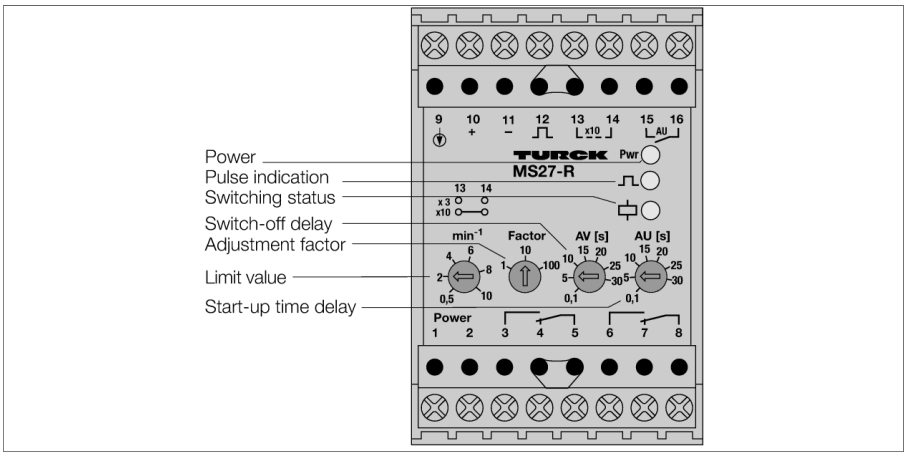
Zero-speed Monitor
1-channel
MS27-R



The zero-speed monitor MS27-R is controlled via 3-wire pnp sensors (II), sensors acc. to EN 60947-5-6 (I) or signal sources with pulse levels of 5…30 VDC (III).

Two relay outputs with one changover contact are provided at the output.

The device is hard-coded to *wire-break monitoring*. If the rotation speeds are below the adjusted limit value, the output relays are de-energized. Six overlapping measuring ranges are programmable. First, the measuring range is set with the bridged terminals 13/14 and the "Factor" switch, then the switchpoint is fine adjusted with the potentiometer "min^{-1}".

Rotation speeds are monitored according to the pulse period measurement principle. This way short response times are achieved even for applications with relatively low speeds.

The green LED indicates operational readiness. The switching status of the output relay is indicated by a yellow LED. Input pulses are indicated by the yellow LED.

A start-up delay between 0.1…30 s for the drive can be set with the AU potentiometer at the front. During this period the limit value relay is energized, preventing this way underspeed indication and system shut-down during the start-up phase. The start-up delay is activated via a potential-free contact at the terminals 15/16 or by applying power to the bridged terminals 15/16.

The device is equipped with an adjustable switch-off delay. The delay time between 0.1…30 s is set with the AV potentiometer at the front. Short-term dips of rotation speed can thus be filtered out.

The device is **not** suited for the detection of an overall system standstill as may be required in safety applications such as centrifuges.

- Rotation underspeed monitoring
- Monitoring range: 25 mHz… 166 Hz (1.5… 10 000 $^{min-1}$)
- Removable terminal blocks
- Start-up bypass, activatable
- Adjustable switch-off delay
- Two sealed relays with hard gold contact (1 x limit value, 1 x alarm)
- Complete galvanic isolation
- Input reverse-polarity protected

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Type	MS27-R
ID	0508412

Nominal voltage	Universal voltage supply unit
Operating voltage	20…250 VAC
Frequency	40…70 Hz
Operating voltage U_B	20…250 VDC
Power consumption	≤ 3 W

Monitoring range/Setting range	1.5…10,000 rpm
Max. input frequency	150000 min^{-1}
Pulse time	≥ 0.02 ms
Pulse pause	≥ 0.02 ms
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	1.55 mA
Switch-off threshold	1.75 mA
3-wire input	
No-load voltage	15 VDC
Current	≤ 30 mA
0-signal	0...3VDC
1-signal	5...30 VDC
External signal source	
0-signal	0…3 VDC
1-signal	5…30 VDC
Input resistance	26000 Ω

Output circuits	
Output circuits (digital)	2 x relays (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	≤ 10 Hz

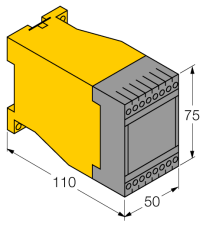
Semiconductor output circuits	
Feed-forward pulse output	
Voltage	≤ 14 V
Current	≤ 10 mA

Response characteristic	
Temperature drift	≤ 0.02 % of full scale/K

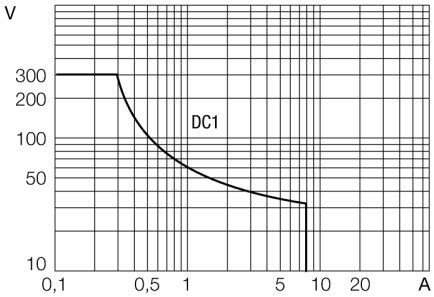
Galvanic isolation	
Test voltage	2.5 kV RMS

Displays/Operating elements	
Operational readiness	Green
Pulse input	Yellow
Switching state	Yellow

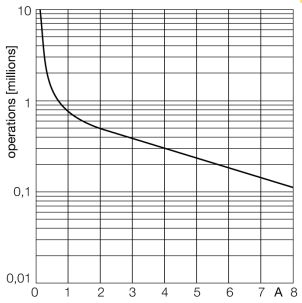
Dimensions



Output relay – Load curve



Output relay – Electrical lifetime



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Mechanical data	
Protection class	IP20
Ambient temperature	-25…+60 °C
Dimensions	75 x 50 x 110 mm
Weight	248 g
Mounting instructions	DIN rail (NS35) or panel
Housing material	Plastic, Polycarbonate/ABS
Electrical connection	2 × 8-pin removable terminal blocks, reverse polarity protected, screw terminal
Terminal cross-section	1 × 2.5 mm²/2 × 1.5 mm²

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