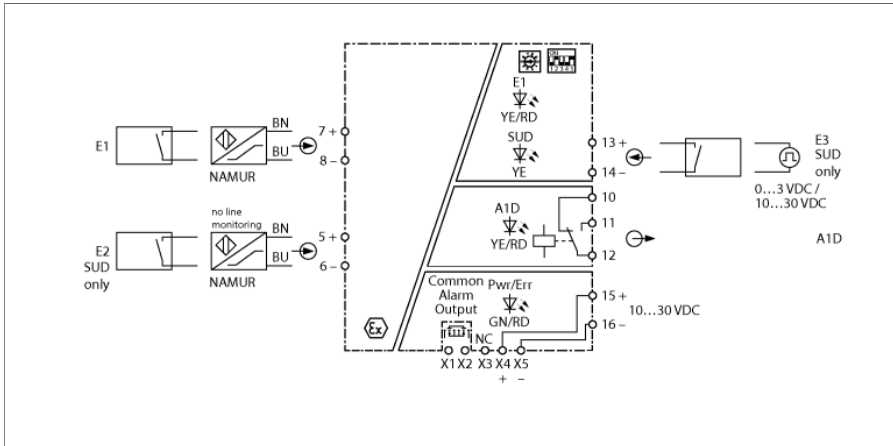


Frequency Transducer/Pulse Counter 1-channel IMX12-FI01-1SF-1R-PR/24VDC/CC



The frequency transducer IMX12-FI01-1SF-1R-PR/24 VDC/CC is equipped with intrinsically safe input circuits and issues a galvanically isolated transmission of frequency signals up to 20,000 Hz from the explosion-hazardous area to the safe area. This device is used for monitoring limit values. The device is suitable for use in Zone 2.

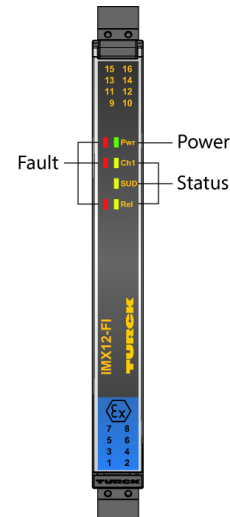
The one-channel device is equipped with two intrinsically safe inputs for the connection of sensors acc. to EN 60947-5-6 (NAMUR) or potential-free contacts. A changeover relay is available on the output side. The device can be powered from a power bridge that also transmits a collective fault signal.

The device is parameterized via rotary coding switches and DIP switches on the side of the device. The relay output is used to monitor whether a limit value exceeds or undershoots a limit value or lies outside a limit value window. Depending on the parameter, the start-up delay (SUD) is activated via input E2 or E3.

The devices have a green and a red Power LED (Pwr) for indicating the operating voltage and the parameterization. For each input circuit there is a yellow and a red status LED. An error in the input circuit causes the red LED to flash according to NE44. A yellow LED indicates the switch-on delay. A red and a yellow LED are available to indicate the switching status of the relay.

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
- Parameterized via DIP/rotary coding switch
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable spring type terminals
- Power bridge (connector incl. in delivery)
- ATEX, IECEx, cUL
- Use in Zone 2
- SIL 2

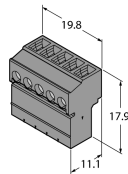
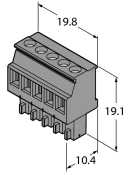
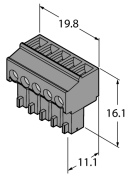
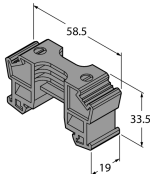
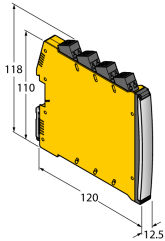
Dimensions

Type	IMX12-FI01-1SF-1R-PR/24VDC/CC
ID	7580202
Nominal voltage	24 VDC
Operating voltage U_s	10...30 VDC
Power consumption	≤ 3 W
Power dissipation, typical	≤ 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 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold	1.75 mA
Switch-off threshold	1.55 mA
Wire breakage threshold	≤ 0.06 mA
Short-circuit threshold	≥ 6.4 mA
Output circuits	
Output circuits (digital)	1 x relay (change-over)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Switching frequency	≤ 15 Hz
Contact quality	AgNi
Power-Bridge common alarm output	MOSFET, $U_{max} = 30 V$, $I_{max} = 100 mA$
Response characteristic	
Reference temperature	23 °C
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
E1,E2 collective fault indicator	375 V peak value acc. to EN 60079-11
E3 supply voltage	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 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 128 mm	
Weight	1 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 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
		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	