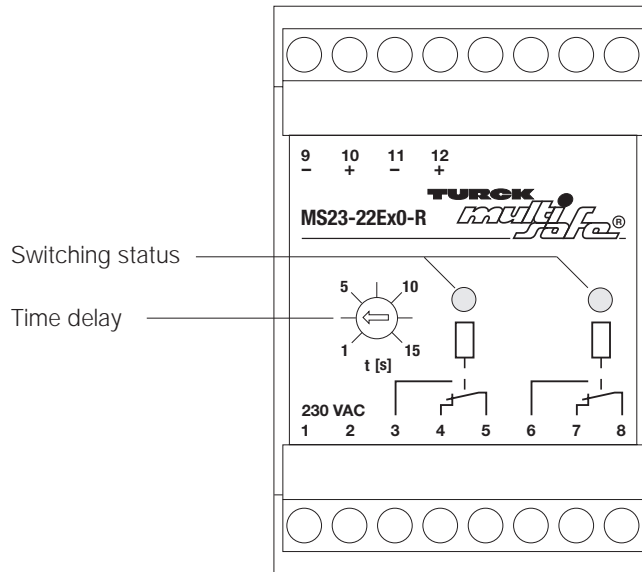


Direction Discriminator MS23-22Ex0-R



- **Intrinsically safe input circuits [EEx ia] IIC**
- **Galvanic isolation between input circuit, output circuit and power supply**
- **Direction detection in either direction**
- **Input circuit monitoring for wire-break and short-circuit**
- **2 relay outputs, each with one SPDT contact**

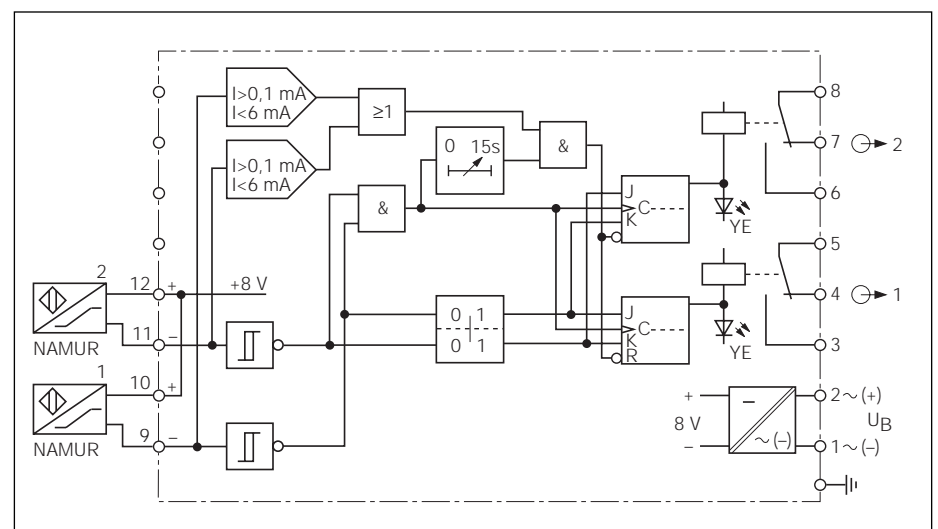
The MS23-22Ex0-R direction discriminator features an intrinsically safe input circuit. It provides two relay outputs, each with one SPDT contact.

The MS23-22Ex0-R uses two sensors to determine forward or reverse direction of a system. One output relay will energise in the forward direction; the other relay will energise in the reverse direction. Each output has a yellow LED that turns on when the output is energised. At zero speed both relays are de-energised.

The direction discriminator receives input pulses from NAMUR sensors according to EN 50227. Both input circuits are monitored for wire-break and short-circuit. In case of a fault condition, both output relays de-energise automatically.

The direction of rotation is obtained by evaluating the sequence and the overlap from the two sensor signals. The target used must be suitable for simultaneous damping of both sensors for a period of at least 1 ms.

A potentiometer located on the front cover of the housing serves to adjust the time delay (1...15 s) between consecutive input pulse sequences. If the input pulses cease, the relays de-energise after the time delay period.



Type	MS23-22Ex0-R/230VAC	MS23-22Ex0-R/24VDC
Ident-No.	53 421	53 427
Supply Voltage U_B	184...250 VAC	20...28 VDC
Line frequency/ripple W_{PP}	48...62 Hz	$\leq 10\%$
Power/current consumption	≤ 3.5 VA	≤ 3.6 W
Galvanic Isolation	between input circuit, output circuit and supply voltage for 250 V_{rms} , test voltage 2.5 kV_{rms}	between input circuit, output circuit and supply voltage for 250 V_{rms} , test voltage 2.5 kV_{rms}
Direction Discrimination	forward and reverse direction	forward and reverse direction
Input pulse overlap	≥ 1 ms	≥ 1 ms
Time limit for input pulse sequence	1...15 s (adjustable)	1...15 s (adjustable)
Input Circuits	to EN 50227 (NAMUR), intrinsically safe	to EN 50227 (NAMUR), intrinsically safe
Operating characteristics		
- Voltage	8 V	8 V
- Current	8 mA	8 mA
Switching threshold	1.55 mA	1.55 mA
Hysteresis	0.2 mA	0.2 mA
Output Circuits	2 relay outputs	2 relay outputs
Number of contacts	1 SPDT contact, AgCdO	1 SPDT contact, AgCdO
Switching voltage	≤ 250 VAC/60 VDC	≤ 250 VAC/60 VDC
Switching current	≤ 4 A	≤ 4 A
Switching capacity	≤ 1000 VA/30 W	≤ 1000 VA/30 W
Ex Approvals acc. to Certificate of Conformity	BVS 94.C.2006 X	BVS 94.C.2006 X
Maximum values		
- No load voltage U_0	11.0 V	11.0 V
- Short-circuit current I_k	27.0 mA	27.0 mA
External inductances/capacitances		
- [EEx ia] IIC	1 mH/550 nF	1 mH/550 nF
- [EEx ib] IIC	-	-
LED Indications		
- Status indication	yellow	yellow
Housing	50 mm wide, Polycarbonate/ABS	
Mounting	panel mounting or snap-on clamps for top-hat rail (DIN 50022)	
Connection	2 x 8 self-lifting pressure plates	
Connection profile	$\leq 2 \times 2.5$ mm ² or 2×1.5 mm ² with wire sleeves	
Degree of protection (IEC 60529/EN 60529)	IP20	
Operating temperature	-25...+60 °C	

