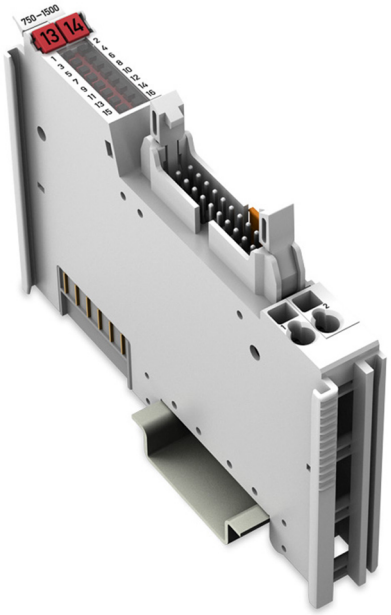
TECHDOCS

# WAGO I/O System 750/753

16-channel digital output; 24 VDC; 0.5 A; high-side switching; ribbon cable

750-1500




Product manual
Valid as of HW version 05 | FW version --
2563239819 | 2 | en-US | 2025-07-28 12:31

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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# 1 Provisions

## 1.1 Scope of Applicability

This document applies to the following product:

**750-1500** (16DO 24V DC 0.5A Ribbon Cable) 16-channel digital output; 24 VDC; 0.5 A; high-side switching; ribbon cable.

| | |
|---|---|
| From hardware version | 05 |
| From firmware version | -- |
| Product detail page | **www.wago.com/750-1500** |

### Note

**Note applicable documents!**

The complete operating instructions for the product consists of several, applicable documents. The product must only be installed and operated in accordance with the complete operating instructions. Knowledge of all applicable documents is required for proper use. You can find all documents and information on the product detail page.

**Applicable document**

**System Manual I/O System 750/753**

- Provisions
- Safety
- Planning
- Transport and Storage
- Assembly and Disassembly
- Conductor Termination
- Decommissioning

# 2 Overview

The I/O module transmits binary control signals to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The I/O module is suitable for interference-free use in safety circuits.

The I/O module has 16 output channels and enables connecting directly to electronic components via a 20-pole ribbon cable.

The 24V power supply can either be fed in via two CAGE CLAMP® connections, or as an alternative, via the electronic module's ribbon cable.

The I/O module’s outputs provide high-side switching. If the signal status of an output channel is “high,” the 24 V potential for the field power supply is switched to the corresponding output connection.

For each channel, a green status LED indicates the signal status.

The field level and the system level are electrically isolated from one another.

The I/O module can be operated on all head stations of the WAGO I/O System 750/753.

# 3 Properties

## 3.1 View

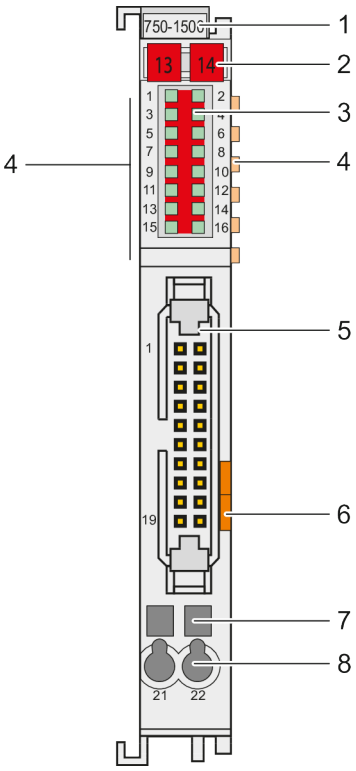



Figure 1: View

| | | |
|---|---|---|
| 1 | Item number | Scope of Applicability [▸ 4] |
| 2 | Slot for Mini-WSB (optional) | System Manual I/O System 750/753 |
| 3 | Status LEDs | Indicators [▸ 7] |
| 4 | Data contacts | System Manual I/O System 750/753 |
| 5 | Connector plug | Wiring Interface [▸ 8] |
| 6 | Release tab | System Manual I/O System 750/753 |
| 7 | Access to open the associated CAGE CLAMP® connection | System Manual I/O System 750/753 |
| 8 | CAGE CLAMP® connection | Wiring Interface [▸ 8] and<br>System Manual I/O System 750/753 |

## 3.2 Indicators

For each channel, a green status LED indicates the signal status.

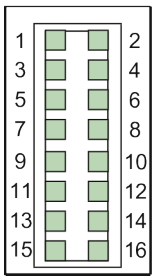



Figure 2: Indicators

| Channel | Designation | LED | State | Function |
|---|---|---|---|---|
| 1 | DO 1 status | 1 | Off | DO 1 output: signal voltage (0) |
| | | | Green | DO 1 output: signal voltage (1) |
| 2 | DO 2 status | 2 | Off | DO 2 output: signal voltage (0) |
| | | | Green | DO 2 output: signal voltage (1) |
| 3 | DO 3 status | 3 | Off | DO 3 output: signal voltage (0) |
| | | | Green | DO 3 output: signal voltage (1) |
| 4 | DO 4 status | 4 | Off | DO 4 output: signal voltage (0) |
| | | | Green | DO 4 output: signal voltage (1) |
| 5 | DO 5 status | 5 | Off | DO 5 output: signal voltage (0) |
| | | | Green | DO 5 output: signal voltage (1) |
| 6 | DO 6 status | 6 | Off | DO 6 output: signal voltage (0) |
| | | | Green | DO 6 output: signal voltage (1) |
| 7 | DO 7 status | 7 | Off | DO 7 output: signal voltage (0) |
| | | | Green | DO 7 output: signal voltage (1) |
| 8 | DO 8 status | 8 | Off | DO 8 output: signal voltage (0) |
| | | | Green | DO 8 output: signal voltage (1) |
| 9 | DO 9 status | 9 | Off | DO 9 output: signal voltage (0) |
| | | | Green | DO 9 output: signal voltage (1) |
| 10 | DO 10 status | 10 | Off | DO 10 output: signal voltage (0) |
| | | | Green | DO 10 output: signal voltage (1) |
| 11 | DO 11 status | 11 | Off | DO 11 output: signal voltage (0) |
| | | | Green | DO 11 output: signal voltage (1) |
| 12 | DO 12 status | 12 | Off | DO 12 output: signal voltage (0) |
| | | | Green | DO 12 output: signal voltage (1) |
| 13 | DO 13 status | 13 | Off | DO 13 output: signal voltage (0) |
| | | | Green | DO 13 output: signal voltage (1) |
| 14 | DO 14 status | 14 | Off | DO 14 output: signal voltage (0) |
| | | | Green | DO 14 output: signal voltage (1) |
| 15 | DO 15 status | 15 | Off | DO 15 output: signal voltage (0) |
| | | | Green | DO 15 output: signal voltage (1) |
| 16 | DO 16 status | 16 | Off | DO 16 output: signal voltage (0) |
| | | | Green | DO 16 output: signal voltage (1) |

## 3.3 Wiring Interface

The 20-pole plug strip is used to connect the field devices.
The field supply voltage is fed in via the two CAGE CLAMP® connections (or alternatively via the ribbon cable of the electronic module).

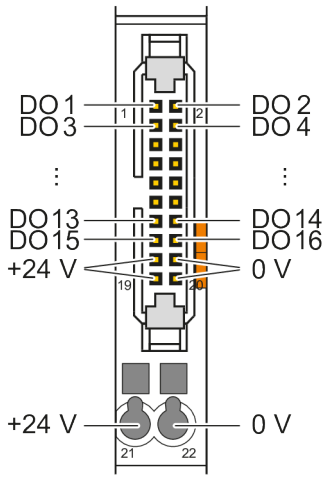



Figure 3: Connections

| Channel | Designation | Connection | Function |
|---|---|---|---|
| 1 | DO 1 | 1 | DO 1 output: signal voltage |
| 2 | DO 2 | 2 | DO 2 output: signal voltage |
| 3 | DO 3 | 3 | DO 3 output: signal voltage |
| 4 | DO 4 | 4 | DO 4 output: signal voltage |
| 5 | DO 5 | 5 | DO 5 output: signal voltage |
| 6 | DO 6 | 6 | DO 6 output: signal voltage |
| 7 | DO 7 | 7 | DO 7 output: signal voltage |
| 8 | DO 8 | 8 | DO 8 output: signal voltage |
| 9 | DO 9 | 9 | DO 19 output: signal voltage |
| 10 | DO 10 | 10 | DO 10 output: signal voltage |
| 11 | DO 11 | 11 | DO 11 output: signal voltage |
| 12 | DO 12 | 12 | DO 12 output: signal voltage |
| 13 | DO 13 | 13 | DO 13 output: signal voltage |
| 14 | DO 14 | 14 | DO 14 output: signal voltage |
| 15 | DO 15 | 15 | DO 15 output: signal voltage |
| 16 | DO 16 | 16 | DO 16 output: signal voltage |
| - | +24 V | 17 | Field supply voltage 24 V (transmission) |
| | | 19 | |
| | 0 V | 18 | Field supply voltage 0 V (transmission) |
| | | 20 | |
| | +24 V | 21 (CAGE CLAMP®) | Field supply voltage 24 V (feed-in) |
| | 0 V | 22 (CAGE CLAMP®) | Field supply voltage 0 V (feed-in) |

## 3.4 Circuit Diagram

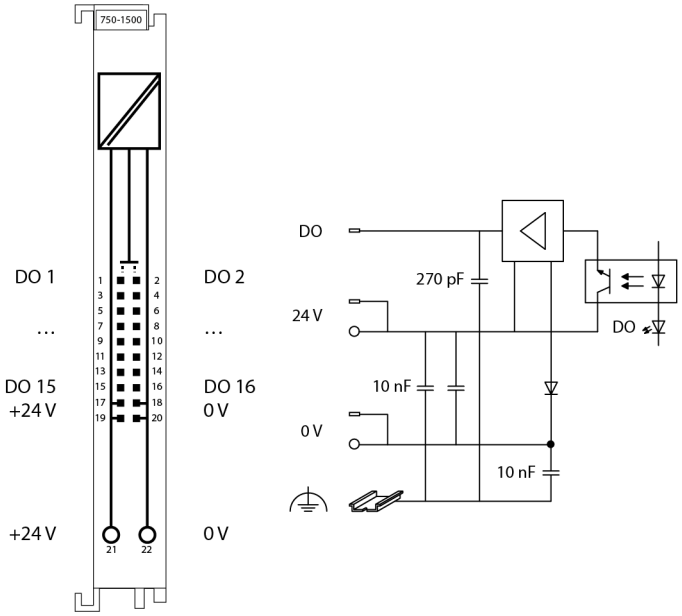



Figure 4: Circuit Diagram

For information on the system power supply, please see 🕮 **System Manual I/O System 750/753**.

# 4 Functions

## 4.1 Signal Processing

The I/O module's outputs provide high-side switching. If the signal status of an output channel is "high," the 24 V potential for the field power supply is switched to the corresponding output connection.

## 4.2 Process Image

Table 1: Output bits 0 .. 7

| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|
| DO 8 | DO 7 | DO 6 | DO 5 | DO 4 | DO 3 | DO 2 | DO 1 |

| | |
|---|---|
| DO 1 | DO 1 signal state – digital output channel 1 |
| DO 2 | DO 2 signal state – digital output channel 2 |
| DO 3 | DO 3 signal state – digital output channel 3 |
| DO 4 | DO 4 signal state – digital output channel 4 |
| DO 5 | DO 5 signal state – digital output channel 5 |
| DO 6 | DO 6 signal state – digital output channel 6 |
| DO 7 | DO 7 signal state – digital output channel 7 |
| DO 8 | DO 8 signal state – digital output channel 8 |

Table 2: Output bits 8 .. 16

| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|
| DO 16 | DO 15 | DO 14 | DO 13 | DO 12 | DO 11 | DO 10 | DO 9 |

| | |
|---|---|
| DO 9 | DO 9 signal state – digital output channel 9 |
| DO 10 | DO 10 signal state – digital output channel 10 |
| DO 11 | DO 11 signal state – digital output channel 11 |
| DO 12 | DO 12 signal state – digital output channel 12 |
| DO 13 | DO 13 signal state – digital output channel 13 |
| DO 14 | DO 14 signal state – digital output channel 14 |
| DO 15 | DO 15 signal state – digital output channel 15 |
| DO 16 | DO 16 signal state – digital output channel 16 |

# 5 Planning

This section provides helpful information for planing the use of the product in a node.

## 5.1 Compatibility

The I/O module can be operated on all head stations of the WAGO I/O System 750/753.

## 5.2 Requirements for Wiring and Accessories

Use a suitable protective circuit to limit the induction voltage, such a recovery diode, parallel to the load. Inductive voltage limitation prevents damage to the I/O module's electronics when inductive loads are switched off.

To protect the I/O module against overload, use a supply module with a fuse (e.g., item no.: 750-601 or 750-610).

The following adapters are available from WAGO as accessories for the I/O module:

Table 3: 857 Series (JUMPFLEX® adapter for system wiring, input)

| Item No. | Description | Suitable WAGO Ribbon Cable |
|---|---|---|
| 857-981 | 8-channel adapter with 14-pole ribbon cable connector per IEC 603-1 / DIN 41651; high-side switching input, 10-pole | 706-7753/304-xxx |

The following electronic modules are available from WAGO as accessories for the I/O module:

Table 4: 289 Series (Interface Modules)

| Item No. | Description | Suitable WAGO Ribbon Cable |
|---|---|---|
| 289-611 | Interface modules for ribbon cable plugs per IEC 603-1 / DIN 41651, 10-pole | 706-7753/302-xxx |
| 289-614 | Interface modules for ribbon cable plugs per IEC 603-1 / DIN 41651, 20-pole | 706-3057/300-xxx |

Table 5: 704 Series (Interface Modules for System Wiring, 8-Channel)

| Item No. | Description | Suitable WAGO Ribbon Cable |
|---|---|---|
| 704-5003 | Relay output module with miniature switching relay for DIN-35 rails, 8 channels, 1 changeover contact each (1 u) with integrated status indicator, 10-pole ribbon cable connector according to DIN 41651 | 706-7753/302-xxx |
| 704-5013 | Relay output module with miniature switching relay for DIN-35 rails, 8 channels, 1 changeover contact each (1 u) with integrated status indicator, 10-pole ribbon cable connector according to DIN 41651 | |

Table 6: 704 Series (Interface Modules for System Wiring, 16-Channel)

| Item No. | Description | Suitable WAGO Ribbon Cable |
|---|---|---|
| 704-5004 | Relay output module with miniature switching relay for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, 20-pole ribbon cable connector according to DIN 41651 | 706-3057/300-xxx |

| Item No. | Description | Suitable WAGO Ribbon Cable |
|---|---|---|
| 704-5014 | Relay output module without miniature switching relay for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5024 | Relay output module with miniature switching relay for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5034 | Relay output module with miniature switching relay for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator and output fuse, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5044 | Relay output module with miniature switching relay for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5054 | Relay output module with miniature relay, for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, disconnect terminal block and output fuse, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5064 | Relay output module with miniature switching relay for DIN-35 rails, 16 channels, 2 changeover contacts each (2 u) with integrated status indicator, 20-pole ribbon cable connector according to DIN 41651 | |
| 704-5074 | Relay output module with miniature relay, for DIN-35 rails, 16 channels, 1 changeover contact each (1 u) with integrated status indicator, double disconnect terminal block and output fuse, 20-pole ribbon cable connector according to DIN 41651 | |

The following WAGO ribbon c are available for connecting electronic modules to the I/O module:

Table 7: 706 Series (WAGO ribbon cable)

| Item No. | Description | Length |
|---|---|---|
| 706-3057/300-100 | WAGO 20/20 ribbon cable, 20-pole female connector to 20-pole female connector | 1 m |
| 706-3057/300-200 | WAGO 20/20 ribbon cable, 20-pole female connector to 20-pole female connector | 2 m |
| 706-3057/300-300 | WAGO 20/20 ribbon cable, 20-pole female connector to 20-pole female connector | 3 m |
| 706-7753/302-100 | WAGO 20/2×10 ribbon cable, 20-pole female connector to two 10-pole female connectors | 1 m |
| 706-7753/302-200 | WAGO 20/2×10 ribbon cable, 20-pole female connector to two 10-pole female connectors | 2 m |

## 5.3 Use in Safety Applications

The I/O module is suitable for interference-free use in safety circuits.

If the field-side supply is shut down via a safety switching device, the safety function of the I/O module is not active. If the interference-free I/O module is used correctly in a safety-related application, this does not affect either the SIL (or the Performance Level and category) achieved by the circuit. Note the following information.

- **Only operate with functional extra-low voltage**
  When using interference-free I/O modules, only use SELV/PELV-capable power supplies for the 24 VDC power supply.
- **Observe maximum voltage**
  Even in the event of failure, only a maximum voltage of $U_{max.}$ must be allowed to act on the interference-free I/O module; otherwise irreparable damage to the I/O module could occur. Use a power supply with active voltage limitation (overvoltage protection) or an alternate component. For the interference-free I/O module, the field supply voltage is: $U_{max.} < 32$ V
- **Ensure protection type IP54**
  Protection type IP54 is mandatory. Therefore, integration and operation of the interference-free I/O module is only allowed in switch boxes or control cabinets with protection type IP54 or higher.
- **Protect the outputs against feedback**
  The 24 V power supply must never be applied to the output of an interference-free I/O module. The system would not detect such a wiring error.
- **Avoid reverse power supply of the I/O module**
  A group of interference-free I/O modules must only be powered by a safety switching device. It is absolutely essential to avoid reverse power supply.
- **Prevent short circuits between outputs**
  It is absolutely essential to prevent short circuits between the outputs of different interference-free I/O modules. The system would not detect such short circuits.

According to EN ISO 13849-2, the following measures are required for an “external voltage” fault exclusion:

- Use of cables routed separately and
- Protection from external damage (e.g., with cable duct).

### 5.3.1 Connection to Safety Switching Devices or F I/O Modules

When the interference-free I/O module is used in safety-related applications, the I/O modules belonging to a safety switching device must be combined to form a potential group. The power supply of the potential group must only be provided via the following supply/filter modules:

Table 8: Supply/Filter Modules for Setting up a Potential Group

| | |
|---|---|
| Supply module | Item no.: 750-601 |
| | Item no.: 750-602 |
| Filter module | Item no.: 750-626 |

Either a supply module or a distance module without power jumper contacts (item no.: 750-616) must be connected at the end of the potential group.

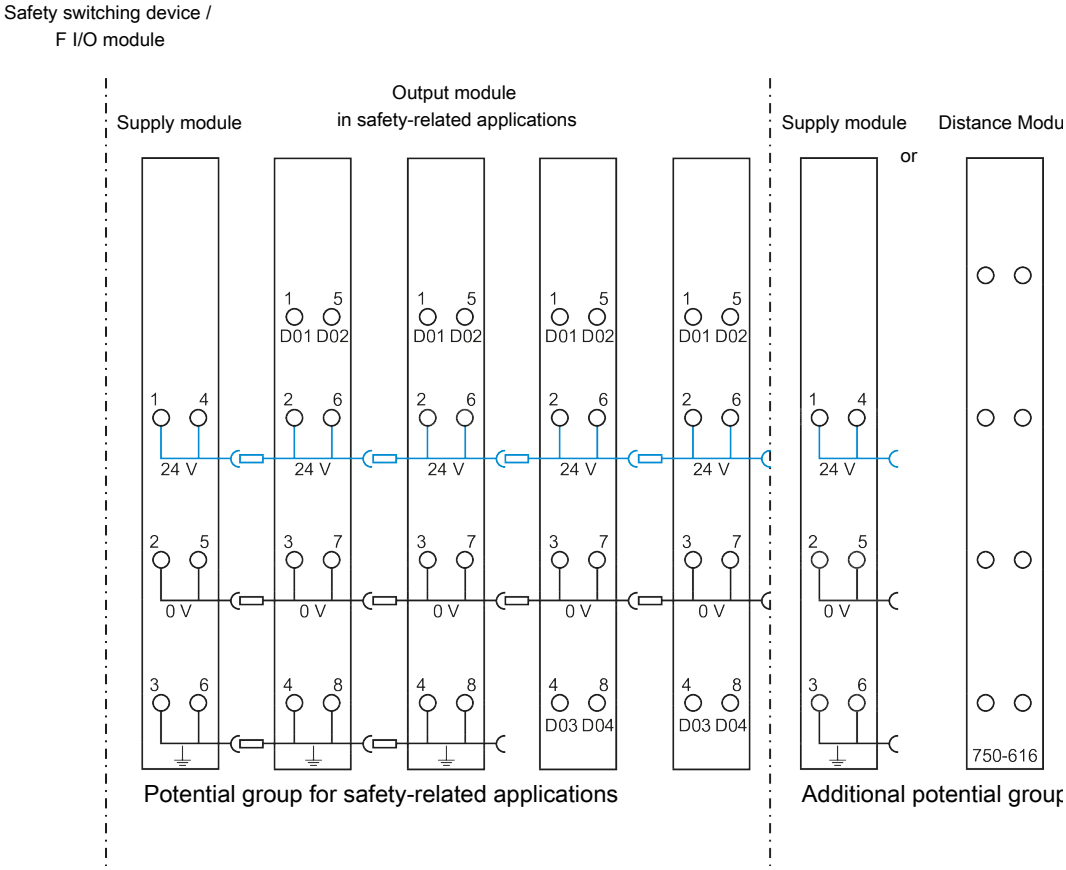



Figure 5: Setting Up a Potential Group (Example)

### 5.3.2 Connection Examples for Use in Safety Applications

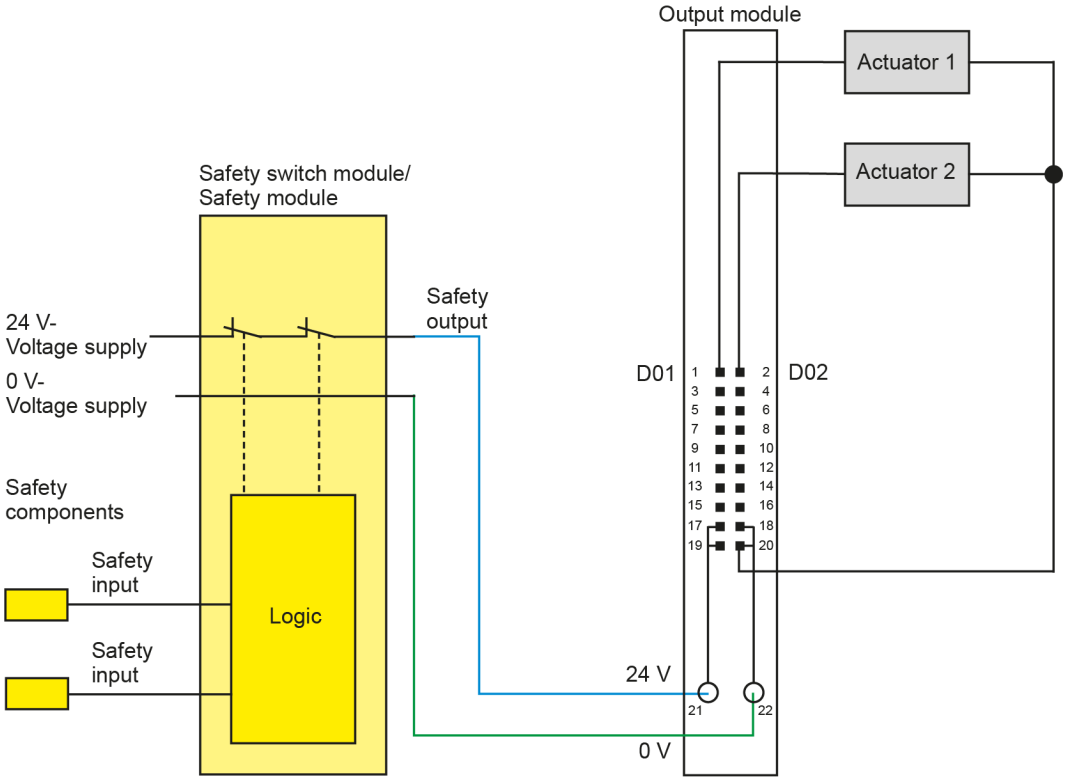



Figure 6: Two-Channel, **Single-Pole** Power Supply Shutdown

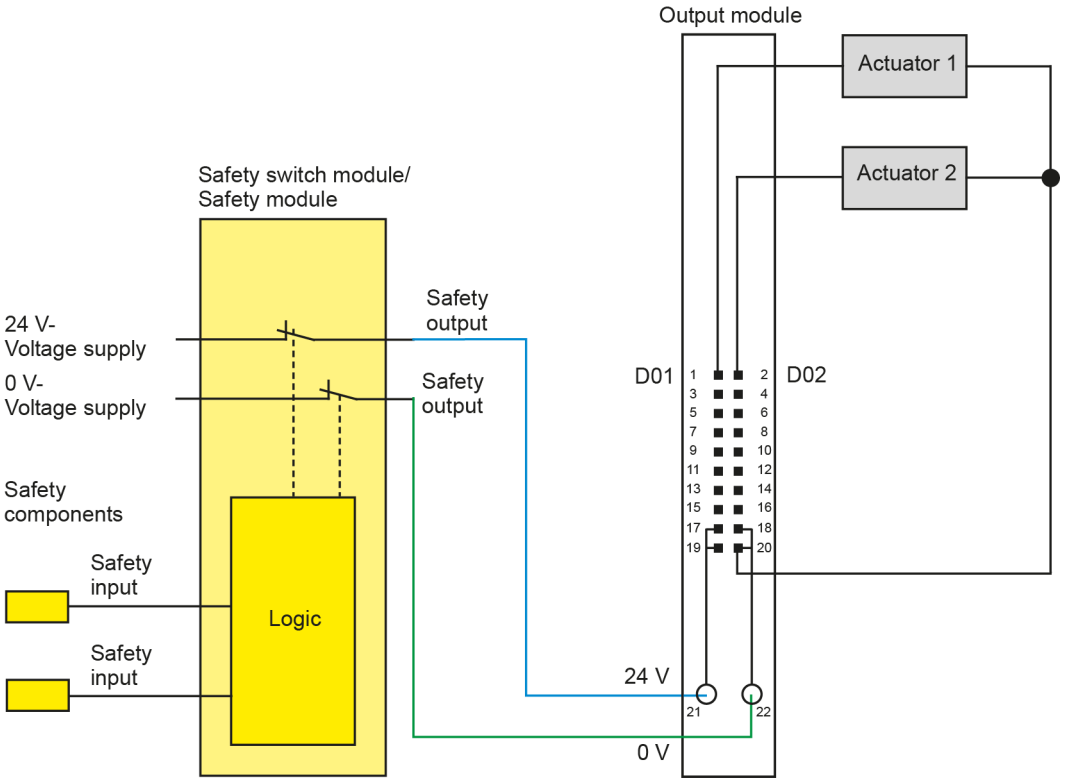



Figure 7: Two-Channel, **Two-Pole** Power Supply Shutdown

# 6 Appendix

## 6.1 Technical Data, Approvals, Guidelines and Standards

**Note**

**Subject to changes!**

Please also observe the further product documentation! You can generate the current datasheet at any time at: www.wago.com /<item number>.

**See also**

Data sheet 750-1500 [▶ 17]

# Data Sheet | Item Number: 750-1500

16-channel digital output; 24 VDC; 0.5 A; Ribbon cable

https://www.wago.com/750-1500

This digital output module features 16 channels in a width of just 12 mm (0.47 inch).
It transmits binary control signals from the automation device to the connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
The module connects to electronic modules via a 20-pole ribbon cable.
The 24 V power is fed to the electronic modules via two CAGE CLAMP® connectors.
A green LED indicates the signal state of each channel.
Field and system levels are electrically isolated.

## Technical data

| | |
|---|---|
| Number of digital outputs | 16 |
| Total number of channels (module) | 16 |
| Signal type | Digital |
| Signal type (voltage) | 24 VDC |
| Actuator connection | 16 x (1-wire) |
| Output characteristic | high-side switching |
| Output current per channel | 0.5 A |
| Output current | short-circuit-protected |
| Load type | Resistive, inductive, lamp load |
| Switching frequency (max.) | 1 kHz |
| Output data width (internal) max. | 16 bits |
| Supply voltage (system) | 5 VDC; via data contacts |
| Current consumption (5 V system supply) | 40 mA |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via pluggable connector (CAGE CLAMP® connection) |
| Current consumption, field supply (module with no external load) | 29 mA |
| Isolation | 500 V system/field |
| Indicators | LED (1-16) green: Status DO 1 … DO 16 |

## Connection data

| | |
|---|---|
| Connection technology: inputs/outputs | 1 x Connector per DIN 41651; Male connector (20-pole) (outputs) |
| Connectable conductor materials | Copper |
| Connection type 1 | Output |
| Connection technology: field supply | 2 x CAGE CLAMP® |
| Connection type | Field supply |
| Solid conductor | 0.08 … 2.5 mm² / 28 … 14 AWG |
| Fine-stranded conductor | 0.08 … 2.5 mm² / 28 … 14 AWG |
| Strip length | 8 … 9 mm / 0.31 … 0.35 inches |

## Physical data

| | |
|---|---|
| Width | 12 mm / 0.472 inches |
| Height | 100 mm / 3.937 inches |
| Depth | 74.1 mm / 2.917 inches |
| Depth from upper-edge of DIN-rail | 66.9 mm / 2.634 inches |


Continued on next page

## Mechanical data

| | |
|---|---|
| Mounting type | DIN-35 rail |
| Pluggable connector | fixed |

## Material data

| | |
|---|---|
| Color | light gray |
| Housing material | Polycarbonate; polyamide 6.6 |
| Fire load | 1.031 MJ |
| Weight | 46 g |
| Conformity marking | CE |

## Environmental requirements

| | |
|---|---|
| Ambient temperature (operation) | 0 … +55 °C |
| Ambient temperature (storage) | -40 … +85 °C |
| Protection type | IP20 |
| Pollution degree | 2 per IEC 61131-2 |
| Operating altitude | 0 … 2000 m / 0 … 6562 ft |
| Mounting position | Horizontal left, horizontal right, horizontal top, horizontal bottom, vertical top and vertical bottom |
| Relative humidity (without condensation) | 95 % |
| Vibration resistance | 4g 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, marine applications |
| Exposure to pollutants | per IEC 60068-2-42 and IEC 60068-2-43 |
| Permissible $H_2S$ contaminant concentration at a relative humidity 75 % | 10 ppm |
| Permissible $SO_2$ contaminant concentration at a relative humidity 75 % | 25 ppm |

## Product classification

| | |
|---|---|
| UNSPSC | 32151705 |

## Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 1303-86-2<br>1317-36-8<br>7439-92-1<br>75980-60-8 |
| REACH Candidate List Substance | Diboron trioxide<br>Lead<br>Lead monoxide<br>Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 7(a)<br>7(c)-I |
| SCIP notification number (Austria) | 92de8fc9-1973-4090-af05-30ed7b2fc7c5 |
| SCIP notification number (Belgium) | 855687fd-4d6a-411d-a7ea-3357de212512 |
| SCIP notification number (Bulgaria) | 321e6d36-d94b-4a09-b409-65ee11bc1103 |
| SCIP notification number (Czech Republic) | db048729-5d6e-432a-9666-43fd12dad62e |
| SCIP notification number (Denmark) | b8966e37-1658-4792-8a91-4eb9843783a8 |
| SCIP notification number (Finland) | b743ee7f-bfcd-407d-ad87-91b3bb1e7afc |
| SCIP notification number (France) | 8a376969-ac1c-4117-9a70-b4707a111f9c |
| SCIP notification number (Germany) | 5797d38f-70c0-425e-ac6d-0b67bec2faca |
| SCIP notification number (Hungary) | 2b177ef9-8e34-4eab-b5b0-40036412ea7d |
| SCIP notification number (Italy) | 4f698208-0236-4b80-a516-972faa82023f |
| SCIP notification number (Netherlands) | 73e2c402-7def-4785-8255-0653bbc3e5b7 |
| SCIP notification number (Poland) | fca7ffc4-f033-4829-aa5b-b294e4f15496 |
| SCIP notification number (Romania) | 33da046b-5a8f-43aa-869a-a637246c3dc0 |


Continued on next page

## Environmental Product Compliance

| | |
|---|---|
| SCIP notification number (Sweden) | dd75c8f5-35c3-45e9-b62b-46dd777d2212 |

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| EAC<br>GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03083 |
| KC<br>National Radio Research Agency | Article 58-2, Clause 3 | MSIP-REM-W43-DOM750 |
| UL<br>Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | UL 508 | E175199 |

### Declarations of conformity and manufacturer's declarations

| Approval | Standard | Certificate Name |
|---|---|---|
| EU-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |
| UK-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |

### Approvals for marine applications

| Approval | Standard | Certificate Name |
|---|---|---|
| ABS<br>American Bureau of Shipping | - | 22-2219060 |
| BSH<br>Bundesamt fuer Seeschifffahrt und Hydrographie | - | 1104 |
| BV<br>Bureau Veritas S.A. | - | 30389/C0 BV |
| DNV<br>DNV GL SE | DNV-CG-0339,Aug.2021 | TAA0000194 |
| KR<br>Korean Register of Shipping | - | KR HMB05880-AC001 |
| LR<br>Lloyds Register EMEA | - | LR22180952TA |
| PRS<br>Polski Rejestr Statków | - | TE/1101/880590/23 |
| RINA<br>RINA Germany GmbH | - | ELE343521XG001 |

### Approvals for hazardous areas

| Approval | Standard | Certificate Name |
|---|---|---|
| ATEX<br>TUEV Nord Cert GmbH | EN 60079-0 | TUEV14ATEX148929X (II 3 G Ex ec IIC T4 Gc) |
| CCCEx<br>CQST/CNEx | CNCA-C23-01 | 2020312310000213 (Ex ec IIC T4 Gc) |
| IECEx<br>TUEV Nord Cert GmbH | IEC 60079-0 | IECEx TUN 14.0035 X (Ex ec IIC T4 Gc) |
| INMETRO<br>TÜV Rheinland do Brasil Ltda. | IEC 60079-0 | TÜV 12.1297 X |
| UKEx<br>WAGO GmbH & Co. KG | EN 60079-0 | UKCA_WA GO22UKEX003X_ec |
| UL<br>Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS) | UL 121201 | E198726 |

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