

## Loop-powered isolators - MACX MCR-SL-I-I-ILP - 2905278

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Single-channel input loop-powered 2-way isolator with plug-in connection technology for the electrical isolation of analog signals. Input signal = output signal: 0(4) mA ... 20 mA. Screw connection technology.

### Product Description

Single-channel input-loop-powered 2-way isolator with plug-in connection technology for the electrical isolation and filtering of analog signals. The input-loop-powered isolator allows operation with active sensor technology with a supply voltage of 6 V DC to 30 V DC. The device is powered via the current loop of the sensor. Input signal = output signal: 0(4) mA to 20 mA. With screw connection.



### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4046356944403 |

### Technical data

#### Dimensions

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

#### Ambient conditions

|   |                               |
|---|-------------------------------|
| Ambient temperature (operation)         | -40 °C ... 85 °C              |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C              |
| Maximum altitude                        | < 2000 m                      |
| Permissible humidity (operation)        | 5 % ... 95 % (non-condensing) |
| Noise immunity                          | EN 61326-1                    |

#### Input data

|                           |               |
|---------------------------|---------------|
| Signal input              | Current input |
| Configurable/programmable | no            |

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## Technical data

### Input data

|                           |                   |
|---------------------------|-------------------|
| Max. voltage input signal | < 30.5 V          |
| Current input signal      | 0 mA ... 20 mA    |
|                           | 4 mA ... 20 mA    |
| Input voltage limitation  | 30.5 V            |
| Voltage dissipation       | 2.9 V (I = 20 mA) |
| Step response (10-90%)    | 5 ms (500 Ω load) |

### Output data

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Signal output                   | Current output                      |
| Configurable/programmable       | no                                  |
| Max. voltage output signal      | 27.5 V                              |
| Current output signal           | 0 mA ... 20 mA                      |
|                                 | 4 mA ... 20 mA                      |
| Transmission Behavior           | 1:1 to input signal                 |
| Load/output load current output | ≤ 1375 Ω (I = 20 mA)                |
| Residual ripple                 | < 10 mV <sub>rms</sub> (500 Ω load) |

### Power supply

|                      |                                      |
|----------------------|--------------------------------------|
| Supply voltage range | no separate supply voltage necessary |
|----------------------|--------------------------------------|

### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 14                  |
| Stripping length                      | 7 mm                |
| Connection method                     | Screw connection    |
| Tightening torque, min                | 0.5 Nm              |
| Tightening torque max                 | 0.6 Nm              |

### General

|  |  |
|--|--|
| No. of channels                        | 1  |
| Maximum transmission error             | ≤ 0.1 % (of final value)                     |
| Maximum temperature coefficient        | ≤ 0.002 %/K (of measured value / 100 Ω load) |
| Flammability rating according to UL 94 | V0   |
| Degree of pollution                    | 2  |
| Overvoltage category                   | II   |
| Electromagnetic compatibility          | Conformance with EMC directive               |
| Housing material                       | PA 6.6-FR                                    |
| Color                                  | gray   |
| Designation                            | Input/output/power supply                    |

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## Technical data

### General

|                      |  |
|----------------------|--|
| Electrical isolation | 300 V <sub>rms</sub> (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1)) |
|                      | 2.5 kV (50 Hz, 1 min., test voltage)   |
| Conformance          | CE-compliant, additionally EN 61326-1  |
| ATEX                 | # II 3 G Ex nA IIC T4 Gc X   |
| UL, USA/Canada       | UL 61010 Listed  |
|                      | Class I, Div. 2, Groups A, B, C, D T4  |
|                      | Class I, Zone 2, Group IIC T4  |
| SIL                  | 3  |

### Standards and Regulations

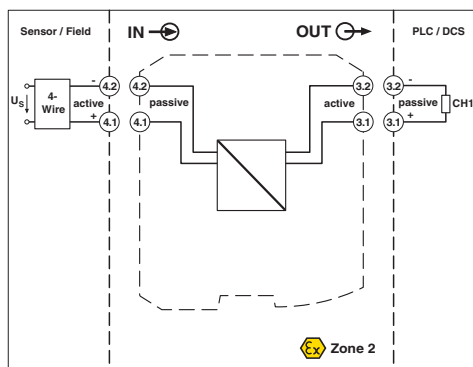
|  |                                       |
|--|---------------------------------------|
| Electromagnetic compatibility          | Conformance with EMC directive        |
| Noise immunity                         | EN 61326-1                            |
| Flammability rating according to UL 94 | V0                                    |
| Conformance                            | CE-compliant, additionally EN 61326-1 |
| ATEX                                   | # II 3 G Ex nA IIC T4 Gc X            |
| UL, USA/Canada                         | UL 61010 Listed                       |
|  | Class I, Div. 2, Groups A, B, C, D T4 |
|  | Class I, Zone 2, Group IIC T4         |

### Environmental Product Compliance

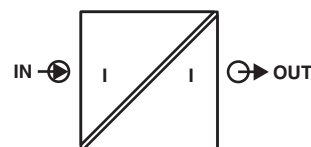
|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

Block diagram



Pictogram



## Approvals

### Approvals

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## Approvals

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### Approvals

UL Listed / cUL Listed / Functional Safety / EAC / cULus Listed

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### Ex Approvals

ATEX / UL Recognized / cUL Recognized / cULus Recognized

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### Approval details

|           |  |   |               |
|-----------|--|---|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 330267 |
|-----------|--|---|---------------|

|            |  |   |               |
|------------|--|---|---------------|
| cUL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 330267 |
|------------|--|---|---------------|

|                   |  |  |                    |
|-------------------|--|--|--------------------|
| Functional Safety |  |  | 968/FSP 1200.00/15 |
|-------------------|--|--|--------------------|

|     |  |  |                          |
|-----|--|--|--------------------------|
| EAC |  |  | RU C-<br>DE.A*30.B.01082 |
|-----|--|--|--------------------------|

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

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