

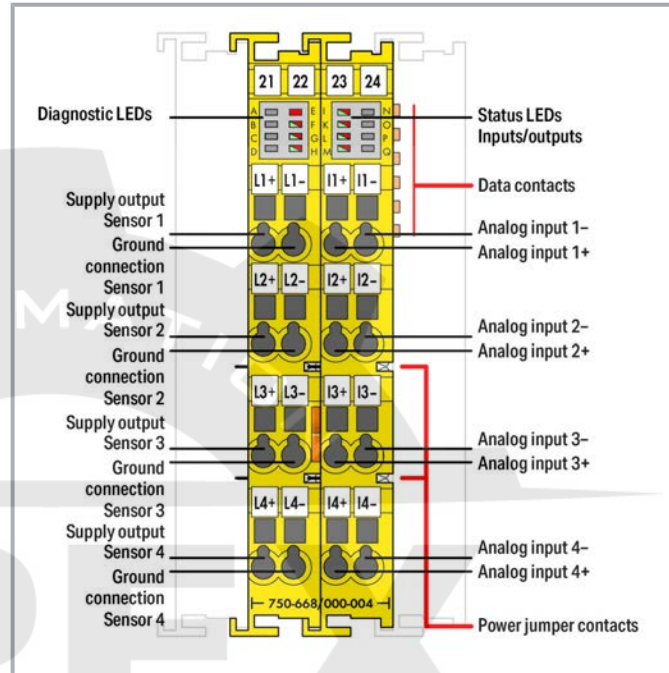
Data sheet | Item number: 750-668/000-004

Fail-safe 4 channel analog input; 0/4 ... 20 mA; Differential input; PROFIsafe

www.wago.com/750-668_000-004



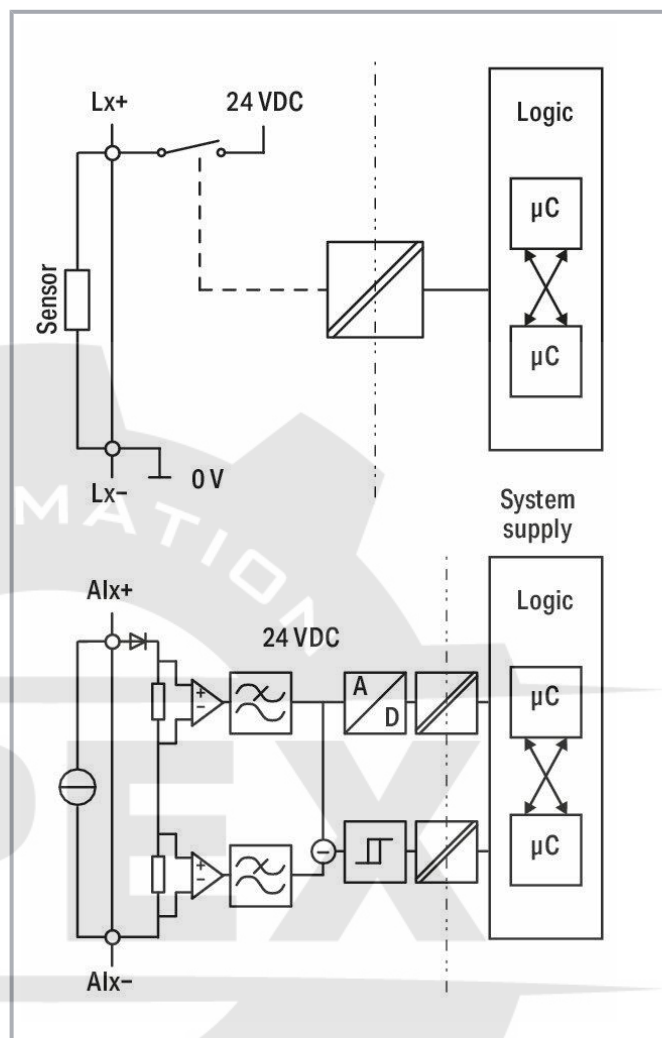
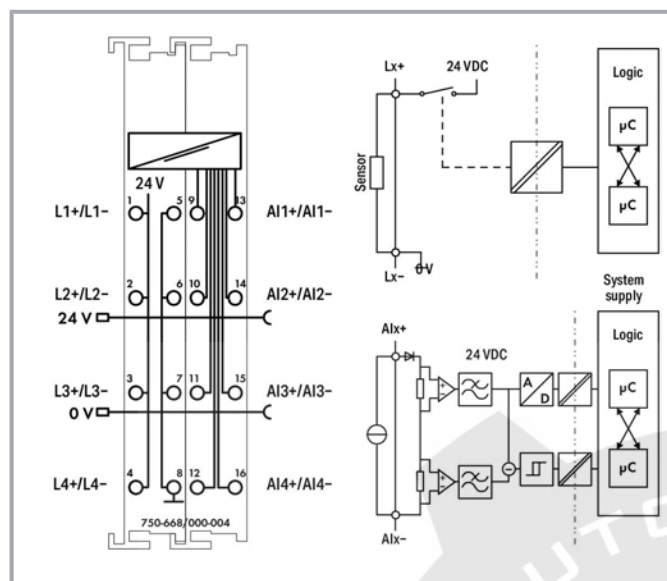
Color:



Subject to changes. Please also observe the further product documentation!

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Email: info.us@wago.com | Web: www.wago.us

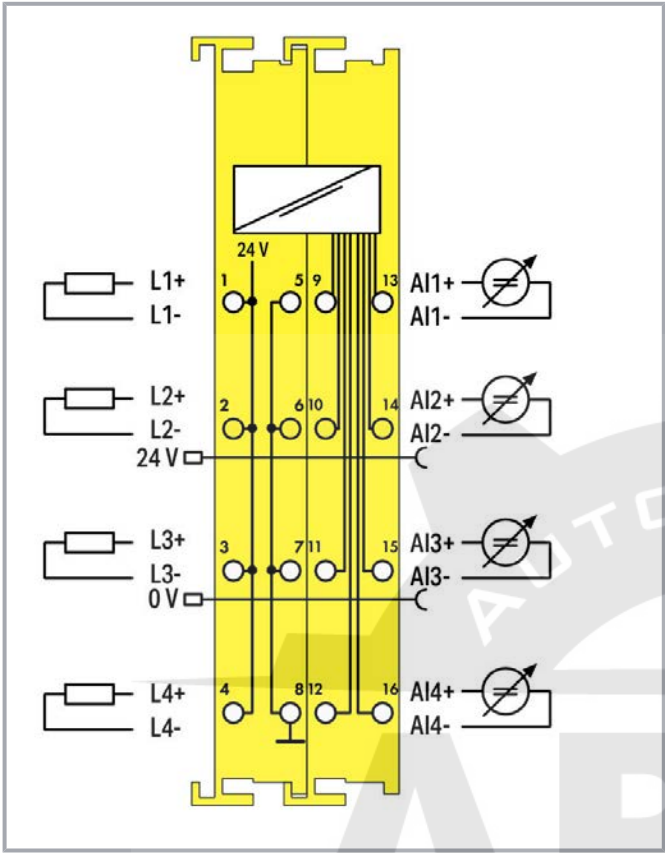
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Item description

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.

If, for example, the cable length of the 24 V supply is greater than 3 m, WAGO's 750-626 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).

Data

Technical data

Number of analog inputs	4
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Number of Channels	4
Achievable safety classes	SIL 3; Category 4, PLe (two-channel); SIL 2; Category 2; PLd (one-channel)
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)
Output current per channel	1.5 A
Output current (module)	1.5 A
Signal characteristic	Differential
Resolution [bit]	16 Bit
Common mode voltage (max)	60 V
Noise rejection at sampling frequency	38 dB
Load impedance	300 Ω
Measurement error, reference temperature	25 °C
Measurement error, deviation max (upper-range value) $\leq \pm$	0.05 %
Temperature error max. (upper-range value) $\leq \pm$	0.006 %/K
Configuration options	PROFIsafe address adjustable via DIP switch or engineering software
Supply voltage (system)	5 VDC; via data contacts
Power 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 via spring contact)
Power consumption, field supply (module with no external load)	40 mA
Isolation	500 V system/field
Indicators	LED (E) red, LED (F-H) red/green: Diagnostics; LED (I-M) red/green: Input/output status
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	10 A
Current carrying capacity (module)	40 mA

Connection data

Connection technology: inputs / outputs	16 x CAGE CLAMP®
Connection type (1)	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 inch

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Physical data

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

Mechanical data

Mounting type	DIN-35 rail
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Material data

Color	yellow
Housing material	Polycarbonate; polyamide 6.6
Weight	102.9 g
Conformity marking	CE

Environmental requirements

Surrounding air temperature (operation)	0 ... 55 °C
Surrounding air temperature (storage)	-40 ... 85 °C
Protection type	IP20
Pollution degree (5)	2 per IEC 61131-2
Operating altitude	0 ... 2000 m
Mounting position	horizontal (standing/lying); vertical
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

Packaging type	BOX
Country of origin	DE
GTIN	4055143899826
Customs tariff number	8538901000

Approvals / Certificates

Ex-Approvals

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Logo	Approval	Additional Approval Text	Certificate name
	ATEX TUEV Nord Cert GmbH	EN 60079	TUEV_14_ATEX_148929_X
	CCCEX CQST/CNEx	CNCA-C23-01	2020312310000213
	IECEX TUEV Nord Cert GmbH	IEC 60079	IECEX_TUN_14.0035_X
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	TUEV Rheinland TUEV Rheinland Industrie Service GmbH	-	No. 968 /EZ 247.14 /16

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAA0000194

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 61010-2-201	E175199 Sec10

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Optional accessories

Carrier rail

	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; www.wago.com/210-112 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	www.wago.com/210-113
	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	www.wago.com/210-114
	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; www.wago.com/210-115 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	www.wago.com/210-118
	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	www.wago.com/210-196
	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	www.wago.com/210-197
	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	www.wago.com/210-198
	Item no.: 210-504 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-505
	Item no.: 210-506 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-506
	Item no.: 210-508 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-508

Shield termination

	Item no.: 790-108 Shield clamping saddle; 11 mm wide; 0-8 mm diameter conductors	www.wago.com/790-108
	Item no.: 790-116 Shield clamping saddle; 19 mm wide; 7-16 mm diameter conductors	www.wago.com/790-116
	Item no.: 790-124 Shield clamping saddle; 27 mm wide; 6-24 mm diameter conductors	www.wago.com/790-124
	Item no.: 790-140 Shield clamping saddle; 43 mm wide; 22-40 mm diameter conductors	www.wago.com/790-140

Subject to changes. Please also observe the further product documentation!

	Item no.: 790-208 Shield clamping saddle; 12.4 mm wide; 3-8 mm diameter conductors	www.wago.com/790-208
	Item no.: 790-216 Shield clamping saddle; 21.8 mm wide; 6-16 mm diameter conductors	www.wago.com/790-216
	Item no.: 790-220 Shield clamping saddle; 30 mm wide; 6-20 mm diameter	www.wago.com/790-220
Marking accessories		
	Item no.: 248-501 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white	www.wago.com/248-501
	Item no.: 248-501/000-002 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	www.wago.com/248-501/000-002
	Item no.: 248-501/000-005 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red	www.wago.com/248-501/000-005
	Item no.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	www.wago.com/248-501/000-006
	Item no.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	www.wago.com/248-501/000-007
	Item no.: 248-501/000-012 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	www.wago.com/248-501/000-012
	Item no.: 248-501/000-017 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green	www.wago.com/248-501/000-017
	Item no.: 248-501/000-023 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green	www.wago.com/248-501/000-023
	Item no.: 248-501/000-024 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet	www.wago.com/248-501/000-024
	Item no.: 750-103 Group marker carrier	www.wago.com/750-103
	Item no.: 750-107 Group marker carrier	www.wago.com/750-107

Supply module

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Item no.: 750-601
Power Supply; 24 VDC; fuse holder

www.wago.com/750-601



Item no.: 750-602
Power Supply; 24 VDC

www.wago.com/750-602



Item no.: 750-610
Power Supply; 24 VDC; fuse holder; Diagnostics

www.wago.com/750-610



Item no.: 750-612
Power Supply; 0 ... 230 V AC/DC

www.wago.com/750-612

System housing



Item no.: 850-804
IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip

www.wago.com/850-804



Item no.: 850-804/000-001
IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip

www.wago.com/850-804/000-001



Item no.: 850-805
IP65 enclosure; Stainless steel; WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip

www.wago.com/850-805



Item no.: 850-814/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate

www.wago.com/850-814/002-000



Item no.: 850-815/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate

www.wago.com/850-815/002-000



Item no.: 850-816/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

www.wago.com/850-816/002-000



Item no.: 850-817/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate

www.wago.com/850-817/002-000



Item no.: 850-825
IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20

www.wago.com/850-825



Item no.: 850-826
IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

www.wago.com/850-826



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

www.wago.com/850-826/002-000



Item no.: 850-827
IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

www.wago.com/850-827

Item no.: 850-827/002-000

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	IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	www.wago.com/850-827/002-000
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Item no.: 850-828

	IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	www.wago.com/850-828
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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	www.wago.com/850-828/002-000
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Item no.: 850-834

	IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20	www.wago.com/850-834
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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	www.wago.com/850-835
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Downloads**Documentation****Data sheet**

750-668/000-004 4FAI 0/4-20 mA Diff PROFIsafe	pdf 170.9 kB	Download
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Manual

4FAI 0/4-20 mA; Diff. PROFIsafe	V 1.0.0 Oct 10, 2019	pdf 3.9 MB	Download
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4 Channel Analog Input Module PROFIsafe

System Manual WAGO I/O System 750 / 753 Decentralized Automation Technology	V 3.0.2 Apr 27, 2021	pdf 6.6 MB	Download
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System Manual Series 750/753	URL	Download
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Bid Text

750-668/000-004	xml 7.9 kB	Download
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750-668/000-004	doc 31.7 kB	Download
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Instruction Leaflet

Gebrauchs- und Montageanleitung Sicherheitsklemmen PROFIsafe	V 1.0.0 Nov 11, 2019	pdf 1.1 MB	Download
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Libraries

SISTEMA library

SISTEMA-Bibliothek	2.08 Nov 11, 2019	zip 179.8 kB	Download
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VDMA-Bibliothek	0.0.9 Nov 11, 2019	zip 305.8 kB	Download
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VDMA-Bibliothek	0.0.9 Nov 11, 2019	zip 305.8 kB	Download
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Engineering-Software

Configuration and Commissioning Software

Safety Editor (SEDI) / 750-66x	3.0.1 Sep 17, 2019	zip 20.1 MB	Download
Loadable safety editor module for parameterisable failsafe modules for integration in IO-Check from version 3.3.2 or higher.			

CAD files

CAE data

EPLAN Data Portal 750-668/000-004	URL	Download
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Installation Notes

Product family

Couplers & I/O modules:
[Show all products from the family](#)

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