

# Repeater power supply - MACX MCR-SL-RPSSI-2I - 2924825

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Measuring transducer power supply and input isolating amplifier, HART-transparent. Transfers supplied or active 0/4-20 mA signals from the field galv. isolated to two burdens. Galvanic 4-way isolation, SIL 2 according to IEC 61508, 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
- Two electrically isolated 0/4 ... 20 mA (active) outputs
- Bidirectional transmission of digital HART communication signals (both outputs)
- 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)
- 4-way electrical isolation



## Key commercial data

<b>package_quantity</b>	1
<b>GTIN</b>	4046356572040

## Technical data

### Note:

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

<b>Width</b>	12.5 mm
<b>Height</b>	99 mm
<b>Depth</b>	114.5 mm

### Ambient conditions

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

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### Ambient conditions

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

### Input data

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

### Output data

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

### Power supply

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

### Connection data

<b>Conductor cross section solid min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	24
<b>Conductor cross section AWG/kcmil max</b>	14

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### Connection data

<b>Stripping length</b>	7 mm
<b>Screw thread</b>	M3
<b>Connection method</b>	Screw connection
<b>Tightening torque, min</b>	0.5 Nm
<b>Tightening torque max</b>	0.6 Nm

### General

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

### Data communication (bypass)

<b>HART function</b>	Yes
<b>Protocols supported</b>	HART

### EMC data

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

## classifications

eCI@ss

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## 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

### 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

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Functional Safety / Functional Safety /

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### Approval details

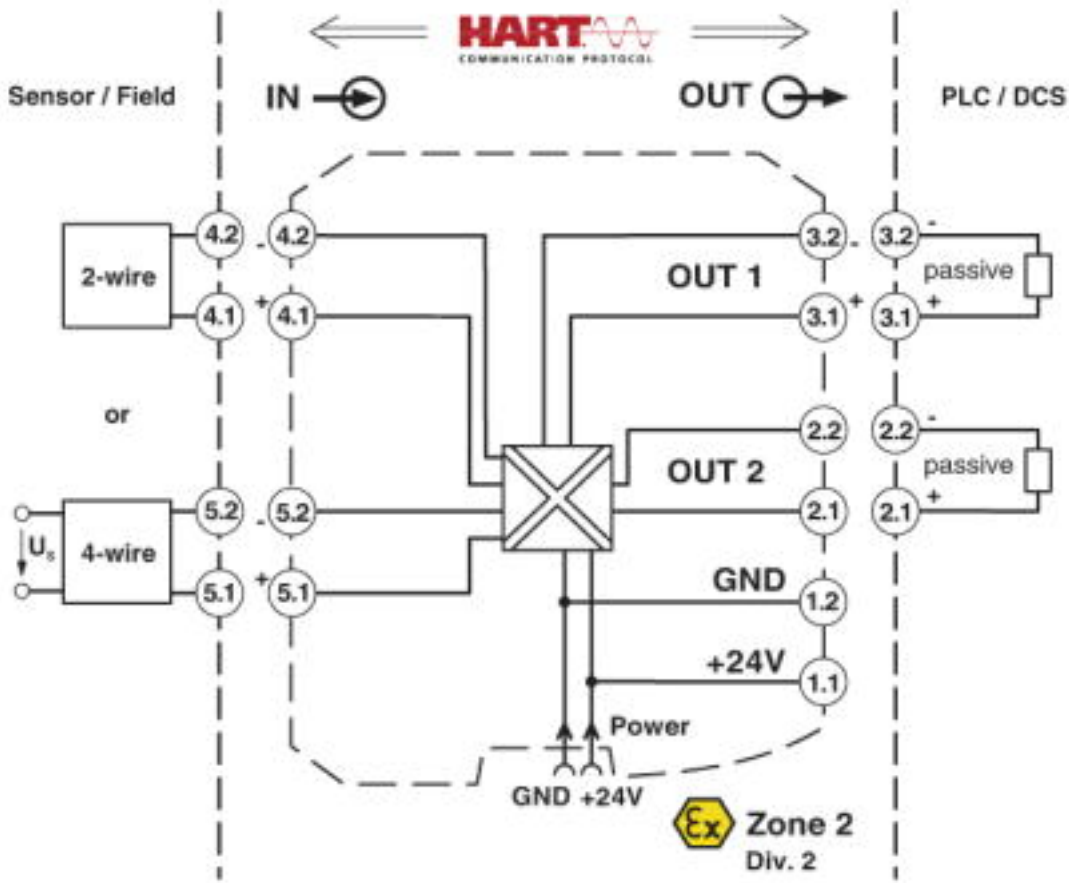
<b>Functional Safety</b>
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## Drawings

# Repeater power supply - MACX MCR-SL-RPSSI-2I - 2924825

Block diagram



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