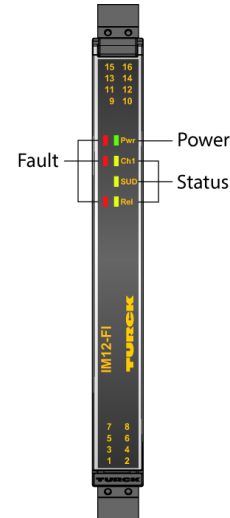
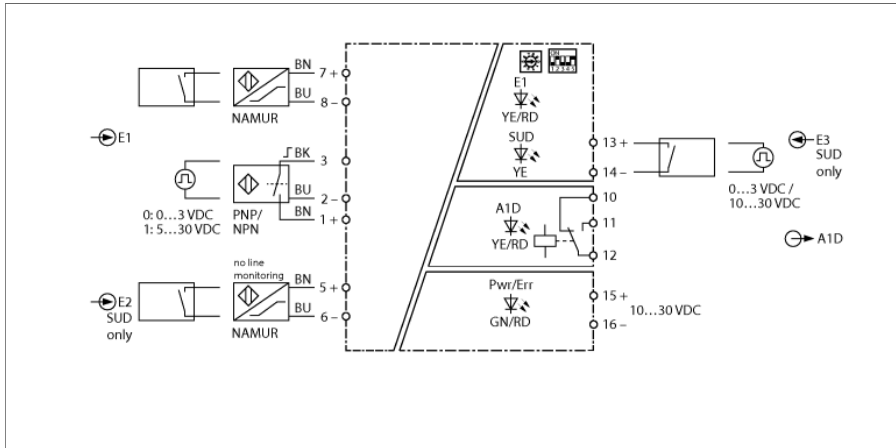


# Frequency Transducer/Pulse Counter 1-channel IM12-FI01-1SF-1R-0/24VDC/CC



The frequency transducer IM12-FI01-1SF-1R-0/24VDC/CC transmits frequency signals up to 20,000 Hz galvanically isolated. 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 inputs for the connection of sensors acc. to EN 60947-5-6 (NAMUR) or potential-free contacts. A 3-wire input and a pulse input are also available. A changeover relay is available on the output side.

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.

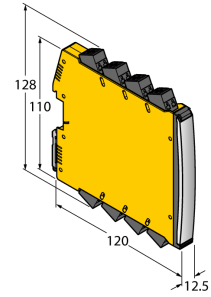
The devices have a green and a red Power LED (Pwr) for indicating the operating voltage and the parameterization. For each input circuit there is a yellow and a red status LED. An error in the input circuit causes the red LED to flash according to NE44. A yellow LED indicates the switch-on delay. A red 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
- Installation in Zone 2
- SIL 2

## Dimensions



ID	7580223
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
3-wire input	
No-load voltage	12 VDC
0-signal	0...3VDC
1-signal	5...30 VDC
External signal source	
0-signal	0...3 VDC
1-signal	5...30 VDC
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
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
Important note	The values provided below indicate the relevant markings associated with the product's Ex certificates.
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	1.1 g		
Mounting instructions	DIN rail (NS35)		
Housing material	Plastic, Polycarbonate/ABS		
Electrical connection	Removable spring-type terminals, 2-pin		
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
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	