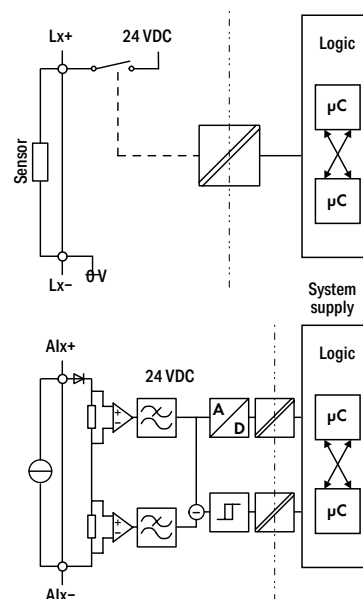
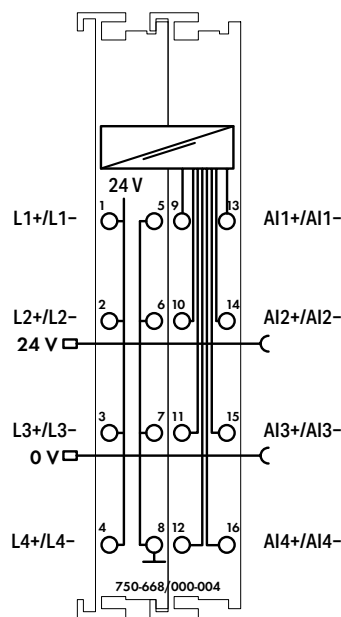
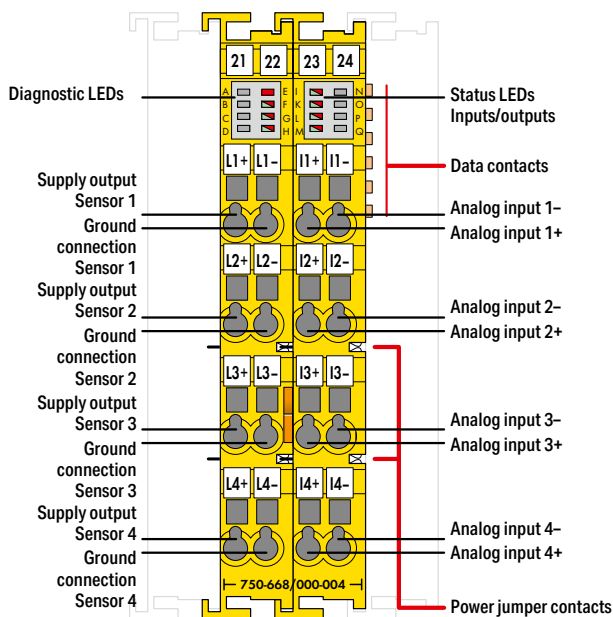


# Fail-Safe Analog Input; 4 Channels; 0/4 ... 20 mA; Differential Input; PROFIsafe



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 using the DIP switch or via WAGO-I/O-CHECK.

The module supports both PROFIsafe V2.4 (PROFIBUS) and V2.6 (PROFINET) protocols. Individual input modules can be arranged in any combination when configuring the fieldbus node.

To protect the module against surge voltages (over-voltage protection acc. to IEC 61000-4-5), a WAGO filter module or an external surge filter must be used for the 24V supply voltage.

Reference the product manual for further information (available in German and English).

| Description                                       | Item No.   | Pack. Unit |
|---|--|------------|
| 4FAI 0/4-20 mA Diff PROFIsafe                     | 750-668/000-004  | 1          |
| 4FAI 0/4-20 mA Diff PROFIsafe (without connector) | 753-668/000-004  | 1          |
| Accessories                                       | Item No.   | Pack. Unit |
| Mini-WSB Quick Marking System;<br>plain           | 248-501  | 50         |
| Plug; Safety                                      | 753-120  | 25         |
| Coding elements                                   | 753-150  | 100        |
| Standards and Approvals                           |  |            |
| Safety standards                                  | IEC 61508-1 ... -7; EN ISO 13849-1; EN 62061                                 |            |
| Conformity marking                                | CE   |            |
| Marine applications                               | DNV  |            |
| ATEX Guideline 2014/34/EU                         |  |            |
| TÜV 14 ATEX 148929 X                              | EN 60079-0, -7, -15<br>II 3 G Ex ec IIC T4 Gc                                |            |
| EC EMC guideline 2014/30/EU                       |  |            |
| EMC immunity of interference                      | EN 61000-6-2; marine applications;<br>EN 61000-6-7 (FS)                      |            |
| EMC emission of interference                      | EN 61000-6-4; marine applications;<br>EN 61000-6-3                           |            |
| E175199 Ordinary Locations                        | UL 61010-1; UL 61010-2-201   |            |
| UL E198726 Hazardous Locations                    | UL 121201<br>Class I, Div2 ABCD T4   |            |
| IECEx TUN 14.0035 X                               | IEC 60079-0, -7, -15<br>Ex ec IIC T4 Gc                                      |            |
| Technical Data                                    |  |            |
| Connection technology: inputs/outputs             | CAGE CLAMP®  |            |
| Conductor cross sections                          | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG                                 |            |
| Strip length                                      | 8 ... 9 mm / 0.33 inch (750 Series);<br>9 ... 10 mm / 0.37 inch (753 Series) |            |
| Dimensions W x H x D                              | 24 x 100 x 67.8 mm   |            |
| Weight  | 110 g  |            |

| Technical Data   |   |
|--|---|
| Number of analog inputs  | 4 inputs (single-channel mode);<br>2 pairs (dual-channel mode)  |
| Signal characteristic  | Differential  |
| Signal type (current)  | 0 ... 20 mA; 4 ... 20 mA; configurable  |
| Sensor connection  | 2-wire; 3-wire; 4-wire  |
| Resolution   | 16 bits   |
| Load impedance   | < 300 Ω   |
| Common mode voltage  | ±60 V (max.)  |
| Common mode rejection  | 87 dB (typ.)  |
| Sampling frequency   | 100 Hz, 60 Hz, 50 Hz, 10 Hz; configurable   |
| Interference frequency suppression                               | 38 dB at 50 Hz/60 Hz  |
| Current carrying capacity (max.)                                 | 40 mA   |
| Safety-related accuracy  | 1.25 % of the upper-range value (single-channel); 1.58 % of the upper-range value (two-channel)                     |
| Measurement error; deviation (max.) of the upper-range value     | ±0.05 %   |
| Measurement error; reference temperature                         | 25 °C   |
| Temperature error (max.) of the upper-range value                | 0.0065 %/K  |
| Sensor supply  | Outputs L1 ... L4   |
| Output current per channel                                       | 1.5 A   |
| Output current (module)  | 1.5 A   |
| Achievable safety classes (two-channel)                          | SIL 3; Category 4; PLe  |
| Achievable safety classes (single-channel)                       | SIL 2; Category 2; PLd  |
| Supply voltage (system)  | 5 VDC; via data contacts  |
| Supply voltage (field)   | 24 VDC (-25 ... +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact) |
| Current consumption – system supply (5 V)                        | 120 mA  |
| Current consumption, field supply (module with no external load) | 40 mA   |