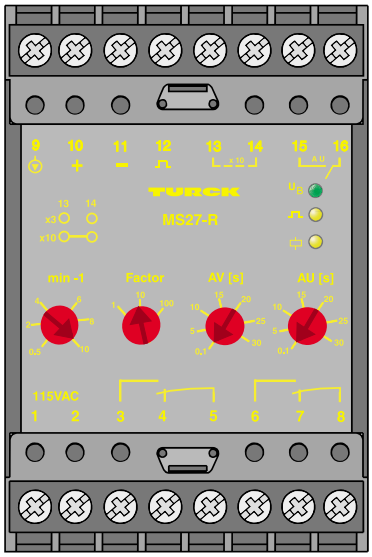


The **MS27-R** rotational speed monitor accommodates NAMUR or 3-wire PNP sensors. The output circuit consists of two SPDT relays. This rotational speed monitor is designed for underspeed detection only and features six adjustable, overlapping speed ranges. The speed range is adjusted by means of a subrange setting and a range factor. Terminals 13 and 14 program the subrange setting. The range factor is set with the "Factor" potentiometer located on the front. The potentiometer "min " is used for fine adjustment of the switch point.

The unit operates on the digital pulse principle, which provides relatively short detection times in applications where input pulses occur infrequently. A yellow LED indicates the state of the output relay.

A start-up time delay can be set from 0.1-30 seconds using the front potentiometer (AU). The start-up time delay keeps the output relay energized during system start-up. The start-up time delay is triggered under two conditions:

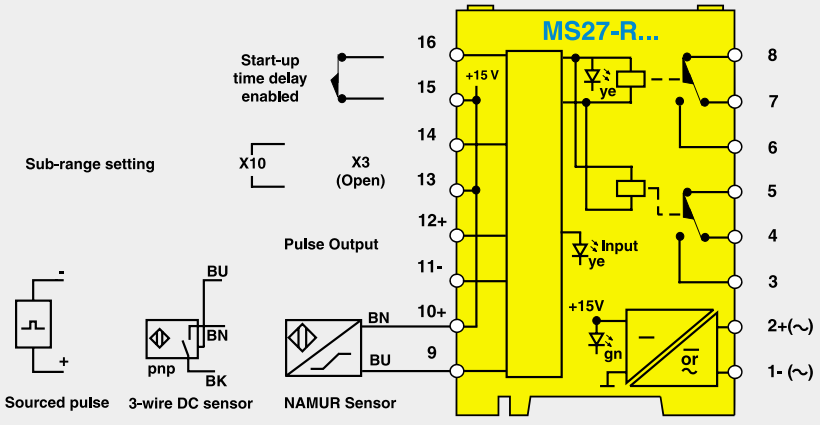
- upon closing of a set of contacts between terminals 15 and 16,
- if terminals 15 and 16 are linked when the unit is powered.

In addition, an off-delay timer is provided for filtering out short-duration speed dips. The off-delay is variable from 0.1-30 seconds and is set with the AV potentiometer. This device is not suitable for safety applications where accurate zero-speed detection is required.

MS27-R/24VDC
MS27-R/85-265VUC
MS27-R/85-265VUC

Connection Diagram

Non-Hazardous Location



Underspeed Monitor
MS27-R/...(24VDC/115VAC/230VAC)

Type	**MS27-R/24VDC**	**MS27-R/115VAC**	**MS27-R/230VAC**
ID Number	M0508407	M0508402	M0508400
Power Supply			
Supply voltage	18-30 VDC, ≤10% ripple	98-126, 48-62 Hz	184-264 VAC, 48-62 Hz
Power consumption	2.5 W	4.5 VA	4.5 VAC
Clearances and Creepage Distances			
- Input circuit to output circuit	≥4 mm	≥4 mm	≥4 mm
- Input circuit to power supply		≥4 mm	≥4 mm
- Test voltage	500 V	2 kV	2 kV
Function	underspeed	underspeed	underspeed
Speed range	1.5-10,000 pulses/min	1.5-10,000 pulses/min	1.5-10,000 pulses/min
Input frequency	≤150,000 pulses/min	≤150,000 pulses/min	≤150,000 pulses/min
Minimum pulse duration	≥0.2 m	≥0.2 m	≥0.2 ms
Minimum pause duration	≥0.2 m	≥0.2 m	≥0.2 m
Hysteresis	approx. 10%	approx. 10%	approx. 10%
Start-up time delay	0.1-30 s (adjustable)	0.1-30 s (adjustable)	0.1-30 s (adjustable)
Switch-off delay	0.1-30 s (adjustable)	0.1-30 s (adjustable)	0.1-30 s (adjustable)
Repeatability	±0.5%	±0.5%	±0.5%
Temperature drift	≤0.020%/K	≤0.020%/K	≤0.020%/K
Input Circuits	NAMUR, 3-wire PNP	NAMUR, 3-wire PNP	NAMUR, 3-wire PNP
NAMUR input	per DIN 19 234 (term. 9/10)	per DIN 19 234 (term. 9/10)	per DIN 19 234 (term. 9/10)
- Nominal operating characteristics	V = 8.2 V, I = 8.2 mA	V = 8.2 V, I = 8.2 mA	V = 8.2 V, I = 8.2 mA
- Switching threshold	1.4 mA ≤ I ≤ 1.8 mA	1.4 mA ≤ I ≤ 1.8 mA	1.4 mA ≤ I ≤ 1.8 mA
3-wire input	PNP (term. 9/10/11)	PNP (term. 9/10/11)	PNP (term. 9/10/11)
- Nominal operating characteristics	V ≤ 15 V, I ≤ 30 mA	V ≤ 15 V, I ≤ 30 mA	V ≤ 15 V, I ≤ 30 mA
- "OFF" signal	0-5 VDC	0-5 VDC	0-5 VDC
- "ON" signal	10-30 VDC	10-30 VDC	10-30 VDC
Output Circuits	two SPDT relays, pulse output	two SPDT relays, pulse output	two SPDT relays, pulse output
Relay output			
- Contact material	AgCdO + 3 µ Au	AgCdO + 3 µ Au	AgCdO + 3 µ Au
- Switching voltage	≤250 V	≤250 V	≤250 V
- Switching current	≤2 A	≤2 A	≤2 A
- Switching capacity	≤500 VA/60 W	≤500 VA/60 W	≤500 VA/60 W
Pulse output (terminal 12)	14 V/10 mA, short-circuit protected	14 V/10 mA, short-circuit protected	14 V/10 mA, short-circuit protected
LED Indications			
- Power "ON"	green	green	green
- Input pulse	yellow	yellow	yellow
- Fault indication	red	red	red
Housing Style	Diagram E (page A18)	Diagram E (page A18)	Diagram E (page A18)

Housing (all styles)

Material	Polycarbonate/ABS, flammability class V-0 per UL 94
Mounting	snap-on clamps for 35 mm symmetrical DIN rail (DIN 50022) or pull-out tabs for panel mounting
Connections	captive terminal screws with self-lifting pressure plates
Connection profile	2 x 14 AWG conductors per terminal
Protection Class	IP 20
Operating temperature	-25°C to +60°C (-13°F to +140°F)

Diagram A 8-pole housing, 18 mm wide

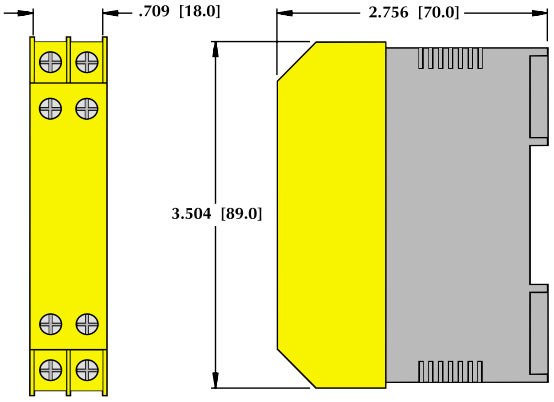


Diagram B 8-pole housing, 18 mm wide, 110 mm long

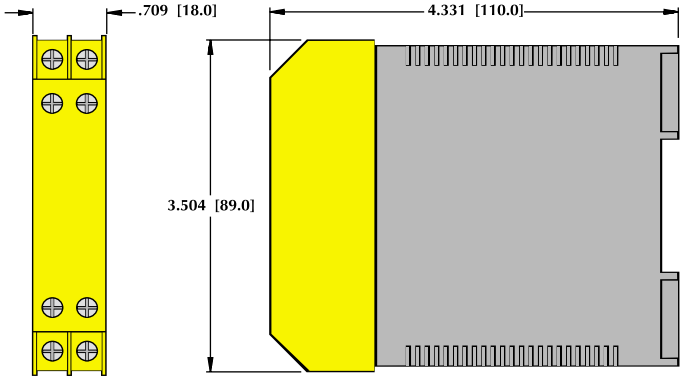


Diagram C 12-pole housing, 27 mm wide

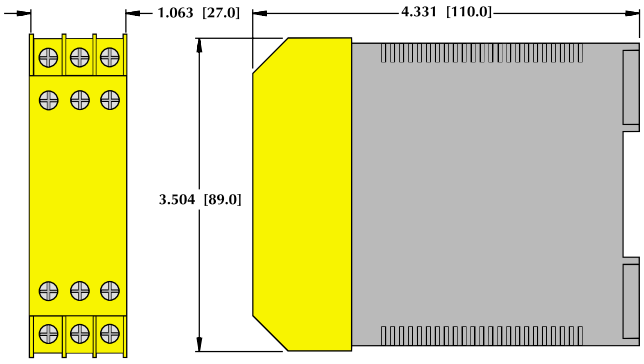
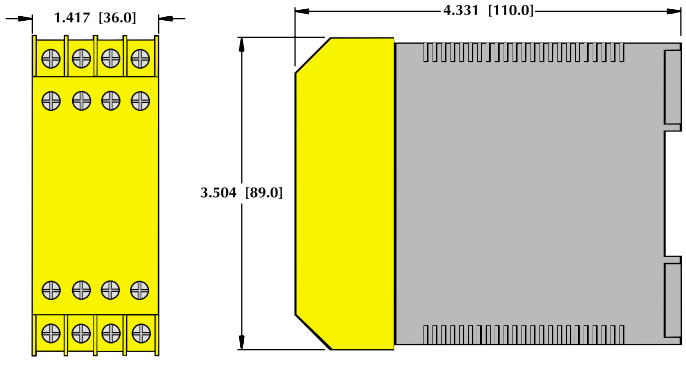


Diagram D 16-pole housing, 36 mm wide, 110 mm long



Housing (all styles)

Diagram E 50 mm housing

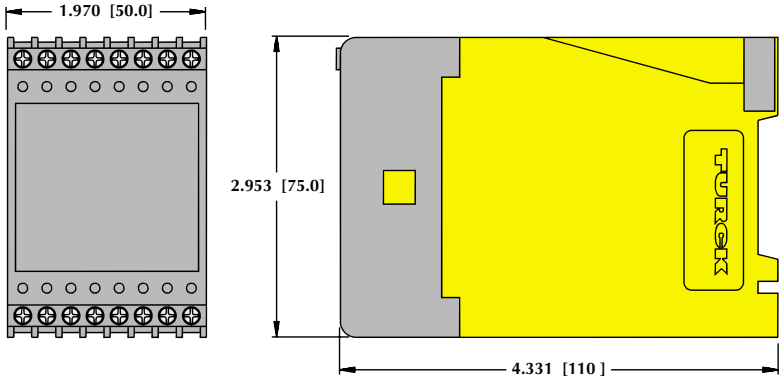


Diagram F 100 mm housing

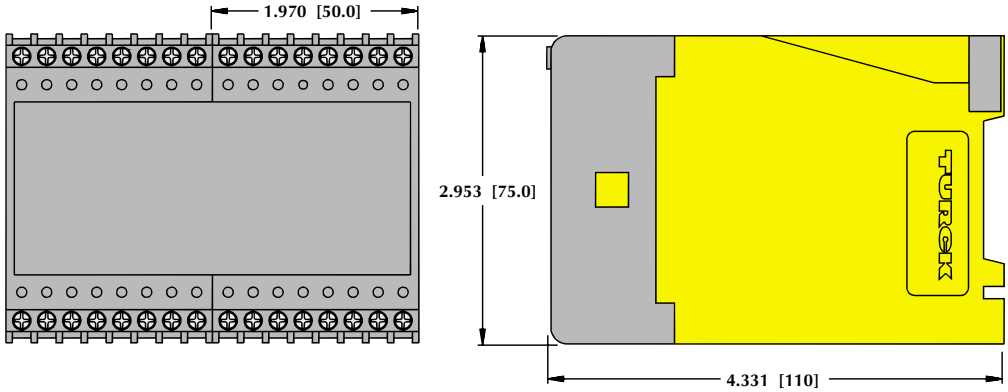


Diagram G 16-pole housing, 36 mm wide

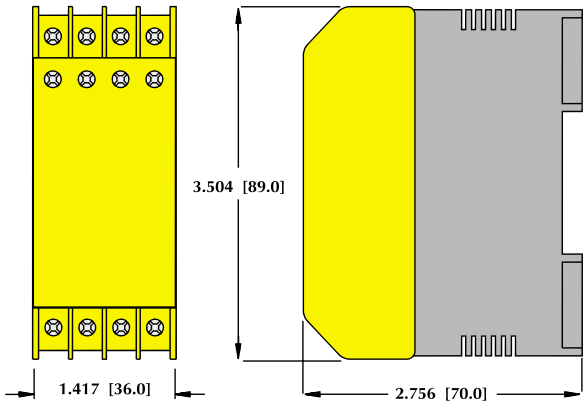


Diagram H 12-pole housing, 18 mm wide