

WAGO I/O system 750 XTR series

Ideal for extreme environmental applications with weather resistance and immunity to electromagnetic interference, vibrations and impulse voltages.

AUTOMATION SYSTEMS





- Fine modularity
- Large variety of components
- Compact design (up to 16 channels in a 12-mm wide housing)
- CAGE CLAMP® connection technology

Readily recognisable by its dark gray modules, the WAGO-I/O-SYSTEM 750 XTR's unique features make it ideal for extreme environment applications by providing:

- Lower space requirements
- Lower purchase costs
- Lower energy costs
- Lower maintenance costs
- Safe investment
- Maximum system availability
- Greater productivity

WAGO's 750 XTR possesses outstanding characteristics: It is extremely weather-resistant, immune to electromagnetic interference, as well as insensitive to vibrations and impulse voltages. This is what makes 750 XTR the first choice for demanding applications, such as:

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

eXTReMe temperature from -40°C to +70°C

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 and transformer stations). Regardless of freezing cold, extreme heat and high humidity, the WAGO-I/O-SYSTEM 750 XTR is engineered for absolute dependability in all climatic conditions. A variant of the WAGO-I/O-SYSTEM 750, XTR is unfazed by both freezing cold down to -40°C and scorching heat up to +70°C.

And this applies to both initial start-up and daily operation. Another highlight: The 750 XTR functions at elevations up to 5,000 m, opening up these applications to new highs for safety, reliability and performance — even in the thin air of a mountain top station. WAGO's 750 XTR helps minimise 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. Four times the benefits: Eliminating air-conditioning components trims upfront purchase costs, saves configuration time, minimises operating expenses and keeps enclosures compact.

- No air conditioning required
- Reduced space requirements
- Lower energy and maintenance costs



eXTReme isolation and protection

Up to 5 kV of impulse voltage

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 higher isolation up to 5 kV of impulse voltage, lower EMC emission of interference and higher insensitivity against EMC interference. These strengths add up to trouble-free operation. Within an application, the 750 XTR Series seamlessly communicates with

other parts of the system, without 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 (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 exceeds all requirements.

- Can be used in unshielded areas
- Suitable for standard telecontrol equipment
- Increased system uptime



eXTReme vibration

Up to 5g of acceleration

High mechanical performance

Automation systems must be particularly 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 common disturbance-creating components. The WAGO-I/O-SYSTEM 750 XTR is also setting new standards with 5g of vibration resistance per DIN EN 60068-2-6 (acceleration:

50 m/s²) and 15g (150 m/s²) of shock resistance per IEC 60068-2-27, as well as 25g (250 m/s²) of continuous shock resistance per IEC 60068-2-29. Count on long-lasting, trouble-free operation and industry-topping levels of safety — even in the most torturous applications, such as a tunnel boring machines.

The extreme strength of the 750 XTR Series pays off twice, maximising both uptime and investment security — it will conserve valuable engineering time and ultimately provide peace of mind.

- Install close to vibrating and shock-generating system components
- Increased system uptime
- Investment security





General technical data

Approvals, standards and guidelines

WAGO proudly holds its products to exceedingly high quality standards. This is why the research and development of all WAGO components occurs in our own accredited test lab with criteria that far exceeds industry mandates. This attention to detail ensures that all relevant standards, guidelines and international approval requirements are met by the 750 XTR Series.

General technical data

Increased insulation withstand voltages:

- Modules ≤ 50 V: 510 V AC/775 V DC
- Modules > 50 V: 2.5 kV AC/3.5 kV DC
- 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

Temperature:

- Ambient operating temperature: -40 °C ... +70 °C
- Storage temperature: -40 °C ... +85 °C

Condensation:

- Short-term condensation acc. to class 3K7 / IEC EN 60721-3-3 (excluding wind-driven precipitation, water and ice formation)

Mixed operation:

- Mixed operation (standard/XTR modules) within a node is possible when groups of modules are electrically isolated on the field side (i.e., electrically isolated power supply).

Vibration:

- 5g per EN 60068-2-6
- Interference-free:
All digital outputs are interference-free for safety applications.

Approvals:

- CE
- UL508 (pending)
- Shipbuilding
- Installation in Zone 2/22

Temperature derating, operating altitude:

- 0.5 K/100 m from 2,000 m to 5,000 m, which means a max. ambient operating temperature of 70 °C for 2,000 m, max. 55 °C for 5,000 m operating altitude

Standards and regulations

Mechanical stability

Vibration resistance:

- IEC 60068-2-6 (5g acceleration)
- EN 60870-2-2
- EN 61131-2
- IEC 60721-3-1
- IEC 60721-3-3

Shock resistance:

- IEC 60068-2-27
 - 15g/11 ms/half-sine/1,000 shocks
 - 25g/6 ms/1,000 shocks

EMC

Immunity to interference:

- EN 61000-6-1
- EN 61000-6-2
- EN 61131-2
- Shipbuilding
- 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

Emission of interference:

- EN 61000-6-3 and EN 61000-6-4
- EN 61131-2
- EN 60255-26
- Shipbuilding
- EN 60870-2-1 (industrial + residential environment)
- EN 61850-3 (industrial + residential environment)
- EN 50121-3-2
- EN 50121-4
- EN 50121-5



WAGO I/O Systems 750 XTR overview



750-880/040-000



750-1405/040-000



750-457/040-000



750-652/040-000

Programmable Fieldbus Controllers

ETHERNET Controller/XTR	750-880/040-000
ETHERNET Controller Telecontrol/XTR	750-880/040-001
CANopen Contr. 640/832 kbyte D-Sub/XTR	750-838/040-000

Fieldbus Coupler

PROFIBUS Coupler DP/V1/XTR	750-333/040-000
ETHERNET Coupler/XTR	750-352/040-000
CANopen Coupler D-Sub/XTR	750-338/040-000

Digital Inputs and Outputs

8 DI 24 V DC 3.0 ms/2-wire/XTR	750-1415/040-000
16 DI 24 V DC 3.0 ms/XTR	750-1405/040-000
2 DI 220 V DC 3.0 ms/XTR	750-407/040-000
2 DO 24 V DC 2.0 A/Diagnostics/XTR	750-508/040-000
8 DO 24 V DC 0.5 A/2-wire/XTR	750-1515/040-000
2 DO 230 V AC 1.0 A/Relay 2CO/XTR	750-517/040-000

Analogue Inputs and Outputs

4 AI 0–20 mA S.E./XTR	750-453/040-000
4 AI 4–20 mA S.E./XTR	750-455/040-000
4 AI 0–10 V DC S.E./XTR	750-468/040-000
4 AI ±10 V DC S.E./XTR	750-457/040-000
2/4 AI RTD configurable/XTR	750-464/040-000
2 AI Thermocouple configurable/XTR	750-469/040-000
2 AO 0/4–20 mA/6–18 V DC/16 Bit/XTR	750-563/040-000
4 AO 0–10 V DC/XTR	750-559/040-000
4 AO ±10 V DC/XTR	750-557/040-000

Communication, Supply and Segment Modules

Serial Interface RS-232/RS-485/XTR	750-652/040-000
24 V DC Power Supply/XTR	750-602/040-000
0–230 V AC/DC Power Supply/XTR	750-612/040-000
24 V DC Power Supply (Bus)/XTR	750-613/040-000
24 V DC Field Supply Filter/HI/XTR	750-624/040-001
24 V DC Supply Filter (Surge)/HI/XTR	750-626/040-000
Potential Multiplication 16+/XTR	750-1605/040-000
Potential Multiplication 16-/XTR	750-1606/040-000
End Module/XTR	750-600/040-000



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