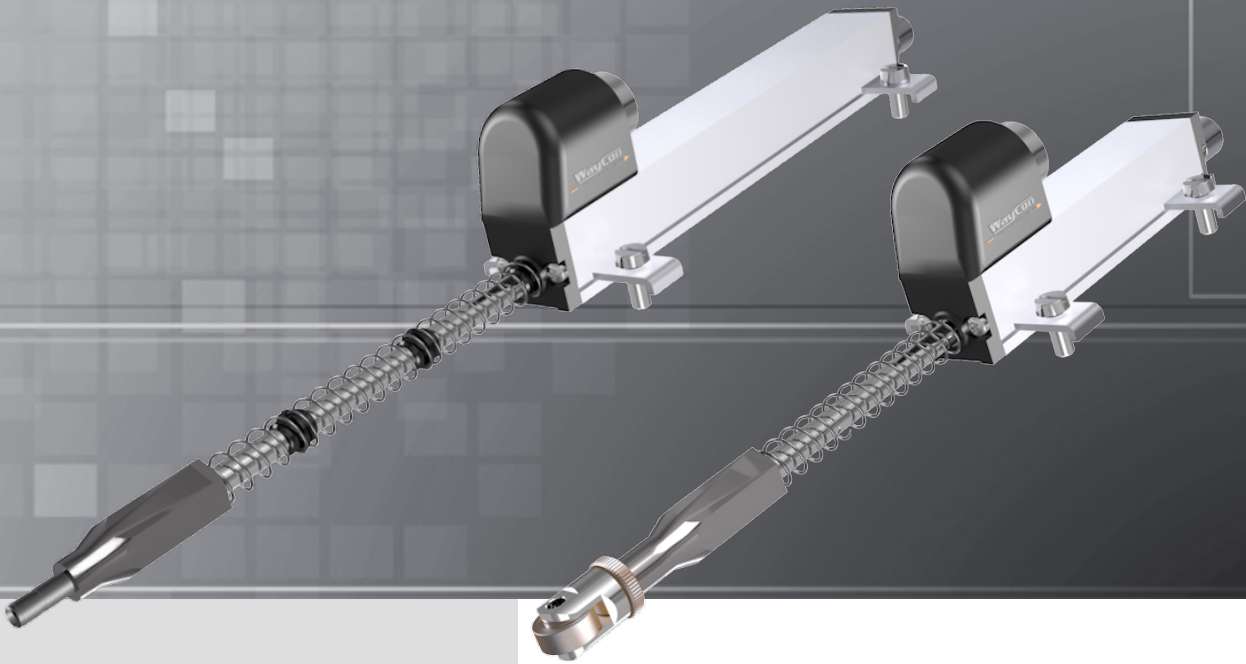


# LINEAR POTENTIOMETER



## Series LRW2 and LRW3

### Key-Features:

- LRW2 with ball tip, measurement ranges up to 150 mm
- LRW3 with roller tip, measurement ranges up to 100 mm
- Double rod support and return spring
- Inhibited rotation of the rod (LRW3)
- Displacement speed  $\leq 10$  m/s
- Linearity up to  $\pm 0.05$  %
- Working 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 the EN 60079-11

### Content:

Technical Data	....2
Technical Drawing	....2
Electrical Connection	....3
Accessories	....3
Order Code	....4

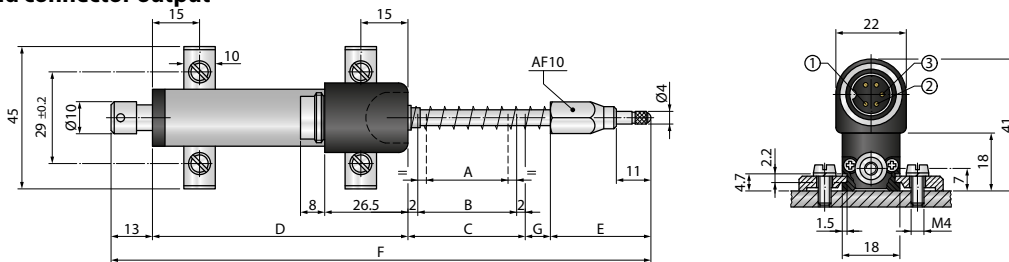
## TECHNICAL DATA

Measurement range	[mm]	10	25	50	75	100	125	150	
Probe tip		ball tip (LRW2) or roller tip (LRW3)						ball tip (LRW2)	
Linearity	[%]	±0.3	±0.2	LRW2: ±0.1 LRW3: ±0.07	±0.1	LRW2: ±0.07 LRW3: ±0.1	±0.05		
Resolution		theoretical infinite, depends on the signal quality of the reference respectively supply voltage							
Displacement force	[N]							≤4	
Displacement speed	[m/s]							≤10	
Resistance	[kΩ]	1			5				
Tolerance on resistance	[%]							±20	
Dissipation at 40 °C (0 W at 120 °C)	[W]	0.2	0.6	1.2	1.8	2.4	3	3.6	
Applicable voltage max.	[V]	14	25	60					
Recommended cursor current	[µA]							<0.1	
Cursor current max.	[mA]							10	
Electrical isolation		>100 MΩ at 500 VDC, 2 s, 1 bar							
Dielectric strength		<100 µA at 500 VAC, 50 Hz, 2 s, 1 bar							
Protection class								IP40	
Operating temperature	[°C]							-30...+100	
Storage temperature	[°C]							-50...+120	
Temperature coefficient resistance	[ppm/°C]							±200	
Temperature coefficient output voltage	[ppm/°C]							<1.5	
Vibration resistance		5...2000 Hz, A <sub>max</sub> = 0.75 mm, a <sub>max</sub> = 20 g							
Shock resistance		50 g, 11 ms							
Life cycle		>25 x 10 <sup>6</sup> m or >100 x 10 <sup>6</sup> operations (whichever is less)							
Connection		cable output, 3 poles or connector output, 5 pins							
Rod		stainless steel, ASIS 303							
Housing		anodised aluminium, Nylon 66 G 25							
Mounting		PKIT005 (4 small brackets) <sup>1)</sup> / optional: PKIT006 (2 large brackets)							

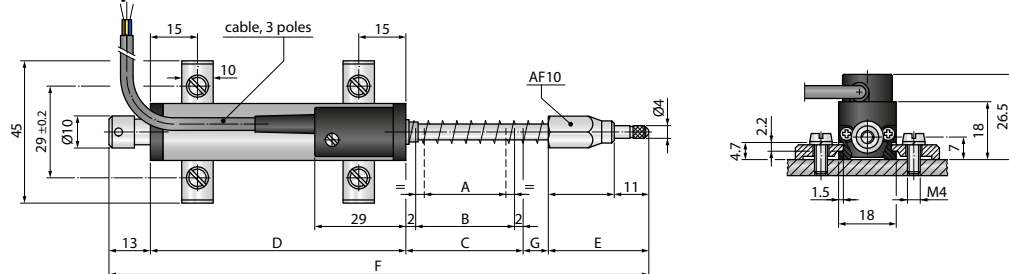
<sup>1)</sup> included in scope of delivery. PKIT005 includes 4 small brackets, screws M4x10 and growers

## TECHNICAL DRAWING

### LRW2-C: ball tip and connector output



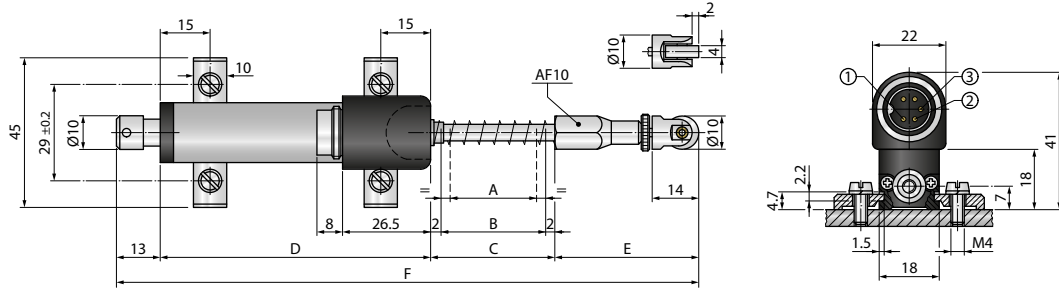
### LRW2-F: ball tip and cable output



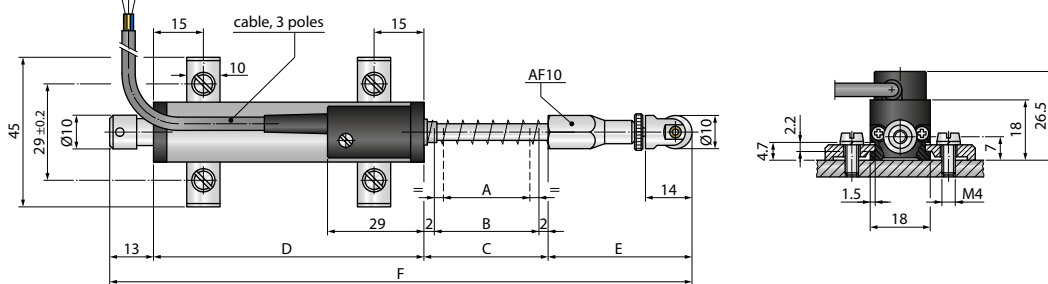
<b>Measurement range / useful electrical stroke +1/-0</b>	<b>A</b>	10	25	50	75	100	125	150
<b>Theoretical electrical stroke ±1</b>	<b>B</b>	11	26	51	76	101	126	151
<b>Mechanical stroke</b>	<b>C</b>	15	30	55	80	105	130	155
<b>Housing length</b>	<b>D</b>	48	63	88	113	138	163	188
<b>Length of probe tip</b>	<b>E</b>	32			40			
<b>Overall length</b>	<b>F</b>	108	138	196	251	307	364	426
<b>Part of push rod not retractable into housing</b>	<b>G</b>	-			5	11	18	31

## TECHNICAL DRAWING

### LRW3-C: roller tip and connector output (inhibited rotation of the rod)

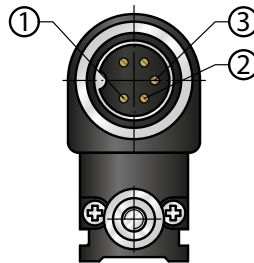
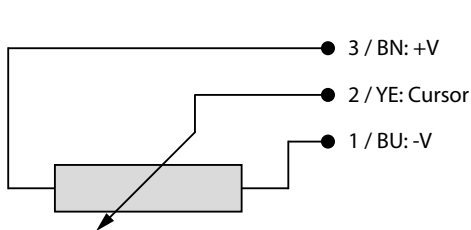


### LRW3-F: roller tip and cable output (inhibited rotation of the rod)



Measurement range / useful electrical stroke $\pm 1/0$	A	10	25	50	75	100
Theoretical electrical stroke $\pm 1$	B	11	26	51	76	101
Mechanical stroke	C	15	30	55	80	105
Housing length	D	48	63	88	113	138
Length of probe tip	E	43		51		
Overall length	F	119	149	207	262	318

## ELECTRICAL CONNECTION



#### 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

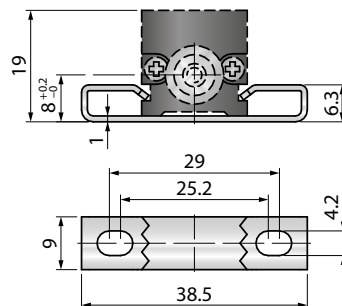
### CON011: Mating connector

- for self assembly
- 5 poles
- IP40
- cable diameter  $\varnothing$  4...6 mm



### PKIT006: mounting brackets

2 pcs. + screws and growlers

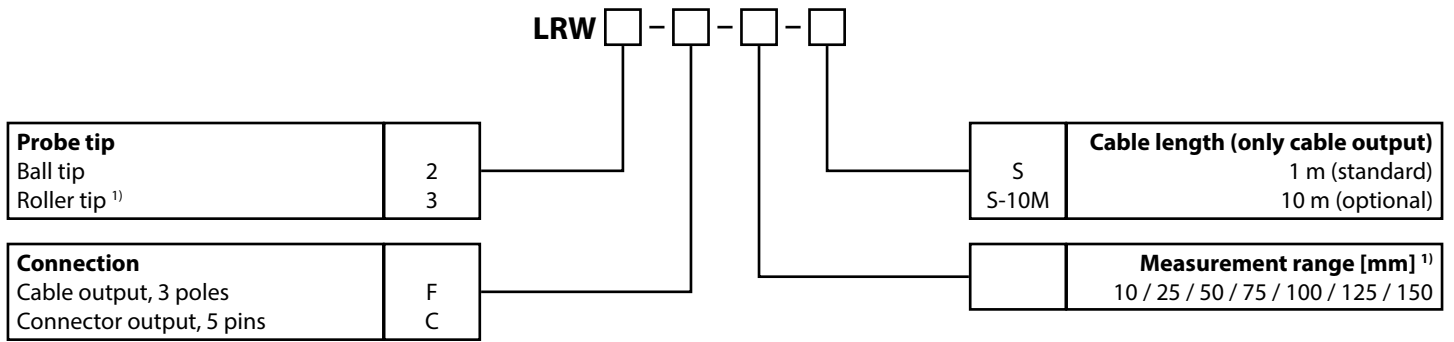


### Signal conditioner PMX-24

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



## ORDER CODE



<sup>1)</sup> Measurement ranges 125 and 150 not combinable with roller tip

## ACCESSORIES

### Mounting accessories and probe tips

PKIT005 <sup>1)</sup>	Mounting set: 4 x small brackets, screws, growers
PKIT006	Mounting set: 2 x large brackets, screws, growers
PTAS000 <sup>1)</sup>	Ball tip
PTAS001 <sup>1)</sup>	Roller tip

### Digital displays for sensors with analog output, 2 channel

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

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

<sup>1)</sup> PKIT005 and PTAS000 (LRW2) or PTAS001 (LRW3) are included in sensor scope of delivery.

### Mating connector for self assembly for LRW1-C

CON011	5 poles, IP40, for cable diameter 4...6 mm
--------	--

### Signal conditioner

PMX-24	Output signals: 4...20 mA, 0...10 V, 0...5 V, ±10 V, ±5 V
--------	---

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](mailto:info@waycon.de)  
 internet: [www.waycon.biz](http://www.waycon.biz)

**WayCon**  
 Positionsmesstechnik

**Head Office**  
 Mehlsbeerstr. 4  
 82024 Taufkirchen  
 Tel. +49 (0)89 67 97 13-0  
 Fax +49 (0)89 67 97 13-250

**Office Köln**  
 Auf der Pehle 1  
 50321 Brühl  
 Tel. +49 (0)2232 56 79 44  
 Fax +49 (0)2232 56 79 45