

## 750 and 753 I/O-System Contents



### Fieldbus Couplers (FC)

PROFINET IO, PROFIBUS, ETHERNET TCP/IP, EtherCAT, MODBUS/TCP, DeviceNet, CANopen, sercos, MODBUS, INTERBUS, CC-Link



### I/O Modules

Digital Input Modules (DI)

Digital Output Modules (DO)

Analog Input Modules (AI)

Analog Output Modules (AO)

Function and Technology Modules

Communication Modules

Functional Safety

Intrinsically Safe Modules

Supply and Segment Modules



### Accessories

Marking and Mounting Accessories

# I/O-System — 750 and 753 Series — One System for Every Application

## General Product Information

### One System for Every Application

The WAGO 750/753 I/O-SYSTEM is characterized by its universal application scope and extensive product portfolio. With more than 500 different modules, the versatility and flexibility is so great that virtually every requirement in a wide range of industries is covered.

### Industrial Automation

The wide selection of I/O modules for various potential and signal types, as well as special functions, makes it possible to economically wire sensors/actuators — even in safety-related applications.

### Building automation

The broad portfolio allows for flexible, cellar-to-ceiling solutions with conventional I/O modules, standardized industry-specific fieldbus protocols and subsystems for typical applications in lighting, shading, heating, ventilating and air conditioning (HVAC) and much more.

### Marine and Onshore/Offshore Automation

International approvals coupled with industry-specific features permit use in shipbuilding and other harsh sectors. Addressing requirements specific to industry and operating environment has enabled use on marine diesels and in the EMC-sensitive area of a vessel's bridge. Because the requirements are significantly greater for immunity to interference or emission of interference and mechanical performance in these sensitive areas, the system can readily meet the needs of other industries.

### Process automation

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

### Maximum Fieldbus Independence

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

### Easy to Use

A modular, DIN-rail-mount design permits easy installation, expansion and modification of the I/O module without tools. The streamlined 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.

### Worldwide Approvals

International approvals for building and industrial automation, as well as the process and marine industries, guarantee worldwide use, even under more rigorous operating conditions including ATEX, BR-Ex, IECEx, UL508, UL ANSI/ISA and ship construction.



### Extremely Compact

WAGO's 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 for node customization.
- Space-saving design permits high integration density and direct connection.

### Maximum Reliability and Ruggedness

The WAGO-I/O-SYSTEM is engineered and tested for use in the most demanding environments 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.
- Greater strength for continuous operation in upper temperature ranges.

In addition, CAGE CLAMP® spring pressure connections ensure superior reliability.

Integrated QA measures in the production process and 100 % function testing ensure consistent quality.

### Clear Identification

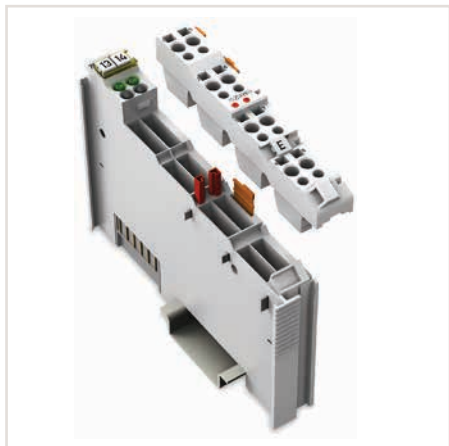
I/O module functionality is identified via marker carriers (integrated or as option). Terminal assignment and technical data are printed onto the side of the I/O module. The WAGO WSB marker system also allows module- and channel-related identification.

### Advantages:

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

## 750 and 753 I/O-System Versions

### Pluggable Connector



The pluggable connections of the WAGO 753 I/O-SYSTEM allow quick and safe replacement. Optional coding pins prevent inserting the pluggable connector in the wrong I/O module. Replacing and connecting the I/O module requires no further action and eliminates possible errors — permanent wiring.

Alternatively, field wiring is possible via interface modules that can be connected to the I/O-System using a ribbon cable (see "Types").

### Extended Temperature Range



Industrial automation technology is typically operated in temperatures ranging from 0 ... 55 °C. However, there are applications that require an extended temperature range.

For these applications, WAGO offers a line of WAGO 750 I/O-SYSTEM products for temperatures ranging from -20 ... +60 °C.

For extreme applications, where even this extended temperature range is not sufficient, the WAGO 750 XTR I/O-SYSTEM is available.

### Functional Safety



In the European Union, the machinery directive defines the requirements for machine and system safety. This ensures a uniform standard for the protection of "life and limb" for people within a machine's operating area.

The required risk assessment is based on harmonized standards (e.g., EN 13849) that identify existing risks and required risk reduction (SIL or PL quality). Based on the risk assessment, safety functionality can be implemented, e.g., by presence detection or protection zone violations using secure switches or light arrays to immediately shutdown the "risk". For this purpose, the safety signals are detected by the "yellow" safety modules and transmitted via "PROFIsafe" to the fail-safe PLC for further processing. The result is then executed via a safe actuator (output module, controller, etc.).

The unique safety characteristic values of the WAGO modules facilitate calculation of the final safety function up to Cat. 4/PLe according to EN 13849, or SIL3 according to EN 62061 or IEC 61511.

The mixed operation of safe and conventional I/O modules streamlines system configuration. For increased EMC immunity required according to the standard, WAGO offers compact filter modules for the power supply. Specific power supply features must be considered, which are described in detail in the corresponding manuals.

### Use in Hazardous Areas



In many plants across the chemical and petrochemical industries, as well as in the production and process automation sectors, installations are operated that process explosive gas- or dust-air mixtures. For this reason, electrical equipment must be explosion-proof in order to avoid injuries to personnel and equipment damages.

The modules within the WAGO 750 I/O-SYSTEM are designed for use in both non-hazardous and hazardous areas. The direct application of fieldbus technology in hazardous areas is typically resource-intensive. When used in hazardous areas of Zone 2/22, the WAGO-I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0/20 and 1/21. The "blue" Ex i I/O modules were specially developed for this purpose. They form an intrinsically safe section that can be integrated into a standard fieldbus node, offering all the advantages of a state-of-the-art fieldbus technology. The WAGO 750 I/O-SYSTEM is also approved for mining applications.