

The 75x-668/000-004 Module features four differential fail-safe analog inputs (AI1 ... AI4) and four current-limited sensor supply outputs (L1 ... L4). The sensors can be supplied directly by the module or via external 24 V. The fail-safe analog inputs can be used either in single-channel (up to SIL2/PLd) or dual-channel mode (up to SIL3/PLe). Measurement cycle, filter times, encoder evaluation with discrepancy times and tolerance windows can be adjusted to meet the safety function requirements.

Overcurrent, overload and wire break are monitored at the fail-safe analog inputs. Both the monitoring and additional safety-relevant functions can be parameterized via *WAGO-I/O-CHECK*.

This configuration tool can be conveniently integrated into engineering systems supporting TCI (Tool Calling Interface) with CC2 or CC3.

When exchanging a module, parameters are automatically downloaded from the controller via PROFIsafe-compatible iPar server.

The PROFIsafe address can be set via DIP switch or *WAGO-I/O-CHECK*.

The module supports PROFIsafe protocols V2.4 (PROFIBUS, PROFINET) and V2.6 (PROFINET).

Individual input 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-668/000-004) 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 evaluation was performed by TÜV Rheinland in compliance with the specified standards.

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

Technical data

| | |
|--|--|
| Protocols | PROFIsafe V2.6 (PROFINET) and V2.4 (PROFIBUS, PROFINET) |
| Configuration options | PROFIsafe address adjustable via DIP switch or engineering software |
| Indicators | LED (E) red, LED (F-H) red/green: Diagnostics; LED (I-M) red/green: Input/output status |
| Device-specific | Common mode rejection: typ. 87 dB; Sampling frequency: 100 Hz, 60 Hz, 50 Hz, 10 Hz; Configurable; Interference frequency suppression: 38 dB at 50 Hz/60 Hz; Safety accuracy: 1.25 % of upper-range value (single-channel); 1.58 % of upper-range value (two-channel) |
| Total number of channels (module) | 4 |
| Number of analog inputs | 4 |
| Signal type | Current |
| Signal type (current) | 0 ... 20 mA; 4 ... 20 mA |
| Sensor supply | Outputs L1 ... L4 |
| Sensor connection | 4 x (2-wire, 3-wire, 4-wire) |
| Signal characteristics | Differential |
| Resolution [bit] | 16 bits |
| Common-mode voltage (max.) | 60 V |
| Load impedance | 300 Ω |
| Measurement error (reference temperature) | 25 °C |
| Measurement error, deviation (max.) from the upper-range value | 0.05 % |
| Output current per channel | 1.5 A |
| Output current (module) | 1.5 A |
| Supply voltage (system) | 5 VDC; via data contacts |
| Current consumption (5 V system supply) | 120 mA |
| Supply voltage (field) | 24 VDC, SELV/PELV (-15 ... +30 %); via power jumper contacts (power supply via blade contact; transmission (field side supply voltage only) via spring contact) |
| Current consumption, field supply (module with no external load) | 40 mA |
| Number of incoming power jumper contacts | 2 |
| Number of outgoing power jumper contacts | 2 |
| Current carrying capacity (power jumper contacts) | 10 A |
| Isolation | 500 V system/field |

Functional Safety

| | |
|---------------------------|--|
| Achievable safety classes | SIL 3; Category 4, PL _e (two-channel); SIL 2; Category 2; PL _d (one-channel) |
| Safety standards | IEC 61508-1 ... -7; EN ISO 13849-1; EN 62061 |

Connection Data

| | |
|---------------------------------|--|
| Connection technology: I/O | 16 x CAGE CLAMP® |
| Connectable conductor materials | Copper |
| Connection type | Inputs/outputs |
| Solid conductor | 0.08 ... 2.5 mm ² / 28 ... 14 AWG |
| Fine-stranded conductor | 0.08 ... 2.5 mm ² / 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 | 1.943 MJ |
| Weight | 101.3 g |
| Conformity marking | CE |

Environmental requirements

| | |
|--|---|
| Ambient temperature (operation) | 0 ... +55 °C |
| Ambient temperature (storage) | -25 ... +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, vertical top and vertical bottom |
| Relative humidity (without condensation) | 95 % |
| 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 |

Commercial data

| | |
|-----------------------|---------------|
| PU (SPU) | 1 pcs |
| Packaging type | Box |
| Country of origin | DE |
| GTIN | 4066966345940 |
| Customs tariff number | 85389099990 |

Product Classification


| | |
|-----------|----------------------|
| UNSPSC | 32151705 |
| ETIM 9.0 | EC001596 |
| ETIM 10.0 | EC001596 |
| ECCN | NO US CLASSIFICATION |

Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 1303-86-2 1317-36-8 693-98-1 7439-92-1 79-94-7 80-05-7 |
| REACH Candidate List Substance | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 2-methylimidazole 4,4'-isopropylidenediphenol Diboron trioxide Lead Lead monoxide |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c) 7(a) 7(c)-I 7(c)-II |
| SCIP notification number (Austria) | 8e8b8227-4de2-4dec-b54c-9362a3510960 |
| SCIP notification number (Belgium) | 7138a1a8-ce3e-409f-a1db-6c1cef7d05a0 |
| SCIP notification number (Bulgaria) | fddf1470-5f83-4174-8fc3-28fa1207e2ed |
| SCIP notification number (Czech Republic) | d21d5bd2-cba2-482a-8a0e-1488cbf98213 |
| SCIP notification number (Denmark) | f4ca036d-faf0-4a28-91c3-330ee4e3695a |
| SCIP notification number (Finland) | 7f414b40-e117-4f7e-8bd4-462082fd94c7 |
| SCIP notification number (France) | 22df0c7e-bac5-48ad-8627-32258a365250 |
| SCIP notification number (Germany) | 4b0afaef-1cf2-4aef-a1e2-b5bcd670d860 |
| SCIP notification number (Hungary) | 79b50ccc-7122-4a6b-a5b5-368bd6b4ce72 |
| SCIP notification number (Italy) | 9209ee78-f41b-4115-90fc-b0357e28c882 |
| SCIP notification number (Netherlands) | 5cae62b2-e4fd-4616-bea5-8cd7481b8db8 |
| SCIP notification number (Poland) | 6d6650cc-442d-4f1c-8ef0-c9d385a21ff9 |
| SCIP notification number (Romania) | cf0b2731-5f57-4ca8-8979-8d9604aea4f9 |
| SCIP notification number (Sweden) | cd82c501-cfa1-4512-9d0f-0e8f16ebc49a |

Approvals / Certificates

General approvals **Declarations of conformity and manufacturer's declarations**



| Approval | Standard | Certificate Name |
|---|----------------|------------------|
| EAC GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03083 |
| UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | - | E175199 |


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

Approvals for marine applications



| Approval | Standard | Certificate Name |
|---|-----------------------|-------------------|
| BSH Bundesamt fuer Seeschifffahrt und Hydrographie | - | 1104 |
| DNV DNV GL SE | DNV-CG-0339, Aug.2021 | TAA0000194 |
| PRS Polski Rejestr Statków | - | TE/1101/880590/23 |

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) |
| CCCEX CQST/CNEx | CNCA-C23-01 | 2020312310000213 (Ex ec IIC T4 Gc) |
| IECEX TUEV Nord Cert GmbH | IEC 60079-0 | IECEX TUN 14.0035 X (Ex ec IIC T4 Gc) |
| INMETRO TUV Rheinland do Brasil Ltda. | IEC 60079-0 | TUV 12.1297 X |

Approvals for hazardous areas

| | | |
|--|------------|----------------------------|
| UKEx WAGO GmbH & Co. KG | EN 60079-0 | UKCA_WA GO22UKEX003X_ec |
| UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS) | UL 121201 | E198726 |

Approvals for functional safety



| Approval | Standard | Certificate Name |
|---------------------------------|----------|------------------|
| Profi-Safe Siemens AG/ComDeC | - | Z20240 |

Downloads

Environmental Product Compliance

Compliance Search

| | |
|--|-------------------|
| Environmental Product Compliance 750-668/000-004 | ↓ |
|--|-------------------|

Documentation

Manual

| | | | |
|--|-----------------------|-------------------|-------------------|
| Product Manual 4FAI 0/4-20 mA; Diff. PROFI- safe | V 1.1.0 13.02.2023 | pdf 4628.62 KB | ↓ |
| System Manual Series 750/753 | | | ↓ |

Bid Text

| | | |
|-----------------|-----------------|-------------------|
| 750-668/000-004 | doc 31.00 KB | ↓ |
| 750-668/000-004 | xml 7.71 KB | ↓ |

Instruction Leaflet

| | | | |
|--------------------------------------|-----------------------|-------------------|-------------------|
| CCC Ex (Additional in- formation) | 26.04.2023 | pdf 159.76 KB | ↓ |
| Gebrauchs- und Monta- geanleitung | V 1.0.0 11.11.2019 | pdf 1087.13 KB | ↓ |

Application Notes

Application note SIEMENS

| | | | |
|---|----------------------|---------------------|-------------------|
| Using iPar-Server opti- on with WAGO PROFI- safe modules (a114802) | V 14.1 07.02.2023 | zip 130043.55 KB | ↓ |
|---|----------------------|---------------------|-------------------|

CAD/CAE-Data

CAD data

| | |
|---------------------------------|-------------------|
| 2D/3D Models 750-668/000-004 | ↓ |
|---------------------------------|-------------------|

CAE data

| | |
|--------------------------------------|-------------------|
| EPLAN Data Portal 750-668/000-004 | ↓ |
|--------------------------------------|-------------------|

Engineering-Software

Configuration and Commissioning Software

| | | | |
|--------------------------------|-----------------------|--------------------|--|
| F-Address Confirmation Tool | 1.2.2 06.06.2023 | zip 3757.47 KB | |
| Safety Editor (SEDI) / 750-66x | 3.5.1.0 25.01.2024 | zip 19060.65 KB | |

Runtime Software

Firmware

| | | | |
|---|--------------------|-------------------|--|
| 750-668/000-004, Sicherer Analogeingang | V 02 31.10.2023 | zip 1045.12 KB | |
|---|--------------------|-------------------|--|

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.: 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

1.1.2.2 Marker



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

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



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



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.: 850-814/002-000

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



Item No.: 850-816/002-000

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

1.1.5.1 System enclosure



Item No.: 850-817/002-000

IP65 enclosure; Sheet steel (RAL 7035);
WxHxD (600x120x200 mm); without flange
plate