

DATA SHEET

T 4749 EN

Type 4749 Position Transmitter



Application

Position transmitter with magnetoresistive measuring system in type of protection Ex d (flameproof enclosure) or Ex i (intrinsic safety) for attachment to pneumatic linear actuators or rotary actuators according to VDI/VDE 3845

The SAMSON Type 4749 Position Transmitter is mounted onto control valves and converts the linear or rotary motion of a control valve into a 4 to 20 mA standardized signal.

Special features

- Mounting kits for linear actuators according to IEC 60534-6-1, rotary actuators with interface according to VDI/VDE 3845 or SAMSON direct attachment
- Electrical connection using M20x1.5 or 1/2 NPT cable gland to terminals
- Easy menu-driven operation using two pushbuttons and two LEDs
- Corrosion-resistant, rugged enclosure with degree of protection IP66 for adverse environmental conditions
- Permissible ambient temperature -40 to $+85$ °C (standard)



Fig. 1: Type 4749 Position Transmitter

Design and principle of operation

The Type 4749 Position Transmitter converts the linear or rotary motion of a control valve into an electric 4 to 20 mA standardized signal. The angle of the position transmitter's axis is measured by the magnetoresistive measuring system and converted into an electric signal.

Attachment

The position transmitter is suitable for the following types of attachment:

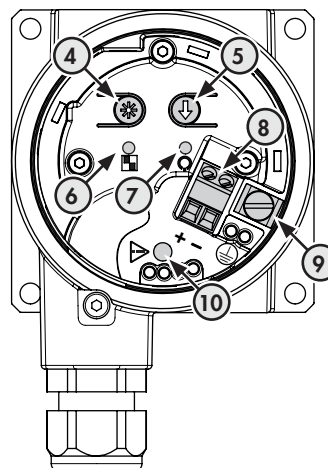
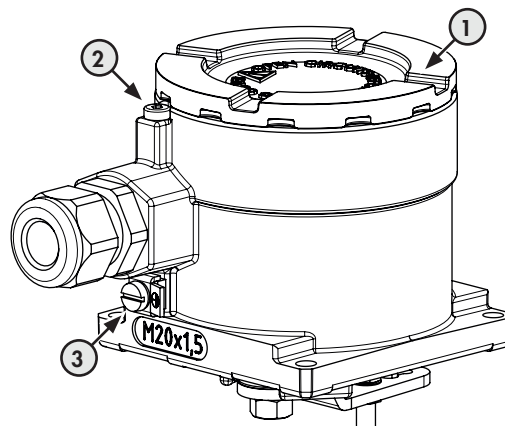
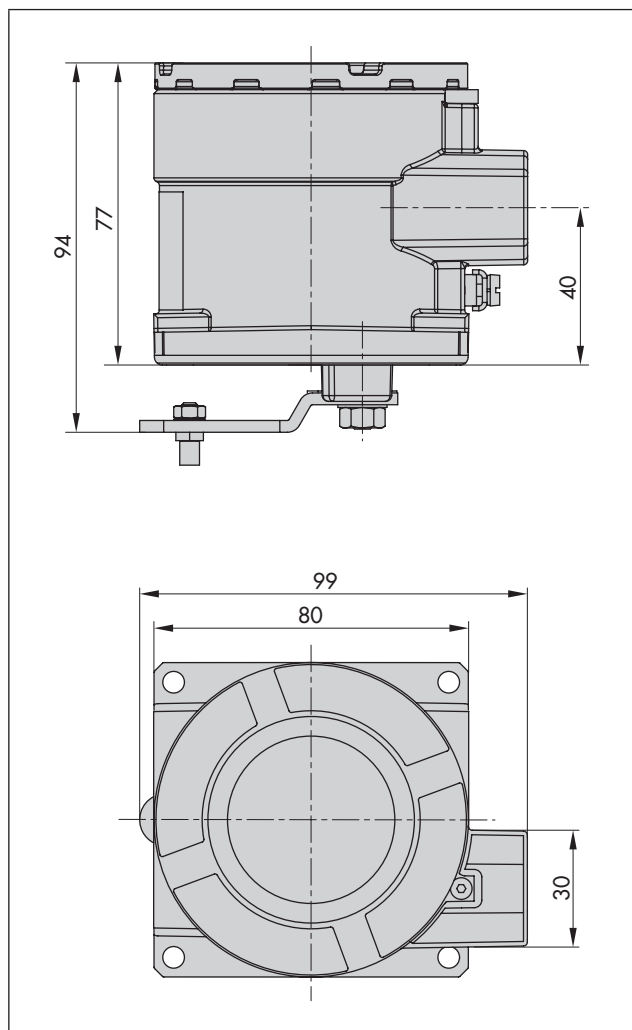
- Direct attachment to SAMSON Type 3277 Actuator
- Attachment to actuators according to IEC 60534-6 (NAMUR rib)
- Attachment to Type 3510 Micro-flow Valve
- Attachment to rotary actuators according to VDI/VDE 3845

Operation

Two pushbuttons are used to operate the device and change device settings. Two LEDs (red and green) indicate the menu items and settings.

To operate the position transmitter, a transmitter supply voltage of $U_b = 12$ to 36 V is required for the 4 to 20 mA measuring circuit.

Dimensions in mm



- 1 Enclosure cover
- 2 Stop screw
- 3 Grounding connection (external)
- 4 * key
- 5 ➔ key
- 6 Red LED
- 7 Green LED
- 8 Terminal
- 9 Grounding connection (internal)
- 10 Shaft locking

Fig. 2: Design and operating controls of the Type 4749 Position Transmitter




Technical data

Type 4749 Position Transmitter	
Measuring range	
Measurement method	Magneto-resistive measuring system
Measured travel for	Direct attachment to Type 3277: 3.6 to 30 mm Attachment according to IEC 60534-6 (NAMUR): 5 to 300 mm Attachment to rotary actuators: 24 to 100°
Power supply	
Input voltage	12 to 36 V DC
Output	4 to 20 mA · Two-wire device, reverse polarity protection
Residual current	≤3.6 mA
Permissible load R_b in Ω	$R_b = (U_b - 12 \text{ V})/0.020 \text{ A}$
Static destruction limit	38 V DC, 30 V AC
Power consumption	<0.2 W
Measuring accuracy	
Reference conditions	Calibrated with $U = 24 \text{ V DC}$, $T_U = 20 \text{ °C}$
Zero error	<0.1 % according to DIN EN 60770
Hysteresis	≤0.1 % according to DIN EN 60770
Nonlinearity	<0.3 % according to DIN EN 60770
Effect of supply voltage on zero and span	<0.05 % according to DIN EN 60770
Effect of ambient temperature on zero and span	<0.1 %/10 K according to DIN EN 60770
Long-term stability	<0.1 % according to DIN EN 60770
Start-up time	1200 ms
Output rate	1 ms
Environmental conditions and permissible temperatures	
Permissible environmental conditions according to EN 60721-3	
Storage	1K6 (relative humidity ≤95 %)
Transport	2K4
Operation	4K2 or 4K3 (depending on the temperature range) -20 to +85 °C: All versions -40 to +85 °C: With metal cable glands Observe the limits in the test certificate for explosion-protected versions.
Resistance to vibration	
Vibrations (sinusoidal)	According to DIN EN 60068-2-6: 2 to 9 Hz; 3.5 mm amplitude 10 to 200 Hz; 10 m/s ² acceleration 200 to 500 Hz; 15 m/s ² acceleration
Noise	According to DIN EN 60068-2-64: 10 to 200 Hz; amplitude 1 (m/s ²) ² /Hz 200 to 2000 Hz; amplitude 0.3 (m/s ²) ² /Hz
Requirements	
EMC	Complying with EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-6-7, EN 61326 and NAMUR Recommendation NE 21
Degree of protection	IP 66
Conformity	CE
Electrical connections	
Cable glands	M20x1.5 or ½ NPT
Terminals	Screw terminals for 0.2 to 2.5 mm ² wire cross-section
Explosion protection	
ATEX, IECEx	Refer to Summary of explosion protection approvals on page 4
Materials	
Enclosure and cover	Die-cast aluminum EN AC-44300/EN AC-43000 according to DIN EN 1706, chromate and powder coating
Cable glands	Polyamide, nickel-plated brass
Other external parts	Stainless steel 1.4301/1.4310 + 1.4404/1.4409 (316 L)
Weight	0.7 kg

Article code

Position transmitter	Type 4749- x x x x 0 x x x x 0 0 x x x x															
Version																
Analog position transmitter				0												
Explosion protection																
Without	0	0	0													
ATEX II 2 G Ex ia IIC T6...T4 Gb/II 2 D Ex ia IIIC T85 °C Db	1	1	0													
IECEX Ex ia IIC T6...T4 Gb/Ex ia IIIC T85 °C Db	1	1	1													
ATEX or II 2 G Ex ia IIC T6...T4 Gb/II 2 D Ex ia IIIC T85 °C Db	1	8	0													
ATEX or II 2 G Ex db IIC T6...T4 Gb/II 2 D Ex tb IIIC T80 °C Db																
IECEX or Ex ia IIC T6...T4 Gb/Ex ia IIIC T85 °C Db	1	8	1													
IECEX or Ex db IIC T6...T4 Gb/Ex tb IIIC T80 °C Db																
ATEX II 2 G Ex db IIC T6...T4 Gb/II 2 D Ex tb IIIC T80 °C Db	2	1	0													
IECEX Ex db IIC T6...T4 Gb/Ex tb IIIC T80 °C Db	2	1	1													
Electrical threaded connections																
M20x1.5							0									
½ NPT							1									
Enclosure material																
Aluminum (standard)								0								
Special applications																
Without									0	0/1						
SIL									1	3						
Temperature range																
-20 to +85 °C (standard)										0						
-40 to +85 °C (versions with metal cable glands)										1						
-35 to +75 °C (SIL version with metal cable gland)										3						
Hardware version																
1.00.00												9	9			
Firmware version																
1.00.02															9	8
1.00.04															9	7

Summary of explosion protection approvals

Type	Certification	Number	Date	Type of protection
4749-110	 EC type examination certificate	Number KIWA 18ATEX0031 X	Date 2019-01-09	II 2 G Ex ia IIC T6...T4 Gb/ II 2 D Ex ia IIIC T85 °C Db
4749-111	IECEX	Number IECEX KIWA 18.0014X	Date 2019-01-09	Ex ia IIC T6...T4 Gb/ Ex ia IIIC T85 °C Db
4749-180	 EC type examination certificate	Number KIWA 19ATEX0038 X	Date 2019-10-10	II 2 G Ex ia IIC T6...T4 Gb II 2 D Ex ia IIIC T85 °C Db or II 2 G Ex db IIC T6...T4 Gb II 2 D Ex tb IIIC T80 °C Db
4749-181	IECEX	Number IECEX KIWA 19.0022X	Date 2019-10-10	Ex ia IIC T6...T4 Gb Ex ia IIIC T85 °C Db or Ex db IIC T6...T4 Gb Ex tb IIIC T80 °C Db
4749-210	 EC type examination certificate	Number KIWA 18ATEX0036 X	Date 2018-11-11	II 2 G Ex db IIC T6...T4 Gb/ II 2 D Ex tb IIIC T80 °C Db
4749-211	IECEX	Number IECEX KIWA 18.0017X	Date 2018-11-11	Ex db IIC T6...T4 Gb/ Ex tb IIIC T80 °C Db