SIL
IEC 61508

PL
EN ISO 13849

Ex
Ex i

Signal conditioners, process indicators, and field devices

Transmit and visualize signals without interference

PHOENIX CONTACT
INSPIRING INNOVATIONS

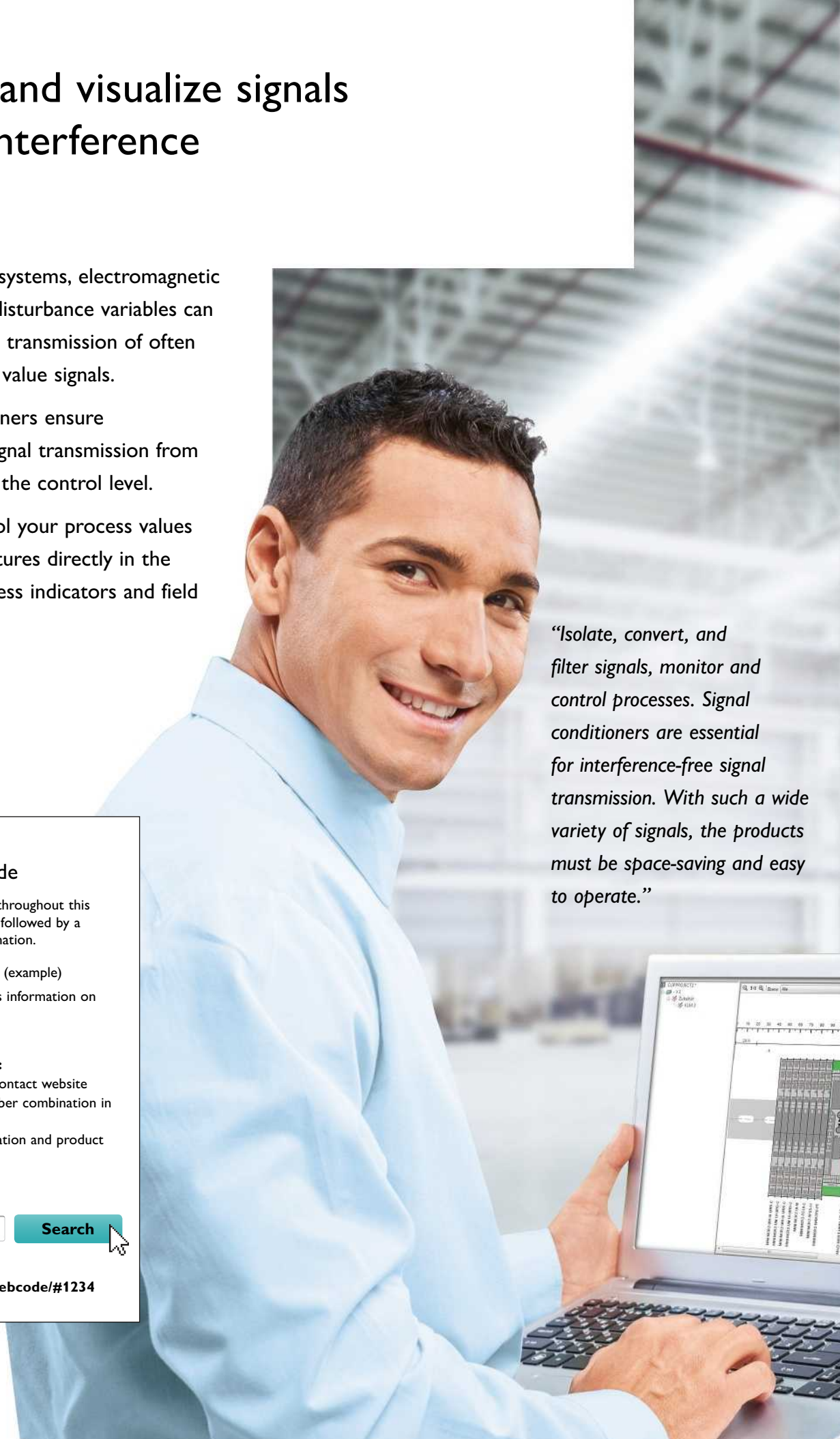
Transmit and visualize signals without interference

In electrotechnical systems, electromagnetic or high-frequency disturbance variables can adversely affect the transmission of often sensitive measured value signals.

Our signal conditioners ensure interference-free signal transmission from the sensor level to the control level.

Monitor and control your process values or record temperatures directly in the field with our process indicators and field devices.

Web code: #1135



"Isolate, convert, and filter signals, monitor and control processes. Signal conditioners are essential for interference-free signal transmission. With such a wide variety of signals, the products must be space-saving and easy to operate."

Find out more with the web code

You will find web codes throughout this brochure: a hash symbol followed by a four-digit number combination.

Web code: #1234 (example)

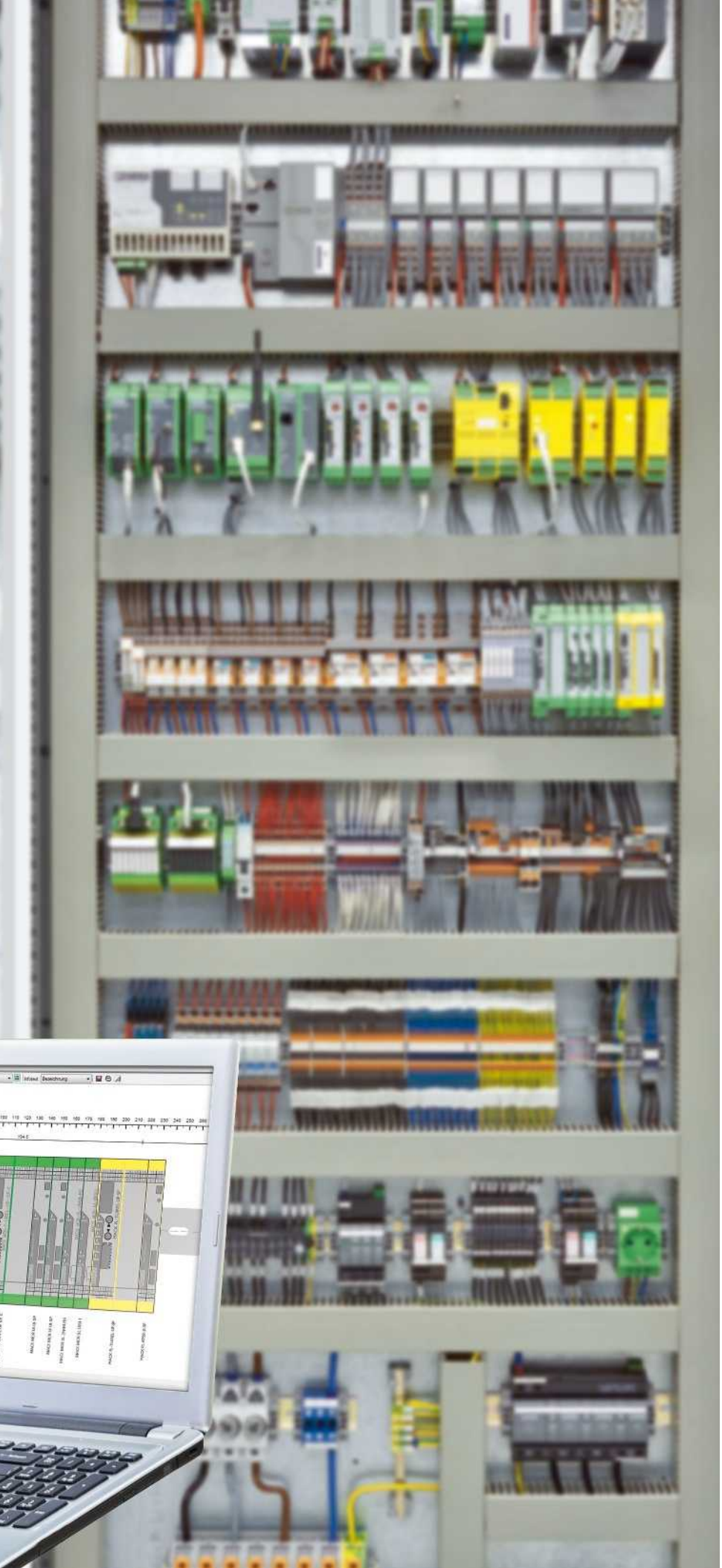
This allows you to access information on our website quickly.

It could not be easier:

1. Go to the Phoenix Contact website
2. Enter # and the number combination in the search field
3. Receive more information and product versions

#1234 **Search**

Or use the direct link:
phoenixcontact.net/webcode/#1234



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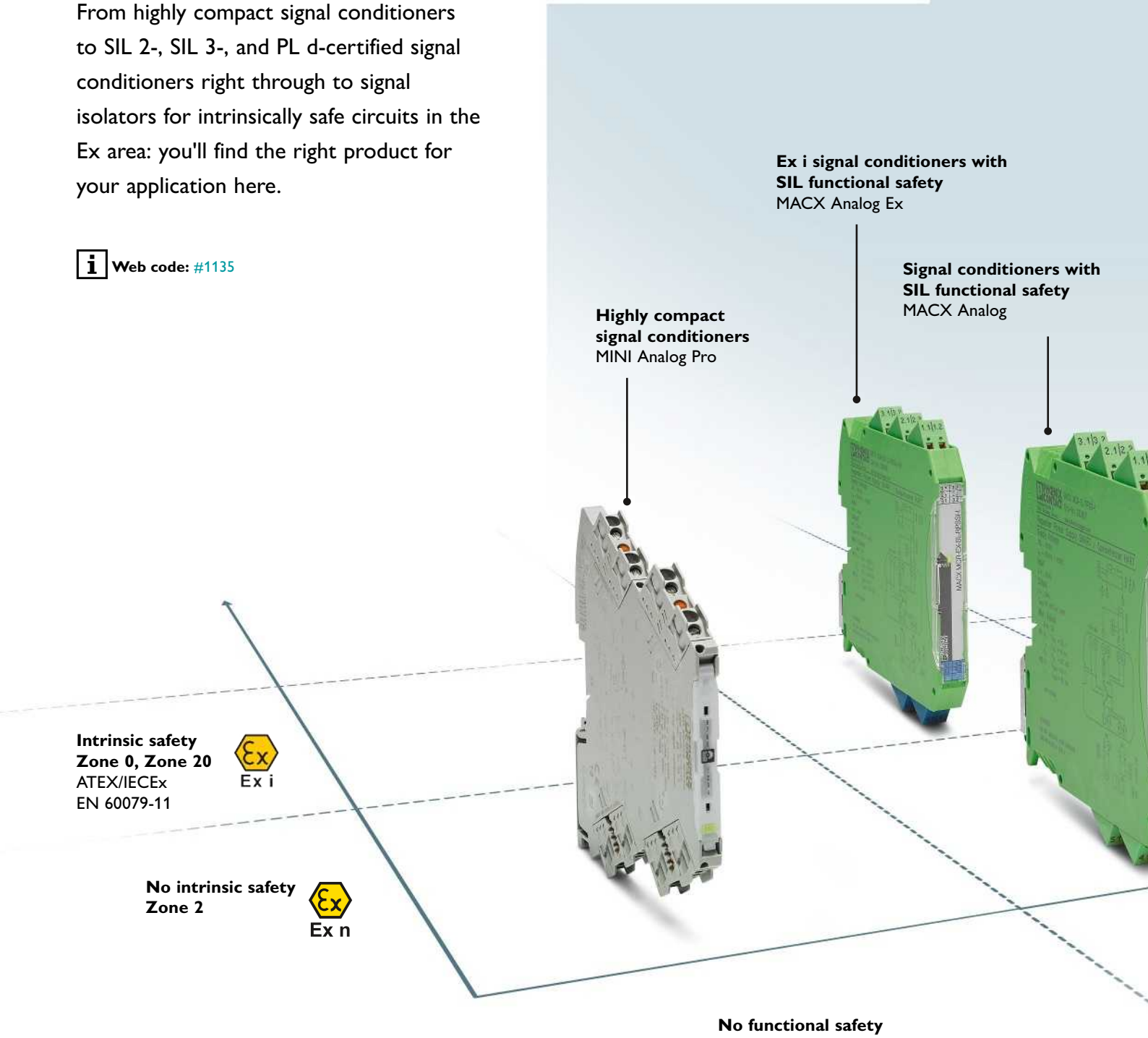
Isolate, convert, filter, amplify – Our signal conditioners at a glance

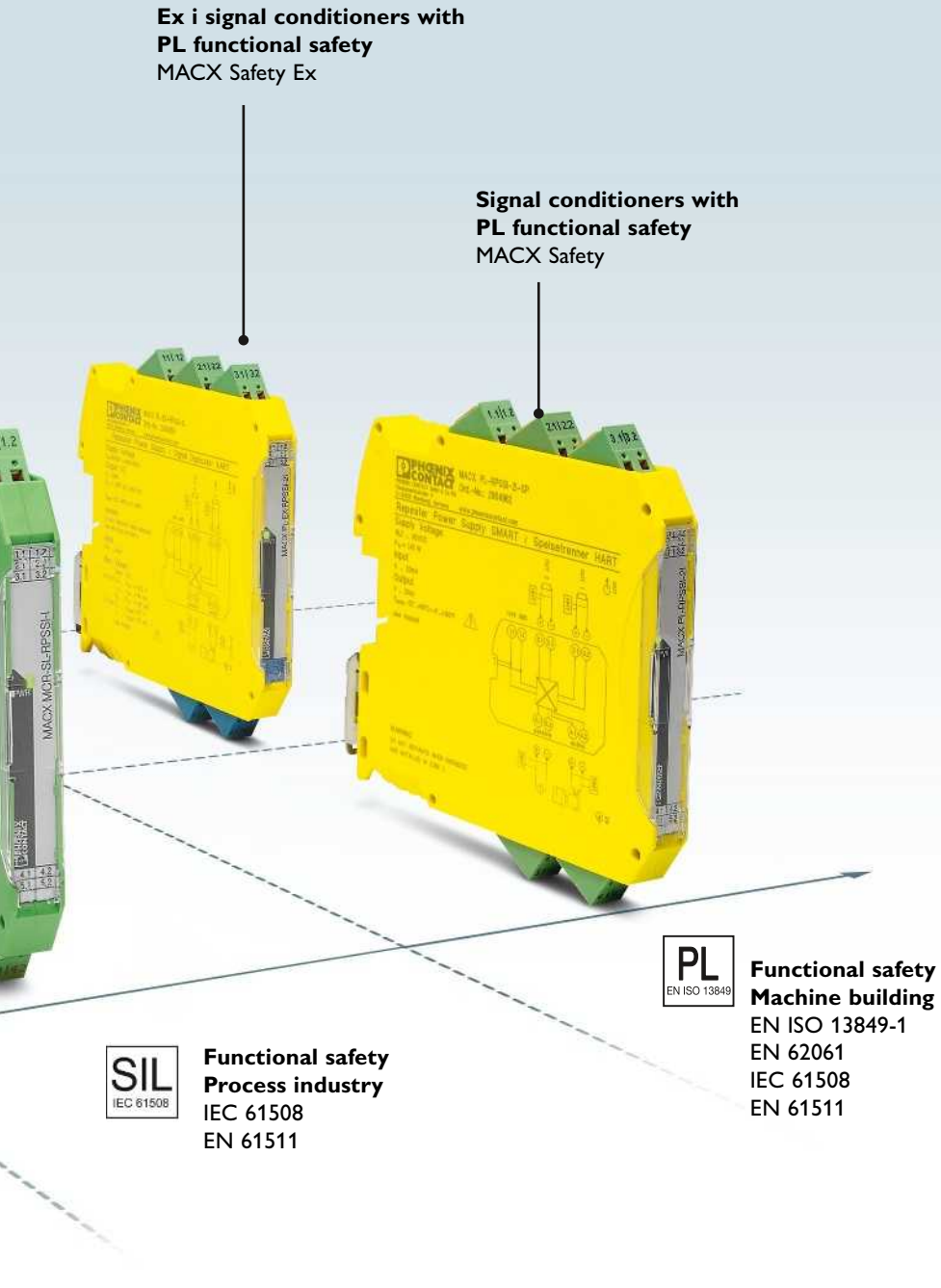
From highly compact signal conditioners to SIL 2-, SIL 3-, and PL d-certified signal conditioners right through to signal isolators for intrinsically safe circuits in the Ex area: you'll find the right product for your application here.

Web code: #1135



Reliable signal transmission

For the precise and interference-free transmission of signals, all signal conditioners from Phoenix Contact feature state-of-the-art, patented transmitter concepts.



More advantages

- Space savings of up to 65% with the highly compact MINI Analog Pro signal conditioners
- High operational safety with the consistently SIL-certified MACX range
- Maximum explosion protection for all Ex zones and gas groups with the MACX Ex i signal conditioners
- Integrate analog signals into the safety chain in accordance with the Machinery Directive with the PL d-certified MACX Safety signal conditioners

Highly compact signal conditioners – Easier than ever but as slim as before

MINI Analog Pro is the first 6 mm signal conditioner range with pluggable connection technology. Easily accessible terminal points and current signal measurement during operation make your work easier than ever.

Web code: #0492

Push-in Technology

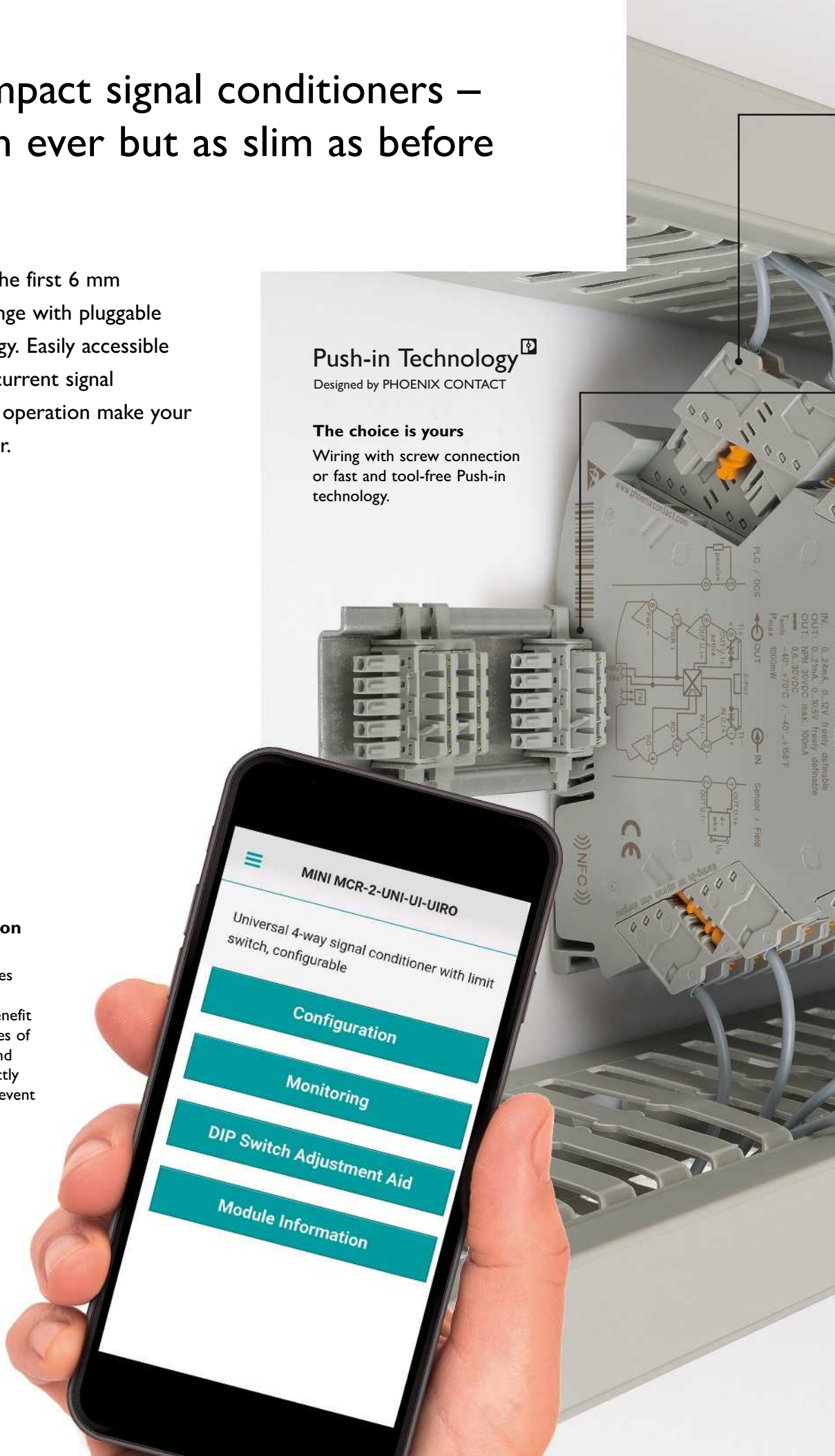
Designed by PHOENIX CONTACT

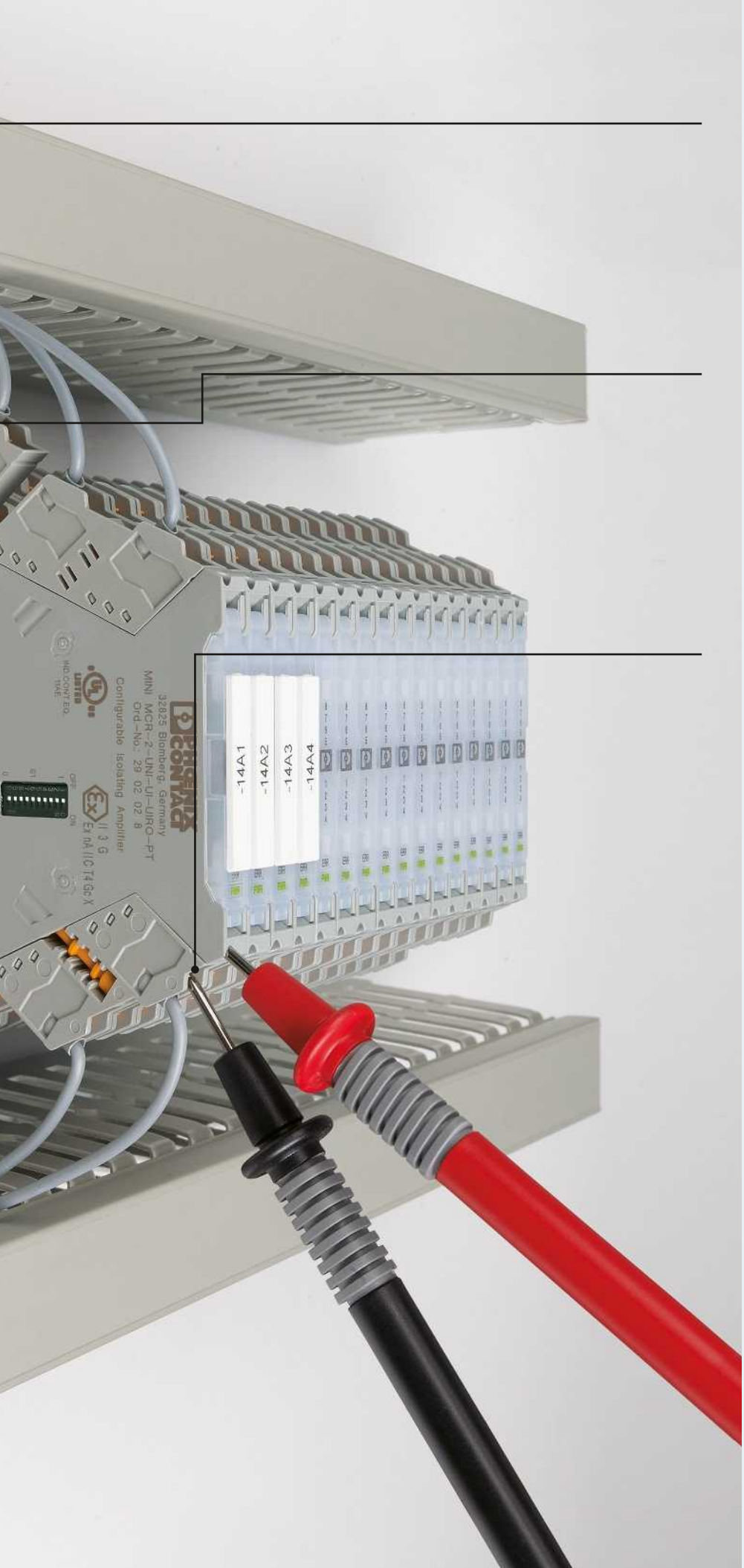
The choice is yours

Wiring with screw connection or fast and tool-free Push-in technology.

Intelligent configuration and monitoring

All MINI Analog Pro modules have an NFC interface for wireless communication. Benefit from the many functionalities of the MINI Analog Pro app and configure the modules directly on site, for example in the event of servicing.





Easy installation and startup

Easily accessible terminal points and pluggable FASTCON Pro connection terminal blocks simplify installation and startup.

Rapid power bridging and group error messaging

In addition to fast power bridging, the DIN rail connector also simplifies wiring, system extension or module replacement during operation. Group error messaging simplifies diagnostics.

Easy startup and service

Measure current signals during operation, without disconnecting current loops. If necessary you can interrupt the signal and supply circuits with the integrated disconnect function.

More advantages

- Various parameterization options: easily via DIP switch or via software or app for advanced device and monitoring functions
- Easy to maintain, thanks to large-surface marking areas and status LEDs in every device
- Optimum signal quality, thanks to the latest switching technology and safe electrical isolation

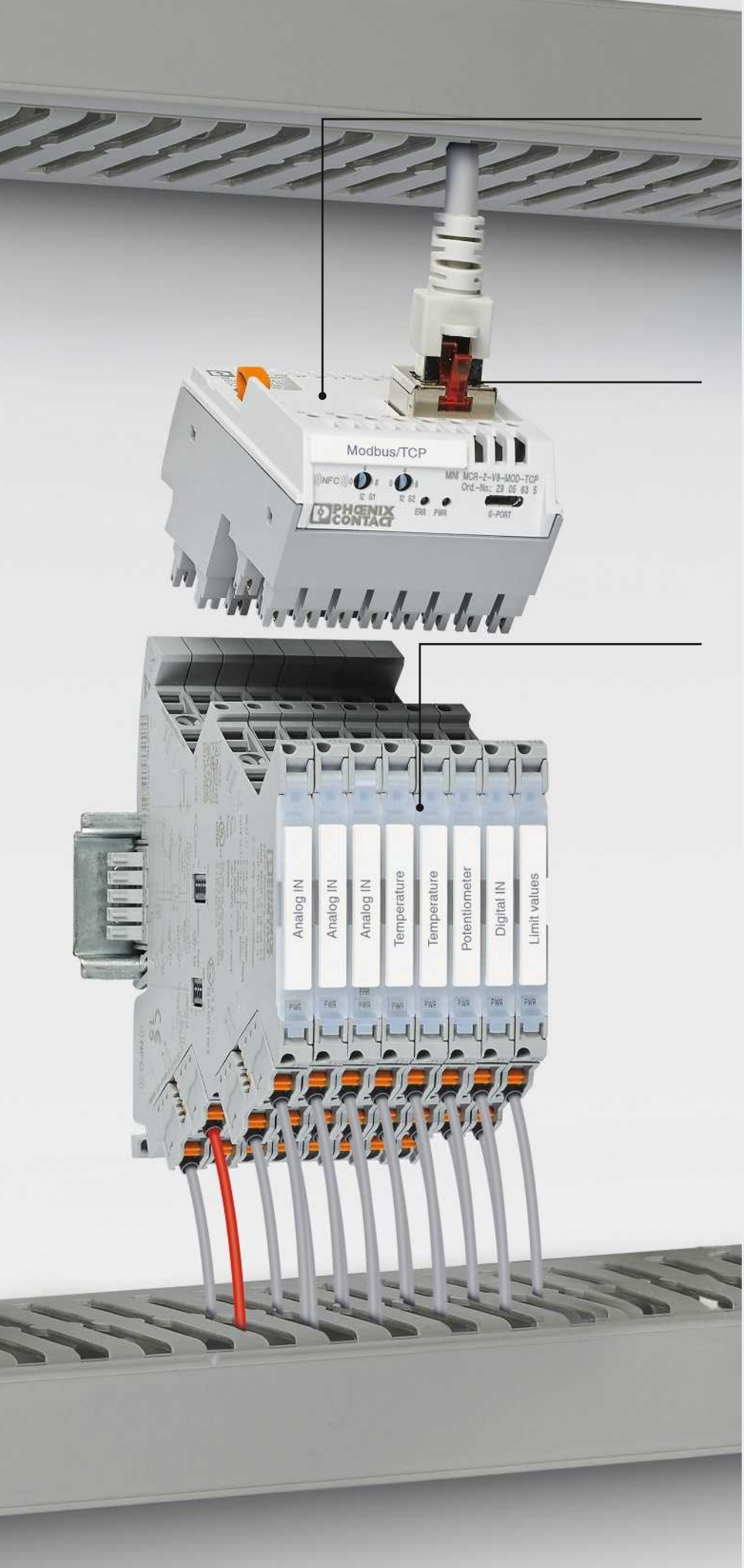
Bus and network connection – Safely isolated from field to network

The MINI Analog Pro gateways combine the advantages of safe electrical isolation and digital communication. With an overall width of less than 50 mm, you can transmit, free of interference, up to eight field signals to industrial networks, without the need for signal-specific input cards.

Web code: #1136

Easy startup and service

Measure current signals during operation, without disconnecting current loops. The MINI Analog Pro app allows you to record current values or configure the modules directly on site.



No need for input cards

Save space and costs – thanks to the direct network connection, you no longer need signal-specific input cards. At the same time, benefit from the consistent electrical isolation right through to the CPU, including between the individual channels.

Error-free wiring, easy parameterization

Bundle eight channels quickly and without errors in just one network cable. Module settings are made easily via a rotary coding switch, software, web server or app.

Modular and space-saving

Full range of signals: with the easy to attach gateways, you can integrate any MINI Analog Pro signal conditioners with current or digital output in your network in a space-saving manner.

Plug-in gateways for different protocols

MINI Analog Pro gateways for bus and network connection are available for the following protocols:

- Modbus/RTU
- Modbus/TCP
- PROFIBUS DP

Signal conditioners with functional safety – Reliable and safe

In all phases of the product lifecycle, MACX signal conditioners have been developed and produced in accordance with IEC 61508 standards for functional safety. This ensures the highest level of safety for your machines and systems. Save planning and operating costs by combining high signal flexibility with consistent SIL evaluation.

Web code: #1137

A solution for every type of signal

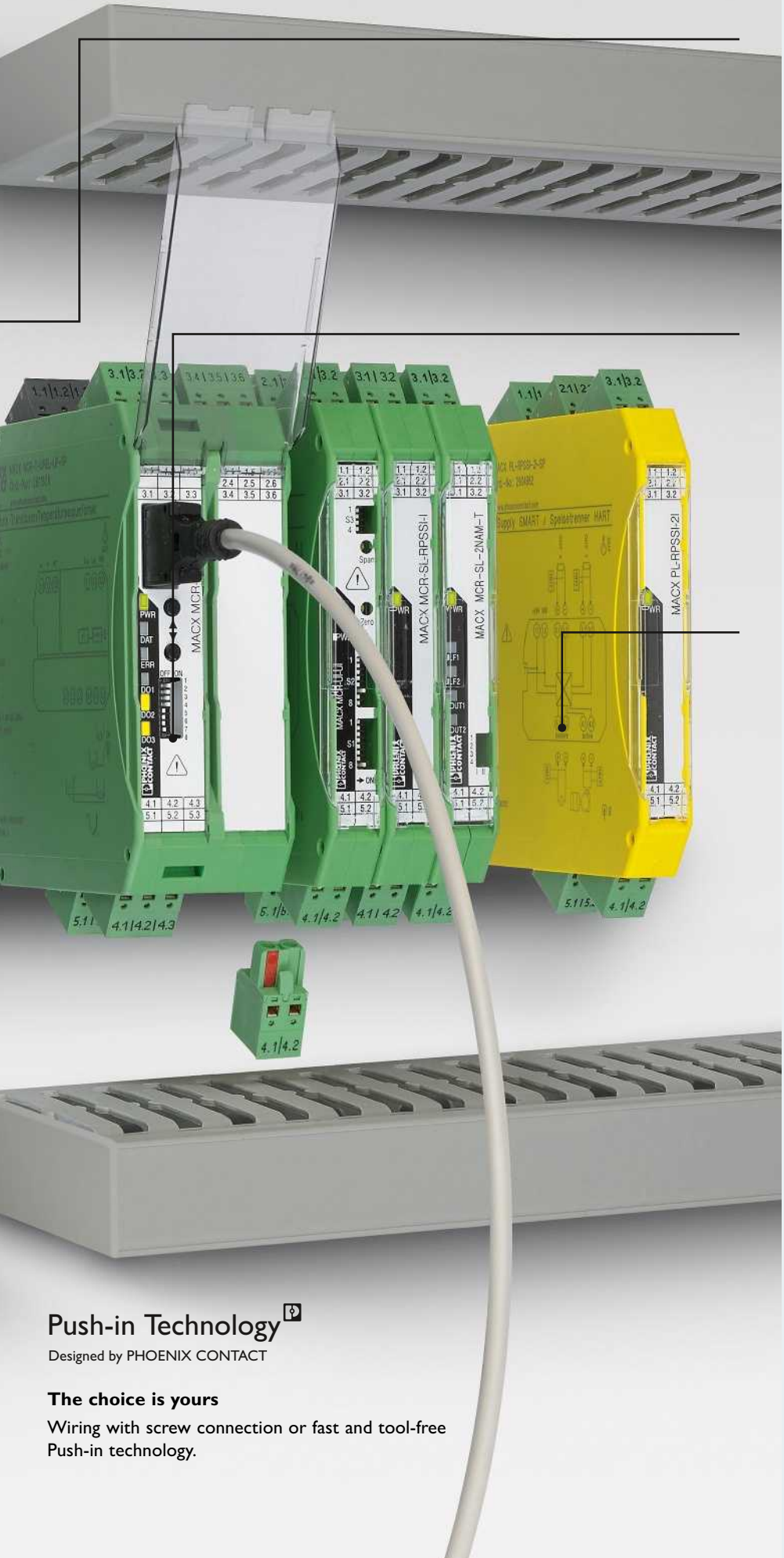
From the price-optimized standard signal conditioner to multifunctional universal devices, MACX Analog provides comprehensive solutions for signal processing.

Maximum explosion protection

With an overall width of just 12.5 mm, MACX Analog Ex offers single- and two-channel signal isolators for intrinsically safe circuits up to Zone 0 and Zone 20.

Analog signals with performance level

With MACX Safety and MACX Safety Ex you can integrate analog signals easily into your safety application in accordance with the Machinery Directive.



Push-in Technology

Designed by PHOENIX CONTACT

The choice is yours

Wiring with screw connection or fast and tool-free Push-in technology.

Rapid power bridging and group error messaging

In addition to fast power bridging, the DIN rail connector also simplifies wiring, system extension or module replacement during operation. Group error messaging simplifies diagnostics.

Convenient configuration and monitoring

Configure your devices easily via the DIP switch on the front or with the operator interface. The free software provides additional device and monitoring functions.

High signal quality and a long service life

Safe electrical isolation and a patented transmitter concept guarantee precise signal transmission. Low self-heating results in a long device service life.

More advantages

- Versions with wide range input enable worldwide use in all power supply networks
- Easy to maintain: pluggable, coded terminal blocks with integrated test sockets plus hot-swap module replacement
- Fast diagnostics, thanks to status LEDs and line fault detection or line fault transparency
- Bidirectional transmission of the HART communication signal with all Analog IN and Analog OUT signal conditioners

System cabling solutions – Fast, error-free signal connection

Our Termination Carriers and MINI Analog Pro system adapters are Plug and Play solutions for fast and error-free connection of a large number of signals from the field to your automation system.

Termination Carriers are available for the following standard DIN rail devices:

- Highly compact MINI Analog Pro signal conditioners
- MACX signal conditioners for SIL applications and Ex i circuits
- PSR SIL coupling relays

Web code: #1138

MINI Analog Pro system adapter

Simply snap on and you're done: the system adapter allows you to connect eight MINI Analog Pro signal conditioners in any combination to your controller.

Web code: #1139

Space-saving

Thanks to the compact design and deep system connections, you can save up to 30% of the space required for standard commercial solutions.

High availability

The stable, vibration-proof aluminum carrier has a profile for accommodating standard DIN rail devices. The termination PCB is also mechanically decoupled and only has passive components.

Simple documentation

By using standard DIN rail devices, you only need one engineering design for standard DIN rail and system applications.

More advantages

- Easy wiring, thanks to pluggable, coded cable sets and pre-assembled system cables
- Easy to maintain, thanks to easily accessible terminal points and hot-swap module replacement
- A wide range of system connectors and front adapters for I/O cards of various automation systems are available for optimum adaptation to your system, e.g.:

ABB	Invensys
Emerson	Siemens
Honeywell	Yokogawa

Contact us for more information.

Process indicators and field devices – Record, control, monitor

The Field Analog process indicators allow you to monitor and display analog and temperature signals as well as control them via digital and analog inputs and outputs.

The field devices enable you to acquire and convert the signals from resistance thermometers, thermocouples, and resistance-type sensors and voltage sensors directly on site.

Web code: #1140

Process indicators and field devices are also available as versions for intrinsically safe circuits.

Ex i

Universal use

Field Analog process indicators are available for field and control panel installation. The universal inputs allow you to record current, voltage, RTDs, and TCs. Comprehensive approvals also allow you to connect sensors in the Ex area.

Everything at a glance

Current process values are easy to read on the five-digit backlit displays. The bar graph also provides you with a quick overview. Alarm statuses can be identified easily from a distance by their changing color.

Easy installation and startup

Thanks to the standardized housing dimensions and pluggable connection terminal blocks, the indicators are easy to install. The devices are easy to configure via the keyboard on the front or via FDT/DTM software.

Additional advantages

- 2-conductor sensors are powered by the integrated measuring transducer supply
- Easy mounting and secure fit on pipes and walls with the optional holder for field indicators
- International use, thanks to UL and CSA approvals
- Also for intrinsically safe circuits in the Ex area: versions with ATEX, CSA, and FM approval

Your individually preconfigured product, made by Phoenix Contact

To ensure it can respond rapidly, flexibly, and cost-effectively to your needs, Phoenix Contact manufactures its signal conditioners using highly flexible production facilities to produce the widest variety of versions in the smallest lot sizes possible.

Simply order the right product with your customized settings using the order key in the catalog or our user-guided web configurator. You then receive the pre-configured modules delivered as you requested, even if you only order one.

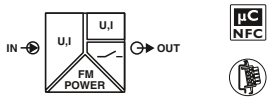
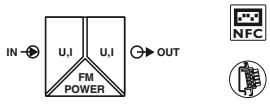
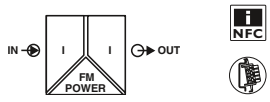
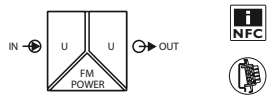
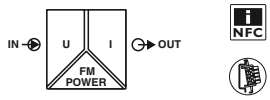
In our own plastic, metal part, and SMD manufacturing plants, we produce "made in Germany" high-quality signal conditioners in the widest variety of versions and the smallest lot sizes possible.

Product overview – MINI Analog Pro highly compact signal conditioners

Web code: #0492

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

Analog IN/Analog OUT

	Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software/app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
 **MINI MCR-2-UNI-UI-UIRO(-PT)** Universal 4-way signal conditioner with relay contact, configurable	Screw	2902026*)	0 … 24 mA (freely adjustable), 0 … 12 V (freely adjustable)	Analog: 0 … 21 mA (freely adjustable), 0 … 10.5 V (freely adjustable) Digital: 1 N/O transistor output	•	•	•	•		•
	Push-in	2902028*)								
 **MINI MCR-2-UI-UI(-PT)** 3-way signal conditioner, configurable	Screw	2902037*)	0 … 20 mA, 4 … 20 mA, -20 … 20 mA, 0 … 5 V, 1 … 5 V, -5 … 5 V, 0 … 10 V, 2 … 10 V, -10 … 10 V, 0 … 20 V, 4 … 20 V, -20 … 20 V, 0 … 24 V, 4.8 … 24 V, -24 … 24 V, 0 … 30 V, 6 … 30 V, -30 … 30 V	0 … 20 mA, 4 … 20 mA, 0 … 5 V, 1 … 5 V, -5 … 5 V, 0 … 10 V, 2 … 10 V, -10 … 10 V	•				•	•
	Push-in	2902040*)								
 **MINI MCR-2-I-I(-PT)** 3-way signal conditioner, with fixed signal combinations	Screw	2901998	0 … 20 mA, 4 … 20 mA; IN = OUT	0 … 20 mA, 4 … 20 mA; IN = OUT					•	•
	Push-in	2901999								
 **MINI MCR-2-U-U(-PT)** 3-way signal conditioner with fixed signal combinations	Screw	2902042	0 … 10 V, -10 … 10 V; IN = OUT	0 … 10 V, -10 … 10 V; IN = OUT					•	•
	Push-in	2902043								
 **MINI MCR-2-U-I0(-PT)** 3-way signal conditioner with fixed signal combinations	Screw	2902022	0 … 10 V	0 … 20 mA					•	•
	Push-in	2902023								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

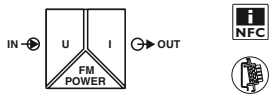
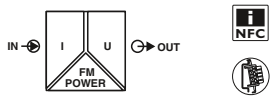
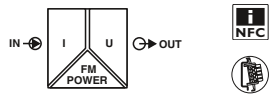
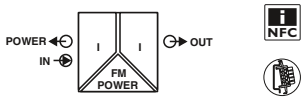
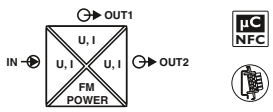
The module can be snapped onto the DIN rail connector.

Product overview – MINI Analog Pro highly compact signal conditioners

Web code: #0492

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

Analog IN/Analog OUT

	Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software / app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
 **MINI MCR-2-U-I4(-PT)** 3-way signal conditioner with fixed signal combinations	Screw	2902029	0 … 10 V	4 … 20 mA					•	•
	Push-in	2902030								
 **MINI MCR-2-I0-U(-PT)** 3-way signal conditioner with fixed signal combinations	Screw	2902000	0 … 20 mA	0 … 10 V					•	•
	Push-in	2902001								
 **MINI MCR-2-I4-U(-PT)** 3-way signal conditioner with fixed signal combinations	Screw	2902002	4 … 20 mA	0 … 10 V					•	•
	Push-in	2902003								
 **MINI MCR-2-RPSS-I-I(-PT)** Repeater power supply	Screw	2902014	Isolator operation: 0 … 20 mA, 4 … 20 mA; IN = OUT Repeater power supply operation: 4 … 20 mA; IN = OUT	0 … 20 mA, 4 … 20 mA; IN = OUT					•	•
	Push-in	2902015								
 **MINI MCR-2-UNI-UI-2UI(-PT)** Universal 4-way signal duplicator, configurable	Screw	2905026*)	0 … 24 mA (freely adjustable), 0 … 12 V (freely adjustable)	2 x 0 … 21 mA (freely adjustable), 2 x 0 … 10.5 V (freely adjustable)	•	•	•	•		•
	Push-in	2905028*)								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector.

Product overview – MINI Analog Pro highly compact signal conditioners

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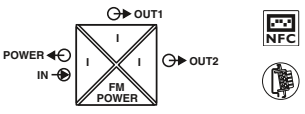
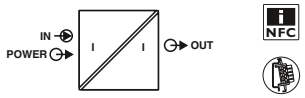
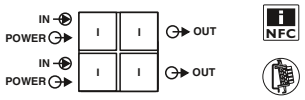
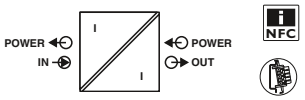
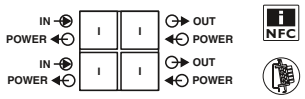
II 3 G Ex ec IIC T4 Gc

Analog IN/Analog OUT

	Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software/app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
 **MINI MCR-2-RPSS-I-2I(-PT)** Repeater power supply, signal duplicator, HART-transparent	Screw	2905628	Isolator operation: 0…20 mA, 4…20 mA; IN = OUT Repeater power supply operation: 4…20 mA; IN = OUT	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT	•				•	•
	Push-in	2905629								
 **MINI MCR-2-I-I-ILP(-PT)** Input-loop-powered 2-way isolator, 1-channel	Screw	2901994	0…20 mA, 4…20 mA; IN = OUT	0…20 mA, 4…20 mA; IN = OUT						•
	Push-in	2901995								
 **MINI MCR-2-2I-2I-ILP(-PT)** Input-loop-powered 2-way isolator, 2-channel	Screw	2901996	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT						•
	Push-in	2901997								
 **MINI MCR-2-RPS-I-I-OLP(-PT)** Output-loop-powered 2-way isolator, 1-channel	Screw	2906446	0…20 mA, 4…20 mA; IN = OUT	0…20 mA, 4…20 mA; IN = OUT						•
	Push-in	2906447								
 **MINI MCR-2-RPS-2I-2I-OLP(-PT)** Output-loop-powered 2-way isolator, 2-channel	Screw	2906448	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT						•
	Push-in	2906449								

Module information
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DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
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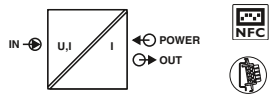
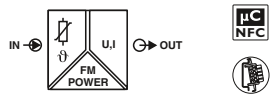
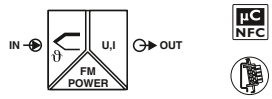
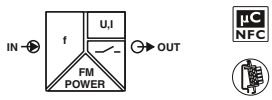
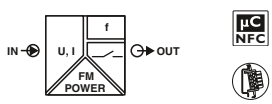
Product overview – MINI Analog Pro highly compact signal conditioners

Web code: #0492

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software / app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
Analog IN/ Analog OUT	 **MINI MCR-2-UI-I-OLP(-PT)** Output-loop-powered 2-way isolator	Screw	2902061	Unipolar and bipolar: 0…2 mA to 0…40 mA (16 ranges), 0…50 mV to 0…30 V (58 ranges)	4…20 mA	•					•
		Push-in	2902063								
Temperature	 **MINI MCR-2-RTD-UI(-PT)** Universal measuring transducer for 2-, 3-, 4-conductor RTD, configurable	Screw	2902049*)	IEC 751: Pt100, Pt200, Pt500, Pt1000; GOST 6651-2009: Pt100, Pt1000, Cu50, Cu100, Cu53; JIS C1604-1997: Pt100, Pt1000; DIN 43760: Ni100, Ni1000; -200°C…+850°C (depending on the sensor); Linear resistance: 0…4 kΩ	0…21 mA (freely adjustable), 0…10.5 V (freely adjustable)	•	•	•	•		•
		Push-in	2902052*)								
	 **MINI MCR-2-TC-UI(-PT)** Universal measuring transducer for TC, configurable	Screw	2902055*)	IEC 584-1: B, C, E, J, K, N, R, S, T; DIN 43710: L, U; GOST 8.585: A-1, A-2, A-3, M, L; -250°C…+2500°C (depending on the sensor)	0…21 mA (freely adjustable), 0…10.5 V (freely adjustable)	•	•	•	•		•
		Push-in	2905249*)								
Frequency	 **MINI MCR-2-F-UI(-PT)** Frequency transducer/limit value switch, configurable	Screw	2902056	NAMUR proximity sensors, floating switch contacts, NPN/PNP transistor contacts, frequency generators, HTL encoders, PWM signals Frequency input: 0.002…200 kHz PWM input: 2…98%	Analog: 0…21 mA (freely adjustable), 0…10.5 V (freely adjustable) Digital: 1 N/O transistor output	•	•	•	•		•
		Push-in	2902058								
	 **MINI MCR-2-UI-FRO(-PT)** Analog frequency transducer/limit value switch, configurable	Screw	2902031	0…24 mA (freely adjustable), 0…12 V (freely adjustable)	Frequency: 0…10 kHz (freely adjustable); PWM output: 0…100%; Digital: 1 N/O transistor output, F/PWM output, can also be used as a second switch output	•	•	•	•		•
		Push-in	2902032								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

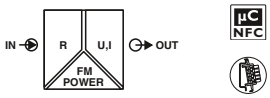
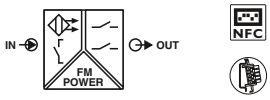
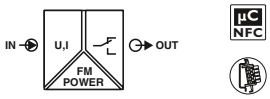
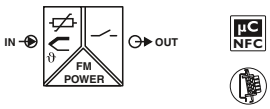
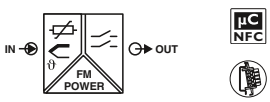
The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – MINI Analog Pro highly compact signal conditioners

Web code: #0492

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software/app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
Potentiometer	 **MINI MCR-2-POT-UI(-PT)** Potentiometer measuring transducer, configurable	Screw	2902016	3-wire potentiometer: 100 Ω … 100 kΩ, automatic detection	0 … 21 mA (freely adjustable), 0 … 10.5 V (freely adjustable)	•	•	•	•		•
		Push-in	2902017								
Digital IN	 **MINI MCR-2-NAM-2RO(-PT)** NAMUR signal conditioner, configurable	Screw	2902004	NAMUR proximity sensors, floating switch contacts, resistor-wired switch contacts	2 N/O transistor outputs, 1 output, can be used either for signal duplication or error messaging	•		•	•	•	•
		Push-in	2902005								
Limit values	 **MINI MCR-2-UI-REL(-PT)** Limit value switch, configurable	Screw	2902033	0 … 24 mA (freely adjustable), 0 … 12 V (freely adjustable)	1 PDT relay	•	•	•	•		
		Push-in	2902035								
	 **MINI MCR-2-T-REL(-PT)** Universal limit value switch for 2-, 3-, 4-conductor RTD and TC, configurable	Screw	2905632	IEC 751: Pt100, Pt200, Pt500, Pt1000; GOST 6651-2009: Pt100, Pt1000, Cu50, Cu100, Cu53; JIS C1604-1997: Pt100, Pt1000; DIN 43760: Ni100, Ni1000 -200°C … +850°C (depending on the sensor); Linear resistance: 0 … 4 kΩ; IEC 584-1: B, E, J, K, N, R, S, T; DIN 43710: L, U; GOST 8.585: A-1, A-2, A-3, M, L; -250°C … +2500°C (depending on the sensor)	1 N/O relay	•	•	•	•		
		Push-in	2905633								
	 **MINI MCR-2-T-2RO(-PT)** Universal limit value switch for 2-, 3-, 4-conductor RTD and TC, configurable	Screw	2906876		2 N/O transistor outputs	•	•	•	•		
		Push-in	2906877								

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

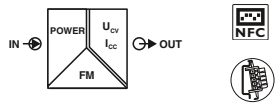
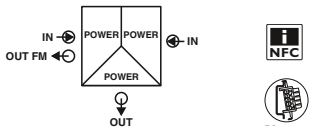
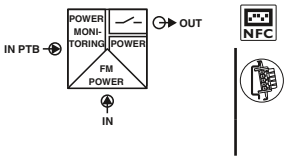
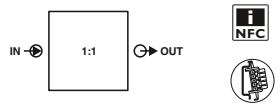
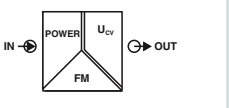
Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MINI Analog Pro highly compact signal conditioners

Web code: #0492

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

Accessories

	Connection	Order No.	Description	Configuration: DIP switch	Configuration: software / app	Fault signaling via LED	Fault monitoring OC/SC/OV/UN/DE	Fault monitoring (DE)	Termination Carrier
 **MINI MCR-2-CVCS(-PT)** Constant voltage/ constant current source	Screw	2902064	Constant voltage/constant current source for potentiometers, measuring bridges, encoders, etc. Input: 9.6 … 30 V DC Output: 10 V/8.75 V/7.5 V/6.25 V/5 V/3.75 V/2.5 V/1.25 V/20 mA/17.5 mA/15 mA/12.5 mA/10 mA/7.5 mA/5 mA/2.5 mA Can be set via DIP switch	•		•		•	
	Push-in	2902065							
 **MINI MCR-2-PTB(-PT)** Feed-in terminal	Screw	2902066	For redundant feed-in on the DIN rail connector Inputs: 9.9 … 30 V DC Output: max. 3.2 A; 9.6 … 29.7 V DC Monitoring of the supply possible in combination with fault monitoring			•			•
	Push-in	2902067							
 **MINI MCR-2-FM-RC(-PT)** Fault monitoring module	Screw	2904504	Fault monitoring module for evaluation and group error messaging in the fault monitoring system Monitoring of supply voltages of MINI MCR-2-PTB(-PT) feed-in terminals	•		•			•
	Push-in	2904508							
 **MINI MCR-2-TB** Feed-through terminal block 1:1 connection	Screw	2902068	Feed-through terminal block for 1:1 forwarding of signals that are already electrically isolated in the MINI Analog Pro group						•
	Push-in	-							
 **MINI MCR-2-SPS-24-15(-PT)** Constant voltage source, sensor power supply	Screw	1033202	Constant voltage source for potentiometers, measuring bridges, encoders, etc. Sensor power supply for 2- or 3-conductor sensors Input: 9.6 … 30 V DC Output: 15 V/max. 30 mA						
	Push-in	1033201							

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

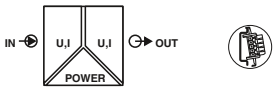
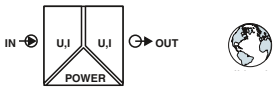
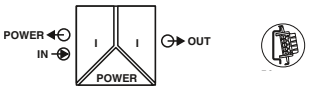
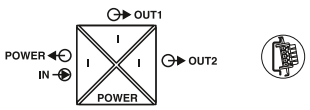
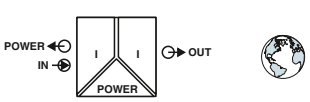
Wide range input for worldwide power supply networks.

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

Analog IN/Analog OUT

	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
 **MACX MCR-UI-UI(-SP)-NC** Universal 3-way signal conditioner, configurable, overall width: 12.5 mm	Screw	2811446	2	Unipolar: 0…50 mV to 0…100 V, 0…1 mA to 0…10 mA Bipolar: -50…50 mV to -100…100 V, -1…1 mA to -100…100 mA Live zero: 1…5 mA, 2…10 mA, 4…20 mA, 1…5 V, 2…10 V	Unipolar: 0…50 mV to 0…10 V, 0…1 mA to 0…10 mA Bipolar: -50…50 mV to -10…10 V, -1…1 mA to -10…10 mA Live zero: 1…5 mA, 2…10 mA, 4…20 mA, 1…5 V, 2…10 V	•		•	•	•
	Push-in	2811556								
 **MACX MCR-UI-UI-UP(-SP)-NC** Universal 3-way signal conditioner, configurable, wide range supply, overall width: 12.5 mm	Screw	2811297	2	Unipolar: 0…50 mV to 0…100 V, 0…1 mA to 0…10 mA Bipolar: -50…50 mV to -100…100 V, -1…1 mA to -100…100 mA Live zero: 1…5 mA, 2…10 mA, 4…20 mA, 1…5 V, 2…10 V	Unipolar: 0…2.5 V, 0…5 V, 0…10 V, 0…5 mA, 0…10 mA, 0…20 mA Bipolar: -2.5…2.5 V, -5…5 V, -10…10 V, -5…5 mA, -10…10 mA, -20…20 mA Live zero: …5 mA, …10 mA, 4…20 mA, 0.5…2.5 V, 1…5 V, 2…10 V	•		•	•	
	Push-in	2811569								
 **MACX MCR-SL-RPSSI-I(-SP)** Repeater power supply and input signal conditioner, HART-compatible, overall width: 12.5 mm	Screw	2865955	2	Input isolator operation: 4…20 mA, (0…20 mA); Repeater power supply operation: 4…20 mA; Transmitter supply voltage: > 16 V (20 mA)	0…20 mA, 4…20 mA; IN = OUT			•	•	•
	Push-in	2924207								
 **MACX MCR-SL-RPSSI-2I(-SP)** Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Screw	2924825	2	Input isolator operation: 4…20 mA (0…20 mA) Repeater power supply operation: 4…20 mA Transmitter supply voltage: > 16 V (20 mA)	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT Load ≤ 450 Ω (20 mA)			•	•	•
	Push-in	2924838								
 **MACX MCR-SL-RPSSI-I-UP(-SP)** Repeater power supply and input signal conditioner, HART-compatible, wide range supply, overall width: 17.5 mm	Screw	2865968	2	Input isolator operation: 4…20 mA (0…20 mA) Repeater power supply operation: 4…20 mA Transmitter supply voltage: > 16 V (20 mA)	4…20 mA (0…20 mA) active/passive, 1…5 V (0…5 V); IN = OUT Load ≤ 600 Ω (20 mA)			•	•	
	Push-in	2924210								

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

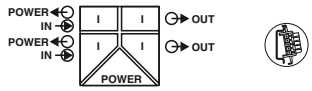
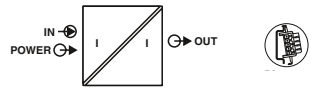
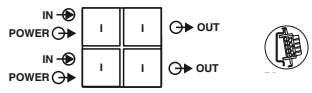
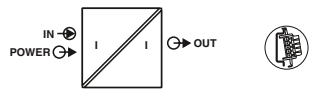
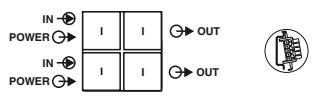
Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

Analog IN/Analog OUT

	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
 **MACX MCR-SL-RPSS-2I-2I(-SP)** Repeater power supply and input signal conditioner, 2-channel, HART-compatible, overall width: 12.5 mm	Screw	2904089	3	Repeater power supply operation: 2 x 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA) per channel	2 x 4 … 20 mA; IN = OUT Load: ≤ 450 Ω (20 mA)			•	•	•
	Push-in	2904090								
 **MACX MCR-SL-I-I-ILP(-SP)** Input-loop-powered 2-way isolator, 1-channel, overall width: 12.5 mm	Screw	2905278	3	0 … 20 mA, 4 … 20 mA; IN = OUT	0 … 20 mA, 4 … 20 mA; IN = OUT					•
	Push-in	2905279								
 **MACX MCR-SL-2I-2I-ILP(-SP)** Input-loop-powered 2-way isolator, 2-channel, overall width: 12.5 mm	Screw	2905280	3	2 x 0 … 20 mA, 2 x 4 … 20 mA; IN = OUT	2 x 0 … 20 mA, 2 x 4 … 20 mA; IN = OUT					•
	Push-in	2905281								
 **MACX MCR-SL-I-I-HV-ILP(-SP)** Input-loop-powered 2-way isolator, 1-channel, test voltage 5 kV, overall width: 12.5 mm	Screw	2907704	3	0 … 20 mA, 4 … 20 mA; IN = OUT	0 … 20 mA, 4 … 20 mA; IN = OUT					•
	Push-in	2907705								
 **MACX MCR-SL-2I-2I-HV-ILP(-SP)** Input-loop-powered 2-way isolator, 2-channel, test voltage 5 kV, overall width: 12.5 mm	Screw	2908063	3	2 x 0 … 20 mA, 2 x 4 … 20 mA; IN = OUT	2 x 0 … 20 mA, 2 x 4 … 20 mA; IN = OUT					•
	Push-in	2908064								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

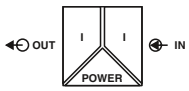
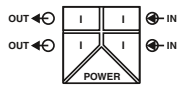
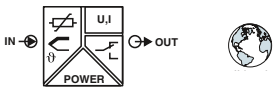
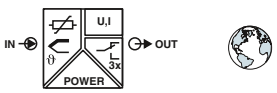
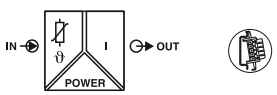
The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Analog OUT	 **MACX MCR-SL-IDS-I-I(-SP)** Output signal conditioner, HART-compatible, overall width: 12.5 mm	Screw	2908063	2	4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection	4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection			•	•	•
		Push-in	2908064								
	 **MACX MCR-SL-IDS-2I-2I-(SP)** Output signal conditioner, 2-channel, HART-compatible, overall width: 12.5 mm	Screw	2908065	2	2 x 4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection	2 x 4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection			•	•	•
		Push-in	2908066								
Temperature	 **MACX MCR-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, wide range supply, configurable, overall width: 17.5 mm	Screw	2811394	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay			•	•	•
		Push-in	2811860								
	 **MACX MCR-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, wide range supply, configurable, overall width: 35 mm	Screw	2811378	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe			•	•	•
		Push-in	2811828								
	 **MACX MCR-RTD-I(-SP)** Temperature transducer for RTD sensors, configurable, overall width: 12.5 mm	Screw	1050192	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ	0 … 20 mA, -10 … 10 V (freely scalable)			•	•	•
		Push-in	1050201								

Module information
- Call module information

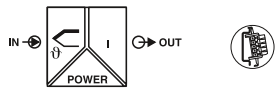
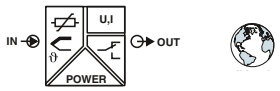
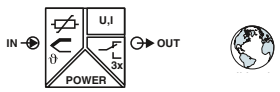
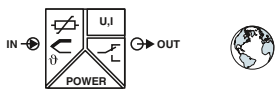
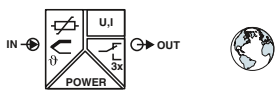
DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
Ⓔx II 3 G Ex nA nC IIC T4 Gc
Ⓔx II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Temperature	 **MACX MCR-TC-I** Temperature transducer for TC sensors, configurable, overall width: 12.5 mm	Screw	1050228	2	TC: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L	0 … 20 mA, -10 … 10 V (freely scalable)		•	•	•	•
		Push-in									
Potentiometer	 **MACX MCR-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, wide range supply, configurable, overall width: 17.5 mm	Screw	2811394	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay		•	•	•	
		Push-in	2811860								
	 **MACX MCR-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, wide range supply, configurable, overall width: 35.0 mm	Screw	2811378	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 Ω Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	
		Push-in	2811828								
Limit values	 **MACX MCR-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, wide range supply, configurable, overall width: 17.5 mm	Screw	2811394	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay		•	•	•	
		Push-in	2811860								
	 **MACX MCR-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, wide range supply, configurable, overall width: 35.0 mm	Screw	2811378	2	RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 Ω Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	
		Push-in	2811828								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

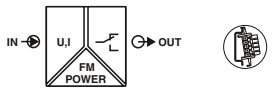
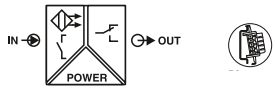
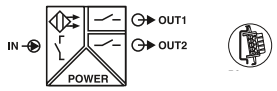
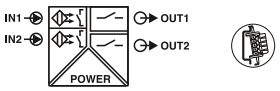
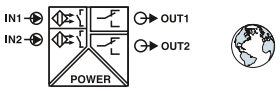
The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Limit values	 **MACX MCR-SL-UI-REL(-SP)** Limit value switch, configurable, overall width: 12.5 mm	Screw	2906169	2	4 … 20 mA; 1 … 10 V	1 PDT relay	•		•	•	•
		Push-in	2906170								
Digital IN	 **MACX MCR-SL-NAM-R(-SP)** NAMUR signal conditioner, PDT output, overall width: 12.5 mm	Screw	2865997	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 PDT relay 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)	•		•	•	•
		Push-in	2924252								
	 **MACX MCR-SL-NAM-2RO(-SP)** NAMUR signal conditioner, two N/O outputs, overall width: 12.5 mm	Screw	2865010	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	2 N/O relays 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A) Signal output 2 can also be configured as an error message output	•		•	•	•
		Push-in	2924265								
	 **MACX MCR-SL-2NAM-RO(-SP)** NAMUR signal conditioner, two-channel, N/O output, overall width: 12.5 mm	Screw	2865049	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 N/O relay per channel 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)	•		•	•	•
		Push-in	2924294								
	 **MACX MCR-SL-2NAM-R-UP(-SP)** NAMUR signal conditioner, two-channel, PDT output, wide range supply, overall width: 17.5 mm	Screw	2865052	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 PDT relay per channel 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)	•		•	•	
		Push-in	2924304								

Module information
- Call module information

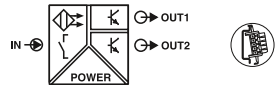
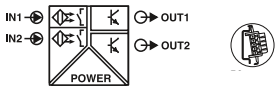
DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MACX Analog signal conditioners with SIL functional safety

Web code: #1141

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc
II 3 G Ex ec IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Digital IN	 **MACX MCR-SL-NAM-2T(-SP)** NAMUR signal conditioner, two transistor outputs, overall width: 12.5 mm	Screw	2865023	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	2 transistor outputs, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz Signal output 2 can also be configured as an error message output	•		•	•	•
		Push-in	2924278								
	 **MACX MCR-SL-2NAM-T(-SP)** NAMUR signal conditioner, two-channel, transistor output, overall width: 12.5 mm	Screw	2865036	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 transistor output per channel, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz Switching behavior configurable via DIP switch	•		•	•	•
		Push-in	2924281								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

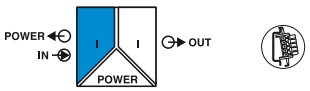
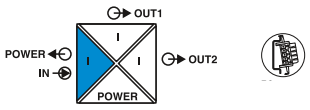
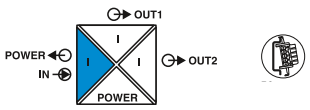
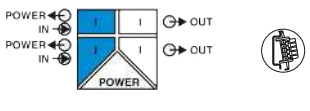
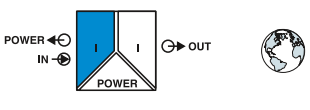
Wide range input for worldwide power supply networks.

Product overview – MACX Analog Ex - Ex i signal conditioners with SIL functional safety

Web code: #1142

Ex i – for intrinsically safe circuits up to Zone 0 (gas) and Zone 20 (dust)
Marking:
II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Analog IN	 **MACX MCR-EX-SL-RPSSI-I(-SP)** Repeater power supply and input signal conditioner, HART-compatible, overall width: 12.5 mm	Screw	2865340	2	Input [Ex ia] Input isolator operation: 4 … 20 mA (0 … 20 mA) Repeater power supply operation: 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA)	0 … 20 mA, 4 … 20 mA; IN = OUT			•	•	•
		Push-in	2924016								
	 **MACX MCR-EX-SL-RPSSI-2I(-SP)** Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Screw	2865366	2	Input [Ex ia] Input isolator operation: 4 … 20 mA (0 … 20 mA) Repeater power supply operation: 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA)	2 x 0 … 20 mA, 2 x 4 … 20 mA; IN = OUT			•	•	•
		Push-in	2924236								
	 **MACX MCR-EX-SL-RPSSI-2I-1S(-SP)** Repeater power supply and input signal conditioner with two outputs, only one channel, HART-compatible, overall width: 12.5 mm	Screw	2908855	3	Input [Ex ia] Repeater power supply operation: 2 x 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA) per channel	2 x 4 … 20 mA; IN = OUT Load: ≤ 450 Ω (20 mA)			•	•	•
		Push-in	2908856								
	 **MACX MCR-EX-SL-RPSS-2I-2I(-SP)** Repeater power supply, two-channel, HART-compatible, overall width: 12.5 mm	Screw	2865382	3	Input [Ex ia] Repeater power supply operation 2 x 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA) per channel	2 x 4 … 20 mA; IN = OUT Load: ≤ 450 Ω (20 mA)			•	•	•
		Push-in	2924676								
	 **MACX MCR-EX-SL-RPSSI-I-UP(-SP)** Repeater power supply and input signal conditioner, HART-compatible, wide range supply, overall width: 17.5 mm	Screw	2865793	2	Input [Ex ia] Input isolator operation: 4 … 20 mA (0 … 20 mA) Repeater power supply operation: 4 … 20 mA Transmitter supply voltage: > 16 V (20 mA)	4 … 20 mA (0 … 20 mA) active/passive, 1 … 5 V (0 … 5 V); IN = OUT			•	•	
		Push-in	2924029								

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

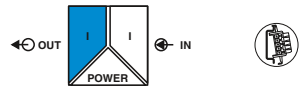
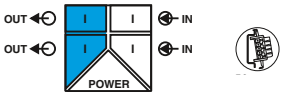
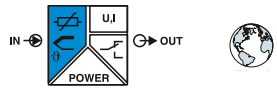
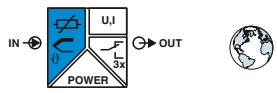
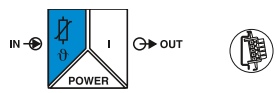
Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MACX Analog Ex - Ex i signal conditioners with SIL functional safety

Web code: #1142

Ex i – for intrinsically safe circuits up to Zone 0 (gas) and Zone 20 (dust)
Marking:
II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Analog OUT	 **MACX MCR-EX-SL-IDS-I-I(-SP)** Output signal conditioner, HART-compatible, overall width: 12.5 mm	Screw	2908060	2	4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection	Output [Ex ia] 4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection			•	•	•
		Push-in	2908062								
	 **MACX MCR-EX-SL-IDS-2I-2I(-SP)** Output signal conditioner, 2-channel, HART-compatible, overall width: 12.5 mm	Screw	2865421	2	2 x 4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection	Output [Ex ia] 2 x 4 … 20 mA (0 … 20 mA); IN = OUT With line fault detection			•	•	•
		Push-in	2904931								
Temperature	 **MACX MCR-EX-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, configurable, wide range supply, overall width: 17.5 mm	Screw	2865654	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay		•	•	•	
		Push-in	2924689								
	 **MACX MCR-EX-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, configurable, wide range supply, overall width: 35.0 mm	Screw	2865751	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	
		Push-in	2924799								
	 **MACX MCR-EX-RTD-I(-SP)** Temperature transducer for RTD sensors, configurable, overall width: 12.5 mm	Screw	1050222	2	Input [Ex ia] RTD: PT 10 … PT 10000 Ni 10 … Ni 10000, Cu10, Cu53, KTY Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ	0 … 20 mA, -10 … 10 V (freely scalable)		•	•	•	•
		Push-in	1050252								

*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

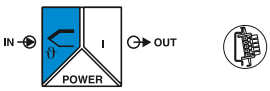
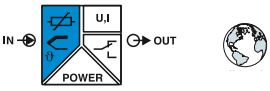
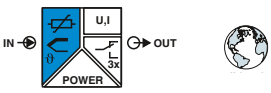
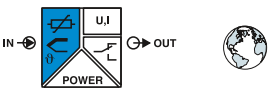
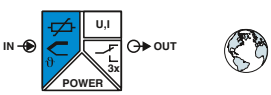
Wide range input for worldwide power supply networks.

Product overview – MACX Analog Ex - Ex i signal conditioners with SIL functional safety

Web code: #1142

Ex i – for intrinsically safe circuits up to Zone 0 (gas) and Zone 20 (dust)
Marking:
II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Temperature	 **MACX MCR-EX-TC-I** Temperature transducer for TC sensors, configurable, overall width: 12.5 mm	Screw	1050233	2	Input [Ex ia] TC: Type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L	0 … 20 mA, -10 … 10 V (freely scalable)		•	•	•	•
		Push-in									
Potentiometers	 **MACX MCR-EX-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, configurable, wide range supply, overall width: 17.5 mm	Screw	2865654	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay		•	•	•	
		Push-in	2924689								
	 **MACX MCR-EX-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, configurable, wide range supply, overall width: 35.0 mm	Screw	2865751	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	
		Push-in	2924799								
Limit values	 **MACX MCR-EX-T-UI-UP(-SP)** Universal temperature transducer, with limit value relay, configurable, wide range supply, overall width: 17.5 mm	Screw	2865654	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 1 PDT relay		•	•	•	
		Push-in	2924689								
	 **MACX MCR-EX-T-UIREL-UP(-SP)** Universal temperature transducer, with three limit value relays, configurable, wide range supply, overall width: 35.0 mm	Screw	2865751	2	Input [Ex ia] RTD: PT 10 … PT 10000, Ni 10 … Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0 … 50 kΩ Linear resistance: 0 … 50 kΩ ±1000 mV, ±20 mA [2]	Analog: 0 … 20 mA, -10 … 10 V (freely scalable), 4 … 20 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	
		Push-in	2924799								

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- Call module information

DIP switch setting help
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- DIP switch setting help

Configuration
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- Bluetooth communication

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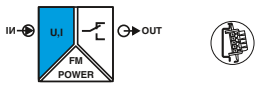
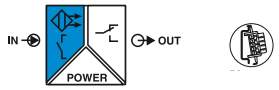
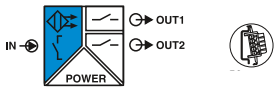
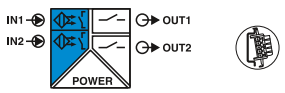
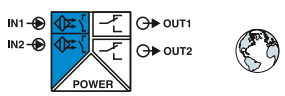
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Limit values	 **MACX MCR-EX-SL-UI-REL(-SP)** Limit value switch, configurable, overall width: 12.5 mm	Screw	2906164	2	4 … 20 mA, 1 … 10 V	1 PDT relay	•		•	•	•
		Push-in	2906165								
Digital IN	 **MACX MCR-EX-SL-NAM-R(-SP)** NAMUR signal conditioner, PDT output, overall width: 12.5 mm	Screw	2865434	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 PDT relay 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A)	•		•	•	•
		Push-in	2924045								
	 **MACX MCR-EX-SL-NAM-2RO(-SP)** NAMUR signal conditioner, 2 N/O outputs, overall width: 12.5 mm	Screw	2865450	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	2 N/O relays, 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A) Signal output 2 can also be configured as an error message output	•		•	•	•
		Push-in	2924061								
	 **MACX MCR-EX-SL-2NAM-RO(-SP)** NAMUR signal conditioner, two-channel, N/O output, overall width: 12.5 mm	Screw	2865476	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 N/O relay per channel 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A)	•		•	•	•
		Push-in	2924087								
	 **MACX MCR-EX-SL-2NAM-R-UP(-SP)** NAMUR signal conditioner, two-channel, PDT output, wide range supply, overall width: 17.5 mm	Screw	2865984	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 PDT relay per channel 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A)	•		•	•	•
		Push-in	2924249								

*) Versions can also be ordered pre-configured ex works.
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DE = device error

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Wide range input for worldwide power supply networks.

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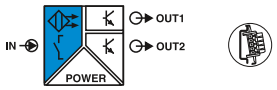
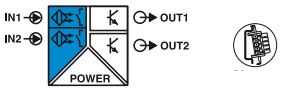
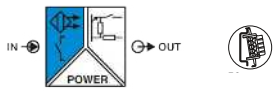
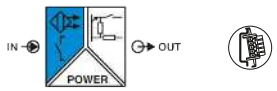
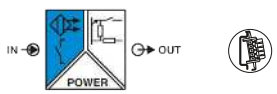
II (1) D [Ex ia Da] IIIC

Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Digital IN	 **MACX MCR-EX-SL-NAM-2T(-SP)** NAMUR signal conditioner, single-channel, 2 transistor outputs, overall width: 12.5 mm	Screw	2865463	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	2 transistor outputs, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz Signal output 2 can also be configured as an error message output	•		•	•	•
		Push-in	2924074								
	 **MACX MCR-EX-SL-2NAM-T(-SP)** NAMUR signal conditioner, two-channel, transistor output overall width: 12.5 mm	Screw	2865489	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	1 transistor output per channel, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz Switching behavior configurable via DIP switch	•		•	•	•
		Push-in	2924090								
	 **MACX MCR-EX-SL-NAM-NAM(-SP)** NAMUR signal conditioner, output with resistive behavior, with line fault transparency, overall width: 12.5 mm	Screw	2866006	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	Resistive behavior in accordance with EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz	•		•	•	•
		Push-in	2924883								
	 **MACX MCR-EX-SL-NAM-YO(-SP)** NAMUR signal conditioner, output with resistive behavior, Yokogawa-compatible, with line fault transparency, overall width: 12.5 mm	Screw	2905723	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	Resistive behavior in accordance with EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz	•		•	•	•
		Push-in	2905724								
	 **MACX MCR-EX-SL-NAM-HO(-SP)** NAMUR signal conditioner, output with resistive behavior, Honeywell-compatible, with line fault transparency, overall width: 12.5 mm	Screw	2907404	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off Direction of action can be selected	Resistive behavior in accordance with EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz	•		•	•	•
		Push-in	2907405								

Module information
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DIP switch setting help
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Ⓔx II (1) D [Ex ia Da] IIIC

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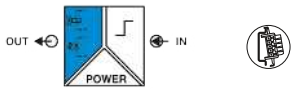
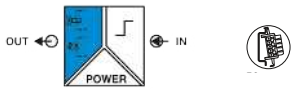
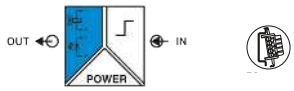
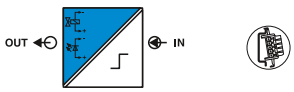
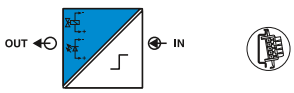
Marking:
Ⓔx II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Digital OUT	 **MACX MCR-EX-SL-21-25-LFD(-SP)** Solenoid driver, with logic input and line fault detection, current limitation at 48 mA, overall width: 12.5 mm	Screw	2905669	3	Switching level 0 signal (L): 0 … 5 VDC Switching level 1 signal (H): 15 … 30 VDC	Output [Ex ia] 4.64 VDC (at 25.1 mA) Current limitation: 25.1 mA Off-load voltage: 21.1 VDC Internal resistance: 641 Ω With line fault transparency and additional error message output	•		•	•	•
		Push-in	2905674								
	 **MACX MCR-EX-SL-24-48-LFD(-SP)** Solenoid driver, with logic input and line fault detection, current limitation at 48 mA, overall width: 12.5 mm	Screw	2906155	3	Switching level 0 signal (L): 0 … 5 VDC Switching level 1 signal (H): 15 … 30 VDC	Output [Ex ia] 9.7 VDC (at 48 mA) Current limitation: 48 mA Off-load voltage: 24.3 VDC Internal resistance: 697 Ω With line fault transparency and additional error message output	•		•	•	•
		Push-in	2906156								
	 **MACX MCR-EX-SL-23-48-LFD(-SP)** Solenoid driver, with logic input and line fault detection, current limitation at 48 mA, overall width: 12.5 mm	Screw	2924867	3	Switching level 0 signal (L): 0 … 5 VDC Switching level 1 signal (H): 15 … 30 VDC	Output [Ex ia] 9.5 VDC (at 48 mA) Current limitation: 48 mA Off-load voltage: 23 VDC Internal resistance: 269 Ω With line fault transparency and additional error message output	•		•	•	•
		Push-in	2924870								
	 **MACX MCR-EX-SL-21-25-LP(-SP)** Solenoid driver, loop-powered, current limitation at 25 mA, overall width: 12.5 mm	Screw	2865492	3	20 … 30 VDC, 10 … 70 mA DC (45 mA at Ue = 24 VDC)	Output [Ex ia] 5.5 VDC (at 25 mA) Current limitation: 25 mA Off-load voltage: 21.9 VDC Internal resistance: 641 Ω			•		•
		Push-in	2924113								
	 **MACX MCR-EX-SL-21-40-LP(-SP)** Solenoid driver, loop-powered, current limitation at 40 mA, overall width: 12.5 mm	Screw	2865764	3	20 … 30 VDC, 10 … 95 mA DC (65 mA at Ue = 24 VDC)	Output [Ex ia] 10 VDC (at 40 mA) Current limitation: 40 mA Off-load voltage: 21.9 VDC Internal resistance: 287 Ω			•		•
		Push-in	2924139								

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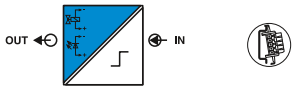
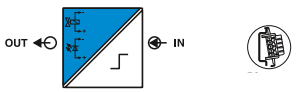
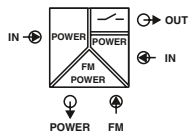
Ex n – for device installation in Zone 2
Marking:
II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
Digital OUT	 **MACX MCR-EX-SL-24-48-LP(-SP)** Solenoid driver, loop-powered, current limitation at 48 mA, overall width: 12.5 mm	Screw	2865609	3	20 … 30 V DC, 10 … 95 mA DC (75 mA at Ue = 24 V DC)	Output [Ex ia] 10.5 V DC (at 48 mA) Current limitation: 48 mA Off-load voltage: 24 V DC Internal resistance: 276 Ω			•		•
		Push-in	2924126								
	 **MACX MCR-EX-SL-21-60-LP(-SP)** Solenoid driver, loop-powered, current limitation at 58 mA, overall width: 12.5 mm	Screw	2865515	3	20 … 30 V DC, 10 … 105 mA DC (95 mA at Ue = 24 V DC)	Output [Ex ia] 12.9 V DC (at 58 mA) Current limitation: 58 mA Off-load voltage: 21.9 V DC Internal resistance: 133 Ω			•		•
		Push-in	2924100								
Accessories	 **MACX MCR-PTB-(-SP)** Feed-in and fault signaling module, overall width: 17.5 mm	Screw	2865625		Voltage input signal: 20 … 30 V DC 5 A/250 V AC fuse, can be replaced Redundant feed-in possible	Output current: 3.75 A Output voltage = input voltage max. 0.8 V at 3.75 A Switching output for error message: 1 PDT relay	•		•	•	•
		Push-in	2924184								
	 **MACX MCR-EX-DUMMYISOLATOR-(-SP)** Dummy module with no electrical function for connecting unused signal cables, overall width: 12.5 mm	Screw	2904970		No function For connecting unused intrinsically safe signal cables	No function For connecting unused signal cables					•
		Push-in	2905846								

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

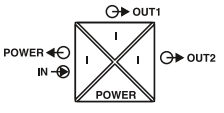
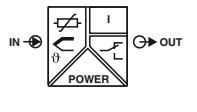
Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – MACX Safety signal conditioners with PL functional safety

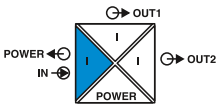
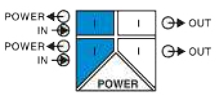
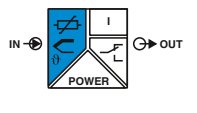
Web code: #1143 / #1144 (Ex i)

Ex i – for intrinsically safe circuits up to Zone 0 (gas) and Zone 20 (dust)
Marking:
Ⓔx II (1) G [Ex ia Ga] IIC
Ⓔx II (1) D [Ex ia Da] IIIC

Ex n – for device installation in Zone 2
Marking:
Ⓔx II 3 G Ex nA nC IIC T4 Gc

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Fault monitoring (DE)	Termination Carrier
Digital IN	 PL d Ex n **MACX PL-RPSSI-2I(-SP)** Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Screw	2904961	2	Input isolator operation: 4…20 mA Repeater power supply operation: 4…20 mA Transmitter supply voltage: > 16 V (20 mA)	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT				•		•
		Push-in	2904962									
Digital OUT	 PL d Ex n **MACX PL-TUI-REL-UP(-SP)** Universal temperature transducer, with limit value relay, configurable, overall width: 35.0 mm	Screw	2904901	2	RTD: PT 10…PT 10000, Ni 10…Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0…50 kΩ Linear resistance: 0…50 kΩ ±1000 mV, ±20 mA [2]	Analog: 4…20 mA, active Digital: 1 PDT relay, 1 PDT relay, functionally safe			•	•	•	
		Push-in	2904903									

Product overview – MACX Safety Ex - Ex i signal conditioners with PL functional safety

		Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Fault monitoring (DE)	Termination Carrier
Analog IN	 PL d Ex i **MACX PL-EX-RPSSI-2I(-SP)** Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Screw	2904959	2	Input [Ex ia] Input isolator operation: 4…20 mA Repeater power supply operation: 4…20 mA Transmitter supply voltage: > 16 V (20 mA)	2 x 0…20 mA, 2 x 4…20 mA; IN = OUT				•		•
		Push-in	2904960									
	 PL d Ex i **MACX PL-EX-RPSS-2I-2I(-SP)** Repeater power supply, two-channel, HART-compatible, overall width: 12.5 mm	Screw	2904963	3	Input [Ex ia] Repeater power supply operation: 4…20 mA per channel Transmitter supply voltage: > 16 V (20 mA) per channel	2 x 4…20 mA; IN = OUT Load: ≤ 450 Ω (20 mA)				•		•
		Push-in	2904964									
Temperature	 PL d Ex i **MACX PL-EX-TUI-REL-UP(-SP)** Universal temperature transducer, with limit value relay, configurable, overall width: 35.0 mm	Screw	2904910	2	Input [Ex ia] RTD: PT 10…PT 10000, Ni 10…Ni 10000, Cu10, Cu53, KTY TC [1]: type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L Potentiometer: 0…50 kΩ Linear resistance: 0…50 kΩ ±1000 mV, ±20 mA [2]	Analog: 4…20 mA, active Digital: 1 PDT relay, 1 PDT relay, functionally safe			•	•	•	
		Push-in	2904912									

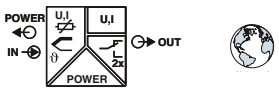
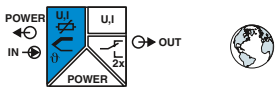
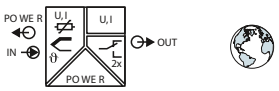
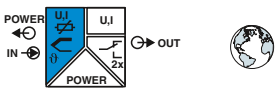
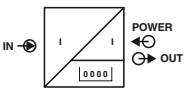
*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – Field Analog process indicators and field devices

Web code: #1140

		Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
Multifunctional process indicators	 **FA MCR-D-TUI-UI-2REL-UP** Multifunctional process indicator in control panel component housing, wide range supply, W x H x D: 96 x 48 x 151.8 mm	Screw			Current input: 0…20 mA, 0…5 mA, 4…20 mA Repeater power supply operation: > 16 V, 22 mA Voltage input: 0…10 V, ±10 V, ±30 V, ±100 mV RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B … E, J, K, N, S, T, L, U	Analog: 0…20 mA, 4…20 mA, 0…10 V, 2…10 V, 0…5 V, 1…5 V Digital: 2 PDT relays 1 transistor output, active	•	•				•
		Push-in	2907064									
	 **FA MCR-EX-D-TUI-UI-2REL-UP** Multifunctional Ex i process indicator in control panel component housing, wide range supply, W x H x D: 96 x 48 x 175 mm	Screw			Current input: 0…20 mA, 0…5 mA, 4…20 mA Repeater power supply operation: > 16 V, 22 mA Voltage input: 0…10 V, ±10 V, ±30 V, ±100 mV RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B … E, J, K, N, S, T, L, U	Analog: 0…20 mA, 4…20 mA, 0…10 V, 2…10 V, 0…5 V, 1…5 V Digital: 2 PDT relays, 1 transistor output, active	•	•				•
		Push-in	2907216									
	 **FA MCR-FD-TUI-UI-2REL-UP** Multifunctional process indicator in field housing, wide range supply, W x H x D: 199 x 160 x 96 mm	Screw			Current input: 0…20 mA, 0…5 mA, 4…20 mA Repeater power supply operation: > 16 V, 22 mA Voltage input: 0…10 V, ±10 V, ±30 V, ±100 mV RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B … E, J, K, N, S, T, L, U	Analog: 0…20 mA, 4…20 mA, 0…10 V, 2…10 V, 0…5 V, 1…5 V Digital: 2 PDT relays, 1 transistor output, active	•	•			•	
		Push-in	2907780									
	 **FA MCR-EX-FD-TUI-UI-2REL-UP** Multifunctional Ex i process indicator in field housing, wide range supply, W x H x D: 199 x 160 x 96 mm	Screw			Current input: 0…20 mA, 0…5 mA, 4…20 mA Repeater power supply operation: > 16 V, 22 mA Voltage input: 0…10 V, ±10 V, ±30 V, ±100 mV RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B … E, J, K, N, S, T, L, U	Analog: 0…20 mA, 4…20 mA, 0…10 V, 2…10 V, 0…5 V, 1…5 V Digital: 2 PDT relays, 1 transistor output, active	•	•			•	
		Push-in	2907781									
LED indicators	 **FA MCR-DS-I-I-OLP** Output loop-powered process indicator in control panel housing, HART-compatible (master), W x H x D: 96 x 48 x 41.5 mm	Screw			4… 20 mA, 20 … 4 mA	4… 20 mA, 20 … 4 mA	•			•		•
		Push-in	2908781									

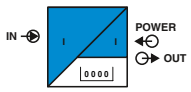
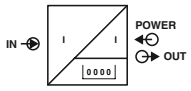
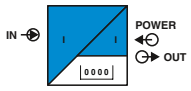
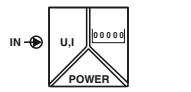
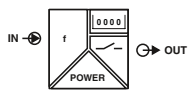
Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – Field Analog process indicators and field devices

Web code: #1140

		Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
LED indicators	 **FA MCR-EX-DS-I-I-OLP** Output loop-powered Ex i process indicator in control panel housing, HART-compatible (master), W x H x D: 96 x 48 x 41.5 mm	Screw			4… 20 mA, 20 … 4 mA	4… 20 mA, 20 … 4 mA	•			•		•
		Push-in	2908800									
	 **FA MCR-FDS-I-I-OLP** Output loop-powered process indicator in field housing, HART-compatible (master), W x H x D: 133 x 81.5 x 55.5 mm	Screw			4… 20 mA, 20 … 4 mA	4… 20 mA, 20 … 4 mA	•				•	
		Push-in	2908782									
	 **FA MCR-EX-FDS-I-I-OLP** Output loop-powered Ex i process indicator in field housing, HART-compatible (master), W x H x D: 133 x 81.5 x 55.5 mm	Screw			4… 20 mA, 20 … 4 mA	4… 20 mA, 20 … 4 mA	•				•	
		Push-in	2908801									
	 **MCR-SL-D-U-I** Process indicator for measuring and displaying standard signals, W x H x D: 48 x 24 x 68 mm	Screw	2864011		Current input: 0…20 mA, 4…20 mA Voltage input: 0…10 V	5-digit 7-segment display, LED Minimum/maximum value storage	•					•
		Push-in										
	 **MCR-SL-D-FIT** Process indicator for measuring and displaying frequencies, pulses, and times, W x H x D: 48 x 24 x 68 mm	Screw	2864024		Dynamic counter input Dynamic set/reset input	6-digit 7-segment display, LED Optocoupler output: active with indicator value <= 0 This means that the device can be used as a simple forward counter in subtractive counting mode.	•					•
		Push-in										

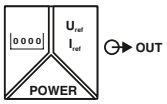
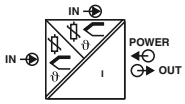
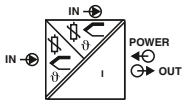
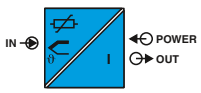
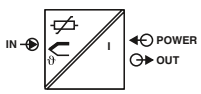
*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – Field Analog process indicators and field devices

Web code: #1140

		Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
LED indicators	 **MCR-SL-D-SPA** Digital setpoint adjuster for defining current and voltage signals, W x H x D: 48 x 24 x 68 mm	Screw	2710314		4-digit 7-segment display, LED Automatic setpoint definition with hold function and 20 interpolation points, manual setpoint definition via direct input	0…24 mA, 0…12 V	•					•
		Push-in										
Head-mounted transducers/2-conductor field devices	 **FA MCR-HT-TS-I-OLP-PT** Output loop-powered head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Screw		2	RTD: PT, Ni, Cu, OIML/GOST, Cu50 OIML/GOST TC: type A…E, J,K,N,R,S,T,L,U	4… 20 mA, 20 … 4 mA		•	•	•	•	
		Push-in	2908742									
	 **FA MCR-EX-HT-TS-I-OLP-PT** Output loop-powered Ex i head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Screw		2	RTD: PT, Ni, Cu, OIML/GOST, Cu50 OIML/GOST TC: type A…E, J,K,N,R,S,T,L,U	4… 20 mA, 20 … 4 mA		•	•	•	•	
		Push-in	2908743									
	 **MCR-FL-HT-TS-LP-I-EX** Ex i head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, HART-compatible	Screw	2864545	2	RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B… E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•	•	•	•	
		Push-in										
	 **MCR-FL-HT-T-I** Head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Screw	2864529		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B… E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•		•	•	
		Push-in										

Module information
- Call module information

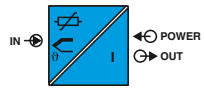
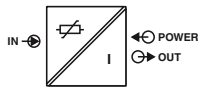
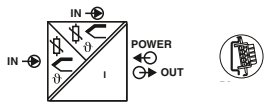
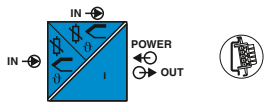
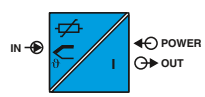
DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – Field Analog process indicators and field devices

Web code: #1140

Head-mounted transducers/2-conductor field devices

	Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
 **MCR-FL-HT-T-I-EX** Ex i head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Screw	2864532		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B… E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•		•	•	
	Push-in										
 **MCR-SL-HT-PT100-I** Head-mounted temperature transducer for Pt100 resistance thermometers, loop-powered	Screw	2864516		RTD: Pt100 (min. measuring span 10 K)	4…20 mA, 20…4 mA		•		•	•	
	Push-in										
 **MACX MCR-TS-I-OLP(-SP)** Output loop-powered temperature transducer for RTD, TC; HART-compatible	Screw	2908662		RTD: PT, Ni, Cu, OIML/GOST, Cu50 OIML/GOST TC: type A…E, J,K,N,R,S,T,L,U	4…20 mA, 20…4 mA		•	•	•		
	Push-in	2908664									
 **MACX MCR-EX-TS-I-OLP(-SP)** Output loop-powered Ex i temperature transducer for RTD, TC; HART-compatible	Screw	2908660		RTD: PT, Ni, Cu, OIML/GOST, Cu50 OIML/GOST TC: type A…E, J,K,N,R,S,T,L,U	4…20 mA, 20…4 mA		•	•	•		
	Push-in	2908661									
 **MCR-FL-TS-LP-I-EX** Ex i temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered, HART-compatible	Screw	2864587	2	RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B… E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•	•	•		
	Push-in										

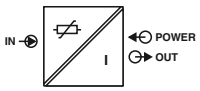
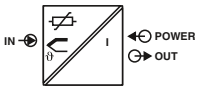
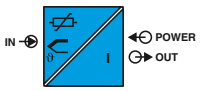
*) Versions can also be ordered pre-configured ex works.
OC = open circuit, SC = short circuit,
OV = overrange, UN = underrange,
DE = device error

The module can be snapped onto the DIN rail connector for 24 V voltage bridging.

Wide range input for worldwide power supply networks.

Product overview – Field Analog process indicators and field devices

Web code: #1140

		Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
Head-mounted transducers/2-conductor field devices	 **MCR-SL-PT100-LP-I** Temperature transducer for Pt100 resistance thermometers, loop-powered	Screw	2864558		RTD: Pt100 (min. measuring span 10 K)	4…20 mA, 20…4 mA	•	•		•		
		Push-in										
	 **MCR-FL-T-LP-I** Temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered	Screw	2864561		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B…E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•		•		
		Push-in										
	 **MCR-FL-T-LP-I-EX** Ex i temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered	Screw	2864574		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B…E, J, K, N, S, T, L, U	4…20 mA, 20…4 mA		•		•		
		Push-in										

Module information
- Call module information

DIP switch setting help
- Call module information
- DIP switch setting help

Configuration
- Call module information
- DIP switch setting help
- Module configuration
- Bluetooth communication

Product overview – Gateways for bus and network connection

Modbus gateways

MINI MCR-2-V8-MOD-RTU
Order No. 2905634
MINI MCR-2-V8-MOD-TCP
Order No. 2905635

Gateway for integrating any eight MINI Analog Pro signal conditioners with current or digital output into a Modbus/RTU or Modbus/TCP network.

PROFIBUS gateway

MINI MCR-2-V8-PB-DP
Order No. 2905636

Gateway for integrating any eight MINI Analog Pro signal conditioners with current or digital output into a PROFIBUS DP network.

EtherNet/IP gateway

MINI MCR-2-V8-EN
Order No. 2909842

Gateway for integrating any eight MINI Analog Pro signal conditioners with current or digital output into an Ethernet IP network.

Accessories for the highly compact MINI Analog Pro signal conditioners

DIN rail connectors

ME 6,2 TBUS-2 1,5/5-ST-3,81 GY
Order No. 2695439
Gray, for two MINI Analog Pro modules respectively.

ME 17,5 TBUS 1,5/5-ST-3,81 GN
Order No. 2709561
Green, for MINI-SYS system power supply (2 required).

System power supply

MINI-SYS-PS-100-240AC/24DC/1.5
Order No. 2866983

MINI-PS-100-240AC/24DC/1.5/EX
Order No. 2866653 (Ex n-capable)
- Wide range input:
  85 … 264 V AC (45 - 65 Hz)
- Output voltage:
  24 V DC ±1%
- Output current:
  1.5 A at 60°C/2 A at 40°C

Programming adapter

IFS-USB-PROG-ADAPTER
Order No. 2811271
USB programming adapter for programming via PC.

IFS-BT-PROG-ADAPTER
Order No. 2905872
Programming adapter for wireless communication via Bluetooth.

Accessories for the highly compact MINI Analog Pro signal conditioners

Marking labels

UCT-EM (30x5) Order No. 0801505
UCT-EM (30x5) CUS Order No. 0801589
UCT-EM (30x5) YE Order No. 0830340

UC-EMLP (15x5) Order No. 0819301
UC-EMLP (15x5) CUS
Order No. 0824550

- For snapping or affixing to module cover
- Can be marked with THERMOMARK CARD or BLUEMARK printer
- Lettering field size: 30 x 5 mm/15 x 5 mm

Adhesive labels

SK 5,0 WH:REEL
Order No. 0805221

- Self-adhesive marker strips, unmarked, continuous
- Material off the roll for marking with the THERMOMARK ROLL thermal transfer printer

Connector set

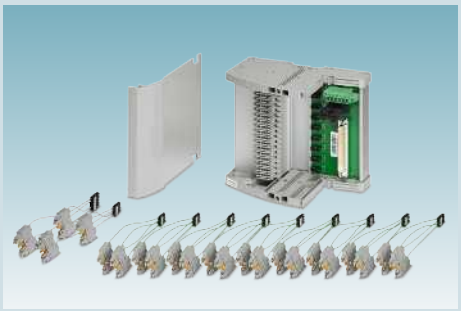
FASTCON PRO-SET
Order No. 2906227
Set consisting of four connectors with screw connection.

FASTCON PRO-SET-PT
Order No. 2906228
Set consisting of four connectors with Push-in connection.

System cabling

MINI MCR-2-V8-FLK 16
Order No. 2901993

System adapters for fast and error-free connection of any eight MINI Analog Pro signal conditioners to a controller.



System cabling

TC-D37SUB-ADIO16-MP-P-UNI
Order No. 2906639
Termination Carrier, universal, for 16 MINI Analog Pro signal conditioners.

TC-D37SUB-AIO16-MP-PS-UNI
Order No. 2906640
Termination Carrier, universal, for 16 MINI Analog Pro signal conditioners with HART multiplexer connection.

Setpoint adjuster

EMG 30-SP-4K7LIN
Order No. 2940252
Individual setpoint definition, resistance value 4.7 kΩ.

EMG 30-SP-10K LIN
Order No. 2942124
Individual setpoint definition, resistance value 10 kΩ.

EMG 30-SPK-10K LIN
Order No. 2942137
With preset set points, resistance value 10 kΩ.

Accessories for the MACX Analog signal conditioners

Operator interface

IFS-OP-UNIT
Order No. 2811899
For process value display and parameterization, can be plugged directly onto 35 mm devices and the IFS-OP-CRADLE cradle unit.

IFS-OP-CRADLE
Order No. 2811886
Cradle for IF-OP-UNIT for connection to 17.5 mm/35 mm modules and use as a remote display unit.

Programming adapter

IFS-USB-PROG-ADAPTER
Order No. 2811271
For programming multifunctional devices with the ANALOG-CONF software or via FDT/DTM.

IFS-BT-PROG-ADAPTER
Order No. 2905872
Programming adapter for wireless communication via Bluetooth.

DIN rail connectors

ME 6,2 TBUS-2 1,5/5-ST-3.81 GN
Order No. 2869728
For direct supply via any MACX Analog device or for supply via a feed-in and fault signaling module of the same shape.

Marking material

UC-EMLP (11X9) (white)
Order No. 0819291
Self-adhesive plastic labels for equipment marking: UniCard, 10-section, lettering field size: 11 x 9 mm.

UC-EMLP (11X9) CUS (white)
Order No. 0824547
As above, plus marked according to your specifications. For details, visit phoenixcontact.com.

Test plugs

MPS-MT	Order No. 0201744
MPS-IH BK (black)	Order No. 0201731
MPS-IH GY (gray)	Order No. 0201728
MPS-IH GN (green)	Order No. 0201702
MPS-IH YE (yellow)	Order No. 0201692
MPS-IH BU (blue)	Order No. 0201689
MPS-IH RD (red)	Order No. 0201676
MPS-IH WH (white)	Order No. 0201663

Test plug for 2.3 mm Ø socket hole, consisting of MPS-MT metal part and MPS-IH… colored insulating sleeve.

Function plug

MACX MCR-CJC	Order No. 2924993
MACX MCR-EX-CJC	Order No. 2925002

Plug for cold junction compensation for thermocouples, in combination with MACX…-(EX)-T-UI… temperature transducers.

MACX MCR-I20	Order No. 2905680
MACX MCR-EX-I20	Order No. 2905679

Connection terminal block for current signals (±20 mA) for safe switching of limit values, in combination with MACX…-(EX)-T-UI… temperature transducers.

Accessories for the MACX Analog signal conditioners

Multiplexer for HART signals

MACX MCR-S-MUX
Order No. 2865599
Multiplexer for the digital connection of HART-compatible field devices, such as measuring transducers or control valves, to a PC or a management system, 32-channel, including two 14-wire flat-ribbon cables.

HART transfer board

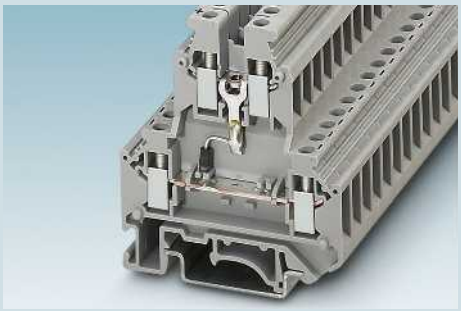
MACX MCR-S-MUX-TB
Order No. 2308124
Transfer board for connecting HART field devices to the HART multiplexer.

PSM-ME-RS232/RS485-P
Order No. 2744416
Interface converter with electrical isolation for converting RS-232 (V.24) to RS-485. Automatic data direction changeover or via RTS/CTS.

Shield fast connection

SSA 3-6 (for Ø 3 - 6 mm)
Order No. 2839295

SSA 5-10 (Ø 5 - 10 mm)
Order No. 2839512
For connecting cable shielding to cable terminal points, can be connected to PLUGTRAB PT.



Resistance circuit

UKK 5-2R/NAMUR Order No. 2941662

D-UKK 3/5 (gray) Order No. 2770024
D-UKK 3/5 BU (blue) Order No. 2770105

Double-level terminal block with resistance circuit according to NAMUR for line fault detection with mechanical contacts.

Important: for intrinsically safe circuits, only in combination with D-UKK 3/5... cover.

Termination Carrier

TC-D37SUB-ADIO16-EX-P-UNI
Order No. 2924854
Universal, for 16 single-channel MACX signal conditioners.

TC-D37SUB-AIO16-EX-PS-UNI
Order No. 2902932
Universal, for 16 single-channel MACX signal conditioners, with HART multiplexer connection.

TC-2D37SUB-ADIO32-2EX-P-UNI
Order No. 2904684
Universal, for 16 two-channel MACX signal conditioners.

Feed-in and fault signaling module

MACX MCR-PTB
Order No. 2865625
With screw connection

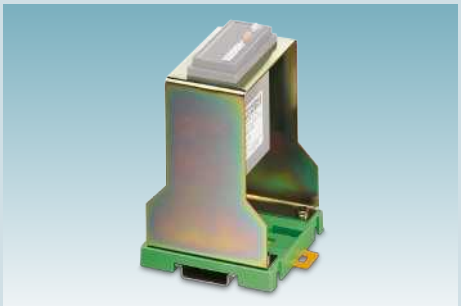
MACX MCR-PTB-SP
Order No. 2924184
With Push-in connection

TC-MACX-MCR-PTB
Order No. 2904673
For use only on the Termination Carrier, with screw connection

Accessories for the Field Analog process indicators and field devices

Programming adapter

MCR-PAC-T-USB
Order No. 2309000
Software adapter cable, length 2.4 m, for programming MCR-...-LP-... and MCR-...-HT-... modules.



DIN rail adapter

MCR-SL-D-RA
Order No. 2810081
DIN rail adapter for LED indicators with housing dimensions 24 x 48 mm. Suitable for 35 mm DIN rails in accordance with EN 60715.

DIN rail adapter for head-mounted transducers

MCR-DIN-RAIL-ADAPTER HT
Order No. 2864671
DIN rail adapter for head-mounted transducers. Suitable for 35 mm DIN rails in accordance with EN 60715.

Wall and tube mounting set

FA MCR-FD-PM
Order No. 2908739
Tube mounting set for multifunctional process indicators
FA MCR-FD-TUI-UI-2REL-UP and
FA MCR-EX-FD-TUI-UI-2REL-UP. Can also be used to simplify wall mounting.

Display for head transmitter

FA MCR-HT-D
Order No. 2908735
Display unit for plugging directly into the FA MCR-... head transmitter.

Electronics housings

FA MCR-HT-FH
Order No. 2908736
Field housing for the installation of head transmitters with or without display unit. For direct connection to the process.

FA MCR-HT-FH-WM
Order No. 2908737
Wall fastening for FA MCR-HT-FH field housing.

Power supply and diagnostics

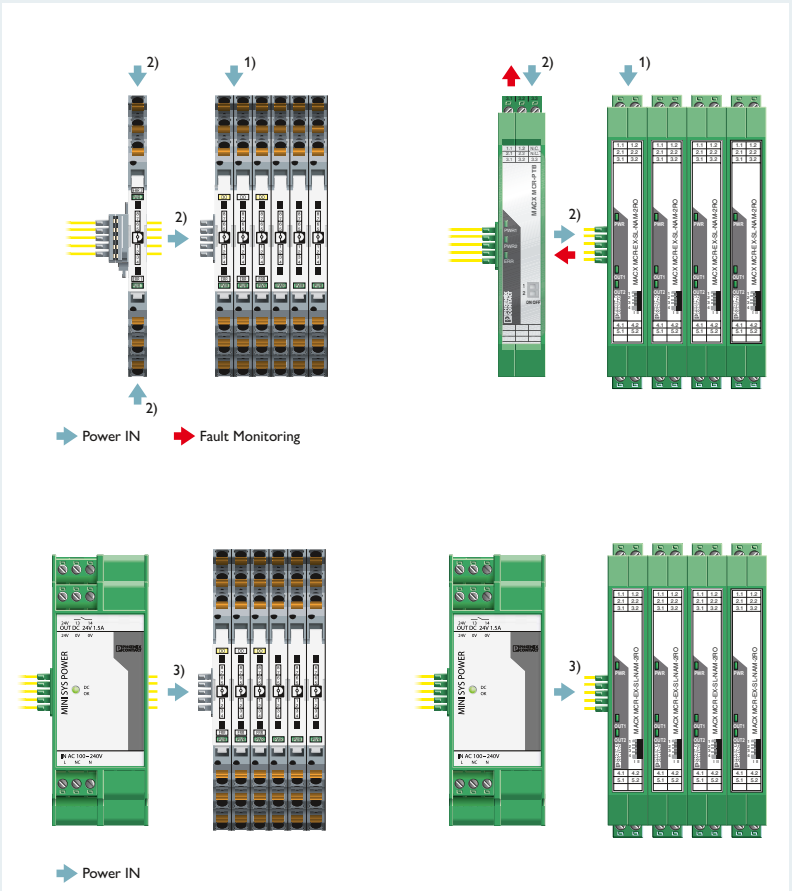
Flexible feed-in

The DIN rail connector gives you three device supply options:

1) Direct feed-in on the module
- Without additional accessories
- For up to 16*) MINI Analog Pro modules
- For up to 32*) MACX modules

2) Feed-in via a feed-in module of the same shape
- Also allows redundant feed-in and supply monitoring
- For up to 115*) MINI Analog Pro modules
- For up to 80*) MACX modules

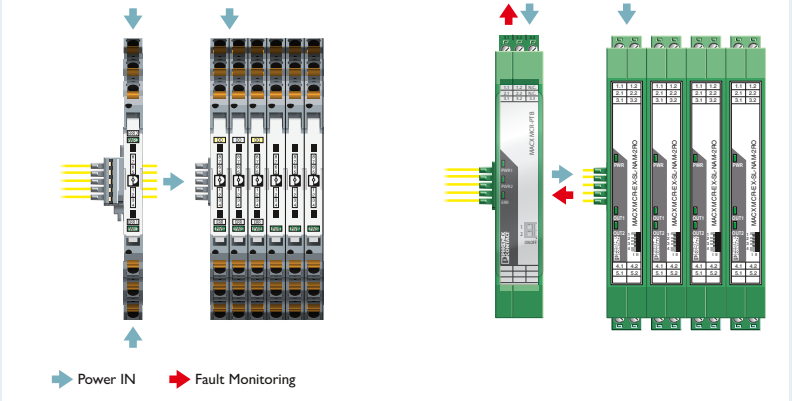
3) Feed-in via the system power supply
- Also allows redundant feed-in and supply monitoring
- For up to 60*) MINI Analog Pro modules
- For up to 10*) MACX modules
  Note: not suitable for Ex i modules



Convenient diagnostics with fault monitoring

With fault monitoring group error messaging, the DIN rail connector offers a modular solution for fast fault analysis in multi-channel applications. The MINI Analog Pro and MACX systems are compatible with one another. The following faults are signaled depending on the module type:

- Open circuit
- Short circuit
- Supply failure
- Measuring range overrange or underrange (MINI Analog Pro only)
- Fuse fault on the feed-in module (MACX only)

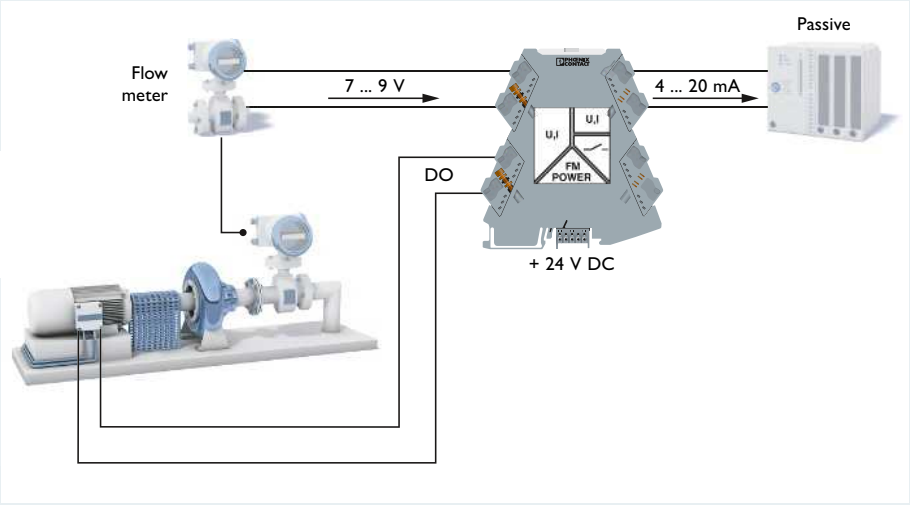


*) The exact number depends on the current consumption of the module type in question. Notes on calculation can be found in our feed-in manual in the download area for the product.

Isolate, convert, filter, amplify – Application examples

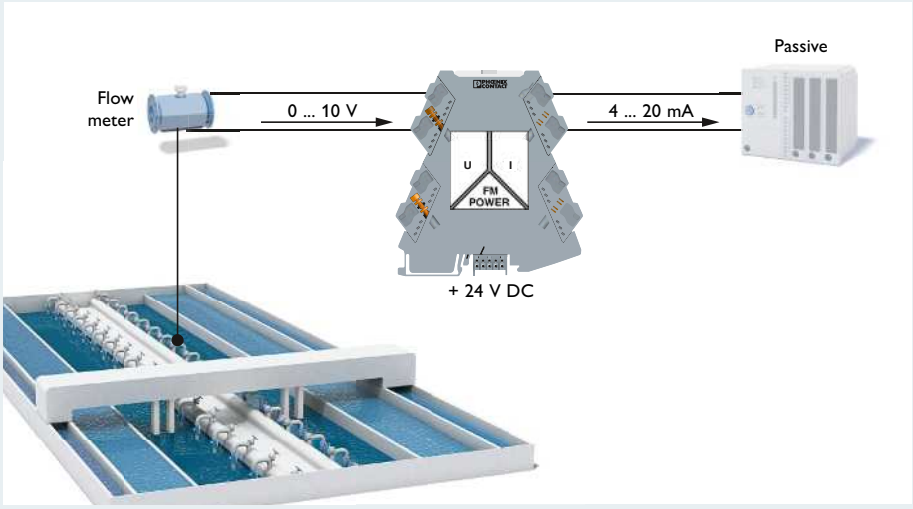
Flow monitoring and signaling using a 4-way signal conditioner

The freely adjustable 4-way signal conditioner with switching output enables you to set the parameters for your application according to your specific requirements. The transistor output is available as a threshold switch. You can configure eight different switching behaviors.



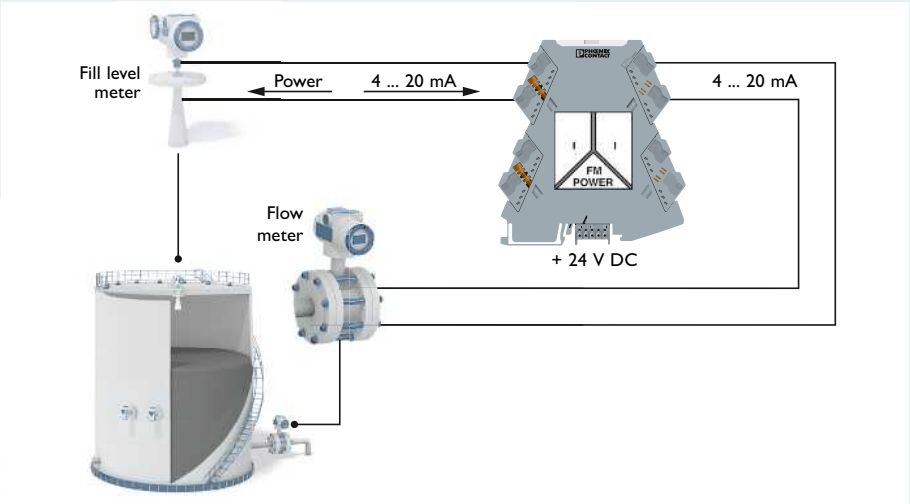
Flow monitoring using a 3-way signal conditioner

The 3-way signal conditioners with fixed values represent a price-optimized alternative in multi-channel standard applications.



Level monitoring using a repeater power supply

The repeater power supply supplies the transmitter located in the field and electrically isolates the input signal from the output signal. The device can be used in both isolator and repeater power supply operation.

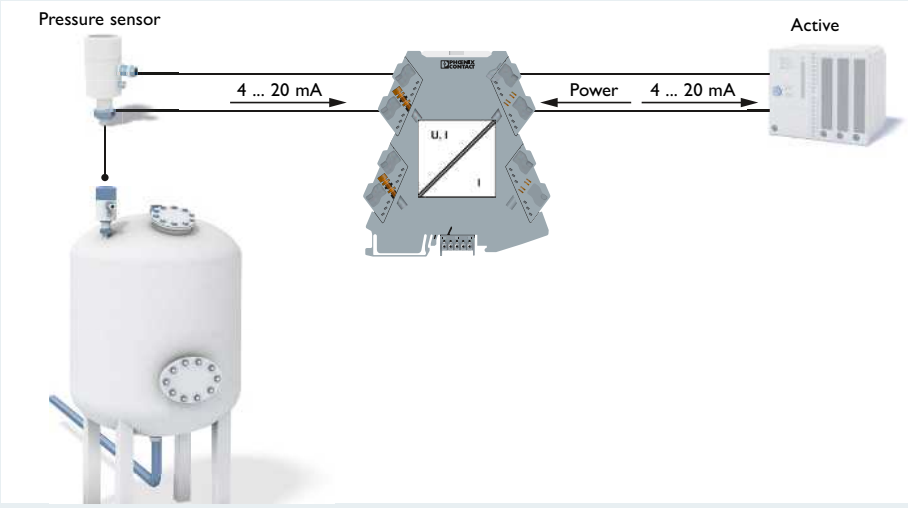


Isolate, convert, filter, amplify – Application examples

Pressure monitoring using a passive isolator

Since the output-loop-powered isolator is powered via the current loop of an active analog input module, no additional auxiliary power is required.

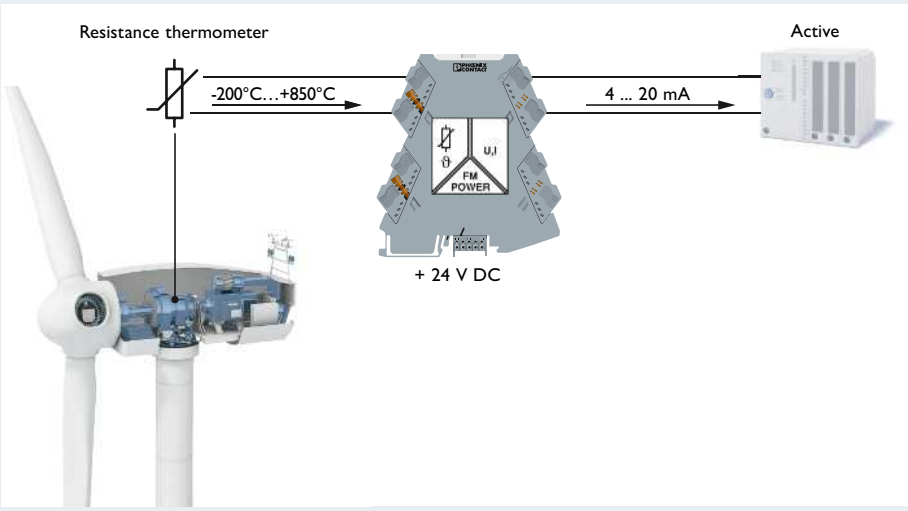
On the input side you can connect analog signals from 2 mA to 40 mA or from 50 mV to 30 V.



Temperature measurement using a resistance thermometer with temperature transducer

The freely adjustable temperature transducer enables you to connect resistance thermometers and remote resistance-type sensors with 2-, 3-, and 4-conductor connection technology.

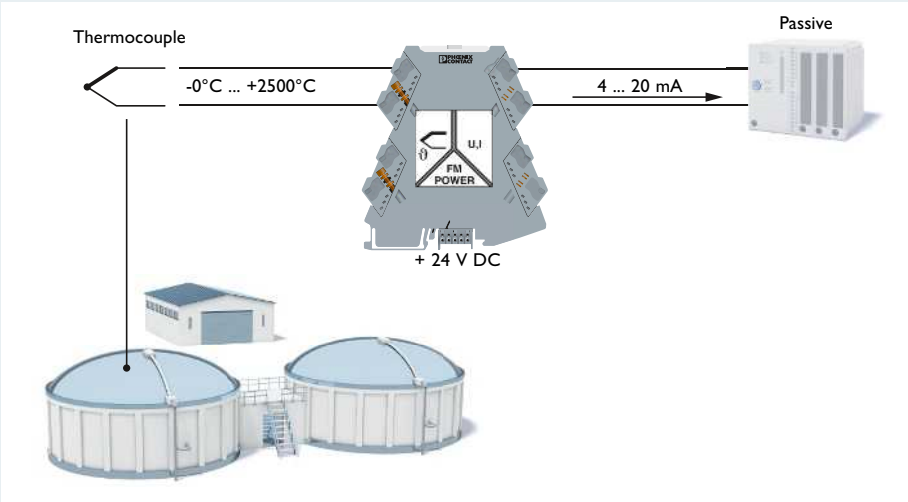
The individual measured temperature values are converted into a linear and freely adjustable current or voltage signal.



Temperature measurement using a thermocouple with temperature transducer

The freely adjustable temperature transducer enables you to connect various thermocouples.

The individual measured temperature values are converted into a linear and freely adjustable current or voltage signal.

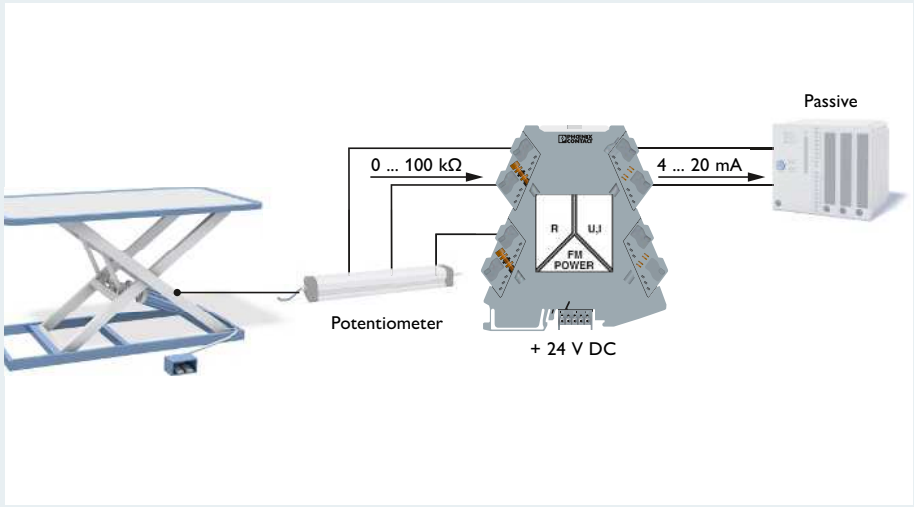


Isolate, convert, filter, amplify – Application examples

Potentiometer measurement using a measuring transducer

The configurable potiposition transducer with automatic potentiometer detection is used to connect potentiometers from 0 ... 100 Ω to 0 ... 100 kΩ.

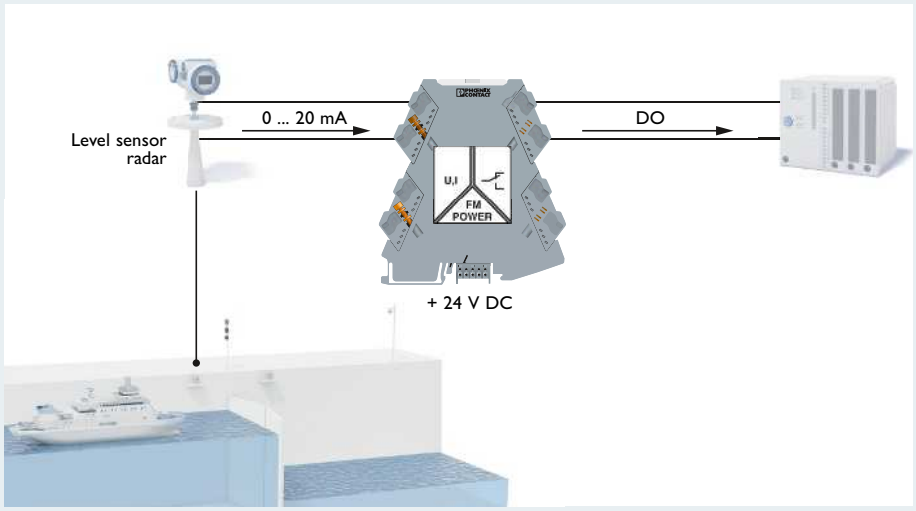
The individual position values are converted into a linear and freely adjustable current or voltage signal.



Level monitoring using a limit value switch

The limit value switch enables you to record and monitor analog signals from 0 ... 24 mA or from 0 ... 12 V.

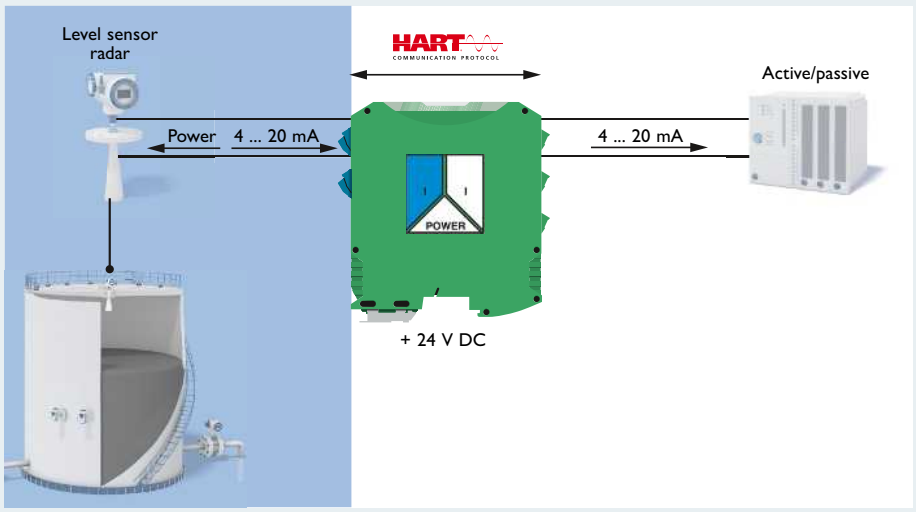
The PDT relay at the output switches loads of up to 250 V AC/DC and max. 6 A.



Level measurement in the Ex area with an Ex i repeater power supply

The repeater power supply and input signal conditioner is designed for the operation of intrinsically safe 2-, 3- or 4-conductor measuring transducers and mA sources installed in the Ex area.

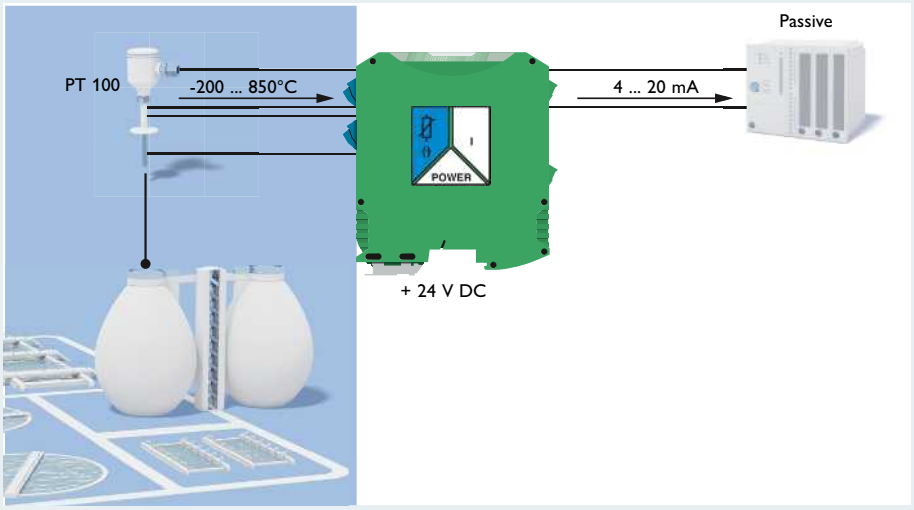
The analog measured value is electrically isolated and transmitted 1:1 from the Ex area to the non-Ex area. You can operate the output of the module actively or passively.



Isolate, convert, filter, amplify – Application examples

Temperature measurement in the Ex area using an Ex i temperature transducer

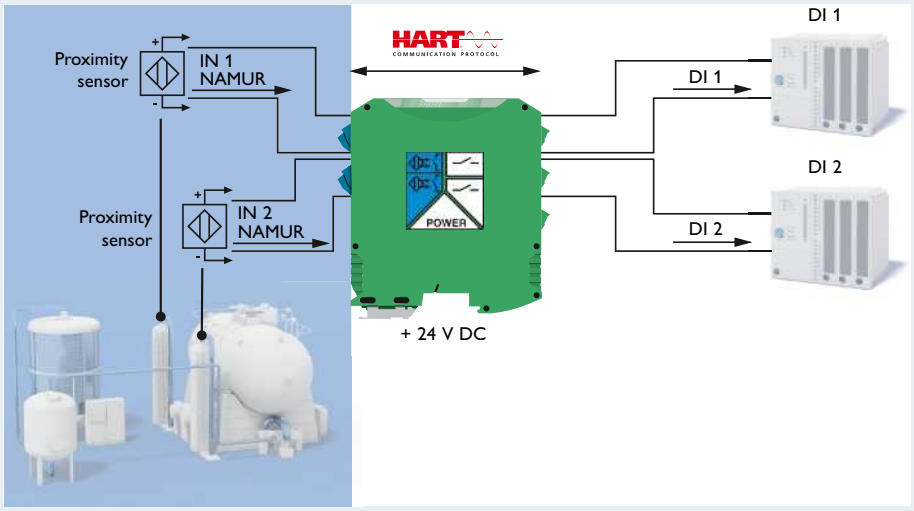
The programmable Ex i temperature transducer is designed for the intrinsically safe operation of resistance thermometers and remote resistance-type sensors installed in the Ex area. The measured values are converted into a linear 0/4 ... 20 mA signal to drive a non-intrinsically safe load.



Proximity sensor detection in the Ex area using an Ex i NAMUR signal conditioner

With the 2-channel NAMUR signal conditioner you can operate proximity sensors installed in the Ex area as well as unconnected contacts or contacts with resistance circuit.

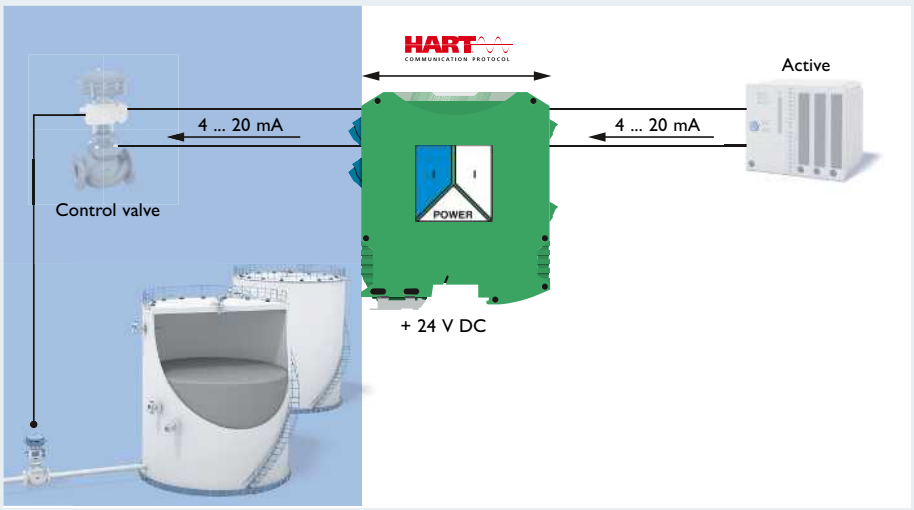
One changeover contact is available per channel as a signal output.



Controlling a control valve in the Ex area using an output signal conditioner

The solenoid drivers are designed for the intrinsically safe control of Ex i solenoid valves, alarm transmitters, and indicators installed in the Ex area. The input uses low/high signal logic.

The various output characteristic curves are compatible with standard solenoid valves.



Discover more products for MCR technology from Phoenix Contact

Discover more products that can be combined with our products for MCR technology.

Shielded sensor/actuator cabling

Ensure error-free transmission of your analog signals, even in environments with significant electromagnetic compatibility, with a complete range of products and solutions for shielded signal transmission of sensors and actuators.

System cabling for easy signal routing

Reliable signal transmission: the universal termination boards couple connectors to screw, Push-in or spring-cage terminal blocks 1:1 – for IDC/FLK, D-SUB, ELCO, DIN rail or RJ45. With universal cables, wiring is fast and protected against polarity reversal.

Surge protection for MCR technology

A large number of sensors and actuators are monitored and controlled in applications for measurement and control technology. A failure due to surge voltages can have devastating effects. Our surge protective devices offer an ideal solution and help to avoid system failures for all applications.

Connection technology for marshalling

Marshalling patchboards and marshalling terminals are used to maintain a clear overview of signal marshalling in automated applications.

The products ensure space-saving, clearly arranged, and fault-free wiring.

The disconnect and knife disconnect terminal blocks enable you to localize malfunctions quickly and easily, and perform off-load maintenance.

PHOENIX CONTACT
Products and solutions for your success

As a leading manufacturer of connection technology and automation components, we are always working to transform the growing requirements placed on your application and markets into new innovations. Our products are the nervous system of your industrial system and help you design more efficient processes and reduce costs.

Web code: #0000

Your advantages:

- Unique product portfolio, thanks to future-oriented innovations and a high degree of variety
- High quality, thanks to standardized laboratory tests and high-quality materials
- Professional service through personal consultation: with 50 subsidiaries and over 30 agencies, we are always close by
- High delivery reliability, thanks to modern production processes, worldwide production locations, and local warehousing

"Made by Phoenix Contact"

Phoenix Contact relies on in-house competence and expertise in a range of contexts. The design and development departments constantly come up with innovative product ideas, developing special solutions to meet customer requirements. Numerous patents emphasize the innovative prowess of the company.

Quality down to the smallest detail

It is only when you keep sight of every little detail that you can be sure the quality is right. That's why we even produce our own screws. We produce items that later form the basis for high-quality components at our own plastic, metal, and SMD production facilities.

Global approvals and certificates

Our numerous certificates are proof that you can fully trust in our products, because quality is essential.

We strive to satisfy this requirement in every respect. For this reason, our systems, processes, and products are inspected and certified several times over.

In dialog with customers and partners worldwide

Phoenix Contact is a globally present, Germany-based market leader. Our group is synonym for future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation. A global network across more than 100 countries, and 15,000 employees ensure a close proximity to our customers, which we believe is particularly important.

The wide variety of our innovative products makes it easy for our customers to find future-oriented solutions for different applications and industries. We especially focus on the fields of energy, infrastructure, process and factory automation.

You will find our complete product range at:

phoenixcontact.com

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg, Germany
Phone: +49 52 35 3-00
Fax: +49 52 35 3-4 12 00
E-mail: info@phoenixcontact.com
phoenixcontact.com

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INSPIRING INNOVATIONS