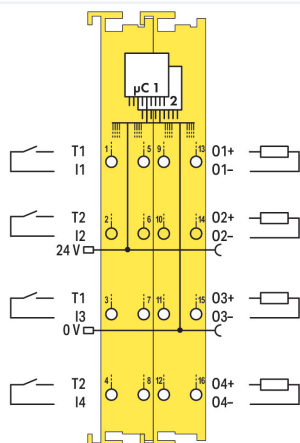
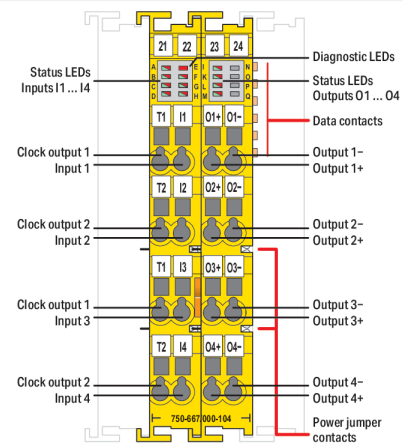
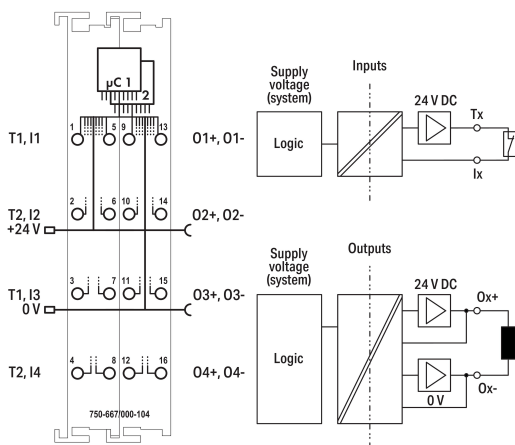


Data Sheet | Item Number: 750-667/000-104

Fail-safe 4/4 channel digital input/output; 24 VDC; 2 A; Logic; PROFIsafe

<https://www.wago.com/750-667/000-104>



This module (Item No. 75x-667/000-104) features four power outputs (O1 ... O4) and four pulse-sensitive inputs (I1 ... I4), and can perform functionally safe logic linking of safe digital inputs and outputs. This enables the module to independently control its safe digital outputs. As a result, safe applications up to SIL 3 / PL e can be implemented without a safety controller, e.g., in combination with WAGO Controllers PFC100, PFC200, PFC300, and the WAGO Basic Controller 100.

The module includes configurable virtual inputs and outputs. It can receive additional virtual output values from a controller and link this information with the safe digital inputs. The internal logic is configured using the WAGO Safety Editor (SEDI).

The sensors can be powered either directly via 24 VDC or via the two pulse-timed 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 with a rated current of up to 2 A, without requiring any additional external circuitry.

The power outputs operate in both bipolar (high-side/low-side switching) and unipolar (common potential on one side of the load) modes. 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 operate without a safety controller and independently of the fieldbus, 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.

To protect the 24 VDC power supply against surge and burst (to IEC 61000-6-7 and for marine applications), a WAGO filter module or a suitable external interference suppression filter must be used. Additional information can be found in the product manual (available in German and English). This module (Item No. 75x-667/000-104) was evaluated by UL to UL/CSA 61010-1, UL/CSA 61010-2-201, UL 121201, and CSA-C22.2 No. 213. The functional safety assessment to the specified standards was conducted by TÜV Rheinland.

Additional information and examples can be found in the WAGO Download Center (link: [Learning Material | WAGO Download Center](#)).

General technical data	
Protocols	Fail-safe communication via PROFIsafe V2.6 (PROFINET _®); Non-fail-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	LEDs (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; LEDs (I–M), red/green: Status/error O1 ... O4
Device specification	GSD specification: V2.4
Number of F I/O modules per node (fieldbus coupler/controller)	See information in the manual about the respective fieldbus coupler/controller
Device-specific	Channel-granular passivation: available; Safe logic: Up to 12 functions configurable; 30 virtual inputs and outputs via process image
Total number of channels (module)	8
Pluggable connector	fixed

Digital Inputs	
Number of digital inputs	4
Signal type	Digital
Signal type (voltage)	24 VDC
Sensor connection	4 x (Fail-safe input with test pulse)
Input characteristic	clock sensitive
Input characteristic	Type 1 per IEC 61131
Voltage range for signal (0)	–3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Input current per channel for signal (1) typ.	3 mA
Signal frequency (max.)	50 Hz
Input filter	0 ... 200 ms (parameterizable in steps)
Response times	See product manual
Minimum signal duration	= input filter time + test pulse duration + 2 ms

Digital Clock Outputs

Clock outputs	2
Signal type	Digital
Signal type (voltage)	24 VDC
Output current per channel	0.1 A
Test pulse duration (clock outputs)	Parameterizable between 0.5 ms and 200 ms in steps
Connection requirement (permissible cable length)	200 m
Connection requirement (permissible cable type)	Shielded or unshielded
Output protection (clock outputs)	Short circuit and overload protection

Digital outputs

Number of digital outputs	4
Signal type	Digital
Signal type (voltage)	24 VDC
Output characteristic	Parameterizable test pulses
Output characteristics	2 ADC per IEC 61131-2
Output current (per channel)	2 A
Output current (module)	8 A
Output residual current at signal "0"	< 1.0 mA
Output protection	Protected and short-circuit-proof per IEC 61131-2; Breaking capacity of the output protection: 200 ADC If the power-supplying network provides a short-circuit current greater than the breaking capacity, a short circuit at the output may lead to the destruction of the F I/O module. Limitation of the inductive switching voltage: See product manual
Response threshold (output protection) min.	2.7 ADC
Response threshold (output protection) max.	4.4 ADC
Parallel connection of outputs	Not possible
Controlling an IEC 61131-2-compatible input	Possible; see product manual
Response times (max.) (outputs)	See product manual
Switching frequency (max.)	0.1 Hz; Capacitive load (with 47 µF capacitive load and active discharge switched on)
Switching frequency (max.) (2)	0.1 Hz; Inductive load DC 13 (50 W) per IEC 60947-5-1, see product manual
Capacitive load for each channel	47 µF
Connection requirement (permissible cable length) (2)	200 m
Connection requirement (permissible cable type) (2)	Shielded or unshielded
Read-back time	1 ... 500 ms (parameterizable in steps)
Test pulse duration (digital outputs)	0 ... 500 ms; test pulse duration is adaptively adjusted to the actuator and corresponds to the read-back time at most.
Response threshold (output monitoring) min.	6.7 VDC (O1+ ... O4+)
Response threshold (output monitoring) max.	12 VDC (O1+ ... O4+)

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 ... +20 %); Via power jumper contacts (supply via blade contact; distribution via spring contact)
Current consumption, field supply (module with no external load)	30 mA
Isolation (peak value)	500 V system voltage/field level (power jumper contacts)
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 per ZVEI CB24I (outputs)	Source; C0, C1, C2, C3, D0, D1, D2, D3

Connection Data	
Connection technology: I/O	16 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type	Inputs/outputs
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	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	1.909 MJ
Weight	100.9 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 ₂ S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO ₂ contaminant concentration at a relative humidity 75 %	25 ppm



Commercial data		
PU (SPU)	1 pcs	
Packaging type	Box	
Country of origin	DE	
GTIN	4066966509236	
Customs tariff number	85371098990	

Product Classification		
UNSPSC	32151705	
ETIM 9.0	EC001599	
ETIM 10.0	EC001599	
ECCN	NO US CLASSIFICATION	

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

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	-	E175199

Declarations of conformity and manufacturer's declarations

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

Approvals for marine applications



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 LOCATIONS)	UL 121201	E198726



Approvals for functional safety



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

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 750-667/000-104

Documentation

Manual
Product Manual Fail-safe 4/4 channel digital input/output
2024-09-17 20.11.2024
pdf 5965.76 KB

Bid Text
750-667/000-104
docx 39.53 KB
750-667/000-104
x81 15.90 KB

Instruction Leaflet
Gebrauchs- und Montageanleitung
V 1.0.0 26.02.2024
pdf 408.26 KB

CAD/CAE-Data

CAD data
2D/3D Models 750-667/000-104

1 Compatible Products

1.1 Optional Accessories

1.1.1 DIN-rail

1.1.1.1 Mounting accessories



Item No.: 210-196
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



Item No.: 210-198
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



Item No.: 210-197
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



Item No.: 210-114
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



Item No.: 210-118
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



Item No.: 210-115
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored



Item No.: 210-112
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



Item No.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



1.1.2 Marking

1.1.2.1 Group marker carrier



[Item No.: 750-107](#)
Group marker carrier

1.1.2.2 Marker

[Item No.: 2009-145/000-006](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue

[Item No.: 2009-145/000-007](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray

[Item No.: 2009-145/000-023](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green

[Item No.: 2009-145/000-012](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange

[Item No.: 2009-145/000-005](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red

[Item No.: 2009-145/000-024](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

[Item No.: 2009-145](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

[Item No.: 2009-145/000-002](#)
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow



[Item No.: 248-501/000-006](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue

[Item No.: 248-501/000-007](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray

[Item No.: 248-501/000-023](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

[Item No.: 248-501/000-017](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green



[Item No.: 248-501/000-012](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

[Item No.: 248-501/000-005](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

[Item No.: 248-501/000-024](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

[Item No.: 248-501](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white



[Item No.: 248-501/000-002](#)
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow



1.1.2.3 Marker carrier



[Item No.: 750-103](#)
Group marker carrier

1.1.3 Shield termination

1.1.3.1 Shield clamping saddles



[Item No.: 790-108](#)
Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm



[Item No.: 790-208](#)
Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm



[Item No.: 790-116](#)
Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm



[Item No.: 790-216](#)
Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm



[Item No.: 790-124](#)
Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm



[Item No.: 790-220](#)
Shield clamping saddle; 30 mm wide; 6 ... 20 mm



[Item No.: 790-140](#)
Shield clamping saddle; diameter of compatible conductor



1.1.4 Supply module

1.1.4.1 Supply module



Item No.: 750-612 Power Supply; 0 ... 230 V AC/DC	Item No.: 750-602 Power Supply; 24 VDC	Item No.: 750-601 Power Supply; 24 VDC; fuse holder	Item No.: 750-610 Power Supply; 24 VDC; fuse holder; Diagnostics
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1.1.5 System enclosure

1.1.5.1 System enclosure



Item No.: 850-825 IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20	Item No.: 850-826 IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	Item No.: 850-827 IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	Item No.: 850-828 IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip
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Item No.: 850-826/002-000 IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	Item No.: 850-827/002-000 IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	Item No.: 850-828/002-000 IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	Item No.: 850-834 IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20
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Item No.: 850-835 IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	Item No.: 850-836 IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	Item No.: 850-814/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate	Item No.: 850-815/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate
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Item No.: 850-816/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate	Item No.: 850-817/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate
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