

MACX PL-EX-RPSSI-2I-SP - Repeater power supply



2904960

<https://www.phoenixcontact.com/us/products/2904960>

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Ex-i measuring transducer repeater power supply and input signal conditioner, HART. Transfers supplied or active 4...20 mA electrically isolated signals from the Ex area to two loads in the safe area. 4-way electrical isolation, PLd, Push-in Technology. Replacement part: 2924236-MACX MCR-EX-SL-RPSSI-2I-SP

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2904960 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | C430 |
| Product key | DK1211 |
| GTIN | 4046356904520 |
| Weight per piece (including packing) | 197 g |
| Weight per piece (excluding packing) | 197 g |
| Customs tariff number | 85437090 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|-----------------|-----------------------|
| Product type | Repeater power supply |
| No. of channels | 1 |

Electrical properties

| | |
|---|---|
| Electrical isolation between input and output | yes |
| Step response (10-90%) | 1.3 ms (for jump 4 mA ... 20 mA, typical) |
| 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 | 2.5 kV AC (50 Hz, 60 s) |
| Overvoltage category | II |
| Degree of pollution | 2 |
| Insulation | Safe isolation in accordance with IEC/EN 61010-1 |

Electrical isolation Input/output

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

Electrical isolation Input/power supply

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

Electrical isolation Output 1/output 2

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

Supply

| | |
|--------------------------|--|
| Designation | Repeater power supply operation |
| Nominal supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %) |
| Max. current consumption | < 75 mA (24 V DC / 20 mA) |
| Power dissipation | < 1.45 W (24 V DC/20 mA) |

Supply

| | |
|------------------------------|--|
| Designation | Signal conditioner operation |
| Nominal 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 | < 1.2 W (24 V DC/20 mA) |

Input data

Signal: Repeater power supply operation

| | |
|--------------------------|---------------------------------|
| Description of the input | Repeater power supply operation |
| Number of inputs | 1 |

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| | |
|----------------------------|------------------|
| Current input signal | 4 mA ... 20 mA |
| Transmitter supply voltage | > 16 V (20 mA) |
| | > 15.1 V (23 mA) |

Signal: Signal conditioner operation

| | |
|--------------------------|------------------------------|
| Description of the input | Signal conditioner operation |
| Current input signal | 4 mA ... 20 mA |
| Voltage drop | approx. 3.9 V |

Output data

Signal: Repeater power supply operation

| | |
|--|---|
| Output description | Repeater power supply operation |
| Number of outputs | 2 |
| Current output signal | 4 mA ... 20 mA (active) |
| Load/output load current output | < 450 Ω (20 mA) |
| | < 380 Ω (23 mA) |
| Output ripple | < 20 mV _{rms} |
| Output behavior in the event of an error | 0 mA (Cable break in the input) |
| | \geq 23 mA (Cable short-circuit in the input) |

Signal: Signal conditioner operation

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

Connection data

| | |
|----------------------------------|---|
| Connection method | Push-in connection |
| Stripping length | 8 mm |
| Conductor cross-section rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |

Ex data

Safety data

| | |
|--|---------------------------------|
| Note | Repeater power supply operation |
| Max. output voltage U_o | 25.2 V |
| Max. output current I_o | 93 mA |
| Max. output power P_o | 587 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 / 107 nF |

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| | |
|--|---------------|
| IIB: Max. external inductivity L_o / Max. external capacitance C_o | 4 mH / 820 nF |
|--|---------------|

Safety data

| | |
|---------------------------------|------------------------------|
| Note | Signal conditioner operation |
| Input voltage U_i | ≤ 30 V |
| Input current I_i | ≤ 150 mA |
| Max. internal inductance L_i | negligible |
| Max. internal capacitance C_i | negligible |

Interfaces

Data communication (bypass)

| | |
|---------------------|------|
| HART function | Yes |
| Protocols supported | HART |

Signaling

| | |
|----------------|--------------------------------|
| Status display | Green LED (PWR supply voltage) |
|----------------|--------------------------------|

Dimensions

| | |
|--------|----------|
| Width | 12.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|--|-------------------|
| Color | yellow (RAL 1018) |
| Flammability rating according to UL 94 (Housing) | V0 (Housing) |
| Housing material | PA 6.6-FR |

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 | Ⓜ II (1) G [Ex ia Ga] IIC/IIB |
| | Ⓜ II (1) D [Ex ia Da] IIIC |
| | Ⓜ II 3 (1)G Ex nA [ia Ga] IIC/IIB T4 Gc |

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| | |
|-------------|---------------------|
| Certificate | BVS 10 ATEX E 143 X |
|-------------|---------------------|

IECEX

| | |
|----------------|-----------------------------|
| Identification | [Ex ia Ga] IIC/IIB |
| | [Ex ia Da] IIIC |
| | Ex nA [ia Ga] IIC/IIB T4 Gc |
| Certificate | IECEX BVS 10.0097X |

UL, USA/Canada

| | |
|----------------|---------------------|
| Identification | UL 61010 |
| Certificate | UL C.D.-No 83104549 |

Shipbuilding approval

| | |
|----------------|--------------------|
| Identification | C, EMC2 |
| Certificate | DNV GL 11 564-14HH |

Safety Integrity Level (SIL, IEC 61508)

| | |
|----------------|---|
| Identification | 2 |
|----------------|---|

Performance Level (ISO 13849)

| | |
|----------------|---|
| Identification | d |
|----------------|---|

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. |

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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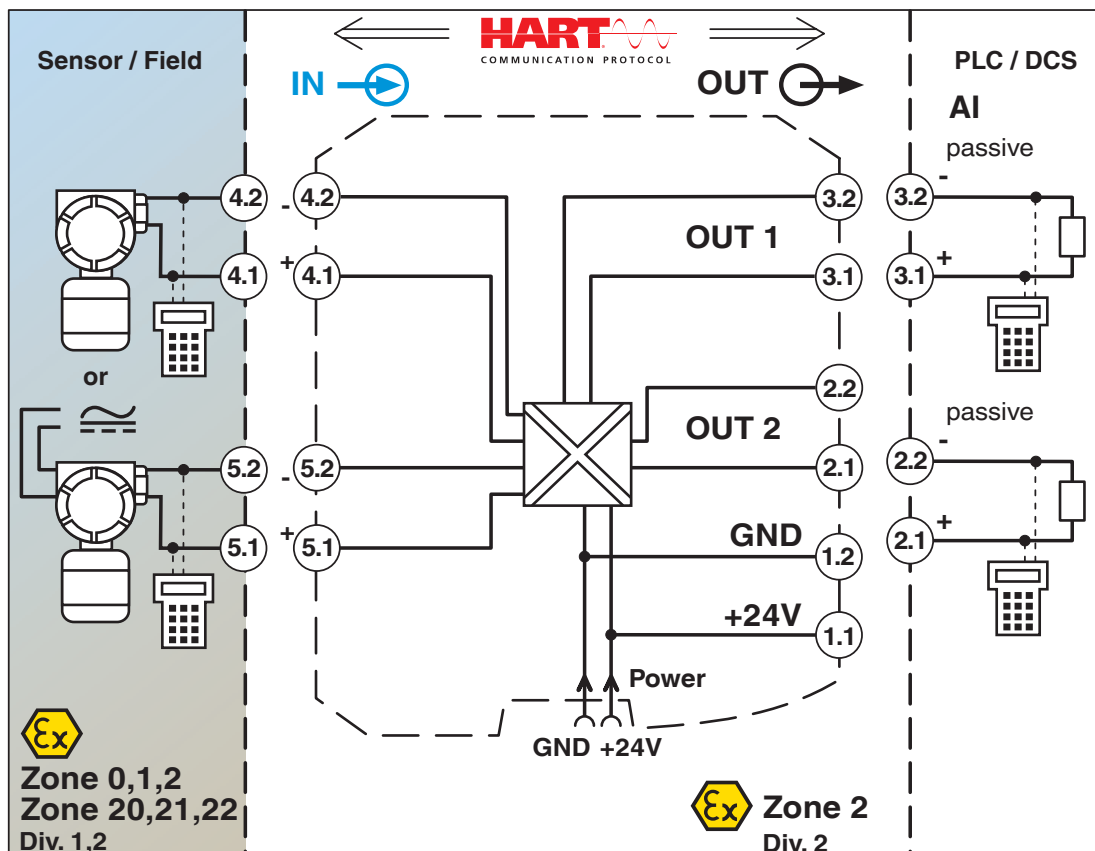


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Drawings

Block diagram



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Environmental product compliance

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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