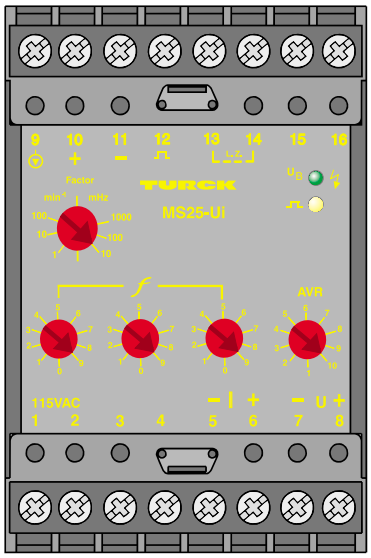


MS25-UI/24VDC
MS25-UI/85-265VUC
MS25-UI/85-265VUC

The **MS25-UI** is a digital to analog converter. It converts the input frequency into an analog current or voltage output relative to the preset measuring range. The device can accommodate NAMUR sensors, 3-wire PNP sensors or other voltage sources with pulse levels between 9 and 30 VDC. The speed range, from 0.6-100,000 pulses/min or 0.01-1660 Hz, is adjusted digitally using four multi-position switches.

The voltage output supplies 0-10 V and the current output supplies 0/4-20 mA. The current output may be programmed for 0-20 mA operation by linking terminals 13 and 14.

If NAMUR sensors are used, the input circuit is monitored for wire break and short circuit. During a fault condition, the 2-color LED turns from green to red and the output current drops to 0 mA (also in live-zero operation). The two conditions can be differentiated using the yellow LED; wire-break causes it to turn off.

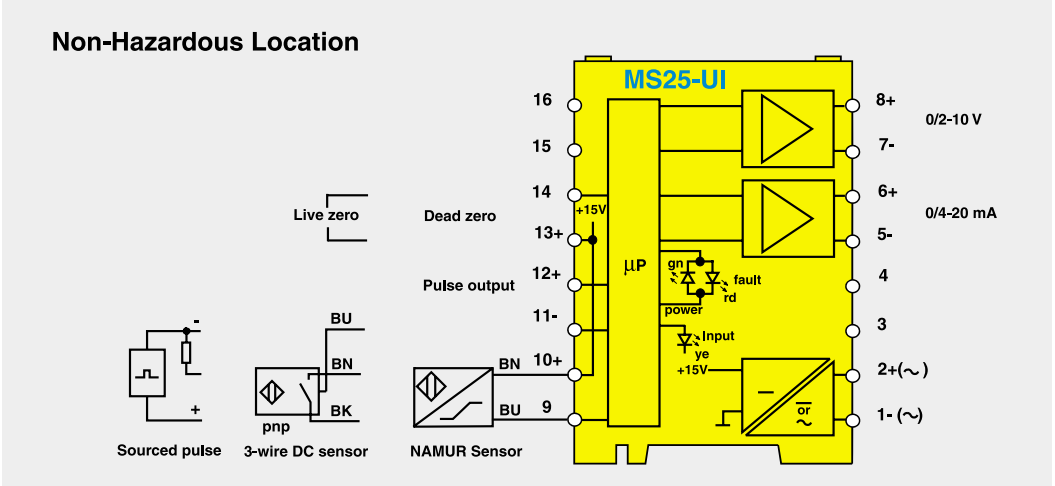
When PNP sensors are used, only the power supply lines are monitored for wire-break. Wire-break and short-circuit conditions on the sensor output are not detected.

When external signal sources are connected, terminals 9 and 11 must be used. In order to suppress fault indications, a 1-10 kΩ resistor should be connected between terminals 10 and 11. If the input rate is less than 0.6 pulses/min, the analog output drops to 0/4 mA or 0 V.

To steady the input signal, an averaging constant can be set between 1 and 10. When the constant is set to 1 (1 pulse sequence), no signal averaging takes place. The averaging principle is based upon the floating average of the preset number of measurements.

Speed monitors used in conjunction with sensors from a hazardous area require an isolated amplifier with PNP output.

Connection Diagram



Digital to Analog Converter
MS25-UI/...(24VDC/85-265VUC)

Type	**MS25-UI/24VDC**	**MS25-UI/85-265VUC**
ID Number	M0508207	M0508220
Power Supply		
Supply voltage	18-30 VDC, ≤10% ripple	85-265 VAC/DC
Power consumption	2.5 W	4.5 VA
Clearances and Creepage Distances		
- Input circuit to output circuit	≥4 mm	≥4 mm
- Input circuit to power supply	≥4 mm	≥4 mm
- Test voltage	500 V	2 kV
Function		
Speed range	0.6-100,000 pulses/min	0.6-100,000 pulses/min
Input frequency	≤150,000 pulses/min	≤150,000 pulses/min
Minimum pulse duration	≥0.2 ms	≥0.2 ms
Minimum pause duration	≥0.2 ms	≥0.2 ms
Repeatability	≤0.1% of full scale	≤0.1% of full scale
Temperature drift	≤0.005%/K of full scale	≤0.005%/K of full scale
Input Circuits	NAMUR, 3-wire PNP	NAMUR, 3-wire PNP
NAMUR input	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
- Switching threshold	1.4 mA ≤ I ≤ 1.8 mA	1.4 mA ≤ I ≤ 1.8 mA
- Wire-break threshold	≤0.15 mA	≤0.15 mA
- Short-circuit threshold	≥6 mA	≥6 mA
3-wire input	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
- "OFF" signal	0-5 VDC	0-5 VDC
- "ON" signal	10-30 VDC	10-30 VDC
Output Circuits	current, voltage, pulse output	current, voltage, pulse output
Current output	0/4-20 mA (load ≤600 Ω)	0/4-20 mA (load ≤600 Ω))
Voltage output	0-10 V (load ≥2 kΩ), short-circuit protected	0-10 V (load ≥2 kΩ), short-circuit protected
Linearity error	≤0.1% of full scale	≤0.1% of full scale
Pulse output (terminal 12)	14 V/10 mA, short-circuit protected	14 V/10 mA, short-circuit protected
Temperature drift	typ. ≤0.005%/°C of full scale max. 0.01%/°C of full scale	typ. ≤0.005%/°C of full scale max. 0.01%/°C of full scale
LED Indications		
- Power "ON" and valid input	green	green
- Input pulse	yellow	yellow
- Fault indication	red	red
Housing Style	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

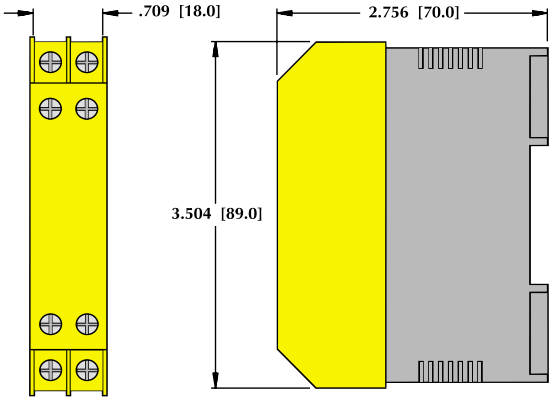


Diagram B 8-pole housing, 18 mm wide, 110 mm long

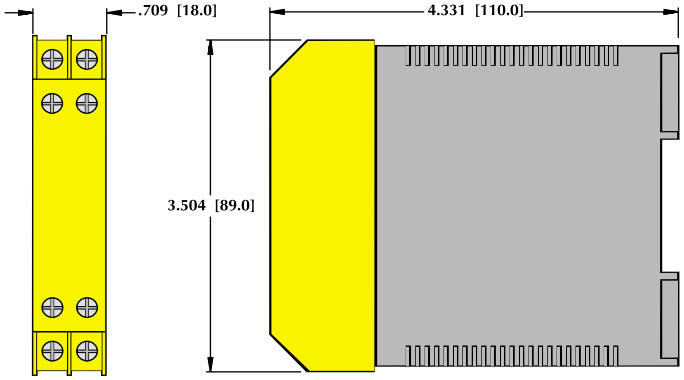


Diagram C 12-pole housing, 27 mm wide

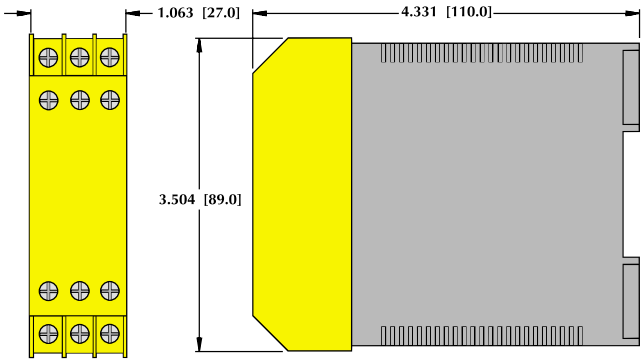
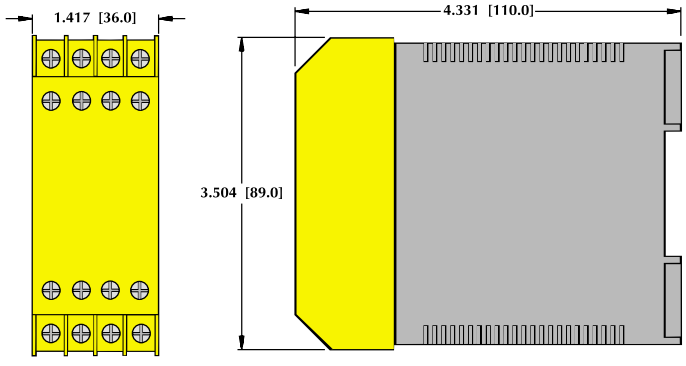


Diagram D 16-pole housing, 36 mm wide, 110 mm long



Housing (all styles)

Diagram E 50 mm housing

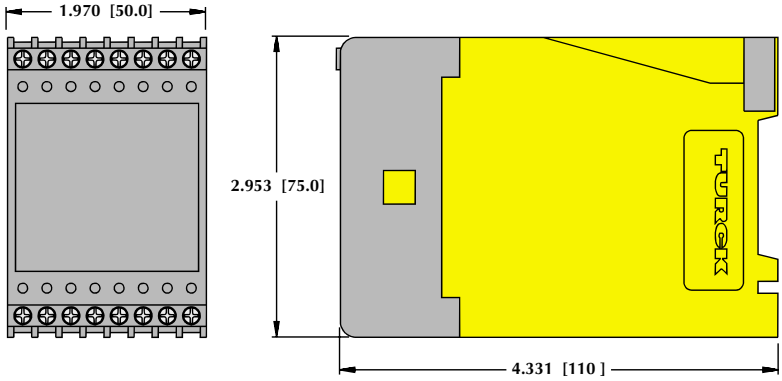


Diagram F 100 mm housing

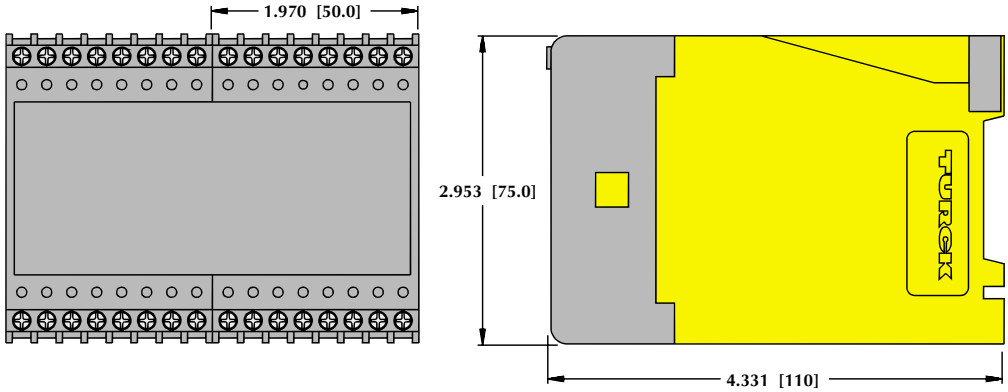


Diagram G 16-pole housing, 36 mm wide

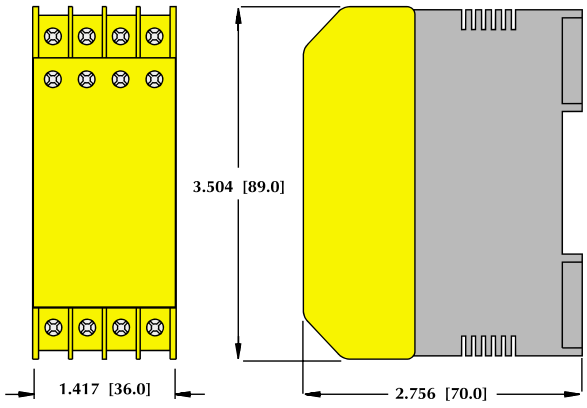


Diagram H 12-pole housing, 18 mm wide