

# Signal conditioner - MINI MCR-2-I-I-PT - 2901999

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3-way signal conditioner with plug-in connection technology for the electrical isolation of analog signals. Input signal: 0(4) mA ... 20 mA, output signal: 0(4) mA ... 20 mA, push-in connection technology.

## Product Description

Standard signal 3-way signal conditioner with plug-in connection technology for the electrical isolation, conversion, amplification, and filtering of standard current signals. The measuring transducer supports fault monitoring and NFC communication.



## Key Commercial Data

Packing unit	1 STK
GTIN	
GTIN	4046356649506
Weight per Piece (excluding packing)	96.600 g
Custom tariff number	85437090
Country of origin	Germany

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Width	6.2 mm
Height	110.5 mm
Depth	120.5 mm

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

### Input data

# Signal conditioner - MINI MCR-2-I-I-PT - 2901999

## Technical data

### Input data

Number of inputs	1
Configurable/programmable	no
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
Input resistance current input	approx. 63 Ω (+ 0.7 V for test diode)

### Output data

Number of outputs	1
Configurable/programmable	no
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Max. output current	22 mA
Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 20 mV <sub>PP</sub> (at 600 Ω)
Transmission Behavior	1:1 to input signal

### Power supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715))
Typical current consumption	25 mA (24 V DC)
	54 mA (12 V DC)
Power consumption	≤ 800 mW (at 9.6 V DC)

### Connection data

Connection method	Push-in connection
Single conductor/terminal point, solid, with ferrule, min.	0.14 mm <sup>2</sup>
Single conductor/terminal point, solid, with ferrule, max.	2.5 mm <sup>2</sup>
Single conductor/terminal point, solid, without ferrule, min.	0.14 mm <sup>2</sup>
Single conductor/terminal point, solid, without ferrule, max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.14 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Min. AWG conductor cross section, flexible	24
Max. AWG conductor cross section, flexible	12
Stripping length	10 mm

### General

No. of channels	1
Maximum transmission error	0.1 % (of final value)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Limit frequency (3 dB)	approx. 30 Hz

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## Technical data

### General

Step response (10-90%)	approx. 10 ms
Protective circuit	Transient protection
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	300 V (effective)
Test voltage, input/output/supply	3 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	gray
Housing material	PBT
Mounting position	any
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6
Certificate of classification	DNV GL 14445-15HH
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

### EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5

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## Technical data

### Standards and Regulations

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R26	HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2

### Environmental Product Compliance

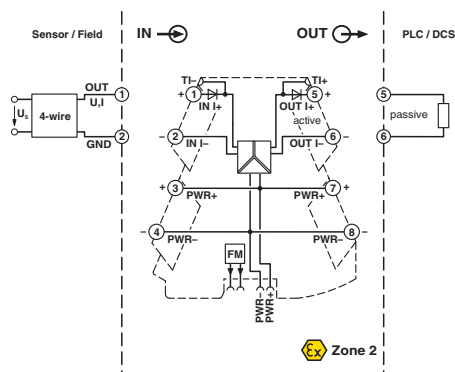
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

### Pictogram

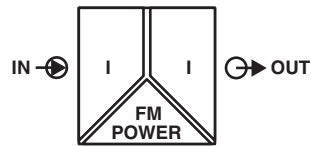


### Block diagram



# Signal conditioner - MINI MCR-2-I-I-PT - 2901999

Pictogram



## Classifications

eCl@ss

eCl@ss 4.0	27210120
eCl@ss 4.1	27210120
eCl@ss 5.0	27210120
eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002653
ETIM 6.0	EC002653

UNSPSC

UNSPSC 6.01	30211502
UNSPSC 7.0901	39121004
UNSPSC 11	39121004
UNSPSC 12.01	39121004
UNSPSC 13.2	39121008

## Approvals

Approvals

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UL Listed / cUL Listed / GL / cULus Listed

# Signal conditioner - MINI MCR-2-I-I-PT - 2901999

## Approvals

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Ex Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

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### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	14445-15 HH
cULus Listed			

## Accessories

### Accessories

#### Communication module

Communication module - MINI MCR-2-V8-MOD-RTU - 2905634



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/RTU network via a communication adapter.

Communication module - MINI MCR-2-V8-MOD-TCP - 2905635



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/TCP network via a communication adapter.

## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

Communication module - MINI MCR-2-V8-PB-DP - 2905636



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a PROFIBUS DP network via a communication adapter.

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### Device marking

Marker for end clamp - UCT-EM (30X5) - 0801505



Marker for end clamp, Sheet, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm

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Marker for end clamp - UCT-EM (30X5) YE - 0830340



Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm

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Plastic label - UC-EMLP (15X5) - 0819301



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) YE - 0822615



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, mounting type: adhesive, lettering field size: 15 x 5 mm

## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

#### Plastic label - UC-EMLP (15X5) SR - 0828095



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, mounting type: adhesive, lettering field size: 15 x 5 mm

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#### Plastic label - US-EMLP (15X5) - 0828790



Plastic label, Card, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm

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#### Plastic label - US-EMLP (15X5) YE - 0828873



Plastic label, Card, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm

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#### Plastic label - US-EMLP (15X5) SR - 0828874



Plastic label, Card, silver, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm

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### DIN rail connector

#### DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

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### Evaluation unit



## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

#### Monitoring module - MINI MCR-2-FM-RC - 2904504



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Screw connection technology, standard configuration

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#### Monitoring module - MINI MCR-2-FM-RC-PT - 2904508



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Push-in connection technology, standard configuration

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### Labeled device marker

#### Marker for end clamp - UCT-EM (30X5) CUS - 0801589



Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm

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#### Marker for end clamp - UCT-EM (30X5) YE CUS - 0830348



Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm

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#### Plastic label - UC-EMLP (15X5) CUS - 0824550



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

Plastic label - UC-EMLP (15X5) YE CUS - 0824551



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) SR CUS - 0828099



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - US-EMLP (15X5) CUS - 0830076



Plastic label, can be ordered: By card, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - US-EMLP (15X5) YE CUS - 0830077



Plastic label, can be ordered: By card, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - US-EMLP (15X5) SR CUS - 0830078



Plastic label, can be ordered: By card, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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### Power module

## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

Power terminal block - MINI MCR-2-PTB - 2902066



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Screw connection technology

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Power terminal block - MINI MCR-2-PTB-PT - 2902067



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Push-in connection technology

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### Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

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Power supply unit - MINI-PS-100-240AC/24DC/1.5/EX - 2866653



Primary-switched power supply MINI POWER for DIN rail mounting, input: 1-phase, output: 24 V DC/1,5 A, for the potentially explosive area

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### System adapter

System adapter - MINI MCR-2-V8-FLK 16 - 2901993



Eight MINI Analog Pro signal conditioners and measuring transducers can be connected to a controller with minimal cabling effort and without any errors using system adapters and system cabling.

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### Terminal marking

## Signal conditioner - MINI MCR-2-I-I-PT - 2901999

### Accessories

Marker strip - SK 5,0 WH:REEL - 0805221



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5 mm

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DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - 2695439



DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rails according to EN 60715