

## Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

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The figure shows the MINI MCR-2-2I-2I-ILP-PT version


Two-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

Two-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. The measuring transducer supports NFC communication.



### Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 STK   |
| GTIN                                 | <br>4 046356 649476 |
| GTIN                                 | 4046356649476   |
| Weight per Piece (excluding packing) | 120.000 g   |
| Custom tariff number                 | 85437090  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|        |          |
|--------|----------|
| Width  | 6.2 mm   |
| Height | 110.5 mm |
| Depth  | 120.5 mm |

#### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Ambient temperature (operation) | -40 °C ... 70 °C |
|---------------------------------|------------------|

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### Technical data

#### Ambient conditions

|   |                  |
|---|------------------|
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Degree of protection                    | IP20             |

#### Input data

|                           |                   |
|---------------------------|-------------------|
| Description of the input  | Current input     |
| Configurable/programmable | no                |
| Current input signal      | 0 mA ... 20 mA    |
|                           | 4 mA ... 20 mA    |
| Response current          | approx. 200 µA    |
| Input voltage limitation  | 30 V              |
| Voltage dissipation       | 3.1 V (I = 20 mA) |

#### Output data

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Output name                     | Current output                       |
| Configurable/programmable       | no                                   |
| Current output signal           | 0 mA ... 20 mA                       |
|                                 | 4 mA ... 20 mA                       |
| Load/output load current output | < 600 Ω (at I = 20 mA output signal) |
| Transmission Behavior           | 1:1 to input signal                  |

#### Power supply

|                      |   |
|----------------------|---|
| Supply voltage range | 9.6 V DC ... 30 V DC (no separate supply voltage necessary) |
| Power consumption    | 600 mW  |

#### Connection data

|   |                     |
|---|---------------------|
| Connection method   | Screw connection    |
| Single conductor/terminal point, solid, with ferrule, min.    | 0.2 mm <sup>2</sup> |
| Single conductor/terminal point, solid, with ferrule, max.    | 1.5 mm <sup>2</sup> |
| Single conductor/terminal point, solid, without ferrule, min. | 0.2 mm <sup>2</sup> |
| Single conductor/terminal point, solid, without ferrule, max. | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min.                         | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max.                         | 1.5 mm <sup>2</sup> |
| Min. AWG conductor cross section, flexible                    | 24                  |
| Max. AWG conductor cross section, flexible                    | 12                  |
| Stripping length  | 10 mm               |
| Screw thread  | M3                  |

#### General

|                            |                          |
|----------------------------|--------------------------|
| No. of channels            | 2                        |
| Maximum transmission error | ≤ 0.1 % (of final value) |

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### Technical data

#### General

|                                   |   |
|-----------------------------------|---|
| Maximum temperature coefficient   | ≤ 0.002 %/K (of measured value / 100 Ω load)                                      |
| Additional error, load-dependent  | < 0.075 % (of measured value / 100 Ω load)  |
| Limit frequency (3 dB)            | 100 Hz  |
| Electrical isolation              | Reinforced insulation in accordance with IEC 61010-1                              |
| Overvoltage category              | II  |
| Degree of pollution               | 2   |
| Rated insulation voltage          | 300 V (effective)   |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.)  |
| Test voltage channel/channel      | 3 kV (50 Hz, 1 min.)  |
| Electromagnetic compatibility     | Conformance with EMC directive  |
| Noise emission                    | EN 61000-6-4  |
| Noise immunity                    | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |
| Color                             | gray  |
| Housing material                  | PBT   |
| Mounting position                 | any   |

#### Standards and Regulations

|                               |  |
|-------------------------------|--|
| Electromagnetic compatibility | Conformance with EMC directive                       |
| Noise emission                | EN 61000-6-4   |
| Electrical isolation          | Reinforced insulation in accordance with IEC 61010-1 |

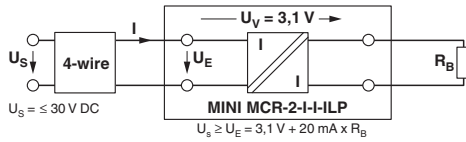
#### Environmental Product Compliance

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

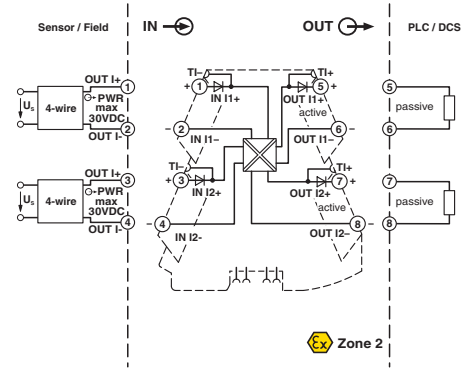
### Drawings

# Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

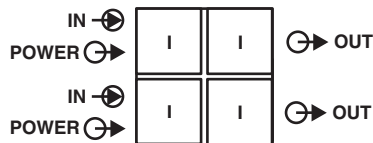
Application drawing



Block diagram



Pictogram



## 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 |
| eCl@ss 9.0 | 27210120 |

### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC002653 |
| ETIM 5.0 | EC002653 |

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 6.0 | EC002653 |
|----------|----------|

### 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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#### Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

### Approval details

|              |   |   |                     |
|--------------|---|---|---------------------|
| ATEX         |  |   | PxCIF16ATEX2901996X |
| 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 238705       |
| 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 238705       |
| cULus Listed |  |   |                     |

## Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

### Accessories

#### Accessories

#### Device marking

##### Marker for end clamp - UCT-EM (30X5) - 0801505



Marker for end clamp, Sheet, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

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##### Marker for end clamp - UCT-EM (30X5) YE - 0830340



Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

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##### Plastic label - UC-EMLP (15X5) - 0819301



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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##### Plastic label - UC-EMLP (15X5) YE - 0822615



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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##### Plastic label - UC-EMLP (15X5) SR - 0828095



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

## Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

### Accessories

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#### Plastic label - US-EMLP (15X5) - 0828790



Plastic label, Card, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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#### Plastic label - US-EMLP (15X5) YE - 0828873



Plastic label, Card, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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#### Plastic label - US-EMLP (15X5) SR - 0828874



Plastic label, Card, silver, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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### Labeled device marker

#### Marker for end clamp - UCT-EM (30X5) CUS - 0801589



Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

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#### Marker for end clamp - UCT-EM (30X5) YE CUS - 0830348



Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

## Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

### Accessories

Plastic label - UC-EMLP (15X5) CUS - 0824550



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) YE CUS - 0824551



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) SR CUS - 0828099



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Plastic label - US-EMLP (15X5) CUS - 0830076



Plastic label, can be ordered: By card, white, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Plastic label - US-EMLP (15X5) YE CUS - 0830077



Plastic label, can be ordered: By card, yellow, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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## Loop-powered isolators - MINI MCR-2-2I-2I-ILP - 2901996

### Accessories

Plastic label - US-EMLP (15X5) SR CUS - 0830078



Plastic label, can be ordered: By card, silver, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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### Terminal marking

Marker strip - SK 5,0 WH:REEL - 0805221



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, Mounting type: Adhesive, Lettering field: continuous x 5 mm