

LINEAR POTENTIOMETER



Series LZW2-IP

Key-Features:

- Protection class IP67
- Installation with rod end bearings or brackets
- Measurement ranges from 10 to 300 mm
- Linearity up to $\pm 0.05\%$
- Displacement speed up to ≤ 3 m/s
- Operating temperature $-30\dots+100$ °C
- Life cycle $>25 \times 10^6$ m or $>100 \times 10^6$ operations, whichever is less
- Simple apparatus according to EN 60079-11 standard

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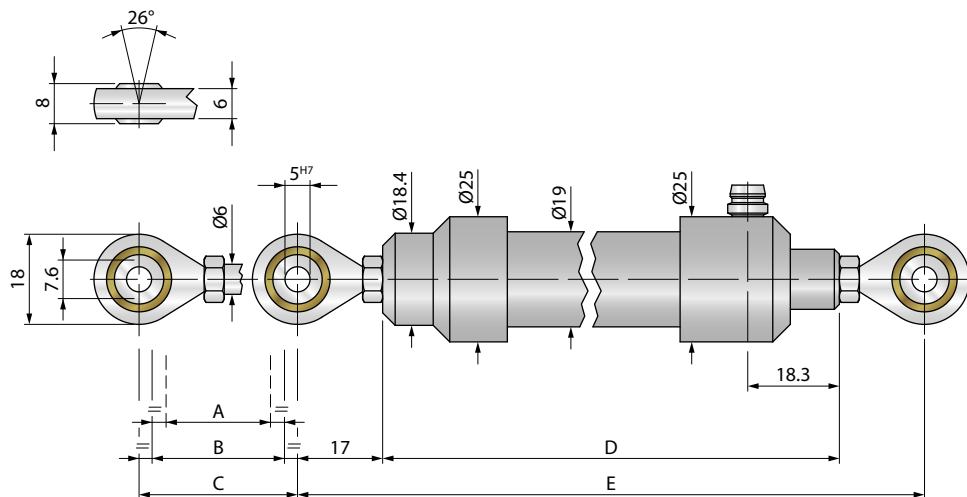
TECHNICAL DATA

Measurement range	[mm]	10 ¹⁾	25	50	75	100	125	150	175	200	250	300
Linearity	[%]	±0.5	±0.2	±0.1			±0.05					
Repeatability	[mm]	0.01										
Resolution		theoretical infinite, depends on the signal quality of the reference respectively supply voltage										
Displacement force	[N]	≤20										
Displacement speed	[m/s]	≤3 (max. ≤5)										
Acceleration max.	[m/s ²]	200 (20 g)										
Resistance	[kΩ]	1	2	3	4	5	6	7	8	10	12	
Tolerance on resistance	[%]	±20										
Dissipation at 40 °C (0 W at 120 °C)	[W]	0.3	0.8	1.6	2.6	8						
Applicable voltage max.	[V]	15	20	40	60							
Recommended cursor current	[μA]	<0.1										
Cursor current max.	[mA]	10										
Electrical isolation		>100 MΩ at 500 VDC, 1 bar, 2 s										
Dielectric strength		<100 μA at 500 VAC, 50 Hz, 1 bar, 2 s										
Protection class		IP67										
Operating temperature	[°C]	-30...+100										
Storage temperature	[°C]	-50...+120										
Temperature coefficient resistance		±200 ppm/°C										
Temperature coefficient output voltage		typ. ≤5 ppm/°C										
Vibration resistance		5...2000 Hz, A _{max} = 0,75 mm, a _{max} = 20 g										
Shock resistance		50 g, 11 ms										
Life cycle		>25 x 10 ⁶ m or >100 x 10 ⁶ operations (whichever is less)										
Connection		connector M8, 3 poles (LZW2-A) or connector M12, 4 poles (LZW2-S)										
Housing		anodised aluminium										
Rod		C45 steel, chromium plated 20 μm										
Mounting		rod end bearings (LZW2-A) or brackets (LZW2-S)										

¹⁾ only available for version LZW2-A (rod end bearings)

TECHNICAL DRAWING

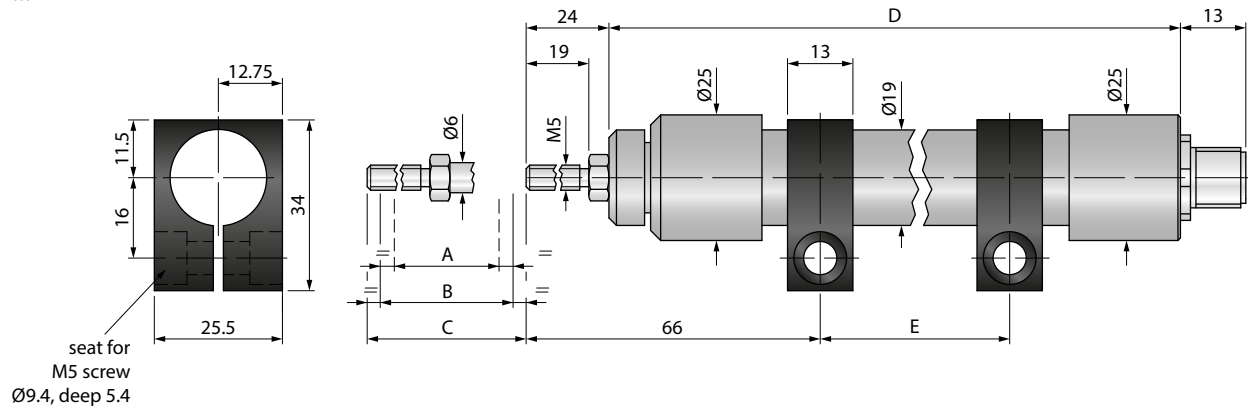
LZW2-A-...-IP



Useful electrical stroke +3/-0	A	10	25	50	75	100	125	150	175	200	250	300
Theoretical electrical stroke ±1	B	11	26	51	76	101	126	151	176	201	251	301
Mechanical stroke	C	15	30	55	80	105	130	155	180	205	255	305
Housing length	D	113.5	128.5	153.5	178.5	203.5	228.5	253.5	278.5	303.5	353.5	403.5
Min. distance ball-joint +3/-5	E	148	163	188	213	238	263	288	313	338	388	438

TECHNICAL DRAWING

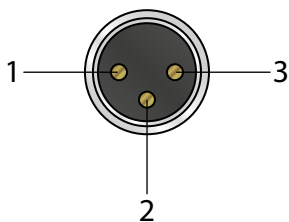
LZW2-S-...-IP



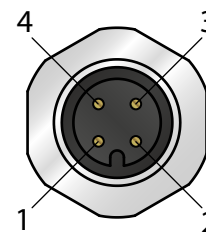
Useful electrical stroke +3/-0	A	25	50	75	100	125	150	175	200	250	300
Theoretical electrical stroke ±1	B	26	51	76	101	126	151	176	201	251	301
Mechanical stroke	C	30	55	80	105	130	155	180	205	255	305
Housing length	D	106,5	131,5	156,5	181,5	206,5	231,5	256,5	281,5	331,5	381,5
Recommended distance between brackets	E	21	46	71	96	121	146	171	196	246	296

ELECTRICAL CONNECTION

LZW2-A-...-IP



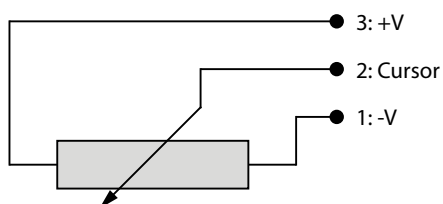
LZW2-S-...-IP



Pin	LZW2-A-...-IP	Connection cable K3P...
1	-V	BN
2	Cursor	BK
3	+V	BU

Pin	LZW2-S-...-IP	Connection cable K4P...
1	-V	BN
2	Cursor	WH
3	+V	BU
4	n. c.	BK

Circuit diagram



Installation notes:

- Do **NOT** use the sensor as a variable resistor!
- While calibrating the sensor set the stroke so that the output signal does not drop below 1 % or exceed 99 % of the supply voltage.

ACCESSORIES

Signal conditioner PMX-24

- Converts potentiometer signals into analog output signals: 4...20 mA, 0...10 V, 0...5 V, ±10 V, ±5 V
- Input: potentiometer 1...20 kΩ
- Configurable output
- DIN-rail-mounting with face-side connector
- For more information please refer to the [PMX-24 data sheet](#).



ORDER CODE

LZW2 - - - IP

Version			Measurement range [mm]
Installation with rod end bearings	A		10 ¹⁾ / 25 / 50 / 75 / 100 / 125 / 150 / 175 /
Installation with brackets	S		200 / 250 / 300

¹⁾ only available for version LZW2-A (rod end bearings)

ACCESSORIES

Cable with mating connector M8 (female) for LZW2-A, 3 poles, IP67

K3P2M-S-M8	2 m, connector straight, shielded
K3P5M-S-M8	5 m, connector straight, shielded
K3P10M-S-M8	10 m, connector straight, shielded

Mating connector M8 (female) for LZW2-A, 3 poles, IP67

D3-G-M8-S	connector straight, for self assembly
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Digital displays for sensors with analog output, 2 channel

WAY-AX-S	touch screen, supply: 18...30 VDC
WAY-AX-S-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

Cable with mating connector M12 (female) for LZW2-S, 4 poles, IP67

K4P2M-S-M12	2 m, connector straight, shielded
K4P5M-S-M12	5 m, connector straight, shielded
K4P10M-S-M12	10 m, connector straight, shielded

Mating connector M12 (female) for LZW2-S, 4 poles, IP67

D4-G-M12-S	connector straight, for self assembly
D4-W-M12-S	connector angular, for self assembly

Signal conditioner

PMX-24	Output signals: 4...20 mA, 0...10 V, 0...5 V, ±10 V, ±5 V
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For more information and options please refer to the [PMX-24 data sheet](#).

Subject to change without prior notice.

WayCon Positionsmesstechnik GmbH

Email: info@waycon.de

Internet: www.waycon.biz

WayCon

Positionsmesstechnik

Headquarters Munich

Siemensstr. 5

85521 Ottobrunn

Tel. +49 (0)89 67 97 13-0

Office Cologne

Auf der Pehle 1

50321 Brühl

Tel. +49 (0)89 67 97 13-100