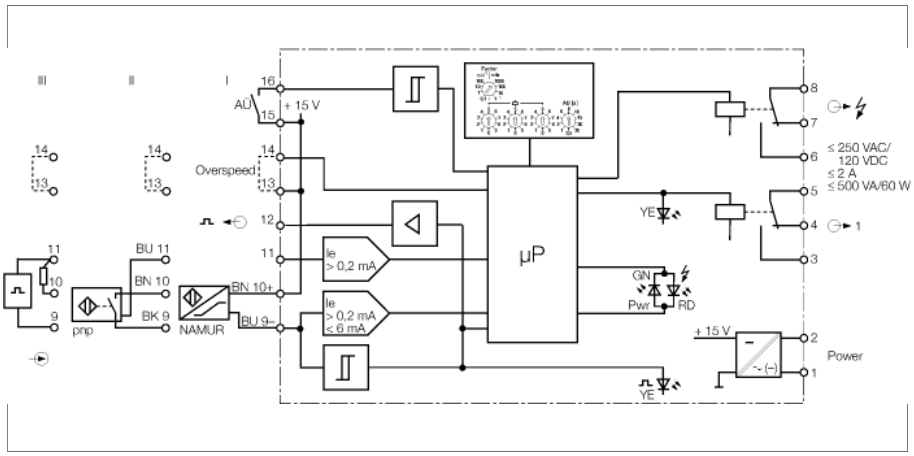
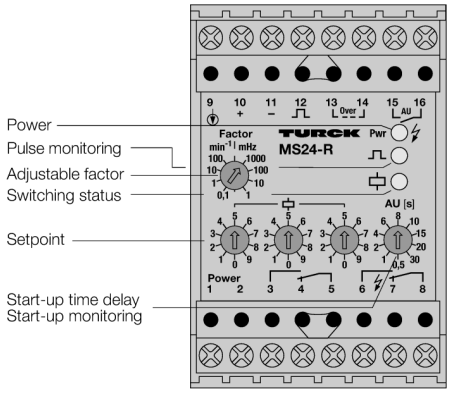
Rotation speed monitor
1-channel
MS24-R





The rotation speed monitor MS24-R monitors pulse frequencies according to over and underrange of a programmed limit value.

The device is controlled via 3-wire pnp sensors, sensors acc. to EN 60947-5-6 or signal sources with pulse levels of 10…30 VDC. If NAMUR sensors are connected (I) the input circuits are monitored for wire-break and short-circuit.

In the event of errors the dual color LED changes from green to red, the relay (3…5) and the alarm relay (6…8) are de-energized independently from the programmed output mode. The yellow LED for input pulses indicates wire-break and short circuit (wire-break: LED off). In case 3-wire sensors are used (II), only the wire-break function for the power cable is active.

Wire-break and short-circuit at the sensor output cable are not detected.

To connect external signal sources (III) use teminals 11 and 9. To suppress short-circuit messages, a 1…10 kΩ resistor must be connected between terminals 10 and 11.

The bridge at terminal 13/14 enables *overspeed monitoring*: In case of overspeed the limit value relay is de-energized. Without bridging *underspeed monitoring*is activated: In case of underspeed the limit value relay is de-energized.

In *overspeed monitoring mode* a start-up delay can be programmed for the drive. 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.

In *overspeed monitoring mode* missing pulses are detected if dynamic input circuit monitoring is connected. For this purpose a monitoring period is programmed which is activated by each incomming pulse. If no pulse is registered during this period, the limit value and the common alarm relay are de-energized. Dynamic input circuit monitoring is activated via a potential free contact at the terminals 15/16 or by applying power (terminals 15/16 are bridged).

- **Monitoring range: 10 mHz… 1 666 Hz (0.6…100 000 $^{min-1}$)**
- **Line monitored for wire-break/short-circuit**
- **1 limit value relay and 1 alarm relay**
- **Setting of digital limit values in Hz or min^{-1}**
- **Start-up bypass activatable for underspeed monitoring**
- **Dynamic monitoring of input circuit, activatable for overspeed monitoring**
- **Removable terminal blocks**
- **Excellent temperature stability and repeatability**
- **Two sealed relays with hard gold contact (1 x limit value, 1 x alarm)**
- **Galvanic separation of input circuits, output circuits and power supply**

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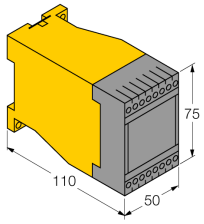
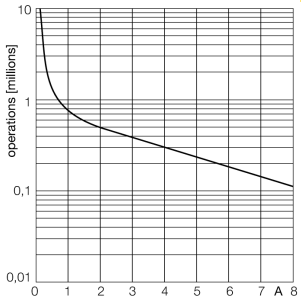
Rotation speed monitor
1-channel
MS24-R

Type	MS24-R
Ident-No.	0519009
Nominal voltage	Universal voltage supply unit
Operating voltage	20…250 VAC
Frequency	40…70 Hz
Operating voltage range	20…250 VDC
Power consumption	≤ 3 W
Monitoring range / setting range:	≤ 0.06…100000 min^{-1}
Input frequency	150000 min^{-1}
Pulse time	≥ 0.02 ms
Pulse stop	≥ 0.02 ms
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:	1.4 mA
Switch-off threshold:	1.8 mA
Wire breakage threshold	≤ 0.15 mA
Short-circuit threshold	≥ 6 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 (digital)	2 x relay (change-over)
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Switching frequency	≤ 10 Hz
Contact quality	AgNi, 3µ Au
Semicondutor output circuit(s)	
Pulse output	
Voltage	≤ 14 V
Current	≤ 10 mA
Temperature drift	≤ 0.005 % / K
Galvanic separation	
Test voltage	2.5 kV
Rated voltage	250 V
Indication	
Operational readiness	green
Pulse input	yellow
Switching state	yellow
Error indication	red
Protection class	IP20
Ambient temperature	-25…+60 °C
Dimensions	75x 50x 110 mm
Weight	259 g
Mounting instruction	For mounting on DIN rail or mounting panel
Housing material	Polycarbonate/ABS
Electrical connection	2 x 8-pole removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm^2 / 2 x 1.5 mm^2

Dimensions



Output relay electrical lifetime



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