

Position Transducers up to 3000 mm

Series TLH



Special features

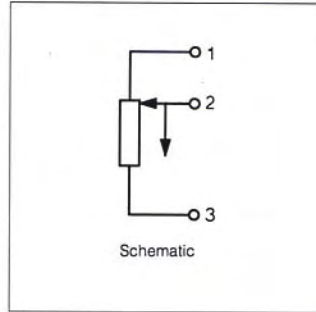
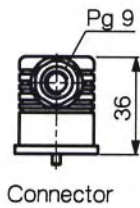
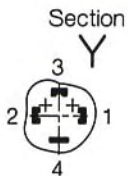
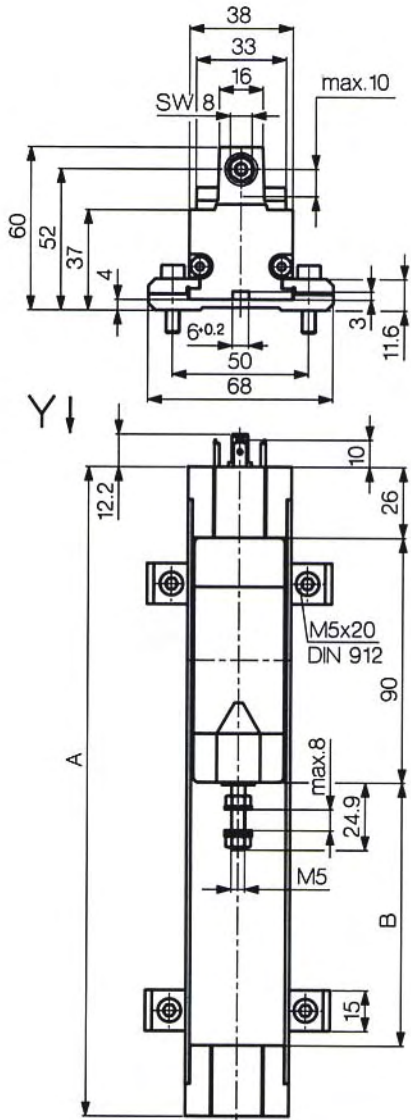
- rodless design
- ball coupling avoids side loads
- very long life $>100 \times 10^6$ operations
- outstanding linearity
- high resolution - better than 0.01 mm
- very high operating speed
- Connector to DIN 43650 (hydraulic connector)

Designed for the direct, accurate measurement of displacement or length in control, regulation and measuring applications.

The rodless design allows the actuator to be driven from the side, along the unit length, thereby avoiding the „pump“ effect problems normally associated with conventional transducers, and allowing standard stroke length up to 3000 mm.

A magnetically restrained stainless steel band completely covers the opening through which the actuator operates. The ball coupling is of a new design which prevents forces, generated through parallel or angular offsets, from being transmitted to bearing surfaces. Fixing is achieved through the use of clamps which permit fine adjustment after initial mounting.

Careful attention to detail and choice of materials has resulted in a transducer with an extremely low temperature drift. The robust construction ensures reliable operation even under adverse environmental conditions such as vibration or temperature changes. The inherent simplicity of the measuring technique - both passive and absolute - ensures that the transducer is immune to external electrical interference, and that it does not require any inbuilt power supply to maintain positional information in the event of power failure.



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

Type designations	TLH 100	TLH 130	TLH 150	TLH 225	TLH 300	TLH 360	TLH 450	TLH 500	TLH 600	TLH 750	TLH 900	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	2570	2770	3020	mm
Nominal resistance	2	2	5	5	5	5	5	5	5	10	10	10	10	10	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	<0.1																				μA
Max. wiper current in case of malfunction	10																				mA
Max. permissible applied voltage	42																				V
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5																				ppm/°C
Insulation resistance (500 V=, 1 bar, 2 s)	≥10																				MΩ
Dielectric strength (50Hz, 2s, 1bar, 500V-) ≤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 of sliding part	45																				g
Permitted movement of ball coupling	±1° angular offset, ±1.5 mm parallel offset																				
Operating force (horizontal)	0.4																				N
vertical	1.1																				N

Environmental Data		
Temperature range	-30...+100	°C
Vibration	5...2000 A _{max} = 0,75 a _{rmax} = 20	Hz mm g
Shock	50 11	g ms
Life	>100 x 10 ⁶	operations
Operating speed	10	m/s max.
Operating acceleration	200 (20 g)	m/s ² max.
Protection class	IP 40	