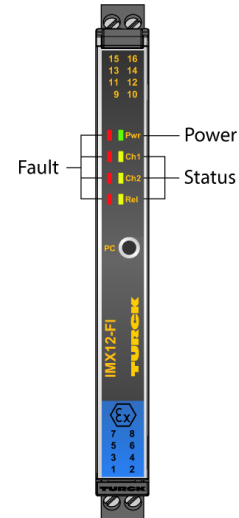
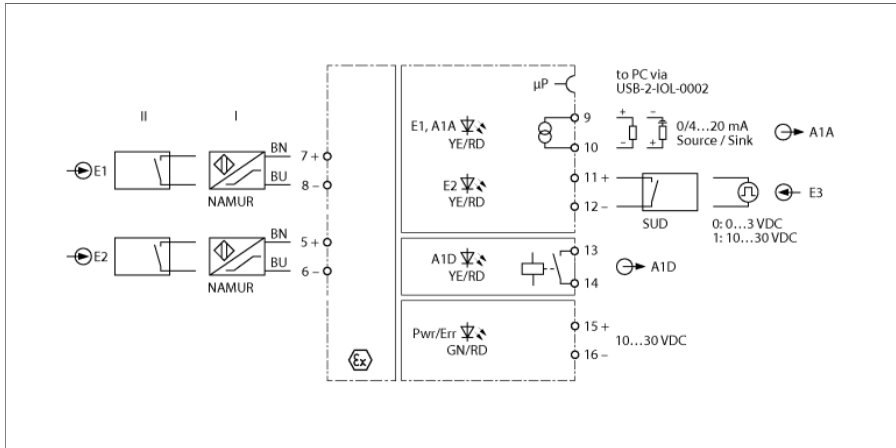


# Frequency Transducer/Pulse Counter 1-channel IMX12-FI01-1SF-1I1R-C0/24VDC



The frequency transducer/pulse counter IMX12-FI01-1SF-1I1R-C0/24VDC is equipped with intrinsically safe input circuits and transmits frequency signals up to 20,000 Hz electrically isolated from the at-risk area to the safe area. In addition, limits, slip or clockwise/counter-clockwise rotation can be monitored. The devices are suitable for operation in zone 2.

The 1-channel device is equipped with two intrinsically safe inputs for the connection of sensors acc. to EN 60947-5-6 (NAMUR). On the output side, there is a 0/4...20 mA current output and a normally open relay.

The device is parameterized via FDT and IODD with a PC. The current output can be set to 0/4...20 mA (source or sink optional). In accordance with the parameterization (E1, E2, E1-E2 or E2-E1), the input signals are provided as a 0/4...20 mA standard current signal. With the NO relay, either a limit value can be monitored on over/undershoot or a window. The start-up delay SUD is turned on via input E1, E2 or E3.

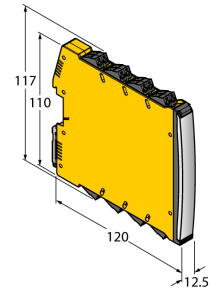
The devices have a green power LED (Pwr) and a red LED to indicate internal faults. For the input circuit there is a yellow and red status LED available. A fault in the input circuit leads to a flashing red LED according to NE44 and an internal fault to a steady read LED. The fault current can be adjusted to < 3.5 mA or > 21.5 mA. A yellow LED indicates the switching state of the limit value relay. A yellow LED indicates that the start-up delay is turned on.

The device can be used in safety circuits up to SIL 2 (high and low demand according to IEC 61508) and meets the requirements of NE21. It is equipped with removable screw terminals.

The device is equipped with removable screw terminals.

- Input circuits monitored for wire-break and short-circuit
- Parameterized via PC
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable screw terminals
- ATEX, IECEx, cFM, cUL, NEPSI, IN-METRO, Kosha, TIIS,
- Use in Zone 2
- SIL 2

## Dimensions



ID	7580205
Nominal voltage	24 VDC
Operating voltage $U_s$	10...30 VDC
Power consumption	$\leq 3$ W
Power dissipation, typical	$\leq 1.7$ W
Monitoring range/Setting range	0.0006...1,200,000 rpm
NAMUR input	
NAMUR	EN 60947-5-6
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 k $\Omega$
Cable resistance	$\leq 50$ $\Omega$
Switch-on threshold	1.75 mA
Switch-off threshold	1.55 mA
Wire breakage threshold	$\leq 0.06$ mA
Short-circuit threshold	$\geq 6.4$ mA
Output circuits	
Output current	Source/sink (10...30 V) 0/4...20 mA
Load resistance current output	$\leq 0.8$ k $\Omega$
Output circuits (digital)	1 x relay (change-over)
Output switching voltage relay	$\leq 30$ VDC / $\leq 250$ VAC
Switching current per output	$\leq 2$ A
Switching capacity per output	$\leq 500$ VA/60 W
Switching frequency	$\leq 15$ Hz
Contact quality	AgNi
Response characteristic	
Reference temperature	23 °C
Measuring accuracy current output (including linearity, hysteresis and repeatability)	$\pm 10$ $\mu$ A
Temperature drift	$\leq 0.0025$ % of full scale/K
Galvanic isolation	
Test voltage	2.5 kV RMS
E1,E2-E3	375 V peak value acc. to EN 60079-11
E1,E2 supply voltage	375 V peak value acc. to EN 60079-11
A1A supply voltage	300 V RMS acc. to EN 50178 and EN 61010-1
E3 supply voltage	375 V peak value acc. to EN 60079-11
A1A-A1D	300 V RMS acc. to EN 50178 and EN 61010-1
A1A-E3	300 V RMS acc. to EN 50178 and EN 61010-1
Important note	The values provided below indicate the relevant markings associated with the product's Ex certificates.
Ex approval acc. to conformity certificate	TÜV 16 ATEX 192124 X
Application area	II (1) G, II (1) D
Ignition protection category	G [Ex ia Ga] IIC; D [Ex ia Da] IIIC
Application area	II 3 (1) G
Ignition protection type	Ex ec nC [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 117 mm
Weight	169 g
Mounting instructions	DIN rail (NS35)
Housing material	Plastic, Polycarbonate/ABS
Electrical connection	Removable screw terminals, 2-pin
Terminal cross-section	0.2...2.5 mm <sup>2</sup> (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
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
IOL-COM/3M	7525110	IO-Link communication line for connecting IO-Link devices to an IO-link master via a 3.5-mm jack plug	
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	