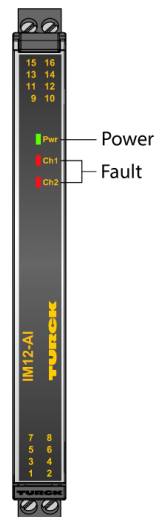
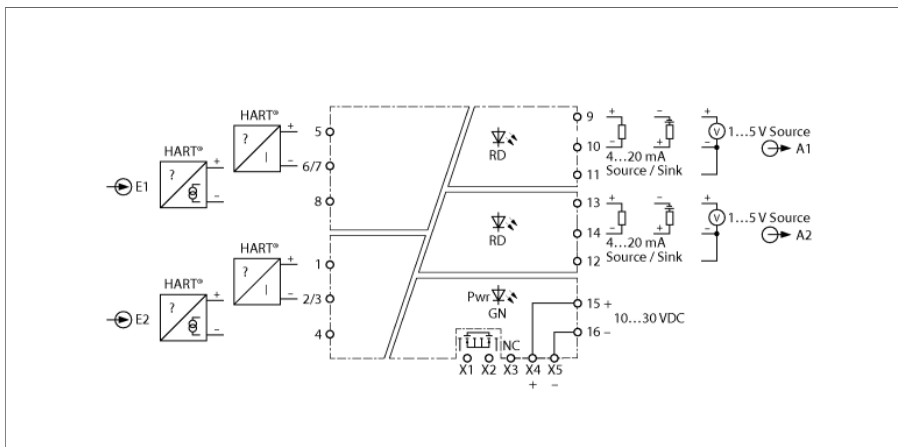


# Isolating transducer 2-channel IM12-AI01-2I-2IU-HPR/24VDC



The isolating transducers IM12-AI01-2I-2IU-HPR/24VDC transmit analog measured signals galvanically isolated. The devices are suitable for operation in zone 2.

The 2-channel device has two inputs for the operation of HART® 2-wire transducers as well as active and passive HART® 2-wire transmitters. Connection is via removable screw terminals. The device can be powered from a power bridge that also transmits a collective fault signal.

The device is equipped with 4...20 mA input circuits and 4...20 mA output circuits (either as source or sink) or 1...5 V (source). The input signals are transmitted 1:1 without interference within a range of 3.8...20.5 mA. In addition, digital signals can also be transmitted bidirectionally in accordance with the HART® protocol. Wire-break (< 3.5 mA) and short-circuit (> 22 mA) in the transducer circuit are output as current < 3.5 mA/voltage < 0.875 V.

The devices have a green power LED (Pwr). For each input circuit there is a red status LED. An error in the input circuit causes the red LED to flash according to NE44.

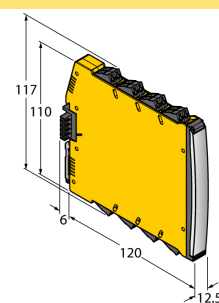
The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508) and meets the requirements of the NE21.

The device is equipped with removable screw terminals.

- Input 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

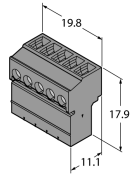
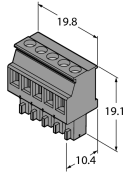
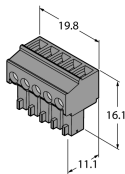
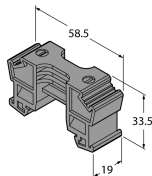
## Dimensions

|                                                                        |                                                                                                                                                                                               |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                                                                   | IM12-AI01-2I-2IU-HPR/24VDC                                                                                                                                                                    |
| ID                                                                     | 7580324                                                                                                                                                                                       |
| Nominal voltage                                                        | 24 VDC                                                                                                                                                                                        |
| Operating voltage                                                      | 10...30 VDC                                                                                                                                                                                   |
| Power consumption                                                      | ≤ 3.8 W                                                                                                                                                                                       |
| Power dissipation, typical                                             | ≤ 1.9 W                                                                                                                                                                                       |
| <b>Transmitter connection</b>                                          |                                                                                                                                                                                               |
| Supply voltage                                                         | ≥ 17 V / 20 mA                                                                                                                                                                                |
| Input current                                                          | 2 x 4...20 mA                                                                                                                                                                                 |
| Temperature drift supply voltage                                       | ≤ 0.03 %/K                                                                                                                                                                                    |
| Reference temperature                                                  | 23 °C                                                                                                                                                                                         |
| <b>Output circuits</b>                                                 |                                                                                                                                                                                               |
| Output current                                                         | 2 x source/sink (15...28 V) 4...20 mA                                                                                                                                                         |
| Output voltage                                                         | 2 x 1...5 V                                                                                                                                                                                   |
| Load resistance current output                                         | ≤ 0.8 kΩ                                                                                                                                                                                      |
| Short-circuit                                                          | Output < 3.5 mA, if in the input circuit a current > 22 mA flows                                                                                                                              |
| Wire break                                                             | Output < 3.5 mA, if in the input circuit a current < 3.5 mA flows                                                                                                                             |
| <b>Power-Bridge common alarm output</b>                                |                                                                                                                                                                                               |
|                                                                        | MOSFET, U <sub>max</sub> = 30 V, I <sub>max</sub> = 100 mA                                                                                                                                    |
| <b>Response characteristic</b>                                         |                                                                                                                                                                                               |
| Rise time (10...90 %)                                                  | ≤ 5 ms                                                                                                                                                                                        |
| Fall time (90...10 %)                                                  | ≤ 5 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                                                                                                                                                                     |
| <b>Galvanic isolation</b>                                              |                                                                                                                                                                                               |
| 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                                                      | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Input 2 to supply                                                      | 375 V peak value according to EN 60079-11                                                                                                                                                     |
| Output 1 to supply                                                     | 50 V RMS acc. to EN 50178 and EN 61010-1                                                                                                                                                      |
| Output 2 to supply                                                     | 50 V RMS acc. to EN 50178 and EN 61010-1                                                                                                                                                      |
| Output 1 to output 2                                                   | 50 V RMS according to EN 50178 and EN 61010-1                                                                                                                                                 |
| Input 1 to input 2                                                     | 60 V peak value acc. to EN 60079-11                                                                                                                                                           |
| <b>Important note</b>                                                  |                                                                                                                                                                                               |
|                                                                        | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.                                                                                  |
| <b>Important note</b>                                                  |                                                                                                                                                                                               |
|                                                                        | 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                                                                                                                                                                       |
| <b>Displays/Operating elements</b>                                     |                                                                                                                                                                                               |
| 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                           | 187 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                     |
|                                  |                                           | 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  |                                                                                       |