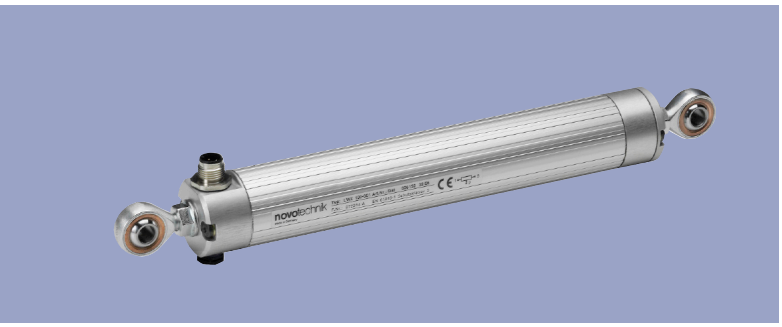
novotechnik
Siedle Group

Transducer
Pivot head mounting potentiometric up to 750 mm, IP67

Series LWX
Model 003



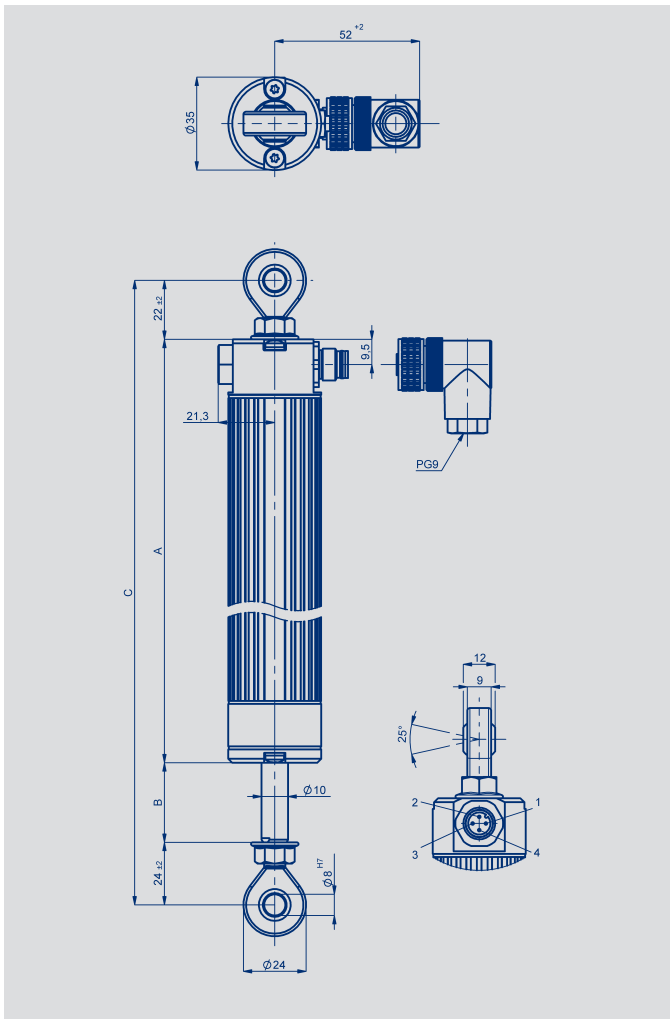
Designed for extreme operating environments, the LWX series features an all-metal construction and a pressure compensation technology to prevent buildup that could degrade operation in mechanical, vehicle, automation and robotic applications where an extended operating life is essential.

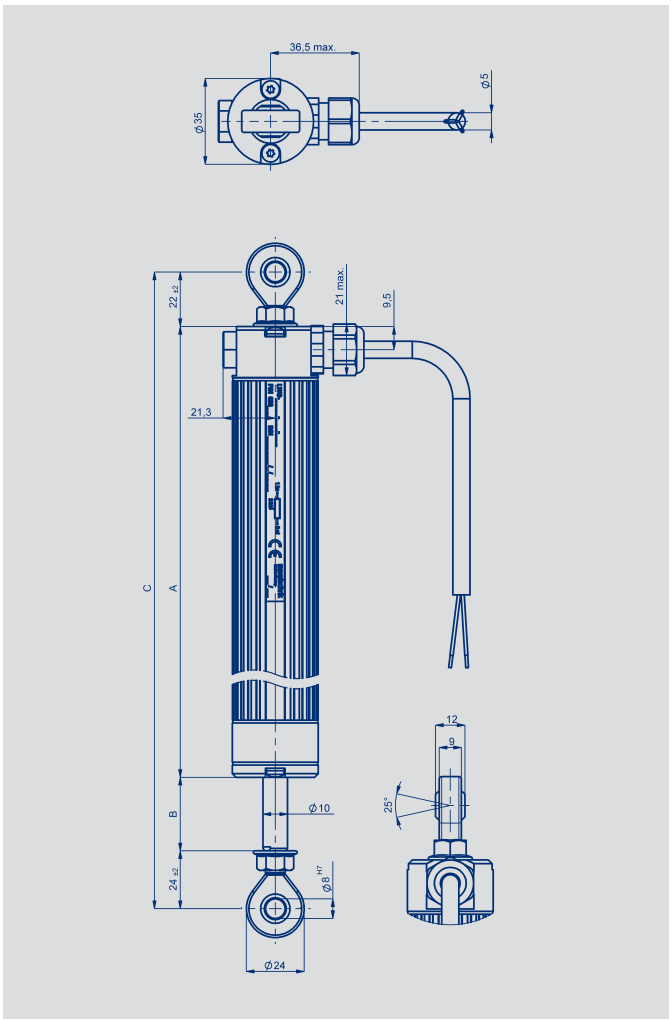
These rugged position transducers provide direct, absolute measurement of displacement or length.
A free-pivot-head mounted on the actuating rod eliminates backlash guaranteeing high accuracy.

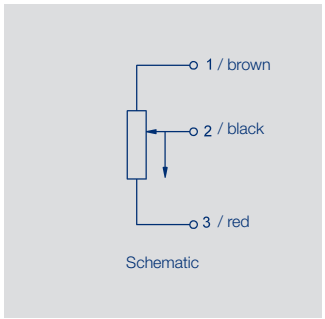
Special features
- protection class IP67
- all-metal housing
- corrosion resistant
- differential pressure compensation system with GORE membrane - compensates for pump effect of push rod movement
- high vibration resistance
- suitable for harsh environmental conditions (humidity, oil, dust)
- double beared actuating rod
- mountable via low-backlash pivot heads with a large angle of free movement (up ±12.5 °)
- outstanding linearity up to ±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 data sheet LWG
- shaft protected version see data sheet LWX, model 004

Applications
- steering cylinders in mobile machines
- building equipment
- machines in the media-polluted environment (e.g. production of concrete fabricated components)

Description	
Housing	aluminium, anodized
Mounting	Pivot Head Mounting Standard model: steel pivot heads Optional: stainless steel pivot heads for outdoor applications and corrosive environments (conversion kit, see Accessories)
Actuating rod	stainless steel (1.4305), rotable
Bearings	metal-polymer slide bearing
Resistane element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer damped
Electrical connections	4-pin round connector, M12x1 or 3-wire PVC-cable, 3x0.5 mm² (AWG 20), shielded, 1 m length


52 +2
Ø35
22 ±2
9,5
21,3
PG9
C
A
B
24 ±2
Ø10
Ø8 H7
Ø24
12
9
25°
1
2
3
4


36,5 max.
Ø35
Ø5
22 ±2
21 max.
9,5
21,3
C
A
B
24 ±2
Ø10
Ø8 H7
Ø24
12
9
25°


1 / brown
2 / black
3 / red

Schematic

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	229	254	305	366	457	508	610	762	mm
Nominal resistance	2	3	3	5	5	5	5	5	5	5	5	5	10	kΩ
Reistance toleranz	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 operating wiper current	≤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/K
Insulation reistance (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 vertical	 typical 50 typical 50													 N N
Tearing force horizontal	 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	movements
Operating speed	5	m/s max.
Protection class	IP 67 (DIN EN 60529), also dynamic	

*) Depending on the environmental temperature and standstill time, the necessary force for the initial operating of the push rod can increase.

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Novotechnik
Messwertaufnehmer OHG

Postfach 4220
73745 Ostfildern (Ruit)
Horbstraße 12
73760 Ostfildern (Ruit)

Telefon +49 711 4489-0
Telefax +49 711 4489-118
info@novotechnik.de
www.novotechnik.de

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Subject to change.
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Order designations (connector version) *		Order designations (cable version) *	
Type	**P/N**	**Type**	**P/N**
LWX-0050-003-101	026302	LWX-0050-003-201	026402
LWX-0075-003-101	026303	LWX-0075-003-201	026403
LWX-0100-003-101	026304	LWX-0100-003-201	026404
LWX-0150-003-101	026306	LWX-0150-003-201	026406
LWX-0175-003-101	026307	LWX-0175-003-201	026407
LWX-0225-003-101	026309	LWX-0225-003-201	026409
LWX-0250-003-101	026310	LWX-0250-003-201	026410
LWX-0300-003-101	026312	LWX-0300-003-201	026412
LWX-0360-003-101	026314	LWX-0360-003-201	026414
LWX-0450-003-101	026318	LWX-0450-003-201	026418
LWX-0500-003-101	026320	LWX-0500-003-201	026420
LWX-0600-003-101	026324	LWX-0600-003-201	026424
LWX-0750-003-101	026330	LWX-0750-003-201	026430

*) Stainless steel pivot heads on request

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 (Ie < 1 µA).

Female connector, angled

Included in delivery (connector version)
M12x1 female connector, angled, with coupling nut, screw termination, 4x0.75mm², cable diameter 6 ... 8 mm, IP67, not shieldable, EEM 33-89

Female connector, angled

Recommended accessories
M12x1 female connector, 4-pin, angled, with molded cable, shielded, 4x0,34 mm², IP67, open ended:
length 2 m, EEM 33-33, P/N 005601;
length 5 m, EEM 33-63, P/N 005610;
length 10 m, EEM 33-99, P/N 005696.
(other versions see data sheet Accessories M12-connection system)

Pivot head Z-G-03

Recommended accessories
Conversion kit: stainless steel version of pivot heads
P/N 108551 Z-G-03

Signal conditioner e.g. MUP-110

Recommended accessories
Process-controlled indicators MAP... with display, Signal conditioner MUP... / MUK … for standardized output signals.

The specifications contained in our datasheets are intended solely for informational purposes. The documented specification values are based on ideal operational and environmental conditions and can vary significantly depending on the actual customer application. Using our products at or close to one or more of the specified performance ranges can lead to limitations regarding other performance parameters. It is therefore necessary that the end user verifies relevant performance parameters in the intended application. We reserve the right to change product specifications without notice.