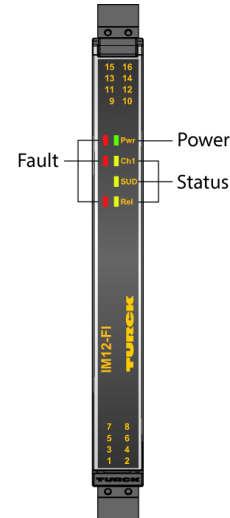
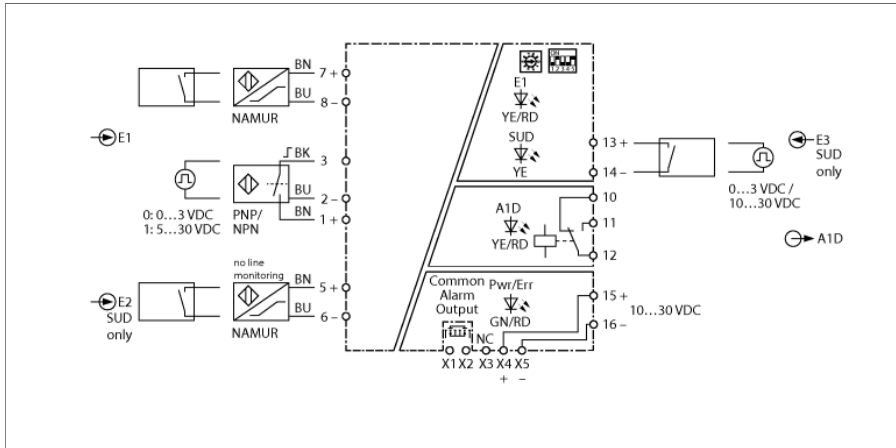


Frequency Transducer/Pulse Counter 1-channel IM12-FI01-1SF-1R-PR/24VDC/CC



The frequency transducer IM12-FI01-1SF-1R-PR/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 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.

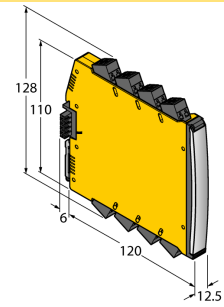
The devices have a green and a red Power LED (Pwr) for indicating the operating voltage and the parameterization. For each input circuit there is a yellow and a red status LED. An error in the input circuit causes the red LED to flash according to NE44. A yellow LED indicates the switch-on delay. A red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

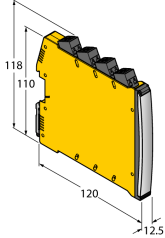
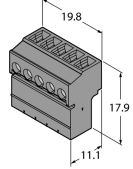
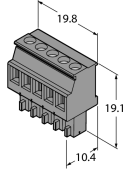
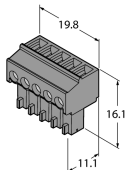
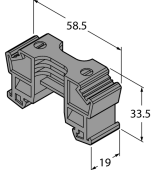
Dimensions



Type	IM12-FI01-1SF-1R-PR/24VDC/CC
ID	7580222
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 k Ω	
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	
Power-Bridge common alarm output MOSFET, $U_{max} = 30$ V, $I_{max} = 100$ mA	
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	
Important note For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.	
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 mm ² (AWG: 24...14)		
Environmental conditions	Operating height	Up to 2000 m above sea level	
	Pollution degree	II	
	Surge/Overtoltage 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-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	
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-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	