

Position Transducers

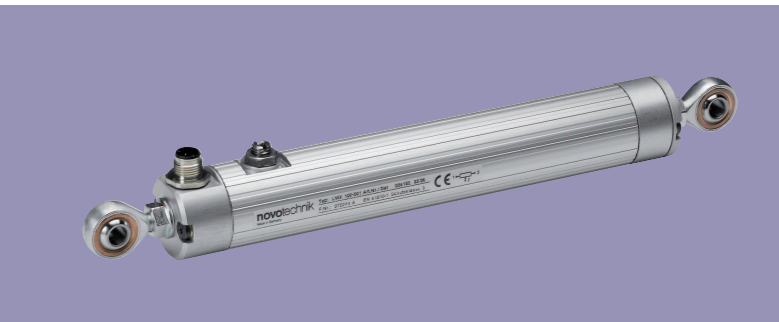
Pivot head mounting

potentiometric

up to 750 mm, IP67

Series LWX,

Model 001



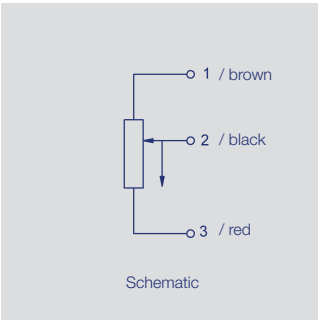
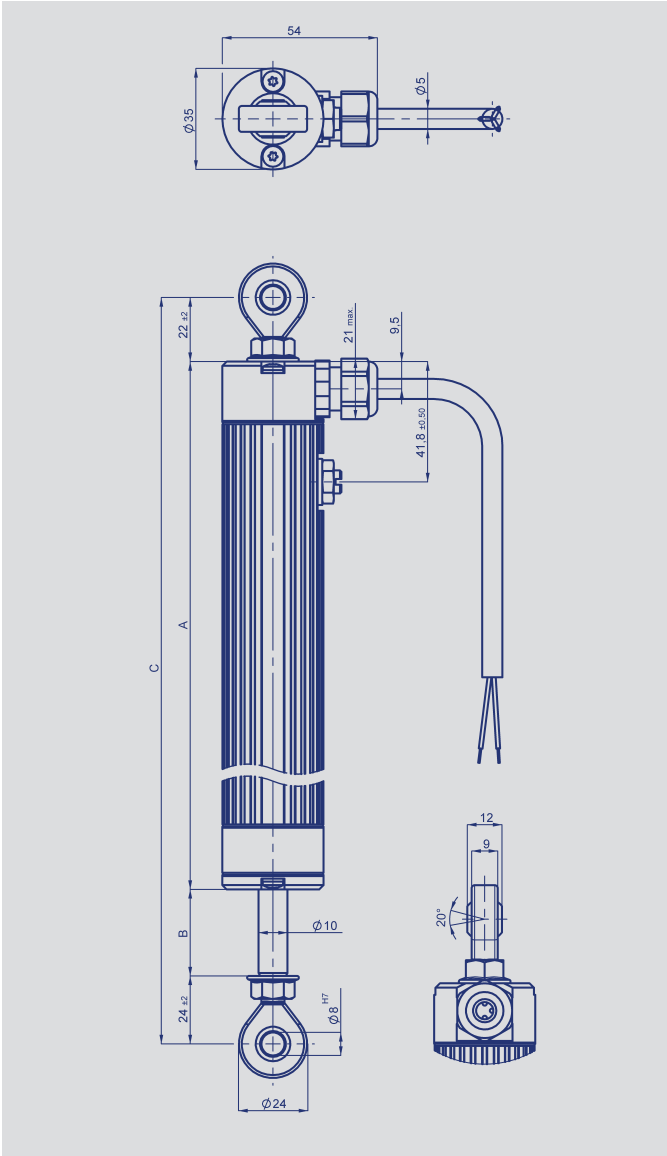
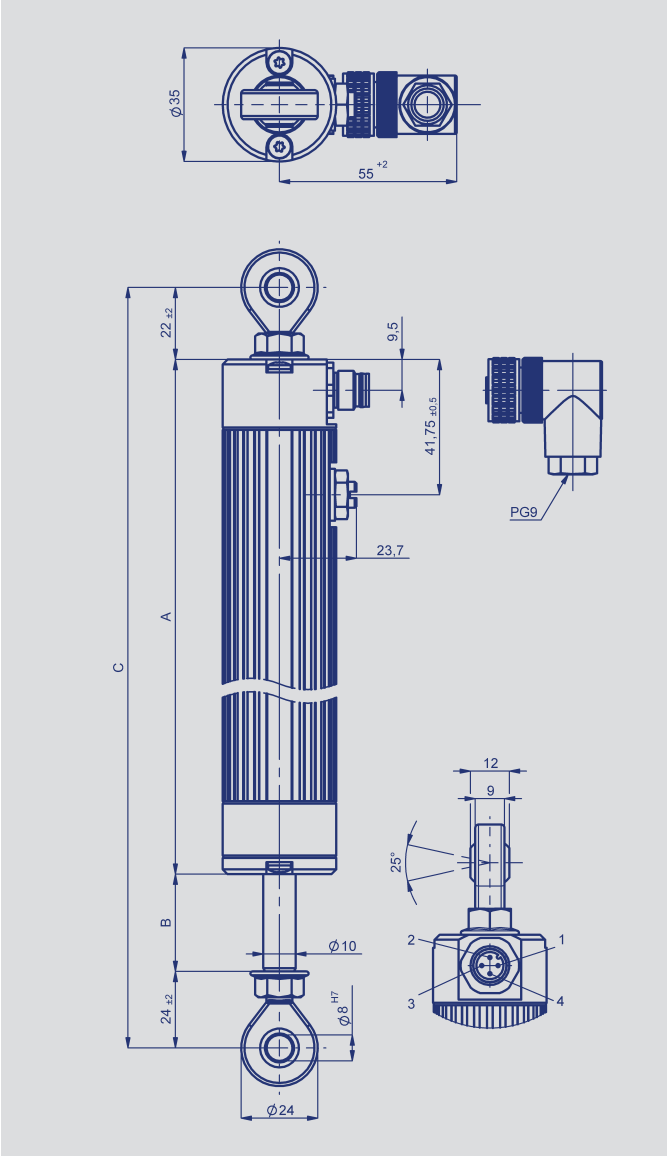
- Special features

 - 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
 - with shaft protection sleeve, see LWX series 002 data sheet

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.

Description	
Housing	aluminium, anodized
Mounting	see drawing
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)	178	203	229	279	305	356	381	432	507	621	686	812	996	±2 mm
Mechanical stroke (dimension B)	56	81	107	157	183	233	259	309	370	462	512	614	766	±2 mm
Minimum distance between pivot heads, nominal (dimension C)	224	249	275	325	351	402	427	478	553	667	732	858	1042	mm
Weight with connector approx.	413	453	493	573	613	693	733	832	1023	1167	1247	1407	1647	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-0050-001	026150	LWX-0050-001-201	026250
LWX-0075-001	026151	LWX-0075-001-201	026251
LWX-0100-001	026152	LWX-0100-001-201	026252
LWX-0150-001	026154	LWX-0150-001-201	026254
LWX-0175-001	026155	LWX-0175-001-201	026255
LWX-0225-001	026157	LWX-0225-001-201	026257
LWX-0250-001	026158	LWX-0250-001-201	026258
LWX-0300-001	026160	LWX-0300-001-201	026260
LWX-0360-001	026162	LWX-0360-001-201	026262
LWX-0450-001	026166	LWX-0450-001-201	026266
LWX-0500-001	026168	LWX-0500-001-201	026268
LWX-0600-001	026172	LWX-0600-001-201	026272
LWX-0750-001	026178	LWX-0750-001-201	026278

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