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

WAGO
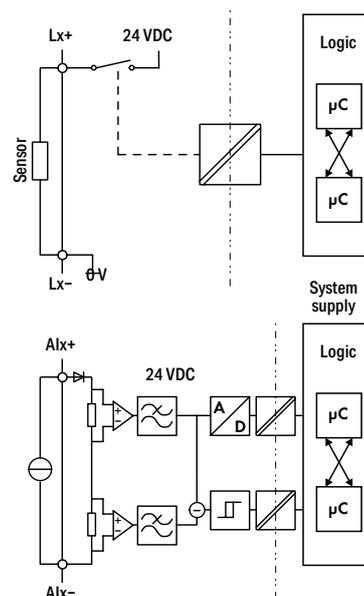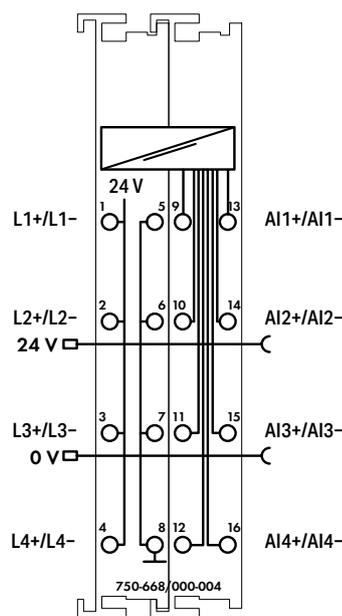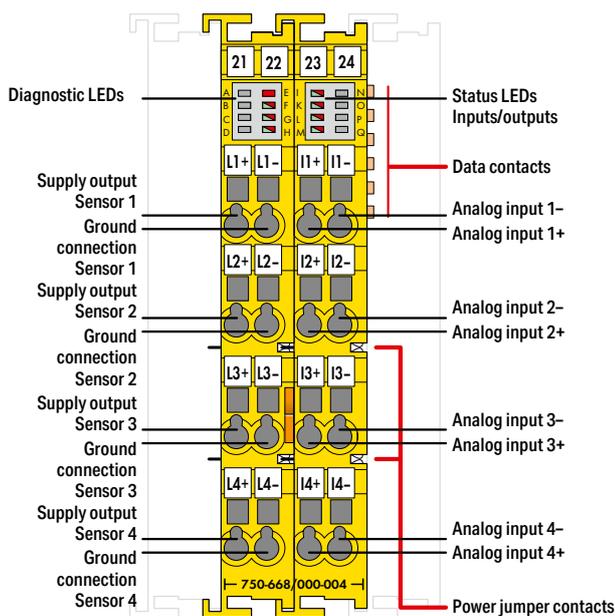
The 75x-668/000-004 Module features four differential fail-safe analog inputs (AI1 … AI4) and four current-limited sensor supply outputs (L1 … L4). The sensors can be supplied directly by the module or via external 24 V. The fail-safe analog inputs can be used either in single-channel (up to SIL2/PLd) 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;		
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
	II 3 G Ex ec IIC T4 Gc
EC EMC guideline 2014/30/EU	
EMC immunity of interference	EN 61000-6-2; marine applications;
	EN 61000-6-7 (FS)
EMC emission of interference	EN 61000-6-4; marine applications;
	EN 61000-6-3
ⓤ E175199 Ordinary Locations	UL 61010-1; UL 61010-2-201
ⓤ UL E198726 Hazardous Locations	UL 121201
	Class I, Div2 ABCD T4
IECEx TUN 14.0035 X	IEC 60079-0, -7, -15
	Ex ec IIC T4 Gc

Technical Data

Connection technology: inputs/outputs	CAGE CLAMP®
Conductor cross sections	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.33 inch (750 Series);
	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);
	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

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