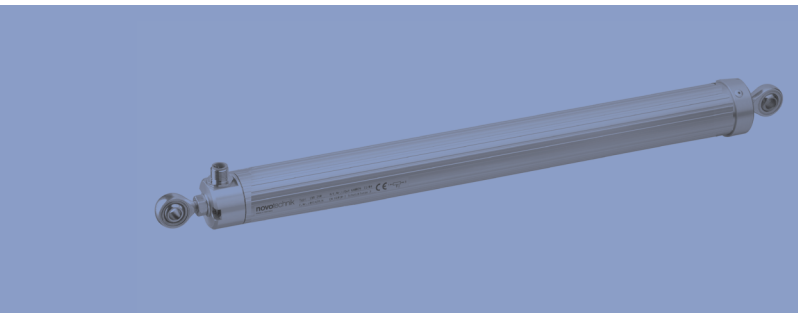


**Position Transducers  
up to 750 mm**

Series LWX,  
Model 001

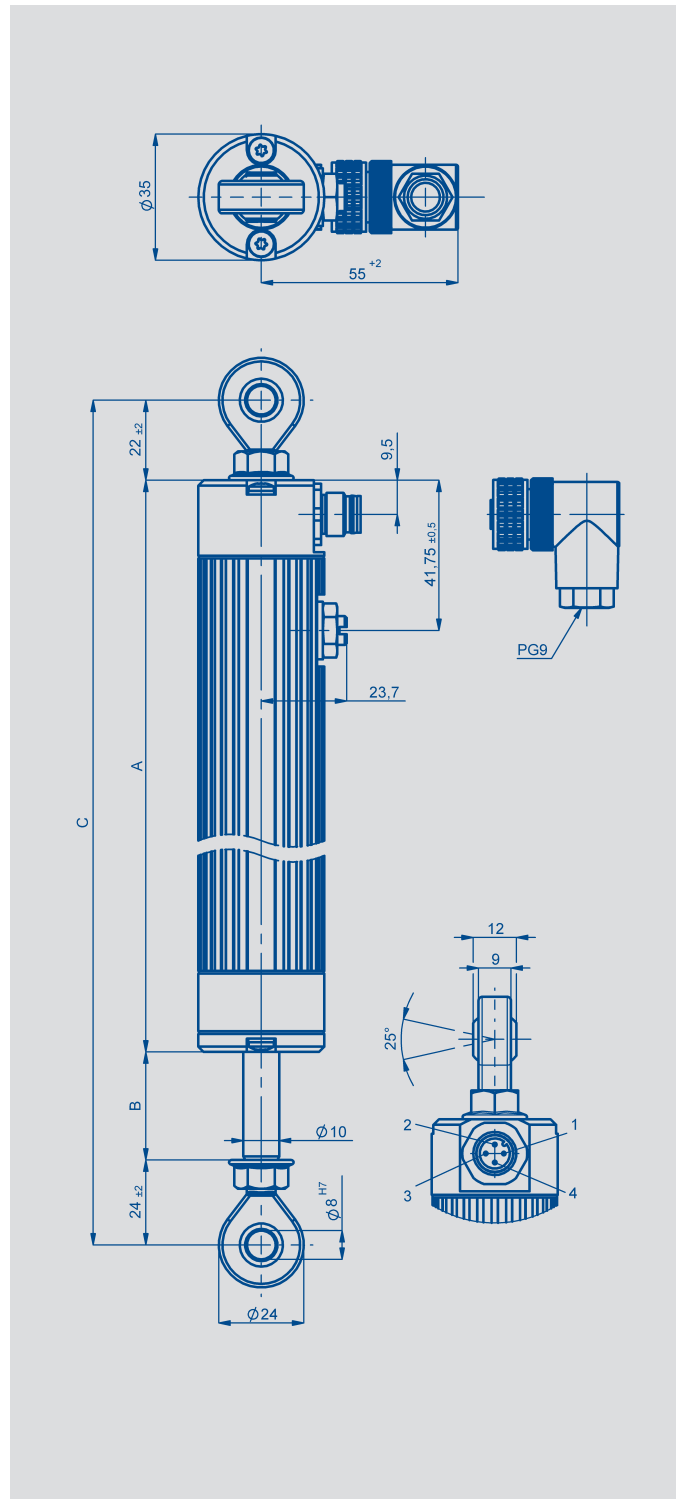
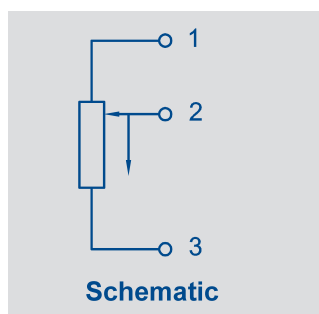


**Special features**

- 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
- can withstand oil and water environments
- twin-bearing actuating rod
- mountable over back-lash free pivot heads with a large angle of free movement (up  $\pm 12.5\%$ )
- outstanding linearity
- resolution better than 0.01 mm
- life (depending on application) up to 50 million movements
- cable connection on request
- version IPO65 see data sheet LWG
- shaft protected version see data sheet LWX, model 002

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. A free-pivot-head mounted on the actuating rod eliminates backlash guaranteeing high accuracy.



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 Printed in Germany

Description	
Housing	aluminium, anodized
Fixings	see drawing
Actuator	stainless steel, rotatable
Bearings	sleeve bearing
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer damped
Electrical connections	4-pin round connector, M12x1, IP 67 for suitable cables diameter 6...8 mm, max. 0.75 mm <sup>2</sup> optional cable outlet on request

Environmental Data		
Temperature range	-30...+100	°C
Vibration	5...2000 $\Delta_{\max} = 0,75$ $a_{\max} = 20$	Hz mm g
Shock	50 11	g ms
Life	> 50 x 10 <sup>6</sup> (typical)	movem.
Operating speed	5	m/s max.
Protection class	IP 67 (DIN 40050 / IEC 529)	

Type designations	LWX 50	LWX 75	LWX 100	LWX 150	LWX 175	LWX 225	LWX 250	LWX 300	LWX 360	LWX 450	LWX 500	LWX 600	LWX 750	
<b>Electrical Data</b>														
Defined electrical range	50	75	100	150	175	225	250	300	360	450	500	600	750	mm
Electrical stroke		76	102	152	178	228	254	304	366	457	508	610	762	mm
Nominal resistance	52	3	3	5	5	5	5	5	5	5	5	5	10	kΩ
Resistance 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 ration	typical 5													ppm/°K
Insulation resistance (500 VDC, 1 bar, 2 s)	≥10													MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤100													μA
<b>Mechanical Data</b>														
Body length (dimension A)	176	201	227	277	303	354	379	430	505	619	684	810	994	±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 (dimension C)	222	247	273	323	349	400	425	476	551	665	730	856	1040	mm
<b>Weight</b>														
Operating force horizontal	typical 50													N
vertical	typical 50													N

Order designations	
Type	Art.no.
LWX 50-001	026150
LWX 75-001	026151
LWX 100-001	026152
LWX 150-001	026154
LWX 175-001	026155
LWX 225-001	026157
LWX 250-001	026158

Order designations	
Type	Art.no.
LWX 300-001	026187
LWX 360-001	026188
LWX 450-001	026189
LWX 500-001	026192
LWX 600-001	026193
LWX 750-001	026194

#### Included in delivery

1 round connector,  
 Art.No. 515532

#### Recommended accessories

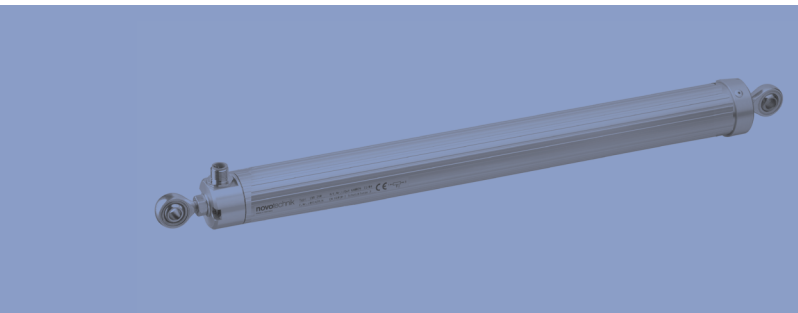
Process-controlled indicators  
 MAP... with display,  
 Signal conditioner MUP.../  
 MUK ... for standardized out-  
 put signals

#### Important

All the values given in this data sheet for linearity, lifetime 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 ( $I_E \leq 1 \mu A$ ).

**Position Transducers  
up to 750 mm**

Series LWX,  
Model 002  
Shaft protected

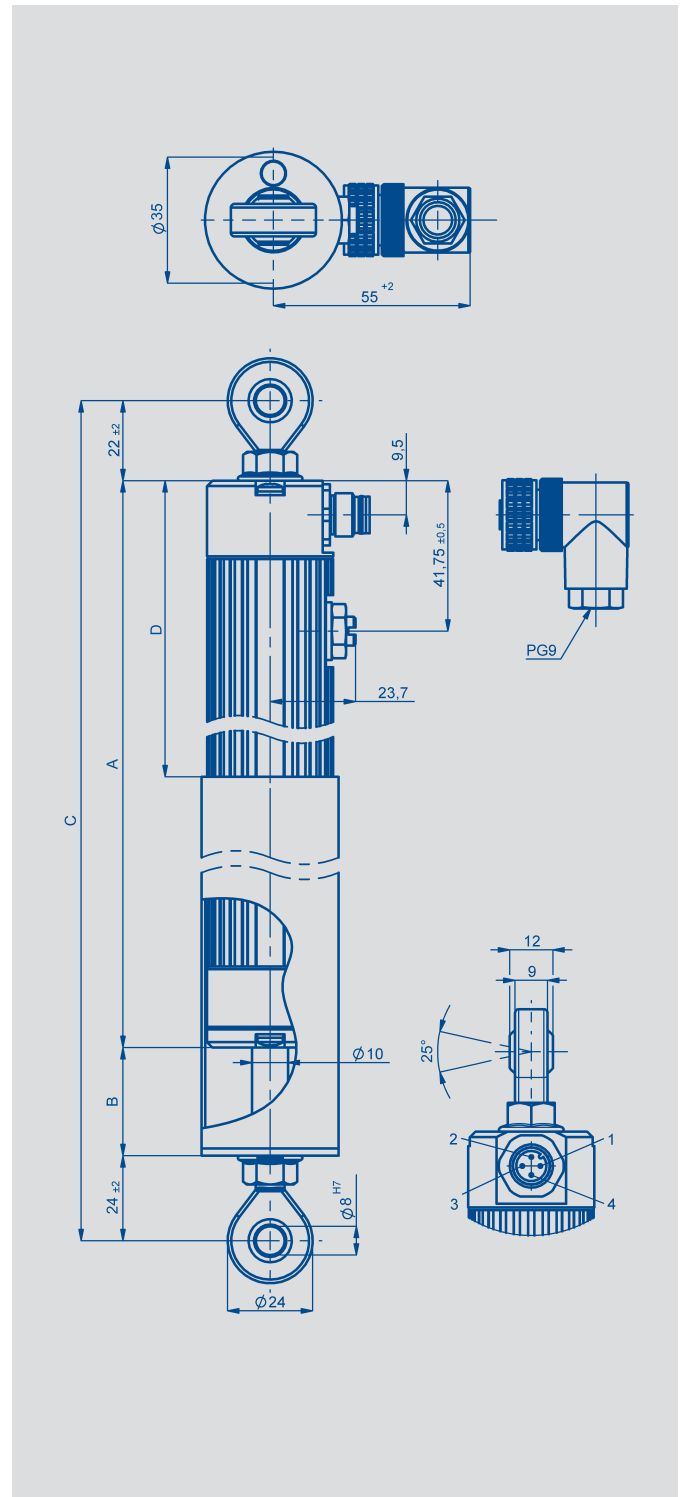
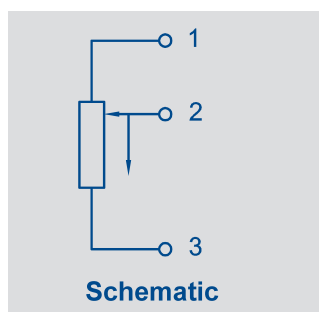


**Special features**

- protection class IP 67
- all-metal housing
- corrosion resistant
- patented differential pressure compensation system compensates for pump effect of push rod movement
- shaft protected
- high vibration resistance
- can withstand oil and water environments
- twin-bearing actuating rod
- mountable over back-lash free pivot heads with a large angle of free movement (up  $\pm 12.5\%$ )
- outstanding linearity
- resolution better than 0.01 mm
- life (depending on application) up to 50 million movements
- cable connection on request
- version IP65 see data sheet LWG
- non-shaft protected version see data sheet LWX, model 001

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. A free-pivot-head mounted on the actuating rod eliminates backlash guaranteeing high accuracy.



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 Printed in Germany

Description	
Housing	aluminium, anodized
Fixings	see drawing
Actuator	stainless steel, rotatable
Bearings	sleeve bearing
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer damped
Electrical connections	4-pin round connector, M12x1, IP 67 for suitable cables diameter 6...8 mm, max. 0.75 mm <sup>2</sup> optional cable outlet on request

Environmental Data		
Temperature range	-30...+100	°C
Vibration	5...2000 $\dot{A}_{max} = 0,75$ $a_{max} = 20$	Hz mm g
Shock	50 11	g ms
Life	> 50 x 10 <sup>6</sup> (typical)	movem.
Operating speed	5	m/s max.
Protection class	IP 67 (DIN 40050 / IEC 529)	

Type designations	LWX 50	LWX 75	LWX 100	LWX 150	LWX 175	LWX 225	LWX 250	LWX 300	LWX 360	LWX 450	LWX 500	LWX 600	LWX 750	
<b>Electrical Data</b>														
Defined electrical range	50	75	100	150	175	225	250	300	360	450	500	600	750	mm
Electrical stroke		76	102	152	178	228	254	304	366	457	508	610	762	mm
Nominal resistance	52	3	3	5	5	5	5	5	5	5	5	5	10	kΩ
Resistance 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 ration	typical 5													ppm/°K
Insulation resistance (500 VDC, 1 bar, 2 s)	≥10													MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤100													μA
<b>Mechanical Data</b>														
Body length (dimension A)	176	201	227	277	303	354	379	430	505	619	684	810	994	±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 (dimension C)	222	247	273	323	349	400	425	476	551	665	730	856	1040	mm
Open housing area (dimension D)	84	90	90	90	90	91	90	91	105	127	142	166	198	mm
Operating force horizontal	typical 50													N
vertical	typical 50													N

Order designations	
Type	Art.no.
LWX 50-002	026180
LWX 75-002	026181
LWX 100-002	026182
LWX 150-002	026183
LWX 175-002	026184
LWX 225-002	026185
LWX 250-002	026186

Order designations	
Type	Art.no.
LWX 300-002	026187
LWX 360-002	026188
LWX 450-002	026189
LWX 500-002	026192
LWX 600-002	026193
LWX 750-002	026194

#### Included in delivery

1 round connector,  
 Art.No. 515532

#### Recommended accessories

Process-controlled indicators  
 MAP... with display,  
 Signal conditioner MUP.../  
 MUK ... for standardized out-  
 put signals

#### Important

All the values given in this data sheet for linearity, lifetime 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 ( $I_e \leq 1 \mu A$ ).