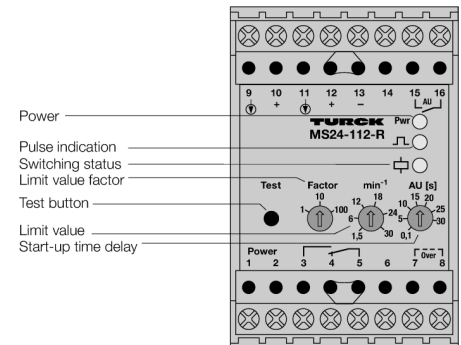
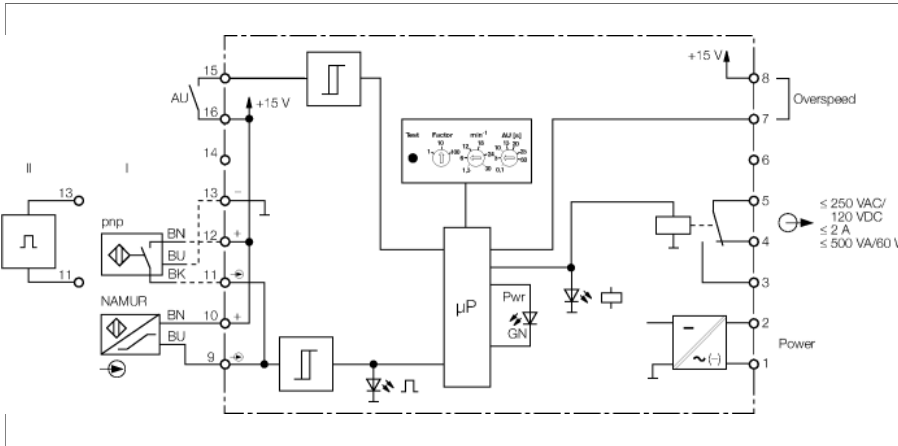


Rotation speed monitor

1-channel

MS24-112-R



The rotation speed monitor MS24-112-R is controlled via 3-wire pnp sensors, sensors acc. to EN 60947-5-6 (I) or signal sources with pulse levels of 10...30 VDC.

Bridging terminals 7 and 8 activates the *overspeed monitoring* mode. In case of rotation speeds above the adjusted limit value, the relay is de-energized. Without bridging, the device works in *underspeed monitoring* mode.

In the case of rotation speeds below the set limit value, the relay is connected. The device features three overlapping measuring ranges and can thus easily be disconnected to adapt to the corresponding application. First, the measuring range is set with a three-step switch and then the switchpoint is fine adjusted with the potentiometer on the front.

The switchpoint can be set during the start-up phase with the test button at the front, without having to switch off the output relay: As long as the test button is being pressed, the output relay remains energized.

To provide optimum response times for applications with relatively low speeds, the device operates on the digital pulse principle.

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

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.

- Rotation speed monitoring for overspeed or underspeed
- Monitoring range: 25 mHz...50 Hz (1.5...3 000^{min⁻¹})
- Line monitored for wire-break/short-circuit
- Removable terminal blocks
- One relay output as changeover contact
- Start-up bypass, activatable
- Complete galvanic isolation
- Input reverse-polarity protected

Dimensions

Type	MS24-112-R
ID	0518003

Nominal voltage	Universal voltage supply unit
Operating voltage	20...250 VAC
Frequency	40...70 Hz
Operating voltage U_s	20...250 VDC
Power consumption	$\leq 3 \text{ W}$

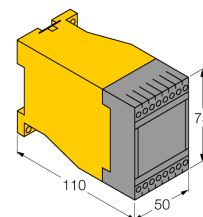
Monitoring range/Setting range	1.5...3000 rpm
Monitoring range/Setting range	1.5...30 rpm
Monitoring range/Setting range	15...300 rpm
Monitoring range/Setting range	150...3000 rpm
Max. input frequency	60000 min ⁻¹
Pulse time	$\geq 0.02 \text{ ms}$
Pulse pause	$\geq 0.02 \text{ ms}$
NAMUR input	
NAMUR	EN 60947-5-6
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 k Ω
Cable resistance	$\leq 50 \Omega$
Switch-on threshold	1.55 mA
Switch-off threshold	1.75 mA
3-wire input	
No-load voltage	15 VDC
Current	$\leq 30 \text{ mA}$
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)	1 x relay (change-over)
Output switching voltage relay	$\leq 30 \text{ VDC} / \leq 250 \text{ VAC}$
Switching current per output	$\leq 2 \text{ A}$
Switching capacity per output	$\leq 500 \text{ VA}/60 \text{ W}$
Switching frequency	$\leq 10 \text{ Hz}$

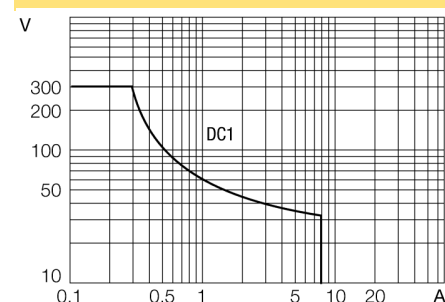
Response characteristic	
Temperature drift	$\leq 0.005 \text{ \% of full scale/K}$

Galvanic isolation	
Test voltage	2.5 kV RMS

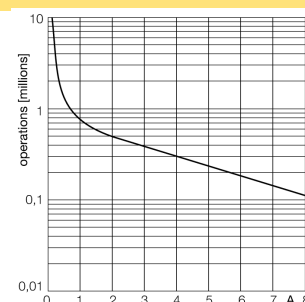
Displays/Operating elements	
Operational readiness	Green
Pulse input	Yellow
Switching state	Yellow



Output relay – Load curve



Output relay – Electrical lifetime



Mechanical data	
Protection class	IP20
Ambient temperature	-25...+60 °C
Dimensions	75 x 50 x 110 mm
Weight	237 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 mm ² /2 × 1.5 mm ²