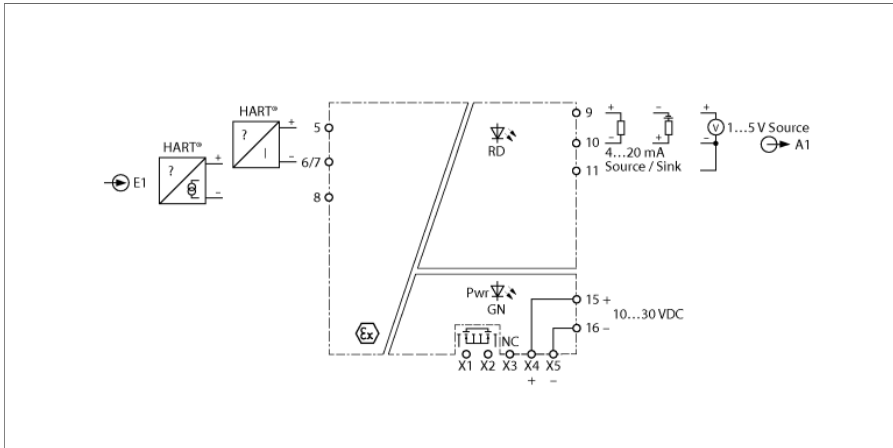


# Isolating transducer 1-channel IMX12-AI01-1I-1IU-HPR/24VDC/CC



The 1-channel IMX12-AI01-1I-1IU-HPR/24VDC/CC HART® isolating transducer is designed to operate intrinsically safe HART® 2-wire transducers in the Ex area and to transmit the measured signals to the non-Ex area. In addition to the analog signals, digital HART® communication signals can also be transmitted bidirectionally. Furthermore, active and passive 2-wire HART® transmitters can be operated. The device can be powered from a power bridge that also transmits a collective fault signal.

The device is equipped with an input circuit of 4...20 mA and an output circuit of 4...20 mA (either as source or sink) or 1...5 V (source). The input signal is transmitted 1:1 without interference in the range of 3.8...20.5 mA and made available at the output in the non-Ex area. 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.

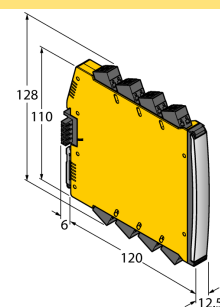
A green LED indicates operational readiness. An error in the input circuit causes the red LED to flash according to NE44.

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

The device is equipped with removable spring-type terminals.

- Input circuits monitored for wire break and short circuit
- Complete galvanic isolation
- HART transparent
- Removable spring type terminals
- ATEX, IECEx, cFM, NEPSI, INMETRO, Kosha, TS
- Use in Zone 2
- SIL 2

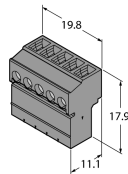
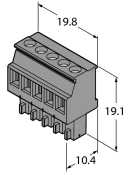
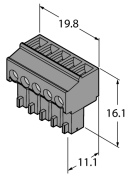
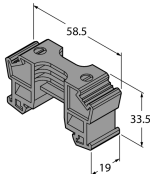
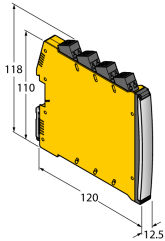


**Dimensions**


|                                                                        |                                                                                                                                                                                               |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                                                                   | IMX12-AI01-1I-1IU-HPR/24VDC/CC                                                                                                                                                                |
| ID                                                                     | 7580314                                                                                                                                                                                       |
| Nominal voltage                                                        | 24 VDC                                                                                                                                                                                        |
| Operating voltage                                                      | 10...30 VDC                                                                                                                                                                                   |
| Power consumption                                                      | ≤ 3.8 W                                                                                                                                                                                       |
| Power dissipation, typical                                             | ≤ 1.4 W                                                                                                                                                                                       |
| <b>Transmitter connection</b>                                          |                                                                                                                                                                                               |
| Supply voltage                                                         | ≥ 17 V / 20 mA                                                                                                                                                                                |
| Input current                                                          | 4...20 mA                                                                                                                                                                                     |
| Temperature drift supply voltage                                       | ≤ 0.03 %/K                                                                                                                                                                                    |
| Reference temperature                                                  | 23 °C                                                                                                                                                                                         |
| <b>Output circuits</b>                                                 |                                                                                                                                                                                               |
| Output current                                                         | Source/sink 4...20 (sink: 15...28 V) mA                                                                                                                                                       |
| Output voltage                                                         | 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 1 to supply                                                      | 375 V peak value acc. to EN 60079-11                                                                                                                                                          |
| Output 1 to supply                                                     | 50 V RMS acc. to EN 50178 and EN 61010-1                                                                                                                                                      |
| <b>Important note</b>                                                  |                                                                                                                                                                                               |
|                                                                        | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.                                                                                  |
| Application area                                                       | II (1) G, II (1) D                                                                                                                                                                            |
| Ignition protection category                                           | [Ex ia Ga] IIC; [Ex ia Da] IIIC                                                                                                                                                               |
| Application area                                                       | II 3 (1) G                                                                                                                                                                                    |
| Ignition protection type                                               | Ex ec [ia Ga] IIC T4 Gc                                                                                                                                                                       |
| 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                                                                                                                                                                       |
| <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 128 mm                       |                              |
| Weight                           | 157 g                                     |                              |
| Mounting instructions            | DIN rail (NS35)                           |                              |
| Housing material                 | Polycarbonate/ABS                         |                              |
| Electrical connection            | Removable spring-type terminals, 2-pin    |                              |
| Connection variant               | Power bridge with collective fault signal |                              |
| Terminal cross-section           | 0.2...2.5 mm² (AWG: 24...14)              |                              |
| 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-PS02-UI-UIR-PR/24VDC/CC | 7580611   | Power supply module power bridge; Collective fault signal via relay; Single and redundant power supply via terminals; Removable screw terminals |  |
| IMX12-SC-2X-4BK               | 7580940   | Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals                                                      |                                                                                       |
| IMX12-SC-2X-4BU               | 7580941   | Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin blue terminals                                                       |                                                                                       |
| IMX12-CC-2X-4BK               | 7580942   | Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin                                                       |                                                                                       |
| IMX12-CC-2X-4BU               | 7580943   | Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. blue terminals, 2-pin                                                        |                                                                                       |