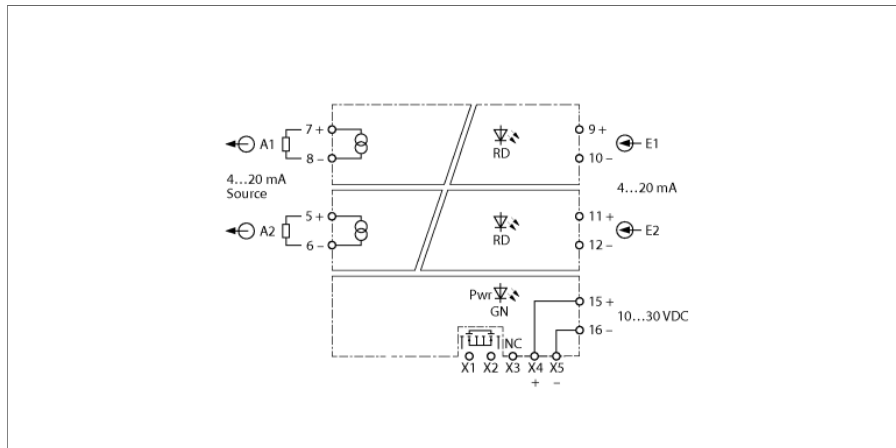


# Analog Signal Isolator

## 2-channel

### IM12-AO01-2I-2I-HPR/24VDC



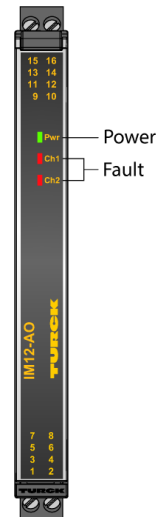
The 2-channel IM12-AO01-2I-2I-HPR/24VDC signal isolator is designed to transmit the normalized current signal galvanically isolated 1:1. In addition to the analog signal, digital HART® communication signals can also be transmitted bidirectionally. Typical applications are, for example, the control of I/P converters or indicators. The device can be powered from a power bridge that also transmits a collective fault signal.

The Pwr LED lights green to indicate operational readiness. The device can detect a wire break or short circuit on the field side, the input then switches to a high impedance state and the common alarm output switches to conductive. An error in the input circuit leads to a flashing red LED according to NE44.

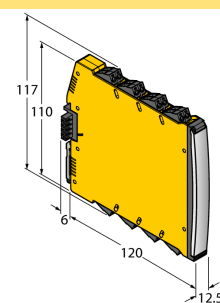
The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508) and meets the requirements of the NE21. It is equipped with removable screw terminals.

The device is equipped with removable screw terminals.

- Output circuits monitored for wire break and short circuit
- Complete galvanic isolation
- HART transparent
- Removable screw terminals
- Connector for power bridge incl. in delivery
- ATEX use in Zone 2, cUL
- SIL 2



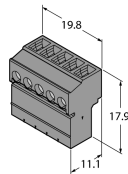
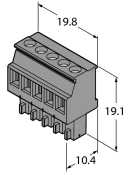
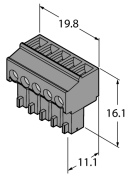
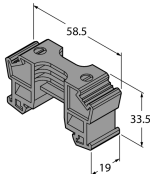
## Dimensions



|                                                                        |                                                                                                                                                                                               |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                                                                   | IM12-AO01-2I-2I-HPR/24VDC                                                                                                                                                                     |
| ID                                                                     | 7580424                                                                                                                                                                                       |
| Nominal voltage                                                        | 24 VDC                                                                                                                                                                                        |
| Operating voltage                                                      | 10...30 VDC                                                                                                                                                                                   |
| Power consumption                                                      | ≤ 2.2 W                                                                                                                                                                                       |
| Power dissipation, typical                                             | ≤ 1.31 W                                                                                                                                                                                      |
| Input current                                                          | 2 x 4...20 mA                                                                                                                                                                                 |
| Reference temperature                                                  | 23 °C                                                                                                                                                                                         |
| Output circuits                                                        |                                                                                                                                                                                               |
| Output current                                                         | 2 x 4...20 mA                                                                                                                                                                                 |
| Load resistance current output                                         | ≤ 0.8 kΩ                                                                                                                                                                                      |
| Minimum load                                                           | ≥ 50 Ω                                                                                                                                                                                        |
| Short-circuit                                                          | At a load resistance of < 30 Ω, the input current is < 500 μA                                                                                                                                 |
| Wire break                                                             | at a load resistance of > 30 kΩ the input current is < 500 μA                                                                                                                                 |
| Power-Bridge common alarm output                                       | MOSFET, U <sub>max</sub> = 30 V, I <sub>max</sub> = 100 mA                                                                                                                                    |
| Response characteristic                                                |                                                                                                                                                                                               |
| Rise time (10...90 %)                                                  | ≤ 10 ms                                                                                                                                                                                       |
| Fall time (90...10 %)                                                  | ≤ 10 ms                                                                                                                                                                                       |
| Measuring accuracy (including linearity, hysteresis and repeatability) | ≤ 0.05 % of full scale                                                                                                                                                                        |
| Reference temperature                                                  | 23 °C                                                                                                                                                                                         |
| Temperature drift                                                      | ≤ 0.002 % of full scale/K                                                                                                                                                                     |
| Galvanic isolation                                                     |                                                                                                                                                                                               |
| Test voltage                                                           | 2.5 kV RMS                                                                                                                                                                                    |
| Input 1 to output 1                                                    | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Input 2 to output 2                                                    | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Input 1 to supply                                                      | 150 V RMS according to EN 50178 and EN 61010-1                                                                                                                                                |
| Input 2 to supply                                                      | 150 V RMS according to EN 50178 and EN 61010-1                                                                                                                                                |
| Output 1 to supply                                                     | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Output 2 to supply                                                     | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Output 1 to output 2                                                   | 50 V RMS according to EN 50178 and EN 61010-1                                                                                                                                                 |
| Input 1 to input 2                                                     | 150 V RMS acc. to EN 50178 and EN 61010-1                                                                                                                                                     |
| Important note                                                         | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.                                                                                  |
| Important note                                                         | If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety. |
| Use in SIL safety circuits                                             | SIL 2 acc. to IEC 61508                                                                                                                                                                       |
| Displays/Operating elements                                            |                                                                                                                                                                                               |
| Operational readiness                                                  | Green                                                                                                                                                                                         |
| Error indication                                                       | red                                                                                                                                                                                           |

|                                  |                                           |                              |
|----------------------------------|-------------------------------------------|------------------------------|
| Mechanical data                  |                                           |                              |
| Protection class                 | IP20                                      |                              |
| Flammability class acc. to UL 94 | V-0                                       |                              |
| Ambient temperature              | -25...+70 °C                              |                              |
| Storage temperature              | -40...+80 °C                              |                              |
| Dimensions                       | 120 x 12.5 x 117 mm                       |                              |
| Weight                           | 171 g                                     |                              |
| Mounting instructions            | DIN rail (NS35)                           |                              |
| Housing material                 | Polycarbonate/ABS                         |                              |
| Electrical connection            | Removable screw terminals, 2-pin          |                              |
| Connection variant               | Power bridge with collective fault signal |                              |
| Terminal cross-section           | 0.2...2.5 mm² (AWG: 24...14)              |                              |
| Tightening torque                | 0.5 Nm                                    |                              |
| Tightening torque                | 4.43 LBS-Inch                             |                              |
| Environmental conditions         | Operating height                          | Up to 2000 m above sea level |
|                                  | Pollution degree                          | II                           |
|                                  | Surge/Overvoltage category                | II (EN 61010-1)              |
|                                  | Standards used                            |                              |
|                                  | Voltage resistance and insulation         |                              |
|                                  |                                           | EN 50178                     |
|                                  |                                           | EN 61010-1                   |
|                                  |                                           | EN 50155                     |
|                                  |                                           | GL VI-7-2                    |
|                                  | Shock                                     |                              |
|                                  |                                           | EN 61373 class B             |
|                                  |                                           | EN 50155                     |
|                                  |                                           | GL VI-7-2                    |
|                                  |                                           | EN 60068-2-6                 |
|                                  |                                           | EN 60068-2-27                |
|                                  | Temperature                               |                              |
|                                  |                                           | EN 60068-2-1 Ad              |
|                                  |                                           | EN 50155                     |
|                                  |                                           | GL VI-7-2                    |
|                                  |                                           | EN 60068-2-2 Bd              |
|                                  |                                           | EN 60068-2-1                 |
|                                  | Air humidity                              |                              |
|                                  |                                           | EN 60068-2-38                |
|                                  | EMC                                       |                              |
|                                  |                                           | EN 50155                     |
|                                  |                                           | GL VI-7-2                    |
|                                  |                                           | NE21                         |
|                                  |                                           | EN 61326-1                   |
|                                  |                                           | EN 61326-3-1                 |
|                                  |                                           | EN 61000-4-2                 |
|                                  |                                           | EN 61000-4-3                 |
|                                  |                                           | EN 61000-4-4                 |
|                                  |                                           | EN 61000-4-5                 |
|                                  |                                           | EN 61000-4-6                 |
|                                  |                                           | EN 61000-4-11                |
|                                  |                                           | EN 61000-4-29                |
|                                  |                                           | EN 55011                     |
|                                  |                                           | EN 55016                     |
|                                  |                                           | EN 50121-3-2                 |
|                                  |                                           | EN 61000-6-2                 |

## Accessories

| Type code              | Ident no. |                                                                                            | Dimension drawing                                                                     |
|------------------------|-----------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| IMC 1.5/ 5-ST-3.81 BK  | 7580954   | Power Bridge Connection Terminal                                                           |    |
| MCVR 1.5/ 5-ST-3.81 BK | 7580955   | Power Bridge Connection Terminal                                                           |    |
| MC 1.5/ 5-ST-3.81 BK   | 7580956   | Power Bridge Connection Terminal                                                           |   |
| E/ME TBUS NS35 BK      | 7580957   | Power Bridge Connection Terminal                                                           |  |
| IMX12-SC-2X-4BK        | 7580940   | Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals |                                                                                       |
| IMX12-CC-2X-4BK        | 7580942   | Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin  |                                                                                       |