

FINGER JOYSTICK MJ-F11 (prev. MJ-1L, MJ-3L, MJ-F03)

The MJ-F11 is a single-axis analog joystick. Thanks to its potentiometer technology, it has very low power consumption and is ideal for battery-powered applications, such as radio remote controls. Its compact housing and shallow depth allow for space-saving installation.

This joystick is available in two different handle lengths and optionally with Hall technology.

Advantages

- Robust, compact design
- Low weight
- Low installation depth

Application examples

- Radio remote controls
- Boat controls
- Forklifts
- Aerial work platforms

Electrical data Potentiometer	
Sensor technology	Potentiometer
Resistance value	5 k Ω , 2 x 2.5 k Ω
Supply voltage	3 – 30 VDC
Tolerance center position	± 0.5 % to ± 1.5 % FSO
Tolerance max. deflection	± 1 % bis ± 2.5 % FSO configuration-dependent
Wiper current	≤ 1 mA max. 5 mA in case of malfunction
Independent Linearity	2 %
Interface	Potentiometer 0 – 100 % Potentiometer 10 – 90 % Potentiometer 7.5 – 92.5 % Redundant or reverse redundant
Resolution	Analog

Electrical data Hall-effect	
Sensor technology	Hall-effect
Supply voltage	3.3 – 5 VDC
Tolerance center position	± 2 % FSO
Interface	0.5 – 4.5 V ratiometric at 5 VDC Redundant or reverse redundant SPI PWM
Resolution	12 bit
Supply current	Typ. 8 mA, max. 16 mA

Electrical connection	
	Molex SL 70553 7 pole Amphenol Dubox 1x6 pole Solder connection Others on request

Environmental data	
Operating temperature	-25° C up to +70° C
Storage temperature	-40° C up to +85° C
Protection level acc. to IEC 60529	IP 66 above sealing
EMC Immunity acc. to	EN IEC 61000-6-2
EMC Emission acc. to	EN IEC 61000-6-4



Mechanical data	
Number of axes	1
Dimensions	See drawings
Weight	approx. 35 g
Operating force	3.5 N $\pm$ 1 N
Max. vertical load	< 500 N
Max. tilt load	< 200 N
Deflection angle	$\pm 30^\circ$
Centering	Spring return
Mounting	Screwed from below
Mechanical option	Spring return to center Stepless locking Stepless locking, with detent step in center
Limiter	Single axis
Lifetime	5 million cycles

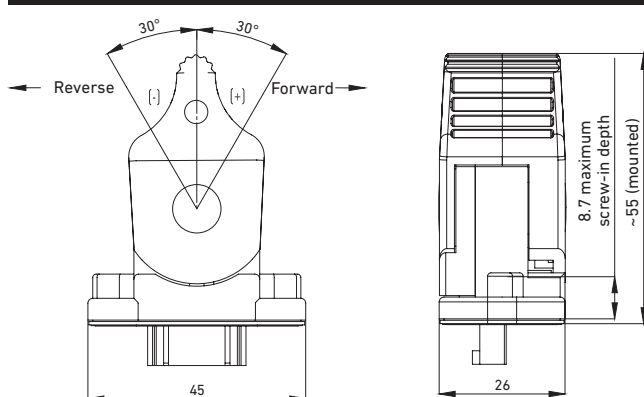
Material	
Housing	Plastic
Rubber Boot	Neopren 40 Shore Neopren 30 Shore

Handle design	
	Handle length 55 mm and 63.5 mm

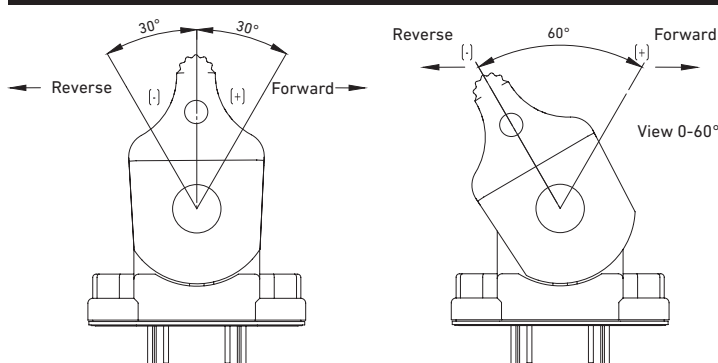
Handle function	
	None

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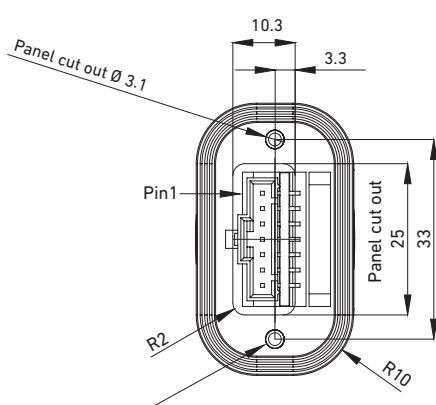
Dimensions



Deflection



Mounting/Mounting Cutout

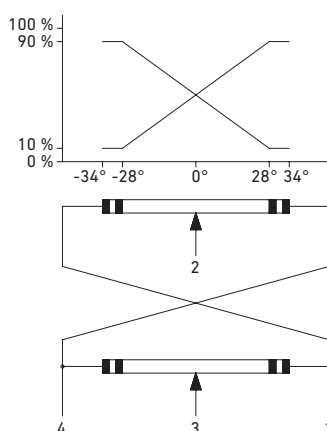


Mounting

Plate thickness up to 3.5 mm	Screw STS KN1031 30x10-Z1 A2 Article no. H904080031
Plate thickness 4 – 6 mm	Screw STS KN1031 30x12-Z1 A2 Article no. H904080018
Screw Drive	PH1/Z1
Torque	0.7 Nm

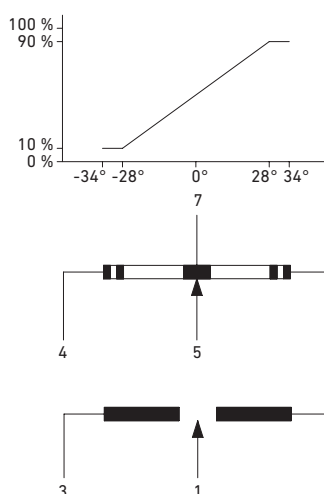
Screws are included

Electrical Connection/Circuit diagram



Potentiometer reverse redundant:
Resistance value: 2 x 2.5 kΩ
Output signal:
10 – 90 % of supply voltage

Pin 1: Supply voltage
Pin 2: Output voltage signal
Pin 3: Output voltage signal
Pin 4: Supply voltage



Potentiometer, not redundant:
Resistance value: 5 kΩ
Output signal:
10 – 90 % of supply voltage

Pin 1: Common terminal-switch
Pin 2: Switch lever forward (+)
Pin 3: Switch lever backward (-)
Pin 4: Negative supply voltage
Pin 5: Output voltage signal
Pin 6: Positive supply voltage
Pin 7: Center contact

Metallux cannot picture the customer's operating and application conditions and the customer's existing environmental influences. We therefore recommend that you carry out your own investigations into the planned use of the products under the actual operating conditions.

We continuously improve our products and also update our data sheets regularly. In this respect, there may be changes in the specification. These changes will apply to orders received by us from the time of the update, unless otherwise agreed.

Our products comply with Directive 2011/65/EU (RoHS) including Directive 2015/863/EU and Regulation (EC) No. 1907/2006 (REACH).

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Product Codes for orders

	X-axis	Y-axis	Z-axis
	X	Y0 00 A00	Z0 00 A00
Sensor technology			
0 None	0		
H Hall	H		
P Potentiometer	P		
Interface			
00 None	00		
01 Potentiometer 0–100 % with directional switch	01		
02 Potentiometer 0–100 % with directional switch and center contact	02		
03 Potentiometer 0–100 % redundant	03		
04 Potentiometer 0–100 % redundant, center contact	04		
05 Potentiometer 0–100 % reverse redundant	05		
06 Potentiometer 0–100 % reverse redundant, center contact	06		
07 Potentiometer 10–90 % with directional switch	07		
08 Potentiometer 10–90 % with directional switch and center contact	08		
09 Potentiometer 10–90 % redundant	09		
10 Potentiometer 10–90 % redundant, center contact	10		
11 Potentiometer 10–90 % reverse redundant	11		
12 Potentiometer 10–90 % reverse redundant, center contact	12		
16 Hall ratiometric 0.5–4.5 V	16		
17 Hall ratiometric 0.5–4.5 V redundant	17		
26 Potentiometer 7.5–92.5 % with directional switch	26		
99 Custom	99		
Mechanical Option			
A00 None	A00		
A01 Spring return to center	A01		
A16 Stepless locking	A16		
A17 Stepless locking, with detent step in center position	A17		
A99 Custom	A99		
Limiter			
B06 Single axis		B06	
B99 Custom		B99	
Electrical connection			
C00 None		C00	
C01 Solder connection		C01	
C02 Connector		C02	
C99 Custom		C99	
Handle design			
D03 MJ-F03		D03	
D04 MJ-F11		D04	
D99 Custom		D99	
Handle function			
E00 None		E00	
E99 Custom		E99	

Explanation of Product Codes

Each product code begins with the model name. After that, for each axis, the sensor technology, the interface, and the mechanical option are specified. This is followed by the limiter, the electrical connection, the handle design, and the handle function.

Example for the Product Code of a typical MJ-F11: MJ-F11_XP04_A01_Y000_A00_Z000_A00_B06_C02_D04_E00

XP04_A01: X-axis Potentiometer 0 – 100 % redundant, center contact, spring return to center

Y000_A00: No Y-axis

Z000_A00: No Z-axis

B06_C02_D04_E00: Single axis, Connector, Handle design MJ-F11, no handle function