

Signal conditioners, process indicators, and field devices

Transmit and visualize signals without interference



Transmit and visualize signals without interference

In electrotechnical systems, electromagnetic or high-frequency interference 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.

i Web code: #1135

Find out more with the web code

You can find web codes in 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:

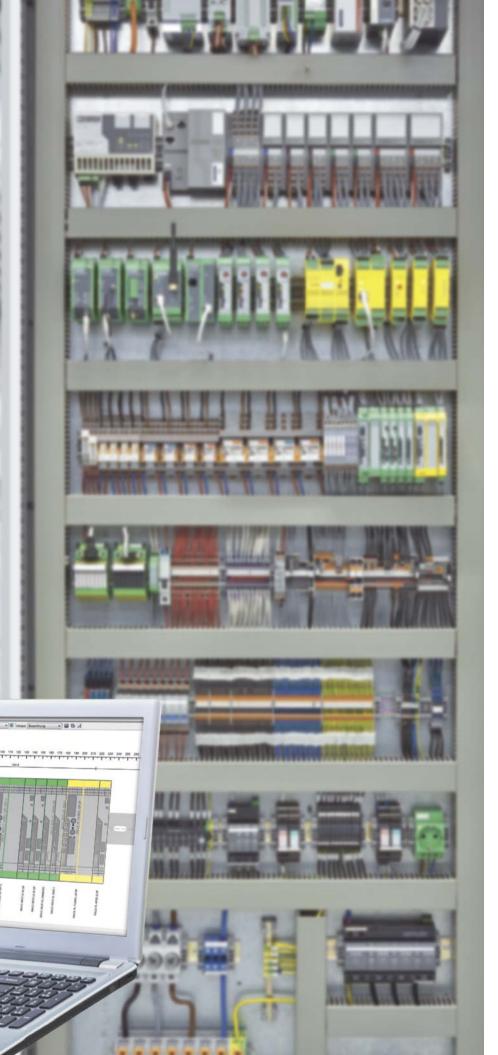
- 1. Go to the Phoenix Contact website
- 2. Enter # and the number combination in the search field
- 3. Get more information and product versions

#1234

Search |

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





Contents

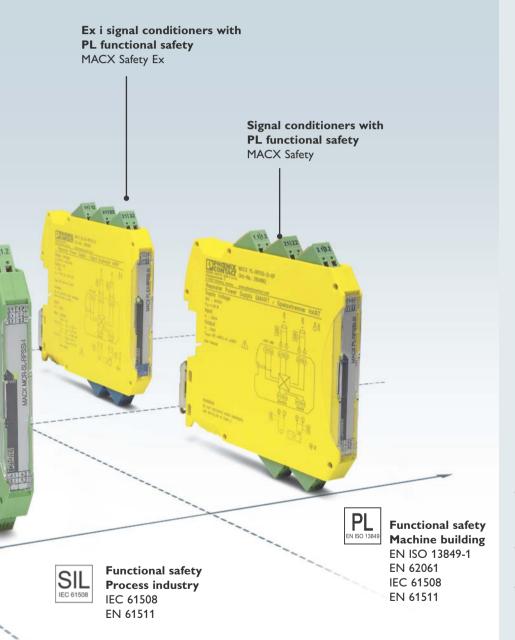
Isolate, convert, filter, amplify – our signal conditioners at a glance	4
Highly compact signal conditioners	6
Signal conditioners with functional safety	٤
System cabling solutions for signal conditioners	10
Process indicators and field devices	12
Signal conditioner, process indicator, and field device product overviews	14
Accessories for signal conditioners, process indicators, and field devices	34
Technical information and application examples	35
Discover more products for MCR technology	44
Products and solutions for your success	46

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 Ex i signal conditioners with SIL functional safety your application here. MACX Analog Ex **i** Web code: #1135 Signal conditioners with **SIL** functional safety MACX Analog Highly compact signal conditioners MINI Analog Pro Intrinsic safety Zone 0, Zone 20 ATEX/IECEx EN 60079-11 No intrinsic safety Zone 2 No functional safety

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 reliability 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 according to the Machinery Directive with the PL d-certified MACX Safety signal conditioners

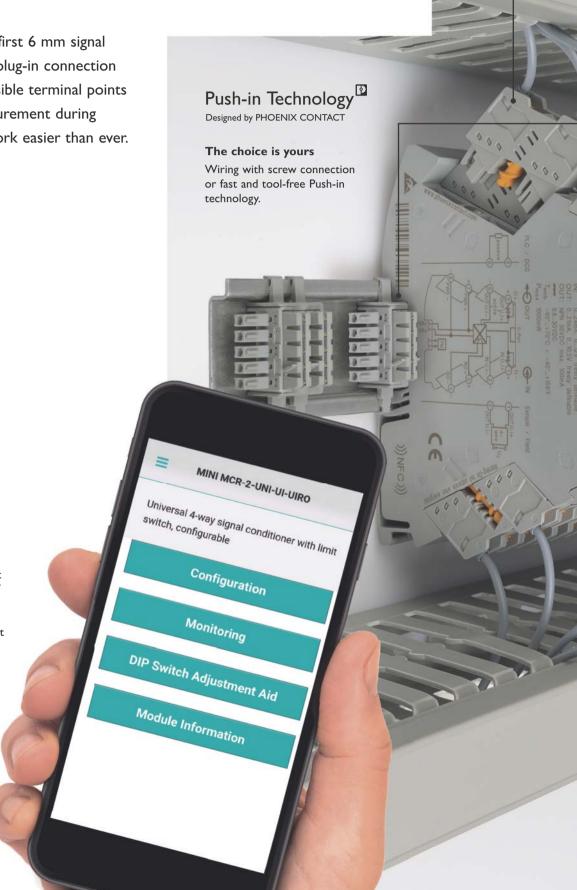
Highly compact signal conditioners – easier than ever but as slim as before

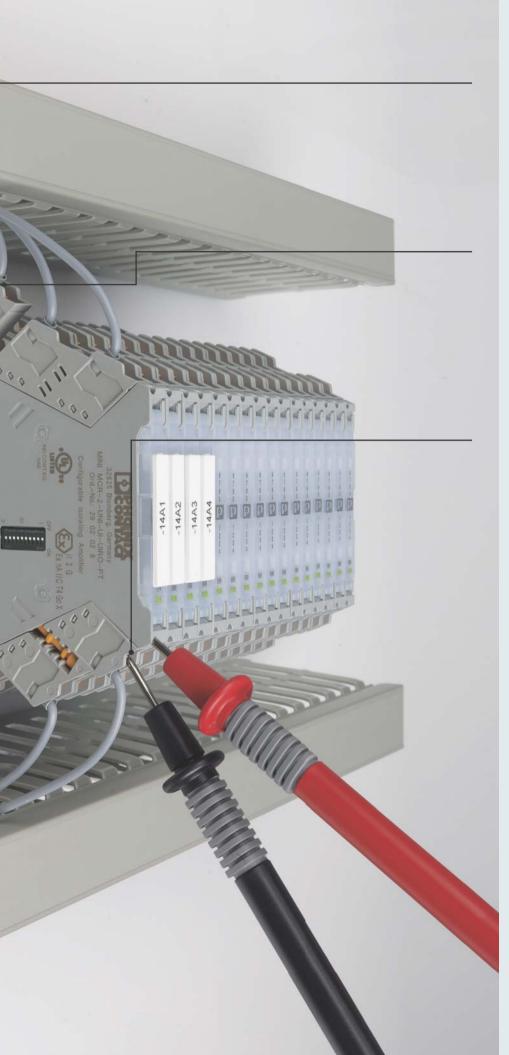
MINI Analog Pro is the first 6 mm signal conditioner range with plug-in connection technology. Easily accessible terminal points and current signal measurement during operation make your work easier than ever.

i Web code: #0492

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 plug-in FASTCON Pro connection terminal blocks simplify installation and startup.

Fast 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.

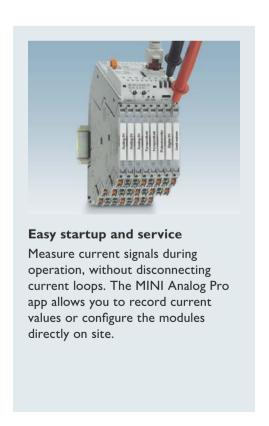
More advantages

- 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

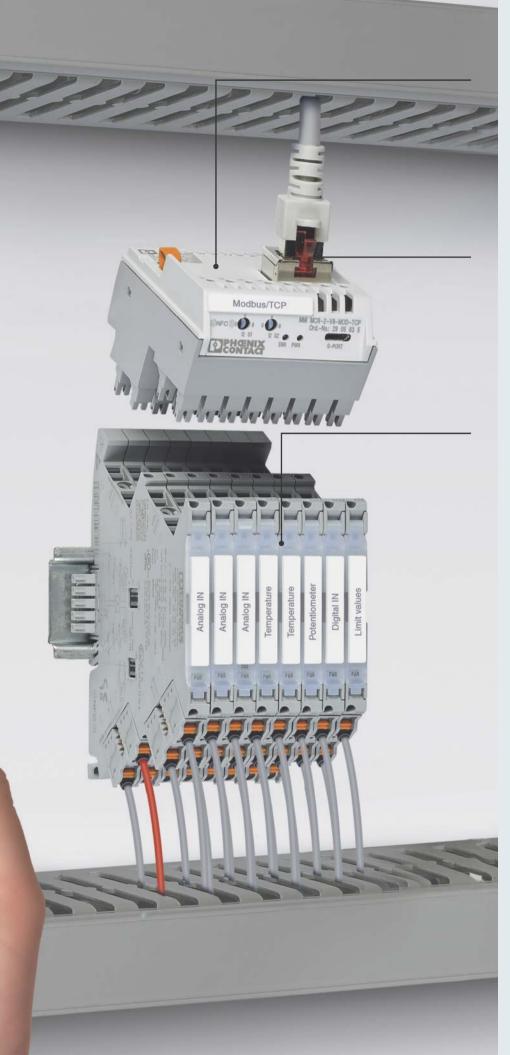
Bus and network connection safely isolated from field to network

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.

i Web code: #1136







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 way that saves space.

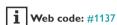
Plug-in gateways for different protocols

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 according to 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.







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.





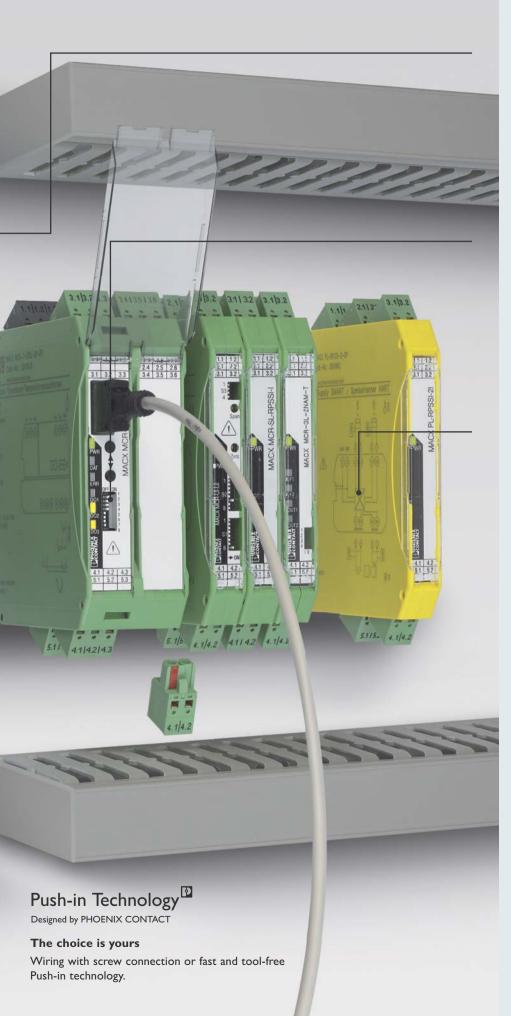




Analog signals with performance level

With MACX Safety and MACX Safety Ex you can integrate analog signals easily into your safety application according to the Machinery Directive.





Fast 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 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: plug-in, 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

i Web code: #1138







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 plug-in, 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.

i Web code: #1140





control cabinet installations.



Universal use

Field Analog process indicators are available for field and control panel installation. The universal inputs allows 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 plug-in 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.

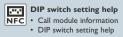
Additional advantages

- 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

Ex n	Web code: #0492 - for device installation in Zone 2 ng: G Ex nA nC 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
	IN → U,I U,I O→ OUT	Screw	2902026*)	024 mA (freely adjustable), 012 V (freely adjustable)	Analog: 021 mA (freely adjustable), 010.5 V (freely adjustable) Digital: 1 N/O transistor output	•		•		
	MINI MCR-2-UNI-UI-UIRO(-PT) Universal 4-way signal conditioner with relay contact, configurable	Push-in	2902028*)		·					
	IN → U,I U,I O→ OUT	Screw	2902037*)	020 mA, 420 mA, -2020 mA, 05 V, 15 V, -55 V, 010 V, 210 V, -1010 V, 020 V, 420 V, -2020 V, 024 V, 4.824 V, -2424 V, 030 V, 630 V,	020 mA, 420 mA, 05 V, 15 V, -55 V, 010 V, 210 V, -1010 V					
F	MINI MCR-2-UI-UI(-PT) 3-way signal conditioner, configurable	Push-in	2902040*)	-30 30 V						
Analog IN/Analog OUT	IN → OUT	Screw	2901998	020 mA, 420 mA; IN = OUT	020 mA, 420 mA; IN = OUT					
nalog IN/	MINI MCR-2-I-I(-PT) 3-way signal conditioner, with fixed signal combinations	Push-in	2901999							
4	IN → U U G→ OUT	Screw	2902042	010 V, -1010 V; IN = OUT	010 V, -1010 V; IN = OUT					
	MINI MCR-2-U-U(-PT) 3-way signal conditioner with fixed signal combinations	Push-in	2902043							
	IN → U I O→ OUT	Screw	2902022	010 V	020 mA					
	MINI MCR-2-U-I0(-PT) 3-way signal conditioner with fixed signal combinations	Push-in	2902023							

The module can be snapped onto the DIN rail connector.

Ex n -	Ğ Ex nA nC IIC T4 Gc	Connection	Order No.	IN	OUT	Configuration: DIP switch	Configuration: software/app	Fault monitoring	Fault monitoring (DE)	Termination Carrier
	IN → U I G→ OUT	Screw	2902029	010 V	420 mA					
	MINI MCR-2-U-14(-PT) 3-way signal conditioner with fixed signal combinations	Push-in	2902030							
	IN → U G→ OUT	Screw	2902000	020 mA	010 V					
	MINI MCR-2-10-U(-PT) 3-way signal conditioner with fixed signal combinations	Push-in	2902001							
F	IN → OUT I	Screw	2902002	420 mA	010 V					
nalog OU	MINI MCR-2-14-U(-PT) 3-way signal conditioner with fixed signal combinations	Push-in	2902003						•	
Analog IN/Analog OUT	POWER ♣○ I I O→ OUT NFC	Screw	2902014	Isolator operation: 020 mA, 420 mA; IN = OUT Repeater power supply operation: 420 mA;	020 mA, 420 mA; IN = OUT					
Ø	MINI MCR-2-RPSS-I-I(-PT) Repeater power supply	Push-in	2902015	IN = OUT						
	IN → OUT1 U, 1 V, 1	Screw	2905026*)	024 mA (freely adjustable), 012 V (freely adjustable)	2 x 0 21 mA (freely adjustable), 2 x 0 10.5 V (freely adjustable)					
	MINI MCR-2-UNI-UI-2UI(-PT) Universal 4-way signal duplicator, configurable	Push-in	2905028*)			•				
	POWER ♣€ I G → OUT2 FM POWER	Screw	2905628	Isolator operation: 020 mA, 420 mA; IN = OUT Repeater power supply operation: 420 mA;	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT					
	MINI MCR-2-RPSS-I-2I(-PT) Repeater power supply, signal duplicator, HART-transparent	Push-in	2905629	4 Zu mA; IN = OUT		•			•	•



Ex n -	Web code: #0492 - for device installation in Zone 2 18: G Ex nA nC IIC T4 Gc					uration: DIP switch uration: software/app	Fault signaling via LED Fault monitoring (OC/SC/OV/UN/DE)	Fault monitoring (DE) Termination Carrier
		Connection	Order No.	IN	OUT	Config Config	Fault si Fault rr (OC/S0	Fault m
	IN → IN FC POWER → III → OUT	Screw	2901994	020 mA, 420 mA; IN = OUT	020 mA, 420 mA; IN = OUT			
	MINI MCR-2-I-I-ILP(-PT) Input-loop-powered 2-way isolator, 1-channel	Push-in	2901995					
	IN - ⊕	Screw	2901996	2 x 0 20 mA, 2 x 4 20 mA; IN = OUT	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT			
5	MINI MCR-2-2I-2I-ILP(-PT) Input-loop-powered 2-way isolator, 2-channel	Push-in	2901997					·
Analog IN/Analog OUT	POWER ← POWER NFC	Screw	2906446	020 mA, 420 mA; IN = OUT	020 mA, 420 mA; IN = OUT			
alog IN/A	MINI MCR-2-RPS-I-I-OLP(-PT) Output-loop-powered 2-way isolator, 1-channel	Push-in	2906447					·
An	N →	Screw	2906448	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT			
	MINI MCR-2-RPS-2I-2I-OLP(-PT) Output-loop-powered 2-way isolator, 2-channel	Push-in	2906449					•
	IN → U,I I OPOWER OF OUT	Screw	2902061	Unipolar and bipolar: 02 mA to 040 mA (16 ranges), 050 mV to 030 V (58 ranges)	420 mA			
	MINI MCR-2-UI-I-OLP(-PT) Output-loop-powered 2-way isolator	Push-in	2902063					
	IN → U.I. O→ OUT	Screw	2902049*)	IEC 751: Pt100, Pt200, Pt500, Pt1000; GOST 6651-2009: Pt100, Pt1000, Cu50, Cu100, Cu53; JIS C1604-1997: Pt100, Pt1000;	021 mA (freely adjustable), 010.5 V (freely adjustable)			
rature	MINI MCR-2-RTD-UI(-PT) Universal measuring transducer for 2-, 3-, 4-conductor RTD, configurable	Push-in	2902052*)	DIN 43760: Ni100, Ni1000; -200°C+850°C (depending on the sensor); Linear resistance: 04 kΩ		•		
Temperature	IN - D U,I O→ OUT	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	021 mA (freely adjustable), 010.5 V (freely adjustable)			
	MINI MCR-2-TC-UI(-PT) Universal measuring transducer for TC, configurable	Push-in	2905249*)	(depending on the sensor)		•		

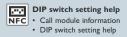
 $[\]ensuremath{^{*}\!\!}{}_{)}$ Versions can also be ordered pre-configured ex works. OC = open circuit, SC = short circuit,



OV = overrange, UN = underrange,

DE = device error

Ex n	Web code: #0492 – for device installation in Zone 2 ng: G Ex nA nC IIC T4 Gc					Configuration: DIP switch	nfiguration: software/app	Fault signaling via LED	(OC/SC/OV/UN/DE)	Fault monitoring (DE) Termination Carrier
		Connection	Order No.	IN	OUT	ပိ	ပိ	Fau		Fau
	IN → U,I O→ OUT	Screw	2902056	NAMUR proximity sensors, floating switch contacts, NPN/PNP transistor contacts, frequency generators, HTL encoders, PWM signals	Analog: 0 21 mA (freely adjustable), 0 10.5 V (freely adjustable) Digital:					
iency	MINI MCR-2-F-UI(-PT) Frequency transducer/limit value switch, configurable	Push-in	2902058	Frequency input: 0.002 200 kHz PWM input: 2 98%	1 N/O transistor output					
Frequency	IN → OUT	Screw	2902031	024 mA (freely adjustable), 012 V (freely adjustable)	Frequency: 010 kHz (freely adjustable); PWM output: 0100%; Digital:					
	MINI MCR-2-UI-FRO(-PT) Analog frequency transducer/limit value switch, configurable	Push-in	2902032		1 N/O transistor output, F/PWM output, can also be used as a second switch output	•	•	•	•	
ometer	IN → OUT	Screw	2902016	3-wire potentiometer: 100 Ω 100 k Ω , automatic detection	021 mA (freely adjustable), 010.5 V (freely adjustable)					
Potentiometer	MINI MCR-2-POT-UI(-PT) Potentiometer measuring transducer, configurable	Push-in	2902017			•	•	•	•	
Digital IN	IN → OUT	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					
Digit	MINI MCR-2-NAM-2RO(-PT) NAMUR signal conditioner, configurable	Push-in	2902005			•		•	•	
	IN → U, I → OH OUT	Screw	2902033	024 mA (freely adjustable), 012 V (freely adjustable)	1 PDT relay					
	MINI MCR-2-UI-REL(-PT) Limit value switch, configurable	Push-in	2902035			•	•	•	•	
Limit values	IN → O→ OUT	Screw	2905632	IEC 751: Pt100, Pt200, Pt500, Pt1000; GOST 6651-2009: Pt100, Pt1000, Cu50, Cu100, Cu53; JIS C1604-1997: Pt100, Pt1000;	1 N/O relay					
Limit	MINI MCR-2-T-REL(-PT) Universal limit value switch for 2-, 3-, 4-conductor RTD and TC, configurable	Push-in	2905633	DIN 43760: Ni100, Ni1000 -200°C +850°C (depending on the sensor) Linear resistance: 0 4 kΩ;		•			•	
	IN → OUT	Screw	2906876	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)	2 N/O transistor outputs					
	MINI MCR-2-T-2RO(-PT) Universal limit value switch for 2-, 3-, 4-conductor RTD and TC, configurable	Push-in	2906877			٠	•	•	•	



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

Ex n	Web code: #0492 – for device installation in Zone 2 ng: 3 G Ex nA nC IIC T4 Gc		Connection	Order No.	Description	Configuration: DIP switch	Configuration: software/app	Fault monitoring	(OC/SC/OV/UN/DE) Fault monitoring (DE)	Termination Carrier
	IN → POWER U _{CV}	NFC	Screw	2902064	Constant voltage/constant current source for potentiometers, measuring bridges, encoders, etc. Input: 9.630 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/					
	MINI MCR-2-CVCS(-PT) Constant voltage/ constant current source		Push-in	2902065	17.5 mA/15 mA/12.5 mA/10 mA/7.5 mA/5 mA/2.5 mA Can be set via DIP switch					
	OUT FM COUT	NFC	Screw	2902066	For redundant supply on the DIN rail connector Inputs: 9.930 V DC Output: max. 3.2 A; 9.629.7 V DC Monitoring of the supply possible in combination with fault monitoring					
Accessories	OUT MINI MCR-2-PTB(-PT) Feed-in terminal		Push-in	2902067						
Acces	IN PTB POWER OWER POWER PWWER PWWER	NFC	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					
	MINI MCR-2-FM-RC(-PT) Fault monitoring module		Push-in	2904508						
	IN -⊕ 1:1 ⊙≯ out	NFC	Screw	2902068	Feed-through terminal block for 1:1 forwarding of signals that are already electrically isolated in the MINI Analog Pro group					
	MINI MCR-2-TB Feed-through terminal block 1:1 connection		Push-in	-						



Order configuration

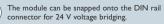
Order your desired device configuration easily and flexibly:

- Use the order key from the catalog
- User-guided through our website

www.phoenixcontact.net/catalog

DE = device error





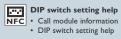


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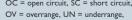
Ex n	Web code: #1141 – for device installation in Zone 2 ng: G Ex nA nC IIC T4 Gc						Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	mination Carrier
		Connection	Order No.	SIL	IN	OUT	ပိ	ပိ	Fau	ğΟ	- F
	IN ♣ U.I O≯ OUT	Screw	2811446		Unipolar: 050 mV to 0100 V, 01 mA to 010 mA Bipolar: -5050 mV to -100100 V, -11 mA to -100100 mA	Unipolar: 050 mV to 0100 V, 01 mA to 010 mA Bipolar: -5050 mV to -100100 V, -11 mA to -100100 mA					
	MACX MCR-UI-UI(-SP)-NC Universal 3-way signal conditioner, configurable, overall width: 12.5 mm	Push-in	2811556	2	Live zero: 1 5 mA, 2 10 mA, 4 20 mA, 1 5 V, 2 10 V	Live zero: 1 5 mA, 2 10 mA, 4 20 mA, 1 5 V, 2 10 V				•	•
	IN → U,I U,I O→ OUT	Screw	2811297	2	Unipolar: 050 mV to 0100 V, 01 mA to 010 mA Bipolar: -5050 mV to -100100 V,-11 mA to -100100 mA	Unipolar: 02.5 V, 05 V, 010 V, 05 mA, 010 mA, 020 mA Bipolar: -2.52.5 V, -55 V, -1010 V, -55 mA, -1010 mA, -2020 mA					
	MACX MCR-UI-UI-UP(-SP)-NC Universal 3-way signal conditioner, configurable, overall width: 12.5 mm	Push-in	2811569	-	Live zero: 1 5 mA, 2 10 mA, 4 20 mA, 1 5 V, 2 10 V	Live zero:5 mA,10 mA, 420 mA, 0.52.5 V, 15 V, 210 V					
L	POWER ♣⊖ I I G→ OUT	Screw	2865955	2	Input isolator operation: 420 mA, (020 mA); Repeater power supply operation: 420 mA;	020 mA, 420 mA; IN = OUT					
nalog OU	MACX MCR-SL-RPSSI-I(-SP) Repeater power supply and input signal conditioner, HART-compatible, overall width: 12.5 mm	Push-in	2924207	2	Transmitter supply voltage: > 16 V (20 mA)					•	•
Analog IN/Analog OUT	POWER ♣○ IN ♣ POWER POWER	Screw	2924825	2	Input isolator operation: 420 mA (020 mA) Repeater power supply operation: 420 mA	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT					
⋖	MACX MCR-SL-RPSSI-2I(-SP) Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Push-in	2924838	2	Transmitter supply voltage: > 16 V (20 mA)				•	•	
	POWER ♣⊖ I I G → OUT	Screw	2865968		Input isolator operation: 420 mA (020 mA) Repeater power supply operation: 420 mA	420 mA (020 mA) active/passive, 15 V (05 V); IN = OUT					
	MACX MCR-SL-RPSSI-I-UP(-SP) Repeater power supply and input signal conditioner, HART-compatible, overall width: 17.5 mm	Push-in	2924210	2	Transmitter supply voltage: > 16 V (20 mA)				•	•	
	POWER ←	Screw	2904089		Repeater power supply operation: 2 × 4 20 mA Transmitter supply voltage: > 16 V (20 mA) per channel	2 × 4 20 mA; IN = OUT Load: ≤ 450 Ω (20 mA)					
	MACX MCR-SL-RPSS-2I-2I(-SP) Repeater power supply and input signal conditioner, 2-channel, HART-compatible, 12.5 mm	Push-in	2904090	3					•		





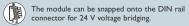
Ex n	i Ğ Ex nA nC IIC T4 Gc	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
	IN - POWER → I I GP OUT	Screw	2905278	3	020 mA, 420 mA; IN = OUT	020 mA, 420 mA; IN = OUT					
	MACX MCR-SL-I-I-ILP(-SP) Input-loop-powered 2-way isolator, 1-channel	Push-in	2905279	3							
F	N - ⊕	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					
Analog IN/Analog OUT	MACX MCR-SL-2I-2I-ILP(-SP) Input-loop-powered 2-way isolator, 2-channel	Push-in	2905281	3							
Analog IN//	IN- POWER → I O→ OUT	Screw	2907704	3	020 mA, 420 mA; IN = OUT	020 mA, 420 mA; IN = OUT					
	MACX MCR-SL-I-I-HV-ILP(-SP) Input-loop-powered 2-way isolator, 1-channel, test voltage 5 kV	Push-in	2907705	3							
	N - ⊕	Screw	2907706	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					
	MACX MCR-SL-2I-2I-HV-ILP(-SP) Input-loop-powered 2-way isolator, 2-channel, test voltage 5 kV	Push-in	2907707	3							
Analog OUT	◆○ OUT I I POWER IN	Screw	2865971	2	420 mA (020 mA) IN = OUT With line fault detection	420 mA (020 mA) IN = OUT With line fault detection					
Analog	MACX MCR-SL-IDS-I(-SP) Output signal conditioner, HART-compatible, overall width: 12.5 mm	Push-in	2924223	2						•	·

 $[\]ensuremath{^{\circ}}\xspace$ Versions can also be ordered pre-configured ex works. OC = open circuit, SC = short circuit,



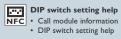
DE = device error







Ex n	Web code: #1141 – for device installation in Zone 2 ng: G Ex nA nC IIC T4 Gc						Configuration: DIP switch	Configuration: software	t signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
		Connection	Order No.	SIL	IN	OUT	S	S	Faul	Faul O	Tem
	IN → U,I POWER O→ OUT	Screw	2811394	2	RTD: PT10 PT10000, Ni10 Ni10000, Cu10, Cu53, KTY TC1): 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	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital: 1 PDT relay					
	MACX MCR-T-UI-UP(-SP) Universal temperature transducer, with limit value relay, configurable	Push-in	2811860		Linear resistance: $050 \text{ k}\Omega$ $\pm 1000 \text{ mV}, \pm 20 \text{ mA}^{2)}$,					
	IN ⊕ U,I O→ OUT	Screw	2811378	2	RTD: PT10 PT10000, Ni10 Ni10000, 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: 050 kΩ	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and					
Temperature	MACX MCR-T-UIREL-UP(-SP) Universal temperature transducer, with three limit value relays, configurable	Push-in	2811828	£	Linear resistance: $050 \text{ k}\Omega$ ±1000 mV, ±20 mA ²⁾	3 functionally safe					
Tempe	IN → OUT	Screw	2865078		RTD: PT50, PT100, PT200, PT500, PT100S, PT500S, Ni100, Ni500, Cu50, Cu53 Potentiometer: $0\dots2000~\Omega$	020 mA, 420 mA					
	MACX MCR-SL-RTD-I(-SP)NC Temperature transducer for RTD sensors, configurable, overall width: 12.5 mm	Push-in	2924320		Linear resistance: 02000Ω			•	•	•	
	IN → OUT	Screw	2924346		TC: type E, J, K, N, L Voltages: -20 mV70 mV	020 mA, 420 mA					
	MACX MCR-SL-TC-I-NC Temperature transducer for TC sensors, configurable, overall width: 12.5 mm	Push-in						•	•	•	
	IN → U,I O→ OUT	Screw	2811394		RTD: PT10 PT10000, Ni10 Ni10000, 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	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital:					
ometer	MACX MCR-T-UI-UP(-SP) Universal temperature transducer, with limit value relay, configurable	Push-in	2811860	2	Potentiometer: $050 \text{ k}\Omega$ Linear resistance: $050 \text{ k}\Omega$ $\pm 1000 \text{ mV}, \pm 20 \text{ mA}^2$	1 PDT relay		•	•	•	
Potentiometer	IN → U,I O→ OUT	Screw	2811378	2	RTD: PT10 PT10000, Ni10 Ni10000, 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	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital: 2 PDT relays combination of relay 2 and					
	MACX MCR-T-UIREL-UP(-SP) Universal temperature transducer, with three limit value relays, configurable, overall width: 35.0 mm	Push-in	2811828	2	Potentiometer: 050Ω Linear resistance: $050 k\Omega$ $\pm 1000 \text{ mV}$, $\pm 20 \text{ mA}^2$	3 PDT relays, combination of relay 2 and 3 functionally safe		•	•	•	



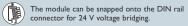
i	W eb code: #1141								Ī		
Marki	– for device installation in Zone 2 ng: 5 G Ex nA nC IIC T4 Gc						Configuration: DIP switch	Configuration: software	ignaling via LED	Fault monitoring (OC/SC)	Termination Carrier
		Connection	Order No.	SIL	IN	OUT	Config	Config	Fault s	Fault r (OC/S	Termin
	IN → OUT	Screw	2865997	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched on/off	1 PDT relay 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)					
	MACX MCR-SL-NAM-R(-SP) NAMUR signal conditioner, PDT output, overall width: 12.5 mm	Push-in	2924252	-	On/off Direction of action can be selected						
	IN → OUT2 POWER O→ OUT2	Screw	2865010	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched	2 N/O relays 250 VAC (2A), 120 VDC (0.2A), 30 VDC (2A) Signal output 2 can also be configured as					
	MACX MCR-SL-NAM-2RO(-SP) NAMUR signal conditioner, two N/O outputs, overall width: 12.5 mm	Push-in	2924265	2	on/off Direction of action can be selected	an error message output	•		•	•	
	IN1- ODE ODE ODE O	Screw	2865049	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched	1 N/O relay per channel 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)				•	
Z e	MACX MCR-SL-2NAM-RO(-SP) NAMUR signal conditioner, two-channel, N/O output, overall width: 12.5 mm	Push-in	2924294	2	on/off Direction of action can be selected		ľ		•	•	
Digital IN	IN1- ODE C ODE ODE OD	Screw	2865052		NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched 1 PDT relay per channel 250 V AC (2 A), 120 V DC (0.2 A), 30 V DC (2 A)						
	MACX MCR-SL-2NAM-R-UP(-SP) NAMUR signal conditioner, two-channel, PDT output, overall width: 17.5 mm	Push-in	2924304	2	on/off Direction of action can be selected		•		•	•	
	IN → OUT2 POWER O→ OUT2	Screw	2865023		NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched	2 transistor outputs, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz					
	MACX MCR-SL-NAM-2T(-SP) NAMUR signal conditioner, two transistor outputs, overall width: 12.5 mm	Push-in	2924278	2	on/off Direction of action can be selected	Signal output 2 can also be configured as an error message output	·		•	•	
	IN1- OF K O OUT1 N2- OW OUT2 OW OUT2	Screw	2865036	2	NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched	1 transistor output per channel, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz					
	MACX MCR-SL-2NAM-T(-SP) NAMUR signal conditioner, two-channel, transistor output, overall width: 12.5 mm	Push-in	2924281	2	on/off Direction of action can be selected	Switching behavior configurable via DIP switch	·		•	•	

 $[\]ensuremath{^{\circ}}\xspace$ Versions can also be ordered pre-configured ex works. OC = open circuit, SC = short circuit,



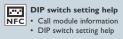
DE = device error







Ex i – Zone Markii & II (Web code: #1142 I for intrinsically safe circuits up to 0 (gas) and Zone 20 (dust) 19: 19: 10 G [Ex ia Ga] IIC 1) D [Ex ia Da] IIIC						Configuration: DIP switch	tion: software	Fault signaling via LED	itoring	n Carrier
Markii	– for device installation in Zone 2 ng: G Ex nA nC IIC T4 Gc	Connection	Order No.	SIL	IN	ОИТ	Configura	Configura	Fault signs	Fault mon	(OC/SC) Termination Carrier
	POWER ♣⊖ I I → OUT	Screw	2865340		Input [Ex ia] Input isolator operation: 420 mA (020 mA) Repeater power supply operation:	020 mA, 420 mA; IN = OUT					
	MACX MCR-EX-SL-RPSSI-I(-SP) Repeater power supply and input signal conditioner, HART-compatible, overall width: 12.5 mm	Push-in	2924016	2	420 mA Transmitter supply voltage: > 16 V (20 mA)				•	•	•
	POWER ♣○ IN ♣ POWER POWER	Screw	2865366	2	Input [Ex ia] Input isolator operation: 420 mA (020 mA) Repeater power supply operation:	2 x 0 20 mA, 2 x 4 20 mA; IN = OUT					
Analog IN	MACX MCR-EX-SL-RPSSI-2I(-SP) Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Push-in	2924236		420 mA Transmitter supply voltage: > 16 V (20 mA)				·	_	
Anal	POWER ← O I I O OUT POWER ← O II O OUT POWER ← O OUT POWER	Screw	2865382	3	Input [Ex ia] Repeater power supply operation 2 x 4 20 mA Transmitter supply voltage:	$2 \times 420 \text{ mA}$; IN = OUT Load: $\leq 450 \Omega (20 \text{ mA})$					
	MACX MCR-EX-SL-RPSS-2I-2I(-SP) Repeater power supply, two-channel, HART-compatible, overall width: 12.5 mm	Push-in	2924676	3	> 16 V (20 mA) per channel				·	·	
	POWER ♣○ IN ♣ POWER O→ OUT	Screw	2865793	2	Input [Ex ia] Input isolator operation: 420 mA (020 mA) Repeater power supply operation: 420 mA	420 mA (020 mA) active/passive, 15 V (05 V); IN = OUT					
	MACX MCR-EX-SL-RPSSI-I-UP(-SP) Repeater power supply and input signal conditioner, HART-compatible, overall width: 17.5 mm	Push-in	2924029	2	Transmitter supply voltage: > 16 V (20 mA)				•	•	
Analog OUT	4 ⊕ OUT I I POWER IN	Screw	2865405	2	420 mA (020 mA); IN = OUT With line break detection	Output [Ex ia] 420 mA (020 mA); IN = OUT With line break detection					
Analog	MACX MCR-EX-SL-IDSI-I(-SP) Output signal conditioner, HART-compatible	Push-in	2924032	2					•	•	





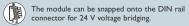
Ex i - Zone Markii II (II (Ex n -	1) G [Ex ia Ga] IIC 1) D [Ex ia Da] IIIC - for device installation in Zone 2	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
	IN-® OUT	Screw	2865654	2	Input [Ex ia] RTD: PT10PT10000, Ni10Ni10000, Cu10, Cu53, KTY TC 1): type B, E, J, K, N, R, S, T, L, U, C,	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital: 1 PDT relay					
	MACX MCR-EX-T-UI-UP(-SP) Universal temperature transducer, with limit value relay, configurable overall width: 17.5 mm	Push-in	2924689	-	D, A-1, A-2, A-3, M, L Potentiometer: $050 \text{ k}\Omega$ Linear resistance: $050 \text{ k}\Omega$ $\pm 1000 \text{ mV}$, $\pm 20 \text{ mA}^{2)}$						
	IN - D POWER O POWER O POWER	Screw	2865751	2	Input [Ex ia] RTD: PT 10 PT 10000, Ni 10 Ni 10000, Cu 10, Cu 53, KTY TC ¹⁾ : type B, E, J, K, N, R, S, T, L, U, C, D, A-1, A-2, A-3, M, L	Analog: 020 mA, -1010 V (freely scalable), 420 mA (functionally safe) Digital: 3 PDT relays, combination of relay 2 and				•	
Temperature	MACX MCR-EX-T-UIREL-UP(-SP) Universal temperature transducer, with 3 limit value relays, configurable overall width: 35.0 mm	Push-in	2924799	_	Potentiometer: $050 \text{ k}\Omega$ Linear resistance: $050 \text{ k}\Omega$ $\pm 1000 \text{ mV}, \pm 20 \text{ mA}^{2)}$	3 functionally safe					
Tempe	IN → OUT	Screw	2865573		Input [Ex ia] RTD: PT50, PT100, PT200, PT500, PT100S, PT500S, Ni100, Ni500, Cu50, Cu53	020 mA, 420 mA					
	MACX MCR-EX-SL-RTD-I-(-SP)-NC Temperature transducer for RTD sensors, configurable, overall width: 12.5 mm	Push-in	2924168		Potentiometer: $02000~\Omega$ Linear resistance: $02000~\Omega$						
	IN-⊕ 01 POWER OUT	Screw	2865586		Input [Ex ia] TC: type E, J, K, N, L Voltages: -20 mV 70 mV	020 mA, 420 mA					
	MACX MCR-EX-SL-TC-I Temperature transducer for TC sensors, configurable, overall width: 12.5 mm	Push-in							-		

^{*)} Versions can also be ordered pre-configured ex works. OC = open circuit, SC = short circuit,



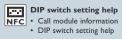
DE = device error







Ex i – Zone Markin	I) G [Ex ia Ga] IIC I) D [Ex ia Da] IIIC - for device installation in Zone 2	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
	IN → OUT	Screw	2865434	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit Line fault detection can be switched	1 PDT relay 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A)				•	
	MACX MCR-EX-SL-NAM-R(-SP) NAMUR signal conditioner, PDT output, overall width: 12.5 mm	Push-in	2924045	on/off	on/off Direction of action can be selected						
	IN → OUT1 POWER POWER	Screw	2865450		Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit	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					
	MACX MCR-EX-SL-NAM-2RO(-SP) NAMUR signal conditioner, 2 N/O outputs, overall width: 12.5 mm	Push-in	2924061	2	Line fault detection can be switched on/off Direction of action can be selected	an error message output	•		•	•	•
	IN1-⊕ ODE OUT1 IN2-⊕ ODE OUT2 POWER	Screw	2865476	2	Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit	1 N/O relay per channel 250 VAC (2 A), 120 VDC (0.2 A), 30 VDC (2 A)				•	
Digital IN	MACX MCR-EX-SL-2NAM-RO(-SP) NAMUR signal conditioner, two-channel, N/O output, overall width: 12.5 mm	Push-in	2924087	-	Line fault detection can be switched on/off Direction of action can be selected						
Digit	IN1 → OUT1 IN2 → POWER POWER O→ OUT2	Screw	2865984		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	250 VAC (2 A), 120 VDC (0.2 A),					
	MACX MCR-EX-SL-2NAM-R-UP(-SP) NAMUR signal conditioner, two-channel, PDT output, overall width: 17.5 mm	Push-in	2924249	2			•		•	•	•
	IN → OUT2	Screw	2865463		Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit	2 transistor outputs, passive Switching voltage/current: max. 30 V DC/50 mA Switching frequency: max. 5 kHz					
	MACX MCR-EX-SL-NAM-2T(-SP) NAMUR signal conditioner, single-channel, 2 transistor outputs, overall width: 12.5 mm	Push-in	2924074	2	Line fault detection can be switched on/off Direction of action can be selected	Signal output 2 can also be configured as an error message output	•		•	•	•
	IN1 →	Screw	2865489		Input [Ex ia] NAMUR proximity sensors Unconnected contacts or contacts with resistance circuit	1 transistor output per channel, passive Switching voltage/current: max. 30 VDC/50 mA Switching frequency: max. 5 kHz					
	MACX MCR-EX-SL-2NAM-T(-SP) NAMUR signal conditioner, two-channel, transistor output overall width: 12.5 mm	Push-in	2924090	2	Line fault detection can be switched on/off Direction of action can be selected	Switching behavior configurable via DIP switch	•		•	•	



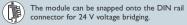
Ex i - Zone Marki II (Ex n - Marki	1) G [Ex ia Ga] IIC 1) D [Ex ia Da] IIIC – for device installation in Zone 2	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC)	Termination Carrier
	MACX MCR-EX-SL-NAM-NAM(-SP) NAMUR signal conditioner, output with resistive behavior, with line fault transparency, overall width: 12.5 mm	Screw Push-in	2866006 2924883	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 according to EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz			•		
Digital IN	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 Push-in	2905723 2905724	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 according to EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz			•	•	
	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 Push-in	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 according to EN 60947-5-6 Switching voltage: 8.2 VDC Switching frequency: max. 5 kHz	•		•	•	
	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 Push-in	2905669 2905674	3	Switching level 0 signal (L): 05 VDC Switching level 1 signal (H): 1530 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					
Digital OUT	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 Push-in	2906155 2906156	3	Switching level 0 signal (L): 05 VDC Switching level 1 signal (H): 1530 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			•		
	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 Push-in	2924867 2924870	3	Switching level 0 signal (L): 05 VDC Switching level 1 signal (H): 1530 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	•		•		

 $[\]ensuremath{^{\circ}}\xspace$ Versions can also be ordered pre-configured ex works. OC = open circuit, SC = short circuit,



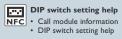
DE = device error







Ex i - Zone Markii II (II (Ex n- Markii	1) G [Ex ia Ga] IIC 1) D [Ex ia Da] IIIC – for device installation in Zone 2	Connection	Order No.	SIL	IN	OUT	Configuration: DIP switch	Configuration: software	Fault signaling via LED	Fault monitoring (OC/SC) Termination Carrier
	OUT ← IN MACX MCR-EX-SL-21-25-LP(-SP) Solenoid driver, loop-powered,	Screw	2865492	3	2030 VDC, 1070 mADC (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				
	current limitation at 25 mA, overall width: 12.5 mm	Push-in	2924113							
	OUT ♣Ð	Screw	2865764	3	2030 VDC, 1095 mADC (65 mA at Ue = 24 VDC)	Output [Ex ia] 10 VDC (at 40 mA) Current limitation: 40 mA Off-load voltage: 21.9 VDC				
Digital OUT	MACX MCR-EX-SL-21-40-LP(-SP) Solenoid driver, loop-powered, current limitation at 40 mA, overall width: 12.5 mm	Push-in	2924139			Internal resistance: 287 Ω				
Digita	OUT ♣Ð	Screw	2865609	3	2030 VDC, 1095 mADC (75 mA at Ue = 24 VDC)	Output [Ex ia] 10.5 V DC (at 48 mA) Current limitation: 48 mA Off-load voltage: 24 V DC Internal resistance: 276 Ω				
	MACX MCR-EX-SL-24-48-LP(-SP) Solenoid driver, loop-powered, current limitation at 48 mA, overall width: 12.5 mm	Push-in	2924126			internal resistance: 276 12				
	OUT ♣€	Screw	2865515	3	20 30 VDC, 10 105 mADC (95 mA at Ue = 24 VDC)	Output [Ex ia] 12.9 VDC (at 58 mA) Current limitation: 58 mA Off-load voltage: 21.9 V DC Internal resistance: 133 Ω				
	MACX MCR-EX-SL-21-60-LP(-SP) Solenoid driver, loop-powered, current limitation at 58 mA, overall width: 12.5 mm	Push-in	2924100							
	IN -⊕ POWER POWER POWER POWER POWER A POWER POWER A POWER POWER POWER A POWER PO	Screw	2865625		Voltage input signal: 2030 VDC 5 A/250 VAC fuse, can be replaced Redundant supply possible	Output current: 3.75 A Output voltage = input voltage max. 0.8 V at 3.75 A Switching output for error message:				
Accessories	MACX MCR-PTB-(-SP) Feed-in and fault signaling module	Push-in	2924184			1 PDT relay				
Acces	IN -⊕ OUT	Screw	2904970		No function For connecting unused intrinsically safe signal cables	No function For connecting unused signal cables				
	MACX MCR-EX- DUMMYISOLATOR-(-SP) Dummy module with no electrical function for connecting unused signal cables	Push-in	2905846							



- Configuration

 Call module information

 DIP switch setting help

 Module configuration

 Bluetooth communication

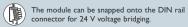
Product overview - MACX Safety signal conditioners with PL functional safety

Ex i - Zone Marki (a) II ((b) II (1) G [Ex ia Ga] IIC 1) D [Ex ia Da] IIIC – for device installation in Zone 2 ng: LG Ex nA nC IIC T4 Gc	Connection	Order No.	SIL	IN	OUT	Configuration: software Fault signaling via LED	Fault monitoring	Fault monitoring (DE)	Termination Carrier
Digital IN	POWER OF OUT2 POWER P	Screw	2904961	2	Input isolator operation: 420 mA Repeater power supply operation: 420 mA Transmitter supply voltage: > 16 V (20 mA)	2 × 0 20 mA, 2 × 4 20 mA; IN = OUT				•
	signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Push-in	2904962		RTD: PT10PT10000,	Analog:				
Digital OUT	IN → OP OUT	Screw	2904901	2	Ni10 Ni10000, 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: 050 k Ω Linear resistance: 050 k Ω	420mA, active Digital: 1 PDT relay, 1 PDT relay, functionally safe		•		
Digita	MACX PL-TUI-REL-UP(-SP) Universal temperature transducer, with limit value relay, configurable, overall width: 35.0 mm	Push-in	2904903		±1000 mV, ±20 mA ²⁾					

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

	POWER ← OUT2 POWER POWER POWER	Screw	2904959	2	Input [Ex ia] Input isolator operation: 420 mA Repeater power supply operation:	2 x 0 20 mA, 2 x 4 20 mA; IN = OUT
NI Bo	MACX PL-EX-RPSSI-2I(-SP) Repeater power supply and input signal conditioner with two outputs, HART-compatible, overall width: 12.5 mm	Push-in	2904960	2	420 mA Transmitter supply voltage: > 16 V (20 mA)	
Analog	POWER ← OUT PL d PDWER ← OUT PDWER ← OUT POWER ← OUT PUBLISHED ← OUT PUBL	Screw	2904963	3	Input [Ex ia] Repeater power supply operation: 420 mA per channel Transmitter supply voltage:	$2 \times 420 \text{mA};$ IN = OUT Load: ≤ 450 Ω (20 mA)
	MACX PL-EX-RPSS-2I-2I(-SP) Repeater power supply, two-channel, HART-compatible, overall width: 12.5 mm	Push-in	2904964	3	> 16 V (20 mA) per channel	
Temperature	IN-⊕ I O→ OUT	Screw	2904910	2	Input [Ex ia] RTD: PT10PT10000, Ni10Ni10000, 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	Analog: 4 20 mA, active Digital: 1 PDT relay, 1 PDT relay, functionally safe
Tempe	MACX PL-EX-TUI-REL-UP(-SP) Universal temperature transducer, with limit value relay, configurable, Overall width: 35.0 mm	Push-in	2904912	L	Potentiometer: $050 \text{ k}\Omega$ Linear resistance: $050 \text{ k}\Omega$ $\pm 1000 \text{ mV}, \pm 20 \text{ mA}^{2)}$	







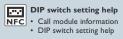
OC = open circuit, SC = short circuit,

OV = overrange, UN = underrange,

DE = device error

Product overview - Field Analog process indicators and field devices

i	Web code: #1140											
		Connection	Order No.	SIL	IN	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation	Control panel installation
	POWER U.I. U.I. → OUT	Screw			Current input: 020 mA, 05 mA, 420 mA Repeater power supply operation: > 16 V, 22 mA Voltage input:	Analog: 020 mA, 420 mA, 010 V, 210 V, 05 V, 15 V Digital: 2 PDT relays						
	FA MCR-D-TUI-UI-2REL-UP Multifunctional process indicator in control panel component housing, W x H x D: 96 x 48 x 151.8 mm	Push-in	2907064		010 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	2 PDT relays 1 transistor output, active						
cators	POWER U.I. → OUT POWER	Screw			Current input: 020 mA, 05 mA, 420 mA Repeater power supply operation: > 16 V, 22 mA	Analog: 020 mA, 420 mA, 010 V, 210 V, 05 V, 15 V Digital: 2 PDT relays,						
rocess indi	FA MCR-EX-D-TUI-UI-2REL-UP Multifunctional Ex i process indicator in control panel component housing, W x H x D: 96 x 48 x 175 mm	Push-in	2907216		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	1 transistor output, active						
Multifunctional process indicators	POWER U.I. U,I OP OUT	Screw			Current input: 020 mA, 05 mA, 420 mA Repeater power supply operation: > 16 V, 22 mA	Analog: 020 mA, 420 mA, 010 V, 210 V, 05 V, 15 V Digital:						
Multifu	FA MCR-FD-TUI-UI-2REL-UP Multifunctional process indicator in field housing, W x H x D: 199 x 160 x 96 mm	Push-in	2907780		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	2 PDT relays, 1 transistor output, active	•	•			•	
	POWER U.I → POWER POWER POWER	Screw			Current input: 020 mA, 05 mA, 420 mA Repeater power supply operation: > 16 V, 22 mA	Analog: 020 mA, 420 mA, 010 V, 210 V, 05 V, 15 V Digital:						
	FA MCR-EX-FD-TUI-UI-2REL-UP Multifunctional Ex i process indicator in field housing, W x H x D: 199 x 160 x 96 mm	Push-in	2907781		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	2 PDT relays, 1 transistor output, active	•	•			•	
	IN → U,I 0000d	Screw	2864011		Current input: 020 mA, 420 mA Voltage input: 010 V	5-digit 7-segment indicator, LED Minimum/maximum value storage						
icators	MCR-SL-D-U-I Process indicator for measuring and displaying standard signals, W x H x D: 48 x 24 x 68 mm	Push-in					•					•
LED indicators	IN → OUT	Screw	2864024		Dynamic counter input Dynamic set/reset input	6-digit 7-segment indicator, LED Optocoupler output: active with indicator value <= 0 This means that the device can be						
	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	Push-in				used as a simple forward counter in subtractive counting mode.						

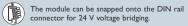


Product overview - Field Analog process indicators and field devices

i	Web code: #1140						uration: keyboard	Configuration: software	Configuration: HART	ail mounting	Field installation Control panel installation
		Connection	Order No.	SIL	IN	OUT	Config	Config	Config	Z Z	Field II
LED indicators	U _{rel} U _{rel} O→ OUT	Screw	2710314		4-digit 7-segment indicator, LED Automatic setpoint definition with hold function and 20 interpolation points, manual setpoint definition via direct input	0 24 mA, 0 12 V					
LED in	MCR-SL-D-SPA Digital setpoint adjuster for defining current and voltage signals, W x H x D: 48 x 24 x 68 mm	Push-in			put						
	IN → POWER → OUT	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					
	MCR-FL-HT-TS-LP-I-EX Ex i head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, HART-compatible	Push-in		2	туре в Е, ј, к, к, з, т, е, о			•	·	•	
evices	IN - IN - POWER O→ OUT	Screw	2864529		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B E, J, K, N, S, T, L, U	420 mA, 204 mA				•	
tor field d	MCR-FL-HT-T-I Head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Push-in									
s/2-conduc	IN ⊕ OPOWER ⊕ OUT	Screw	2864532		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B E, J, K, N, S, T, L, U	420 mA, 204 mA					
transducer	MCR-FL-HT-T-I-EX Ex i head-mounted temperature transducer for RTD, TC, resistance-type sensors and voltage sensors	Push-in			7,						
Head-mounted transducers/2-conductor field devices	IN → POWER C→ OUT	Screw	2864516		RTD: Pt100 (min. measuring span 10 K)	4 20 mA, 20 4 mA					
Head	MCR-SL-HT-PT100-I Head-mounted temperature transducer for Pt100 resistance thermometers, loop-powered	Push-in						•		•	
	IN → POWER → OUT	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					
	MCR-FL-TS-LP-I-EX Ex i temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered, HART-compatible	Push-in		2	7,F2 = = 1, 1, 14 1 14 15 11 E1 O			•	ľ	•	

^{*)} Versions can also be ordered pre-configured ex works.







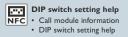
OC = open circuit, SC = short circuit,

OV = overrange, UN = underrange,

DE = device error

Product overview - Field Analog process indicators and field devices

i	Veb code: #1140	Connection	Order No.	SIL	ΙΝ	OUT	Configuration: keyboard	Configuration: software	Configuration: HART	DIN rail mounting	Field installation Control panel installation
rices	IN → OPOWER → OUT	Screw	2864574		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B E, J, K, N, S, T, L, U	420 mA, 204 mA					
cor field dev	MCR-FL-T-LP-I-EX Ex i temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered	Push-in			7,						
s/2-conduct	IN → I ← POWER → OUT	Screw	2864561		RTD: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu50, Cu100 TC: type B E, J, K, N, S, T, L, U	420 mA, 204 mA					
transducer	MCR-FL-T-LP-I Temperature transducer for RTD, TC, resistance-type sensors and voltage sensors, loop-powered	Push-in			7,						
Head-mounted transducers/2-conductor field devices	IN → I	Screw	2864558		RTD: Pt100 (min. measuring span 10 K)	4 20 mA, 20 4 mA					
Hea	MCR-SL-PT100-LP-I Temperature transducer for Pt100 resistance thermometers, loop-powered	Push-in					ľ	•		•	



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.

System adapter

MINI MCR-2-V8-FLK 16

Order No.: 2901993

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

Accessories for the highly compact MINI Analog Pro signal conditioners







DIN rail connector

ME 6,2 TBUS-2 1,5/5-ST-3,81 GY

Order No. 2695439

Gray, for two MINI Analog Pro modules each.

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.

NFC-USB-PROG-ADAPTER

Order No. 2900013

Programming adapter for wireless communication via NFC.

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 sticking onto 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.



Current transformer for retrofitting

PACT RCP-4000 A-UIRO-PT-D95

Order No. 2906234

Set with 300 mm coil length.

PACT RCP-4000 A-UIRO-PT-D140

Order No. 2906235

Set with 450 mm coil length.

PACT RCP-4000 A-UIRO-PT-D190

Order No. 2906236

Set with 600 mm coil length.

PACT RCP-CLAMP

Order No. 2904895

Coil holding device for busbars.



Termination Carrier

TC-D37SUB-ADIO16-MP-P-UNI

Order No. 2906639

Universal, for 16 MINI Analog Pro signal conditioners.

TC-D37SUB-AIO16-MP-PS-UNI

Order No. 2906640

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 k Ω .

EMG 30-SP-10K LIN

Order No. 2942124

Individual setpoint definition, resistance value 10 $\mbox{k}\Omega.$

EMG 30-SPK-10K LIN

Order No. 2942137

With preset setpoints, resistance value 10 $k\Omega$.

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 connector

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, see phoenixcontact.com



Test plug

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. 0201336

Test plug for 2.3 mm Ø socket hole, consisting of MPS-MT metal part and MPS-IH... color 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-120 Order No. 2905680 Order No. 2905679 MACX MCR-EX-I20

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 in the case of 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

TC-MACX-MCR-PTB

Order No. 2904673

Feed-in and fault signaling module, only for use on the Termination Carrier.

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 of 24 x 48 mm. Suitable for 35 mm DIN rails according to 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 according to 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.

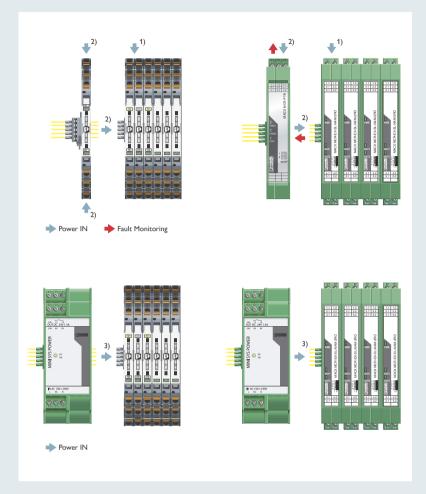


Power supply and diagnostics

Flexible feed-in

The DIN rail connector gives you three device supply options:

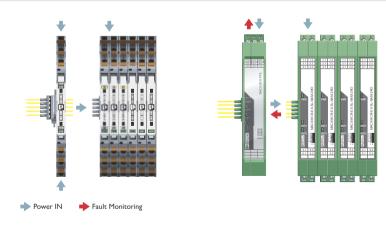
- 1) Direct feed-in on the module
 - · Without additional accessories
 - For up to 16*) MINI Analog Pro modules
 - For up to 32*) MACX modules
- 2) Feed-in via a feed-in module of the same shape
 - · Also allows redundant feed-in and supply monitoring
 - For up to 115*) MINI Analog Pro modules
 - For 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:

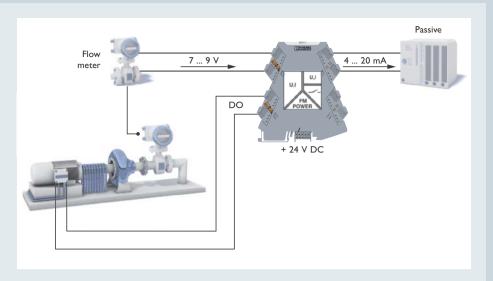
- · Open circuit
- Short circuit
- · Supply failure
- Measuring range overrange or underrange (MINI Analog Pro only)
- Fuse fault on the feed-in module (MACX only)



^{*)} 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.

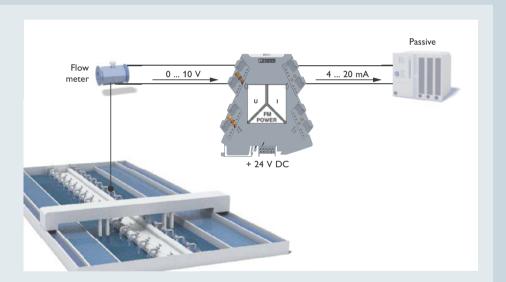
Flow monitoring and signaling using a 4-way signal conditioner

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



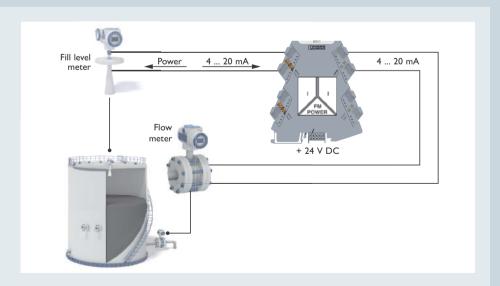
Flow monitoring using a 3-way signal conditioner

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

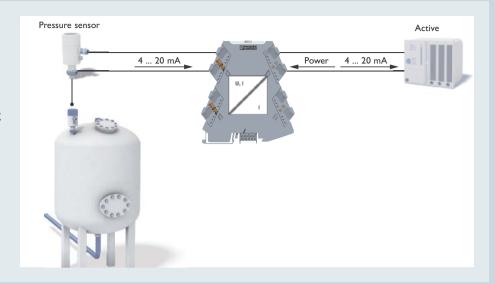
The repeater power supply supplies the transmitter located in the field and electrically isolates the input signal from the output signal. The device can be used in both isolator and repeater power supply operation.



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.

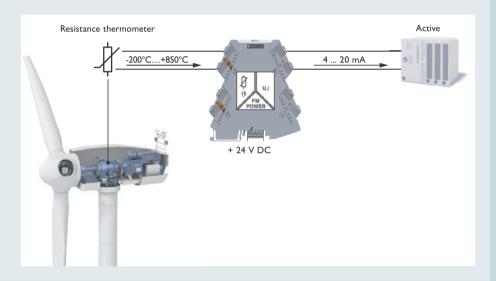
On the input side you can connect analog signals from 2 mA to 40 mA or from 50 mV to 30 V.



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.

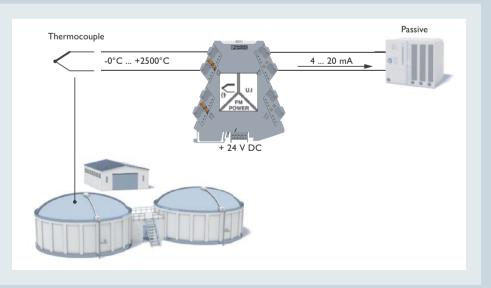
The individual measured temperature values are converted into a linear and freely adjustable current or voltage signal.



Temperature measurement using a thermocouple with temperature transducer

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

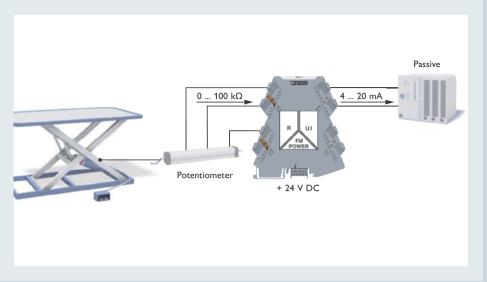
The individual measured temperature values are converted into a linear and freely adjustable current or voltage signal.



Potentiometer measurement using a measuring transducer

The configurable potiposition transducer with automatic potentiometer detection is used to connect potentiometers from 0 ... $100~\Omega$ to 0 ... $100~k\Omega.$

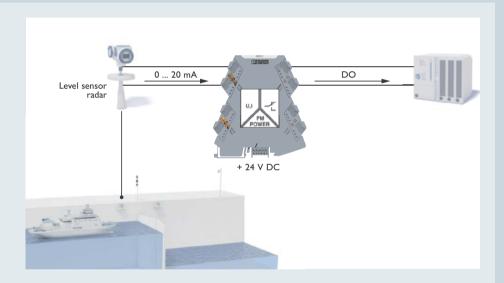
The individual position values are converted into a linear and freely adjustable current or voltage signal.



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.

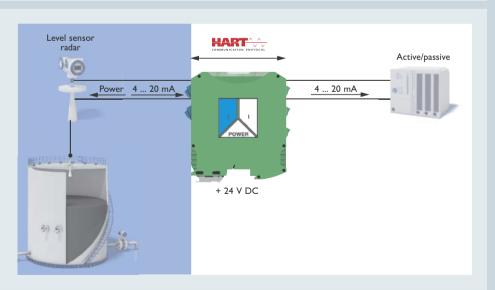
The PDT relay at the output switches loads of up to 250 V AC/DC and max. 6 A.



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

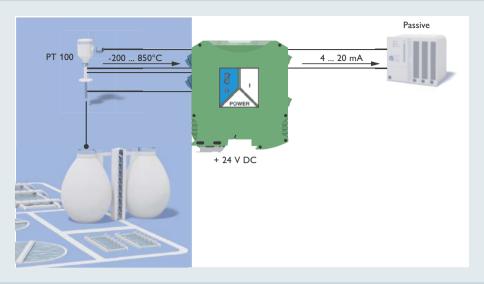
The repeater power supply and input signal conditioner is designed for the operation of intrinsically safe 2-, 3- or 4-conductor measuring transducers and mA sources installed in the Ex area.

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.



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

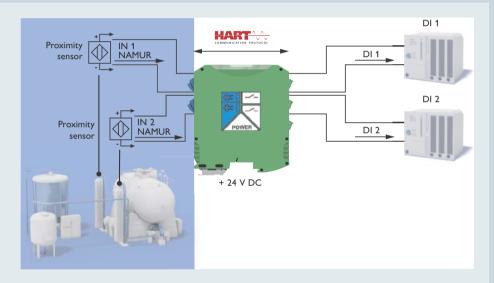
The programmable Ex i temperature transducer is designed for the intrinsically safe operation of resistance thermometers and remote resistance-type sensors installed in the Ex area. The measured values are converted into a linear 0/4 ... 20 mA signal to drive a non-intrinsically safe load.



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.

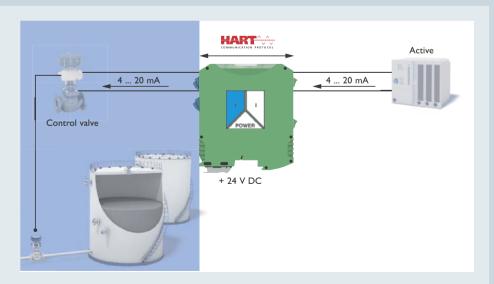
One changeover contact is available per channel as a signal output.



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.



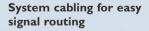
Discover more products for MCR technology from Phoenix Contact

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









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 for the clear marshalling of signals in automation 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.

i 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 company's innovation strength.

Quality down to the smallest detail

It is only when you keep sight of every little detail that you can be sure of the quality. 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.

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You will find our complete product range at: phoenixcontact.com

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