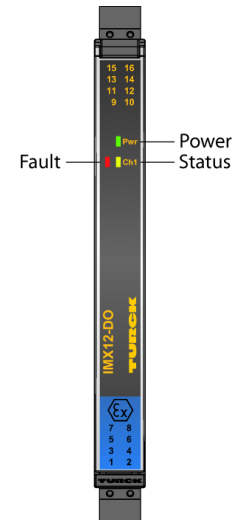
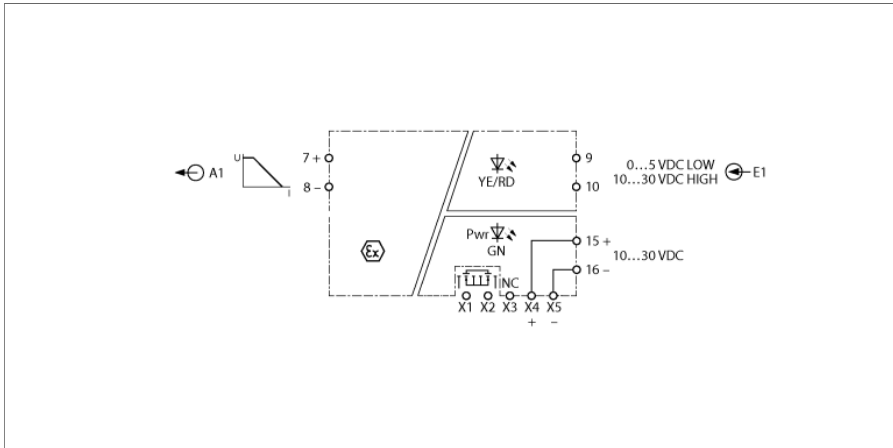


# Solenoid Driver

## 1-channel

### IMX12-DO01-1U-1U-PR/24VDC/CC



The 1-channel IMX12-DO01-1U-1U-PR/24VDC/CC solenoid driver provides an intrinsically safe output signal limited in current and voltage. Loads in the Ex area can thus be supplied directly. Typical applications are the control of Ex i pilot valves and the powering of displays and transmitters. The device can be powered from a power bridge that also transmits a collective fault signal.

The device is ready for operation when power is applied. The green LED indicates operational readiness. A yellow LED indicates the switching state of the associated output.

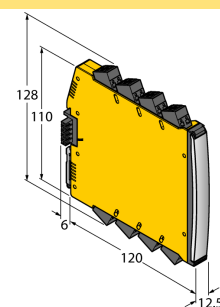
The device can detect a wire break or short circuit when a "high" is present at the input. The input then switches to high impedance and the common alarm output becomes conducting. An error in the output circuit causes the red LED to flash according to NE44.

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.

- Output circuits monitored for wire-break and short-circuit
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable spring type terminals
- Power bridge (connector incl. in delivery)
- ATEX, IECEx, cUL, cFM, INMETRO, NEPSI, Kosha, TIIS
- Use in Zone 2
- SIL 2

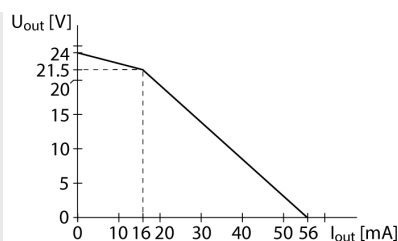
## Dimensions



|                            |                              |
|----------------------------|------------------------------|
| Type                       | IMX12-DO01-1U-1U-PR/24VDC/CC |
| ID                         | 7580102                      |
| Nominal voltage            | 24 VDC                       |
| Operating voltage $U_s$    | 10...30 VDC                  |
| Power consumption          | $\leq 1.8 \text{ W}$         |
| Power dissipation, typical | $\leq 0.75 \text{ W}$        |
| 0-signal                   | 0...5 VDC                    |
| 1-signal                   | 10...30 VDC                  |
| Input delay                | $\leq 20 \text{ ms}$         |

|               |                                                                                               |
|---------------|-----------------------------------------------------------------------------------------------|
| Short-circuit | Output at load resistance $< 30 \Omega$ , the input will be $> 100 \text{ k}\Omega$           |
| Wire break    | Output at $> 20 \text{ k}\Omega$ load resistance, the input will be $> 100 \text{ k}\Omega$ . |

Output curve



Power-Bridge common alarm output MOSFET,  $U_{max} = 30 \text{ V}$ ,  $I_{max} = 100 \text{ mA}$

|                         |                      |
|-------------------------|----------------------|
| Response characteristic |                      |
| Limit frequency         | $\leq 50 \text{ Hz}$ |

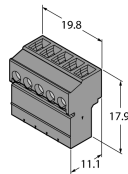
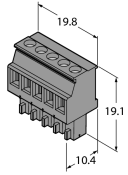
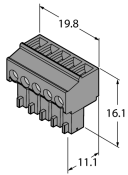
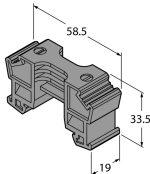
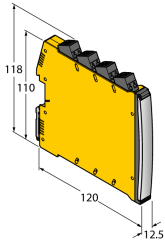
|                     |                                                |
|---------------------|------------------------------------------------|
| Galvanic isolation  |                                                |
| Test voltage        | 2.5 kV RMS                                     |
| Input 1 to output 1 | 375 V peak value acc. to EN 60079-11           |
| Input 1 to supply   | 300 V RMS according to EN 50178 and EN 61010-1 |
| Output 1 to supply  | 375 V peak value acc. to EN 60079-11           |

|                                            |                                                                                                                                                                                               |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Important note                             | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.                                                                                  |
| Ex approval acc. to conformity certificate | TÜV 14 ATEX 149780X                                                                                                                                                                           |
| 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 nA [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                                                                                                                                                                       |

|                             |        |
|-----------------------------|--------|
| Displays/Operating elements |        |
| Operational readiness       | Green  |
| Switching state             | Yellow |
| 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                           | 147 g                                     |                              |
| Mounting instructions            | DIN rail (NS35)                           |                              |
| Housing material                 | Plastic, 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 mm <sup>2</sup> (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                     |
|                                  |                                           | 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-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                                                        |                                                                                       |