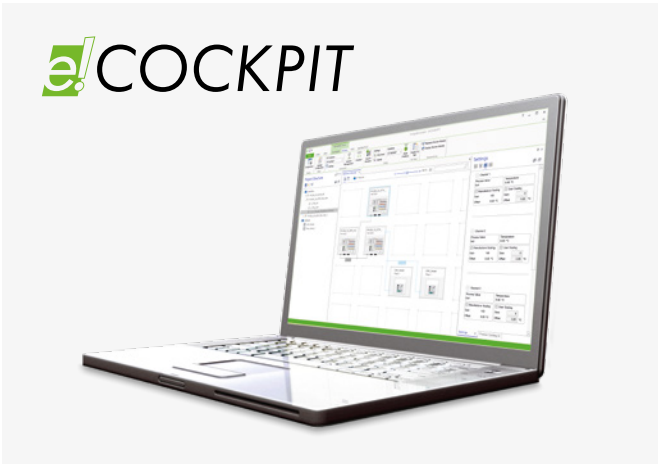
WAGO I/O SYSTEM 750

The System for Every Application

Automating with WAGO

Engineering Software

e!COCKPIT is an integrated development environment that supports every automation task, from hardware configuration and programming, to simulation and visualization, to commissioning – an all-in-one software package. This development environment enables users to easily master complex automation networks, saving both time and money.



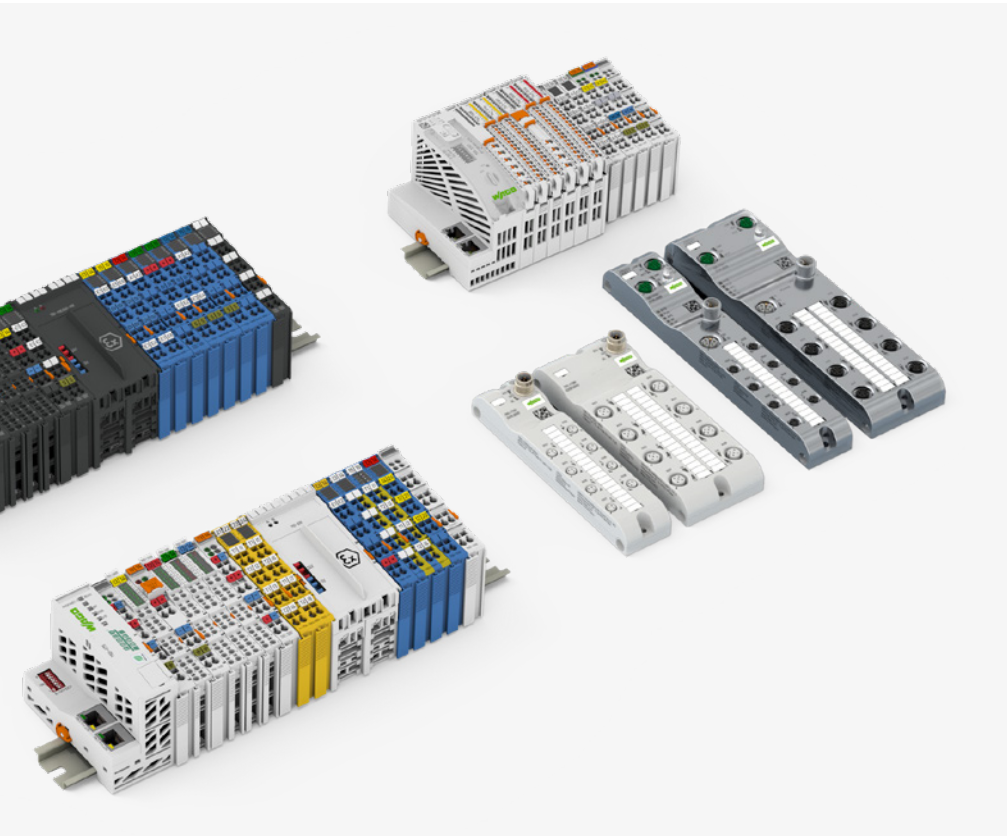
Operation and Monitoring

Operate, observe, visualize, diagnose in production and process industry: WAGO's Web and Control Panels for small- to mid-sized control and visualization tasks feature perfect usability and with the quickly created visualizations, set the focus on time savings.

Perfectly Use Data in the Field

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

As the leader in screwless electrical interconnection and interface electronic technologies, WAGO developed the first finely modular, fieldbus-independent I/O system in 1995. To this day, our steadfast commitment to innovation and versatility has enabled us to continue setting new standards in 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 decentralized I/O systems.



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 you a wide variety of I/O modules for virtually any application by providing both IP20 (WAGO I/O System 750, 750 XTR and Advanced) IP67 (WAGO I/O System Field) solutions.

Infrastructure

In the field of industrial automation, more and more wireless technologies, such as mobile radio, *Bluetooth*® and WLAN, supplement data transmission via fieldbus or industrial ETHERNET systems. The WAGO EnOcean® Gateway easily connects battery-free sensors to the WAGO I/O System 750 via a serial interface. This is complemented by the economic industrial switches, which reliably transmit data traffic and protect against network failures.

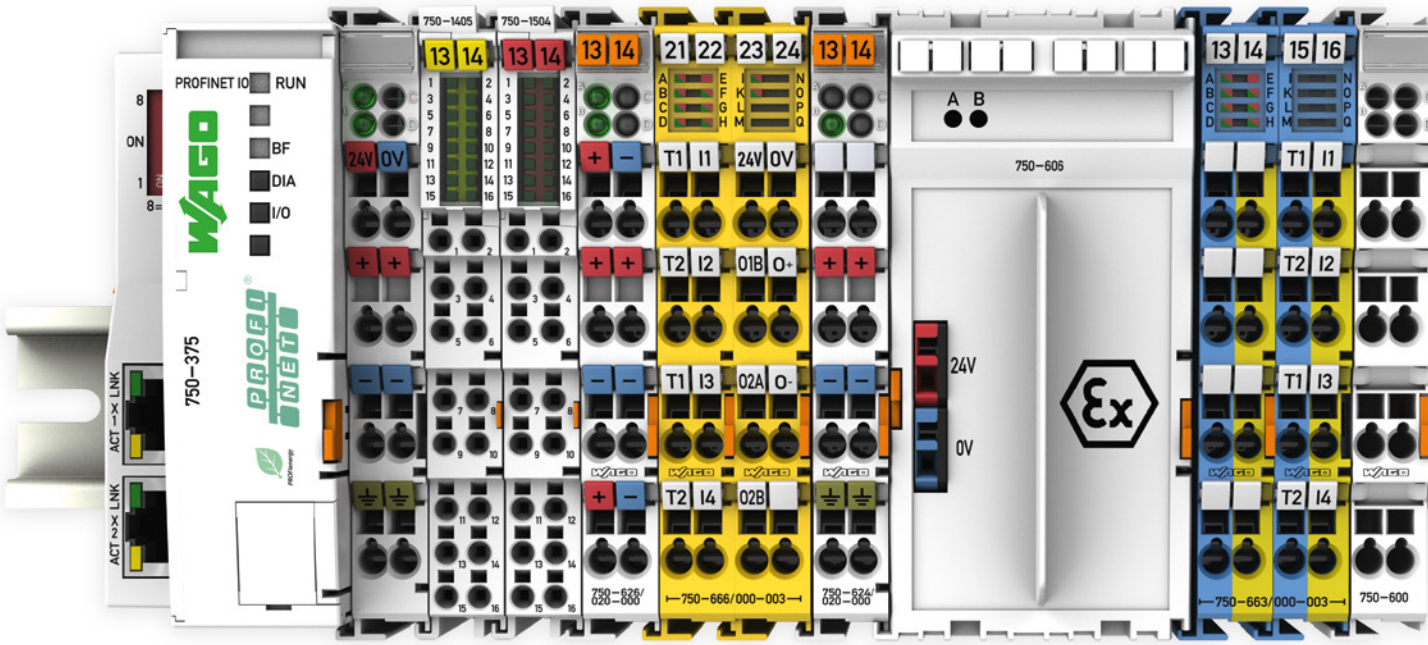
Controllers

WAGO's family of high-performance programmable controllers boasts a wide range of capabilities for controlling any automation task in both centralized and decentralized applications. For decentralized control tasks, WAGO's controllers can be incorporated into the most prevalent fieldbus networks and they record all field signals via I/O modules. WAGO's IEC 61131-3 programmable controllers perform a variety of automation tasks, while providing all the benefits of proven PLC technology (e.g., strength, stability, reliability and near-high constant uptime).
With Linux® running on WAGO's controllers, a flexible and secure operating system is available that offers many advantages of the open source world. For example, the Docker® third-party container software can be used on WAGO's controllers.

WAGO I/O System 750

The System for Every Application

The WAGO I/O System 750 is distinguished by its universal use and extensive product portfolio. With more than 500 different modules, it is versatile and flexible enough to cover virtually any requirement in a huge variety of industries.
Whether it's industrial, process or building automation, sensitive safety applications, telecontrol or in hazardous areas: The WAGO I/O System 750 provides the decentralized periphery required. International certifications such as IECEx, UL61010 or ABS, as well as several additional marine approvals mean that WAGO I/O System can be used worldwide for virtually any industry.



Advantages:

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

WAGO I/O System 750 XTR

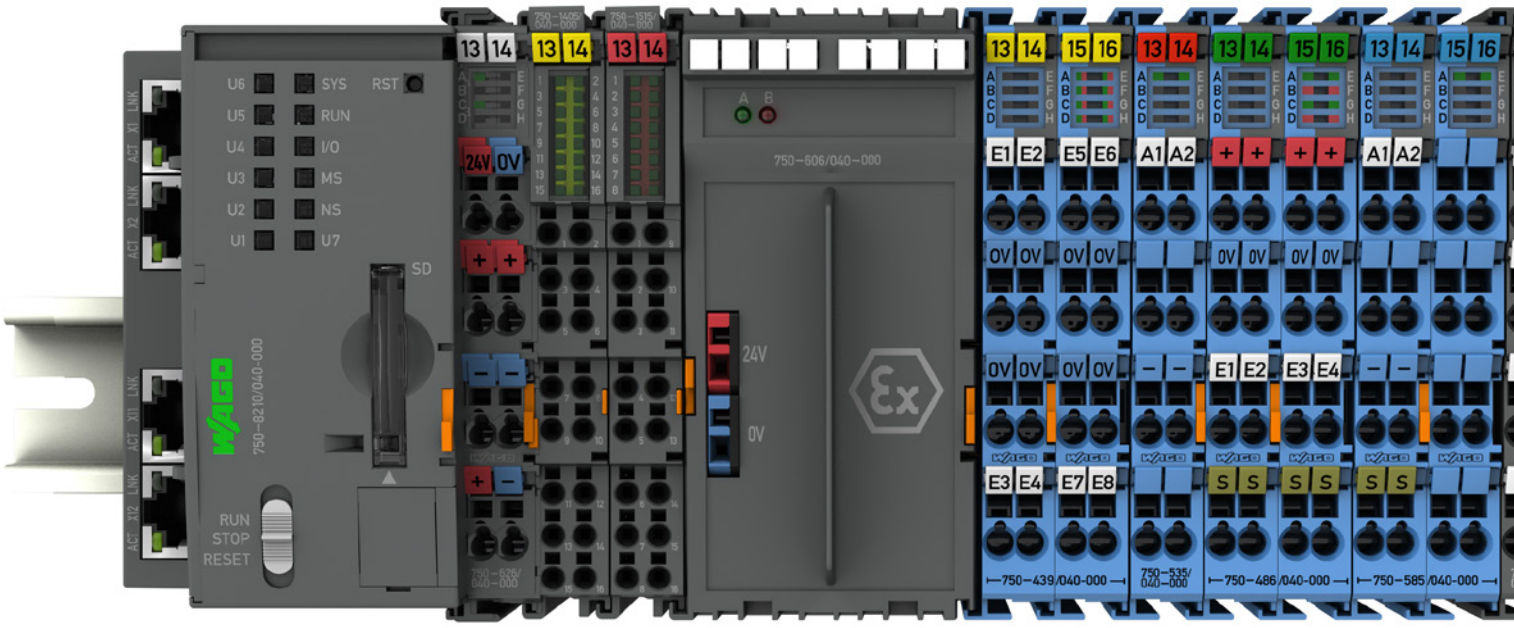
Taking It to the eXTReme – The Standard for 750 XTR

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

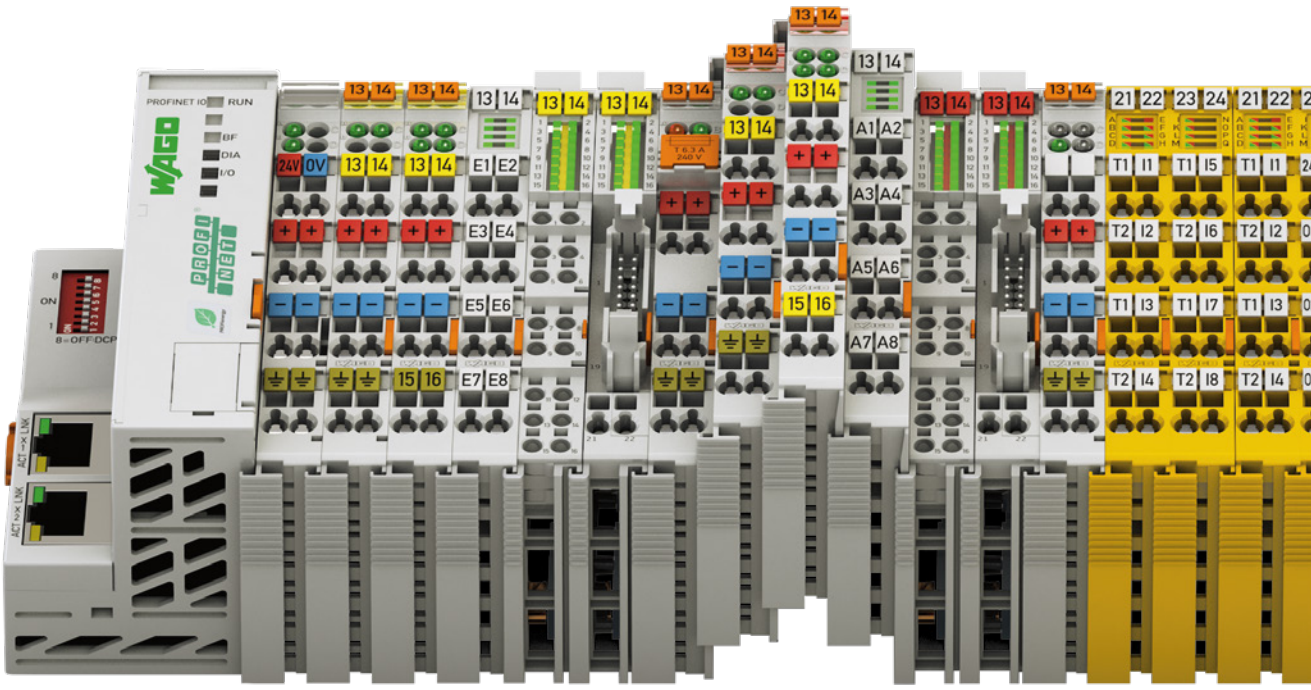


Advantages:

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

Universal, Compact, Economical

The Ideal Fieldbus Node

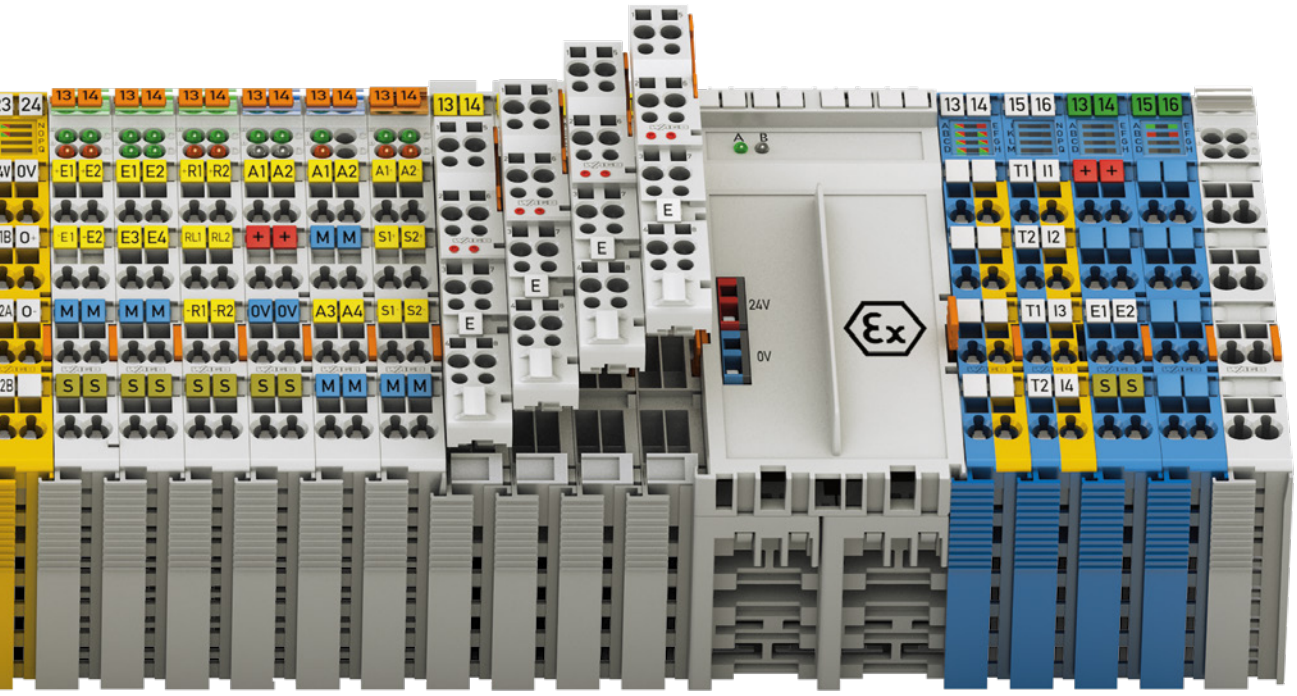


Maximum Fieldbus Independence
The system's modularity is also reflected in its support for numerous fieldbus systems and ETHERNET standards. Depending on the application, it is possible to choose between fieldbus couplers and communication modules for different protocols.

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

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

Extremely Compact
The extremely compact I/O nodes make the system a perfect fit in the most compact spaces. In fact, it can accommodate up to 16 channels in a module width of 12 mm (1/2"). The finely granular and space-saving I/O modules provide both node customization and high I/O integration density.



Pluggable Connection Interface
For the ultimate convenience, 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 design virtually eliminates installation errors, providing flexible and time-saving final assembly via pre-wired connectors.

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

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

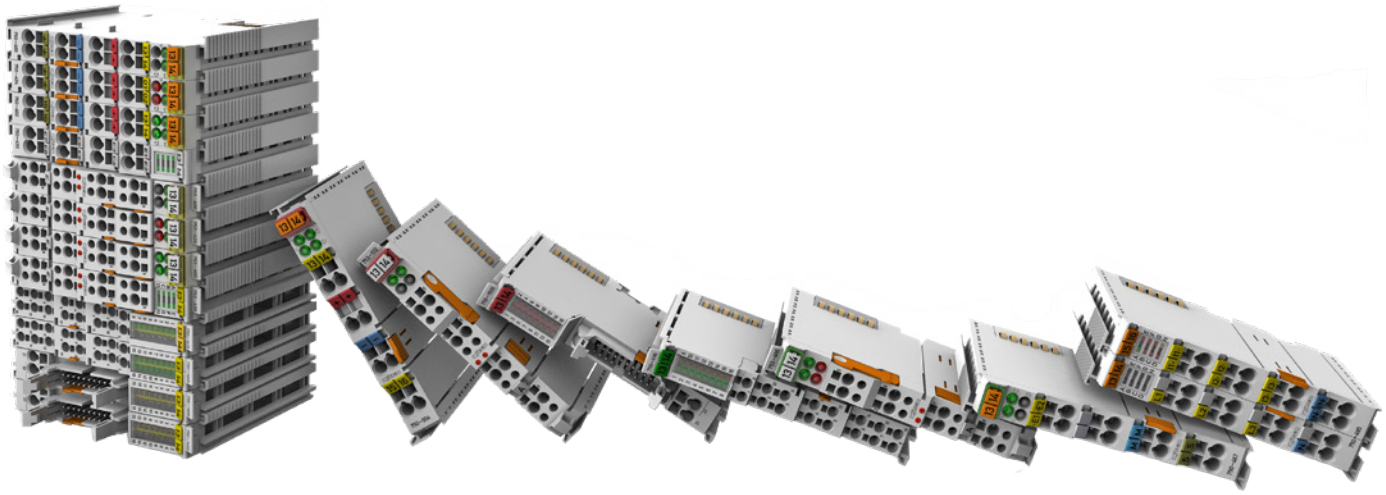
In addition, CAGE CLAMP® spring pressure connections ensure superior reliability. Integrated QA measures in the production process and 100% function testing ensure consistent quality.

Maximum Flexibility
Each node in the WAGO I/O System can be configured to meet every channel's requirements; additionally, 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.

Easy to Use
A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O node without tools. The straightforward design prevents installation errors. Additionally, proven CAGE CLAMP® technology ensures that all connections made in the field are quick, vibration-proof and maintenance-free. Depending on the I/O 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 (broken wire/short circuit)
- 230 VAC, SSR, 3.0 A, diagnostics

4-Channel Digital Output
- DC 5 V, 24 V, 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

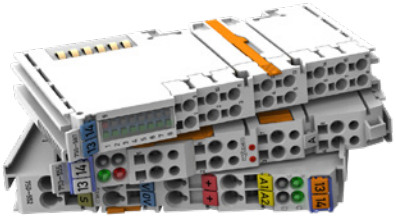
Analog Input Modules

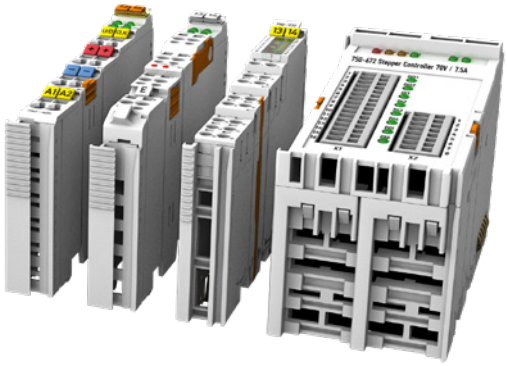
2-Channel Analog Input
- Resistor bridge (strain gauge)
- AC/DC 0/4 ... 20 mA, 0 ... 1/5 A
- DC 0 ... 10 V, ±10 V, 0 ... 30 V
- Thermocouples
- Resistance measurement (RTD)
- Differential/single-ended input
- Measurement input (electrical isolation)
- Modules with HART protocol (NE43)

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 / ±10V
- 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

RTC Module
- DCF77 radio receiver

PROFINET PROFIBUS EtherNet/IP EtherCAT DeviceNet Modbus

INTERBUS CC-Link CANopen IEC 60870-5-101/-103/-104 IEC 61850 IEC 61400-25 DNP3 KNX ASHRAE BACnet

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 (configurable)

4-channel 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 Catagory
- PLe/Cat. 4 to EN ISO 13849 or SIL 3 EN IEC 62061

Supply and Segment Modules

Local Bus Extension
- End Module
- Coupler Module

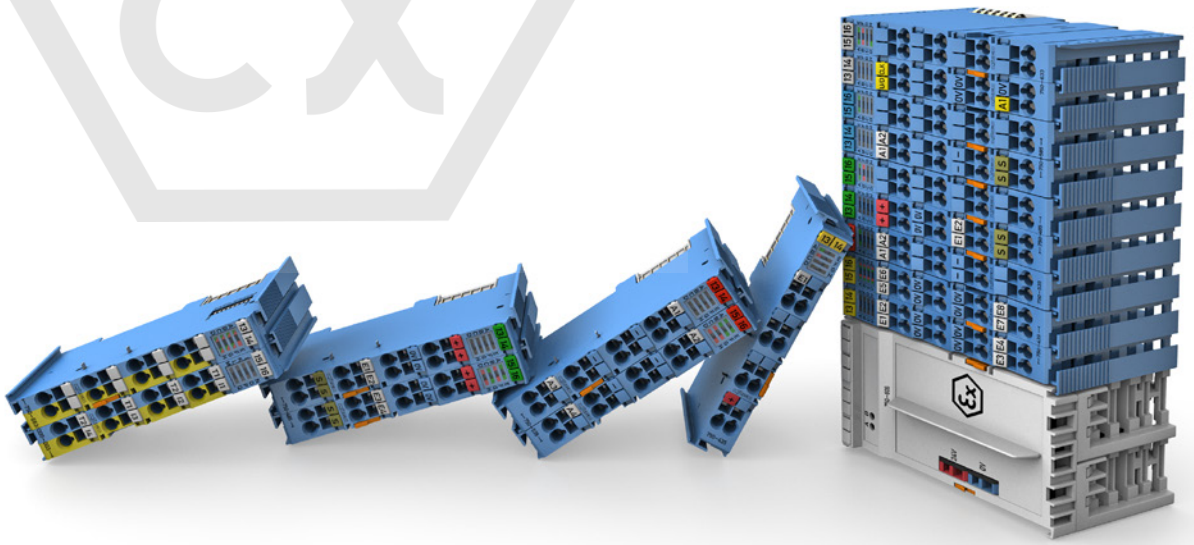
Supply Module
- 0 ... 230 VAC/DC
- Fuse/diagnostics (optional)
- 24 VDC/5 ... 15 VDC (adjustable)

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 Temperatures

From −40°C to +70°C

Advantages:

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

Superior Reliability in Extreme Climates

Automation systems are increasingly being located in outdoor and remote locations where components are directly affected by widely fluctuating temperatures and weather conditions (e.g., wind turbines, rolling stock and transformer stations).

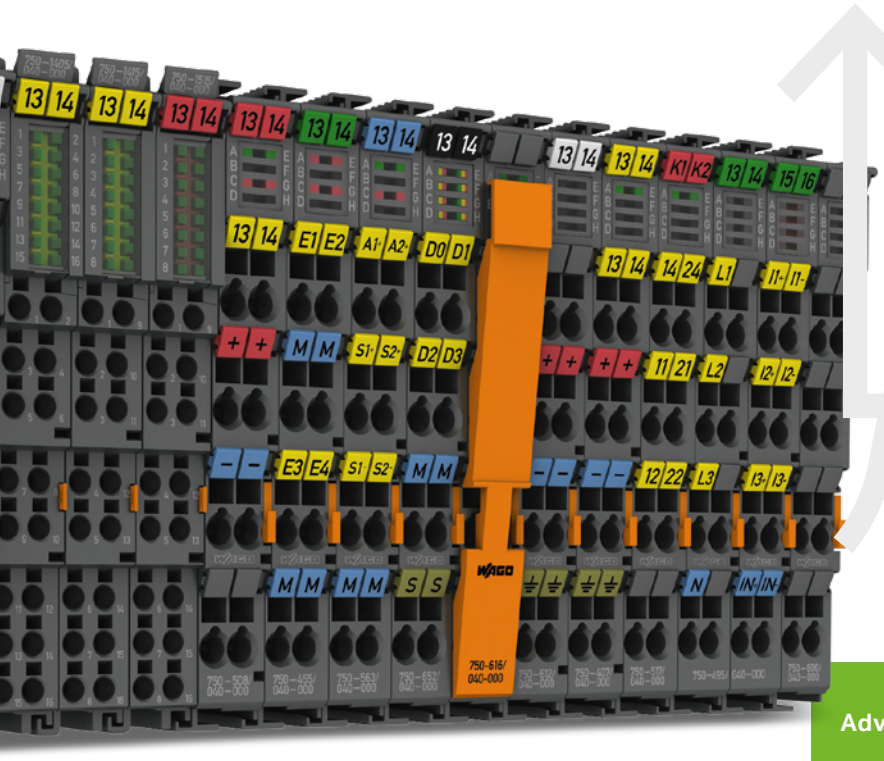
Engineered for freezing cold, extreme heat and high humidity, the WAGO I/O System 750 XTR provides absolute dependability in virtually any weather. The XTR version of the WAGO I/O System 750 is unfazed by both freezing cold down to **−40°C** and scorching heat up to **+70°C**. And this applies equally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

The maximum approved **operating altitude of 5,000 m** is another highlight. Even in the thin air of a mountain-top station, the system impressively demonstrates its high performance and availability.

WAGO's 750 XTR helps minimize space requirements by offering a compact footprint, but the savings go well beyond cabinet dimensions. XTR does not require additional heating/cooling equipment, which significantly reduces both energy consumption and maintenance costs. This brings four major benefits to your operation: No configuration, purchase, follow-up costs and space for extra air-conditioning are required.

eXTReme Isolation and Immunity to Interference

Up to 5 kV of Impulse Voltage



Advantages:

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

Additional Protection against Interference Pulses

Increasing demands for high productivity are shaping manufacturing processes, and placing particularly high demands on automaton systems.

The WAGO I/O System 750 XTR provides greater **immunity to impulse voltages up to 5 kV**, lower EMC emission of interference and higher insensitivity to EMC interference. These strengths ensure trouble-free operation.

Within an application, the 750 XTR Series seamlessly communicates with other parts of the system without creating interference or disrupting other system components. This ensures successful communication and reliability you can trust.

Extensively engineered, 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 adhering to IEC 60870-5-101/-103/-104, IEC 61850 and IEC 61400-25**). Second, it fully meets **EN 60870-2-1** impulse voltage withstand requirements.

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

eXTReme Vibration Resistance

Up to 5g of Acceleration

Advantages:

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

High Mechanical Performance

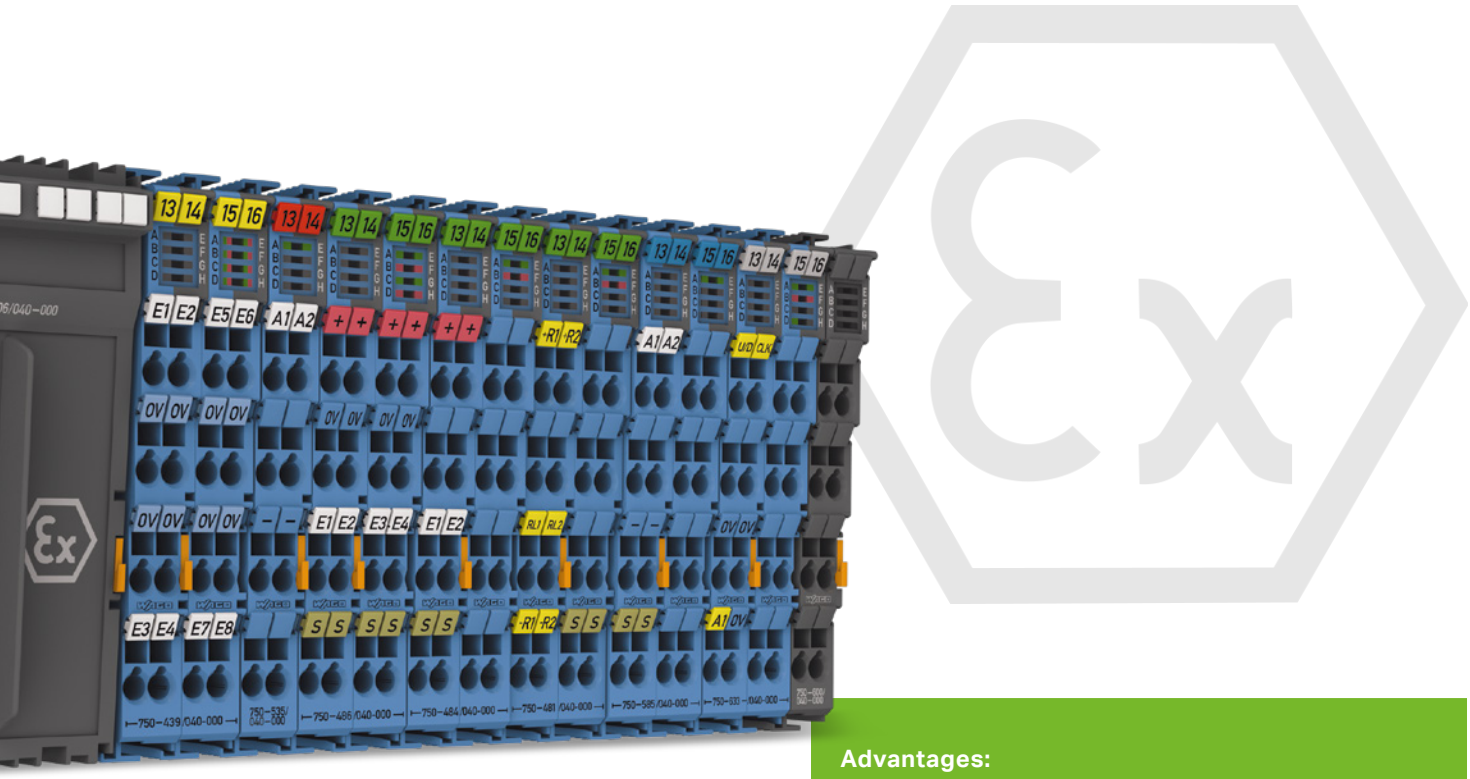
Automation systems must be incredibly vibration-resistant, especially when installed close to vibration-prone and shock-generating system components. Powerful motors and power circuit breakers are just two examples of the many applications that can stress automation systems.

To perform in these demanding environments, the WAGO I/O System 750 XTR was developed to set new standards. With **5g of vibration resistance** per DIN EN 60068-2-6 (acceleration: 50 m/s²) and **shock resistance of 15g** (150 m/s²), as well as **continuous shock resistance of 25g** (250 m/s²) per IEC 60068-2-27, the system is engineered for dependability – no matter what. Count on long-lasting, trouble-free operation and industry-topping levels of safety – even in the most severe applications, such as tunnel boring machines.

The extreme ruggedness of the 750 XTR Series pays off twice, 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



Advantages:

- 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 which, due to special design principles, ensures that even in the event of an error, an unsafe condition does not occur. This property is particularly important for devices that are used in hazardous areas such as the oil or gas industry.

The WAGO I/O System 750 XTR can be used both outside of 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 Modules

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 Modules

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 Modules

2-Channel Analog Output
- 0/4 … 20 mA

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

Analog Input Modules

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 VAD/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)

Fieldbus-Independent

The Right Fieldbus Coupler and Controller for Every Application

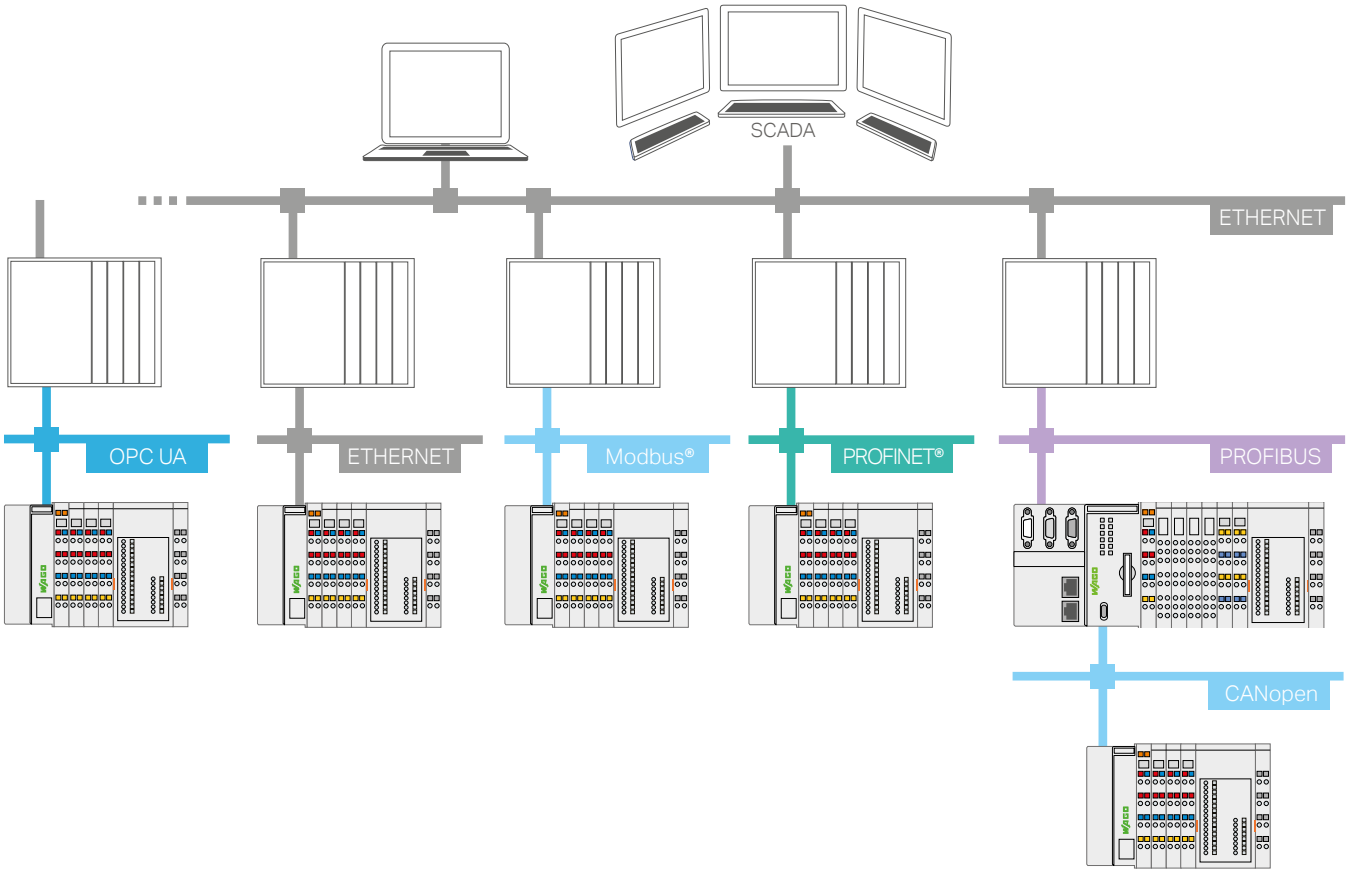
Fieldbus Couplers

- Fieldbus couplers connect the WAGO I/O System to a higher-level control system
- Fieldbus-independent – supports all standard fieldbus protocols and ETHERNET standards
- Space-saving design
- For eXTReme environments

Controllers 750

- Controllers for all prominent fieldbus systems and ETHERNET standards
- Quick commissioning
- Programmable via CODESYS 3 (IEC 61131-3)
- Directly connect to a wide range of I/O modules within the WAGO I/O System 750
- Flexible platform adapts to diverse applications and environments
- For eXTReme environments

PROFINET PROFIBUS EtherNet/IP EtherCAT Modbus DeviceNet CANopen



PFC Controllers

- High processing speed and a wide variety of interfaces
- Cost-effective configuration via ***e!****COCKPIT* (CODESYS 3) Engineering Software
- Ready for future business thanks to scalable control technology
- Linux® operating system extensibility through open source packages
- Docker® third-party container software can be used
- High level security with TLS, SSH, VPN and a firewall
- For eXTReme environments

IEC 60870-5-101/-103/-104
IEC 61850
IEC 61400-25
DNP3

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- and space-saving 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 much more
- Wide range of interfaces (e.g., CAN, IO-Link, AS-Interface® and much more)
- Current and energy measurement technology for energy consumption calculation

Energy

The main objective of the power generation and distribution industry is to ensure the reliable and safe supply of power. With an extensive product portfolio, WAGO offers customers a broad spectrum of possible applications: from automating energy generation plants, to energy distribution, to safe remote solutions, as well as 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
- Using 750 XTR
  - Temperature resistance: -40 … +70 °C
  - Isolation up to 5 kV of impulse voltage (DIN EN 60870-2-1)
  - Vibration resistance up to 5g of 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 much 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 due to 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 much more)

Process

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

Technical highlights:

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

Applications

Marine and Offshore

Both shipbuilding and onshore/offshore applications are particularly demanding on both component performance and availability. Our I/O components for marine applications stand up to the most extreme environments. The I/O systems used in shipbuilding are put to the test in the most punishing operating environments. For example, constant vibrations, shock loads, extreme temperature cycling and severe humidity continuously assault the components placed in a ship's engine room. Still, WAGO components meet ever-increasing demands for electromagnetic compatibility day in and day out, year after year.

Technical highlights:

- Media redundancy controller
  - Media redundancy provides high operational reliability
  - Operation in two separate networks
- Using 750 XTR
  - Temperature resistance: -40 … +70 °C
  - Isolation up to 5 kV of impulse voltage (DIN EN 60870-2-1)
  - Vibration resistance up to 5g of acceleration (DIN EN 60068-2-6)
- International approvals: DNV-GL, LR, BV, RINA, KR, NK, ABS, PRS
- Environmental category (DNV GL) temperature B/D, humidity A/B, vibration B and EMC A/B, operation on the bridge or direct operation on combustion engines 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 ideally supplements our customer's 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) – no application limitations.

Technical highlights:

- The WAGO I/O System 750 XTR was developed using the strict IRIS railway standard as guidance and complies with EN 50155 requirements:
  - 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 x Un up to 1.3 x 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 defy extreme climatic influences, vibrations, shocks and surges.
For WAGO, only the highest quality will do! This attention to detail ensures that all relevant standards, guidelines and international approval requirements are met by the 750 XTR Series.

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
- Surrounding air 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:

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