

**Position Transducers
Pivot head mounting
potentiometric
up to 750 mm, IP67**

Series LWX,
Model 002
Shaft protected



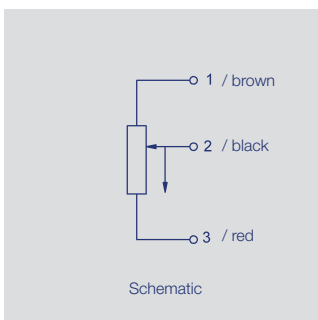
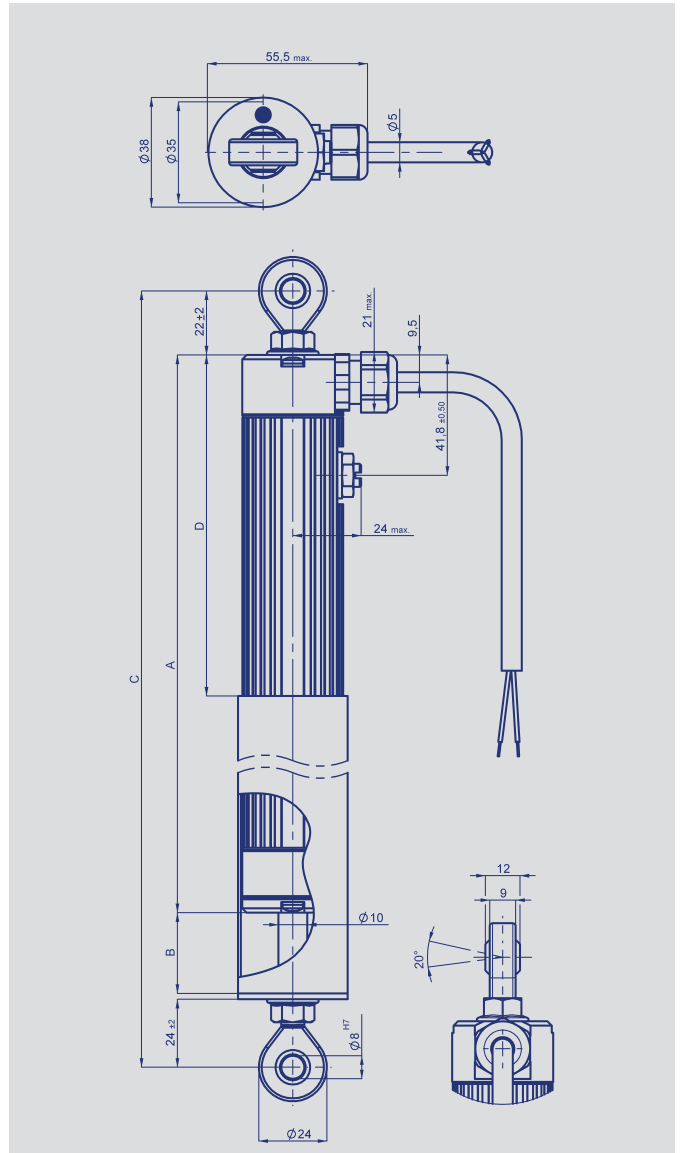
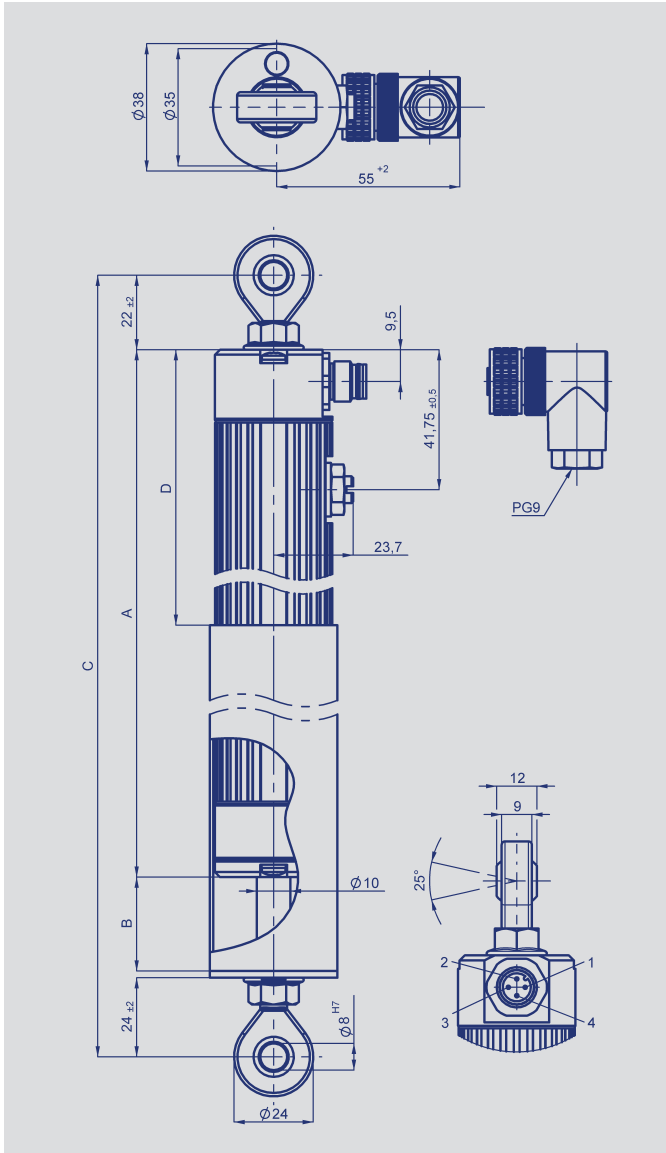
Designed for extreme operating environments, the LWX series features all-metal construction and patented pressure equalization technology to prevent buildup that could degrade operation in mechanical, vehicle, automation and robotic applications where an extended operating life is essential.

These rugged position transducers provide direct, absolute measurement of displacement or length. Pivot-head mountings minimize backlash and guarantee high accuracy.

Special features

- protection class IP 67
- all-metal housing
- corrosion resistant
- patented differential pressure compensation system compensates for pump effect of push rod movement
- high vibration resistance
- suitable for harsh environmental conditions (humidity, oil, dust)
- twin-bearing actuating rod
- mountable via low-backlash pivot heads with a large angle of free movement (up $\pm 12.5^\circ$)
- outstanding linearity up to $\pm 0.04\%$
- resolution better than 0.01 mm
- long life up to 50 million movements, depending on application
- cable or connector version available
- version IP65, see LWG data sheet
- without shaft protection sleeve, see LWX series 001 data sheet

Description	
Housing	aluminium, anodized
Mounting	see drawing
Guard tube	stainless steel (1.4301 or 1.4307)
Actuator rod	stainless steel (1.4305), rotatable
Bearings	metal-polymer slide bearing
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer-damped
Electrical connections	4-pin round connector, M12x1 or 3-wire PVC-cable, 3x0.34 mm ² , shielded, 1 m length



Type designations	LWX 0050	LWX 0075	LWX 0100	LWX 0150	LWX 0175	LWX 0225	LWX 0250	LWX 0300	LWX 0360	LWX 0450	LWX 0500	LWX 0600	LWX 0750	
Electrical Data														
Defined electrical range	50	75	100	150	175	225	250	300	360	450	500	600	750	mm
Electrical stroke	52	77	102	152	178	228	254	304	366	457	508	610	762	mm
Nominal resistance	2	3	3	5	5	5	5	5	5	5	5	5	10	kΩ
Resistance tolerance	20													±%
Independent linearity	0.2	0.1	0.1	0.08	0.07	0.07	0.07	0.06	0.05	0.05	0.05	0.05	0.04	±%
Repeatability	0.01													mm
Recommended wiper operating current	≤ 1													μA
Maximum allowed wiper current (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)	176	201	227	277	303	354	379	430	505	619	684	810	9974	±2 mm
Mechanical stroke (dimension B)	54	79	105	155	181	231	257	307	368	460	510	612	764	±2 mm
Minimum distance between pivot heads, nominal (dimension C)	224	249	275	325	351	402	427	478	553	667	732	858	1042	mm
Open housing area (dimension D)	84	90	90	90	90	90	90	91	105	127	142	166	198	±2 mm
Weight with connector approx.	489	556	623	757	824	958	1025	1159	1353	1594	1728	1996	2398	g
Operating force horizontal	typical 50													N
vertical	typical 50													N
Initial operating force horizontal	max. 150 (*)													N
Environmental Data														
Temperature range	-30 ... +100													°C
Operating humidity range	0 ... 95 (no condensation)													% R.H.
Vibration	5...2000 Amax = 0.75 amax= 20													Hz mm g
Shock	50 11													g ms
Life	> 50 x 10 ⁶ (typical)													movem.
Operating speed	5													m/s max.
Protection class	IP67 (DIN EN 60529), includes dynamic operation													

* Initial operating force is dependent on ambient temperature and inactive time.

Order designations (connector version)		Order designations (cable version)	
Type	P/N	Type	P/N
LWX-0050-002	026180	LWX-0050-002-201	026280
LWX-0075-002	026181	LWX-0075-002-201	026281
LWX-0100-002	026182	LWX-0100-002-201	026282
LWX-0150-002	026183	LWX-0150-002-201	026283
LWX-0175-002	026184	LWX-0175-002-201	026284
LWX-0225-002	026185	LWX-0225-002-201	026285
LWX-0250-002	026186	LWX-0250-002-201	026286
LWX-0300-002	026187	LWX-0300-002-201	026287
LWX-0360-002	026188	LWX-0360-002-201	026288
LWX-0450-002	026189	LWX-0450-002-201	026289
LWX-0500-002	026192	LWX-0500-002-201	026292
LWX-0600-002	026193	LWX-0600-002-201	026293
LWX-0750-002	026194	LWX-0750-002-201	026294

Included in delivery (connector version)

Angled connector M12
(4x0.75 mm², Ø 9.5 mm),
EEM 33-89, unshielded, IP67.

Recommended accessories

MAP process control indi-
cators with display
MUP / MUK signal
conditioners for standard
voltage and current outputs.



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 $\leq 1 \mu\text{A}$.