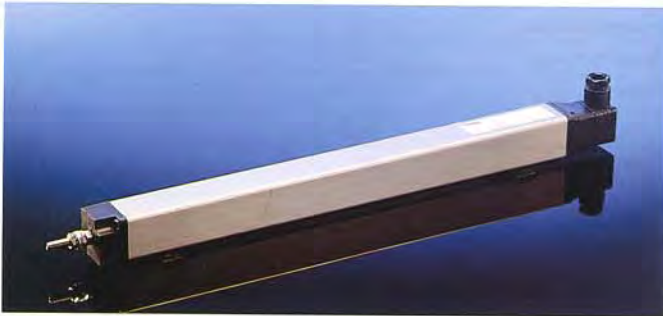


# Position Transducers up to 900 mm

Series LWH



## Special features

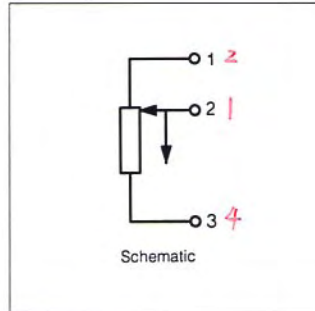
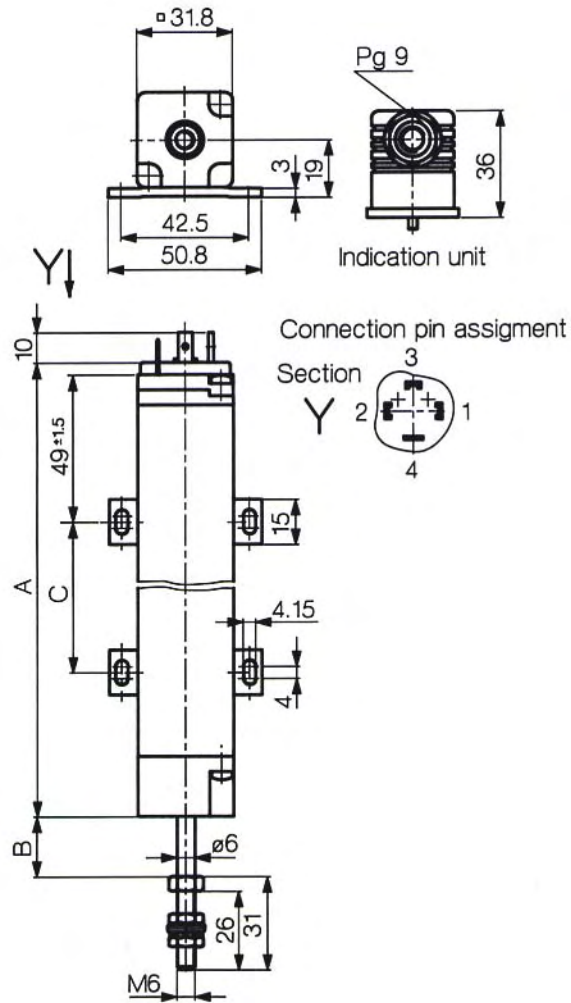
- very long life  $>100 \times 10^6$  operations
- outstanding linearity
- high resolution 0.01 mm
- very high operating speed
- connection via plug and socket to DIN 43 650 (hydraulic connector)

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

High resolution (0.01 mm) combined with a stroke length of up to 900 mm permits the accurate measurement of linear displacement.

Rack and pinions or similar devices are not required because the construction of the transducers is such that they may be built directly into the mechanical system.

Tighter tolerances on the extruded body combined with a special surface treatment permit high operating speeds and reduced wear. A pivoting front bearing overcomes „stick-slip“ type of operation even where some angular or out of parallel errors are present. The technique for fixing and making connections to the resistance track ensures the highest degree of reliability even under the most adverse working conditions. The fixing „feet“ are adjustable and may therefore be at the most convenient points.



Description	
Housing	aluminium, anodized
Fixings	see diagram, setting adjustable
Actuator	stainless steel, rotatable
Bearings	pivoting sleeve bearing
Resistance element	conductive plastic
Wiper assembly	metal multi-finger wiper, elastomer-damped
Electrical connections	4pole socket to DIN 43650

Type designations	LWH 75	LWH 100	LWH 130	LWH 150	LWH 225	LWH 300	LWH 360	LWH 450	LWH 500	LWH 600	LWH 750	LWH 900	
<b>Electrical Data</b>													
Defined electrical range	75	100	130	150	225	300	360	450	500	600	750	900	mm
Electrical stroke	76	102	132	152	228	304	366	457	508	610	762	915	mm
Nominal resistance	2	2	2	5	5	5	5	5	5	5	10	10	kΩ
Resistance tolerance	20												±%
Independent linearity	0.1	0.1	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.04	0.04	±%
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 (50 Hz, 2 s, 1 bar, 500 V-)	≤100												μA
<b>Mechanical Data</b>													
Body length (Dimension A)	148	173	203	223	300	375	438	528	579	680	833	985	±2 mm
Mechanical stroke (dimension B)	83	109	139	160	236	312	373	465	515	617	769	922	±2 mm
spacing of fixing feet (Dimension C)	52.5	77.5	108.5	128.5	204.5	280.5	343.5	433.5	484.5	585.5	738.5	890.5	±1.5 mm
Total weight	220	250	290	320	410	500	570	680	740	870	1050	1230	g
Weight of actuator and wiper	50	55	60	65	85	100	115	135	145	170	210	245	g
Operating force (horizontal)	1.5	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.2	2.3	N
vertical	2.0	2.1	2.2	2.3	2.6	2.8	3.0	3.4	3.5	3.9	4.4	5.0	N
Max. permitted torque for fixing screws (with washers)	240												Ncm

<b>Environmental Data</b>		
Temperature range	-30... +100	°C
Vibration	5... 2000 A <sub>max</sub> = 0.75 a <sub>max</sub> = 20	Hz mm g
Shock	50 11	g ms
Life	>100 x 10 <sup>6</sup>	operations
Operating speed	10	m/s max.
Operational acceleration	200 (20 g)	m/s <sup>2</sup> max.
Protection class	IP 50	

**Included in delivery**

1 free socket  
GDM 3009 EEM 33-98,  
1 sealing gasket  
GDM 3-16 EEM 33-99,  
2 fixing clamps with 4 screws

**Recommended accessories**

Pivot head (see accessoires)  
Process-controlled indicators  
MAP... with display  
Signal conditioner MUP... for  
standardized output signals

Order designations	
Type	Art.no.
LWH 75	002429
LWH 100	002428
LWH 130	002430
LWH 150	002431
LWH 225	002432
LWH 300	002434
LWH 360	002435
LWH 450	002436
LWH 500	002437
LWH 600	002438
LWH 750	002440
LWH 900	002442

Greater lengths on request

**Important**

All the values given in this data sheet for linearity, lifetime, micro-linearity, resistance to external disturbances and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper ( $I_e \leq 0,1 \mu A$ ).