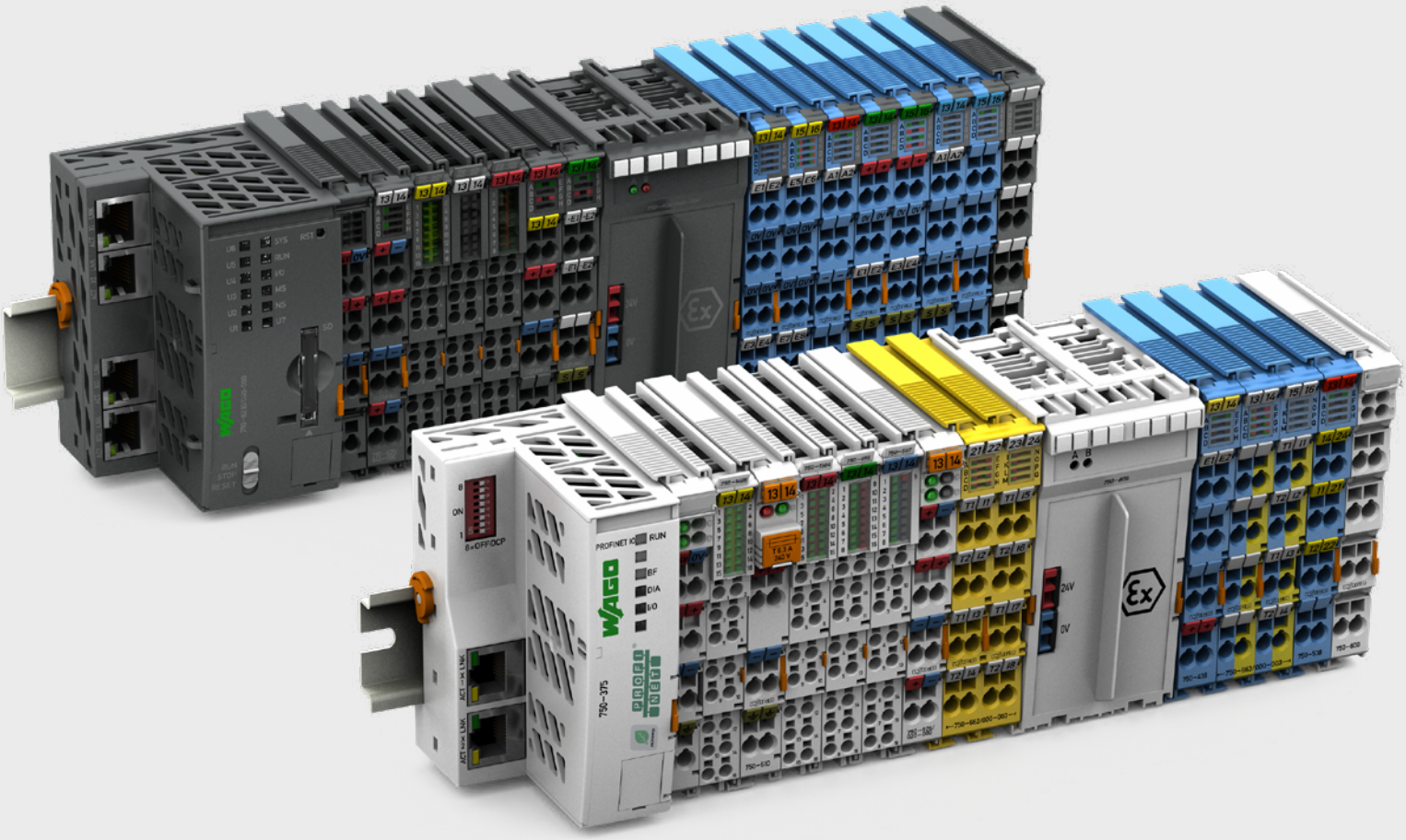
WAGO I/O System 750

The System for Every Application



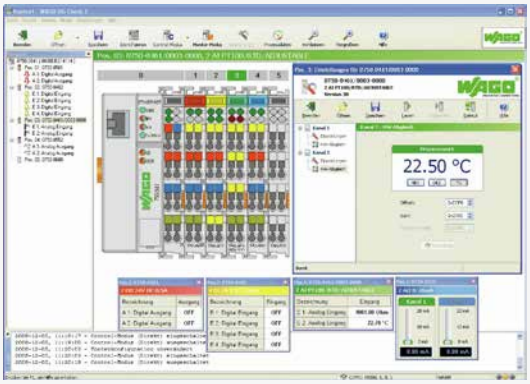
Automating with WAGO

Engineering Software

The right software for every task: *WAGO-I/O-CHECK* is available as an easy-to-use Windows application for configuring an I/O node.

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. *WAGO-I/O-CHECK* allows you to display and specify the process data of individual I/O modules, so the field wiring, including all sensors and actuators, can be checked before commissioning. You can also make special settings for I/O modules. The CODESYS V3 industry standard is used for programming the controllers, offering flexible engineering per IEC 61131-3.

All the software is available from the WAGO Download Center:
https://downloadcenter.wago.com/



Operation and Monitoring

Operation, monitoring, visualization and diagnostics in production and the process industry – WAGO's Web and Control Panels are available for small- to medium-sized control and visualization tasks. These products focus on saving you time with their excellent ease of use and fast-paced visualizations.

Optimal Data Utilization in the Field

Intelligent processes are requiring more and more computing power, placing corresponding demands on databases right in the field. With the Edge Controller and the Edge Computer, WAGO offers the perfect hardware for every edge application.

As the leader in screwless electrical interconnection and interface electronic technologies, WAGO developed the first fieldbus-independent I/O system with fine-grained modularity in 1995. To this day, our steadfast commitment to innovation and versatility has enabled us to continue setting new standards of usability, performance and reliability. A compact design, combined with the highest quality standards, has made the WAGO I/O System one of the world's most successful decentralized I/O systems.

Controllers

WAGO's high-performance programmable controllers offer a wide range of performance classes for any automation control needs in both centralized and decentralized applications. For decentralized control, WAGO's controllers can be incorporated into the most common fieldbus networks and record all field signals via I/O modules. WAGO's controllers (programmable per IEC 61131-3) are appropriate for many different automation tasks and provide all the benefits of proven PLC technology, such as strength, stability, reliability and availability.

WAGO's controllers run Linux®, a flexible and secure operating system that offers many of the advantages of the open source universe. For example, the third-party container software Docker® can be used on WAGO's controllers.

WAGO I/O Systems

Whether inside or outside the control cabinet, WAGO's I/O systems provide automation right where you need it – even under harsh conditions. WAGO offers a wide variety of I/O modules for virtually any application, with both IP20 solutions (the WAGO I/O System 750 and 750 XTR) and IP67 solutions (the WAGO I/O System Field).

Infrastructure

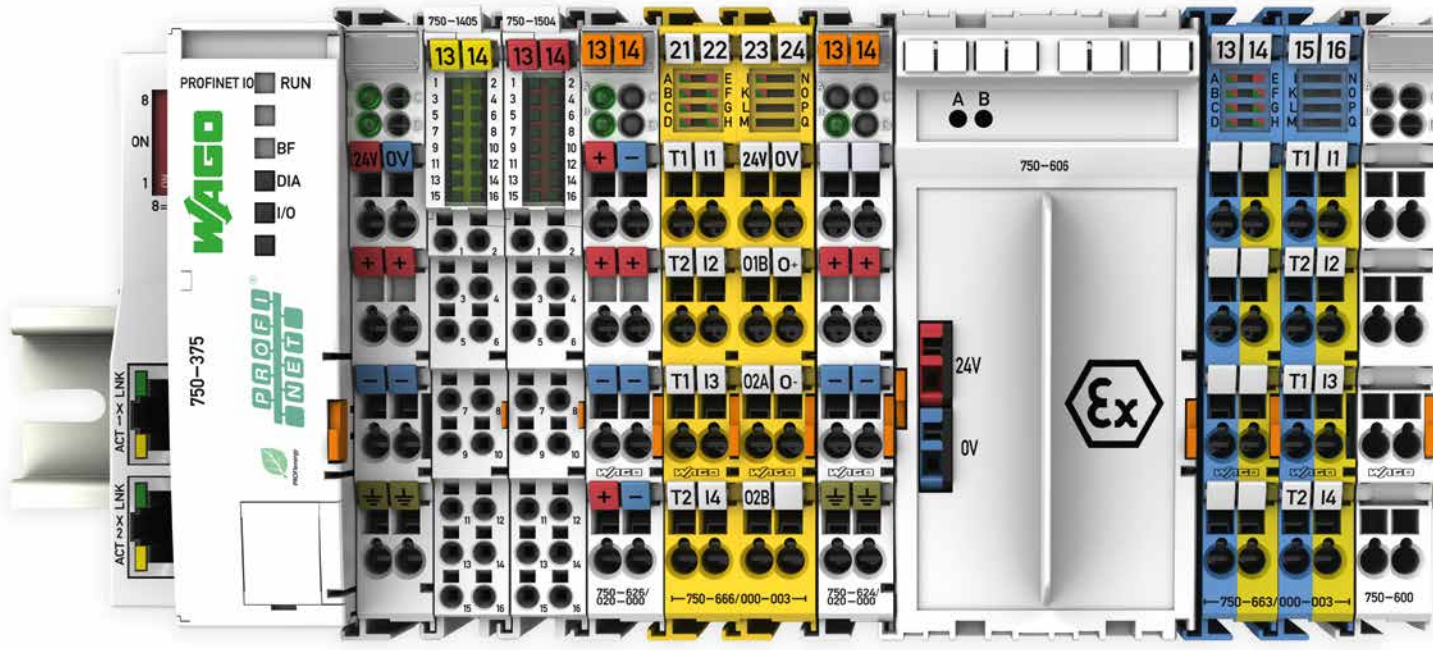
In industrial automation, data transmission via fieldbus or industrial ETHERNET systems is being supplemented more and more by wireless technologies, such as mobile radio, *BLUETOOTH*® and WLAN. The WAGO EnOcean® Gateway makes it easy to connect battery-free sensors to the WAGO I/O System 750 via a serial interface. The economical industrial switches, which reliably transmit data traffic and protect against network failures, offer the perfect complement.

WAGO I/O System 750

The System for Every Application

The WAGO I/O System 750 boasts universal use and an 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. Whether for industrial, process or building automation, safety applications, telecontrol or hazardous areas:

The WAGO I/O System 750 offers the decentralized periphery for automation technology. International certifications such as IECEx, UL61010 and DNV, as well as several additional marine approvals, allow the WAGO I/O System to be used worldwide for virtually any industry.



Benefits:

- Fieldbus-independent – compatible with the most common fieldbus protocols and ETHERNET standards
- Use in a wide variety of applications and environments
- Tested and approved worldwide
- Extensive range of accessories for marking and connection technology
- Fast, vibration-proof, maintenance-free CAGE CLAMP® connections

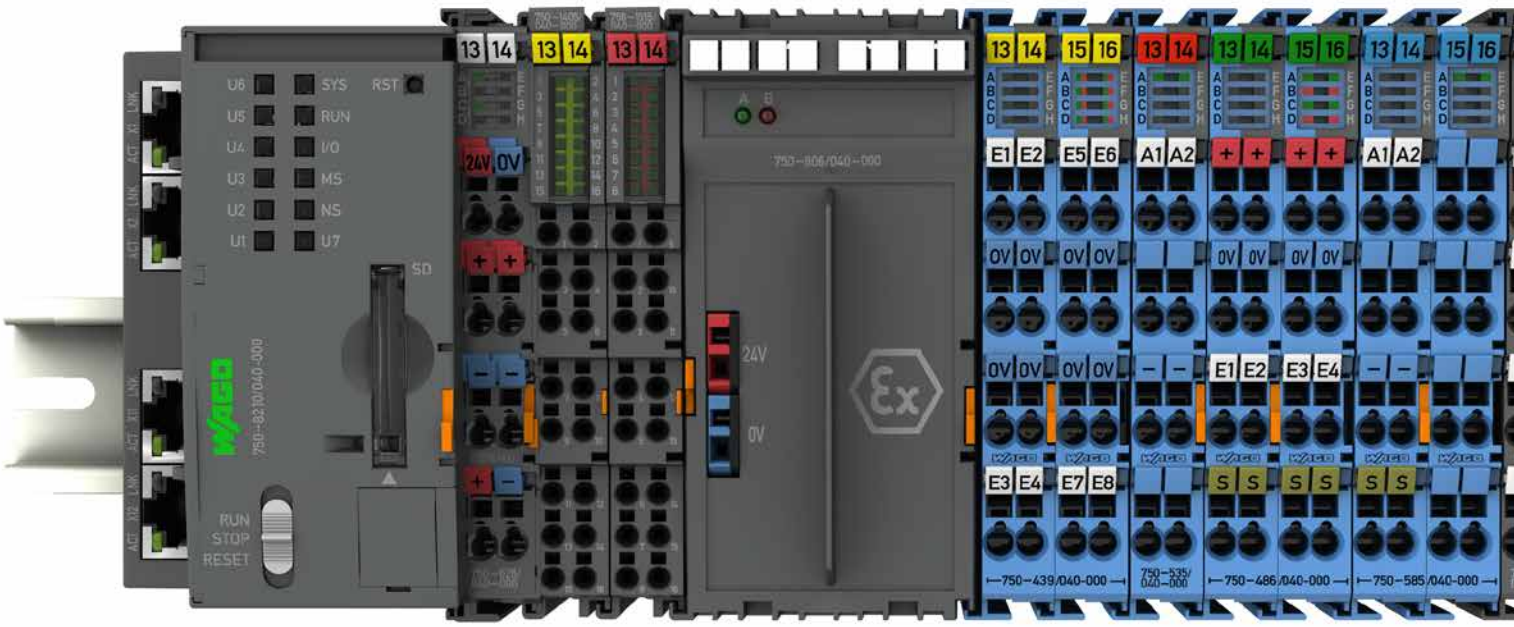
WAGO I/O System 750 XTR

Taking It to the eXTReme – the Standard for the 750 XTR

The WAGO I/O System 750 XTR is instantly recognizable by its dark gray modules. Extremely temperature-resistant, immune to interference, as well as unfazed by vibrations and impulse voltages – you will benefit from the unique added value of the WAGO I/O System 750 XTR for applications that are subjected to extreme environments.

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

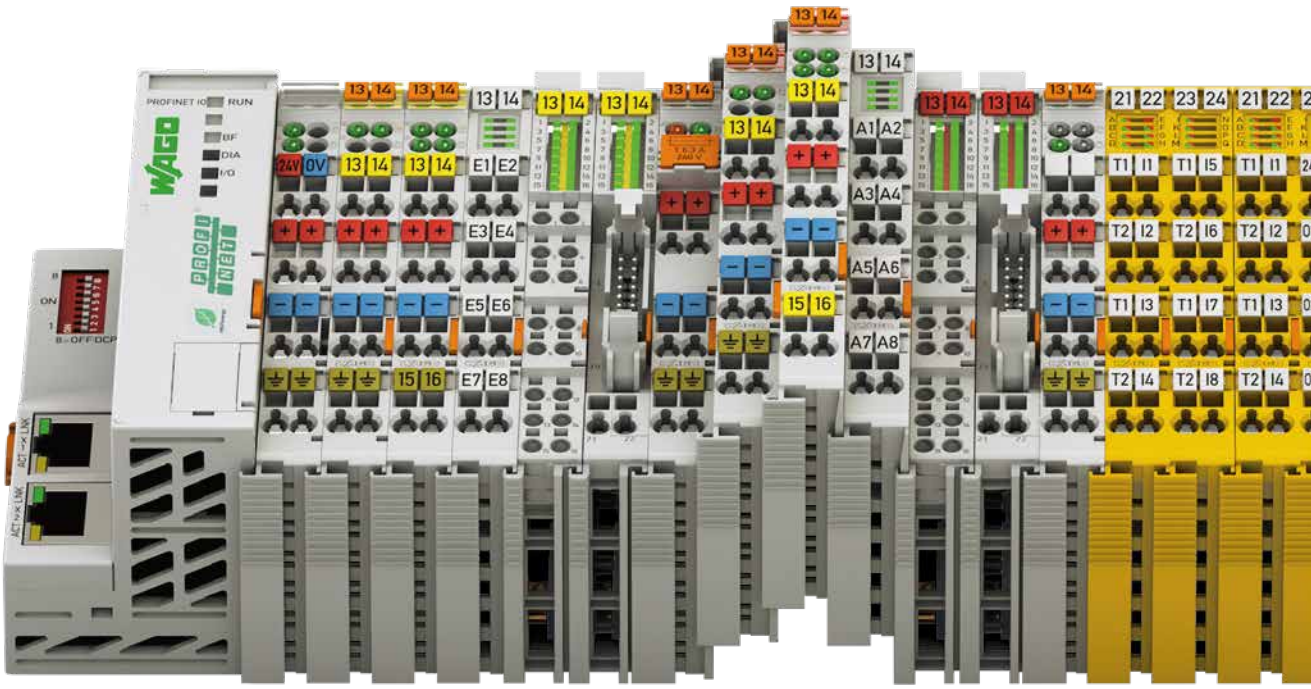


Benefits:

- Based on the 750 Series
- No air-conditioning required
- Smaller footprint
- Lower energy and maintenance costs
- Can be used in unshielded areas
- Can be used in hazardous areas

Universal, Compact, Economical

The Ideal Fieldbus Node



Maximum Fieldbus Independence
Another facet of the system's modular design can be seen in its support for numerous fieldbus systems and ETHERNET standards. You can choose between fieldbus couplers and communication modules for different protocols according to your application.

Worldwide Approvals
International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use. These even include the harsh operating conditions covered by ATEX, BR-Ex, IECEx, UL, UL ANSI/ISA and numerous other marine certifications.

Clear Labeling
Marker carriers (integrated or optional) identify I/O modules' functionality. Terminal assignment information and technical data are printed on the side of the I/O modules. WAGO's WSB Marking System also allows for module- and channel-specific labeling.

Extremely Compact
The extremely compact I/O nodes allow the system to fit perfectly in the tightest spaces. It can accommodate up to 16 channels in a module width of 12 mm (1/2").
The I/O modules boast fine-grained modularity and a compact design, allowing tailored node configurations and high I/O integration density.

Pluggable Connection Interface
For ultimate convenience, 753 Series Modules are 100 % compatible with the 750 Series and feature pluggable connectors. Thanks to the detachable wiring interface, it is easy to replace a module without removing and redoing all the existing wiring. This design virtually eliminates installation errors, enabling flexible assembly via pre-wired connectors and saving time.

Maximum Reliability and Ruggedness
The WAGO I/O System is engineered and tested for use in the most demanding environments and meets the highest standards, such as are required in marine applications. The system differs from other products intended solely for industrial use through the following features:

- 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

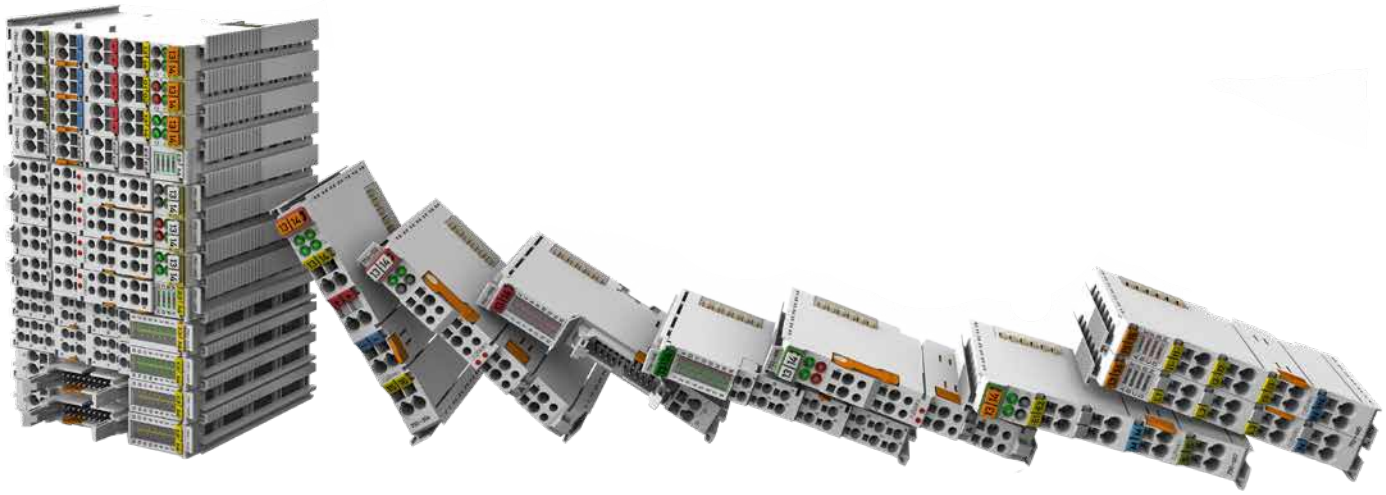
In addition, CAGE CLAMP® spring pressure connections ensure superior reliability. Integrated QA steps in the production process and 100 % function testing ensure consistent quality.

Maximum Flexibility
Each node in the WAGO I/O System can be configured to meet every channel's requirements; various potentials and signal types are also available (granularity: 1 to 16 channels). Digital and analog I/O modules, as well as specialty modules, can be freely mixed. Supply modules permit different voltages within the same node.

Easy to Use
This modular DIN-rail-mount I/O module permits easy installation, expansion and modification of the I/O node without tools. The straightforward design prevents installation errors. Additionally, proven CAGE CLAMP® technology makes all field connections 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.

500+ I/O Modules Available

1-, 2-, 4-, 8- and 16-Channel



Digital Input Modules

2-Channel Digital Input
- 24, 48, 60, 110, 220 VDC
- 120, 230 VAC
- NPN/PNP, 0.2 ms/3.0 ms, filter, diagnostics

2-Channel Digital Specialty Modules
- NAMUR
- Pulse extension
- Intruder detection
- Up/down counter, 500 Hz, 100 kHz

4-Channel Digital Input
- 5, 24, 42 VDC
- 24, 42 VAC, 110 ... 230 VAC

8-Channel Digital Input
- 24 VDC, 5 ... 14 VDC
- NPN/PNP, 0.2/3.0 ms, filter
- PTC

16-Channel Digital Input
- Push-in CAGE CLAMP®, 24 VDC, NPN/PNP
- Ribbon cable, 24 VDC, NPN/PNP

Digital Output Modules

1-Channel Digital Output
- 440 VAC, 16 A
- Manual operation, bistable

2-Channel Digital Output
- 24 VDC, 0.5 A/2 A, diagnostics (wire break/short circuit)
- 230 VAC, SSR, 3.0 A, diagnostics

4-Channel Digital Output
- 5 VDC, 24 VDC, 0.5 A
- 5, 24 VDC, 30 VAC/DC, 0.5/2 A
- 120 ... 230 VAC, 0.25 A
- NPN/PNP, diagnostics

8-Channel Digital Output
- 5 ... 14 VDC, 1 A
- 24 VDC, 0.5 A
- NPN/PNP, diagnostics

16-Channel Digital Output
- Push-in CAGE CLAMP®, 24 VDC, 0.5 A, NPN/PNP
- Ribbon cable, 24 VDC, 0.5 A

2-Channel Relay Output
- 0 ... 230 VAC/DC
- 2 make contacts/2 changeover contacts, isolated outputs/non-floating

4-Channel Relay Output
- 4 make contacts

Analog Input Modules

2-Channel Analog Input
- Resistor bridge (strain gauge)
- 0/4 ... 20 mA, 0 ... 1/5 A AC/DC
- 0 ... 10 VDC, ±10 VDC, 0 ... 30 VDC
- Thermocouples
- Resistance measurement (RTD)
- Differential/single-ended input
- Measurement input (electrical isolation)
- Modules with HART protocol (NE43)

4-Channel Analog Input
- 0/4 ... 20 mA
- 3, 6 ... 21 mA NE43
- ±20 mA
- 0 ... 10 V, ±10 V
- Resistance measurement (RTD)
- Differential/single-ended input
- Diagnostics
- Measurement input (electrical isolation)

8-Channel Analog Input
- 0 ... 10 V / ±10 V
- 0/4 ... 20 mA
- Thermocouples
- Resistance measurement (RTD)
- Single-ended input
- Push-in CAGE-CLAMP® connection technology

3-Phase Power Measurement
- 480 / 690 V, medium voltage, 1 A / 5 A/Rogowski coil

Analog Output Modules

2-Channel Analog Output
- 0 ... 10 V / ±10 V
- 0/4 ... 20 mA

4-Channel Analog Output
- 0 ... 10 V / ±10 V
- 0/4 ... 20 mA

8-Channel Analog Output
- 0 ... 10 V / ±10 V

Analog Specialty Modules
- 6 ... 18 V
- 0 ... 10 V, 10 mA, diagnostics

Function and Technology Modules

Counter Modules
- Up/down counter
- Frequency counter
- Peak-time counter

Distance and Angle Measurement
- SSI transmitter interface
- Incremental encoder interface
- Digital impulse interface

Positioning
- Stepper controller, RS-422
- Stepper controller, 24 V/1.5 A
- Stepper controller, 70 V/7.5 A, 6IN/2OUT
- Servo stepper controller, 70 V/7.5 A, 6IN/2OUT
- DC drive controller, 24 V/5 A

Pulse Width Output

Proportional Valve Module
- Control of hydraulic or pneumatic valves

Vibration Monitoring
- Vibration velocity/bearing condition monitoring

A Wide Variety of I/O Modules

For Virtually Any Application

Communication Modules

Building Automation
- DALI Multi-Master
- EnOcean® Radio Receiver
- MP-Bus
- KNX/EIB/TP1 Interface
- LON®
- SMI
- M-Bus

Serial Interfaces
- RS-232-/RS-485 interface (adjustable)

4-Port IO-Link Master

AS-Interface Master
- Per (M4) V 3.0 specification
- Up to 62 slaves

CAN Gateway

Functional Safety

Fail-Safe Digital Input PROFIsafe
- 4FDI, 24 VDC
- 8FDI, 24 VDC

Fail-Safe Digital Input/Output PROFIsafe
- 4FDI/2FDO, 24 VDC, 10 A
- 4FDI/4FDO, 24 VDC, 2 A
- 4FDI/4FRO, 48 VAC, 60 VDC, 6 A

Intrinsically Safe Digital Input PROFIsafe
- 4 F Ex i DI, 24 VDC, Zone 0 + 1

Fail-Safe Analog Input PROFIsafe
- 4FAI 0/4 ... 20 mA

Safety Category
- Cat. 4/PLe per EN ISO 13849 or SIL3 EN IEC 62061

Supply and Segment Modules

Local Bus Extension
- End module
- Coupler module

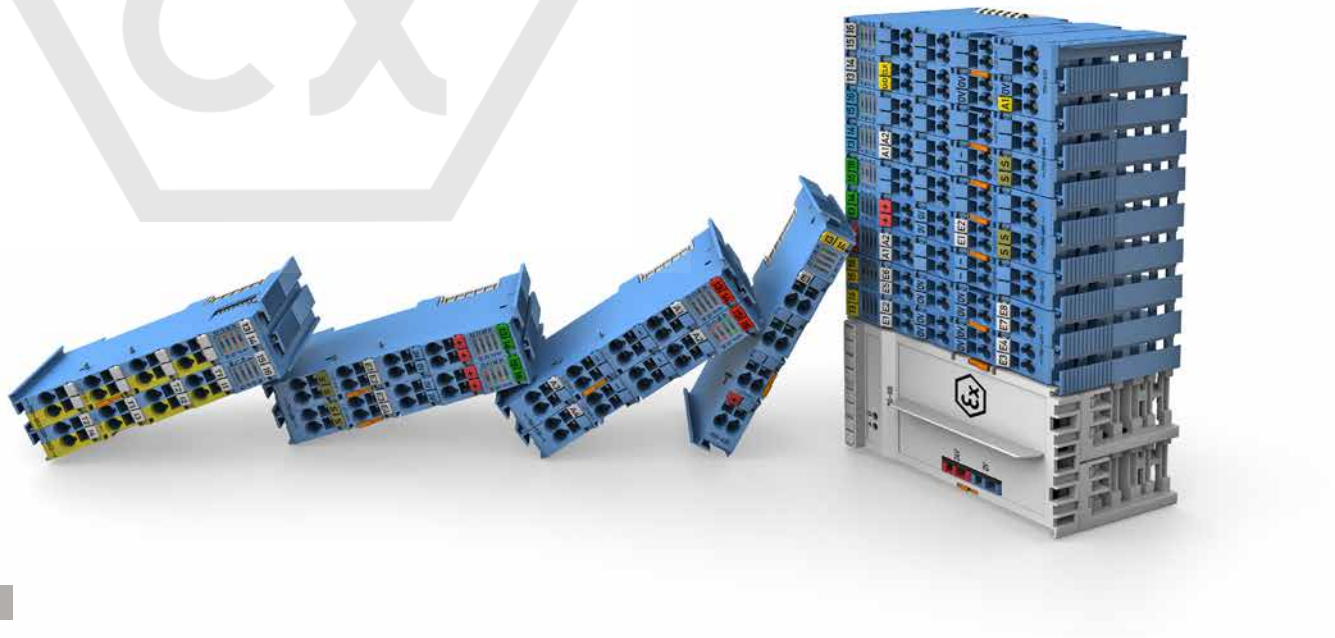
Supply Module
- 0 ... 230 VAC/DC
- Fuse/diagnostics (optional)
- 24 VDC/5 ... 15 VDC (adjustable)

Filter Module
- System and field supply
- 24 VDC power supply filter with overvoltage (surge) protection

Potential Distribution Module
- 24 VDC
- 0 VDC

Distance Module
- 24 VDC / 230 VAC

End Module



Intrinsic Safety

1-Channel Digital Input
- NAMUR

2-Channel Digital Input
- NAMUR

4-Channel Digital Input
- PROFIsafe

8-Channel Digital Input
- NAMUR

2-Channel Digital Output
- Max. 40 mA

4-Channel Digital Output
- Valves

2-Channel Relay Output
- 2 changeover contacts

2-Channel Analog Input
- 4 ... 20 mA
- 4 ... 20 mA, HART (NE43)

4-Channel Analog Input
- 0/4 ... 20 mA, 3.6 ... 21 mA (NE43)
- Resistance measurement (RTD)
- Thermocouples (TCs)
- Strain gauges (DMS)

2-Channel Analog Output
- 0 ... 20 mA
- 4 ... 20 mA

Up/Down Counter
- 20 ... 50 kHz

Supply Module
- 24 VDC, 1 A

NAMUR HART

eXTReme Temperature Resistance

From −40 °C to +70 °C

Benefits:

- No air-conditioning required
- Smaller footprint
- Lower energy and maintenance costs

Superior Reliability in Extreme Climates

More and more, automation systems are being deployed in outdoor and remote locations where components are directly affected by widely fluctuating temperatures and weather conditions. Examples include wind turbines, rolling stock and transformer stations.

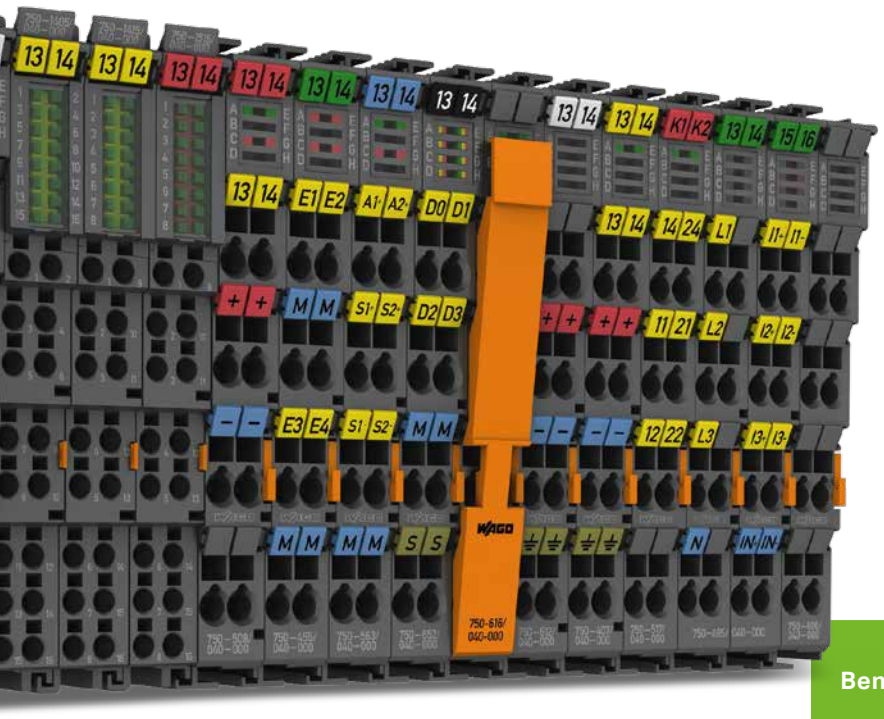
Engineered for freezing cold, extreme heat and high humidity, the WAGO I/O System 750 XTR provides absolute dependability in virtually any conditions. The XTR version of the WAGO I/O System 750 is unfazed by both freezing cold down to −40 °C and scorching heat up to +70 °C. And that is equally true of 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.

WAGO's 750 XTR helps minimize space requirements by offering a compact footprint, but the savings go well beyond cabinet dimensions: The XTR requires no additional heating/cooling equipment, which significantly reduces both energy consumption and maintenance costs. This is a four-fold benefit, eliminating configuration, purchase, follow-up costs and the space for extra air-conditioning.

eXTReme Isolation and Immunity to Interference

Up to 5 kV of Impulse Voltage



Benefits:

- Can be used in unshielded areas
- Meets standards for telecontrol equipment and railway applications
- Increased system uptime

Additional Protection against Interference Pulses

More and more, the focus for production systems is on high productivity; that in turn makes high demands of the automation systems.

The WAGO I/O System 750 XTR boasts 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.

In your application, you can use the 750 XTR Series for targeted communication with other parts; there's no need to worry about other system components disrupting the communication or suffering negative impacts themselves. That ensures successful communication and reliability you can trust.

The WAGO I/O System 750 XTR is also an ideal solution for telecontrol applications for two good reasons:

First, the 750 XTR Series Telecontroller speaks the right languages (DNP3, MODBUS and telecontrol protocols per IEC 60870-5-101/-103/-104, IEC 61850 and IEC 61400-25). Second, it fully meets EN 60870-2-1 requirements on immunity to impulse voltages.

The result is a tailor-made solution for demanding tele-control applications that readily meets all requirements.

eXTReme Vibration Resistance

Up to 5g of Acceleration

Benefits:

- Use on vibrating/shock-generating system components
- Increased system uptime
- Maximum return on investment

High Mechanical Resilience

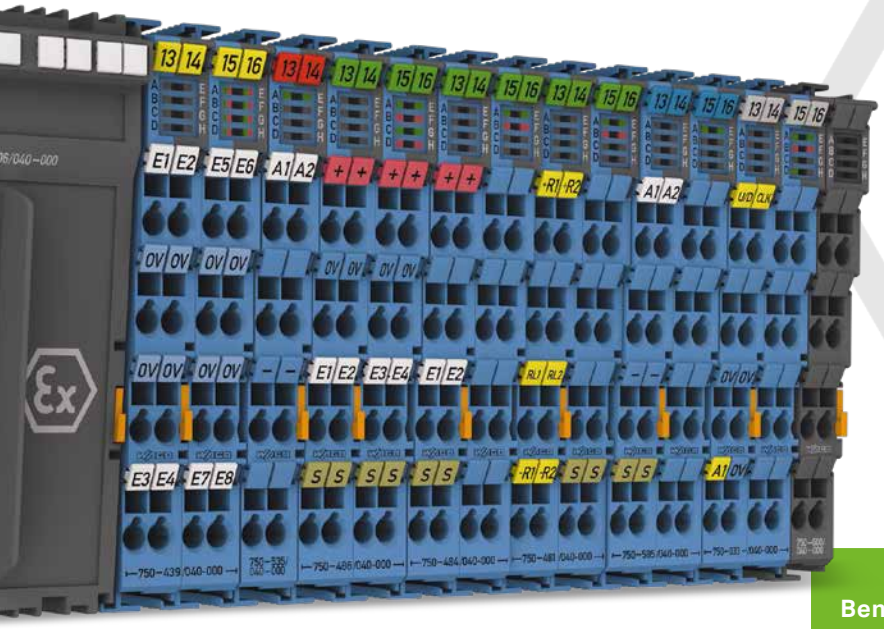
Automation systems need to be especially vibration-resistant, particularly when installed close to system components that generate strong vibrations or shocks. Powerful motors and circuit breakers are just two examples among many of components that can stress automation systems.

The WAGO I/O System 750 XTR sets new standards in these demanding environments too. With vibration resistance up to 5g per DIN EN 60068-2-6 (acceleration: 50 m/s2) and shock resistance up to 15g (150 m/s2), as well as continuous shock resistance up to 25g (250 m/s2) per IEC 60068-2-27, the system is engineered for dependability – no matter what. Even in extremely harsh working environments, such as tunnel boring machines, this ensures long-lasting trouble-free operation – including a safety margin!

The extreme ruggedness of the 750 XTR Series pays off in two ways, maximizing both uptime and investment security – to save you time and give you peace of mind.

eXTReme Intrinsic Safety

Signal Acquisition and Transmission in Zones 0 and 1



Benefits:

- Safely and easily connect sensors and actuators of Zones 0/20 and 1/21 under extreme conditions
- ATEX and IECEx approvals for use worldwide

Intrinsically Safe Signal Acquisition

The intrinsic safety of a device or system is a technical property that relies on special design principles to ensure that, even in the event of an error, an unsafe condition cannot occur. This property is particularly important for devices used in hazardous areas, such as the oil or gas industry.

The WAGO I/O System 750 XTR can be used both outside hazardous areas and within Zone 2/22 inside an approved enclosure. The 750 XTR Series also offers the right intrinsic I/O modules for every field device, all of which have the ATEX/IECEx approval for use in Zone 2/22.

In addition to standard signals from sensors and actuators in Zone 2/22, intrinsically safe sensors and actuators in Zones 0/20 and 1/21 can also be integrated via the blue I/O modules. Thus, the 750 XTR Series also allows applications to be implemented in an intrinsically safe area under extreme conditions.

WAGO I/O System 750 XTR

For eXTReme Environments

Digital Input Module

2-Channel Digital Input
- 220 VDC, 3.0 ms
- 110 VDC, 3.0 ms
- 60 VDC, 3.0 ms

8-Channel Digital Input
- 24 VDC
- NPN/PNP, 0.2/3.0 ms filter

16-Channel Digital Input
- 24 VDC, 3.0 ms

Digital Output Module

2-Channel Digital Output
- 24 VDC, 2 A, diagnostics
- 230 VAC, 1 A, relay with 2 make contacts

8-Channel Digital Output
- 24 VDC, 0.5 A
- NPN/PNP, diagnostics

Analog Output Module

2-Channel Analog Output
- 0/4 ... 20 mA

4-Channel Analog Output
- 0 ... 10 V / ±10 V

Analog Input Module

2-Channel Analog Input
- 4 ... 20 mA, differential input, NE43
- Resistance measurement (RTD)
- Thermocouples
- 0 ... 30 V
- Differential input

4-Channel Analog Input
- 0/4 ... 20 mA
- 3.6 ... 21 mA NE43
- ±20 mA
- 0 ... 10 V, ±10 V
- Resistance measurement (RTD)
- Differential/single-ended input
- Diagnostics

3-Phase Power Measurement
- 690 V, 1 A/5 A/Rogowski coil
- 20 kV medium voltage

Function and Technology Modules

- Counter Modules
- SSI transmitter interface
- Incremental encoder interface
- Pulse width output

Communication, Supply and Segment Modules

CAN Gateway

Supply Module
- 24 VDC / 0 ... 230 VAC/DC

Filter Module
- 24 VDC power supply filter/ field-side power supply filter
- System and field supply

Potential Distribution Module
- 24 VDC / 0 VDC / 0 ... 230 VAC/DC

Serial Interface
- RS-232/RS-485

Distance and End Module

Intrinsic Safety

8-Channel Digital Input
- NAMUR

2-Channel Digital Output
- Max. 40 mA

2-Channel Analog Input
- Resistance measurement (RTD)
- 4 ... 20 mA, HART

4-Channel Analog Input
- 0/4 ... 20 mA, 3.6 ... 21 mA (NE43)

2-Channel Analog Output
- 0 ... 20 mA

Up/Down Counter
- 20 ... 50 kHz

Supply Module
- 24 VDC, 1 A
- Fuse/diagnostics (optional)

enaco

Unlimited Variety

The Right Fieldbus Coupler and Controller for Every Application

Fieldbus Couplers

- Connect the WAGO I/O System to a higher-level control system
- Fieldbus-independent: Compatible with all common fieldbus protocols and ETHERNET standards
- Compact design
- For eXTReme environments too

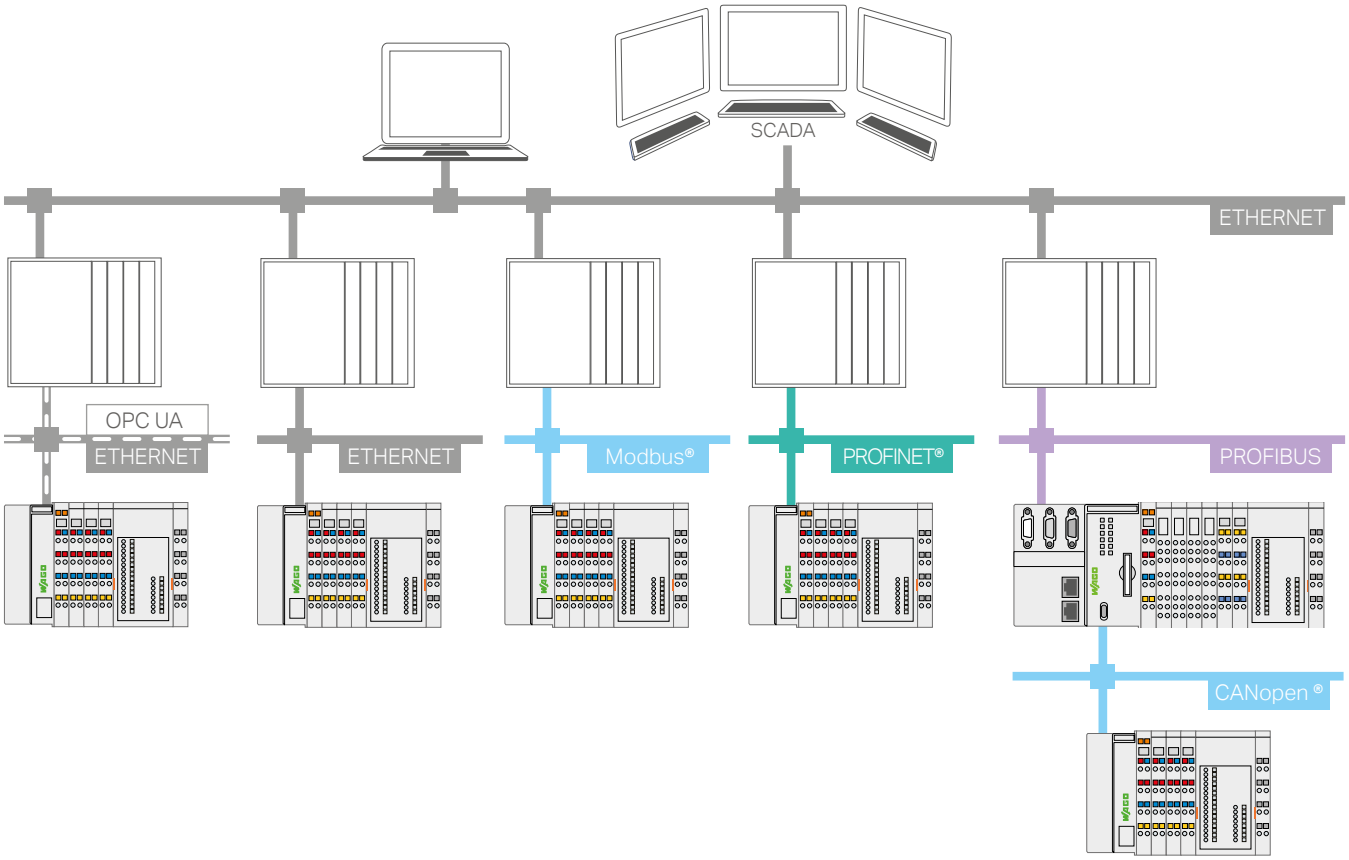
WAGO Basic Controller 100

- Engineering with CODESYS V3 per IEC 61131
- Controllers for all common fieldbus systems
- Expandable with the WAGO I/O System 750's comprehensive product range
- Extensive IT integration options
- International approvals for building and industrial automation, as well as process technology and marine applications
- Maximum reliability and ruggedness

WAGO Compact Controller 100

- Compact controller with I/Os in a DIN-rail-mount enclosure
- Maximum user freedom thanks to real-time Linux® operating system
- Manufacturer-independent CODESYS V3 engineering environment per IEC 61131
- Option of using the third-party container software Docker® (copyright)

PROFINET PROFIBUS EtherNet/IP EtherCAT Modbus DeviceNet CANopen



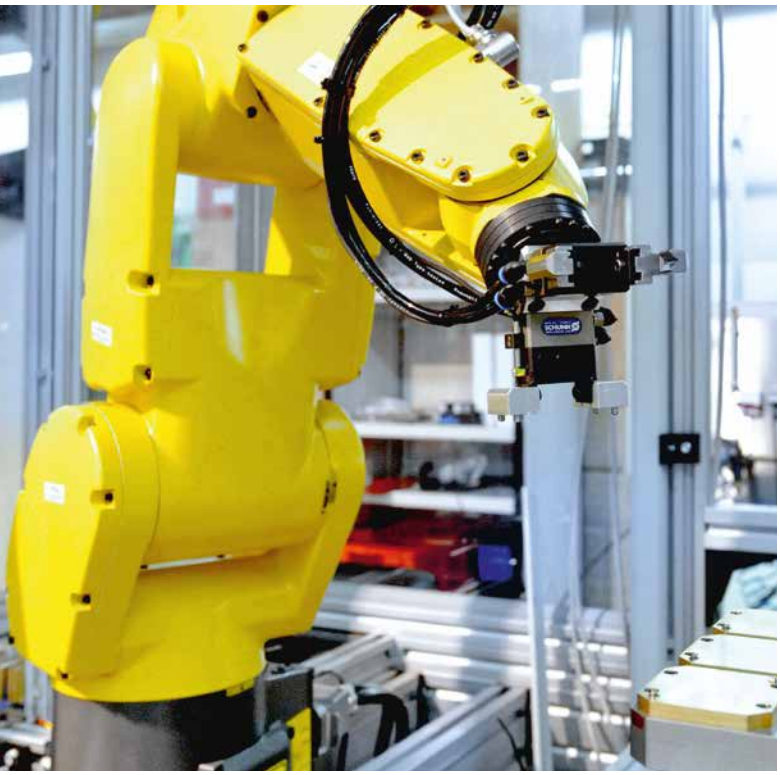
WAGO PFC100 and PFC200 Controllers

- High processing speed and a wide variety of interfaces
- Cost-effective project planning with CODESYS V3
- Security functions provide on-device data security
- Protect your investment with scalable control technology
- Flexible configuration via Linux® real-time operating system
- Option of using the third-party container software Docker® (copyright)
- XTR variant for applications in extreme environments

OPC UA · CC-Link · IEC 60870-5-101/-103/-104 · IEC 61850 · IEC 61400-25 · DNP3 · KNX · BACnet · docker

Applications

Industrial and Mechanical Engineering



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.

Technical highlights:

- Fieldbus-independent solutions with scalable performance for major fieldbus systems and industrial ETHERNET standards
- Cost-effective, space-optimized design with 1-, 2-, 4-, 8- and 16-channels per I/O module
- Functional safety according to PLe/Cat. 4 per EN ISO 13849 or SIL3 EN IEC 62061
- Application-specific specialty functions, such as positioning, condition monitoring and many more
- Wide range of interfaces (e.g., CAN, IO-Link, AS-Interface® and many more)
- Current and energy measurement technology for energy consumption calculation

Energy

The overriding objective of the power generation and distribution industry is to ensure a safe, reliable supply of energy. With an extensive product portfolio, WAGO offers customers a broad spectrum of possible applications: from automating energy generation plants and energy distribution, to safe remote solutions, to energy monitoring and control with I/O components for current and energy measurement technology.

Technical highlights:

- Scalable controllers and telecontrol technology
- Communication per IEC 60870-5-101/-103/-104, 61850, 61400-25, DNP3
- PFC hardening is possible in compliance with the German Energy and Water Industry (BDEW) Whitepaper
- Current and energy measurement technology for extensive network analysis
- Gateway functionality with interfaces to all common fieldbus systems
- When using 750 XTR:
  - Temperature resistance: −40 … +70 °C
  - Immunity to impulse voltages: up to 5 kV (DIN EN 60870-2-1)
  - Vibration resistance: up to 5g acceleration (DIN EN 60068-2-6)

Buildings

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 many more.

Technical highlights:

- Fully integrated building automation with BACnet/IP, BACnet MS/TP, KNX IP and Modbus TCP
- Fast and efficient solutions for all building systems through freely programmable controllers and application-specific function blocks
- Continuous networking and remote access, e.g., using Web-based technologies
- Wide range of building automation interfaces (KNX®, LON®, DALI, EnOcean®, SMI, MP-Bus, M-Bus and many more)

Processing

Special approvals allow use even under the harshest environmental conditions. Potential applications in hazardous areas 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.

Technical highlights:

- Output modules and analog I/O modules for connection to Zones 0/20 and 1/21
- Functional safety and explosion protection in one module
- Numerous specialty and analog functions (RTD, TC, AC/DC), NAMUR and extensive diagnostics (e.g., short circuits, wire break and out-of-range measurements)
- Different potentials can be supplied within one node
- HART protocol support
- Certified per ATEX, IECEx, UL ANSI/ISA 12.12.01, UL, GOST-R etc.
- Intrinsically safe I/O modules as XTR variants

Applications

Marine and Offshore

Both shipbuilding and onshore/offshore applications are particularly demanding in terms of both component performance and availability. Our I/O components for marine applications stand up to the most extreme environments. The I/O systems need to offer years of fail-safe operation, 24 hours a day, under the harshest environmental conditions, such as in a ship's engine, and do so in the face of constant vibration and shock loads, high humidity and temperature and stricter electromagnetic compatibility requirements.

Technical highlights:

- Redundancy controller
  - Increased availability through media and application redundancy
  - Fail safety in different topologies
- When using 750 XTR
  - Temperature resistance: –40 … +70 °C
  - Immunity to impulse voltages: up to 5 kV (DIN EN 60870-2-1)
  - Vibration resistance: up to 5g acceleration (DIN EN 60068-2-6)
- International approvals (e.g., DNV, LR, BV, ABS and others)
- Environmental categories (DNV) temperature B, moisture B, vibration B, EMC B, operation on the bridge or direct operation on marine motors and compressors
- Certified operation on the bridge, "Compass" certificate (BSH)
- Gateway functions: RS-232/RS-485, NMEA2000, SAE J1939, Modbus RTU

Railway

Whether for railway vehicles, signal technology or train stations, WAGO is the right partner wherever electricity flows or signals are transmitted and converted. Our WAGO I/O System 750 XTR is the perfect complement to our customers' safety-oriented controls for implementing preventative maintenance. Whether on rails or switches, our products fulfill the requirements of railway standards DIN EN 50121-4, EN 50121-5 and DIN EN 50155 with no application limitations.

Technical highlights:

- The WAGO I/O System 750 XTR was developed according to the strict IRIS railway standard and meets the requirements of EN 50155:
  - EMC resistance per DIN EN 50121-3-2
  - Temperature class: OT4 (–40 … +70 °C)
  - Shock and vibration per EN 61373 for 1A and 1B locations
  - Voltage fluctuations 0.7 × Un up to 1.3 × Un
  - Isolation up to 5 kV of impulse voltage per DIN EN 60870-2-1
  - Conformal coating protects all PCBs from moisture, condensation and atmospheric pollutants.

Did You Know ...?

The WAGO I/O System 750 XTR has been developed to withstand extreme environmental impacts, vibrations, shocks and surges.

For WAGO, only the highest quality will do! Therefore, the 750 XTR Series meets all relevant standards, guidelines and international approval requirements.

General Specifications

Increased immunity to impulse voltages:
- Modules ≤ 50 V: 510 VAC / 775 VDC
- Modules > 50 V: 2.5 kVAC / 3.5 kVDC
- Isolation: Rated surge 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)

Temperature
- Ambient temperature: −40 … +70 °C
- Storage temperature: −40 … +85 °C

Condensation:
- Short-term condensation per class 3K7/IEC EN 60721-3-3 (except wind-driven precipitation, water and ice formation) is permitted due to conformally coated circuit boards.

Vibration
- 5g per EN 60068-2-6

Standards and Regulations

Vibration resistance:
- IEC 60068-2-6 (5g acceleration)
- EN 61131-2
- IEC 60721-3-1
- IEC 60721-3-3
- EN 60870-2-2
- EN 50155
- EN 61373

Shock resistance:
- IEC 60068-2-27
  - 15g/11 ms/half-sine/1,000 shocks
  - 25g/6 ms/1,000 shocks
- EN 50155
- EN 61373

Immunity to interference:
- EN 61000-6-1
- EN 61000-6-2
- EN 61131-2
- EN 60255-26
- EN 60870-2-1
- EN 61850-3
- IEC 61000-6-5
- IEEE 1613
- VDEW: 1994
- Railway
- Marine applications

Emission of interference:
- EN 61000-6-3 and EN 61000-6-4
- EN 61131-2
- EN 60255-26
- EN 60870-2-1
- EN 61850-3
- Railway
- Marine applications

These solutions may also interest you:

WAGO Industrial Switches – Robust Devices for Scaling Your ETHERNET Network Infrastructure:
wago.com/switches

WAGO PFC200 Controller – Compact and Powerful:

wago.com/pfc200

WAGO Power Supplies – Let Power Communicate!

wago.com/powersupply

MM-406979 – 0888-0140/0607-6901 – I/O OVERVIEW 6.7 US – 10/2023 – Printed in Germany – Subject to changes

WAGO GmbH & Co. KG
Postfach 2880 · D-32385 Minden
Hansastraße 27 · D-32423 Minden
info@wago.com
www.wago.com

Headquarters +49 (0)571/ 887 - 0
Sales +49 (0)571/ 887 - 44 222
Orders +49 (0)571/ 887 - 44 333

FSC www.fsc.org
MIX
Paper from responsible sources
FSC® C010764

WAGO is a registered trademark of WAGO Verwaltungsgesellschaft mbH.
"Copyright – WAGO GmbH & Co. KG – All rights reserved. The content and structure of the WAGO websites, catalogs, videos and other WAGO media are subject to copyright. Distribution or modification of the contents of these pages and videos is prohibited. Furthermore, the content may not be copied or made available to third parties for commercial purposes. Also subject to copyright are the images and videos that were made available to WAGO GmbH & Co. KG by third parties."