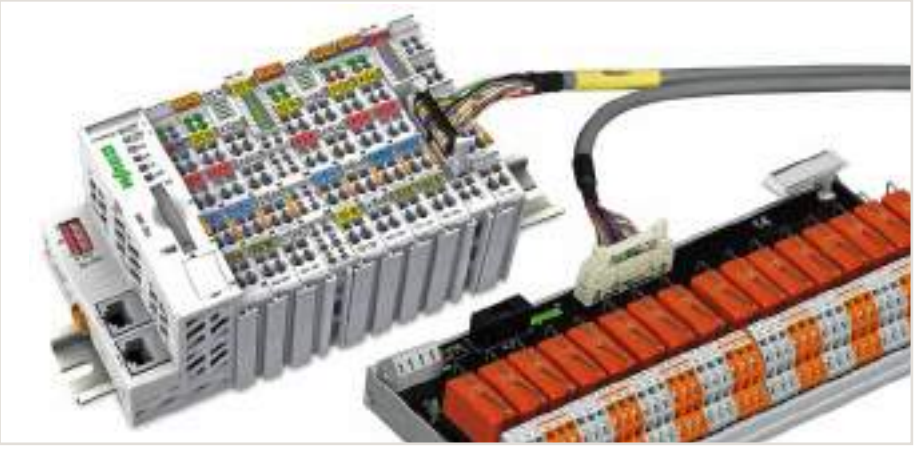
Removable group marker carriers are available for all 750 and 753 Series I/O Modules with a maximum of four LEDs, as well as all fieldbus couplers with a supply module.



Mini-WSB marking cards (blank, pre-marked or colored) are suitable for all 750 and 753 Series I/O Modules.

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



Interface modules for system wiring

WAGO system cables

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



### Power Supply

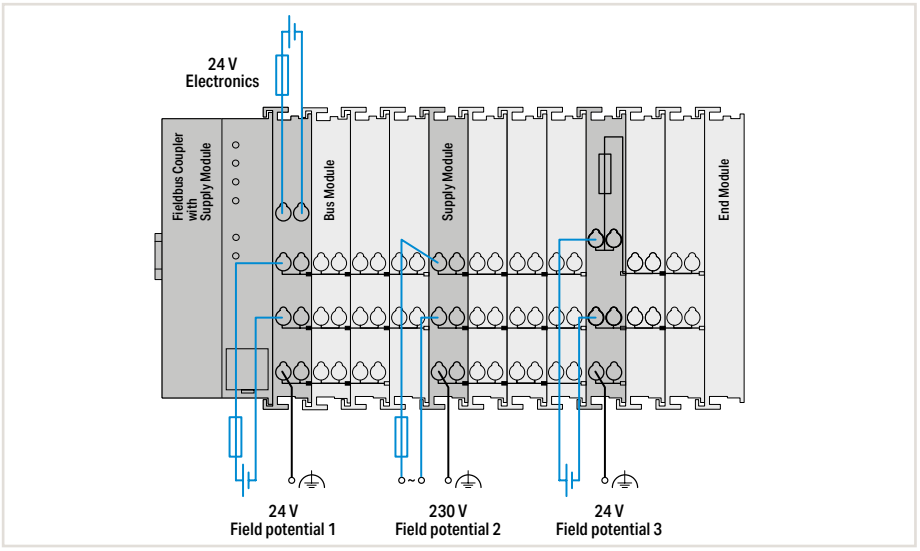
The fieldbus coupler powers the internal electronics. The field-side power supply is electrically isolated via the supply module on the coupler or a separate power supply module. This division enables a separate supply for sensors and actuators. Snapping the I/O modules together automatically routes 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 and customized supply configuration for a fieldbus node.

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. Furthermore, the current consumed for field-side supply must not exceed 10 A. A variety of power supply modules allows re-feeding, creating potential groups and implementing emergency stops.

### Interference-Free in Safety-Related Applications

To easily and safely perform a cost-effective and 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:**

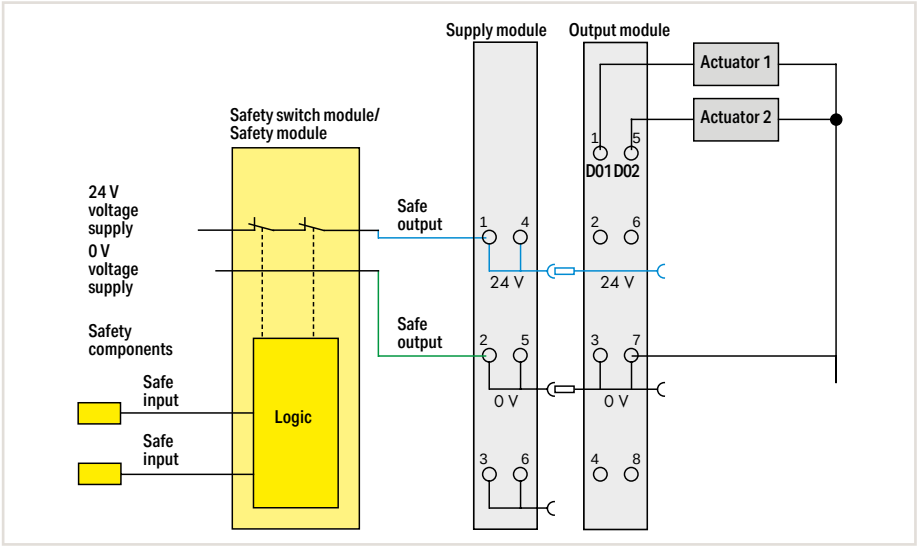
Additional steps must be implemented based on where the I/O system is installed:

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

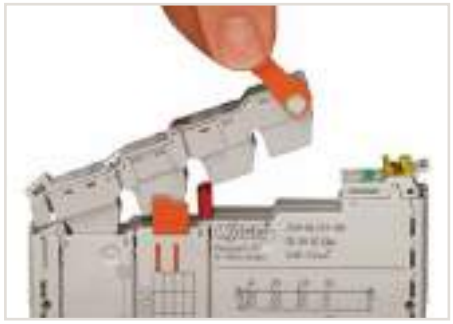
For the 24 VDC power supply of electronics and field, PELV/SELV power supply units are recommended. As part of safety-related applications, they are mandatory. The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased electromagnetic immunity (EMC standard),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



Removing a pluggable connector

Optional protection against mismating of a pluggable connector via coding elements



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

**Notice:**

Some I/O modules do not provide all power jumper contacts. Therefore, a module with three power jumper contacts (e.g., 2-channel digital input) cannot be connected to a module that does not have all power jumper contacts.

To increase electromagnetic compatibility (EMC), some components are connected to the DIN-rail via 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

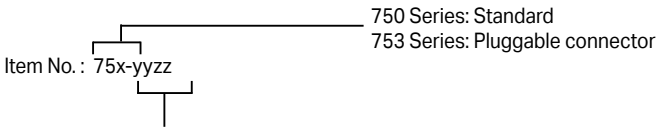
Secure, automatic power supply connection via self-cleaning blade contacts

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


Securing a cable to the connector

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

Explanation of an 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
.../000-003: PROFIsafe V2 iPar
.../000-004: PROFIsafe V2
7z: Stepper

09zz: Accessories

.../025-000: Extended temperature range (-20 ... +60 °C)
.../000-800: Interference-free
.../040-000: 750 XTR Series (see Section 8)

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



| General Technical Data | |
|---|---|
| System supply voltage | 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) | −25 ... +85 °C |
| Surrounding air temperature (storage) for versions with an extended temperature range | −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 / 0 ... 6562 ft |
| 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 class | IP20 |
| Mounting type | DIN-35 rail mounting |
| Housing material | Polycarbonate; polyamide 6.6 |
| Exposure to pollutants | Per IEC 60068-2-42 and IEC 60068-2-43 |
| Permissible SO2 contaminant concentration at a relative humidity < 75 % | 25 ppm |
| Permissible H2S contaminant concentration at a relative humidity < 75 % | 10 ppm |
| Connection technology | CAGE CLAMP® |
| Conductor cross-section; strip length for: | |
| Standard modules and couplers | 0.08 ... 2.5 mm²/28 ... 14 AWG; 8 ... 9 mm/0.31 ... 0.35 inch |
| I/O modules (753 Series) | 0.08 ... 2.5 mm²/28 ... 14 AWG; 9 ... 10 mm/0.35 ... 0.39 inch |
| Fieldbus couplers (ECO) | 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,<br>Fine-stranded: 0.25 ... 1.5 mm²/22 ... 16 AWG;<br>8 ... 9 mm/0.31 ... 0.35 inch |
| Current carrying capacity (power jumper contacts) | 10 A |

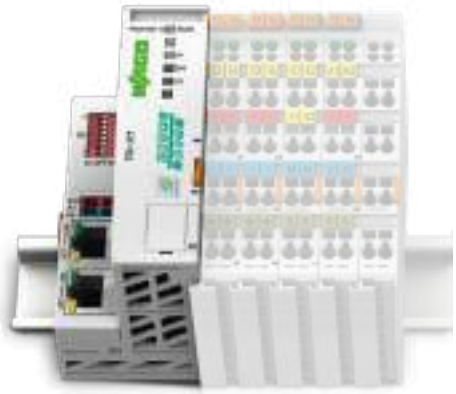
## Approvals

For approvals overview (item comparison), see Section 14 (Technical Section) or visit www.wago.com.

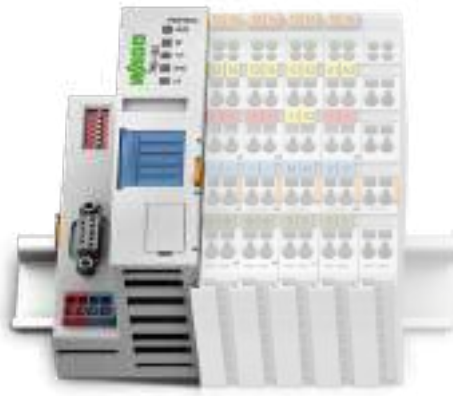
# Fieldbus Couplers

| Housing Design I with Field Supply | |
|---|---|
| Dimensions W x H x D | 50.5 x 100 x 71.1 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 100 x 71.9 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 96.8 x 71.9 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 |

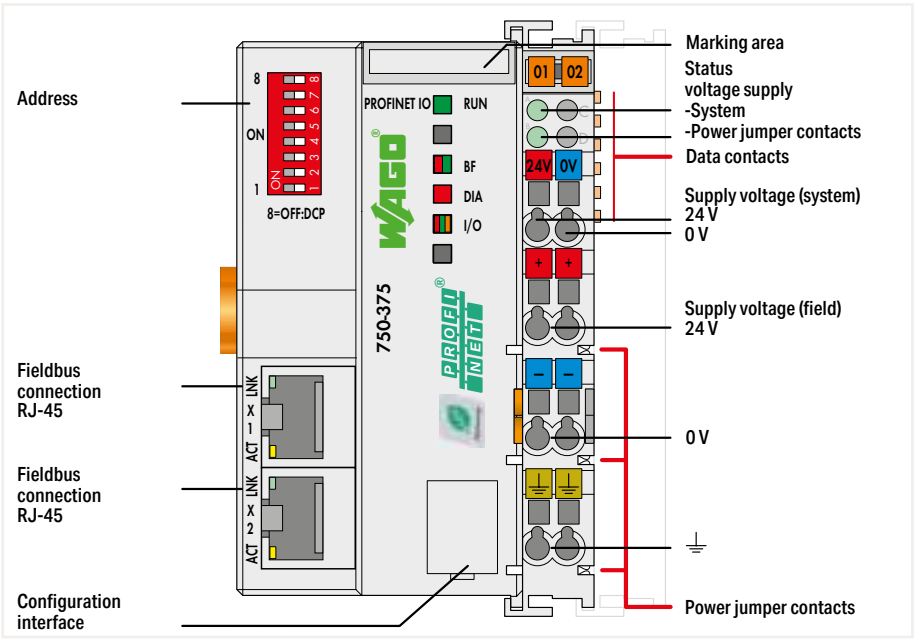


| Housing Design "Eco" (without Field Supply) | |
|---|---|
| Dimensions W x H x D | 49.5 x 96.8 x 71.9 mm |
| Height from upper edge of DIN-rail | 64.7 mm |
| Connection technology (system supply) | CAGE CLAMP® |
| Conductor cross-section | 0.08 … 1.5 mm² / 28 … 16 AWG |
| Strip length | 5 … 6 mm / 0.22 inch |

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

# Fieldbus coupler ▸ PROFINET IO; Advanced

750-375

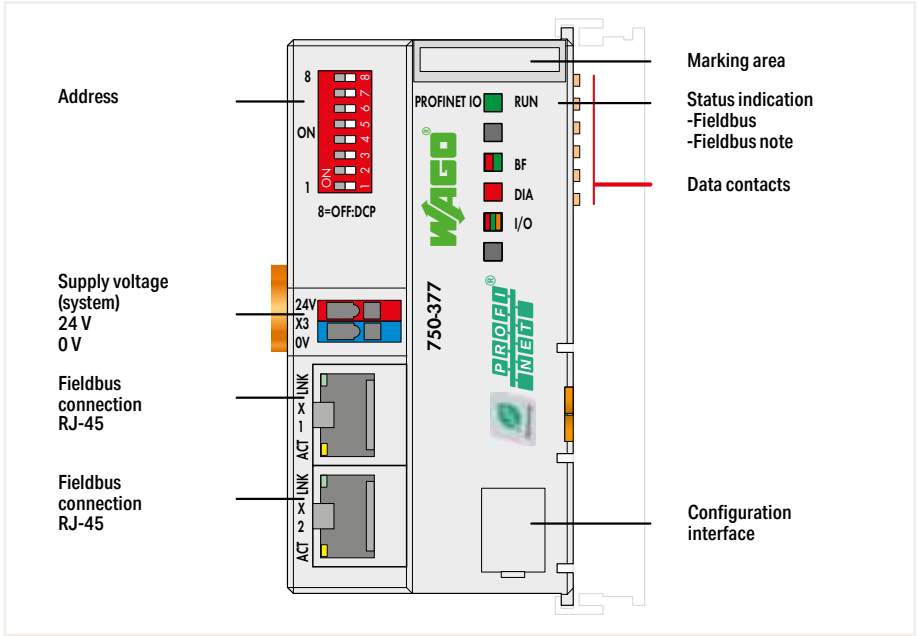



| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-375** | **750-375/025-000** |
| **Order Text** | **FC PROFINET; G3; Adv** | **FC PROFINET; G3; T; Adv** |

| Technical Data | | |
|---|---|---|
| Communication | PROFINET IO | |
| Protocol | PROFINET IO V2.3 (conformity class C); Topology detection / LLDP; Network diagnostics / SNMP / MIB-2; Media redundancy / MRP; Webserver / HTTP; Shared device | |
| Connection technology: communication/fieldbus | PROFINET IO: 2 x RJ-45 | |
| PROFINET IO properties | 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 | |
| Device-specific | Supported profiles: PROFIsafe V2, PROFIenergy V1.0; ID code: Vendor ID: 0x011D; Device ID: 0x02EE; Module ID: 0x01000177 (firmware version 01, 02), 0x02000177 (from firmware version 03) | |
| Baud rate | 10/100 Mbit/s (10 Mbit/s (ETHERNET protocols), 100 Mbit/s full duplex (PROFINET IO)) | |
| Transmission medium (communication/fieldbus) | Twisted pair S-UTP; 100 Ω; Cat. 5 | |
| Number of modules per node (max.) | 250 | |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 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 100 x 71.9) mm | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-375 | |

# Fieldbus coupler ▸ PROFINET IO; ECO Advanced

750-377

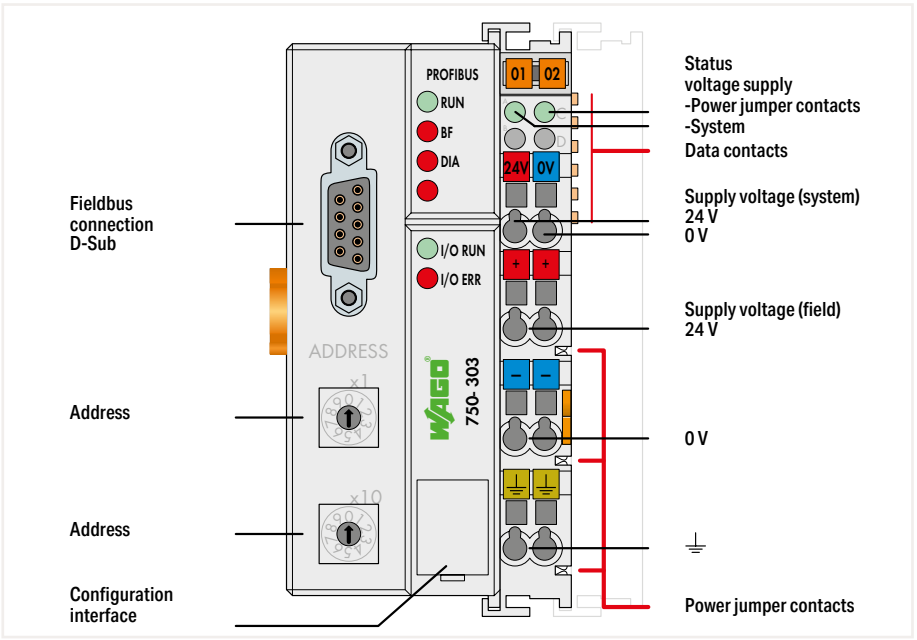



| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-377** | **750-377/025-000** |
| **Order Text** | **FC PROFINET; G3; ECO Adv** | **FC PROFINET; G3; T; ECO Adv** |

| Technical Data | | |
|---|---|---|
| Communication | PROFINET IO | |
| Protocol | PROFINET IO V2.3 (conformity class C); Topology detection / LLDP; Network diagnostics / SNMP / MIB-2; Media redundancy / MRP; Webserver / HTTP | |
| Connection technology: communication/fieldbus | PROFINET IO: 2 x RJ-45 | |
| PROFINET IO properties | 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 | |
| Device-specific | Supported profiles: PROFIsafe V2, PROFIenergy V1.0; ID code: Vendor ID: 0x011D; Device ID: 0x02EE; Module ID: 0x01000177 (firmware version 01, 02), 0x02000177 (from firmware version 03) | |
| Baud rate | 10/100 Mbit/s (10 Mbit/s (ETHERNET protocols), 100 Mbit/s full duplex (PROFINET IO)) | |
| Transmission medium (communication/fieldbus) | Twisted pair S-UTP; 100 Ω; Cat. 5 | |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 256 bytes/256 bytes | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector | |
| Input current (typ.) at nominal load (24 V) | 280 mA | |
| Power consumption (5 V system supply) | 450 mA | |
| Total current (system supply) | 700 mA | |
| Surrounding air temperature (operation) | 0 … 55 °C | -20 … 60 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-377 | |

# Fieldbus coupler ▸ PROFIBUS DP; 1st generation

750-303

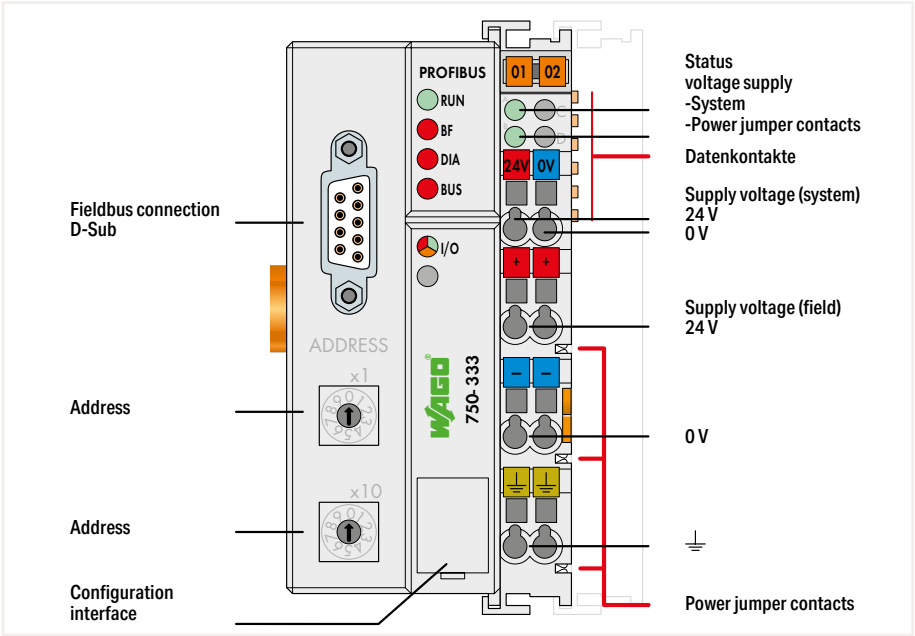



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-303** |
| **Order Text** | **FC PROFIBUS; G1; 12MBd** |

| Technical Data | |
|---|---|
| Communication | PROFIBUS |
| Protocol | PROFIBUS DP/FMS |
| Connection technology: communication/fieldbus | PROFIBUS: 1 x D-sub 9 socket |
| Number of fieldbus nodes on master (max.) | 96 |
| Baud rate | 9.6 kBd … 12 MBd |
| Transmission medium (communication/fieldbus) | Cu cable per EN 50170 |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 128 bytes/128 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-303 |

# Fieldbus coupler ▸ PROFIBUS DP; 2nd generation

750-333

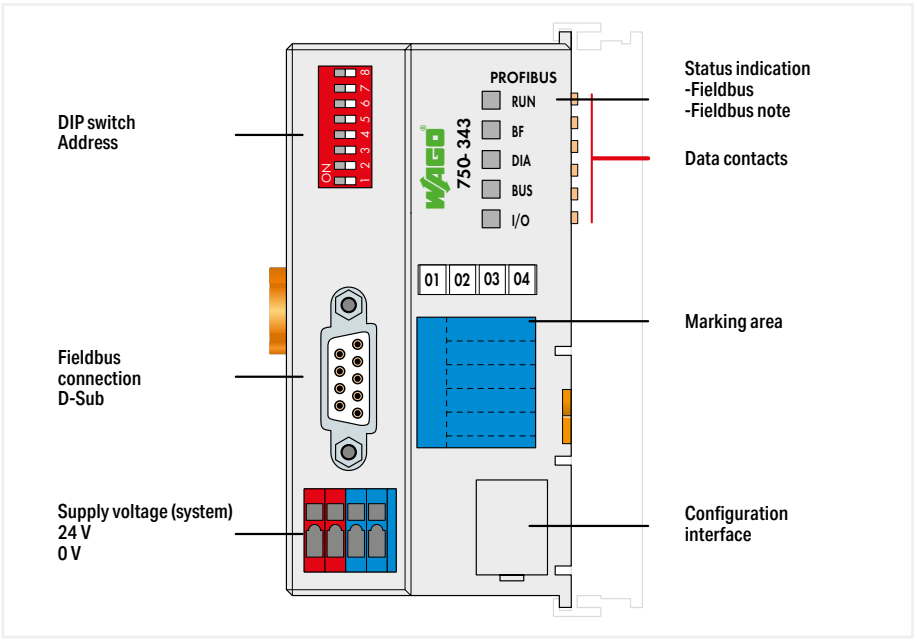



| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-333** | **750-333/025-000** |
| **Order Text** | **FC PROFIBUS; G2; 12MBd** | **FC PROFIBUS; G2; 12MBd; T** |

| Technical Data | | |
|---|---|---|
| Communication | PROFIBUS | |
| Protocol | PROFIBUS DP/V1 | |
| Connection technology: communication/fieldbus | PROFIBUS: 1 x D-sub 9 socket | |
| Number of fieldbus nodes on master (max.) | 96 | |
| Baud rate | 9.6 kBd … 12 MBd | |
| Transmission medium (communication/fieldbus) | Cu cable per EN 50170 | |
| Number of modules per node (max.) | 63 | |
| Input and output (fieldbus) process image (max.) | 244 bytes/244 bytes | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 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 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-333 | |

# Fieldbus coupler ▶ PROFIBUS DP; ECO

750-343

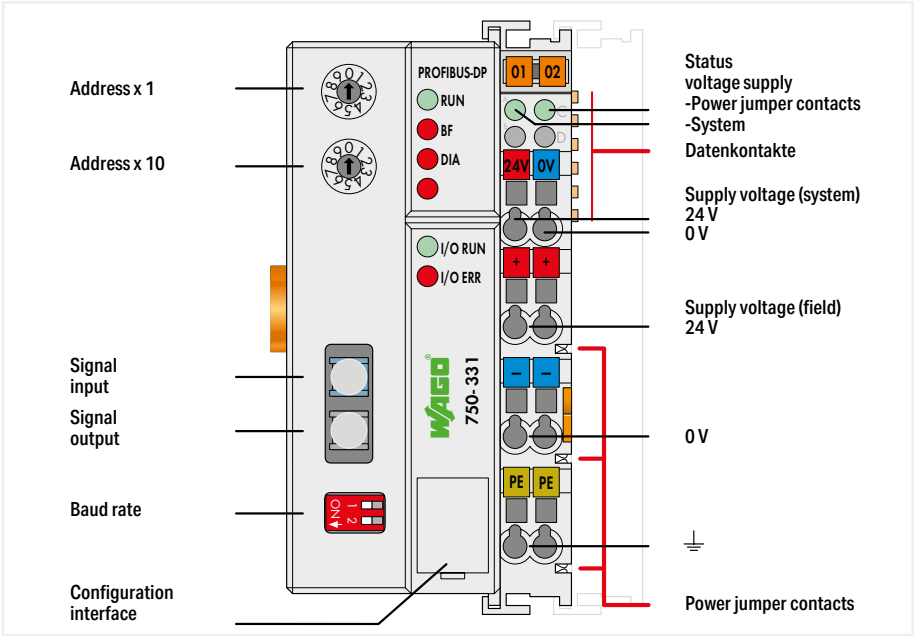



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-343** |
| **Order Text** | **FC PROFIBUS; 12MBd; ECO** |

| Technical Data | |
|---|---|
| Communication | PROFIBUS |
| Protocol | PROFIBUS DP |
| Connection technology: communication/fieldbus | PROFIBUS: 1 x D-sub 9 socket |
| Number of fieldbus nodes on master (max.) | 125 |
| Baud rate | 9.6 kBd … 12 MBd |
| Transmission medium (communication/fieldbus) | Cu cable per EN 50170 |
| Number of modules per node (max.) | 63 |
| Input and output (fieldbus) process image (max.) | 32 bytes/32 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 260 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-343 |

# Fieldbus coupler ▸ PROFIBUS DP; Fiber-optic connection

750-331

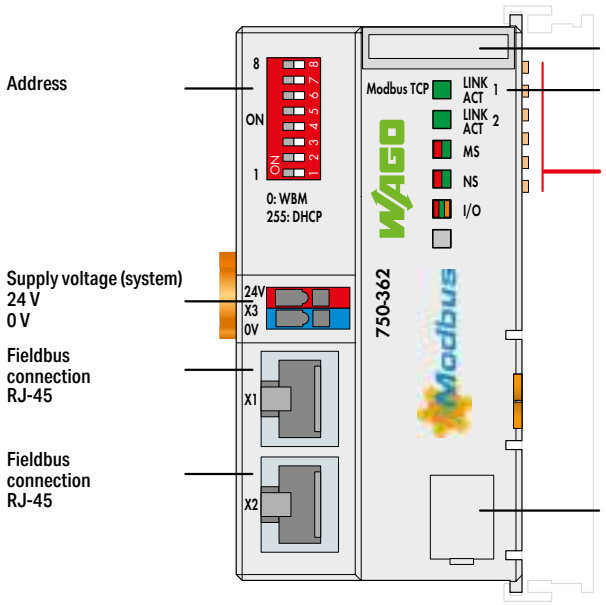



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-331** |
| **Order Text** | **FC PROFIBUS; FOC; 1.5MBd** |

| Technical Data | |
|---|---|
| Communication | PROFIBUS |
| Protocol | PROFIBUS DP |
| Connection technology: communication/fieldbus | PROFIBUS: 1 x HP Simplex, FOC plug included with delivery |
| Number of fieldbus nodes on master (max.) | 10 |
| Baud rate | 93.75 kBd … 1.5 MBd |
| Transmission medium (communication/fieldbus) | APF (All Plastic Fiber) (1000 µm) |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 128 bytes/128 bytes |
| Supply voltage (system) | 24 VDC (-15 … +20 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-15 … +20 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; cULus OrdLoc |
| Data sheet and further information, see: | wago.com/750-331 |

# Fieldbus coupler ▶ Modbus TCP; ECO

750-362

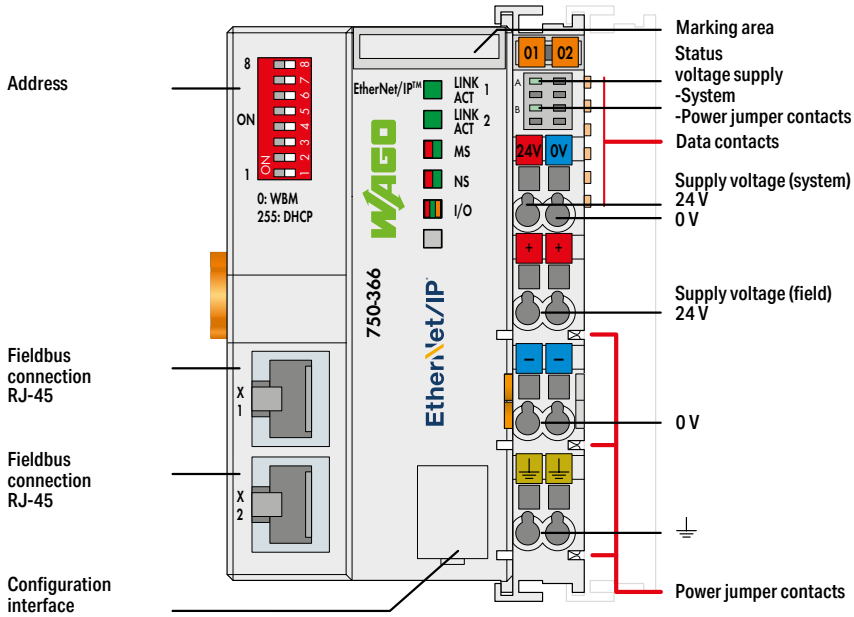



| Version | Default |
|---|---|
| **Item No.** | **750-362** |
| **Order Text** | **FC Modbus TCP; G4** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP) |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Transmission medium (communication/fieldbus) | Twisted Pair S-UTP; 100 Ω; Cat. 5; 100 m maximum cable length |
| Transmission performance | Class D per EN 50173 |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 280 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-362 |

# Fieldbus coupler ▶ EtherNet/IP™

750-366

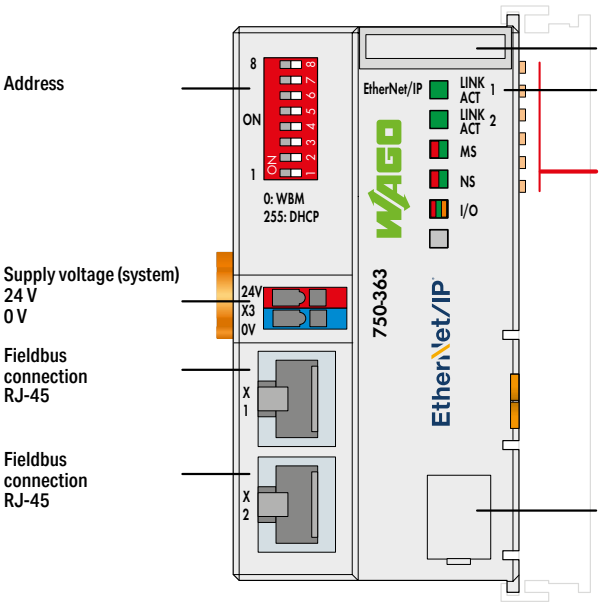



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-366** |
| **Order Text** | **FC EtherNet/IP™; G4; DLR** |

| Technical Data | |
|---|---|
| Communication | EtherNet/IP™ |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; FTP(S); SNMP |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Transmission medium (communication/fieldbus) | Twisted Pair S-UTP; 100 Ω; Cat. 5; 100 m maximum cable length |
| Transmission performance | Class D per EN 50173 |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 480 mA |
| Power consumption (5 V system supply) | 300 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (62 x 100 x 71.9) mm |
| Approvals | CE; Marine; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/750-366 |

# Fieldbus coupler ▶ EtherNet/IP™; ECO

750-363

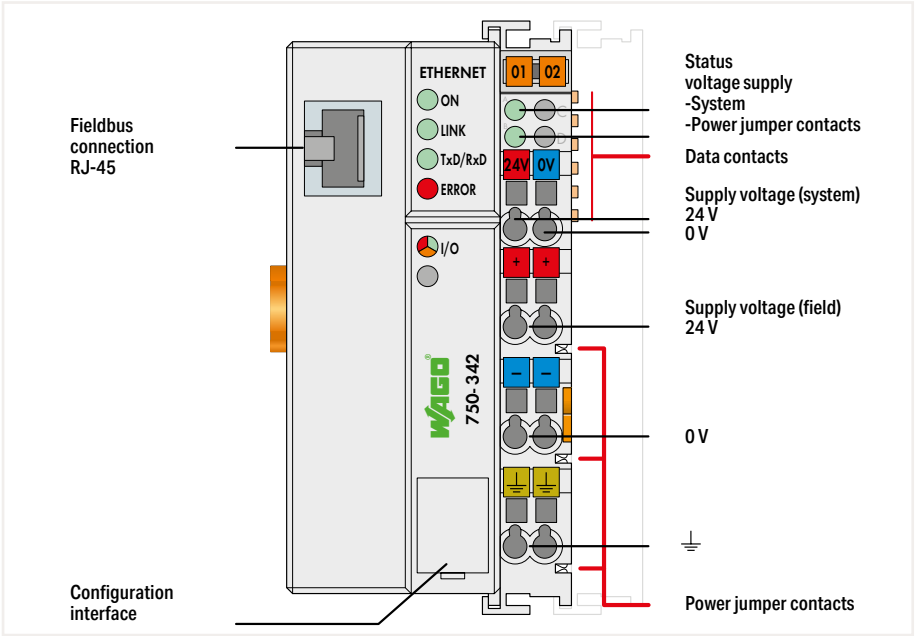



| Version | Default |
|---|---|
| **Item No.** | **750-363** |
| **Order Text** | **FC EtherNet/IP™** |

| Technical Data | |
|---|---|
| Communication | EtherNet/IP™ |
| ETHERNET protocols | HTTP(S); BootP; DHCP; DNS; SNTP; FTP(S); SNMP |
| Connection technology: communication/fieldbus | EtherNet/IP™: 2 x RJ-45 |
| Baud rate | 10/100 Mbit/s |
| Transmission medium (communication/fieldbus) | Twisted Pair S-UTP; 100 Ω; Cat. 5; 100 m maximum cable length |
| Transmission performance | Class D per EN 50173 |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 280 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-363 |

# Fieldbus coupler ▶ ETHERNET

750-342

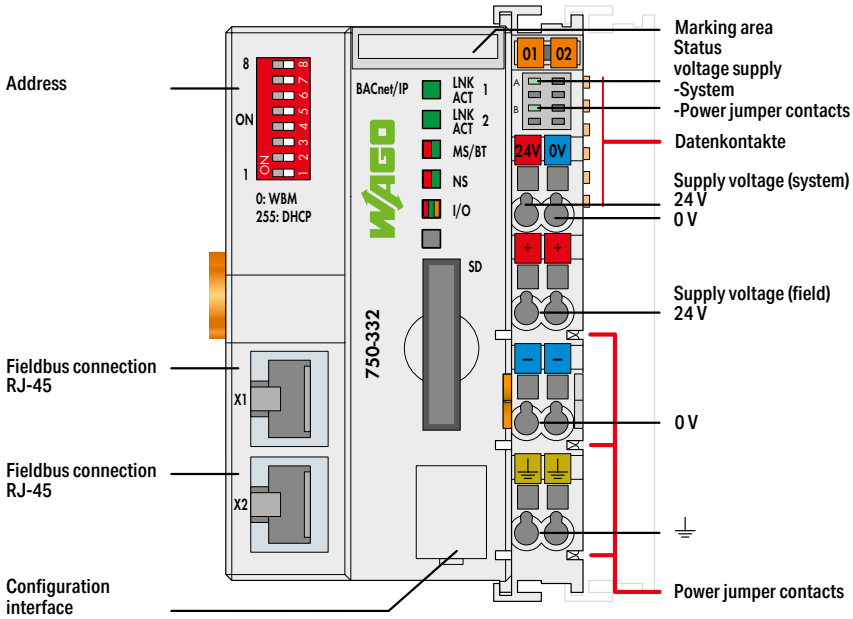



| Version | Default |
|---|---|
| **Item No.** | **750-342** |
| **Order Text** | **FC ETHERNET; G1** |

| Technical Data | |
|---|---|
| Communication | Modbus (TCP, UDP); ETHERNET |
| ETHERNET protocols | HTTP; BootP |
| Connection technology: communication/fieldbus | Modbus TCP/UDP: 1 x RJ-45 |
| Baud rate | 10 Mbit/s |
| Transmission medium (communication/fieldbus) | Twisted pair S-UTP; 100 Ω; Cat. 5 |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 200 mA |
| Total current (system supply) | 1800 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-342 |

# Fieldbus coupler ▶ BACnet/IP; SD card slot

750-332



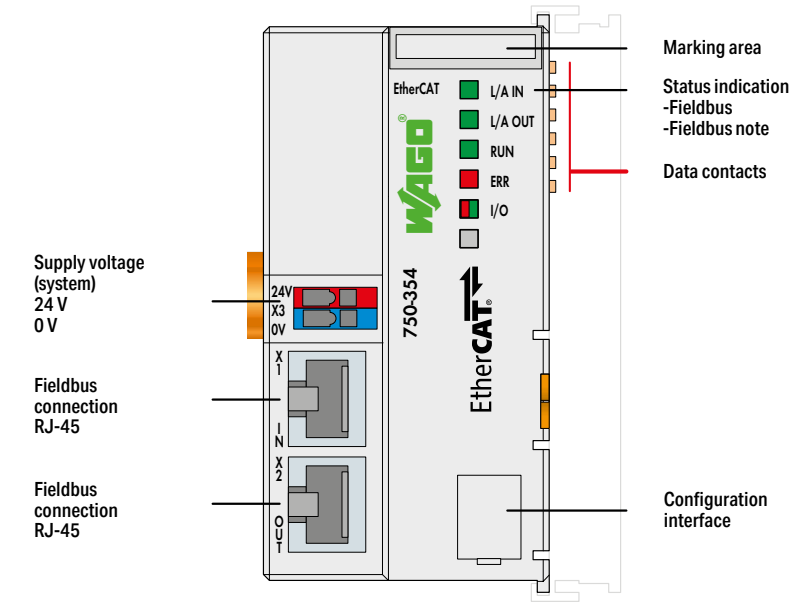

| Version | Default |
|---|---|
| **Item No.** | **750-332** |
| **Order Text** | **FC BACnet/IP** |

| Technical Data | |
|---|---|
| Communication | BACnet/IP; Modbus (TCP, UDP) |
| Protocol | HTTP(S), BootP, DHCP, DNS, (S)FTP, SNMP |
| Connection technology: communication/fieldbus | BACnet/IP: 2 x RJ-45; Modbus TCP/UDP: 2 x RJ-45 |
| Device-specific | BACnet device profile: B-BC (BACnet building controller); BACnet revision: 12 |
| Baud rate | 10/100 Mbit/s |
| Transmission medium (communication/fieldbus) | Twisted Pair S-UTP; 100 Ω; Cat. 5; 100 m maximum cable length |
| Transmission performance | Class D per EN 50173 |
| Memory card type | SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO Memory Card) |
| Number of modules per node (max.) | 250 |
| Input and output (fieldbus) process image (max.) | 1020 words/1020 words |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 440 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-332 |

| Accessories | Item No. |
|---|---|
| Memory Card SD; pSLC-NAND; 8 GB; Temperature range: -40 to 90°C | 758-879/000-2108 |

# Fieldbus coupler ▶ EtherCAT

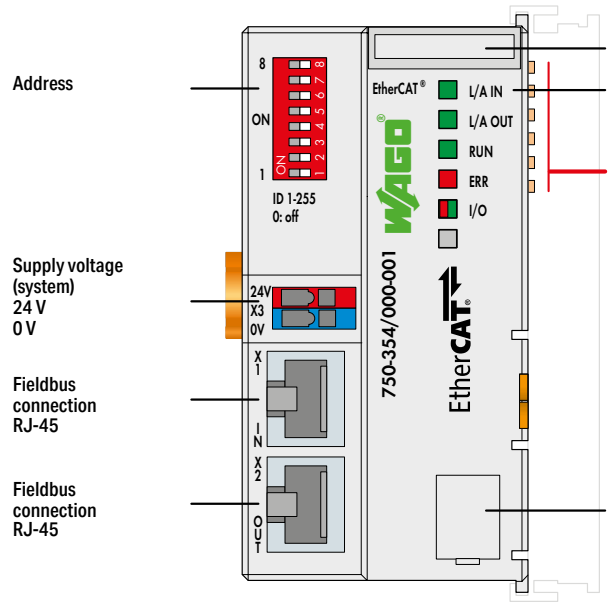
750-354




| Version | Default |
|---|---|
| **Item No.** | **750-354** |
| **Order Text** | **FC EtherCAT** |

| Technical Data | |
|---|---|
| Communication | EtherCAT |
| Protocol | EtherCAT® (direct mode) |
| Connection technology: communication/fieldbus | EtherCAT: 2 x RJ-45 |
| Baud rate | 100 Mbit/s |
| Transmission medium (communication/fieldbus) | Shielded twisted pair S/FTP, F/FTP or SF/FTP; 100 Ω; Cat. 6 |
| Transmission performance | Class D per EN 50173 |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 1024 bytes/1024 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 250 mA |
| Power consumption (5 V system supply) | 300 mA |
| Total current (system supply) | 700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-354 |

# Fieldbus coupler ▶ EtherCAT; ID switch

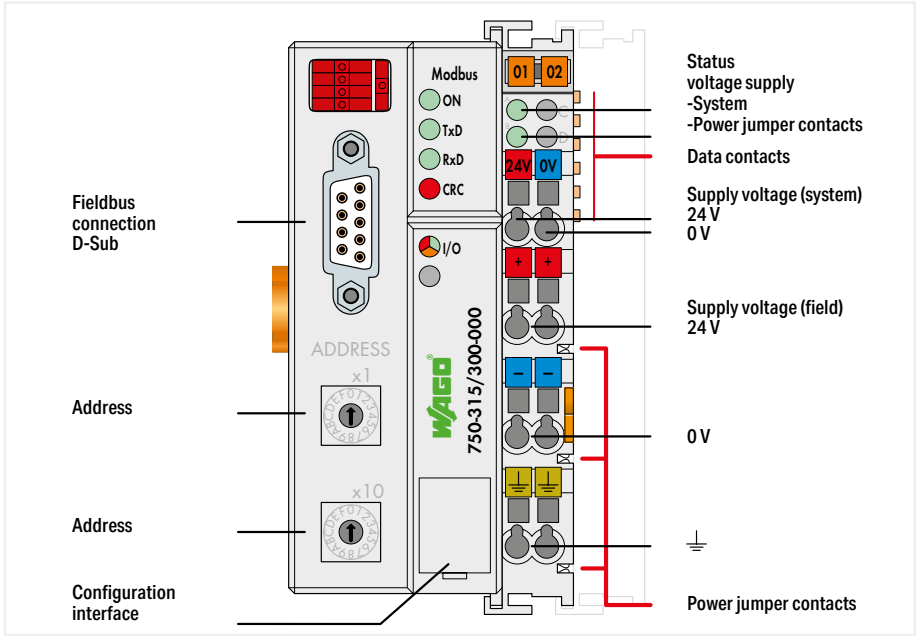



| Version | Default | Diagnostics |
|---|---|---|
| **Item No.** | **750-354/000-001** | **750-354/000-002** |
| **Order Text** | **FC EtherCAT; ID-Switch** | **FC EtherCAT; ID-Switch; 100Mbit/s; Diagn** |

| Technical Data | | |
|---|---|---|
| Communication | EtherCAT | |
| Protocol | EtherCAT® (direct mode) | |
| Connection technology: communication/fieldbus | EtherCAT: 2 x RJ-45 | |
| Baud rate | 100 Mbit/s | |
| Transmission medium (communication/fieldbus) | Shielded twisted pair S/FTP, F/FTP or SF/FTP; 100 Ω; Cat. 6 | |
| Transmission performance | Class D per EN 50173 | |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 1024 bytes/1024 bytes | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector | |
| Input current (typ.) at nominal load (24 V) | 250 mA | |
| Power consumption (5 V system supply) | 300 mA | |
| Total current (system supply) | 700 mA | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm | |
| Approvals | CE; Marine; OrdLoc/HazLoc; ATEX/IECEx | CE; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-354/000-001 | |

# Fieldbus coupler ▸ MODBUS; RS-485; 115.2 kBd

750-315/300-000

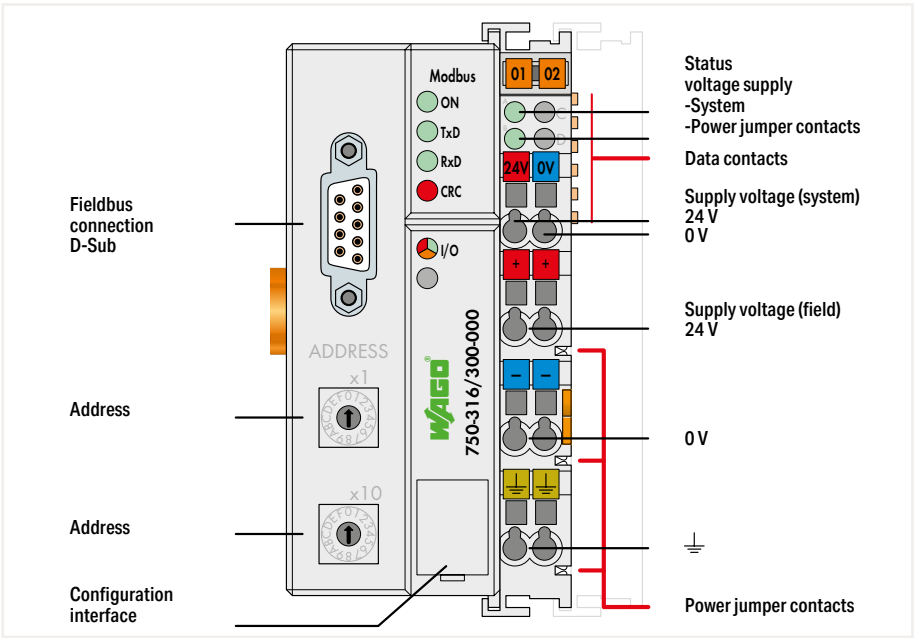



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-315/300-000** |
| **Order Text** | **FC MODBUS; RS485; 115.2kBd** |

| Technical Data | |
|---|---|
| Communication | Modbus® RTU |
| Connection technology: communication/fieldbus | Modbus RTU: 1 x D-sub 9 socket |
| Number of fieldbus nodes on master (max.) | 247 |
| Baud rate | 150 Baud … 115.2 kBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 2 (4) x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-315/300-000 |

# Fieldbus coupler ▸ MODBUS; RS-232; 115.2 kBd

750-316/300-000



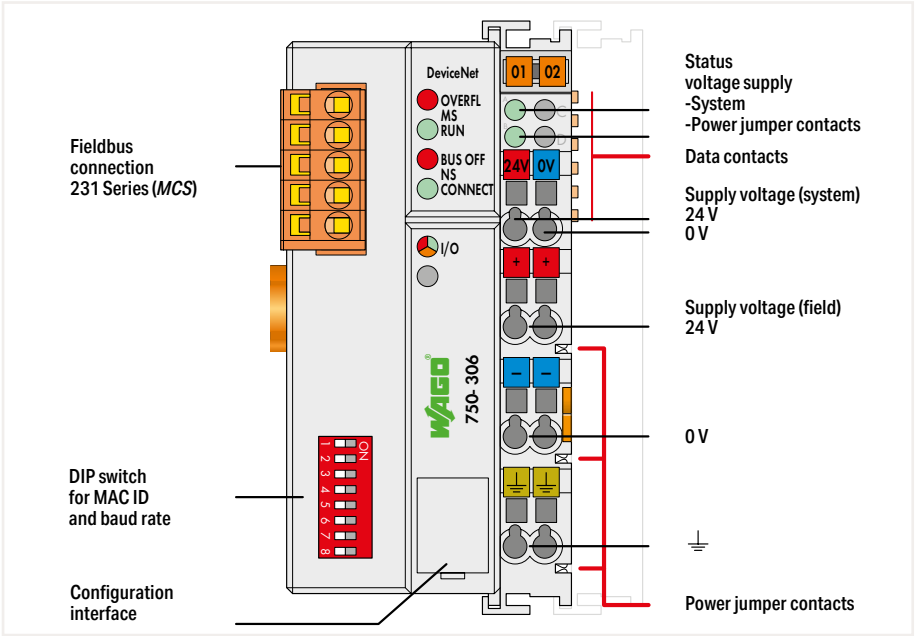

7.1

| Version | Default |
|---|---|
| **Item No.** | **750-316/300-000** |
| **Order Text** | **FC MODBUS; RS232; 115.2kBd** |

| Technical Data | |
|---|---|
| Communication | Modbus® RTU |
| Connection technology: communication/fieldbus | Modbus RTU: 1 x D-sub 9 socket |
| Number of fieldbus nodes on master (max.) | 247 |
| Baud rate | 150 Baud … 115.2 kBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 2 (4) x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-316/300-000 |

# Fieldbus coupler ▶ DeviceNet

750-306

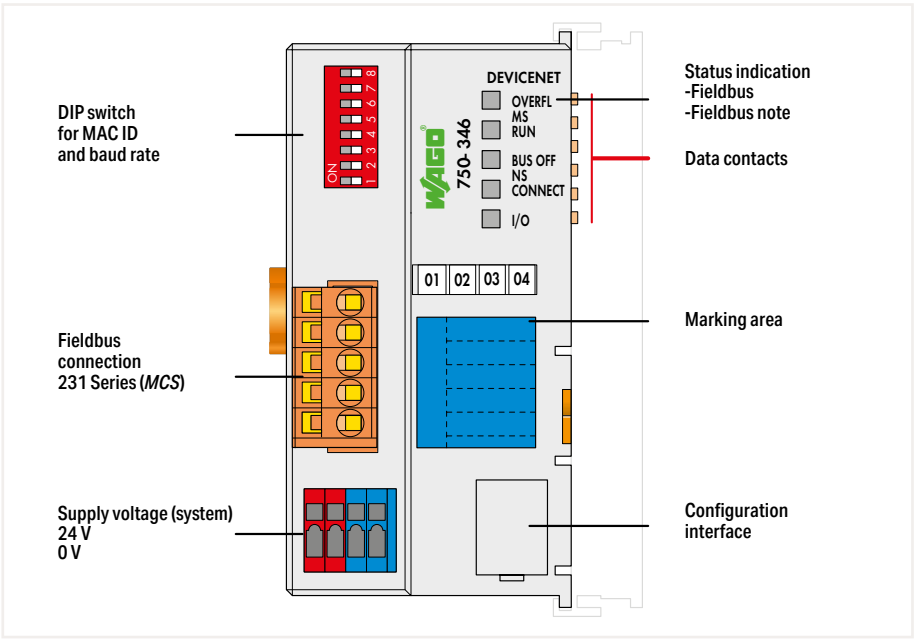



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-306** |
| **Order Text** | **FC DeviceNet** |

| Technical Data | |
|---|---|
| Communication | DeviceNet |
| Connection technology: communication/fieldbus | DeviceNet: 1 x Male connector; 5-pole |
| Number of fieldbus nodes on master (max.) | 64 |
| Number of I/O points | 6000 |
| Bus segment length (max.) | 500 m |
| Baud rate | 500 kBd (125 kBd, 250 kBd, 500 kBd) |
| Transmission medium (communication/fieldbus) | 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 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Input current via DeviceNet interface at 11 V | 120 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-306 |

# Fieldbus coupler ▸ DeviceNet; ECO

750-346

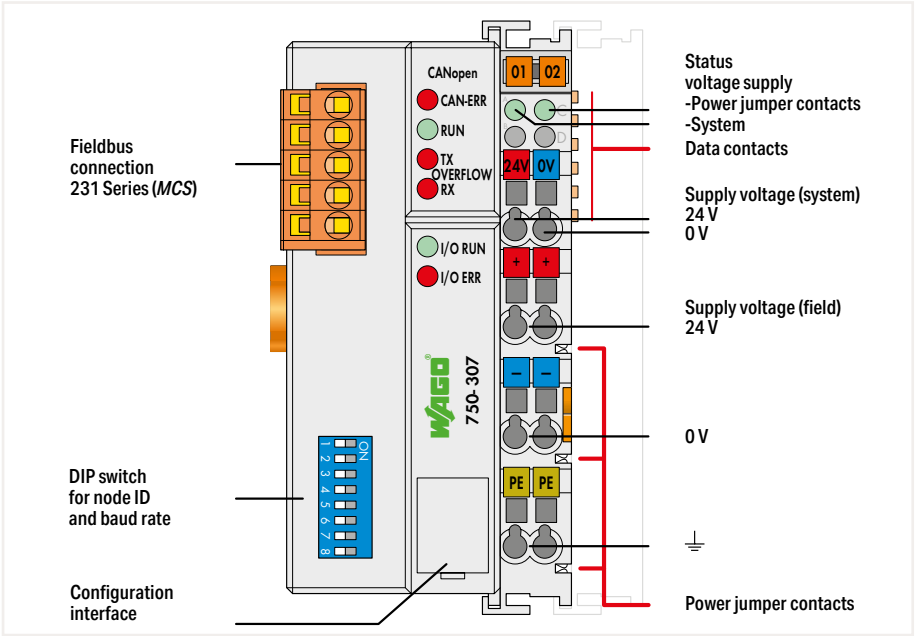



| Version | Default |
|---|---|
| **Item No.** | **750-346** |
| **Order Text** | **FC DeviceNet; ECO** |

| Technical Data | |
|---|---|
| Communication | DeviceNet |
| Connection technology: communication/fieldbus | DeviceNet: 1 x Male connector; 5-pole |
| Number of fieldbus nodes on master (max.) | 64 |
| Number of I/O points | 6000 |
| Bus segment length (max.) | 500 m |
| Baud rate | 500 kBd (125 kBd, 250 kBd, 500 kBd) |
| Transmission medium (communication/fieldbus) | 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 |
| Input and output (fieldbus) process image (max.) | 32 bytes/32 bytes |
| Supply voltage (system) | 24 VDC (-15 … +20 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 260 mA |
| Input current via DeviceNet interface at 11 V | 120 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; cULus OrdLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-346 |

# Fieldbus coupler ▸ CANopen

750-307

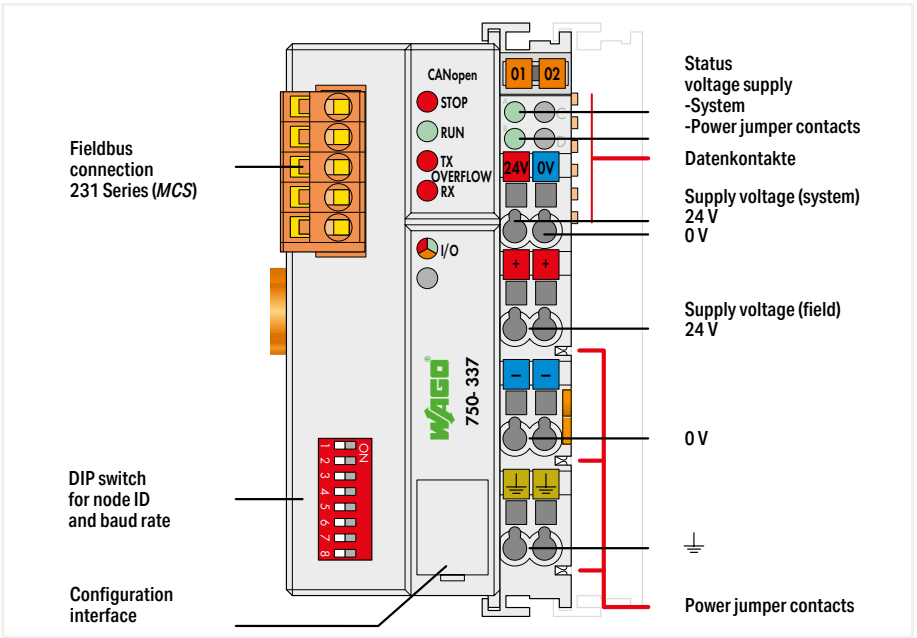



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-307** |
| **Order Text** | **FC CANopen** |

| Technical Data | |
|---|---|
| Communication | CANopen |
| Connection technology: communication/fieldbus | CANopen: 1 x Male connector; 5-pole |
| Number of fieldbus nodes on master (max.) | 110 |
| Bus segment length (max.) | 1000 m |
| Baud rate | 10 kBd … 1 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 3 x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Number of PDOs | 5 Tx / 5 Rx |
| Number of SDOs | 2 SDO servers |
| Communication profile | DS-301 V3.0 |
| Device profile | DS-401 V1.4 |
| Supply voltage (system) | 24 VDC (-15 … +20 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-15 … +20 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-307 |

# Fieldbus coupler ▶ CANopen; MCS

750-337

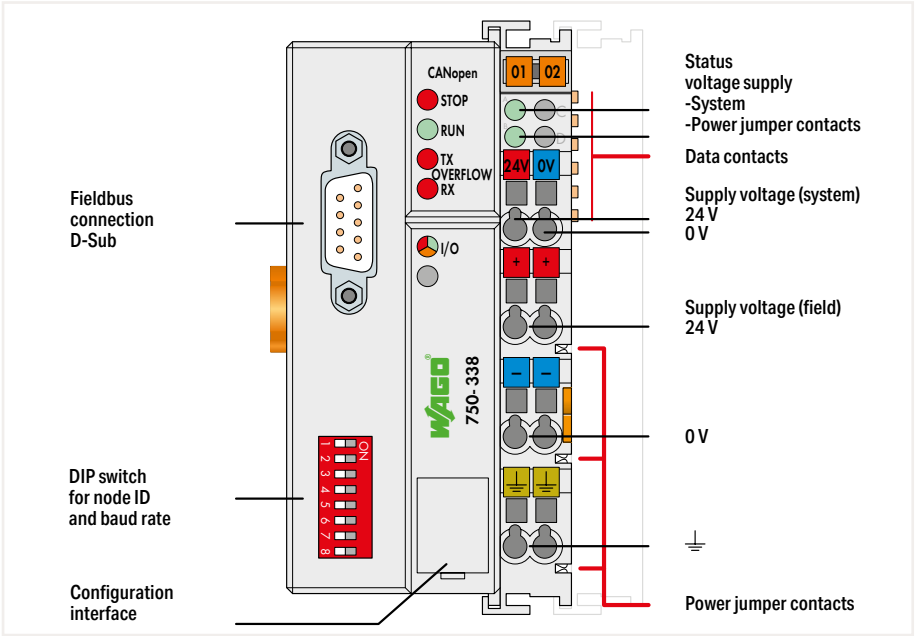



| Version | Default | Ext. Temperature |
|---|---|---|
| **Item No.** | **750-337** | **750-337/025-000** |
| **Order Text** | **FC CANopen; MCS** | **FC CANopen; MCS; T** |

| Technical Data | | |
|---|---|---|
| Communication | CANopen | |
| Connection technology: communication/fieldbus | CANopen: 1 x Male connector; 5-pole | |
| Number of fieldbus nodes on master (max.) | 110 | |
| Bus segment length (max.) | 1000 m | |
| Baud rate | 10 kBd … 1 MBd | |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 3 x 0.25 mm² | |
| Number of modules per node (max.) | 64 | |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes | |
| Number of PDOs | 32 Tx / 32 Rx | |
| Number of SDOs | 2 SDO servers | |
| Communication profile | DS-301 V4.1 | |
| Device profile | DS-401 V2.0; Limit value monitoring ; Edge-triggered PDOs; Configurable response in the event of an error | |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts | |
| Input current (typ.) at nominal load (24 V) | 500 mA | |
| Power consumption (5 V system supply) | 350 mA | |
| Total current (system supply) | 1650 mA | |
| Surrounding air temperature (operation) | 0 … 55 °C | -20 … 60 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-337 | |

# Fieldbus coupler ▸ CANopen; D-sub

750-338

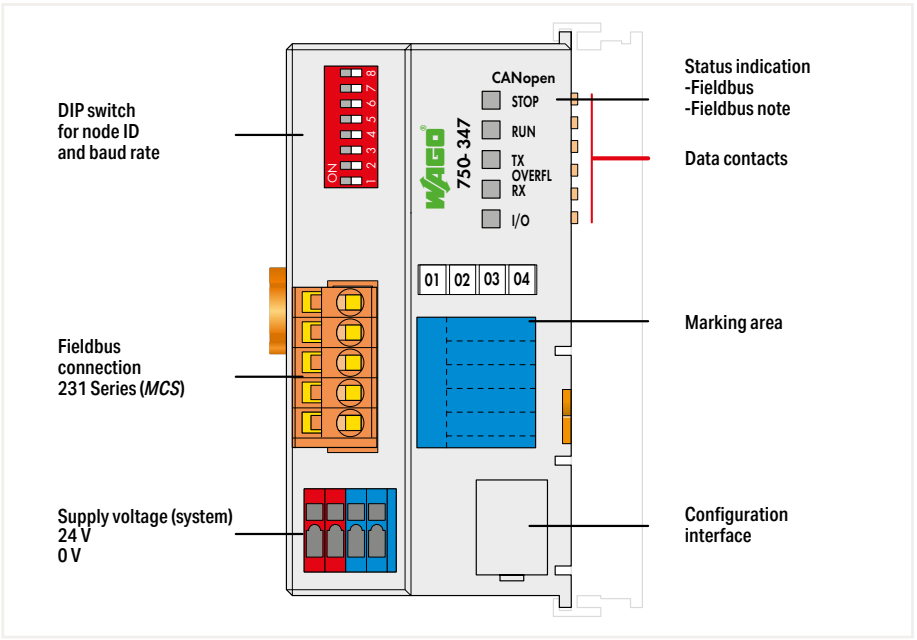



| | |
|---|---|
| Version | Default |
| Item No. | 750-338 |
| Order Text | FC CANopen; DSub |

| Technical Data | |
|---|---|
| Communication | CANopen |
| Connection technology: communication/fieldbus | CANopen: 1 x D-sub 9 plug |
| Number of fieldbus nodes on master (max.) | 110 |
| Bus segment length (max.) | 1000 m |
| Baud rate | 10 kBd … 1 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 3 x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 512 bytes/512 bytes |
| Number of PDOs | 32 Tx / 32 Rx |
| Number of SDOs | 2 SDO servers |
| Communication profile | DS-301 V4.1 |
| Device profile | DS-401 V2.0; Limit value monitoring ; Edge-triggered PDOs; Configurable response in the event of an error |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 1650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-338 |

# Fieldbus coupler ▶ CANopen; MCS; ECO

750-347

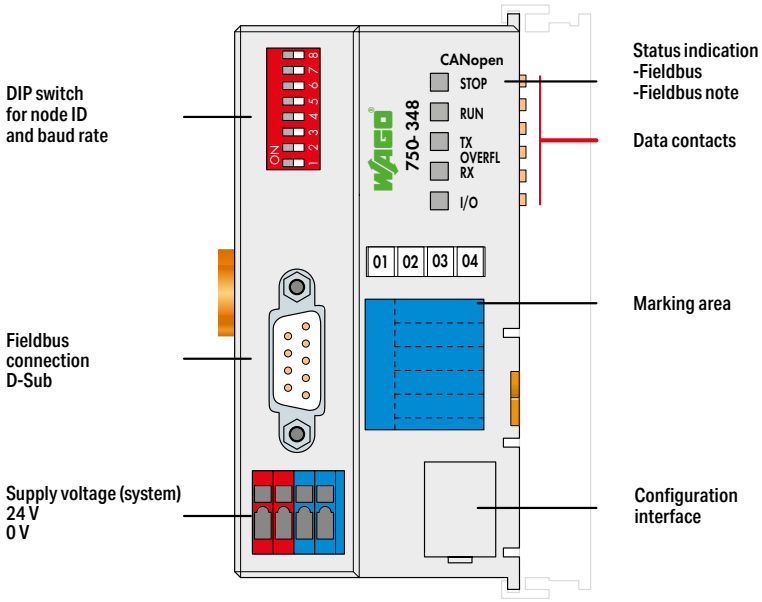



| Version | Default |
|---|---|
| **Item No.** | **750-347** |
| **Order Text** | **FC CANopen; MCS; ECO** |

| Technical Data | |
|---|---|
| Communication | CANopen |
| Connection technology: communication/fieldbus | CANopen: 1 x Male connector; 5-pole |
| Number of fieldbus nodes on master (max.) | 110 |
| Bus segment length (max.) | 1000 m |
| Baud rate | 10 kBd … 1 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 3 x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 32 bytes/32 bytes |
| Number of PDOs | 5 Tx / 5 Rx |
| Number of SDOs | 1 SDO server |
| Communication profile | DS-301 V4.1 |
| Device profile | DS-401 V2.0; Configurable response in the event of an error |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 260 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-347 |

# Fieldbus coupler ▸ CANopen; D-Sub; ECO

750-348

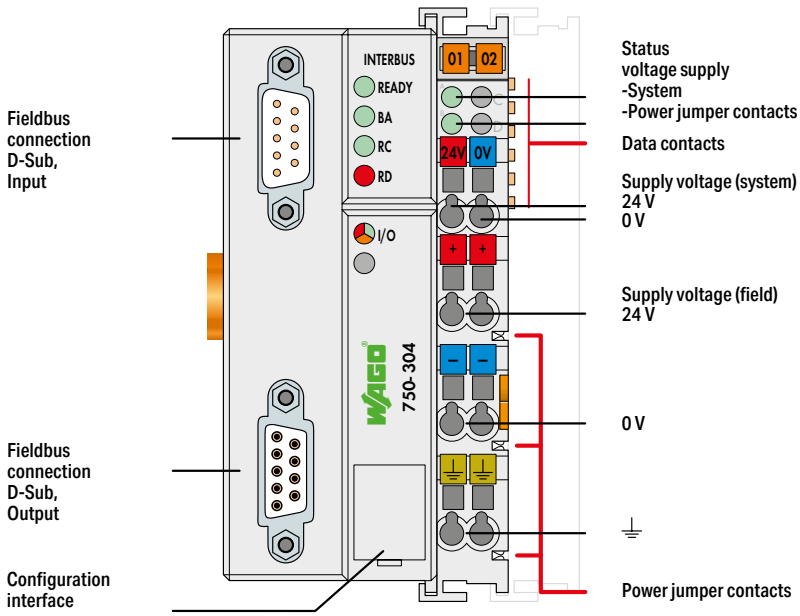



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-348** |
| **Order Text** | **FC CANopen; DSub; ECO** |

| Technical Data | |
|---|---|
| Communication | CANopen |
| Connection technology: communication/fieldbus | CANopen: 1 x D-sub 9 plug |
| Number of fieldbus nodes on master (max.) | 110 |
| Bus segment length (max.) | 1000 m |
| Baud rate | 10 kBd … 1 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 3 x 0.25 mm² |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 32 bytes/32 bytes |
| Number of PDOs | 5 Tx / 5 Rx |
| Number of SDOs | 1 SDO server |
| Communication profile | DS-301 V4.1 |
| Device profile | DS-401 V2.0; Configurable response in the event of an error |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 260 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-348 |

# Fieldbus coupler ▶ INTERBUS

750-304

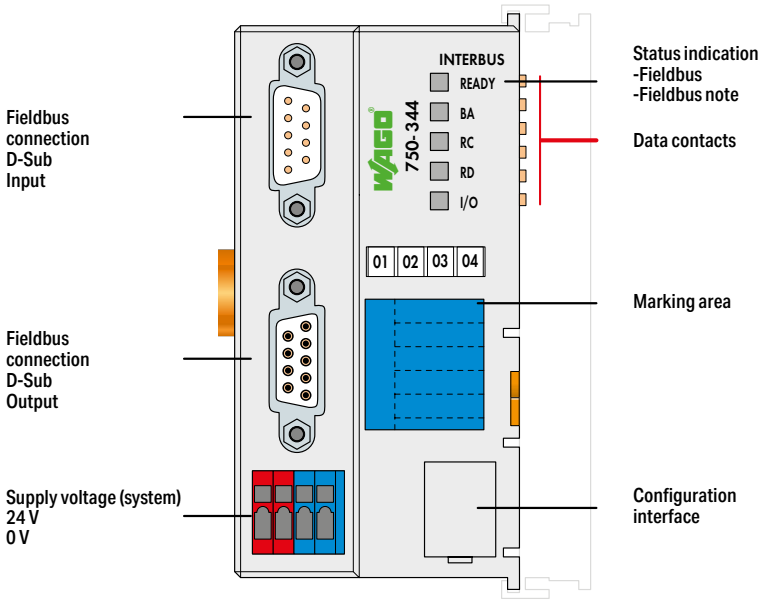



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-304** |
| **Order Text** | **FC INTERBUS** |

| Technical Data | |
|---|---|
| Communication | INTERBUS |
| Connection technology: communication/fieldbus | INTERBUS: 1 x D-sub 9 plug/socket |
| Number of fieldbus nodes on master (max.) | 256 |
| Number of I/O points | 4096 |
| Bus segment length (max.) | 400 m |
| Baud rate | 500 kBd |
| Transmission medium (communication/fieldbus) | Certified Cu cable |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 64 bytes/64 bytes |
| Supply voltage (system) | 24 VDC (-15 … +20 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-15 … +20 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 300 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-304 |

# Fieldbus coupler ▶ INTERBUS; ECO

750-344

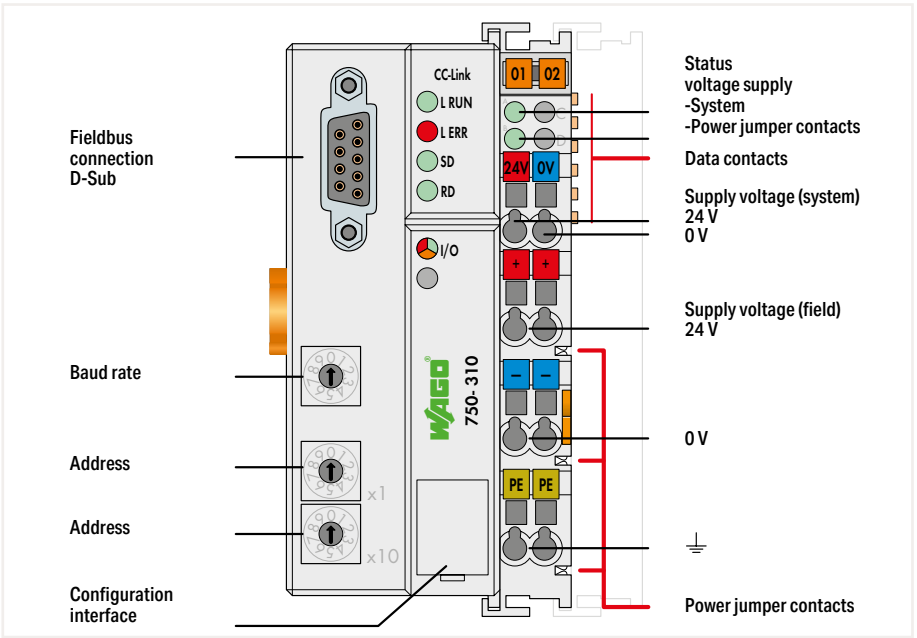



| | |
|---|---|
| Version | **Default** |
| **Item No.** | **750-344** |
| **Order Text** | **FC INTERBUS; 500kbit/s; ECO** |

| Technical Data | |
|---|---|
| Communication | INTERBUS |
| Connection technology: communication/fieldbus | INTERBUS: 1 x D-sub 9 plug/socket |
| Number of fieldbus nodes on master (max.) | 256 |
| Number of I/O points | 4096 |
| Bus segment length (max.) | 400 m |
| Baud rate | 500 kBd |
| Transmission medium (communication/fieldbus) | Certified Cu cable |
| Number of modules per node (max.) | 64 |
| Input and output (fieldbus) process image (max.) | 20 bytes/20 bytes |
| Supply voltage (system) | 24 VDC (-15 … +20 %); via pluggable connector |
| Input current (typ.) at nominal load (24 V) | 260 mA |
| Power consumption (5 V system supply) | 350 mA |
| Total current (system supply) | 650 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (49.5 x 96.8 x 71.9) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-344 |

# Fieldbus coupler ▸ CC-Link; D-Sub

750-310



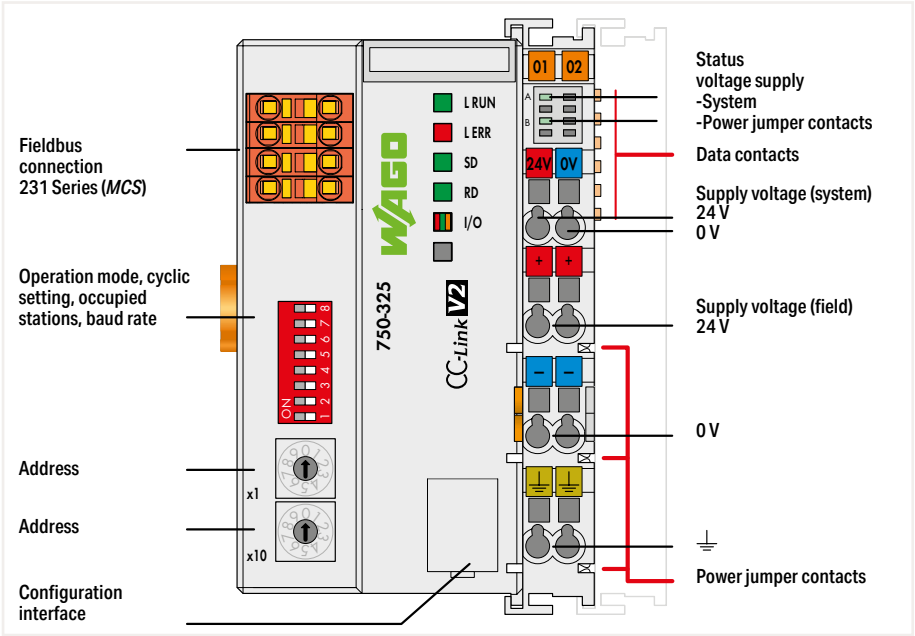

7.1

| Version | Default |
|---|---|
| **Item No.** | **750-310** |
| **Order Text** | **FC CC-Link** |

| Technical Data | |
|---|---|
| Communication | CC-Link |
| Connection technology: communication/fieldbus | CC-Link: 1 x D-sub 9 socket |
| Number of fieldbus nodes on master (max.) | 64 |
| Baud rate | 156 kBd … 10 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 2 / 3 x 0.5 mm² |
| Number of modules per node (max.) | 64 |
| Station addresses | 4/1 … 4 |
| Input and output (fieldbus) process image (max.) | 48 bytes/48 bytes |
| Input process image note | 14-byte digital, 2-byte system, 32-byte analog |
| Output process image note | 14-byte digital, 2-byte system, 32-byte analog |
| Supply voltage (system) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 500 mA |
| Power consumption (5 V system supply) | 300 mA |
| Total current (system supply) | 1700 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (50.5 x 100 x 71.1) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; Ex ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-310 |

# Fieldbus coupler ▸ CC-Link; MCS

750-325



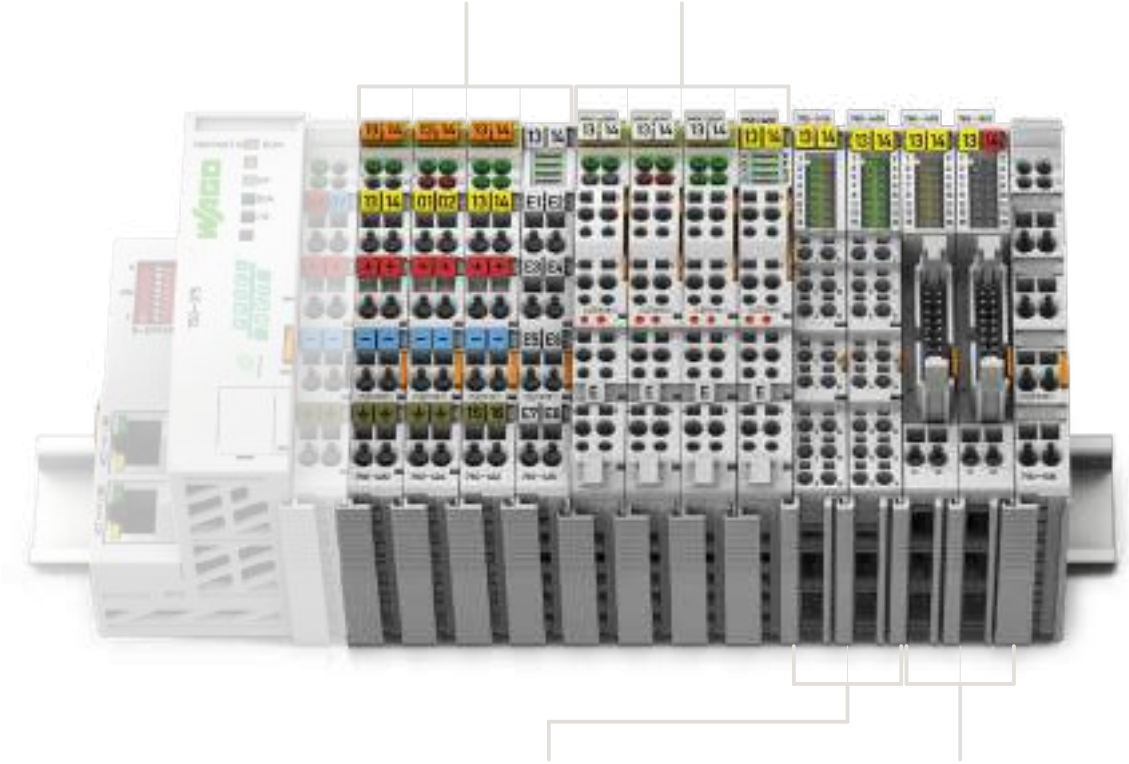

| Version | Default |
|---|---|
| **Item No.** | **750-325** |
| **Order Text** | **FC CC-Link** |

| Technical Data | |
|---|---|
| Communication | CC-Link |
| Connection technology: communication/fieldbus | CC-Link: 1 x Male connector; 4-pole |
| Device-specific | Operating mode: CC-Link V2.0 (default setting)/V1.1; Advanced cycle setting: 1, 2, 4 (default setting), 8 cycles |
| Number of fieldbus nodes on master (max.) | 64 |
| Baud rate | 156 kBd … 10 MBd |
| Transmission medium (communication/fieldbus) | Shielded Cu cable 2 / 3 x 0.5 mm² |
| Number of modules per node (max.) | 64 |
| Station addresses | 1 … 4 / 4 (default setting) |
| Input process image note | 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 16 bits per 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 process image note | 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 16 bits per 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 pluggable connector (CAGE CLAMP® connection) |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts |
| Input current (typ.) at nominal load (24 V) | 600 mA |
| Power consumption (5 V system supply) | 200 mA |
| Total current (system supply) | 1800 mA |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (61.5 x 100 x 71.9) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-325 |

# Digital Input Modules

| Housing Design (750 Series) | |
|---|---|
| Dimensions W x H x D | Housing with 4 LEDs: 12 x 100 x 69.8 mm<br>Housing with 8 LEDs: 12 x 100 x 67.8 mm |
| Depth from upper edge of DIN-rail | Housing with 4 LEDs: 62.6 mm<br>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 100 x 69.8 mm<br>Housing with 8 LEDs: 12 x 100 x 69 mm |
| Depth from upper edge of DIN-rail | Housing with 4 LEDs: 62.6 mm<br>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 100 x 69 mm |
| Depth from upper edge of DIN-rail | 61.8 mm |
| Connection technology | Push-in CAGE CLAMP® |
| Conductor cross-section | Solid:<br>0.08 … 1.5 mm² / 28 … 16 AWG<br>Fine-stranded:<br>0.25 … 1.5 mm² / 22 … 16 AWG |
| Strip length | 8 … 9 mm / 0.33 inch |

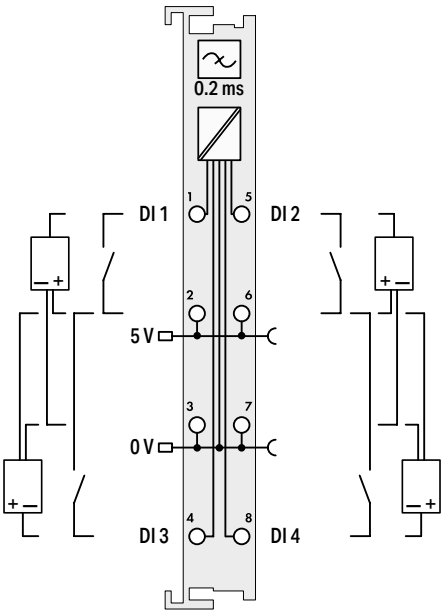
| Housing Design (750 Series), with Ribbon Cable Connection | |
|---|---|
| Dimensions W x H x D | 12 x 100 x 74.1 mm |
| Depth from upper edge of DIN-rail | 66.9 mm |
| Connection technology | 20-pole male connector<br>+ 2 x CAGE CLAMP® |
| Conductor cross-section | 0.08 … 2.5 mm² / 28 … 14 AWG |
| Strip length | 8 … 9 mm / 0.33 inch |


I/O System –
750 XTR Series

# I/O System – 750 and 753 Series, Digital Input Modules
## Contents

# Digital input ▸ 5 VDC ▸ High-side switching ▸ 0.2 ms

750-414




| | |
|---|---|
| Item Description | **4-Channel Digital Input; 5 VDC; 0.2 ms** |
| Version | **Default** |
| **Item No.** | **750-414** |
| **Order Text** | **4DI; 5 VDC; 0.2ms** |

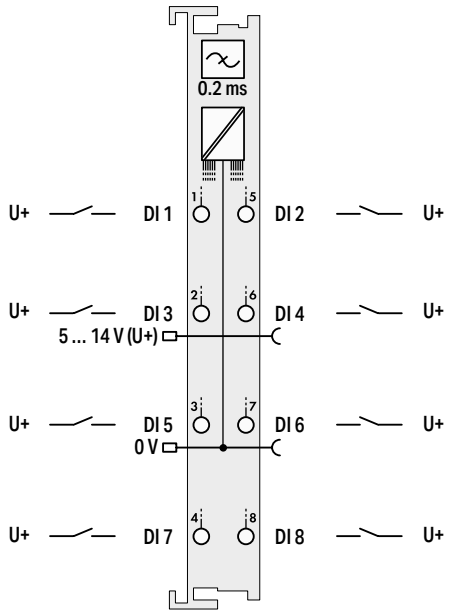
7.2

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 4 |
| Signal type | Voltage |
| Voltage signal type | 5 VDC |
| Voltage range for signal (0) | 0 … 0.8 VDC |
| Voltage range for signal (1) | 2.4 … 5 VDC |
| Sensor connection | 2 x (2-wire, 3-wire); A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors. |
| Input characteristic | High-side switching |
| Input filter (digital) | 0.2 ms |
| Input current per channel for signal (1) (typ.) | 0.05 mA |
| Supply voltage (sensor) | 5 VDC |
| Supply voltage (field) | 5 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Power consumption (5 V system supply) | 5 mA |
| Input data width (internal) (max.) | 4 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69.8) mm |
| Approvals | CE; KC; cULus OrdLoc/HazLoc |
| Data sheet and further information, see: | wago.com/750-414 |

Notice: An additional supply module must be added for 5 VDC supply!

# Digital input ▸ 5 VDC ▸ High-side switching ▸ 0.2 ms

753-434




| | |
|---|---|
| Item Description | **8-Channel Digital Input; 5/12 VDC; 0.2 ms** |
| Version | **Pluggable (delivery without connector)** |
| **Item No.** | **753-434** |
| **Order Text** | **8DI; 5/12 VDC; 0.2ms** |

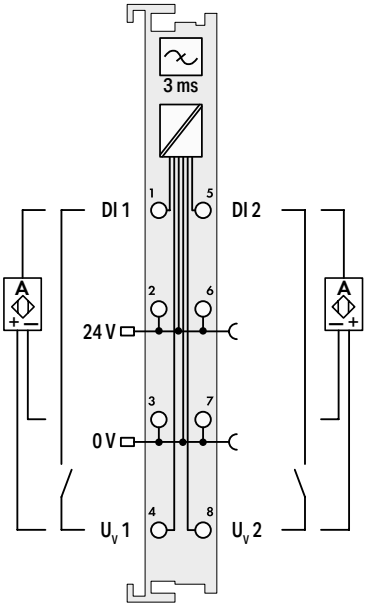
| Technical Data | |
|---|---|
| Wiring interface | Pluggable |
| Number of digital inputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 5 VDC; 12 VDC |
| Voltage range for signal (0) | −3 ... 0.2 x $U_V$ DC |
| Voltage range for signal (1) | 0.5 x $U_V$ ... 1.1 x $U_V$ DC |
| Sensor connection | 8 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 0.2 ms |
| Input current at specific input voltage | 0.06 mA at 12 V |
| Supply voltage (field) | 14 VDC; via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Power consumption (5 V system supply) | 4 mA |
| Input data width (internal) (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/753-434 |

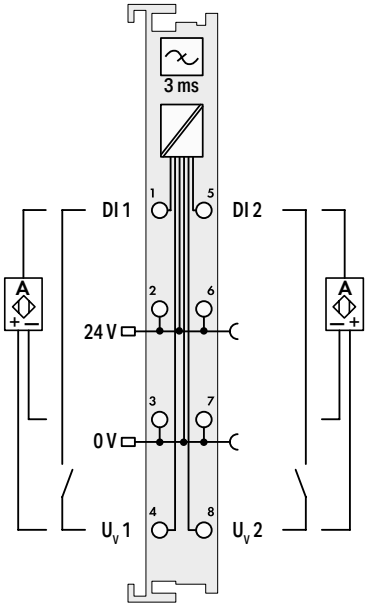
| **Accessories** | **Item No.** |
|---|---|
| Plug | 753-110 |

Notice: An additional supply module must be added for 5-14 VDC supply!

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-418



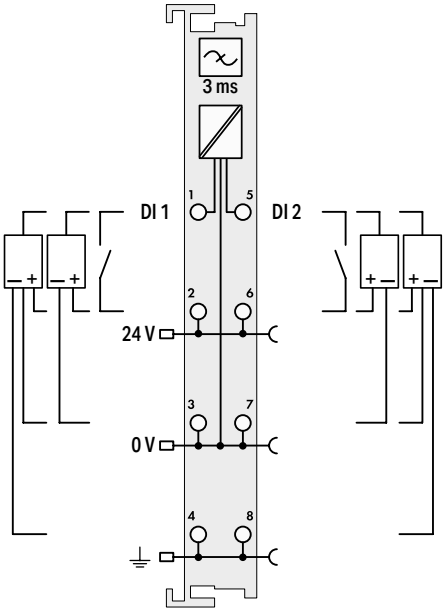




7.2

| Item Description | 2-Channel Digital Input; 24 VDC; 3 ms; Acknowledgement; Diagnostics | | 2-Channel Digital Input; 24 VDC; 3 ms; Diagnostics | |
|---|---|---|---|---|
| Version | Default | Pluggable (delivery without connector) | Default | Pluggable (delivery without connector) |
| **Item No.** | **750-418** | **753-418** | **750-421** | **753-421** |
| **Order Text** | **2DI; 24 VDC; 3ms; Acknol; Diagn** | **2DI; 24 VDC; 3ms; Acknol; Diagn** | **2DI; 24 VDC; 3ms; Diagn** | **2DI; 24 VDC; 3ms; Diagn** |
| Technical Data | | | | |
| Wiring interface | Fixed | Pluggable | Fixed | Pluggable |
| Number of digital inputs | 2 | | 2 | |
| Signal type | Voltage | | Voltage | |
| Voltage 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 x (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 | | 3.7 mA | |
| Output current per channel | 0.5 A | | 0.5 A | |
| Diagnostics | Short circuit, active acknowledgment after error rectified | | Short circuit, automatic acknowledgment after error rectified | |
| Supply voltage (sensor) | 24 VDC; Short-circuit-protected, isolated channels A short circuit to ground is indicated as an error/fieldbus failure and a message is sent to the supervisory control. The error is canceled via the controller after it has been rectified (active acknowledgment by a user). | | 24 VDC; Short-circuit-protected, isolated channels A short circuit to ground is indicated as an error/fieldbus failure and a message is sent to the supervisory control. The error is canceled automatically after it has been rectified. | |
| 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) | |
| Power consumption (5 V system supply) | 12 mA | | 12 mA | |
| Input data width (internal) (max.) | 4 bits | | 4 bits | |
| Output (internal) data width (max.) | 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 100 x 69.8) mm | | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-418 | wago.com/753-418 | wago.com/750-421 | wago.com/753-421 |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** | **Item No.** |
| Plug | | 753-110 | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-400

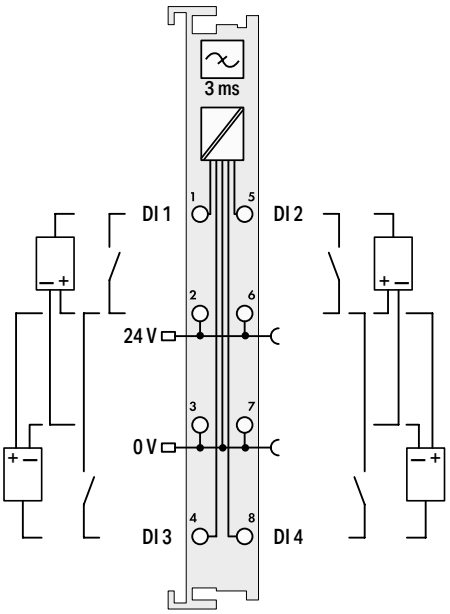



| Item Description | 2-Channel Digital Input; 24 VDC; 3 ms | | |
|---|---|---|---|
| Version | Default | Ext. Temperature | Pluggable (delivery without connector) |
| **Item No.** | **750-400** | **750-400/025-000** | **753-400** |
| **Order Text** | **2DI; 24 VDC; 3ms** | **2DI; 24 VDC; 3ms; T** | **2DI; 24 VDC; 3ms** |

| Technical Data | | | |
|---|---|---|---|
| Wiring interface | Fixed | | Pluggable |
| Number of digital inputs | 2 | | |
| Signal type | Voltage | | |
| Voltage 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, 4-wire) | | |
| Input characteristic | High-side switching | | |
| Input filter (digital) | 3 ms | | |
| Input current per channel for signal (1) (typ.) | 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) | | |
| Power consumption (5 V system supply) | 3.7 mA | | |
| Input data width (internal) (max.) | 2 bits | | |
| 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 100 x 69.8) mm | | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-400 | | wago.com/753-400 |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Plug | | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-402



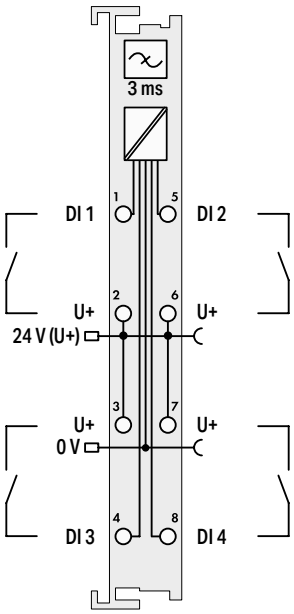

7.2

| Item Description | 4-Channel Digital Input; 24 VDC; 3 ms | | |
|---|---|---|---|
| Version | Default | Ext. Temperature | Pluggable (delivery without connector) |
| **Item No.** | **750-402** | **750-402/025-000** | **753-402** |
| **Order Text** | **4DI; 24 VDC; 3ms** | **4DI; 24 VDC; 3ms; T** | **4DI; 24 VDC; 3ms** |

| Technical Data | | | |
|---|---|---|---|
| Wiring interface | Fixed | | Pluggable |
| Number of digital inputs | 4 | | |
| Signal type | Voltage | | |
| Voltage 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); A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors. | | |
| Input characteristic | High-side switching | | |
| Input filter (digital) | 3 ms | | |
| Input current per channel for signal (1) (typ.) | 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) | | |
| Power consumption (5 V system supply) | 7.5 mA | | |
| Input data width (internal) (max.) | 4 bits | | |
| 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 100 x 69.8) mm | | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-402 | | wago.com/753-402 |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Plug | | | 753-110 |

# Digital input ▶ 24 VDC ▶ High-side switching ▶ 3 ms

750-432

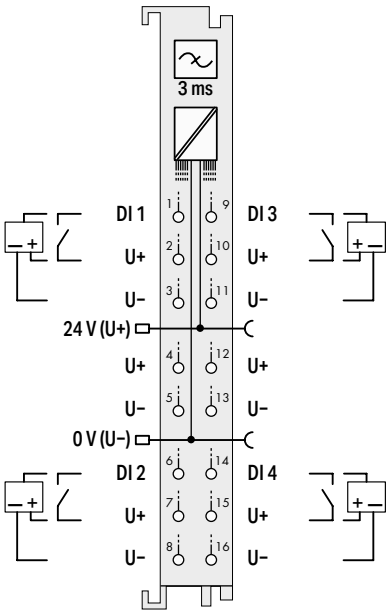



| | | |
|---|---|---|
| Item Description | 4-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection | |
| Version | Default | Pluggable (delivery without connector) |
| **Item No.** | 750-432 | 753-432 |
| **Order Text** | 4DI; 24 VDC; 3ms; 2-wire | 4DI; 24 VDC; 3ms; 2-wire |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 4 | |
| Signal type | Voltage | |
| Voltage signal type | 24 VDC | |
| Voltage range for signal (0) | −3 … +5 VDC | |
| Voltage range for signal (1) | 15 … 30 VDC | |
| Sensor connection | 4 x (2-wire) | |
| Input characteristic | High-side switching | |
| Input filter (digital) | 3 ms | |
| Input current per channel for signal (1) (typ.) | 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) | |
| Power consumption (5 V system supply) | 5.5 mA | |
| Input data width (internal) (max.) | 4 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-432 | wago.com/753-432 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1420



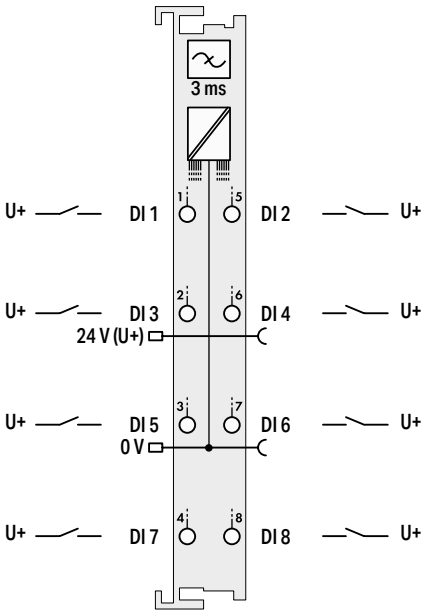

| | |
|---|---|
| Item Description | **4-Channel Digital Input; 24 VDC; 3 ms; 3-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1420** |
| **Order Text** | **4DI; 24 VDC; 3ms; 3-wire** |

7.2

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 4 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 11 … 30 VDC |
| Input characteristic | Type 3 |
| Sensor connection | 4 x (3-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 4.5 mA |
| Input current per channel for signal (0) (typ.) | 1.6 mA |
| Power consumption, field supply (module with no external load) | 2 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) |
| Power consumption (5 V system supply) | 4 mA |
| Input data width (internal) (max.) | 4 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1420 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-430

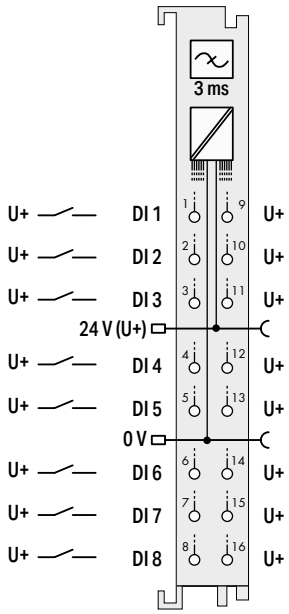



| Item Description | 8-Channel Digital Input; 24 VDC; 3 ms | | |
|---|---|---|---|
| Version | Default | Ext. Temperature | Pluggable (delivery without connector) |
| **Item No.** | **750-430** | **750-430/025-000** | **753-430** |
| **Order Text** | **8DI; 24 VDC; 3ms** | **8DI; 24 VDC; 3ms; T** | **8DI; 24 VDC; 3ms** |

| Technical Data | | | |
|---|---|---|---|
| Wiring interface | Fixed | | Pluggable |
| Number of digital inputs | 8 | | |
| Signal type | Voltage | | |
| Voltage signal type | 24 VDC | | |
| Voltage range for signal (0) | −3 … +5 VDC | | |
| Voltage range for signal (1) | 15 … 30 VDC | | |
| Sensor connection | 8 x (1-wire) | | |
| Input characteristic | High-side switching | | |
| Input filter (digital) | 3 ms | | |
| Input current per channel for signal (1) (typ.) | 2.8 mA | | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) | | |
| Power consumption (5 V system supply) | 17 mA | | |
| Input data width (internal) (max.) | 8 bits | | |
| 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 100 x 67.8) mm | | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-430 | | wago.com/753-430 |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Plug | | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1415



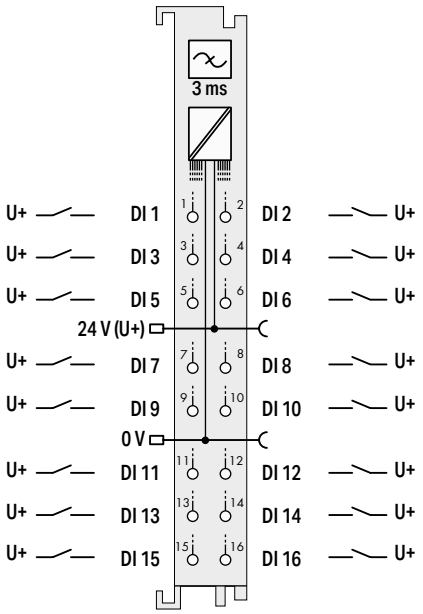

7.2

| | |
|---|---|
| Item Description | **8-Channel Digital Input; 24 VDC; 3 ms; 2-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1415** |
| **Order Text** | **8DI; 24 VDC; 3ms; 2-wire** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 11 … 30 VDC |
| Input characteristic | Type 3 |
| Sensor connection | 8 x (2-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 4.5 mA |
| Input current per channel for signal (0) (typ.) | 1.6 mA |
| Power consumption, field supply (module with no external load) | 2 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) |
| Power consumption (5 V system supply) | 6 mA |
| Input data width (internal) (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1415 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1405

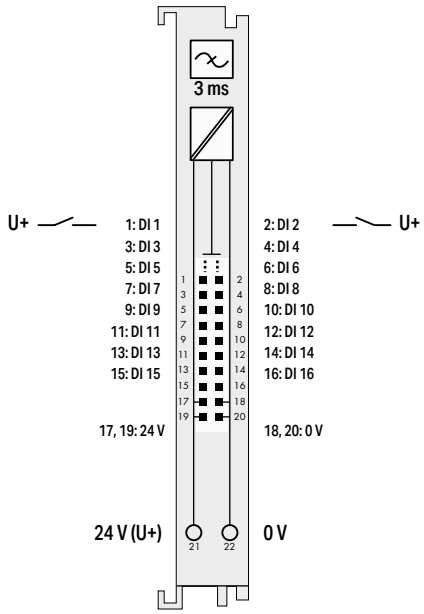



| | |
|---|---|
| Item Description | **16-Channel Digital Input; 24 VDC; 3 ms** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1405** |
| **Order Text** | **16DI; 24 VDC; 3ms** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 16 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 2.3 mA |
| Input current per channel for signal (0) (typ.) | 0.6 mA |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Power consumption (5 V system supply) | 25 mA |
| Input data width (internal) (max.) | 16 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1405 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1400



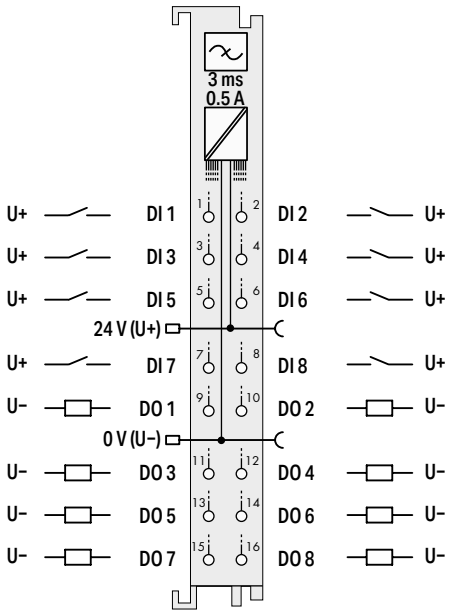

| | |
|---|---|
| Item Description | **16-Channel Digital Input; 24 VDC; 3 ms; Ribbon cable** |
| Version | **Standard with ribbon cable connector** |
| **Item No.** | **750-1400** |
| **Order Text** | **16DI; 24 VDC; 3ms; Ribbon Cable** |

7.2

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 16 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 2.3 mA |
| Input current per channel for signal (0) (typ.) | 0.6 mA |
| Supply voltage (sensor) | 24 VDC |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Power consumption (5 V system supply) | 25 mA |
| Input data width (internal) (max.) | 16 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 74.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1400 |

# Digital input; Digital output ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1506

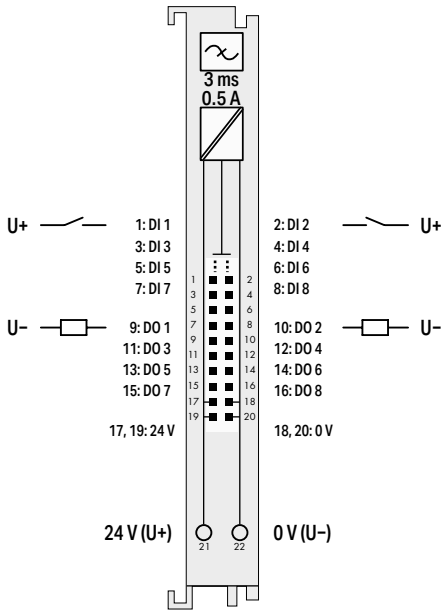



| | |
|---|---|
| Item Description | **8-Channel Digital Input/Output; 24 VDC; 0.5 A** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1506** |
| **Order Text** | **8DIO; 24 VDC; 0.5A** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 8 |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Sensor connection | 8 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 2.4 mA |
| Number of digital outputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Output characteristic | High-side switching |
| Output current per channel | 0.5 A |
| Output current | Short-circuit-protected |
| Load type | Resistive, inductive, lamp load |
| Actuator connection | 8 x (1-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) |
| Power consumption, field supply (module with no external load) | 16 mA |
| Power consumption (5 V system supply) | 30 mA |
| Input data width (internal) (max.) | 8 bits |
| Output (internal) data width (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1506 |

# Digital input; Digital output ▸ 24 VDC ▸ High-side switching ▸ 3 ms

750-1502



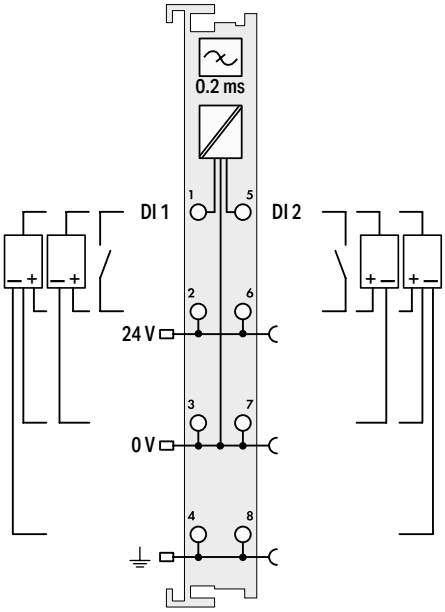

| | |
|---|---|
| Item Description | **8-Channel Digital Input/Output; 24 VDC; 0.5 A; Ribbon cable** |
| Version | **Standard with ribbon cable connector** |
| **Item No.** | **750-1502** |
| **Order Text** | **8DIO; 24 VDC; 0.5A; Ribbon Cable** |

7.2

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 8 |
| Voltage range for signal (0) | –3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Sensor connection | 8 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | 2.4 mA |
| Number of digital outputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Output characteristic | High-side switching |
| Output current per channel | 0.5 A |
| Output current | Short-circuit-protected |
| Load type | Resistive, inductive, lamp load |
| Actuator connection | 8 x (1-wire) |
| Switching frequency (max.) | 1 kHz |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Power consumption, field supply (module with no external load) | 16 mA |
| Power consumption (5 V system supply) | 30 mA |
| Input data width (internal) (max.) | 8 bits |
| Output (internal) data width (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 74.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1502 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 0.2 ms

750-401

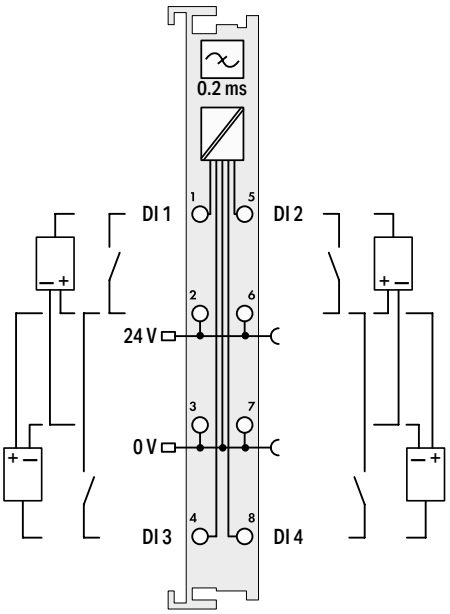



| | | |
|---|---|---|
| Item Description | 2-Channel Digital Input; 24 VDC; 0.2 ms | |
| Version | Default | Pluggable (delivery without connector) |
| **Item No.** | 750-401 | 753-401 |
| **Order Text** | 2DI; 24 VDC; 0.2ms | 2DI; 24 VDC; 0.2ms |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 2 | |
| Signal type | Voltage | |
| Voltage 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, 4-wire) | |
| Input characteristic | High-side switching | |
| Input filter (digital) | 0.2 ms | |
| Input current per channel for signal (1) (typ.) | 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) | |
| Power consumption (5 V system supply) | 3.7 mA | |
| Input data width (internal) (max.) | 2 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-401 | wago.com/753-401 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 0.2 ms

750-403



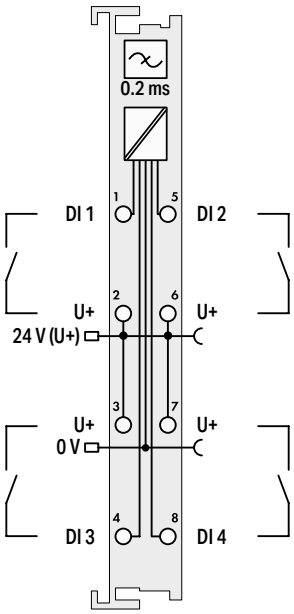

7.2

| | | |
|---|---|---|
| Item Description | 4-Channel Digital Input; 24 VDC; 0.2 ms | |
| Version | Default | Pluggable (delivery without connector) |
| Item No. | 750-403 | 753-403 |
| Order Text | 4DI; 24 VDC; 0.2ms | 4DI; 24 VDC; 0.2ms |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 4 | |
| Signal type | Voltage | |
| Voltage 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); A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors. | |
| Input characteristic | High-side switching | |
| Input filter (digital) | 0.2 ms | |
| Input current per channel for signal (1) (typ.) | 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) | |
| Power consumption (5 V system supply) | 7.5 mA | |
| Input data width (internal) (max.) | 4 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-403 | wago.com/753-403 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 0.2 ms

750-433

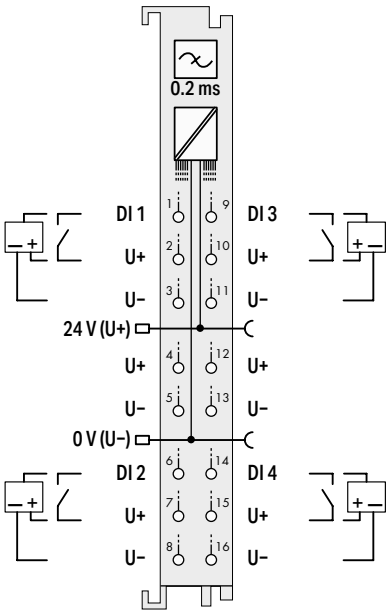



| | | |
|---|---|---|
| Item Description | 4-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection | |
| Version | Default | Pluggable (delivery without connector) |
| **Item No.** | 750-433 | 753-433 |
| **Order Text** | 4DI; 24 VDC; 0.2ms; 2-wire | 4DI; 24 VDC; 0.2ms; 2-wire |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 4 | |
| Signal type | Voltage | |
| Voltage signal type | 24 VDC | |
| Voltage range for signal (0) | −3 … +5 VDC | |
| Voltage range for signal (1) | 15 … 30 VDC | |
| Sensor connection | 4 x (2-wire) | |
| Input characteristic | High-side switching | |
| Input filter (digital) | 0.2 ms | |
| Input current per channel for signal (1) (typ.) | 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) | |
| Power consumption (5 V system supply) | 5.5 mA | |
| Input data width (internal) (max.) | 4 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-433 | wago.com/753-433 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 0.2 ms

750-1421




| | |
|---|---|
| Item Description | **4-Channel Digital Input; 24 VDC; 0.2 ms; 3-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1421** |
| **Order Text** | **4DI; 24 VDC; 0.2ms; 3-wire** |

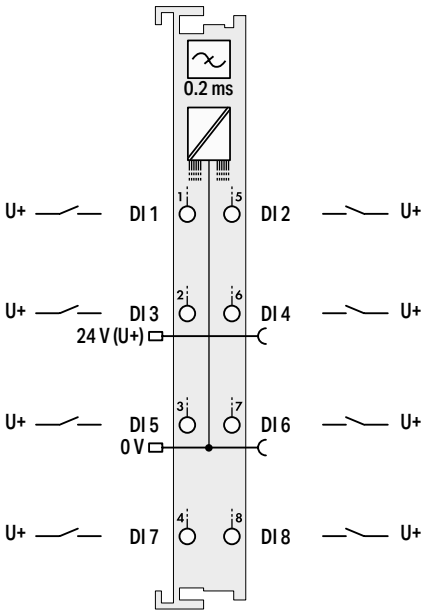
7.2

Technical Data

| | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 4 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 11 … 30 VDC |
| Input characteristic | Type 3 |
| Sensor connection | 4 x (3-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 0.2 ms |
| Input current per channel for signal (1) (typ.) | 4.5 mA |
| Input current per channel for signal (0) (typ.) | 1.6 mA |
| Power consumption, field supply (module with no external load) | 2 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) |
| Power consumption (5 V system supply) | 4 mA |
| Input data width (internal) (max.) | 4 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1421 |

# Digital input ▶ 24 VDC ▶ High-side switching ▶ 0.2 ms

750-431

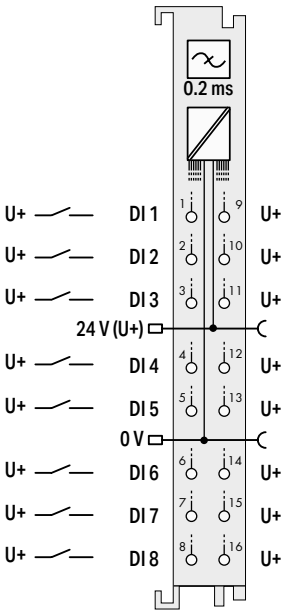



| | | |
|---|---|---|
| Item Description | 8-Channel Digital Input; 24 VDC; 0.2 ms | |
| Version | Default | Pluggable (delivery without connector) |
| **Item No.** | **750-431** | **753-431** |
| **Order Text** | **8DI; 24 VDC; 0.2ms** | **8DI; 24 VDC; 0.2ms** |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 8 | |
| Signal type | Voltage | |
| Voltage signal type | 24 VDC | |
| Voltage range for signal (0) | −3 … +5 VDC | |
| Voltage range for signal (1) | 15 … 30 VDC | |
| Sensor connection | 8 x (1-wire) | |
| Input characteristic | High-side switching | |
| Input filter (digital) | 0.2 ms | |
| Input current per channel for signal (1) (typ.) | 2.8 mA | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) | |
| Power consumption (5 V system supply) | 17 mA | |
| Input data width (internal) (max.) | 8 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 67.8) mm | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-431 | wago.com/753-431 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ High-side switching ▸ 0.2 ms

750-1416



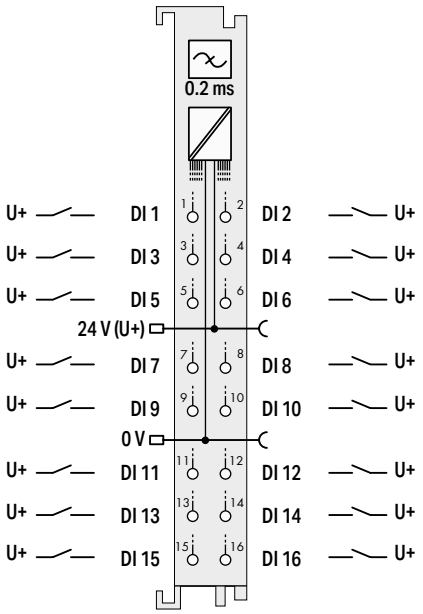

7.2

| | |
|---|---|
| Item Description | **8-Channel Digital Input; 24 VDC; 0.2 ms; 2-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1416** |
| **Order Text** | **8DI; 24 VDC; 0.2ms; 2-wire** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 11 … 30 VDC |
| Input characteristic | Type 3 |
| Sensor connection | 8 x (2-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 0.2 ms |
| Input current per channel for signal (1) (typ.) | 4.5 mA |
| Input current per channel for signal (0) (typ.) | 1.6 mA |
| Power consumption, field supply (module with no external load) | 2 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) |
| Power consumption (5 V system supply) | 6 mA |
| Input data width (internal) (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1416 |

# Digital input ▶ 24 VDC ▶ High-side switching ▶ 0.2 ms

750-1406

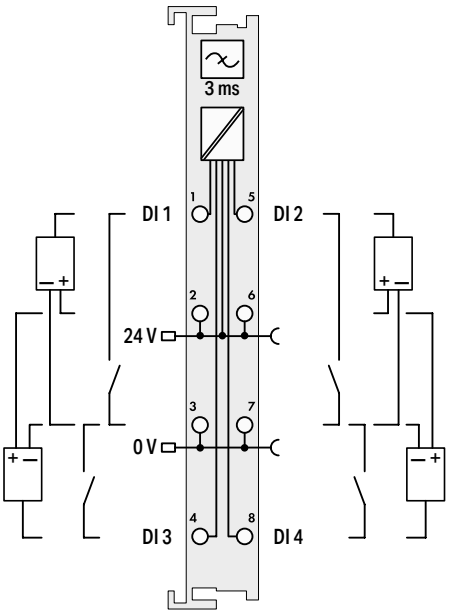



| | |
|---|---|
| Item Description | **16-Channel Digital Input; 24 VDC; 0.2 ms** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1406** |
| **Order Text** | **16DI; 24 VDC; 0.2ms** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 16 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | High-side switching |
| Input filter (digital) | 0.2 ms |
| Input current per channel for signal (1) (typ.) | 2.3 mA |
| Input current per channel for signal (0) (typ.) | 0.6 mA |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Power consumption (5 V system supply) | 25 mA |
| Input data width (internal) (max.) | 16 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 … 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1406 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-408



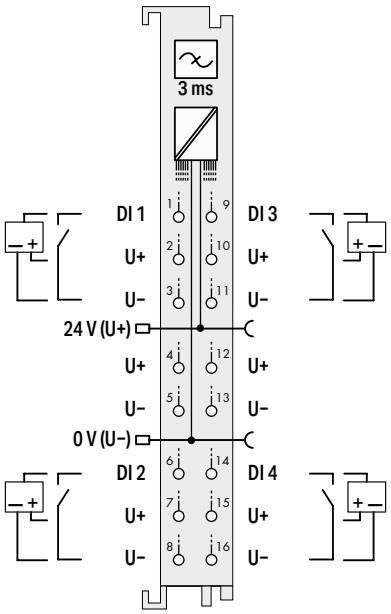

7.2

| Item Description | 4-Channel Digital Input; 24 VDC; 3 ms; Low-side switching | | |
|---|---|---|---|
| Version | Default | Ext. Temperature | Pluggable (delivery without connector) |
| **Item No.** | **750-408** | **750-408/025-000** | **753-408** |
| **Order Text** | **4DI; 24 VDC; 3ms; LSS** | **4DI; 24 VDC; 3ms; LSS; T** | **4DI; 24 VDC; 3ms; LSS** |

| Technical Data | | | |
|---|---|---|---|
| Wiring interface | Fixed | | Pluggable |
| Number of digital inputs | 4 | | |
| Signal type | Voltage | | |
| Voltage signal type | 24 VDC | | |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC | | |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) | | |
| Sensor connection | 2 x (2-wire, 3-wire); A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors. | | |
| Input characteristic | Low-side switching | | |
| Input filter (digital) | 3 ms | | |
| Input current per channel for signal (0) (typ.) | 7 mA | | |
| 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) | | |
| Power consumption (5 V system supply) | 5 mA | | |
| Input data width (internal) (max.) | 4 bits | | |
| 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 100 x 69.8) mm | | |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx | | |
| Data sheet and further information, see: | wago.com/750-408 | | wago.com/753-408 |
| **Accessories** | **Item No.** | **Item No.** | **Item No.** |
| Plug | | | 753-110 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-1422

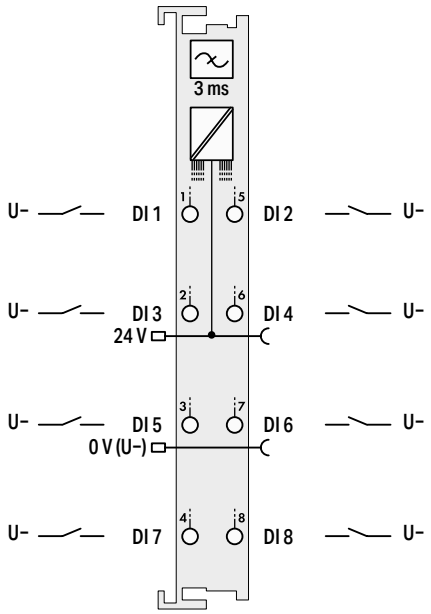



| | |
|---|---|
| Item Description | **4-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; 3-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1422** |
| **Order Text** | **4DI; 24 VDC; 3ms; LSS; 3-wire** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 4 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) |
| Sensor connection | 4 x (3-wire) |
| Input characteristic | Low-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | -0.6 mA |
| Input current per channel for signal (0) (typ.) | -2.5 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) |
| Power consumption (5 V system supply) | 7 mA |
| Input data width (internal) (max.) | 4 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1422 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-436



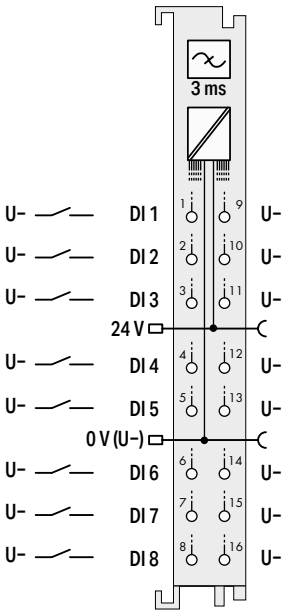

7.2

| Item Description | 8-Channel Digital Input; 24 VDC; 3 ms; Low-side switching | |
|---|---|---|
| Version | Default | Pluggable (delivery without connector) |
| Item No. | 750-436 | 753-436 |
| Order Text | 8DI; 24 VDC; 3ms; LSS | 8DI; 24 VDC; 3ms; LSS |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 8 | |
| Signal type | Voltage | |
| Voltage signal type | 24 VDC | |
| Voltage range for signal (0) | 15 … 30 VDC | |
| Voltage range for signal (1) | −3 … +5 VDC | |
| Sensor connection | 8 x (1-wire) | |
| Input characteristic | Low-side switching | |
| Input filter (digital) | 3 ms | |
| Input current per channel for signal (0) (typ.) | 2.8 mA | |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) | |
| Power consumption (5 V system supply) | 13 mA | |
| Input data width (internal) (max.) | 8 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 … 55 °C | |
| Dimensions W x H x D | (12 x 100 x 67.8) mm | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-436 | wago.com/753-436 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-1417

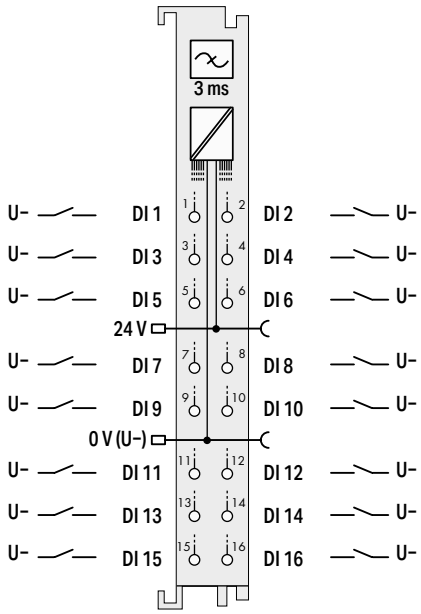



| | |
|---|---|
| Item Description | **8-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; 2-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1417** |
| **Order Text** | **8DI; 24 VDC; 3ms; LSS; 2-wire** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 8 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) |
| Sensor connection | 8 x (2-wire) |
| Input characteristic | Low-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | -0.6 mA |
| Input current per channel for signal (0) (typ.) | 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) |
| Power consumption (5 V system supply) | 12 mA |
| Input data width (internal) (max.) | 8 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1417 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-1407



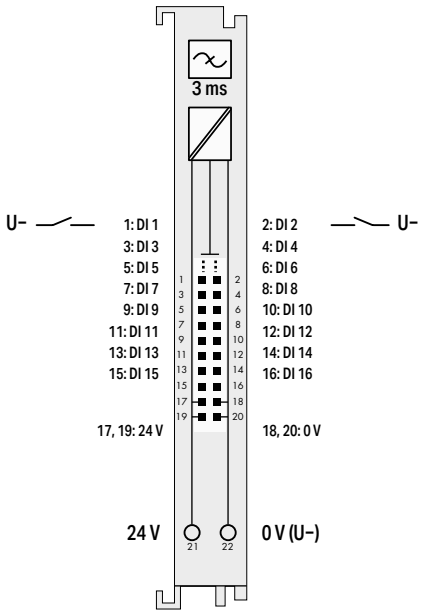

7.2

| | |
|---|---|
| Item Description | **16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1407** |
| **Order Text** | **16DI; 24 VDC; 3ms; LSS** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 16 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | Low-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | -0.6 mA |
| Input current per channel for signal (0) (typ.) | 2.3 mA |
| Supply voltage (field) | 24 VDC (-25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Power consumption (5 V system supply) | 25 mA |
| Input data width (internal) (max.) | 16 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; cULus OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1407 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 3 ms

750-1402

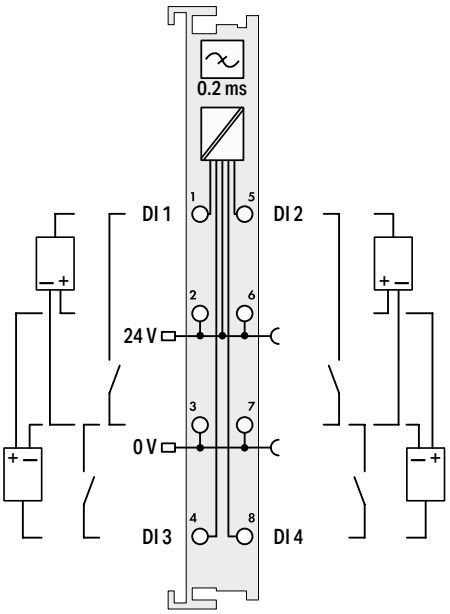



| | |
|---|---|
| Item Description | **16-Channel Digital Input; 24 VDC; 3 ms; Low-side switching; Ribbon cable** |
| Version | **Standard with ribbon cable connector** |
| **Item No.** | **750-1402** |
| **Order Text** | **16DI; 24 VDC; 3ms; LSS; Ribbon Cable** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 16 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | Low-side switching |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (1) (typ.) | -0.6 mA |
| Input current per channel for signal (0) (typ.) | 2.3 mA |
| Supply voltage (sensor) | 24 VDC |
| Supply voltage (field) | 24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Power consumption (5 V system supply) | 25 mA |
| Input data width (internal) (max.) | 16 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 74.1) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1402 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 0.2 ms

750-409



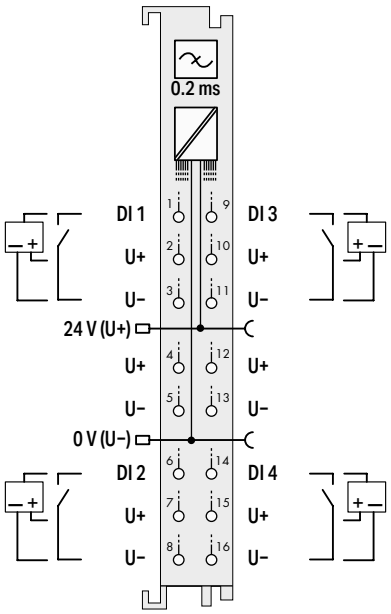

7.2

| | | |
|---|---|---|
| Item Description | 4-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching | |
| Version | **Default** | **Pluggable (delivery without connector)** |
| **Item No.** | **750-409** | **753-409** |
| **Order Text** | **4DI; 24 VDC; 0.2ms; LSS** | **4DI; 24 VDC; 0.2ms; LSS** |

| Technical Data | | |
|---|---|---|
| Wiring interface | Fixed | Pluggable |
| Number of digital inputs | 4 | |
| Signal type | Voltage | |
| Voltage signal type | 24 VDC | |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC | |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) | |
| Sensor connection | 2 x (2-wire, 3-wire); A suitable field side connection module (e.g., 750-614) must also be used to connect other sensors. | |
| Input characteristic | Low-side switching | |
| Input filter (digital) | 0.2 ms | |
| Input current per channel for signal (0) (typ.) | 7 mA | |
| 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) | |
| Power consumption (5 V system supply) | 5 mA | |
| Input data width (internal) (max.) | 4 bits | |
| Isolation | 500 V system/field | |
| Surrounding air temperature (operation) | 0 ... 55 °C | |
| Dimensions W x H x D | (12 x 100 x 69.8) mm | |
| Approvals | CE; KC; cULus OrdLoc/HazLoc; ATEX/IECEx | |
| Data sheet and further information, see: | wago.com/750-409 | wago.com/753-409 |
| **Accessories** | **Item No.** | **Item No.** |
| Plug | | 753-110 |

# Digital input ▸ 24 VDC ▸ Low-side switching ▸ 0.2 ms

750-1423




| | |
|---|---|
| Item Description | **4-Channel Digital Input; 24 VDC; 0.2 ms; Low-side switching; 3-wire connection** |
| Version | **Standard with 16 connectors** |
| **Item No.** | **750-1423** |
| **Order Text** | **4DI; 24 VDC; 0.2ms; LSS; 3-wire** |

| Technical Data | |
|---|---|
| Wiring interface | Fixed |
| Number of digital inputs | 4 |
| Signal type | Voltage |
| Voltage signal type | 24 VDC |
| Voltage range for signal (0) | ($U_V$ - 5 V) ... $U_V$ DC |
| Voltage range for signal (1) | −3 VDC ... ($U_V$ - 15 V) |
| Sensor connection | 4 x (3-wire) |
| Input characteristic | Low-side switching |
| Input filter (digital) | 0.2 ms |
| Input current per channel for signal (1) (typ.) | -0.6 mA |
| Input current per channel for signal (0) (typ.) | 2.5 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) |
| Power consumption (5 V system supply) | 7 mA |
| Input data width (internal) (max.) | 4 bits |
| Isolation | 500 V system/field |
| Surrounding air temperature (operation) | 0 ... 55 °C |
| Dimensions W x H x D | (12 x 100 x 69) mm |
| Approvals | CE; KC; Marine; OrdLoc/HazLoc; ATEX/IECEx |
| Data sheet and further information, see: | wago.com/750-1423 |