

MACX MCR-SL-IDS-I - Output signal conditioner



2865971

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Output signal conditioner, HART. Isolates and transmits 0/4 - 20 mA signals to a load (I/P converters, regulating valves, displays). Open-circuit detection, SIL 2 in accordance with IEC 61508, screw connection. Replacement item: 2908063 MACX MCR-IDS-I-I.

Your advantages

- Power supply possible via DIN rail connector
- Up to SIL 2 in accordance with EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Line fault detection (LFD)
- 3-way electrical isolation
- Plug-in screw or spring-cage connection technology (Push-in technology), with integrated sockets for HART communicators
- Bidirectional transmission of digital HART communication signals
- Input: 0/4 mA ... 20 mA
- Output: 0/4 mA ... 20 mA

Commercial data

Item number	2865971
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C402
Product key	DK1112
GTIN	4046356449540
Weight per piece (including packing)	175.2 g
Weight per piece (excluding packing)	140.9 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Product properties

Product type	Output signal conditioner
Application	Analog OUT
No. of channels	1
Type	Signal conditioners with SIL functional safety

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

Electrical isolation between input and output	yes
Signal transmission behavior	In = Out
Step response (10-90%)	< 140 µs (for 4 mA ... 20 mA step)
Maximum temperature coefficient	< 0.01 %/K
Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)

Electrical isolation Input/output/power supply

Rated insulation voltage	300 V _{rms}
Test voltage	1.5 kV AC (50 Hz, 60 s)

Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)
Max. current consumption	< 46 mA (24 V DC / 20 mA)
Power dissipation	< 1.1 W (24 V DC / 20 mA)

Input data

Signal: Current

Number of inputs	1
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA
Input impedance	> 100 kΩ (If there is a line fault)
Voltage drop	5.4 V (20 mA)

Output data

Signal: Current

Output description	Current output
Number of outputs	1
Current output signal	0 mA ... 20 mA 4 mA ... 20 mA

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Load/output load current output	< 800 Ω (20 mA)
	< 730 Ω (22.5 mA)
Output ripple	< 20 mV _{rms}

Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

Interfaces

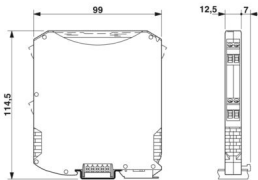
Data communication (bypass)

HART function	Yes
Protocols supported	HART

Signaling

Status display	Green LED (supply voltage)
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Dimensions

Dimensional drawing	
Width	12.5 mm
Height	112.5 mm
Depth	114.5 mm

Material specifications

Color	gray (RAL 7042)
Flammability rating according to UL 94	V0 (Housing)
Housing material	PA 6.6-FR

Characteristics

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	2
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Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	2
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
Note	and EN 61326-1

ATEX

Identification	Ex II 3 G Ex nA IIC T4 Gc X
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UL, USA/Canada

Identification	UL 508 Listed
	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4

Shipbuilding approval

Identification	C, EMC1
Certificate	DNV GL TAA00000AG

Safety Integrity Level (SIL, IEC 61508)

Identification	2
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Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2

Noise emission

Standards/regulations	EN 61000-6-4
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Electromagnetic HF field

Designation	Electromagnetic RF field
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Standards/regulations	EN 61000-4-3
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Mounting

Mounting type	DIN rail mounting
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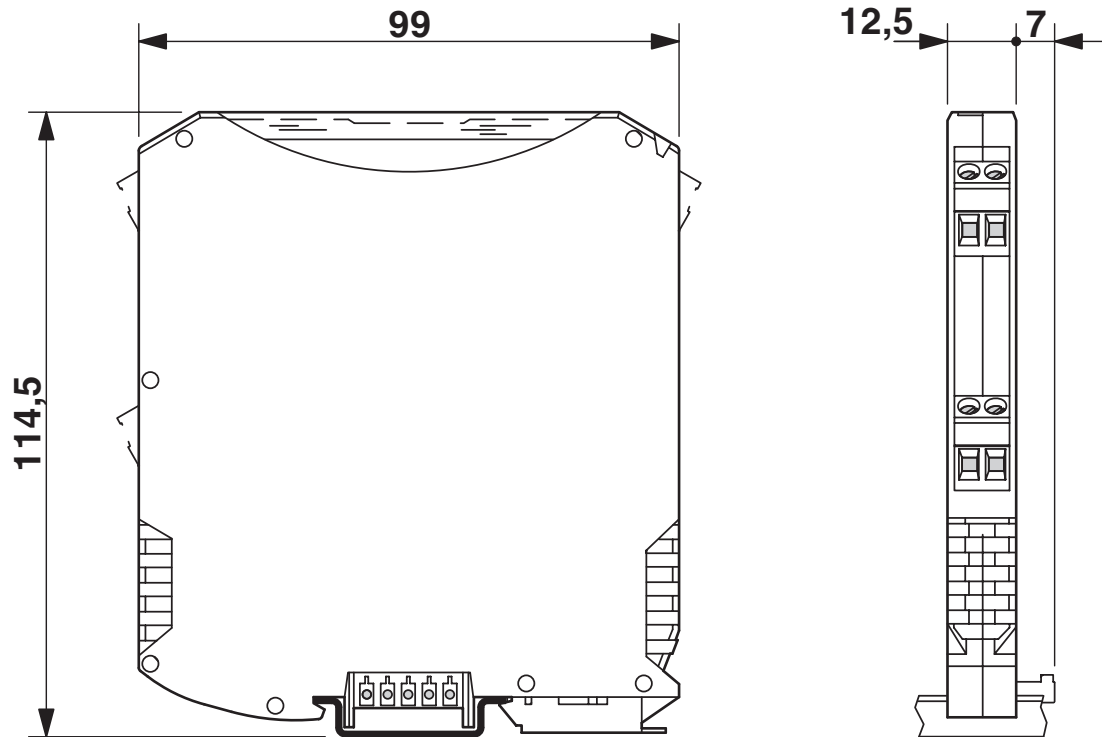
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Drawings

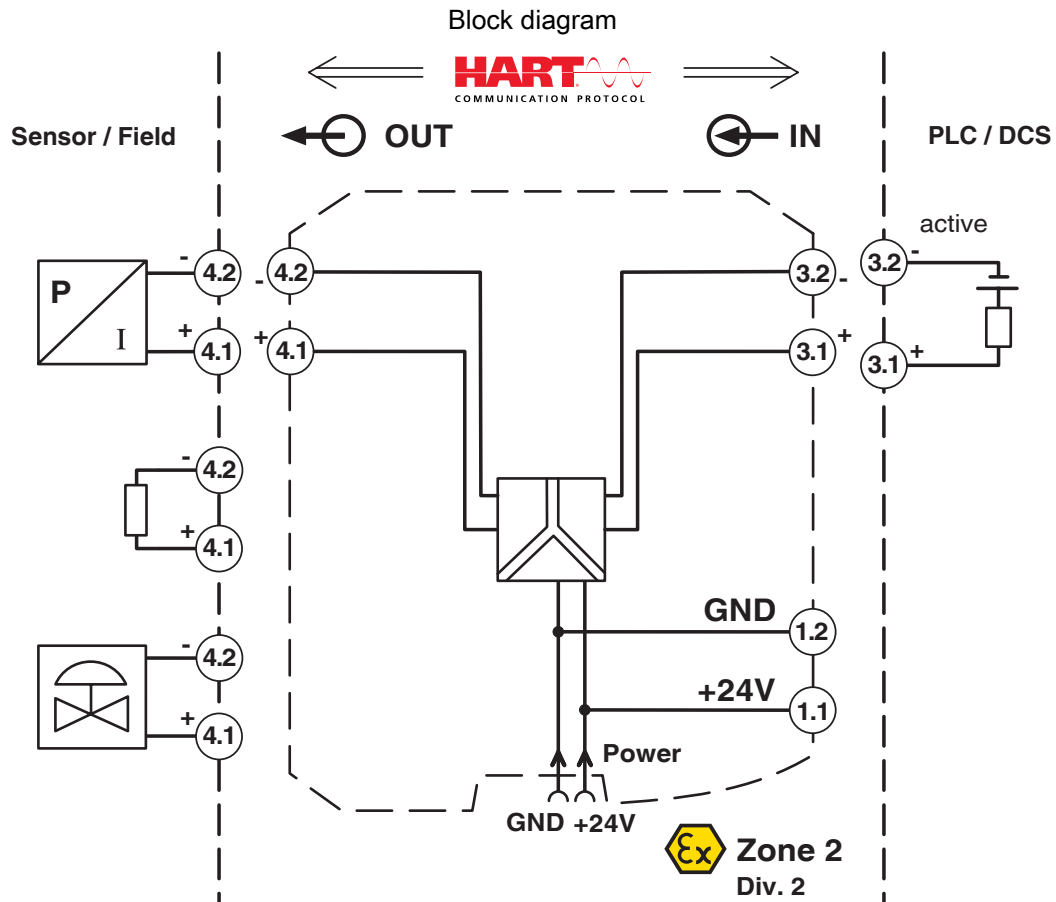
Dimensional drawing



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Classifications

UNSPSC

UNSPSC 21.0	39121008
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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