

Signal conditioner - MINI MCR-2-UI-UI-PT - 2902040

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3-way signal conditioner with plug-in connection technology and calibrated measuring range changeover, for the electrical isolation of unipolar and bipolar analog signals. Input/output configurable via DIP switch. push-in connection technology, standard configuration.

Product Description

The 3-way signal conditioner with plug-in connection technology and calibrated measuring range changeover can be configured using DIP switches and is used for the electrical isolation, conversion, amplification, and filtering of unipolar and bipolar standard and normalized signals. On the input side, the standard analog signals 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, 1 ... 5 V or -10 ... 10 V, and signals 2 ... 10 V, 0 ... 20 V, 4 ... 20 V, 0 ... 24 V, 0 ... 30 V, -5 ... 5 V, -20 ... 20 V, -24 ... 24 V, -30 ... 30 V and -20 ... 20 mA are available. On the output side, 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, 1 ... 5 V, -10 ... 10 V and -5 ... 5 V are possible. There is no need for adjustment following a measuring range changeover. The measuring transducer supports fault monitoring and NFC communication.



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356652063

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
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

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Ambient conditions

Degree of protection	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V ... 5 V (via DIP switch)
	1 V ... 5 V (via DIP switch)
	-5 V ... 5 V (via DIP switch)
	0 V ... 10 V (via DIP switch)
	2 V ... 10 V (via DIP switch)
	-10 V ... 10 V (via DIP switch)
	0 V ... 20 V (via DIP switch)
	4 V ... 20 V (via DIP switch)
	-20 V ... 20 V (via DIP switch)
	0 V ... 24 V (via DIP switch)
	4.8 V ... 24 V (via DIP switch)
	-24 V ... 24 V (via DIP switch)
	0 V ... 30 V (via DIP switch)
	6 V ... 30 V (via DIP switch)
	-30 V ... 30 V (via DIP switch)
Current input signal	0 mA ... 20 mA (via DIP switch)
	4 mA ... 20 mA (via DIP switch)
	-20 mA ... 20 mA (via DIP switch)
max. input voltage	33 V
Max. input current	24 mA
Input resistance of voltage input	> 1000 kΩ
Input resistance current input	approx. 63 Ω (+ 0.7 V for test diode)

Output data

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 5 V (via DIP switch)
	1 V ... 5 V (via DIP switch)
	-5 V ... 5 V (via DIP switch)
	0 V ... 10 V (via DIP switch)
	2 V ... 10 V (via DIP switch)
	-10 V ... 10 V (via DIP switch)
Current output signal	0 mA ... 20 mA (via DIP switch)
	4 mA ... 20 mA (via DIP switch)
Max. output current	22 mA

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Output data

Short-circuit current	< 32 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 20 mV _{PP} (at 600 Ω)
	< 20 mV _{PP} (at 600 Ω)

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 (Current output, at 24 V DC incl. load)
	54 mA (Current output, at 12 V DC incl. load)
Power consumption	≤ 800 mW (at I _{OUT} = 20 mA, 9.6 V DC, 600 Ω load)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.14 mm ² ... 2.5 mm ² (with ferrule)
	0.14 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.14 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)

General

No. of channels	1
Maximum transmission error	≤ 0.1 % (of final value)
	≤ 0.15 % (of final value, at IN: 4 ... 20 mA / OUT: -10 V ... 10 V)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Limit frequency (3 dB)	30 Hz (via DIP switch)
	5 kHz (via DIP switch)
Step response (10-90%)	< 8.5 ms (with 30 Hz filter)
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.

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General

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
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
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Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

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Environmental Product Compliance

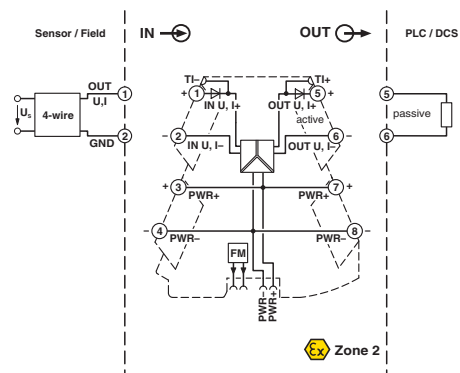
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

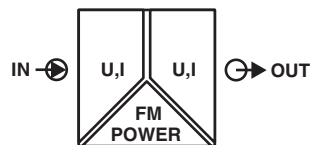
Pictogram



Block diagram



Pictogram



Approvals

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GL / UL Listed / cUL Listed / cULus Listed

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Approvals

Ex Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

Approval details

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

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