

This module (Item No. 750-666/000-104) has two power outputs (O1 ... O2) and four clock-sensitive inputs (I1 ... I4) and can establish a functionally safe link between the safe digital inputs and outputs. Thus, the module can automatically control its safe digital outputs, allowing safety-related applications up to SIL 3 / PL e to be implemented without a safety controller.

The module has 30 virtual inputs and 30 virtual outputs, making it possible to receive additional virtual output values from a controller and to link this information to the safe digital inputs. The internal logic is parameterized via the WAGO Safety Editor (SEDI). The sensors can be supplied directly with 24 V, or fed by two differently clocked outputs (T1 ... T2). The inputs connect potential-free, emergency-off switches with contacts, safety interlock switches, mode selectors, as well as both safety sensors and semiconductor outputs (e.g., light barriers, PLC outputs). The power outputs switch both DC13 resistive and inductive loads.

Power output O1 can be operated in high-side switching mode, while power output O2 can be used in high-side or low-side switching mode. Both power outputs are single-channel.

The module monitors short circuits, cross circuits and 24 V power supply from separate sources. Both the monitoring and additional safety-relevant parameters (e.g., operating modes, switching off test pulses, discrepancy or filter times) can be configured via WAGO-I/O-CHECK.

The configuration tool can be conveniently integrated into engineering systems supporting both CC2 and CC3 tool calling interfaces (TCI).

The PROFIsafe address can be set using the DIP switch located on the side of the module, or via WAGO-I/O-CHECK.

The module can be operated without a secure controller and is fieldbus-independent, but also supports the PROFIsafe protocol V2.6 (PROFINET®). Field and system levels are electrically isolated.

Individual safety modules can be arranged in any combination when configuring the fieldbus node.

If, for example, the cable length of the 24 V supply is greater than 3 m, a WAGO Filter Module or an appropriate external filter must be used for the 24 V power supply to protect the module against surge and burst (per IEC 61000-6-7 and marine applications). Additional information can be found in the product manual (available in German and English).

This module (Item No. 750-666/000-104) has been evaluated by UL in compliance with the UL/CSA 61010-1, UL/CSA 61010-2-201 and UL 121201, CSA-C22.2 No. 213 standards.

The functional safety evaluation was performed by TÜV Rheinland in compliance with the specified standards.

### General technical data

Protocols	Safe communication via PROFIsafe V2.6 (PROFINET®); Non-safe communication (PROFINET®; with functional limitations)
Configuration options	Device address adjustable via DIP switch, WAGO Safety Editor 75x or engineering software for the safety controller; Parameters adjustable via WAGO Safety Editor 75x or engineering software for the safety controller
Indicators	LED (A-D) green/red: Status/error I1 ... I4; LED (E) red: Module error; LED (F) red/green: Local bus communication; LED (G) red/green: Protocol status; LED (H) red/green: Parameterization; LED (I,K) red/green: Status/error O1 ... O2
Device specification	GSD specification: V2.4
Number of F I/O modules per node (fieldbus coupler/controller)	Siehe Angaben im Handbuch zum entsprechenden Feldbuskoppler/-controller
Device-specific	Channel-granular passivation: Available; Safety logic: Up to 12 functions can be parameterized; 30 virtual inputs and outputs via process image
Pluggable connector	fixed

### Technical data

Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	120 mA
Overvoltage category	II
Supply voltage (field)	24 VDC, SELV/PELV (-25 ... +30 %); for digital inputs; Power outputs: SELV/PELV 24 VDC (-25 ... +20 %) for inductive loads ("Pilot Duty" / DC13); SELV/PELV 24 VDC (-25 ... +30 %) other applications; Current consumption from power outputs: 3 mA + load current
Current consumption, field supply (module with no external load)	30 mA
Isolation (peak value)	500 V output channel – output channel, system voltage, input channel
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	10 A

### Functional Safety

Achievable safety classes	Logic: Cat. 4/PL e per ISO 13849; SIL 3 per IEC 61508 / EN 62061 Digital inputs and outputs (without clock outputs): Single-channel Cat. 2/PL d per ISO 13849-1; SIL 2 per IEC 61508 / EN 62061; dual-channel Cat. 4/PL e per ISO 13849-1; SIL 3 per IEC 61508 / EN 62061
Safety standards	IEC 61508-1 ... -7; EN ISO 13849-1; EN 62061
Interface types according to ZVEI (inputs)	Drain; A, C0, C1, C2, C3
Interface types according to ZVEI (outputs)	Source; C0, C1, C2, C3, D0, D1, D2, D3

### Connection data

Connection technology: inputs/outputs	16 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type 1	Inputs/outputs
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches

### Physical data

Width	24 mm / 0.945 inches
Height	100 mm / 3.937 inches
Depth	67.8 mm / 2.669 inches
Depth from upper-edge of DIN-rail	60.6 mm / 2.386 inches

### Mechanical data

Mounting type	DIN-35 rail
Pluggable connector	fixed

### Material data

Housing material	Polycarbonate; polyamide 6.6
Fire load	1.985 MJ
Weight	97.3 g
Conformity marking	CE; UKCA

### Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	-40 ... +85 °C
Protection type	IP20
Protection class	III
Pollution degree	2 per IEC 61131-2
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	Horizontal left, horizontal right, horizontal top, 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, EN 61000-6-7 (FS)
EMC emission of interference	per EN 61000-6-4, marine applications, EN 61000-6-3
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %	25 ppm


**Environmental Product Compliance**

RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II

**Approvals / Certificates**

**Declarations of conformity and manufacturer's declarations**      **Approvals for marine applications**

Approval	Standard	Certificate Name
EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-



Approval	Standard	Certificate Name
DNV DNV GL SE	DNV-CG-0339,Aug.2021	TAA0000194

**Approvals for hazardous areas**



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX148929X (II 3 G Ex ec IIC T4 Gc)
IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX TUN 14.0035 X (Ex ec IIC T4 Gc)
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	-	E198726

**Approvals for functional safety**



Approval	Standard	Certificate Name
Prod. Safety, Funct. Safety TUEV Rheinland Industrie Service GmbH	-	No. 968/EZ 247.18/21