MACX MCR-EX-SL-IDSI-I-SP - Output signal conditioner

2924032

https://www.phoenixcontact.com/us/products/2924032

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.

Ex i output signal conditioner, HART. Isolates and transmits 0/4 - 20 mA signals with intrinsic safety to a load (I/P converters, regulating valves, displays) in the Ex area. Open-circuit detection, SIL 2 in accordance with IEC 61508, spring-cage connection. Replacement item: 2908062 MACX MCR-EX-IDS-I-I-SP.

Your advantages

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

Commercial data

Item number	2924032
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C430
Product key	DK1212
GTIN	4046356337342
Weight per piece (including packing)	170.9 g
Weight per piece (excluding packing)	137.8 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

Product type	Output signal conditioner
Application	Analog OUT
No. of channels	1

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

Electrical isolation	3-way isolation
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)

Electrical isolation Input/output/power supply

Test voltage	1.5 kV AC (50 Hz, 60 s)

Electrical isolation Output/input

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

Electrical isolation Output/supply

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

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 (intrinsically safe)
	4 mA ... 20 mA (intrinsically safe)
Load/output load current output	< 800 Ω (20 mA)
	< 730 Ω (22.5 mA)
Output ripple	< 20 mV_{rms}

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16

Ex data

Safety data

Max. output voltage U_o	27.7 V
Max. output current I_o	92 mA
Max. output power P_o	633 mW
Safety-related maximum voltage U_m	253 V AC (125 V DC)
IIC: Max. external inductivity L_o / Max. external capacitance C_o	2 mH / 85 nF
IIB: Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 663 nF

Interfaces

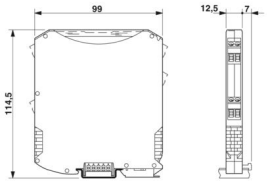
Data communication (bypass)

HART function	Yes
Protocols supported	HART

Signaling

Status display	Green LED (supply voltage)

Dimensions

Dimensional drawing	
Width	12.5 mm
Height	116 mm
Depth	114.5 mm

Material specifications

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

Characteristics

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	2

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	2

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 ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
Note	and EN 61326

ATEX

Identification	Ⓔx II (1) G [Ex ia Ga] IIC/IIB
	Ⓔx II (1) D [Ex ia Da] IIIC
	Ⓔx II 3(1) G Ex nA [ia Ga] IIC/IIB T4 Gc
Certificate	BVS 08 ATEX E 074 X

IECEx

Identification	[Ex ia Ga] IIC/IIB
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC/IIB T4 Gc
Certificate	IECEx BVS 08.0025 X

UL, USA/Canada

Identification	Class I Div 2; IS for Class I, II, III Div 1
Certificate	cULus C.D.-No 83104549

KC-s

Identification	[Ex ia] IIC/IIB
Certificate	17-KA4BO-0413X

Shipbuilding approval

Certificate	DNV GL TAA00000AG

Safety Integrity Level (SIL, IEC 61508)

Identification	2

EAC Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
Certificate	RU C-DE.AB72.B.00093/19

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
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	1 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	1 %

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	1 %

Standards and regulations

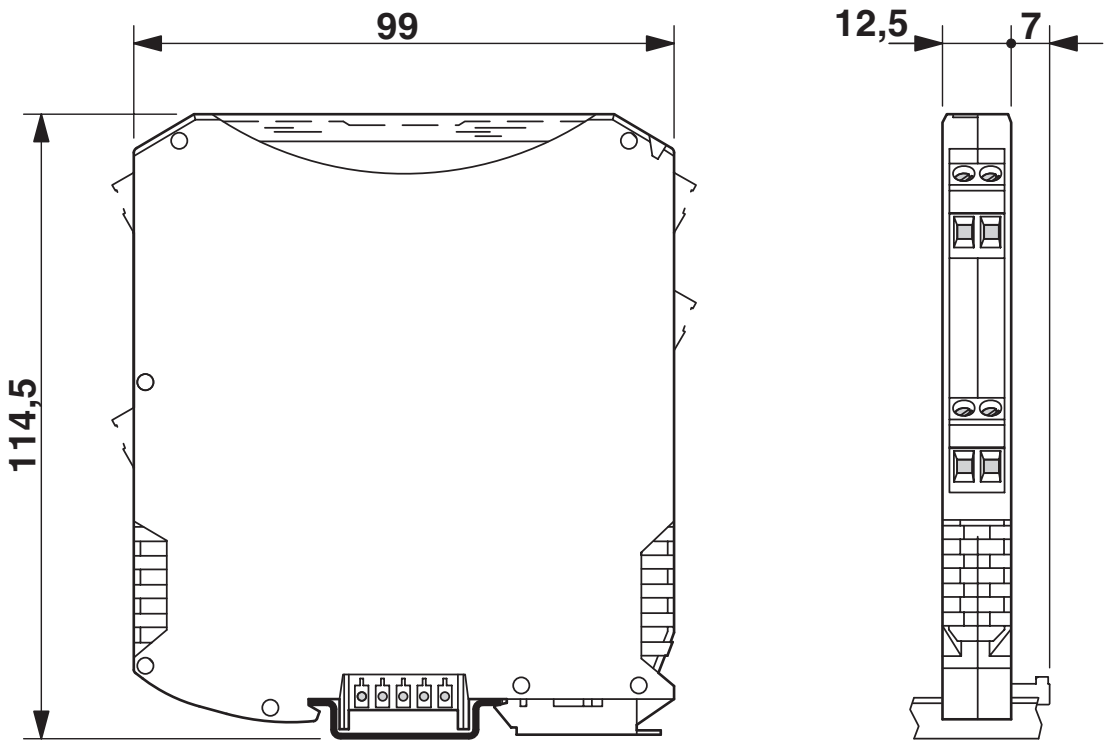
Electrical isolation	3-way isolation

Mounting

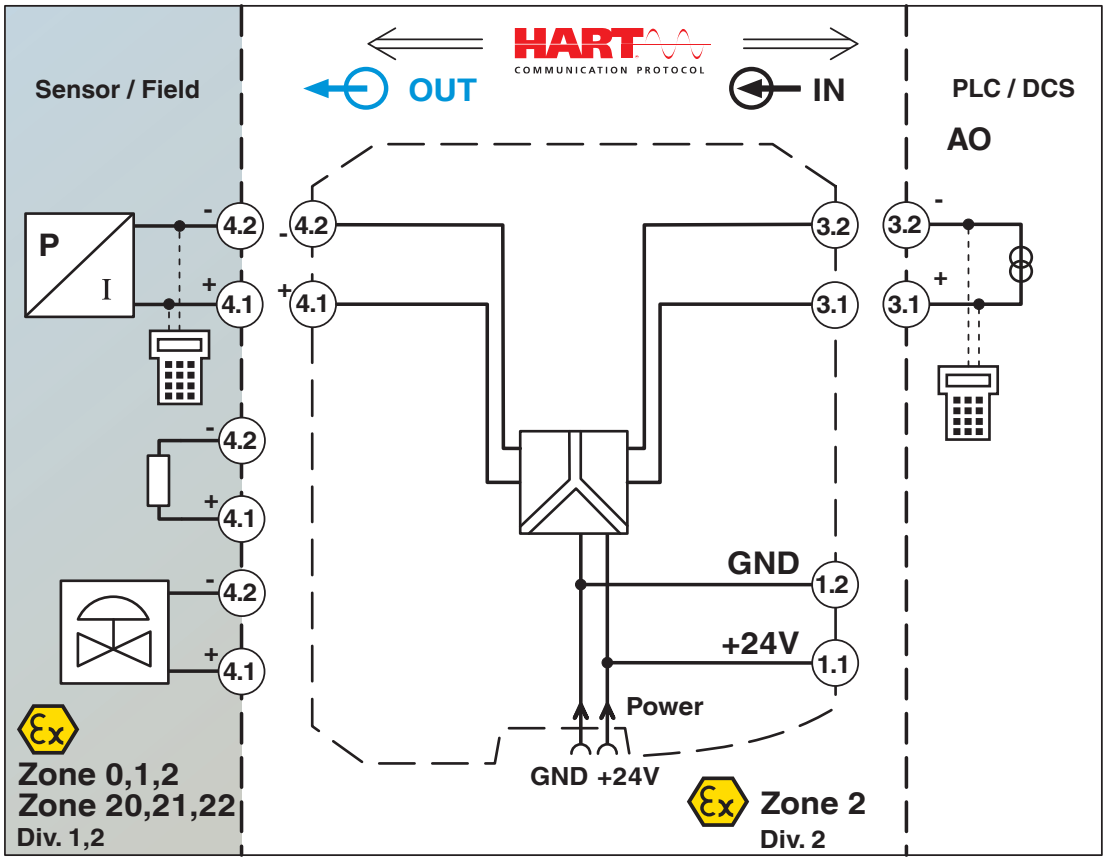
Mounting type	DIN rail mounting

Drawings

Dimensional drawing



Block diagram



Classifications

UNSPSC

UNSPSC 21.0	39121008

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%

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com