

Signal isolator - MACX MCR-EX-SL-RPSS-2I-2I-SP - 2924676

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Ex i measuring transducer repeater power supply, 2-channel, HART-transparent. Supplies Ex i 2-conductor measuring transducers and transmits the 4...20 mA signal from the Ex area to the safe area. 5-way electrical isolation, Push-in connection, up to SIL 3, PL.

Your advantages

- ✓ 2-channel
- ✓ 4 mA ... 20 mA input, intrinsically safe, [Ex ia], powered
- ✓ Output 4 mA ... 20 mA, active
- ✓ HART-compatible
- ✓ Error indication according to NAMUR NE 43
- ✓ Up to SIL 3 according to IEC/EN 61508
- ✓ 5-way electrical isolation
- ✓ Power supply possible via DIN rail connector
- ✓ Installation in Ex zone 2 permitted
- ✓ Plug-in connection terminals, push-in connection technology
- ✓ Housing width: 12.5 mm
- ✓ Minimal power dissipation
- ✓ High transmission accuracy



Key Commercial Data

| | |
|--------------|---------------|
| Packing unit | 1 pc |
| GTIN | |
| GTIN | 4046356665483 |

Technical data

Note

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

Dimensions

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Technical data

Dimensions

| | |
|--------|----------|
| Width | 12.5 mm |
| Height | 116.8 mm |
| Depth | 113.7 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 % (non-condensing) |
| Degree of protection | IP20 (not assessed by UL) |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |

Input data

| | |
|---------------------------------|--------------------|
| Signal input | Intrinsically safe |
| Current input signal | 4 mA ... 20 mA |
| Transmitter supply voltage | > 16 V (at 20 mA) |
| Underload/overload signal range | 0 mA ... 24 mA |

Output data

| | |
|--|---|
| Signal output | Current output |
| Current output signal | 4 mA ... 20 mA (active) |
| Transmission Behavior | 1:1 to input signal |
| Load/output load current output | ≤ 450 Ω (20 mA) |
| | ≤ 375 Ω (24 mA) |
| Output behavior in the event of an error | < 3.6 mA (In the event of cable break at the input (as per NE 43)) |
| | > 22.5 mA (In the event of cable short circuit at the input (as per NE 43)) |

Power 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 | < 100 mA (24 V / 20 mA) |
| Power dissipation | < 1.4 W (at 24 V DC / 20 mA) |

Connection data

| | |
|----------------------------------|---|
| Connection method | Push-in connection |
| Stripping length | 8 mm |
| Conductor cross section solid | 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 |

Connection data 2

| | |
|-----------------|-------------|
| Connection name | Test socket |
| Max. diameter | 2.3 mm |

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Technical data

General

| | |
|---------------------------------|---|
| No. of channels | 2 |
| 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 (supply voltage) |
| Degree of pollution | 2 |
| Overvoltage category | II |
| Electromagnetic compatibility | Conformance with EMC directive |
| Interference emission | EN 61000-6-4 |
| Housing material | PA 6.6-FR |
| Color | gray |
| Designation | Input/output, power supply |
| | Input/output |
| Electrical isolation | 375 V (Peak value in accordance with IEC/EN 60079-11) |
| Designation | Input/power supply |
| Electrical isolation | 375 V (Peak value in accordance with IEC/EN 60079-11) |
| Designation | Output 1/output 2/ power supply |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | # II (1) G [Ex ia Ga] IIC |
| | # II (1) D [Ex ia Da] IIIC |
| | # II 3(1) G Ex nA [ia Ga] IIC T4 Gc |
| IECEX | [Ex ia Ga] IIC |
| | [Ex ia Da] IIIC |
| | Ex nA [ia Ga] IIC T4 Gc |
| UL, USA/Canada | Class I Div 2; IS for Class I, II, III Div 1 |
| SIL | 3 |

Data communication (bypass)

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

Safety data

| | |
|---------------------------------|----------------|
| Max. output voltage U_o | 25.2 V |
| Max. output current I_o | 93 mA |
| Max. output power P_o | 587 mW |
| Group | IIC |
| Max. external inductivity L_o | 2 mH |
| Max. external capacitance C_o | 107 nF |
| Additional text | simple circuit |
| Group | IIC |

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Technical data

Safety data

| | |
|--------------------------------------|---------------------|
| Max. external inductivity L_o | 2 mH |
| Max. external capacitance C_o | 49 nF |
| Additional text | mixed circuit |
| Group | IIC |
| Max. external inductivity L_o | 1 mH |
| Max. external capacitance C_o | 63 nF |
| Additional text | mixed circuit |
| Group | IIC |
| Max. external inductivity L_o | 500 μ H |
| Max. external capacitance C_o | 80 nF |
| Additional text | mixed circuit |
| Group | IIC |
| Max. external inductivity L_o | 200 μ H |
| Max. external capacitance C_o | 107 nF |
| Additional text | mixed circuit |
| Group | IIB |
| Max. external inductivity L_o | 4 mH |
| Max. external capacitance C_o | 820 nF |
| Additional text | simple circuit |
| Group | IIB |
| Max. external inductivity L_o | 4 mH |
| Max. external capacitance C_o | 370 nF |
| Additional text | mixed circuit |
| Group | IIB |
| Max. external inductivity L_o | 1 mH |
| Max. external capacitance C_o | 430 nF |
| Additional text | mixed circuit |
| Group | IIB |
| Max. external inductivity L_o | 500 μ H |
| Max. external capacitance C_o | 510 nF |
| Additional text | mixed circuit |
| Group | IIB |
| Max. external inductivity L_o | 200 μ H |
| Max. external capacitance C_o | 660 nF |
| Additional text | mixed circuit |
| Group | IIB |
| Max. external inductivity L_o | 100 μ H |
| Max. external capacitance C_o | 820 nF |
| Additional text | mixed circuit |
| Safety-related maximum voltage U_m | 253 V AC (125 V DC) |

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Technical data

Standards and Regulations

| | |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission | EN 61000-6-4 |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | # II (1) G [Ex ia Ga] IIC |
| | # II (1) D [Ex ia Da] IIIC |
| | # II 3(1) G Ex nA [ja Ga] IIC T4 Gc |
| IECEX | [Ex ia Ga] IIC |
| | [Ex ia Da] IIIC |
| | Ex nA [ja Ga] IIC T4 Gc |
| UL, USA/Canada | Class I Div 2; IS for Class I, II, III Div 1 |
| DNV GL-Temperature | B |
| DNV GL-Humidity | B |
| DNV GL-Vibration | A |
| DNV GL-EMC | A |
| DNV GL-Enclosure | Required protection according to the Rules shall be provided upon installation on board |
| Group | IIC |
| | IIC |
| | IIC |
| | IIC |
| | IIC |
| | IIB |

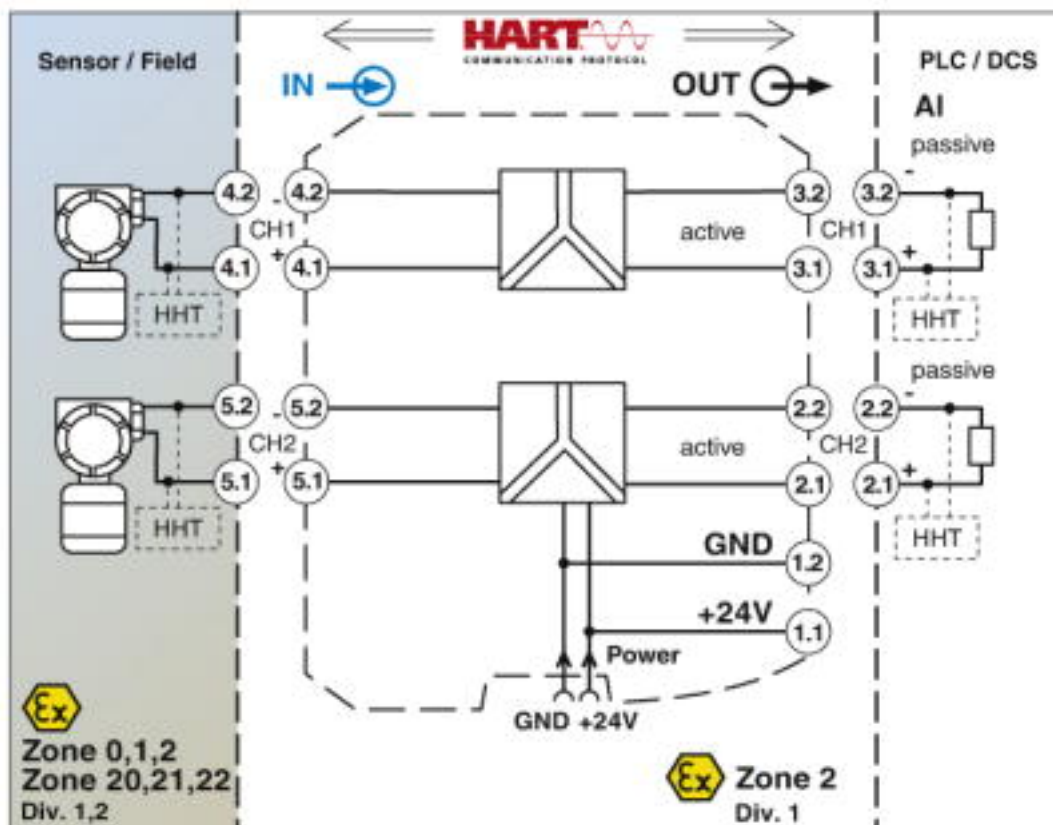
Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

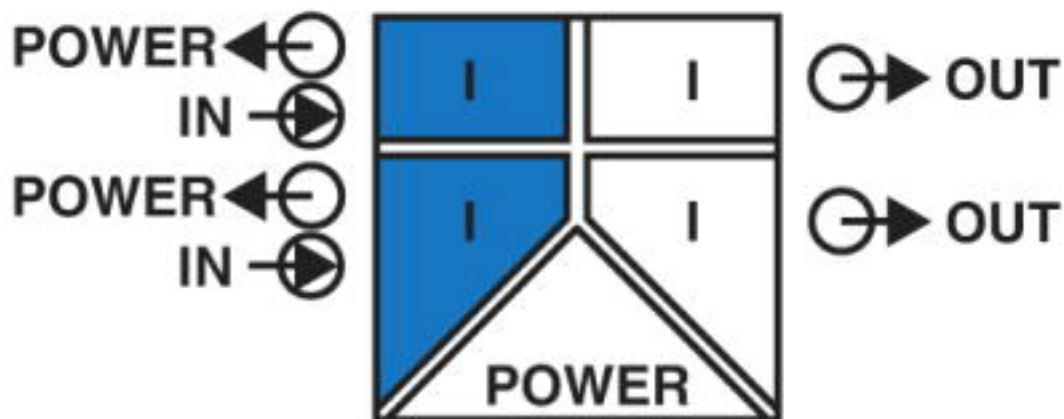
Drawings

Signal isolator - MACX MCR-EX-SL-RPSS-2I-2I-SP - 2924676

Block diagram



Pictogram



Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27210100 |
| eCl@ss 4.1 | 27210100 |
| eCl@ss 5.0 | 27210100 |

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Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 5.1 | 27210100 |
| eCl@ss 6.0 | 27210100 |
| eCl@ss 7.0 | 27210120 |
| eCl@ss 8.0 | 27210120 |
| eCl@ss 9.0 | 27210120 |

ETIM

| | |
|----------|----------|
| ETIM 4.0 | EC002653 |
| ETIM 5.0 | EC002653 |
| ETIM 6.0 | EC002653 |
| ETIM 7.0 | EC002653 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211506 |
| UNSPSC 7.0901 | 39121008 |
| UNSPSC 11 | 39121008 |
| UNSPSC 12.01 | 39121008 |
| UNSPSC 13.2 | 39121008 |
| UNSPSC 18.0 | 39121008 |
| UNSPSC 19.0 | 39121008 |
| UNSPSC 20.0 | 39121008 |
| UNSPSC 21.0 | 39121008 |

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

KC-s / IECEx / ATEX / UL Listed / cUL Listed / cULus Listed

Approval details

| | | | |
|-----------|---|---|---------------|
| UL Listed |  | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330267 |
|-----------|---|---|---------------|

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Approvals

| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330267 |
|------------|--|---|---------------|

| | |
|-------------------|--------------|
| Functional Safety | BVS Pb 04/13 |
|-------------------|--------------|

| | |
|--------------|--|
| cULus Listed | |
|--------------|--|

Accessories

Accessories

Device marking

Plastic label - UC-EMLP (11X9) - 0819291



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Plastic label - UC-EMLP (11X9) YE - 0822602



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Plastic label - UC-EMLP (11X9) SR - 0828094



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Plastic label - US-EMLP (11X9) - 0828789



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

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Accessories

Plastic label - US-EMLP (11X9) YE - 0828871



Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

Plastic label - US-EMLP (11X9) SR - 0828872



Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

Device marker - LS-EMLP (11X9) WH - 0831678



Device marker, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255

Device marker - LS-EMLP (11X9) YE - 0831732



Device marker, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255

Device marker - LS-EMLP (11X9) SR - 0831705



Device marker, Sheet, silver, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255

DIN rail connector

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Accessories

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Insulating sleeve

Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



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Accessories

Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



Insulating sleeve - MPS-IH WH - 0201663

Insulating sleeve, color: white



Labeled device marker

Plastic label - UC-EMLP (11X9) CUS - 0824547



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm

Plastic label - UC-EMLP (11X9) YE CUS - 0824548



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm

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Accessories

Plastic label - UC-EMLP (11X9) SR CUS - 0828098



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Module carrier

Module carrier - TC-2D37SUB-ADIO32-2EX-P-UNI - 2904684



Universal Termination Carrier for connecting 16 two-channel MACX Analog Ex i signal conditioners to digital or analog I/O cards, via two D-SUB connectors, 37-pos. (1:1 connection)

Power module

Power and error message module - MACX MCR-PTB - 2865625



Power and fault signaling module with screw connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

Power and error message module - MACX MCR-PTB-SP - 2924184



Power and fault signaling module with Push-in connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

Programming cable

Cable adapter - GW HART USB MODEM - 1003824



USB HART modem cable for communication between a PC and HART devices, cable length: 1m.

Test plug terminal block

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Accessories

Test plugs - MPS-MT - 0201744



Test plugs, with solder connection up to 1 mm² conductor cross section, color: gray

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