

# Automation Technology


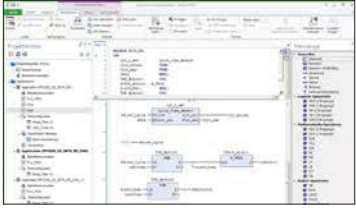








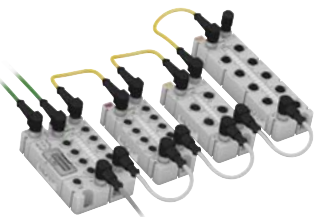





## Interface Electronic



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# WAGO Automation Technology

Software	<p><b>Engineering Software</b></p>  <ul style="list-style-type: none"> <li>• PC-based software</li> <li>• Customized tools for every automation task</li> </ul>	<p><b>Runtime Software</b></p>  <ul style="list-style-type: none"> <li>• Standard machine component</li> <li>• Comprehensive, fully tested software modules for controlling, operation and monitoring</li> </ul>	<p><b>Mobile Software (Apps)</b></p>  <ul style="list-style-type: none"> <li>• Machine operation and monitoring on tablet and smartphone</li> </ul>
Operation & Monitoring	<p><b>PERSPECTO® Control Panels</b></p> 	<p><b>e!DISPLAY 7300T Web Panels</b></p>  <ul style="list-style-type: none"> <li>• Web-based visualization</li> <li>• 8.9 cm ... 25.6 cm (4.3" ... 10.1")</li> </ul>	<p><b>PERSPECTO® Web Panels</b></p>  <ul style="list-style-type: none"> <li>• Web-based visualization</li> <li>• 8.9 cm ... 30.7 cm (3.5" ... 12")</li> </ul>
Controllers		<p><b>PFC200 / PFC200 XTR</b></p>  <ul style="list-style-type: none"> <li>• High processing speed</li> <li>• Wide variety of interfaces</li> <li>• Runtime system for CODESYS 2 and 3</li> <li>• Also programmable in high-level language based on Linux®</li> </ul>	<p><b>PFC100</b></p>  <ul style="list-style-type: none"> <li>• Extremely compact design</li> <li>• e!RUNTIME environment based on CODESYS 3</li> <li>• Real-time Linux® operating system</li> <li>• TSL 1.2, IPsec, OpenVPN and firewall</li> </ul>
I/O-Systems	<p><b>I/O-System – 750 and 753 Series</b></p>  <ul style="list-style-type: none"> <li>• Highly versatile</li> <li>• More than 500 modules available</li> <li>• Functional safety</li> <li>• Ex i</li> </ul>	<p><b>I/O-System – 750 XTR Series</b></p>  <p>For demanding applications where the following are critical:</p> <ul style="list-style-type: none"> <li>• Extreme temperature stability</li> <li>• Immunity to electromagnetic interference and impulse voltages</li> <li>• Vibration and shock resistance</li> </ul>	<p><b>I/O-System – SPEEDWAY 767 Series</b></p>  <ul style="list-style-type: none"> <li>• Uncompromising protection – even in the harshest environments outside the control cabinet</li> <li>• IP67 degree of protection</li> <li>• Fully encapsulated</li> </ul>
Infrastructure	<p><b>ETHERNET Switches</b></p>  <ul style="list-style-type: none"> <li>• Copper cables</li> <li>• Fiber optic cables</li> <li>• Ring redundancy</li> </ul>	<p><b>Radio Technology</b></p>  <ul style="list-style-type: none"> <li>• Bluetooth®</li> <li>• WLAN</li> <li>• EnOcean®</li> </ul>	<p><b>TO-PASS® Telecontrol Technology</b></p>  <ul style="list-style-type: none"> <li>• Telecontrol technology based on GSM/GPRS</li> <li>• See Full Line Catalog</li> </ul>

## Software Solutions (Applications)



- Reusable, customizable solutions

## Software

Engineering Software  
Runtime Software  
Mobile Software (Apps)  
Software Solutions (Applications)

## Operation & Monitoring

PERSPECTO® Web Panels  
PERSPECTO® Control Panels  
e!DISPLAY 7300T Web Panels

## 750 Series Controllers



- Decentralized intelligence based on fieldbus couplers
- Programmable to IEC 61131-3
- Modular WAGO-I/O-SYSTEM 750

## 750 XTR Controllers



For demanding applications where the following are critical:

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

## Controllers

PERSPECTO® Control Panels

PFC100/PFC200  
750 Series Controllers  
750 XTR Controllers

## I/O-Systems

750 and 753 Series  
Fieldbus Couplers  
I/O Modules  
750 XTR Series  
SPEEDWAY

## Sensor/Actuator Boxes, IP67



- Passive M8/M12 sensor/actuator boxes
- Machine-level signal connection in harsh environments

## Power Supplies Accessories



## Infrastructure

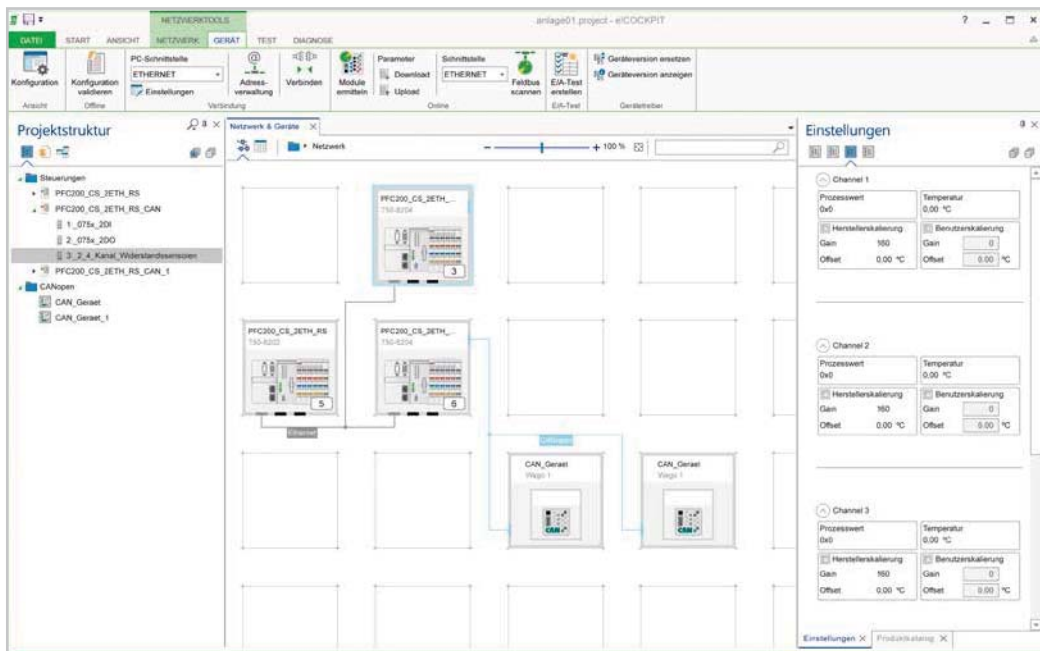
ETHERNET Switches  
Radio Technology  
TO-PASS® Telecontrol Technology  
Sensor/Actuator Boxes

## Accessories

Power Supplies  
Cables and Pluggable Connectors, IP67



# e!COCKPIT CODESYS 3-Based Integrated Engineering



e!COCKPIT automation software for faster machine and system startup: WAGO'S new engineering software shortens development time for automation projects while impressing with a modern and clearly laid out user interface. At the software's core is CODESYS 3 for simple and versatile creation of applications.

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

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

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

Description	Item No.	Pack. Unit
e!COCKPIT workstation license	2759-101/1110-2002	1
e!COCKPIT multi-user license, 10 ea.	2759-101/1110-2010	1
e!COCKPIT multi-user license, 15 ea.	2759-101/1110-2015	1
e!COCKPIT multi-user license, 20 ea.	2759-101/1110-2020	1
e!COCKPIT site license	2759-101/1110-3000	1
e!COCKPIT buy-out license	2759-101/1110-4000	1

Workstation license: Can be installed on up to two PCs (e.g., notebook & desktop)  
Multi-user license: Can be installed up to the number specified  
Site license: Unlimited installations at a company location  
Buy-out license: Unlimited installations within a company at every country's location. In addition, the software shall be used in the company's products that contain WAGO's automation components to form a functional unit.

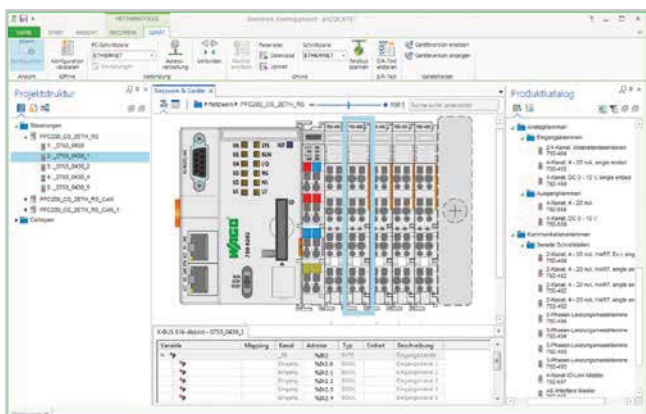
Accessories	Item No.	Pack. Unit
WAGO USB communication cable, 2.5 m long	750-923	1
WAGO USB communication cable, 5 m long	750-923/000-001	1

Technical Data	
Supported operating systems	Windows 7 (32- and 64-bit), Windows 8, Windows 8.1 (32- and 64-bit)
System requirements:	
Processor	Core2Duo
Memory	2 GB
Hard disk storage	1 GB
Graphics resolution	1,366 x 768 px
Supported devices	Controllers based on CODESYS 3, 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	IEC 61131-3: ST, LD, FBD, IL, FC, CFC
Import/export formats	CODESYS 3 project files (*.project)
Delivery type	Installation file (download)

Internet connection may be required for license activation.

# e!COCKPIT

## Features Overview



### Configuration and Parameterization

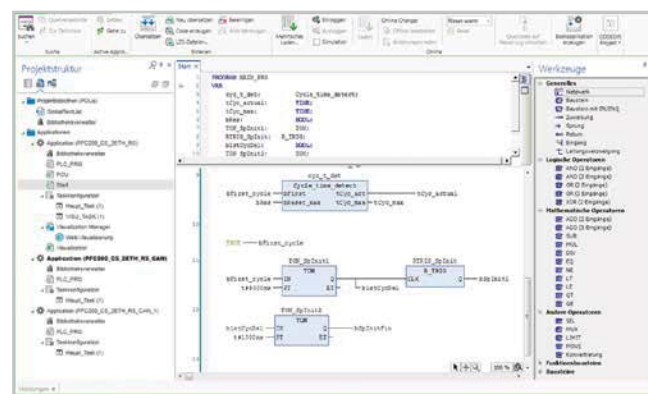
The integrated e!COCKPIT configurators provide modern operating tools and workspaces, such as:

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

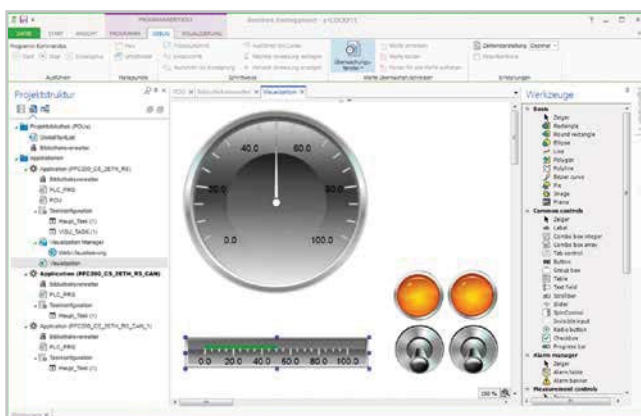
### Programming

e!COCKPIT offers multiple software development options:

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



6



### Visualization

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

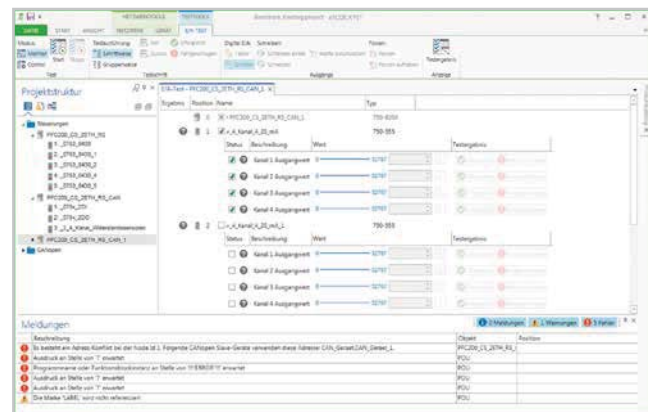
- Access to IEC program variables
- Closed simulation of HMI and PLC program on the engineering PC
- Guaranteed language independence via Unicode character set
- Current standards such as HTML 5 or CSS

### Diagnostics

Being acutely aware of the automation network's current status is an absolute must for the rapid detection and elimination of errors – be it during development in the office or directly on the machine during commissioning.

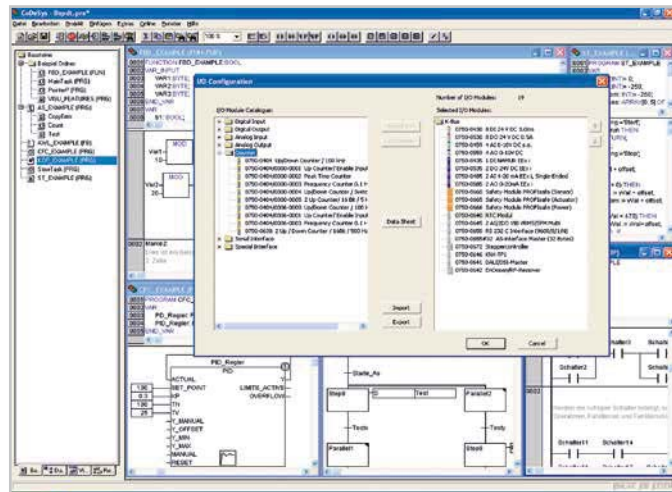
e!COCKPIT provides comprehensive diagnostic capabilities:

- Individual views always display the controllers' status information, for example, 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



## WAGO-I/O-PRO V2.3

### IEC 61131-3 Programming Tool



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 Series Programmable Fieldbus Controllers.

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

With extensive programming functions, the software readily meets the increasing requirements of control program development (e.g., reusability and modularization).

Description	Item No.	Pack. Unit
WAGO-I/O-PRO V2.3, RS-232 Kit	759-333	1
WAGO-I/O-PRO V2.3, USB Kit	759-333/000-923	1
WAGO-I/O-PRO V2.3, CD-ROM	759-911	1

### Approvals

Marine applications	ABS, DNV, GL, KR, NKK and RINA
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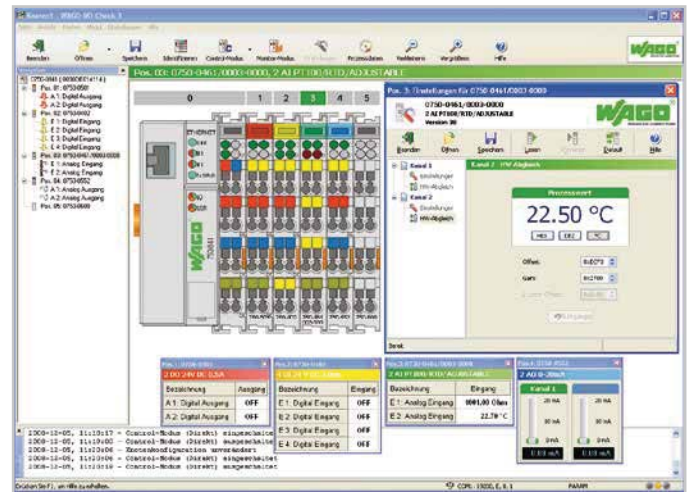
### Technical Data

Supported operating systems	Windows XP (SP3 or later), Windows 7
System requirements:	
Processor	1 GHz or higher, with 32 bits (x86) or 64 bits (x64)
Memory	1 GB RAM (min.), 2 GB RAM or more (recommended)
Hard disk storage	300 MB (min.)
CD-ROM	Required
Graphics resolution	1024 x 768 (min.), 1280 x 1024 or higher (recommended)
Mouse	Required
Other	Open serial interface
Delivery type	<b>RS-232 Kit:</b> CD-ROM with software and serial communication cable (750-920) <b>USB Kit:</b> CD-ROM with software and USB communication cable (750-923) <b>CD-ROM:</b> CD-ROM with software (without communication cable)

Windows® is a registered trademark of Microsoft Corporation.

## WAGO-I/O-CHECK

### Commissioning Tool for the WAGO-I/O-SYSTEM 750



WAGO-I/O-CHECK is an easy-to-use Windows application for operating and displaying a WAGO-I/O-SYSTEM 750 node without connecting the node to a fieldbus system.

The software reads the configuration from the node and displays it as an on-screen graphic. The graphic can be printed together with a configuration list as documentation.

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

Description	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 Kit	759-302	1
WAGO-I/O-CHECK, USB Kit	759-302/000-923	1
WAGO-I/O-CHECK, CD-ROM	759-920	1

### Technical Data

Supported operating systems	Windows XP (SP3 or later), Windows 7
System requirements:	
Processor	1 GHz or higher, with 32 bits (x86) or 64 bits (x64)
Memory	1 GB RAM (min.), 2 GB RAM or more (recommended)
Hard disk storage	150 MB (min.)
CD-ROM	Required
Graphics resolution	1024 x 768 (min.), 1280 x 1024 or higher (recommended)
Mouse	Required
Delivery type	<b>RS-232 Kit:</b> CD-ROM with software and serial communication cable (750-920) <b>USB Kit:</b> CD-ROM with software and USB communication cable (750-923) <b>CD-ROM:</b> CD-ROM with software (without communication cable)

Windows® is a registered trademark of Microsoft Corporation.

## WAGO WebVisu App For Mobile System Operation/Monitoring



Using the WAGO WebVisu App, you can access CODESYS 2 WebVisu websites on mobile devices. 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 "App Store," and in Android for smartphones and tablets in the "Google Play™" store.

Note: An overview of the supported WAGO controllers, operating manuals and application notes can be found on our website or at [www.wago.com/webvisu](http://www.wago.com/webvisu).

### Description

#### WAGO WebVisu App

### Technical Data

#### System requirements:

Operating system	iOS (version 4.3 or later) Android (version 2.2 or later)
Compatibility	iPhone, iPad and iPod touch, Android smartphones and tablets

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

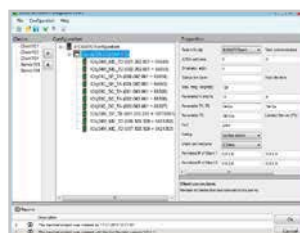


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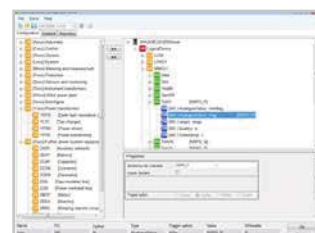
"App Store" is a service mark of Apple Inc.

"Google Play™" is a registered trademark of Google Inc.

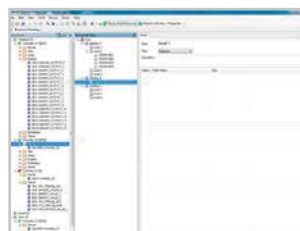
## Additional Software



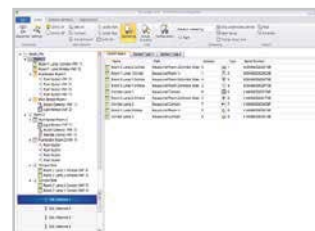
IEC 60870 Configuration Dialog



IEC 61850 Configuration Dialog



WAGO BACnet Configurator



DALI Configurator



DNP3 Configurator

### Description

#### IEC 60870 Configurator

Configuration dialog integrated in WAGO-I/O-PRO v2.3 for IEC 60870-5-101/-103/-104 communication parameterization

#### IEC 61850 Configurator

Configuration dialog integrated in WAGO-I/O-PRO v2.3 for IEC 61850 communication parameterization

#### DNP3 Configurator

Configuration dialog integrated in WAGO-I/O-PRO v2.3 for DNP3 communication parameterization

#### WAGO BACnet Configurator

Supported operating systems Windows XP (SP3 or later), Windows 7  
For a free download, visit [www.wago.com](http://www.wago.com).

#### DALI Configurator

Included in WAGO-I/O-CHECK (version 3.5.1 and higher) or as a stand-alone application at [www.wago.com](http://www.wago.com)

#### LON® Configurator

Included in WAGO-I/O-PRO (Version 2.3.9.34 and higher) at: [www.wago.com](http://www.wago.com)

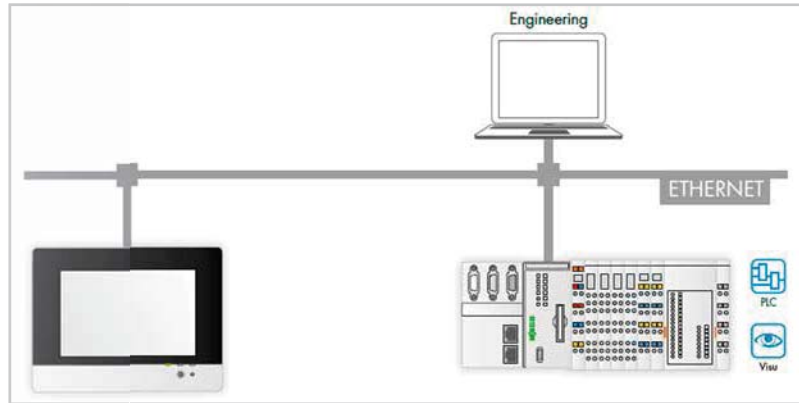
#### WAGO ETS Plug-In





Supported operating systems Windows XP, Windows 7  
For free download, visit [www.wago.com](http://www.wago.com).




## e!DISPLAY 7300T

### Web Panels



	Description	Diagonal Screen Size	Screen Resolution	USB 2.0	ETHERNET/ MODBUS TCP	microSD Card	Item No.
	<b>e!DISPLAY 7300T</b> Web Panel	10.9 cm (4.3"), 16:9	480 x 272 pixels	2	2	1	<b>762-3000</b>
	<b>e!DISPLAY 7300T</b> Web Panel	14.5 cm (5.7"), 4:3	640 x 480 pixels	2	2	1	<b>762-3001</b>
	<b>e!DISPLAY 7300T</b> Web Panel	18 cm (7.0"), 16:9	800 x 480 pixels	2	2	1	<b>762-3002</b>
	<b>e!DISPLAY 7300T</b> Web Panel	25.7 cm (10.1"), 16:9	1280 x 800 pixels	2	2	1	<b>762-3003</b>

#### Accessories

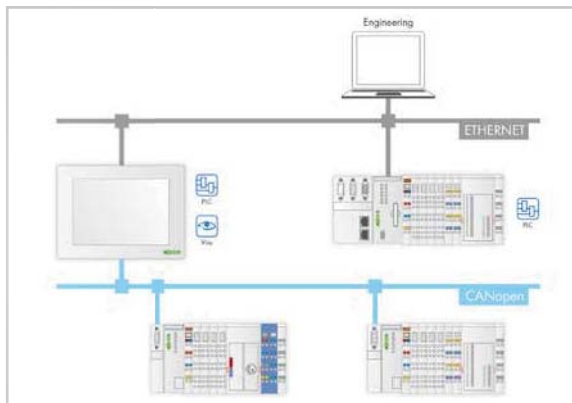
	Description						Item No.
	Memory Card	microSD, 1 GB					<b>758-879/000-002</b>

#### Features:

- Analog, resistive (single-touch) screen
- Four display diagonals available: 4.3", 5.7", 7.0" and 10.1"
- Status LEDs (1 x operating status, 2 x operational feedback)
- Front-mount brightness adjustment
- Variable mounting position (viewing angle, horizontal/vertical: +/- 65°)
- Easy installation via universal mounting system (VESA mount) and wide mounting collar
- Protection class (front/back): IP65/IP20
- Passive cooling system

# PERSPECTO®

## Web and Control Panels

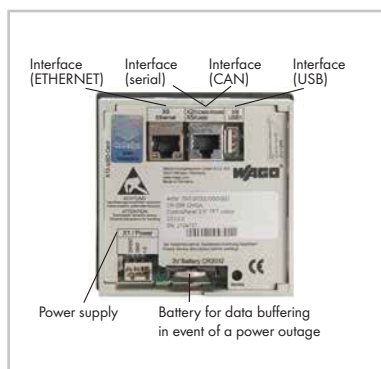


	Description	Diagonal Screen Size	Screen Resolution	USB 2.0	ETHERNET/ MODBUS TCP	CANopen	Others	Item No.
	<b>PERSPECTO®</b> , Web Panels	8.9 cm (3.5")	320 x 240 pixels	1			Web browser	<b>762-1035</b>
		14.5 cm (5.7")	320 x 240 pixels	2			Web browser	<b>762-1057</b>
		26.4 cm (10.4")	640 x 480 pixels	2			Web browser	<b>762-1104</b>
		30.7 cm (12.1")	800 x 600 pixels	2			Web browser	<b>762-1121</b>
	<b>PERSPECTO®</b> , Control Panels (programmable via CODESYS 2)	8.9 cm (3.5")	320 x 240 pixels	1	x	M/S	MODBUS RTU	<b>762-3035/000-001</b>
		14.5 cm (5.7")	320 x 240 pixels	2	x	M/S	MODBUS RTU	<b>762-3057/000-001</b>
		26.4 cm (10.4")	640 x 480 pixels	2	x	M/S	MODBUS RTU	<b>762-3104/000-001</b>
		30.7 cm (12.1")	800 x 600 pixels	2	x	M/S	MODBUS RTU	<b>762-3121/000-001</b>
		38.1 cm (15")	1024 x 768 pixels	4	x		MODBUS RTU	<b>762-3150/000-001</b>
		38.1 cm (15")	1024 x 768 pixels	4	x	M/S	MODBUS RTU	<b>762-3150/000-003</b>

### Accessories

	Description					Pack. Unit	Item No.
	Memory Cards	CF, 1 GB				1	<b>758-879/000-000</b>
		SD, 2 GB				1	<b>758-879/000-001</b>
		microSD, 1 GB				1	<b>758-879/000-002</b>
	Connection Cables	DVI-D, 3 m				1	<b>758-879/000-100</b>
		USB A-B, 3 m				1	<b>758-879/000-101</b>
	Mounting Sets	for WP, CP 35				1	<b>758-879/000-300</b>
		for WP, CP 57				1	<b>758-879/000-301</b>
		for WP, CP 104				1	<b>758-879/000-302</b>
		for WP, CP 121				1	<b>758-879/000-303</b>
		for CP 150				1	<b>758-879/000-304</b>

M: Master, S: Slave



### General Specifications

HBT (Half Brightness Time)	50000 hrs.
Operating system	Windows CE
Control elements	Touch, analog, resistive
Power supply	DC 24 V (18 V ... 30 V)
Operating temperature	0 °C ... +50 °C
Storage temperature	-10 °C ... +60 °C
Relative humidity (without condensation)	10 % ... 85 %
Protection type	Front IP65, back IP20

# WAGO-I/O-SYSTEM, 750/753 Series

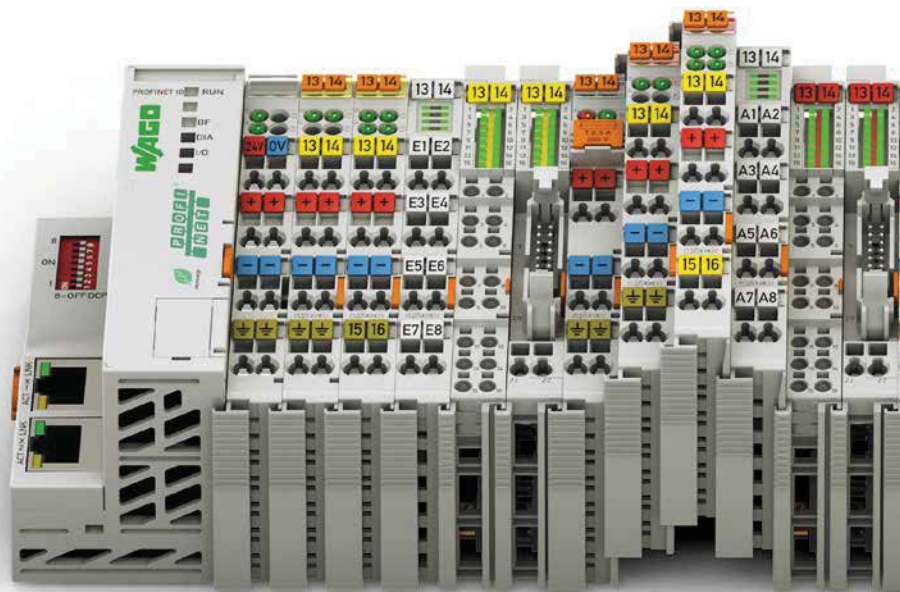


IEC 60870-5-101/-103/-104

IEC 61850

IEC 61400-25

DNP3



## 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.

## 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, e.g., ATEX, BR-Ex, IECEx, UL, UL ANSI/ISA and marine applications.

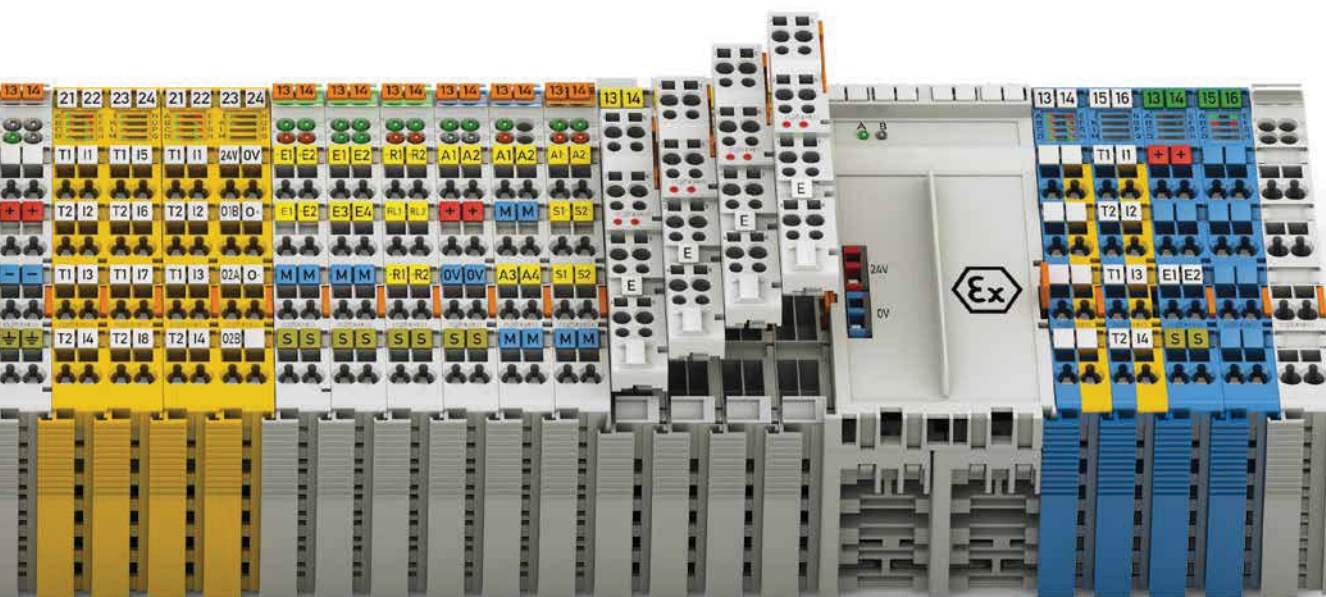
## Clear Identification

Module functionality is identified via integrated or pluggable marker carriers. Terminal assignment and technical data are printed onto the side of the module. The WAGO WSB marker system also allows for module- and channel-related identification.

## Extremely Compact

Our patented mechanical design leads to extremely compact I/O nodes. In fact, select I/O modules can accommodate up to 16 channels in a 12 mm (1/2") wide housing.

- Finely granular I/O modules enable node customization.
- Space-saving design permits high integration density.



### Pluggable Connections

For ultimate convenience, the 753 Series Modules are 100 % compatible with the 750 Series and feature pluggable connectors. A detachable wiring interface allows an operator to easily replace a module without removing and then rewiring all pre-existing wiring. This convenience virtually eliminates installation errors and saves time – if needed, this can be executed via placeholder modules.

### Maximum Flexibility

Each node in the WAGO-I/O-SYSTEM can be configured to meet each channel's requirements, and various potentials and signal types are available (granularity of 1 – 16 channels). Digital and analog I/O modules, as well as specialty modules, can be freely mixed in the same node. Supply modules permit different voltages within the same node.

### Maximum Reliability and Ruggedness

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

- Greatly increased vibration rating
- Significantly greater immunity to interference (ESD)
- Lower emission of interference
- Larger voltage fluctuation range
- Improved ruggedness 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.

### Easy to Use

The modular, DIN-rail-mount design allows for easy, tool-free installation. The straightforward design prevents installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

- **Fieldbus-independent – Support all standard fieldbus protocols and ETHERNET standards**
- **Flexible platform adapts to diverse applications and environments**
- **Tested and approved worldwide**
- **Wide range of accessories for marking system and connection technology**
- **CAGE CLAMP® technology provides vibration-proof, fast and maintenance-free connections**



# WAGO-I/O-SYSTEM 750

## – Description and Handling –

### The Bus Module – The Universal Basic Module

#### Assembly



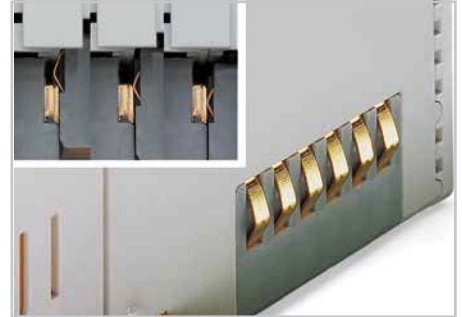
Fine modularity for DIN-rail assembly

#### Power jumper contacts (field side)



Safe, automatic connection by tinned, self-cleaning slide contacts with high contact safety through make-first, break-last ground contact

#### Data contacts

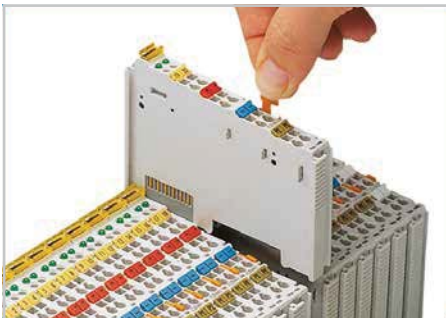


Safe, automatic connection by gold-plated, self-cleaning slide contacts with high contact safety



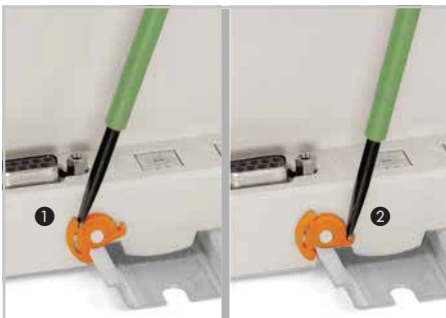
Secure connection with dovetails

#### Exchange within the assembly



Quickly exchange a module within the assembly – without tools.

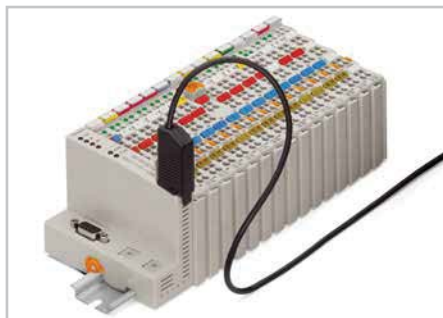
#### Locking the fieldbus coupler



① Locking

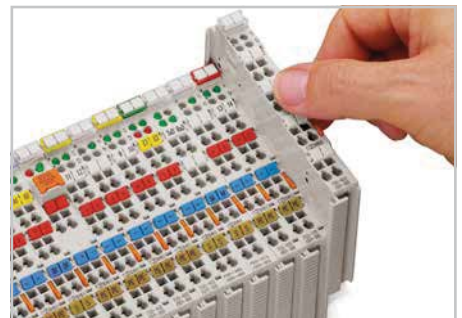
② Releasing

#### Accessing the programming interface



Accessing the programming interface – Programming a fieldbus controller WAGO-I/O-CHECK, WAGO-I/O-PRO CAA.

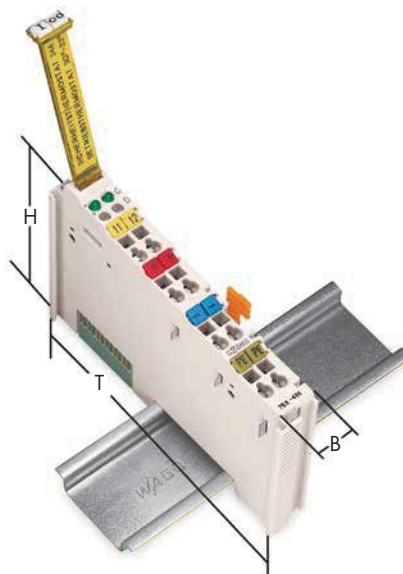
#### End module required



The end module physically terminates the fieldbus node and guarantees safe data transmission.

WxH\*xL (mm) 12x65x100

\*from upper-edge of DIN-35 rail

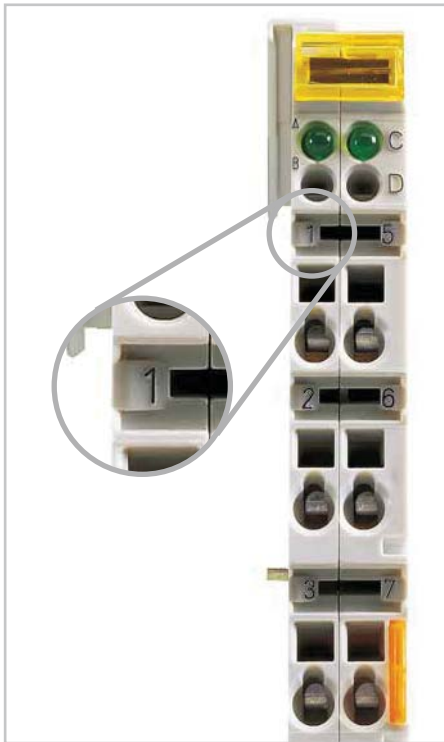


750 Series

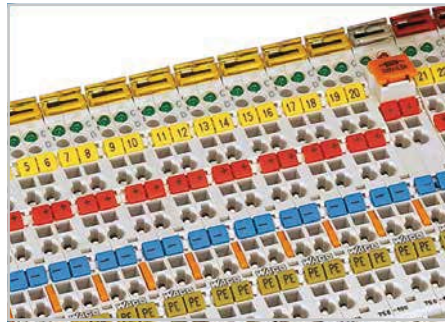


753 Series

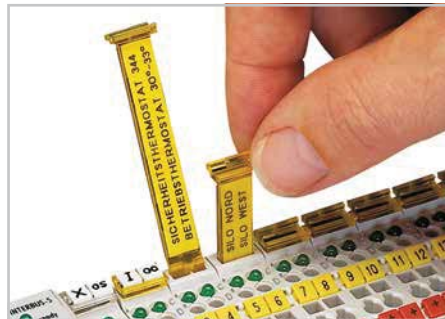
## Color-coded for simplicity



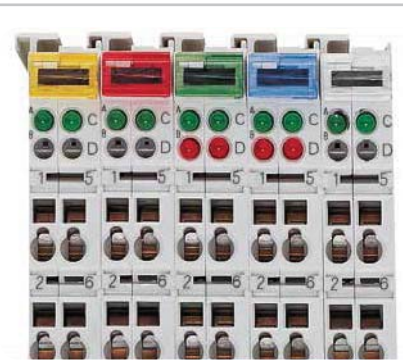
Connection points identified via factory-direct printing.



Marking clamping units via colored miniature WSB markers.



Pullout group marker carriers provide large self-marking areas.

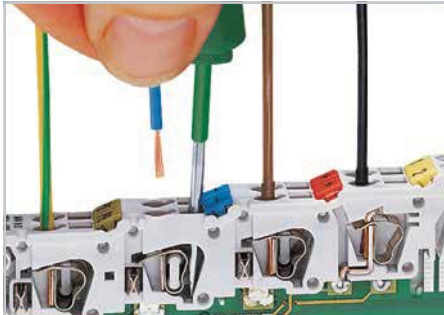


- Yellow – Digital Inputs (DI)
- Red – Digital Outputs (DO)
- Green – Analog Inputs (AI)
- Blue – Analog Outputs (AO)
- Clear – Supply and  
Specialty Modules

Transparent group marker carriers indicate module type by color.

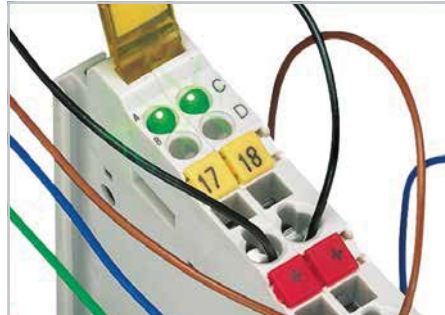
6

## CAGE CLAMP® connection



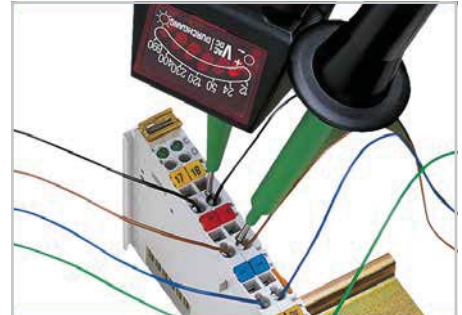
Vibration-proof, fast and maintenance-free connections for conductors ranging 0.08 ... 2.5 mm<sup>2</sup> (28 ... 14 AWG)

## Status indicator



LED diagnostic and status indications for safe startup and system control.

## Testing

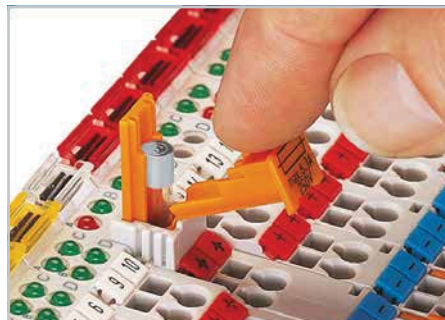


Tracing signals with wired conductors.

## Fuse holder

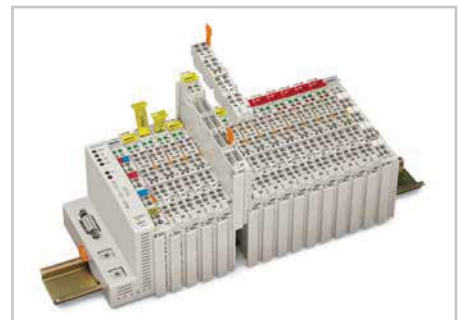


Function at locked position 1:  
Power output to I/O group is off.



Function at locked position 2:  
Easy fuse replacement via hinged cover.  
Use UL-recognized fuses only!

## Pluggable connections






753 Series see Full Line Catalog or visit [www.wago.com](http://www.wago.com).








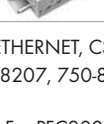


# Controllers

## PFC100 and PFC200

### 750 Series

	Description	CPU	ETHERNET MODBUS TCP	PROFIBUS	CANopen	Others	Item No.
	PFC100 CS 2ETH ECO	Cortex A8, 600 MHz	x				750-8100
	PFC100 CS 2ETH	Cortex A8, 600 MHz	x				750-8101
	PFC100 CS 2ETH/T Operating temperature: -20 °C ... +60 °C						750-8101/ 025-000
	PFC100 CS 2ETH RS	Cortex A8, 600 MHz	x				750-8102
	PFC100 CS 2ETH RS/T Operating temperature: -20 °C ... +60 °C						750-8102/ 025-000

	Description	CPU	ETHERNET MODBUS TCP	PROFIBUS	CANopen	Others	Item No.
	PFC200 CS 2ETH RS CAN DPS	Cortex A8, 600 MHz	x	S	M/S	MODBUS RTU	750-8206
	PFC200 CS 2ETH RS CAN DPS/T Operating temperature: -20 °C ... +60 °C						750-8206/ 025-000
	PFC200 CS 2ETH RS CAN DPS TELE/T Operating temperature: -20 °C ... +60 °C	Cortex A8, 600 MHz	x	S	M/S	MODBUS RTU IEC 60870-5 IEC 61850 IEC 61400-25 DNP3	750-8206/ 025-001
	PFC200 CS 2ETH RS CAN	Cortex A8, 600 MHz	x		M/S	MODBUS RTU	750-8204
	PFC200 CS 2ETH RS CAN/T Operating temperature: -20 °C ... +60 °C						750-8204/ 025-000
	PFC200 CS 2ETH CAN	Cortex A8, 600 MHz	x		M/S		750-8203
	PFC200 CS 2ETH CAN/T Operating temperature: -20 °C ... +60 °C						750-8203/ 025-000
	PFC200 CS 2ETH RS	Cortex A8, 600 MHz	x			MODBUS RTU	750-8202
	PFC200 CS 2ETH RS/T Operating temperature: -20 °C ... +60 °C						750-8202/ 025-000
	PFC200 CS 2ETH RS Telecontrol/T PFC200 CS 2ETH RS TELE ECO/T Operating temperature: -20 °C ... +60 °C	Cortex A8, 600 MHz	x			MODBUS RTU IEC 60870-5 IEC 61850 IEC 61400-25 DNP3	750-8202/ 025-001 750-8202/ 025-002
	PFC200 CS 2ETH RS 3G*	Cortex A8, 600 MHz	x			MODBUS RTU	750-8207
	PFC200 CS 2ETH RS 3G/T* PFC200 CS 2ETH RS 3G Telecontrol/T*	Cortex A8, 600 MHz	x			MODBUS RTU IEC 60870-5 IEC 61850 IEC 61400-25 DNP3	750-8207/ 025-000 750-8207/ 025-001










ETH: ETHERNET, CS: CODESYS, RS: RS-232/-485 Serial Interfaces, TELE: Telecontrol Protocol, T: Ext. Temperature Range, DPS: PROFIBUS Slave, M: Master, S: Slave

\*750-8207, 750-8207/025-000 and 750-8207/025-001 are EU-only models.

**Note:** For PFC200 XTR, see page 177.

# Controllers

## 750 Series

	Description	CPU	ETHERNET				PROFIBUS	CANopen	Others	Item No.
			MODBUS TCP	EtherNet/IP	BACnet/IP	KNX IP				
	ETHERNET Controller	32 bits	x	x					IEC 60870-5 IEC 61850 IEC 61400-25 DNP3	750-880 750-880/025-000* 750-880/025-001* 750-880/025-002* 750-881
	ETHERNET Controller	32 bits	x	x					Media Redundancy	750-885 750-885/025-000* 750-882
	Telecontroller	32 bits	x	x					MODBUS RTU IEC 60870-5 IEC 61850 IEC 61400-25 DNP3	750-872
	ETHERNET TCP/IP Controller, RS-232	32 bits	x	x					MODBUS RTU	750-873
	ETHERNET Controller	32 bits	x	x						750-852
	KNX IP Controller	32 bits	x			x				750-889
	BACnet/IP Controller	32 bits	x		x					750-831
	BACnet/IP Controller		x		x					750-830
	BACnet MS/TP Controller	32 bits	x						BACnet MS/TP	750-829
	ETHERNET TCP/IP Controller	16 bits	x							750-843 750-842
	DeviceNet Controller	16 bits							DeviceNet	750-806
	MODBUS Controller	16 bits							MODBUS RTU	750-815/300-000 750-815/325-000* 750-816/300-000
	PROFIBUS Controller	16 bits					S			750-833 750-833/025-000*
	CANopen Controller	16 bits						M/S		750-837 750-838
	INTERBUS Controller								INTERBUS	750-804

\*Operating temperature: -20 °C ... +60 °C

Note: For Controller XTR, see page 177.

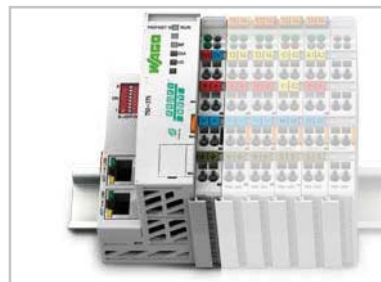


# Modular I/O-Systems

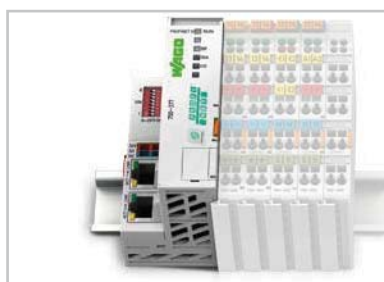
## Fieldbus Couplers


**Housing Design I with System Power Supply**

Dimensions (mm) W x H x L:	51 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	8 ... 9 mm / 0.33 in.


**Housing Design II with System Power Supply**

Dimensions (mm) W x H x L:	51 x 65 x 100 (Height from upper-edge of DIN-rail)
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**Housing Design without System Power Supply**

Dimensions (mm) W x H x L:	50 x 65 x 97 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 1.5 mm² / 28 ... 14 AWG
Strip length:	5 ... 6 mm / 0.22 in.


**Housing Design ECO**

Dimensions (mm) W x H x L:	50 x 65 x 97 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 1.5 mm² / 28 ... 16 AWG
Strip length:	5 ... 6 mm / 0.22 in.

**General Specifications**

Operating voltage	24 VDC (-25 % ... +30 %)*; *for all marine-certified fieldbus couplers and I/O modules
Operating temperature	0 °C ... +55 °C
Operating temperature for versions with an extended temperature range	-20 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Storage temperature for versions with an extended temperature range	-40 °C ... +85 °C
Relative humidity (without condensation)	95 %
Operating altitude	without temperature derating: 0 ... 2,000 m; with temperature derating: 2,000 ... 5,000 m (0.5 K/100 m); max.: 5,000 m
Pollution degree	2 per IEC 61131-2
Vibration resistance	0.5g (4g for all marine-certified fieldbus couplers and I/O modules) per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2 / marine applications
EMC emission of interference	per EN 61000-6-3 / EN 61000-6-4 / marine applications
Protection type	IP20
Mounting position	any
Mounting type	on DIN-35 rail
Housing material	polycarbonate, polyamide 6.6
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Maximum pollutant concentration with a relative humidity < 75 %	SO <sub>2</sub> ≤ 25 ppm; H <sub>2</sub> S ≤ 10 ppm
Connection technology	CAGE CLAMP®
Conductor size; strip length for standard I/O modules and fieldbus couplers: 753 Series I/O Modules: ECO Fieldbus Couplers:	0.08 ... 2.5 mm²/28 ... 14 AWG; 8 ... 9 mm/0.33 in. 0.08 ... 2.5 mm²/28 ... 14 AWG; 9 ... 10 mm/0.37 in. 0.08 mm² ... 1.5 mm²/28 ... 16 AWG; 5 ... 6 mm/0.22 in.
Connection technology	Push-in CAGE CLAMP®
Conductor size; strip length for I/O modules with 16 connection points:	solid: 0.08 ... 1.5 mm²/28 ... 16 AWG; fine-stranded: 0.25 ... 1.5 mm²/22 ... 16 AWG; 8 ... 9 mm/0.33 in.
Current via power jumper contacts	10 A (max.)

# Modular I/O-Systems

## Fieldbus Couplers

### 750 Series

CAGE CLAMP®

Fieldbus System	Housing Design				Description	Item No.
	With System Power Supply		Without System Power Supply	ECO		
						
	<input type="checkbox"/>				Fieldbus Coupler, 100 Mbit	750-340
	<input type="checkbox"/>				Fieldbus Coupler, 2 ports, 100 Mbit	750-370
		<input type="checkbox"/>			Fieldbus Coupler, advanced, 2 ports	750-375
		<input type="checkbox"/>			Fieldbus Coupler, advanced, 2 ports, Operating temperature: -20 °C ... +60 °C	750-375/025-000
			<input type="checkbox"/>		Fieldbus Coupler, advanced, ECO, 2 ports	750-377
			<input type="checkbox"/>		Fieldbus Coupler, advanced, ECO, 2 ports, Operating temperature: -20 °C ... +60 °C	750-377/025-000
	<input type="checkbox"/>				DP/FMS Fieldbus Coupler, 12 Mbaud	750-303
	<input type="checkbox"/>				DP/V1 Fieldbus Coupler, 12 Mbaud	750-333
	<input type="checkbox"/>				DP/V1 Fieldbus Coupler, 12 Mbaud, Operating temperature: -20 °C ... +60 °C	750-333/025-000
				<input type="checkbox"/>	DP/ECO Fieldbus Coupler, 12 Mbaud	750-343
	<input type="checkbox"/>				Fieldbus Coupler with Fiber-Optic Connection, 1.5 Mbaud	750-331
			<input type="checkbox"/>		Fieldbus Coupler, 10/100 Mbit	750-352
MODBUS/TCP	<input type="checkbox"/>				Fieldbus Coupler, 10 Mbit	750-342
			<input type="checkbox"/>		Fieldbus Coupler, 100 Mbit/s	750-354
			<input type="checkbox"/>		Fieldbus Coupler, ID switch, 100 Mbit/s	750-354/000-001
	<input type="checkbox"/>				Fieldbus Coupler	750-306
				<input type="checkbox"/>	ECO Fieldbus Coupler	750-346
	<input type="checkbox"/>				Fieldbus Coupler	750-307
	<input type="checkbox"/>				Fieldbus Coupler	750-337
	<input type="checkbox"/>				Fieldbus Coupler, Operating temperature: -20 °C ... +60 °C	750-337/025-000
	<input type="checkbox"/>				Fieldbus Coupler, D-sub	750-338
				<input type="checkbox"/>	ECO Fieldbus Coupler	750-347
				<input type="checkbox"/>	ECO Fieldbus Coupler, D-sub	750-348
	<input type="checkbox"/>				Fieldbus Coupler, 2 ports, 100 Mbit	750-351
MODBUS	<input type="checkbox"/>				Fieldbus Coupler, RS-485 (150 ... 115.2 kbaud)	750-315/300-000
	<input type="checkbox"/>				Fieldbus Coupler, RS-232 (150 ... 115.2 kbaud)	750-316/300-000
	<input type="checkbox"/>				Fieldbus Coupler, 500 kbaud	750-304
				<input type="checkbox"/>	ECO Fieldbus Coupler, 500 kbaud	750-344
				<input type="checkbox"/>	ECO Fieldbus Coupler, 2 Mbaud	750-345
	<input type="checkbox"/>				Fieldbus Coupler with Fiber-Optic Connection	750-334
	<input type="checkbox"/>				Fieldbus Coupler	750-310

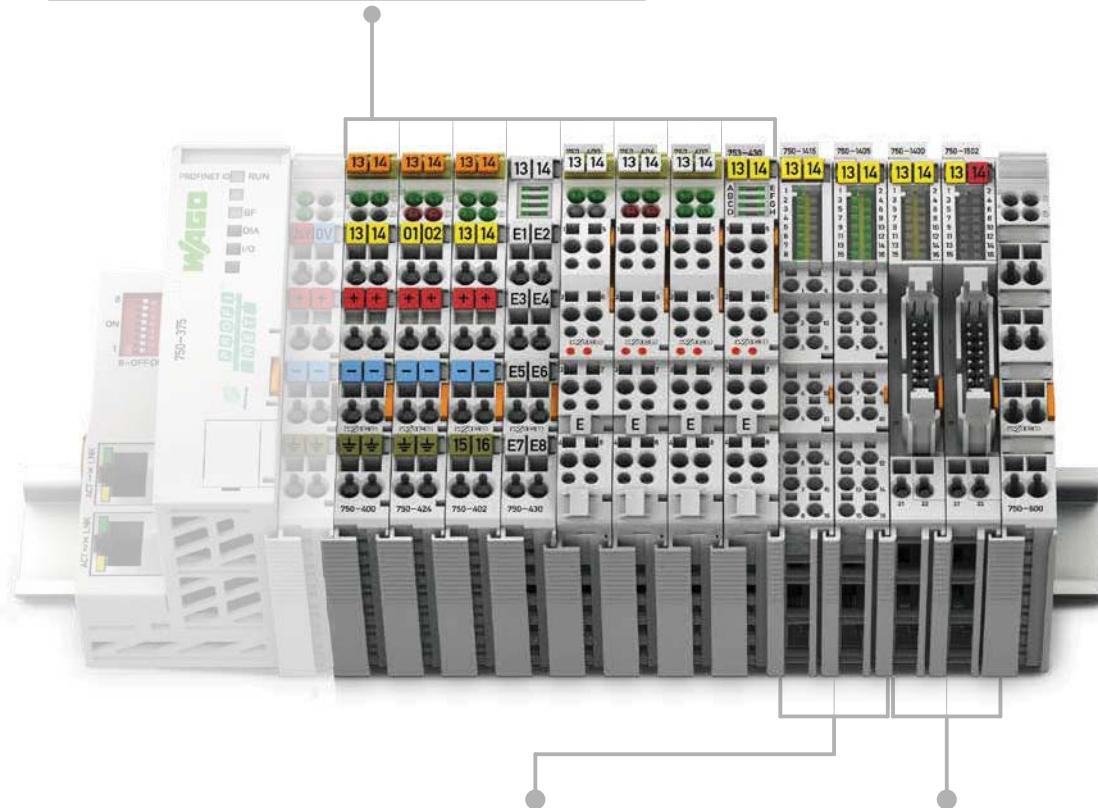
# Modular I/O-Systems

## Digital Input Modules



### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.



### 750 Series Housing Design with Push-in CAGE CLAMP® (Up to 16 Connection Points)

Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.

### 750 Series Housing Design with Ribbon Cable Connection

Dimensions (mm) W x H x L:	12 x 73 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	20-pole male connector/ CAGE CLAMP®



# Modular I/O-Systems

## Digital Inputs

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	2-Channel DI	4-Channel DI	8-Channel DI	8-Channel DIO	16-Channel DI	Description	Item No.		
							Standard	Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
5 VDC		■				0.2 ms, high-side switching	750-414		
5/12 VDC			■			(5 ... 14 VDC) 0.2 ms, high-side switching			753-434
24 VDC	■					3.0 ms, high-side switching	750-400	750-400/025-000	753-400
	■					0.2 ms, high-side switching	750-401		753-401
	■					3.0 ms, high-side switching, proximity switch	750-410		753-410
	■					0.2 ms, high-side switching, proximity switch	750-411		753-411
	■					3.0 ms, high-side switching, diagnostics, acknowledgment	750-418		753-418
	■					3.0 ms, high-side switching, diagnostics	750-421		753-421
	■					NAMUR, proximity switch per DIN EN 60947-5-6	750-425		753-425
	■					Intruder detection	750-424		753-424
		■				3.0 ms, high-side switching	750-402	750-402/025-000	753-402
		■				0.2 ms, high-side switching	750-403		753-403
		■				3.0 ms, high-side switching	750-432		753-432
		■				0.2 ms, high-side switching	750-433		753-433
		■				Pulse extension, 10 ms	750-422		753-422
		■				3.0 ms, low-side switching	750-408	750-408/025-000	753-408
		■				0.2 ms, low-side switching	750-409		753-409
		■				3.0 ms, 3-conductor	750-1420		
		■				0.2 ms, 3-conductor	750-1421		
		■				3.0 ms, low-side switching, 3-conductor	750-1422		
		■				0.2 ms, low-side switching, 3-conductor	750-1423		
			■			3.0 ms, high-side switching	750-430	750-430/025-000	753-430
			■			0.2 ms, high-side switching	750-431		753-431
			■			3.0 ms, low-side switching	750-436		753-436
			■			0.2 ms, low-side switching	750-437		753-437
			■			3.0 ms, 2-conductor	750-1415		
			■			0.2 ms, 2-conductor	750-1416		
			■			3.0 ms, low-side switching, 2-conductor	750-1417		
			■			0.2 ms, low-side switching, 2-conductor	750-1418		
				■		0.5 A, high-side switching, ribbon cable	750-1502		
				■		0.5 A, high-side switching	750-1506		
					■	3.0 ms, high-side switching, ribbon cable	750-1400		
					■	3.0 ms, high-side switching	750-1405		
					■	0.2 ms, high-side switching	750-1406		
					■	3.0 ms, low-side switching, ribbon cable	750-1402		
					■	3.0 ms, low-side switching	750-1407		
24 V AC/DC		■				20 ms	750-415		753-415
		■				50 ms, power jumper contacts	750-423		753-423
42 V AC/DC		■				20 ms	750-428		753-428
48 VDC	■					3.0 ms, high-side switching	750-412		753-412
60 VDC	■					3.0 ms, high-side switching			753-429
110 VDC	■					3.0 ms, high-side or low-side switching	750-427		753-427
220 VDC	■					3.0 ms, high-side switching	750-407		
120 VAC	■					10 ms, high-side switching	750-406		753-406
120/230 VAC		■				(120 ... 230 VAC) 10 ms, high-side switching			753-440
230 VAC	■					10 ms, high-side switching	750-405		753-405
PTC			■			Connection to PTC thermistors per DIN 44081/44082	750-1425		
Functional Safety							See page 174		
Ex i							See page 175		



# Modular I/O-Systems

## Digital Output Modules

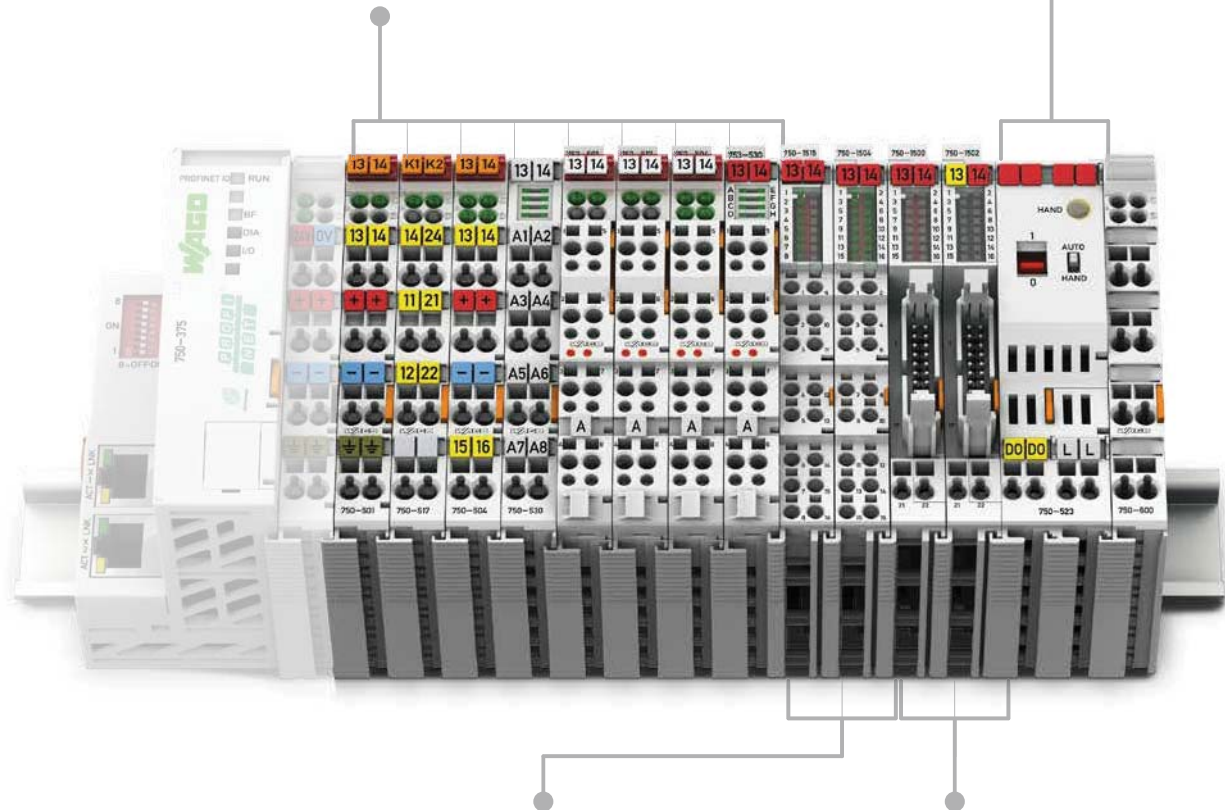


### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.

### 750 Series Specialty Housing

Dimensions (mm) W x H x L:	24 x 65 x 100 (Height from upper-edge of DIN-rail)
----------------------------	---



### 750 Series Housing Design with Push-in CAGE CLAMP® (Up to 16 Connection Points)

Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.

### 750 Series Housing Design with Ribbon Cable Connection

Dimensions (mm) W x H x L:	12 x 73 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	20-pole male connector/ CAGE CLAMP®



# Modular I/O-Systems

## Digital Outputs

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	1-Channel DO	2-Channel DO	4-Channel DO	8-Channel DO	8-Channel DIO	16-Channel DO	Description	Item No.		
								Standard	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
5 VDC			■				High-side switching	750-519		
5/12 VDC				■			(5 ... 14 VDC) 1 A, short-circuit-protected, high-side switching	750-534		753-534
24 VDC		■					0.5 A, short-circuit-protected, high-side switching	750-501		753-501
		■					0.5 A, short-circuit-protected, high-side switching, interference-free	750-501/000-800		753-501/000-800
		■					2.0 A, short-circuit-protected, high-side switching	750-502		753-502
		■					2.0 A, short-circuit-protected, high-side switching, interference-free	750-502/000-800		753-502/000-800
		■					0.5 A, diagnostics, short-circuit-protected, high-side switching	750-506		753-506
		■					0.5 A, diagnostics, short-circuit-protected, high-side switching, interference-free	750-506/000-800		
		■					2.0 A, diagnostics, short-circuit-protected, high-side switching	750-508		753-508
		■					2.0 A, diagnostics, short-circuit-protected, high-side switching, interference-free	750-508/000-800		
			■				0.5 A, short-circuit-protected, high-side switching	750-504	750-504/025-000	753-504
			■				0.5 A, short-circuit-protected, high-side switching, interference-free	750-504/000-800	750-504/025-800	
			■				0.5 A, 2-conductor, short-circuit-protected, high-side switching	750-531		753-531
			■				0.5 A, 2-conductor, short-circuit-protected, high-side switching, interference-free	750-531/000-800		753-531/000-800
			■				Short-circuit-protected, low-side switching	750-516		753-516
			■				0.5 A, 2-conductor, diagnostics, short-circuit-protected, high-side switching	750-532		
				■			0.5 A, short-circuit-protected, high-side switching	750-530	750-530/025-000	753-530
				■			0.5 A, short-circuit-protected, low-side switching	750-536		753-536
				■			0.5 A, diagnostics, short-circuit-protected, high-side switching	750-537		753-537
				■			0.5 A, 2-conductor	750-1515		
				■			0.5 A, low-side switching, 2-conductor	750-1516		
					■		0.5 A, high-side switching, ribbon cable	750-1502		
					■		0.5 A, high-side switching	750-1506		
						■	0.5 A, high-side switching, ribbon cable	750-1500		
						■	0.5 A, high-side switching	750-1504		
						■	0.5 A, low-side switching, ribbon cable	750-1501		
						■	0.5 A, low-side switching	750-1505		
120/230 VAC			■				(120 ... 230 VAC) 0.25 A, high-side switching			753-540
230 VAC/DC		■					0.3 A, solid-state relay	750-509		753-509
230 VAC		■					0.5 A, solid-state relay (3 A < 30 ms)	750-522		
Relay		■					2 changeover contacts, potential-free, 125 VAC, 0.5 A	750-514		753-514
		■					2 changeover contacts, potential-free, 230 VAC, 1 A	750-517		753-517
		■					2 make contacts, non-floating, 230 VAC, 2 A	750-512		753-512
		■					2 make contacts, potential-free, 230 VAC, 2 A	750-513		753-513
		■					2 make contacts, potential-free, 230 VAC, 2 A, without power jumper contacts	750-513/000-001		
	■						1 make contact, potential-free, manual operation, 230 VAC, 16 A	750-523		
Functional Safety								See page 174		
Ex i								See page 175		

# Modular I/O-Systems

## Analog Input Modules

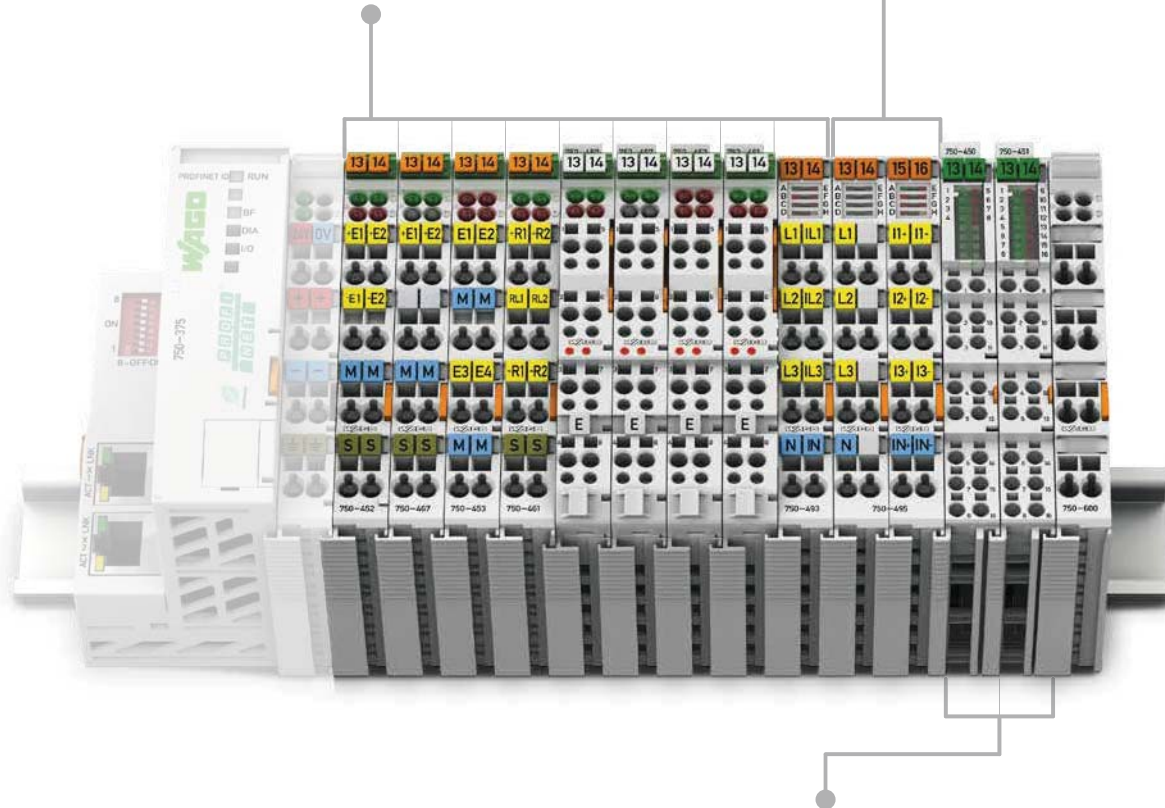


### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.

### 750 Series Housing Design, Double Width

Dimensions (mm) W x H x L:	24 x 65 x 100 (Height from upper-edge of DIN-rail)
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### 750 Series Housing Design with Push-in CAGE CLAMP® Connections (Up to 16 Connection Points)

Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.



# Modular I/O-Systems

## Analog Inputs

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	1-Channel AI	2-Channel AI	4-Channel AI	8-Channel AI	Description	Item No.			
						Standard	/S5 or /S7 Customized Data Format	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
0 ... 20 mA		■			Differential input	750-452	750-452/000-200		753-452
		■			Single-ended	750-465		750-465/025-000	753-465
		■			Single-ended, short-circuit-protected	750-470			
		■			Single-ended, short-circuit-protected, 60 Hz	750-470/005-000			
		■			Single-ended, 16 bits	750-472	750-472/000-200		753-472
		■			Single-ended, 16 bits, 60 Hz	750-472/005-000			
		■			Differential input	750-480			753-480
		■			Differential input, synchronous	750-480/000-001			
4 ... 20 mA			■		Single-ended	750-453			753-453
		■			Differential input	750-454	750-454/000-200	750-454/025-000	753-454
		■			Single-ended	750-466	750-466/000-200	750-466/025-000	753-466
		■			Single-ended, short-circuit-protected	750-473			
		■			Single-ended, short-circuit-protected, 60 Hz	750-473/005-000			
		■			Single-ended, 16 bits	750-474	750-474/000-200		753-474
		■			Single-ended, 16 bits, 60 Hz	750-474/005-000			
		■			Differential input	750-492			753-492
		■			Single-ended, 16 bits, HART	750-482	750-482/000-300	750-482/025-000	753-482
			■		Single-ended	750-455		750-455/025-000	753-455
0/4 ... 20 mA			■		Single-ended	750-455/020-000			
				■	Single-ended	750-496			
0 ... 1 A		■			Differential input	750-475			753-475
0 ... 5 A		■			Differential input	750-475/020-000			
± 10 V		■			Differential input	750-456	750-456/000-200		753-456
		■			Differential input	750-479			753-479
		■			Differential input, synchronous	750-479/000-001			
		■			Single-ended, 16 bits	750-476	750-476/000-200		753-476
0 ... 10 V			■		Single-ended	750-457		750-457/025-000	753-457
		■			Differential input	750-477			753-477
		■			Single-ended	750-467	750-467/000-200		753-467
		■			Single-ended, 16 bits	750-478			753-478
		■			Single-ended, 16 bits, 60 Hz	750-478/005-000			
± 10 V/0 ... 10 V			■		Single-ended	750-468	750-468/000-200	750-468/025-000	
			■		Single-ended	750-459			753-459
				■	Single-ended	750-497			
		■			Differential input	750-483			753-483
		■			Pt100 / RTD / NTC 20 kΩ	750-461	750-461/000-200	750-461/025-000	753-461
Resistance Sensors		■			Pt100 / configurable	750-461/003-000			753-461/003-000
		■			NTC 20k	750-461/020-000			
		■			Resistance measurement (other variants)	750-461/000-00x			
			■		Pt100 / RTD	750-460			
			■		Pt1000 / RTD	750-460/000-003			
			■		Ni1000 TK6180 / RTD	750-460/000-005			
			■		4AI RTD (building automation)	750-463			
		■	■		RTD, configurable	750-464			
			■		NTC, configurable	750-464/020-000			
			■		4AI RTD, configurable	750-450			
				■	8AI RTD, configurable	750-451			
Thermocouples		■			K/Diagnostics	750-469	750-469/000-200		753-469
		■			J/Diagnostics	750-469/000-006			
		■			Configurable	750-469/003-000			753-469/003-000
		■			S/; T/; ±120 mV/; E/; L/Diagnostics	750-469/000-00x			
			■		8AI Thermocouple, configurable	750-458			
Analog Specialty Functions	■				Resistor bridges (strain gauge)	750-491			
					Resistor bridges (strain gauge), 125 ms	750-491/000-001			
		■			(1A)	750-493			
		■			(5A)	750-493/000-001			
		■			(480V/1A)	750-494		750-494/025-000	
		■			(480V/5A)	750-494/000-001		750-494/025-001	
		■			(690V/1A)	750-495			
					(690V/5A)	750-495/000-001			
					(690V/RC)	750-495/000-002			

Exi

See page 175



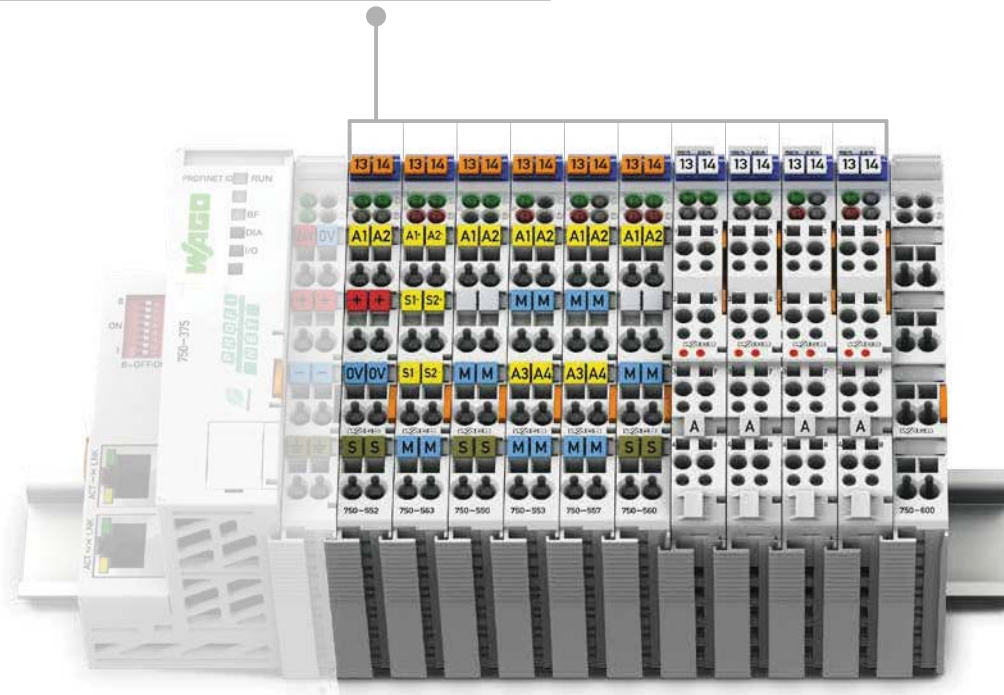
# Modular I/O-Systems

## Analog Output Modules



### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.



# Modular I/O-Systems

## Analog Outputs

### 750 Series

CAGE CLAMP®

Function	2-Channel AO	4-Channel AO	Description	Item No.			
				Standard	/S5 Customized Data Format	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
0 ... 20 mA	■		12 bits	750-552	750-552/000-200	750-552/025-000	753-552
		■	12 bits	750-553			753-553
4 ... 20 mA	■		12 bits	750-554	750-554/000-200	750-554/025-000	753-554
		■	12 bits	750-555			753-555
0/4 ... 20 mA	■		16 bits, configurable	750-563			
0 ... 10 V	■		12 bits	750-550	750-550/000-200		753-550
	■		10 bits, 10 mA	750-560			
		■	12 bits	750-559		750-559/025-000	753-559
± 10 V	■		12 bits	750-556	750-556/000-200		753-556
		■	12 bits	750-557			753-557
0 V / ±10 V	■		16 bits, configurable	750-562			
Exi				See page 175			

# Modular I/O-Systems

## Function and Technology Modules

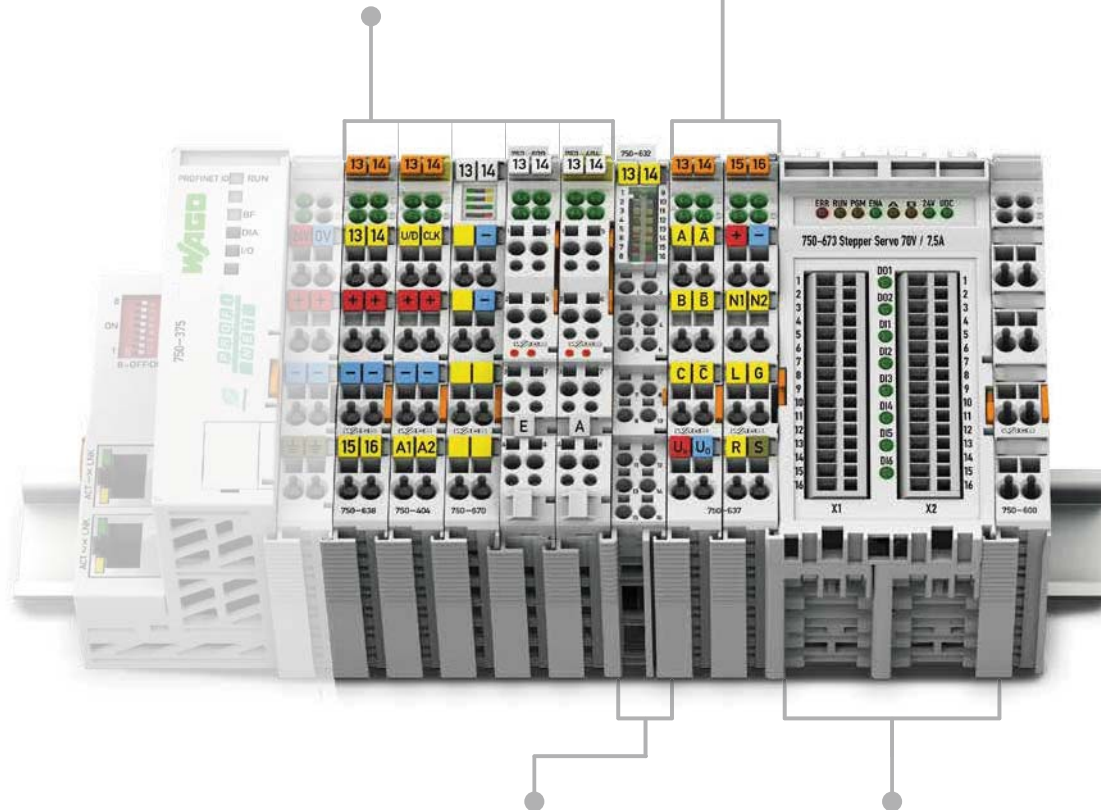


### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.

### 750 Series Housing Design, Double Width

Dimensions (mm) W x H x L:	24 x 65 x 100 (Height from upper-edge of DIN-rail)
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### 750 Series Housing Design with Push-in CAGE CLAMP® Connections (Up to 16 Connection Points)

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.

### Specialty Housing

Dimensions (mm) W x H x L:	51 x 70 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 1.5 mm² / 28 ... 14 AWG
Strip length:	5 ... 6 mm / 0.22 in.



# Modular I/O-Systems

## Function and Technology Modules

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	Description	Item No.		
		Standard	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
<b>Counter Modules</b>	Up/Down Counter, 24 VDC, 100 kHz	<b>750-404</b>		<b>753-404</b>
	Up Counter/Enable Input	<b>750-404/000-001</b>		
	Peak-Time Counter	<b>750-404/000-002</b>		
	Frequency Counter 0.1 Hz ... 100 kHz	<b>750-404/000-003</b>		<b>753-404/000-003</b>
	Up/Down Counter, Switch Output	<b>750-404/000-004</b>		
	2 Up Counters, 16 bits, 5 kHz	<b>750-404/000-005</b>		<b>753-404/000-005</b>
	Up/Down Counter, 24 VDC, 16 bits, 500 Hz	<b>750-638</b>	<b>750-638/025-000</b>	<b>753-638</b>
<b>Pulse Width Output Modules</b>	2-channel pulse width, 24 VDC, short-circuit-protected, high-side switching	<b>750-511</b>		<b>753-511</b>
	2-channel frequency, 2 kHz	<b>750-511/000-001</b>		
	2-channel pulse width, 100 Hz	<b>750-511/000-002</b>		
<b>Distance and Angle Measurement Modules</b>	SSI Transmitter Interface, 24 bits, 125 kHz, gray	<b>750-630</b>		
	SSI Transmitter Interface, 24 bits, 125 kHz, bin.	<b>750-630/000-001</b>		
	SSI Transmitter Interface, 24 bits, 250 kHz, bin.	<b>750-630/000-002</b>		
	SSI Transmitter Interface, 24 bits, 125 kHz, gray, status	<b>750-630/000-004</b>		
	SSI Transmitter Interface, 15 bits, 125 kHz, gray, status	<b>750-630/000-005</b>		
	SSI Transmitter Interface, 24 bits, 250 kHz, gray	<b>750-630/000-006</b>		
	SSI Transmitter Interface, 25 bits, 125 kHz, gray	<b>750-630/000-008</b>		
	SSI Transmitter Interface, 13 bits, 250 kHz, bin.	<b>750-630/000-009</b>		
	SSI Transmitter Interface, 25 bits, 125 kHz, bin.	<b>750-630/000-011</b>		
	SSI Transmitter Interface, 13 bits, 125 kHz, gray	<b>750-630/000-012</b>		
	SSI Transmitter Interface, 29 bits, 125 kHz, bin.	<b>750-630/000-013</b>		
	SSI Transmitter Interface, configurable	<b>750-630/003-000</b>		
	Incremental Encoder Interface	<b>750-631/000-004</b>		
	Incremental Encoder Interface, cam outputs	<b>750-637</b>		
	Incremental Encoder Interface, 24 V, 32 bits, differential	<b>750-637/000-001</b>		
	Incremental Encoder Interface, 24 V, 32 bits, single-ended	<b>750-637/000-002</b>		
	Incremental Encoder Interface, RS-422, 32 bits, single interpreter	<b>750-637/000-003</b>		
	Incremental Encoder Interface, 24 V, 32 bits, single-ended, cam outputs	<b>750-637/000-004</b>		
	Digital Impulse Interface	<b>750-635</b>		<b>753-635</b>
<b>RTC Module</b>	RTC Module, real-time clock	<b>750-640</b>		
<b>Condition Monitoring</b>	2-Channel, Vibration Velocity/Bearing Condition Monitoring VIB I/O Module	<b>750-645</b>		
<b>Stepper Modules</b>	Stepper Controller, RS-422, 24 V, 20 mA	<b>750-670</b>		
	Stepper Controller, 24 V, 1.5 A	<b>750-671</b>		
	Stepper Controller, 70 V, 7.5 A, 6 IN, 2 OUT	<b>750-672</b>		
	Servo Stepper Controller, 70 V, 7.5 A, 6 IN, 2 OUT	<b>750-673</b>		
<b>DC Drive Controllers</b>	DC Drive Controller, 24 V, 5 A	<b>750-636</b>	<b>750-636/025-000</b>	
	DC Drive Controller, 24 V, 5 A, external motor voltage	<b>750-636/000-700</b>		
	DC Drive Controller, 24 V, 5 A, interference-free	<b>750-636/000-800</b>		
<b>Proportional Valve Module</b>	Proportional Valve Module	<b>750-632</b>		
<b>Ex i</b>		See page 175		



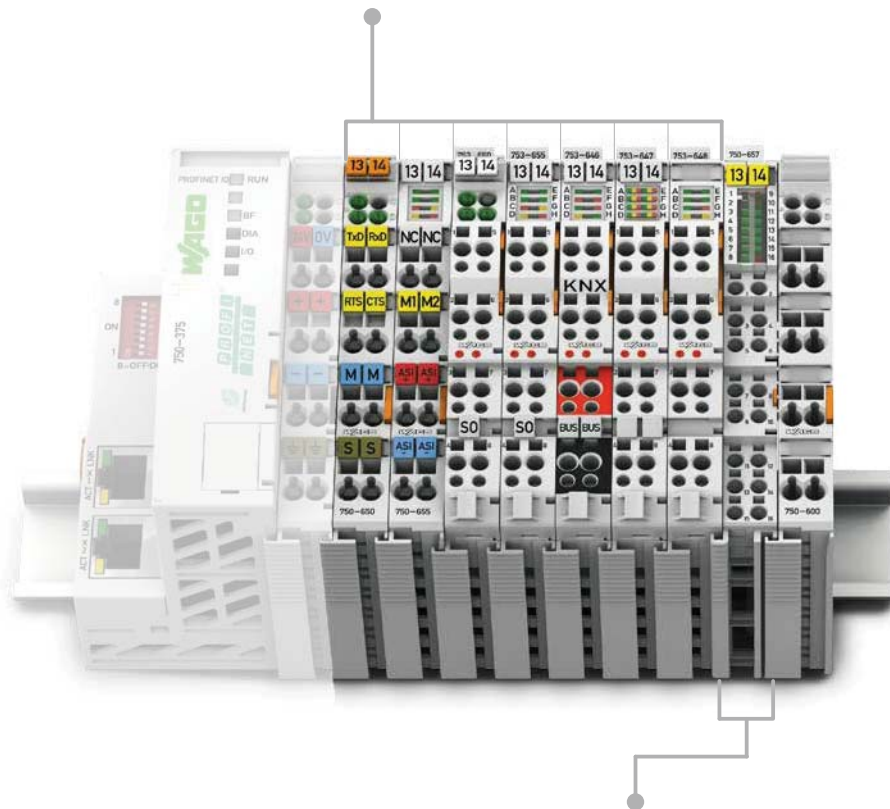
# Modular I/O-Systems

## Communication Modules



### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm² / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.



### 750 Series Housing Design with Push-in CAGE CLAMP® Connections (Up to 16 Connection Points)

Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm² / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.

# Modular I/O-Systems

## Communication Modules

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	Description	Item No.		
		Standard	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
<b>Serial Interfaces</b>	Serial Interface RS-232 C, 9600, N, 8, 1	<b>750-650</b>		<b>753-650</b>
	Serial Interface RS-232 C, 9600, N, 8, 1, 5 bytes	<b>750-650/000-001</b>		
	Serial Interface RS-232 C, 9600, E, 7, 2	<b>750-650/000-002</b>		
	Serial Interface RS-232 C, 9600, E, 8, 1	<b>750-650/000-006</b>		
	Serial Interface RS-232 C, 19200, N, 8, 1	<b>750-650/000-010</b>		
	Serial Interface RS-232 C, 19200, E, 8, 1	<b>750-650/000-011</b>		
	Serial Interface RS-232 C, 2400, N, 8, 1	<b>750-650/000-012</b>		
	Serial Interface RS-232 C, 4800, E, 8, 1	<b>750-650/000-015</b>		
	Serial Interface RS-232 C, configurable	<b>750-650/003-000</b>		<b>753-650/003-000</b>
	Serial Interface RS-485, 9600, N, 8, 1	<b>750-653</b>	<b>750-653/025-018</b>	<b>753-653</b>
	Serial Interface RS-485, 9600, E, 7, 2	<b>750-653/000-001</b>		
	Serial Interface RS-485, 9600, E, 8, 1	<b>750-653/000-002</b>		
	Serial Interface RS-485, 19200, N, 8, 1, 5 bytes	<b>750-653/000-006</b>		
	Serial Interface RS-485, configurable	<b>750-653/003-000</b>	<b>750-653/025-000</b>	<b>753-653/003-000</b>
	Serial Interface RS-232 C/RS-485	<b>750-652</b>	<b>750-652/025-000</b>	<b>753-652</b>
	TTY Interface, 9600, N, 8, 1	<b>750-651</b>		
	TTY Interface, 9600, E, 8, 1	<b>750-651/000-002</b>		
<b>Bluetooth®</b>	Bluetooth® RF Transceiver	<b>750-644</b>		
<b>EnOcean</b>	Radio Receiver Module	<b>750-642</b>		
<b>KNX</b>	KNX/EIB/TP1 Module			<b>753-646</b>
<b>DALI</b>	DALI Multi-Master Module			<b>753-647</b>
<b>LON</b>	LON FTT Module			<b>753-648</b>
<b>MP-Bus</b>	MP-Bus Master Module	<b>750-643</b>		
<b>AS-Interface Master</b>	AS-Interface Master	<b>750-655</b>		<b>753-655</b>
<b>IO-Link Master</b>	IO-Link Master	<b>750-657</b>		
<b>CAN Gateway</b>	CAN Gateway	<b>750-658</b>		
<b>Data Exchange</b>	Data Exchange Module	<b>750-654</b>		



# Modular I/O-Systems

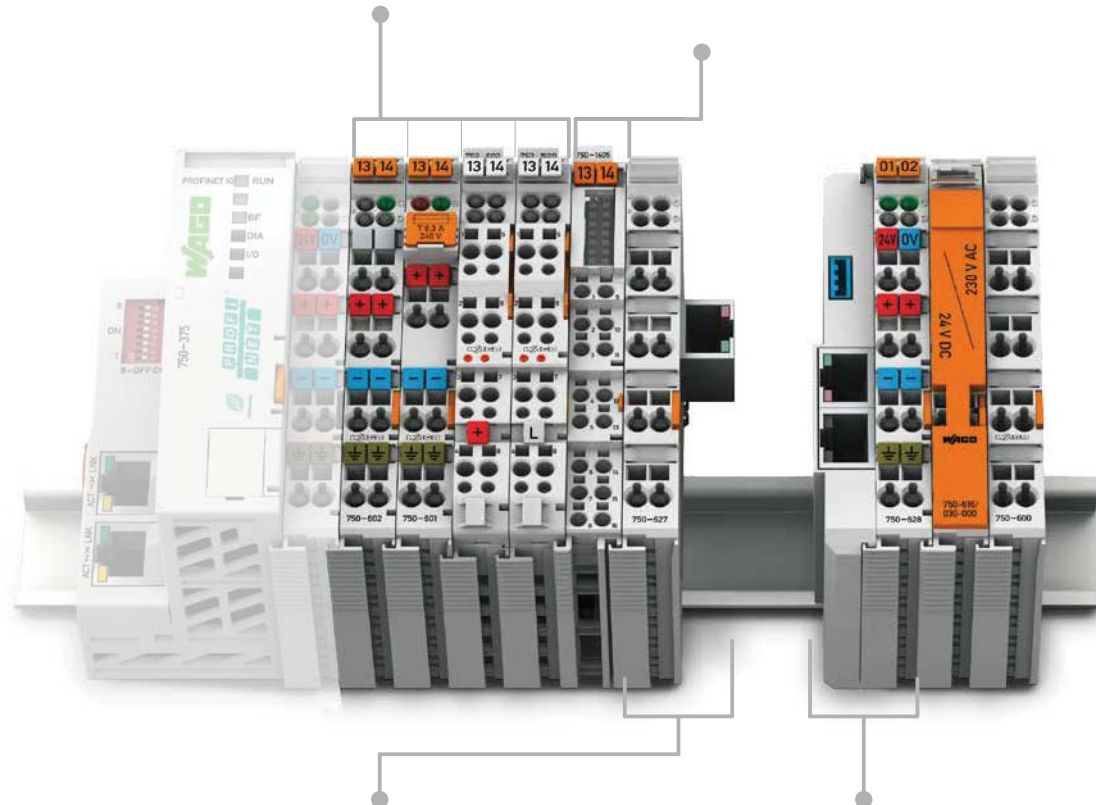
## Supply and Segment Modules

### 750/753 Series Housing Design

Dimensions (mm) W x H x L:	12 x 65 x 100 (Height from upper-edge of DIN-rail)
Connection technology:	CAGE CLAMP®
Conductor sizes:	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length:	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.

### 750 Series Housing Design with Push-in CAGE CLAMP® Connections (Up to 16 Connection Points)

Connection technology:	Push-in CAGE CLAMP®
Conductor sizes:	solid: 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 16 AWG fine-stranded: 0.25 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip length:	8 ... 9 mm / 0.33 in.



### Specialty Housing for Internal Data Bus Extension End Module

Dimensions (mm) W x H x L:	24 x 65 x 100 (Height from upper-edge of DIN-rail)
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### Specialty Housing for Internal Data Bus Extension Coupler Module

Dimensions (mm) W x H x L:	25 x 65 x 100 (Height from upper-edge of DIN-rail)
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# Modular I/O-Systems

## Supply and Segment Modules

### 750 Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**

Function	Description	Item No.		
		Standard	/T Operating Temperature: -20 °C ... +60 °C	Pluggable (Connector, Page 178)
<b>Supply Modules</b>  24 VDC	24 VDC, passive	750-602	750-602/025-000	753-602
	24 VDC, max. 6.3 A, without diagnostics, with fuse carrier	750-601		
	24 VDC, max. 6.3 A, with diagnostics, with fuse carrier	750-610		
	24 VDC, 5 ... 15 V	750-623		
24 VDC, Passive	24 VDC	750-613		
24 VAC	24 VAC, with fuse carrier	750-617		
120 VAC	120 VAC, max. 6.3 A, without diagnostics, with fuse carrier	750-615		
230 VAC	0 ... 230 V AC/DC, without diagnostics, passive	750-612		753-612
	230 VAC, max. 6.3 A, without diagnostics, with fuse carrier	750-609		
	230 VAC, max. 6.3 A, with diagnostics, with fuse carrier	750-611		
DALI Multi-Master DC/DC Converter	DALI Multi-Master DC/DC Converter			753-620
<b>Field-Side Connection Modules</b>	24 VDC	750-603		753-603
	0 VDC	750-604		753-604
	0 ... 230 V AC/DC	750-614		753-614
	16+, 24 VDC	750-1605		
	16-, 0 VDC	750-1606		
	8+/8-, 24/0 VDC	750-1607		
<b>Filter Modules</b>	Field-Side Power Supply Filter (Surge), high isolation ❶	750-624/020-000		
	Field-Side Power Supply Filter (Surge), high isolation, without power jumper contacts, also suitable as a supply module ❶	750-624/020-001		
	Field-Side Power Supply Filter (Surge) ❸ ❺	750-624		
	Field-Side Power Supply Filter (Surge), without power jumper contacts, also suitable as a supply module ❸ ❺	750-624/000-001		
	Power Supply Filter (Surge), high isolation ❷	750-626/020-000	750-626/025-001	
	Power Supply Filter (Surge) ❹ ❺	750-626	750-626/025-000	
<b>Internal Data Bus Extension</b>	End Module	750-627		
	Coupler Module	750-628		
<b>Spacer Modules</b>	Binary Spacer Module	750-622		
	Spacer Module, active			753-1629
	Spacer Module, active, without power jumper contacts			753-1629/000-001
	Spacer Module, passive			753-629/020-000
<b>Separation Modules</b>	Separation Module	750-616		
	Separation Module, labeled	750-616/030-000		
	Separation Module with Power Jumper Contacts	750-621		
<b>End Modules</b>	End Module for internal data bus completion	750-600	750-600/025-000	
<b>Ex i</b>		See page 175		

❶ Required for marine-certified operation with 750 Series I/O Modules

❷ Required for marine-certified operation with both 750 Series Couplers and Programmable Controllers

❸ Required for marine-certified operation with an Ex i Supply Module

❹ Required for marine-certified operation with both 758 Series IPCs and 750-625 Ex i Supply Module

❺ Required when using the 750 Series PROFIsafe Modules



# Modular I/O-Systems

## Functional safety

### 750 Series

CAGE CLAMP®

Function	Description	Item No.	
		Standard	Pluggable (Connector, Page 178)
PROFIsafe Digital Input Modules	PROFIsafe V1.3, 8 FDI 24 V	750-660/000-001	
	PROFIsafe V2 iPar, 4 FDI 24 V	750-661/000-003	753-661/000-003
	PROFIsafe V2 iPar, 8 FDI 24 V	750-662/000-003	753-662/000-003
PROFIsafe Digital Input/Output Modules	PROFIsafe V1.3, 4 FDO 0.5 A, 4 FDI 24 V	750-665/000-001	
	PROFIsafe V2 iPar, 4 FDI/2 FDO 24 V/2 A	750-666/000-003	753-666/000-003
	PROFIsafe V2 iPar, 4 FDI/4 FDO 24 V/2 A	750-667/000-003	753-667/000-003
Intrinsically Safe Digital Input Module with Inputs for Functional Safety	PROFIsafe V2 iPar, 4 F Ex i DI 24V	750-663/000-003	
Ex i Supply Modules	The intrinsically safe digital input module with inputs for functional safety (750-663/000-003) shall only be operated using an Ex i 24 VDC power supply (e.g., 750-606, 750-625/000-001)! General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!		
	24 VDC 1.0 A Ex i Supply Module, with diagnostics	750-606	
	24 VDC 1.0 A Ex i Supply Module	750-625/000-001	
Filter Modules	The mixed operation of safe and conventional modules streamlines system configuration. For increased electromagnetic immunity (EMC standard), WAGO offers compact power supply filter modules (Section 4.10). Specific power supply features must be considered, which are described in detail in the corresponding manuals.		
	24 VDC Field-Side Power Supply Filter (Surge), high isolation	750-624/020-000	
	24 VDC Power Supply Filter (Surge), high isolation	750-626/020-000	



# Modular I/O-Systems

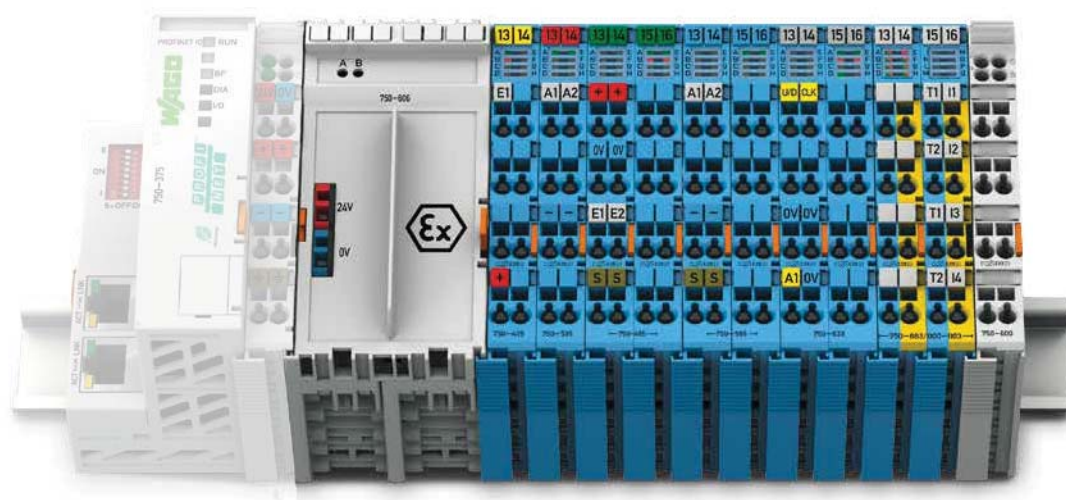
## Intrinsically Safe Ex i Modules

### 750 Series

CAGE CLAMP®

Function	Description	Item No.
Ex i Supply Modules	24 VDC 1.0 A Ex i Supply Module, with diagnostics	750-606
	24 VDC 1.0 A Ex i Supply Module	750-625/000-001
Digital Input Ex i Modules for Proximity Switches per EN 60947-5-6	1 DI NAMUR, Ex i	750-435
	2 DI NAMUR, Ex i	750-438
	8 DI NAMUR, Ex i	750-439
Intrinsically Safe Digital Input Module with Inputs for Functional Safety	PROFIsafe V2 iPar, 4 F Ex i DI 24V	750-663/000-003
Digital Output Ex i Modules	2 DO Ex i, short-circuit-protected, high-side switching	750-535
	2 DO Relay Output Ex i Module, isolated outputs, 2 changeover contacts	750-538
Analog Input Ex i Modules	2 AI Ex i 4 ... 20 mA, single-ended	750-485
	2 AI Ex i 4 ... 20 mA, single-ended, HART	750-484
	2 AI Ex i RTD	750-481/003-000
	2 AI Ex i TC	750-487/003-000
Analog Output Ex i Modules	2 AO Ex i 0 ... 20 mA	750-585
	2 AO Ex i 4 ... 20 mA	750-586
Ex i Function Module	Ex i Up/Down Counter NAMUR, 50 kHz	750-633

6



# WAGO-I/O-SYSTEM – 750 XTR Series

## General Product Information



### Taking it to the eXTReMe – The standard for 750 XTR

Instantly recognizable by its dark gray modules, the WAGO-I/O-SYSTEM 750 XTR's unique features make it ideal for extreme environments or applications.

The WAGO-I/O-SYSTEM 750 XTR features outstanding characteristics: It is extremely temperature-resistant, immune to interferences, as well as insensitive to vibrations and impulse voltages. This is what makes 750 XTR the first choice for demanding applications including:

- Marine systems and onshore/offshore installations
- Renewable energy systems (wind, photovoltaic and biogas plants)
- Transformer stations and power distribution
- Petrochemical Industry
- Water and wastewater treatment systems
- Custom machine engineering
- Railway applications



**eXTReMe**  
**temperatures**  
-40 °C ... +70 °C

**eXTReMe**  
**isolation**  
up to 5 kV of impulse voltage  
**DIN EN 60870-2-1**

**eXTReMe**  
**vibrations**  
up to 5g acceleration  
**DIN EN 60068-2-6**

### General Specifications

Operating voltage	24 VDC Under laboratory conditions +15 °C ... +35 °C: 18 ... 31.2 V (17.4 ... 31.2 V) <sup>1)</sup> -40 °C ... +55 °C: 18 ... 28.8 V (17.4 ... 28.8 V) <sup>1)</sup> +55 °C ... +70 °C: 18 ... 26.4 V (17.4 ... 26.4 V) <sup>1)</sup> <sup>1)</sup> including residual ripple of 15 %
Operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Relative humidity	Max. 95 % short-term condensation per IEC EN 60721-3-3, Class 3K7 (excluding wind-driven precipitation, water and ice formation)
Operating altitude	without temperature derating: 0 ... 2,000 m; with temperature derating: 2,000 ... 5,000 m (0.5 K/100 m); max.: 5,000 m
Pollution degree	2 per IEC 61131-2
Immunity to impulse voltages	Per EN 60870-2-1 Modules ≤ 50 V: 510 VAC / 775 VDC; Modules > 50 V: 2.5 kVAC / 3.5 VDC Isolation: Rated impulse voltage Modules ≤ 50 V: 1 kV (Class VW1 per EN 60870-2-1) Modules > 50 V: 5 kV (Class VW3 per EN 60870-2-1) Surge: Modules ≤ 50 V: 1 kV (L - L) / 2 kV (L - E) Modules > 50 V: 2 kV (L - L) / 4 kV (L - E) Overvoltage category: III
Vibration resistance	5g per IEC 60068-2-6, EN 60870-2-2, IEC 60721-3-1, IEC 60721-3-3, EN 61131-2
Shock resistance	15g/11 ms/half-sine/1,000 shocks per IEC 60068-2-27 25g/6 ms/1,000 shocks per IEC 60068-2-27
EMC immunity to interference	EN 61000-6-1, EN 61000-6-2, EN 61131-2 marine applications, EN 50121-3-2, EN 50121-4 EN 50121-5, EN 60255-26, EN 60870-2-1 EN 61850-3, IEC 61000-6-5, IEEE 1613, VDEW: 1994
EMC emission of interference	EN 61000-6-3 and EN 61000-6-4, EN 61131-2 EN 60255-26, marine applications EN 60870-2-1 (industrial and residential areas) EN 61850-3 (industrial and residential areas) EN 50121-3-2, EN 50121-4, EN 50121-5
Protection type	IP20
Mounting position	Horizontal (standing/lying) or vertical
Mounting type	on DIN-35 rail
Housing material	polycarbonate, polyamide 6.6
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Maximum pollutant concentration with a relative humidity < 75 %	SO <sub>2</sub> ≤ 25 ppm; H <sub>2</sub> S ≤ 10 ppm
Connection technology	CAGE CLAMP® (for standard I/O modules and fieldbus couplers)
Conductor size; strip length for standard I/O modules and fieldbus couplers: ECO Fieldbus Couplers:	0.25 ... 2.5 mm <sup>2</sup> /24 ... 14 AWG; 8 ... 9 mm/0.33 in. 0.25 ... 1.5 mm <sup>2</sup> /24 ... 16 AWG; 5 ... 6 mm/0.22 in.
Connection technology	Push-in CAGE CLAMP® (for I/O modules with 16 connection points)
Conductor size; strip length for I/O modules with 16 connection points:	0.25 ... 1.5 mm <sup>2</sup> /24 ... 16 AWG; 8 ... 9 mm/0.33 in.
Current via power jumper contacts	10 A (max.)

- No air conditioning required
  - Compact footprint
  - Lower energy and maintenance costs
- Can be used in unshielded areas
- Maximum system uptime
- Install close to vibrating and shock-generating system components
- CAGE CLAMP® connection technology for vibration-proof, fast and maintenance-free connections

# Modular I/O-Systems

## 750 XTR Series

**CAGE CLAMP®**  
**PUSH-IN CAGE CLAMP®**




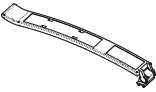



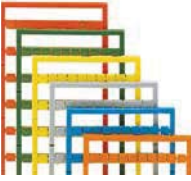



	Description		Item No.
	<b>PFC200 XTR</b>	PFC200 CS 2ETH RS CAN DPS / XTR	750-8206/040-000
		PFC200 CS 2ETH RS CAN DPS TELE / XTR	750-8206/040-001
		PFC200 CS 2ETH RS / XTR	750-8202/040-000
		PFC200 CS 2 ETH RS TELE / XTR	750-8202/040-001
	<b>Fieldbus Controllers</b>	ETHERNET Controller / XTR	750-880/040-000
		ETHERNET Controller TELE / XTR	750-880/040-001
		CANopen Controller / XTR	750-838/040-000
	<b>Fieldbus Couplers</b>	PROFIBUS DP/V1 12 Mbd / XTR	750-333/040-000
		ETHERNET / XTR	750-352/040-000
		CANopen D-Sub / XTR	750-338/040-000
	<b>Digital Input Modules</b>	8 DI 24 VDC 3.0 ms, 2-wire connection / XTR	750-1415/040-000
		8 DI 24 VDC 0.2 ms, 2-wire connection / XTR	750-1416/040-000
		16 DI 24 VDC 3.0 ms / XTR	750-1405/040-000
		2 DI 220 VDC 3.0 ms / XTR	750-407/040-000
		2 DI 60 VDC 3.0 ms / XTR	750-429/040-001
		2 DI 110 VDC 3.0 ms / XTR	750-427/040-000
	<b>Digital Output Modules</b>	2 DO 24 VDC 2.0 A, diagnostics / XTR	750-508/040-000
		8 DO 24 VDC 0.5 A, 2-wire connection / XTR	750-1515/040-000
		2 DO 230 VAC 1.0 A, relay 2 CO, potential-free / XTR	750-517/040-000
	<b>Analog Input Modules</b>	4 AI 0 ... 20 mA, single-ended / XTR	750-453/040-000
		4 AI 4 ... 20 mA, single-ended / XTR	750-455/040-000
		2 AI 4 ... 20 mA, differential input NE43 / XTR	750-492/040-001
		4 AI 0 ... 10 VDC, single-ended / XTR	750-468/040-000
		4 AI ±10 VDC, single-ended / XTR	750-457/040-000
		2/4 AI RTD, configurable / XTR	750-464/040-000
		2 AI Thermocouple, configurable / XTR	750-469/040-000
		3-Phase Power Measurement Module, 690 V, 1 A / XTR	750-495/040-000
		3-Phase Power Measurement Module, 690 V, 5 A / XTR	750-495/040-001
		3-Phase Power Measurement Module, 690 V, Rogowski coil / XTR	750-495/040-002
	<b>Analog Output Modules</b>	2 AO 0/4 ... 20 mA / 6 ... 18 VDC, configurable / XTR	750-563/040-000
		4 AO ±10 VDC / XTR	750-557/040-000
		4 AO 0 ... 10 VDC / XTR	750-559/040-000
	<b>Communication Modules</b>	RS-232/RS-485, configurable / XTR	750-652/040-000
	<b>Supply and Segment Modules</b>	24 VDC Power Supply / XTR	750-602/040-000
		AC/DC Power Supply, 0 ... 230 V / XTR	750-612/040-000
		24 VDC Bus Power Supply	750-613/040-000
		24 VDC Field-Side Power Supply Filter (Surge) / XTR	750-624/040-001
		24 VDC Power Supply Filter (Surge) / XTR	750-626/040-000
		Field-Side Connection Module 16+ / XTR	750-1605/040-000
		Field-Side Connection Module 16- / XTR	750-1606/040-000
		Separation Module / XTR	750-616/040-000
		End Module / XTR	750-600/040-000



## Modular I/O-Systems

### Accessories






#### 750/753 Series

	Description	Item No.	Pack. Unit
	Pluggable Connector, 753 Series, light gray	<b>753-110</b>	25
	Pluggable Connector, 753 Series, yellow	<b>753-120</b>	25
	Coding Elements, 753 Series, red	<b>753-150</b>	100
	Marker Carrier for 750/753 Series, transparent	<b>750-103</b>	50
	Marker Carrier for 750/753 Series, 4 LEDs	<b>750-106</b>	50
	Marker Carrier for 750/753 Series, 8 LEDs	<b>750-107</b>	50
	Markers for Group Marker Carrier, white	<b>750-100</b>	1 sheet
	Miniature WSB Quick Marking System, plain ○ white ● yellow ● red ● blue ● gray ● orange ● light green ● green ● violet	<b>248-501</b> <b>248-501/000-002</b> <b>248-501/000-005</b> <b>248-501/000-006</b> <b>248-501/000-007</b> <b>248-501/000-012</b> <b>248-501/000-017</b> <b>248-501/000-023</b> <b>248-501/000-024</b>	5 cards
	Interface modules for system wiring, relay modules with miniature switching relay, with flat cable connector per DIN 41651  8 channels/10 poles 16 channels/20 poles	See pages 232-234	1
	WAGO Ribbon Cables, connect I/O modules to interface modules  20/20 20/2 x 10	<b>706-3057/300-100</b> <b>706-7753/302-000</b>	1
	Operating Tools		
	with a partially insulated shaft, type 1, (2.5 x 0.4) mm blade	<b>210-719</b>	1
	with a partially insulated shaft, type 2, (3.5 x 0.5) mm blade	<b>210-720</b>	1

# Modular I/O-Systems

## Accessories

### 750/753 Series

	Description		Item No.	Pack. Unit
	PROFIBUS Fieldbus Connector with D-sub connector, 9-pole, suitable for an S7 PLC		<b>750-971</b>	1
	PROFIBUS Fieldbus Connector with D-sub male and female connectors, 9-pole		<b>750-972</b>	1
	ETHERNET RJ-45 Fieldbus Connector, IP20, CAT 5e		<b>750-975</b>	1
	PROFINET RJ-45 Fieldbus Connector, IP20		<b>750-976</b>	1
	PROFIBUS Fieldbus Connector with D-sub male connector, 9-pole		<b>750-960</b>	1
	CANopen Fieldbus Connector with D-sub female connector, 9-pole		<b>750-963</b>	1
	INTERBUS Fieldbus Connector (IN) with D-sub female connector, 9-pole		<b>750-961</b>	1
	INTERBUS Fieldbus Connector (OUT) with D-sub male connector, 9-pole		<b>750-962</b>	1
	CC-Link Fieldbus Connector with D-sub male connector, 9-pole		<b>750-965</b>	1
	<i>Bluetooth</i> ® Adapter, radio connection between PC and coupler/controller		<b>750-921</b>	1
	WAGO USB Communication Cable, connection between PC and coupler/controller (suitable for JUMPFLEX®)		<b>750-923</b> <b>750-923/000-001</b>	1
		2.5 m 5 m		
	<i>Bluetooth</i> ® ETHERNET Gateway		<b>758-915</b>	1
	WLAN ETHERNET Gateway	2.4 GHz 5 GHz	<b>758-916</b> <b>758-917</b>	1
	Magnetic-Mount Antenna, GSM 900/1800		<b>758-910</b>	1
	Magnetic-Mount Antenna, WLAN/ <i>Bluetooth</i> ® 2.4 Ghz		<b>758-912</b>	1

## WAGO SPEEDWAY 767

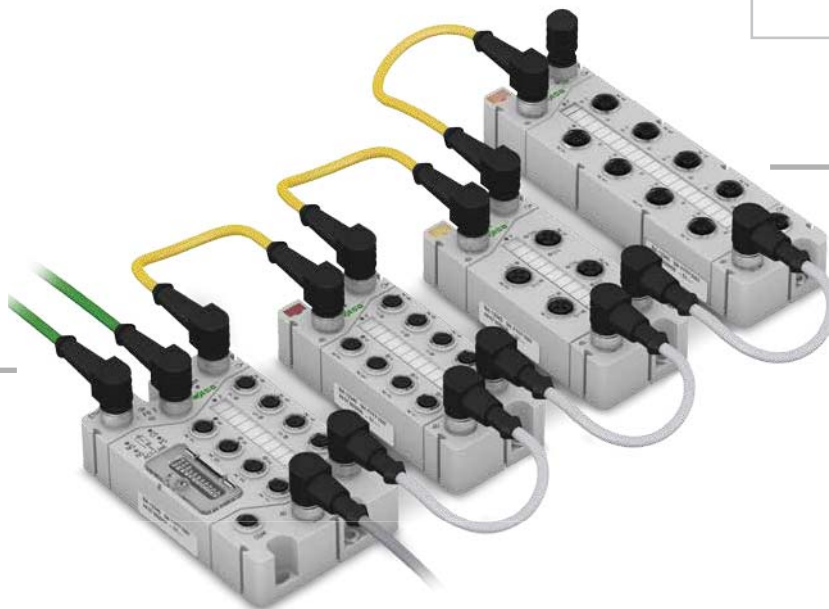
### For Cabinet-Free Data Acquisition

Where previously discrete wiring was once required, fieldbuses now communicate between the control and field levels. Depending on the application, cabinet-free automation systems help minimize costs for planning, start-up and maintenance.

In addition to requiring a high degree of protection, a robust design and standardized connection technology, there is an increasing demand for advanced IP67 features that were once reserved only for IP20 systems, including:

- Real-time capable (isochronous data acquisition/output)
- Parameterizable
- Diagnostic capable
- Upgradable

Connect the cabinet directly to the field level without sacrificing functionality – *SPEEDWAY* perfectly tailors machines to meet specific, decentralized needs. Configuration is both easy and flexible, with changes being made safely and quickly (plug & play).



- Fully encapsulated for harsh environmental conditions
- Fieldbus-independent – Support all standard fieldbus protocols and ETHERNET standards
- Real-time capability up to isochronous mode for selected ETHERNET-based fieldbuses
- Exclusive use of standard pluggable connectors
- Flexible mounting options
- ATEX/IEC Ex certificate for Zone 2/22







#### General Specifications

Operating voltage	24 VDC (-25 % ... +30 %)
Operating temperature	-25 °C ... +60 °C; temperature change 3 K/s
Storage temperature	-40 °C ... +85 °C
Relative humidity (without condensation)	5 ... 95 %
Operating altitude	-1000 ... 2000 m; Air pressure: 1080 ... 795 hPa
Altitude at storage/transport	-1000 ... 3500 m; Air pressure: 1080 ... 660 hPa
Free fall	≤ 1 m per EN 61131-2
Pollution degree	3 per IEC 60664 (IEC 61131)
Protection class	III per IEC 60536 (VDE 0106, Part 1)
Vibration resistance	5g per IEC 60068-2-6
Shock resistance	Short-term: 50g/11 ms/half-sine per IEC 60068-2-27 Long-term: 30g/6 ms/half-sine per IEC 60068-2-29
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Protection type	IP67 (NEMA 6&6P) per DIN 40050 (EN 60529)
Mounting position	any
Housing material	Polyamide (PA), light gray (RAL7035); Makrolon (address switch cover), transparent; Flammability per UL94-V0; halogen, silicon-free; Potting: Polyurethane (PUR), halogen/silicon-free
UV resistance	1,000 h UV continuous light per DIN EN ISO 4892-2B
Maximum contaminant concentration	SO <sub>2</sub> < 0.5 ppm; H <sub>2</sub> S < 0.1 ppm
Current carrying capacity (supply connections)	Max. 8 A (U <sub>IS</sub> : 4 A; U <sub>A</sub> : 4 A)

# WAGO SPEEDWAY 767

	Function	Description	Item No.	
			Standard	Interference-Free
	Fieldbus Couplers	FC PROFIBUS DP, 8 DI, 24 VDC	767-1101	
		FC PROFINET IO, 8 DI, 24 VDC	767-1201	
		FC ETHERNET, 8 DI, 24 VDC	767-1301	
		FC sercos 8 DI, 24 VDC, high-speed	767-1311	
		FC DeviceNet, 8 DI, 24 VDC	767-1401	
		FC CANopen, 8 DI, 24 VDC	767-1501	
	Digital Input Modules (DI)	8 DI, 24 VDC (8 x M8)	767-3801	
		8 DI, 24 VDC (4 x M12)	767-3802	
		8 DI, 24 VDC, low-side switching (8 x M8)	767-3803	
		8 DI, 24 VDC, low-side switching (4 x M12)	767-3804	
		8 DI, 24 VDC (8 x M12)	767-3805	
		8 DI, 24 VDC, high-speed (4 x M12)	767-3806	
	Digital Output Modules (DO)	8 DO, 24 VDC, 0.5 A (8 x M8)	767-4801	767-4801/000-800
		8 DO, 24 VDC, 0.5 A (4 x M12)	767-4802	767-4802/000-800
		8 DO, 24 VDC, 2.0 A (8 x M8)	767-4803	767-4803/000-800
		8 DO, 24 VDC, 2.0 A (4 x M12)	767-4804	767-4804/000-800
		8 DO, 24 VDC, 0.5 A, low-side switching (8 x M8)	767-4805	
		8 DO, 24 VDC, 0.5 A, low-side switching (4 x M12)	767-4806	
		8 DO, 24 VDC, 0.5 A (8 x M12)	767-4807	767-4807/000-800
		8 DO, 24 VDC, 0.1 A, high-speed (4 x M12)	767-4808	
	Digital Input/Output Modules (DIO)	8 DIO, 24 VDC, 0.5 A (8 x M8)	767-5801	767-5801/000-800
		8 DIO, 24 VDC, 0.5 A (4 x M12)	767-5802	767-5802/000-800
		8 DIO, 24 VDC, 0.5 A (8 x M12)	767-5803	767-5803/000-800
		4 DIO, 24 VDC, 0.2 A, high-speed (4 x M12)	767-5401	
	Analog Input Modules (AI)	4 AI U/I (4 x M12)	767-6401	
		4 AI RTD (4 x M12)	767-6402	
		4 AI TC (4 x M12)	767-6403	
	Analog Output Modules (AO)	4 AO U/I (4 x M12)	767-7401	
	Function and Technology Modules	TTL Incremental Encoder/SSI Encoder (4 x M12)	767-5201	
		HTL Incremental Encoder/Counter (4 x M12)	767-5202	
	Communication Modules	Serial Interface RS-232, RS-422/-485 (4 x M12)	767-5203	
		MOVILINK® Interface (RS-232, RS-485) (4 x M12)	767-5204	
	Supply Modules	Power Divider (1 x M23 + 6 x M12)	767-9101	

## Accessories



	Spacer Module, with fixing lugs for cable ties		767-111	
	Protective Caps, for unused sockets	M8	756-8101	
		M12	756-8102	
	Protective Caps, for unused plugs	M12	755-8103	
		M23	755-8104	
	Carrier Rail Adapter	for couplers	767-121	
		for I/O modules	767-122	
			767-125	
	USB Communication Cable	3 m	756-4101/042-030	
	Profile Adapter	for couplers	767-123	
		for I/O modules and power dividers	767-124	
			767-126	





## WAGO SPEEDWAY 767

### Connection Cables for 767 Series



#### System Bus Cables, B-Coded

	Description	Item No.
	Socket, straight, 2 ... 20 m	756-1301/060-020 ... 756-1301/060-200
	Plug, straight, 2 ... 20 m	756-1303/060-020 ... 756-1303/060-200
	Socket/plug, straight, 0.2 ... 50 m	756-1305/060-002 ... 756-1305/060-500
	Socket, angled, 2 ... 20 m	756-1302/060-020 ... 756-1302/060-200
	Plug, angled, 2 ... 20 m	756-1304/060-020 ... 756-1304/060-200
	Socket/plug, angled, 0.2 ... 50 m	756-1306/060-002 ... 756-1306/060-500

#### Power Supply Cables, A-Coded

	Description	Item No.
	Socket, straight, 2 ... 20 m	756-3101/040-020 ... 756-3101/040-200
	Plug, straight, 2 ... 20 m	756-3103/040-020 ... 756-3103/040-200
	Socket/plug, straight, 0.2 ... 20 m	756-3105/040-002 ... 756-3105/040-200
	Socket, angled, 2 ... 20 m	756-3102/040-020 ... 756-3102/040-200
	Plug, angled, 2 ... 20 m	756-3104/040-020 ... 756-3104/040-200
	Socket/plug, angled, 0.2 ... 20 m	756-3106/040-002 ... 756-3106/040-200

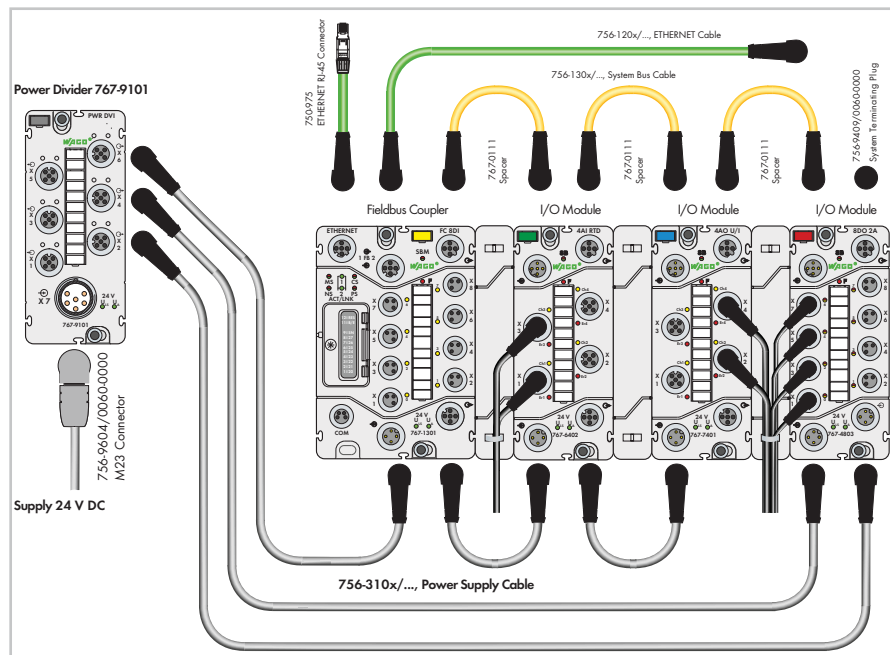
#### ETHERNET, PROFINET Cables, D-Coded

	Description	Item No.
	Plug, straight, 2 ... 20 m	756-1201/060-020 ... 756-1201/060-200
	Plug/plug, straight, 2 ... 20 m	756-1203/060-020 ... 756-1203/060-200
	Plug, angled, 2 ... 20 m	756-1202/060-020 ... 756-1202/060-200
	Plug/plug, angled, 2 ... 20 m	756-1204/060-020 ... 756-1204/060-200

#### Power Supply

The WAGO SPEEDWAY system's modular structure allows both individual I/O modules and groups of modules to be supplied (e.g., emergency stop groups). Thus, different power supplies can be used at the same potential to operate each individual module and group of modules. Two supply lines are routed within the supply cables (gray). The logic and sensor supply ( $U_{IS}$ ) is always electrically isolated from the actuator supply ( $U_A$ ).

Additional I/O modules can be connected until the highest permissible current load of 4 A for one supply line ( $U_{IS}$  and/or  $U_A$ ) is reached. The power supply must be re-established to connect additional SPEEDWAY Modules. However, using 2 A output modules, power supply will not be transmitted in the event of an increased power demand.



WAGO's SPEEDWAY Power Divider permits  $U_{IS}$  and  $U_A$  power supply distribution via six M12 connectors. The combination of point-to-point and linear power distribution/distribution routing offers the greatest flexibility to optimize the supply lines for the respective application and to supply power over large distances.

## Sensor/Actuator Boxes, IP67

### 757 Series

	Function	Description	Item No.
	M12 Sensor/Actuator Boxes, with connection cable	4-port, 4-pole, 5 m cable	757-244/000-005
		4-port, 4-pole, 10 m cable	757-244/000-010
		6-port, 4-pole, 5 m cable	757-264/000-005
		6-port, 4-pole, 10 m cable	757-264/000-010
		8-port, 4-pole, 5 m cable	757-284/000-005
		8-port, 4-pole, 10 m cable	757-284/000-010
		8-port, 4-pole, 25 m cable	757-284/000-025
		4-port, 5-pole, 5 m cable	757-245/000-005
		4-port, 5-pole, 10 m cable	757-245/000-010
		6-port, 5-pole, 5 m cable	757-265/000-005
		6-port, 5-pole, 10 m cable	757-265/000-010
		8-port, 5-pole, 5 m cable	757-285/000-005
		8-port, 5-pole, 10 m cable	757-285/000-010
		8-port, 5-pole, 25 m cable	757-285/000-025
	M12 Sensor/Actuator Boxes, with M23 connector	4-port, 4-pole, M23 connector	757-144
		6-port, 4-pole, M23 connector	757-164
		8-port, 4-pole, M23 connector	757-184
		4-port, 5-pole, M23 connector	757-145
		6-port, 5-pole, M23 connector	757-165
		8-port, 5-pole, M23 connector	757-185
		8-port, 5-pole, without LED, M23 connector	757-185/100-000
	M8 Sensor/Actuator Boxes, with connection cable	4-port, 3-pole, 2 m cable	757-443/000-002
		4-port, 3-pole, 5 m cable	757-443/000-005
		4-port, 3-pole, 10 m cable	757-443/000-010
		6-port, 3-pole, 5 m cable	757-463/000-005
		6-port, 3-pole, 10 m cable	757-463/000-010
		8-port, 3-pole, 5 m cable	757-483/000-005
		8-port, 3-pole, 10 m cable	757-483/000-010
		10-port, 3-pole, 5 m cable	757-403/000-005
		10-port, 3-pole, 10 m cable	757-403/000-010
	M8 Sensor/Actuator Boxes, with M16 connector	4-port, 3-pole, M16 connector	757-343
		6-port, 3-pole, M16 connector	757-363
		8-port, 3-pole, M16 connector	757-383
		10-port, 3-pole, M16 connector	757-303
Accessories			
	Connection Cables	M16 socket, straight, 14-pole, 5 ... 15 m	756-3205/140-050 ... 756-3205/140-150
		M16 socket, angled, 14-pole, 5 ... 15 m	756-3206/140-050 ... 756-3206/140-150
		M23 socket, straight, 12-pole, 5 ... 15 m	756-3201/120-050 ... 756-3201/120-150
		M23 socket, straight, 19-pole, 5 ... 15 m	756-3203/190-050 ... 756-3203/190-150
		M23 socket, angled, 12-pole, 5 ... 15 m	756-3202/120-050 ... 756-3202/120-150
		M23 socket, angled, 19-pole, 5 ... 15 m	756-3204/190-050 ... 756-3204/190-150
	Spacer Modules for sensor/actuator boxes	4-port	757-040
		6-port	757-060
		8-port	757-080
		10-port	757-000
	Marker Cards for M12 sensor/actuator boxes, 40 markers/card		757-011