

Repeater power supply - MACX MCR-SL-RPSSI-2I-SP - 2924838

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Measuring transducer power supply and input isolating amplifier, HART-transparent. Transfers supplied or active 0/4 - 20 mA electrically isolated signals from the field to two loads. 4-way electrical isolation, SIL 2 according to IEC 61508, Push-in Technology

The illustration shows the versions with screw connection

Product Features

- ✔ Power supply possible via DIN rail connector
- ✔ Up to SIL 2 according to EN 61508
- ✔ Installation in zone 2, protection type "n" (EN 60079-15) permitted
- ✔ Plug-in screw or spring-cage connection technology (Push-in technology), with integrated sockets for HART communicators
- ✔ 0/4 ... 20 mA input (powered or not powered)
- ✔ Two electrically isolated 0/4 ... 20 mA (active) outputs
- ✔ 4-way electrical isolation
- ✔ Bidirectional transmission of digital HART communication signals (both outputs)



Key commercial data

package_quantity	1
GTIN	4046356572057

Technical data

Note:

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

Width	12.5 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (no condensation)

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Ambient conditions

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

Input data

Signal input	Repeater power supply operation
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 21.5 V (at 20 mA)
Transmitter supply voltage	> 21 V (at 23 mA)
Voltage drop	< 3.9 V (in input isolating amplifier operation)
Signal input	Isolating amplifier operation
Current input signal	0 mA ... 20 mA
Current input signal	4 mA ... 20 mA
Voltage drop	< 3.9 V

Output data

Signal output	Repeater power supply operation
Current output signal	4 mA ... 20 mA (active)
Load/output load current output	< 450 Ω (at 20 mA)
Load/output load current output	< 380 Ω (at 23 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input)
Output behavior in the event of an error	≥ 23 mA (Cable short-circuit in the input)
Signal output	Isolating amplifier operation
Current output signal	0 mA ... 20 mA (active)
Current output signal	4 mA ... 20 mA (active)
Load/output load current output	< 450 Ω (at 20 mA)
Load/output load current output	< 380 Ω (at 23 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input)
Output behavior in the event of an error	0 mA (Cable short-circuit in the input)

Power supply

Supply voltage range	19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%))
Max. current consumption	< 75 mA (at 24 V DC)
Power consumption	< 1.45 W (at 24 V DC / 20 mA)

Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	1.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	16

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Connection data

Stripping length	8 mm
Connection method	Spring-cage conn.

General

Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)
Maximum temperature coefficient	< 0.01 %/K
Step response (10-90%)	< 1.3 ms (for 4 mA ... 20 mA step)
Status display	Green LED (PWR supply voltage)
Inflammability class according to UL 94	V0
Housing material	PA 66-FR
Color	green
Name	Input/output/power supply
Electrical isolation	300 V _{rms} (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1))
Electrical isolation	2.5 kV (50 Hz, 1 min., test voltage)
Name	Output 1/output 2
Electrical isolation	1.5 kV AC (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II 3 G Ex nA IIC T4 Gc X
Functional safety (SIL)	SIL 2 according to EN 61508

Data communication (bypass)

HART function	Yes
Protocols supported	HART

EMC data

Name	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	3 %
Name	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	3 %
Name	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	3 %

classifications

eCl@ss

eCl@ss 4.0	27210120
eCl@ss 4.1	27210120
eCl@ss 5.0	27210120

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classifications

eCl@ss

eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120

ETIM

ETIM 2.0	EC001485
ETIM 3.0	EC001485
ETIM 4.0	EC001485
ETIM 5.0	EC002475

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

approvals

Functional Safety / Functional Safety /

Approval details

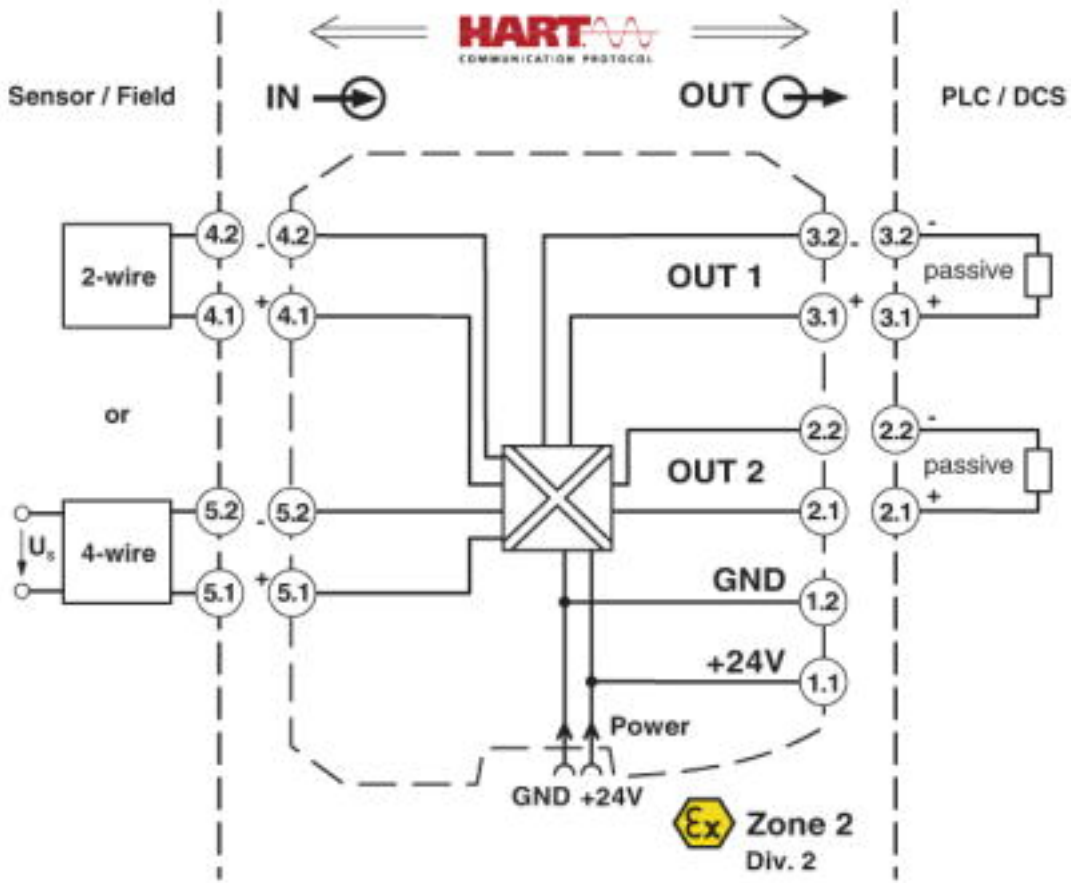
Functional Safety

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Drawings

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Block diagram



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