

# LINEAR 1-AXIS INDUSTRIAL JOYSTICK MJ-1L



The linear joystick of the MJ-1L type series is the robust light-weight of the MJ-xx joystick series. One of its feature characteristics is space-saving in the customer's housing. The installation space and extra functions, combined with a compact housing are excellent arguments to choose the MJ-1L. Less weight, easier controls of operations are huge advantages for end users. The robust design (also available with additional protective cover) guarantees a long service life.

## CHARACTERISTICS

- Ultra light
- Robust design
- Compact
- Minimal installation dimensions
- Long service life
- Conductive plastic technology

## APPLICATIONS

- Aerial work platforms
- Radio remote controls
- Forklift trucks
- Mobile hydraulics
- Steering of boats

## OPTION

- Protective cover



## ELECTRICAL SPECIFICATIONS

<b>Resistance value</b>	5 kohm $\pm 20\%$ (2 x 2.5 K $\pm 20\%$ )
<b>Linearity</b>	$\pm 2\%$
<b>Deflection angle, el.</b>	$> \pm 28^\circ$ *
<b>Load capacity/axis</b>	0.2 W at 40° C
<b>Operating voltage (VCC)</b>	Max. 30 VDC
<b>Contact current</b>	$< 10 \mu\text{A}$
<b>Max. contact current</b>	3 mA (typ.: 1 mA; in case of malfunction: max. 5 mA)
<b>Contact resistance (CRV)</b>	$< 400 \text{ ohm}$ (switch level)
<b>Insulation resistance</b>	1 G $\Omega$ at 500 V
<b>Dielectric strength</b>	2,000 V
<b>Output signal</b>	10 – 90 % ( $\pm 1\%$ ) of VCC 0 – 100 % ( $\pm 1\%$ ) of VCC 2 x 2.5 k 10 – 90 % reverse redundant
<b>Neutral position</b>	$\pm 2.5$ (50% $\pm 0.5\%$ of VCC measured load-free)

## MECHANICAL SPECIFICATIONS

<b>Service life</b>	5 million cycles
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<b>Deflection angle, mech.</b>	$\pm 30^\circ$
<b>Operating force</b>	4 N typically *
<b>Impact strength</b>	Max. 180 N
<b>Weight</b>	About 35 g

## AMBIENT CONDITIONS

<b>Storage temperature</b>	-40° C – +85° C
<b>Operating temperature</b>	-25° C – +70° C
<b>Protection class</b>	IP 66

## MATERIALS

<b>Base</b>	Plastics
<b>Bearing</b>	Plastics
<b>Electrical connection</b>	7-pin Molex

## DEFINITIONS

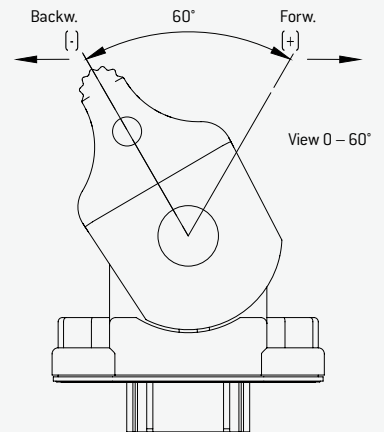
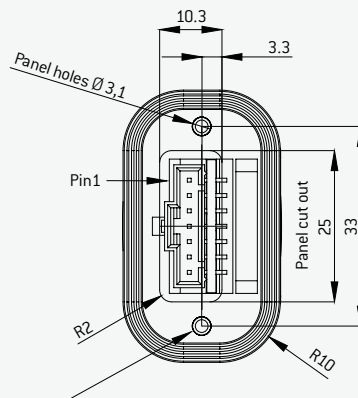
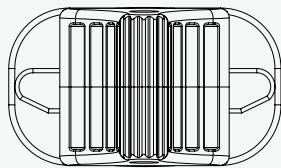
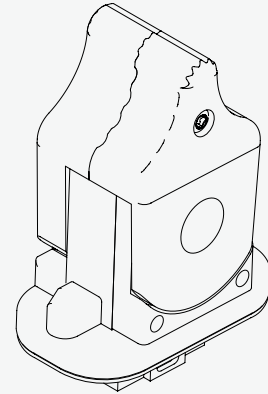
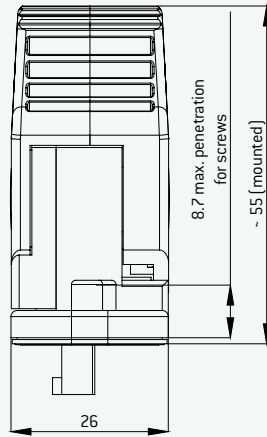
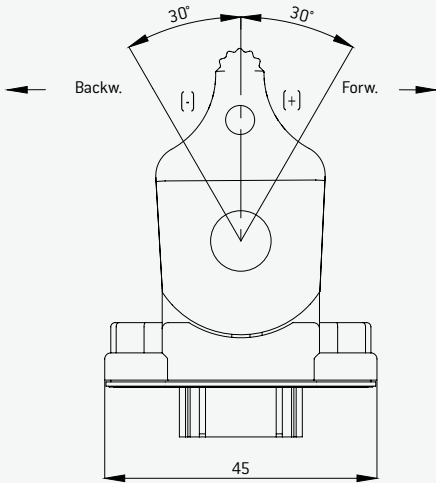
<b>BRS-0</b>	Stepless brake, detent in the zero position
<b>BRS</b>	Stepless brake
<b>0 – 60°</b>	-30° = zero position

Specifications are subject to change without notice. | \* Other values on request.

## MJ-1L

Type	MJ-1L 5K MC 1-0-1 10 – 90 % Molex 7-pin	Type	MJ-1L BRS-0 5k MC 1-0-1 0 – 100 % Molex 7-pin
Item number	E060200030 (1-axis)	Item number	E060201130 (1-axis)
Type	MJ-1L 5K MC 1-0-1 0 – 100 % Molex 7-pin	Type	MJ-1L BRS 5K MC 1-0-1 10 – 90 % Molex 7-pin
Item number	E060200130 (1-axis)	Item number	E060202030 (1-axis)
Type	MJ-1L 2x2.5K 10 – 90 % reverse redundant Molex 7-pin	Type	MJ-1L BRS 5K MC 1-0-1 0 – 100 % Molex 7-pin
Item number	E060200231 (1-axis)	Item number	E060202130 (1-axis)
Type	MJ-1L BRS-0 5K MC 1-0-1 10 – 90 % Molex 7-pin	Type	MJ-1L 0 – 60° 2x2.5K 10 – 90 % reverse redundant Molex 7-pin
Item number	E060201030 (1-axis)	Item number	E060203231 (1-axis)
Connection cable	Molex 7-pin LiYv 0.14mm <sup>2</sup> 500mm	Item number	Z301000507

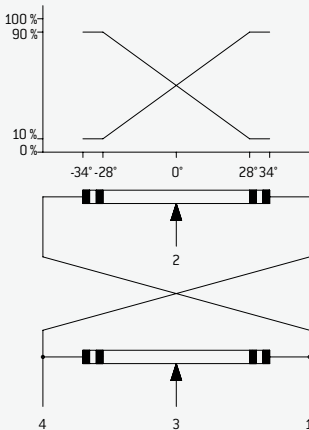
**DRAWINGS FOR MJ-1L**



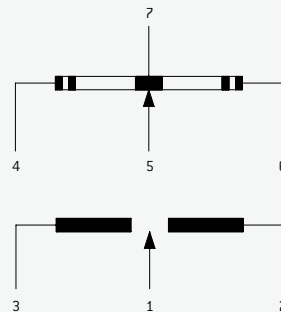
Mounting: 2 x screws for plastic  
K30x\_Z1 A2 [supplied]  
Drive mode: PH1/Z1 ~0.7 Nm  
Plate thickness up to 3.50 mm: K30 x 10  
Z408000031  
Plate thickness from 4.0 – 6.0 mm: K30 x 12  
Z408000018

Connector:  
Male header Molex 70553-0111  
Connector latching: 7 pol. Molex  
Cable 500 mm ws/white LiYv 0.14 mm² VDE0812  
[order separately: Z30100050?]

**CONNECTOR PIN ASSIGNMENT/DIAGRAM**



Potentiometer:  
Resistance value: 2.5 kOhm ± 20 %  
Output signal reverse redundant  
10 – 90 % of supplied voltage  
  
Pin 1: Voltage supply  
Pin 2: Output voltage signal  
Pin 3: Output voltage signal  
Pin 4: Voltage supply



Potentiometer:  
Resistance value: 5 kOhm ± 20 %  
Output signal:  
10 – 90 % ± 1 % of supplied voltage  
  
Pin 1: Common terminal-switches  
Pin 2: N/O switch lever forward (+)  
Pin 3: N/O switch lever backward (-)  
Pin 4: Negat. or zero volt. supply  
Pin 5: Output voltage signal  
Pin 6: Positive voltage supply  
Pin 7: Center tap

**ACCESSORIES**

Type	Neoprene protective cover MJ-1L	Type	Locking connector, 7-pin Molex
Item number	Z405000018 (not applicable for BRS/BRS-0/0 – 60°)	Item number	500mm, white LiYv 0.14mm²_VDE 0812
Type	Neoprene protective cover MJ-1L SC (Soft Control)		Z30100050?
Item number	Z405000023 (not applicable for BRS/BRS-0/0 – 60°)		