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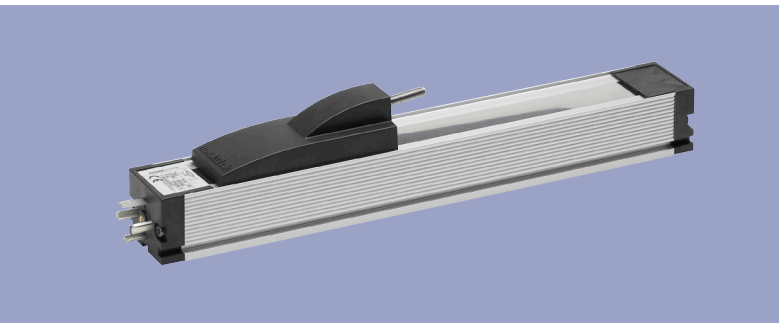
Position Transducers potentiometric up to 3000 mm

Series TLH



Special features
- rodless design
- very high operating speed
- ball coupling avoids side loads
- long life >100 x 106 movements
- outstanding linearity - up to ±0.02 %
- high resolution – better than 0.01 mm
- real-time output
- connector to DIN 43650 (hydraulic connector)
- protection class IP 54 - mounted slider-side down

TLH transducers are designed for the direct, accurate measurement of displacement or length in control, regulation and measuring applications.

The rodless design utilizes a magnetically-restrained stainless steel band to cover the opening through which the actuator operates. Thus, the actuator is driven from the side, along the unit length. This allows the transducer to be shorter, and permits stroke lengths up to 3000 mm.

A ball coupling limits parallel or angular drive forces from being transmitted to the sensor bearings.

The TLH series is designed for use with mounting clamps which simplifies installation and adjustment.

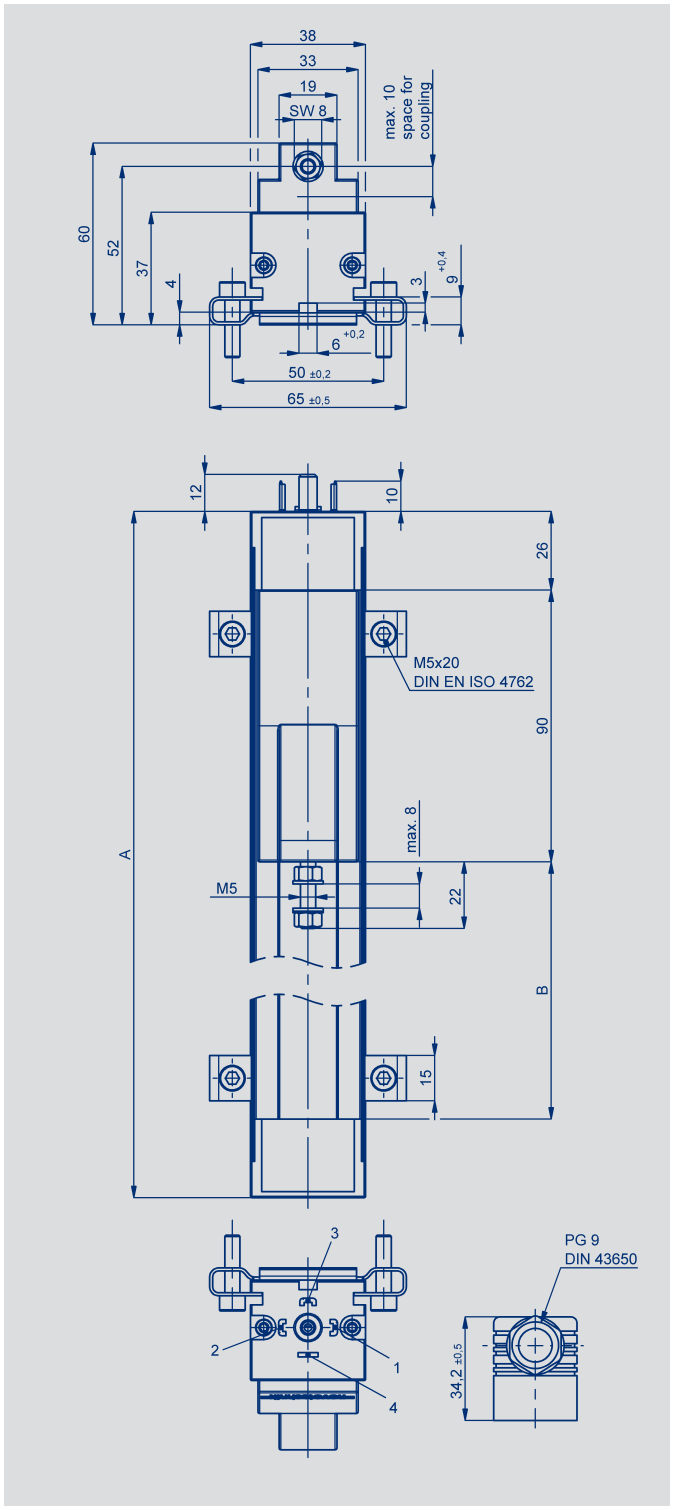
Due to the design and the selected materials the temperature coefficient of the transducer is extremely small. Careful attention to detail and choice of materials has resulted in a transducer with an extremely low drift due to temperature.

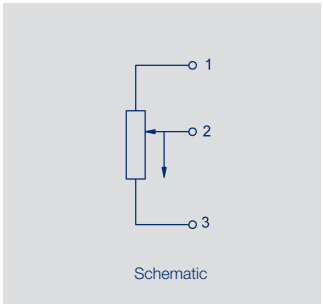
The robust design ensures reliable operation even under harsh environmental conditions such as vibration or temperature changes. The measuring technology is both passive and absolute.

The TLH transducer is immune to external electrical interference, and retains absolute positional information in the event of power failure.

As with all potentiometers, the output is real-time.

Description	
Housing	aluminium, anodized
Fixings	adjustable clamps
Sliding parts	aluminium with plastic inserts
Coupling	ball coupling, incorporating a hardened ball, with spring and hardened plate.
Reistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer-damped
Electrical connections	4pole socket to DIN 43650


38
33
19
SW 8
max. 10
space for
coupling
60
52
37
4
3
9 +0,4
6 +0,2
50 ±0,2
65 ±0,5
12
10
26
M5x20
DIN EN ISO 4762
90
max. 8
A
M5
22
B
15
3
2
1
4
PG 9
DIN 43650
34,2 ±0,5


1
2
3
Schematic

Type designations	TLH 0100	TLH 0130	TLH 0150	TLH 0225	TLH 0300	TLH 0360	TLH 0450	TLH 0500	TLH 0600	TLH 0750	TLH 0900	TLH 1000	TLH 1250	TLH 1500	TLH 1750	TLH 2000	TLH 2250	TLH 2500	TLH 2750	TLH 3000	
Electrical Data																					
Defined electrical range	100	130	150	225	300	360	450	500	600	750	900	1000	1250	1500	1750	2000	2250	2500	2750	3000	mm
Electrical stroke	102	132	152	228	304	366	457	508	610	762	914	1016	1270	1520	1770	2020	2270	2520	2770	3020	mm
Nominal resistance	3	3	5	5	5	5	5	5	5	10	10	10	10	20	20	20	20	20	20	20	kΩ
Resistance tolerance	20																				±%
Independent linearity	0.1	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	±%
Repeatability	0.01																				mm
Recommended operating wiper current	≤ 1																				µA
Maximum wiper current (due to system malfunction)	10																				mA
Maximum permissible applied voltage	42																				V
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5																				ppm/K
Insulation resistance (500 VDC)	≥ 10																				MΩ
Dielectric strength (500 VAC, 50 Hz)	≤ 100																				µA
Mechanical Data																					
Body length (dimension A)	250	280	300	376	452	514	605	656	758	910	1062	1164	1418	1668	1918	2168	2418	2668	2918	3168	±2 mm
Mechanical stroke (dimension B)	108	138	158	234	310	372	463	514	616	768	920	1022	1276	1526	1776	2026	2276	2526	2776	3026	±2 mm
Total weight	440	480	500	620	730	820	950	1020	1170	1390	1600	1750	2110	2470	2830	3200	3560	3920	4280	4650	g
Weight ofsliding part	45																				g
Permitted movement of ball coupling	±1° angular offset, ±1.5 mm parallel offset																				
Operating force horizontal vertical	 ≤ 0.4 ≤ 1.1																				 N N
Environmental Data																					
Temperature range	-30 ... +100																				°C
Vibration	5...2000 Amax = 0.75 amax= 20																				Hz mm g
Shock	50 11																				g ms
Life	> 100 x 10^6																				movem.
Operating speed	10																				m/s max.
Operational acceleration	200 (20 g)																				m/s^2 max.
Protection class	IP40 (DIN EN 60529) IP54 (DIN EN 60529) mounted actuator side down																				

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Order designations

Type	P/N
TLH-0100	025304
TLH-0130	025305
TLH-0150	025306
TLH-0225	025309
TLH-0300	025312
TLH-0360	025314
TLH-0450	025318
TLH-0500	025320
TLH-0600	025324
TLH-0750	025330
TLH-0900	025336
TLH-1000	025340
TLH-1250	025350
TLH-1500	025360
TLH-1750	025370
TLH-2000	025380
TLH-2250	025381
TLH-2500	025383
TLH-2750	025384
TLH-3000	025385

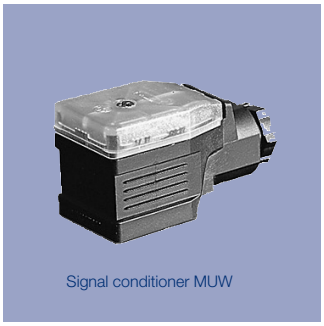
Other lengths on request.
(see data sheet TLH Special Length)

Included in delivery

Fixing clamps Z-43 with 4 screws
1 plug connector GDM 3009 (Ø 4.5 mm - 7 mm)
1 sealing gasket GDM 3-16

Recommended accessories

MAP - process control indicator with display
MUW signal conditioner - 24V supply with standard voltage and current outputs. (integrated in connector).



Signal conditioner MUW

Important

All values specified in this data sheet for linearity, lifetime and temperature coefficient are only valid for a sensor used as a voltage divider with virtually no load applied to the wiper ≤ 1 µA).

Mounting instructions

It is recommended that the transducer be mounted with slider-side down. In this orientation the design works to effectively minimze the build up of dirt on the sealing band in a dusty environment.