

# FINGER JOYSTICK MJ-F12 (prev. MJ-2K)

The MJ-F12 series with potentiometer technology is characterized by precise control and low power consumption.

The 1-, 2- or 3-axis joystick is available in numerous variants.

The MJ-F12 and MJ-F13 series differ in their flange shape. The MJ-F12 has a square flange.

## Advantages

- Robust and compact design
- Low weight
- Low installation depth
- Low power consumption

## Application examples

- Remote Controls
- Boat controls
- Forklifts
- Aerial work platforms

| Electrical data           |                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor technology         | Potentiometer                                                                                                                                                             |
| Resistance value          | 1.75 kΩ, 2.5 kΩ, 5 kΩ, 10 kΩ<br>Others on request                                                                                                                         |
| Supply voltage            | 3 – 30 VDC                                                                                                                                                                |
| Tolerance center position | ±0.5 % to ±1.5 % FSO                                                                                                                                                      |
| Tolerance max. deflection | ±1 % bis ±2.5 % FSO<br>configuration-dependent                                                                                                                            |
| Wiper current             | ≤ 1 mA<br>max. 5 mA in case of malfunction                                                                                                                                |
| Independent Linearity     | ±2 %                                                                                                                                                                      |
| Interface                 | Potentiometer 0 – 100 %<br>Potentiometer 10 – 90 %<br>Potentiometer 7.5 – 92.5 %<br>Potentiometer for detent steps, digital<br>Potentiometer Gray Code and center contact |
| Resolution                | Analog                                                                                                                                                                    |

| Electrical connection |                                                                                                                       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------|
|                       | Solder connection<br>Hirose DF3 12 pole<br>Molex PicoBlade 53048<br>Amphenol Dubox 6 oder 8 pole<br>Others on request |

| Environmental data                 |                                     |
|------------------------------------|-------------------------------------|
| Operating temperature              | -25 °C to +70 °C<br>-40 °C optional |
| Storage temperature                | -40 °C to +85 °C                    |
| Protection level acc. to IEC 60529 | IP 67 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, 2 or 3                                                                                                                                                         |
| Dimensions               | See drawings                                                                                                                                                      |
| Weight                   | approx. 25 g                                                                                                                                                      |
| Operating force          | 5 N ±1,5 N<br>3 N optional                                                                                                                                        |
| Max. vertical load       | < 500 N                                                                                                                                                           |
| Max. tilt load           | < 200 N                                                                                                                                                           |
| Deflection angle X and Y | ±26°<br>Others on request                                                                                                                                         |
| Deflection angle Z       | ±37°                                                                                                                                                              |
| Centering                | Single spring                                                                                                                                                     |
| Mounting                 | M2.5 x 16 for 3 mm mounting plate,<br>mounting ring<br>Screwed from below                                                                                         |
| Mechanical option        | Spring return to center<br>Spring return to center, reduced operating force<br>Detent steps, spring return to center<br>Detent steps, locking<br>Stepless locking |
| Limiter                  | Square<br>Square, soft guided feel<br>Round<br>Round, soft guided feel<br>Cross gate<br>Single axis in X or Y                                                     |
| Lifetime                 | > 5 million cycles                                                                                                                                                |

| Material    |                         |
|-------------|-------------------------|
| Housing     | Aluminium               |
| Bearing     | Stainless steel/plastic |
| Rubber boot | Neoprene                |
| Handle      | Plastic                 |

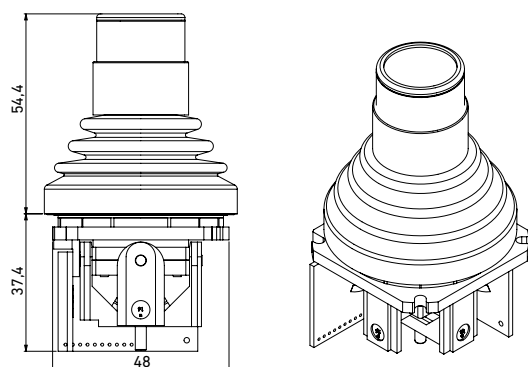
| Handle design |                                                                                               |
|---------------|-----------------------------------------------------------------------------------------------|
|               | Handle length 55 to 70 mm<br>Handle with rubber boot, closed<br>Handle with rubber boot, open |

| Handle function |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
|                 | Push button / Deadman switch, internal<br>Push button / Deadman switch, external |

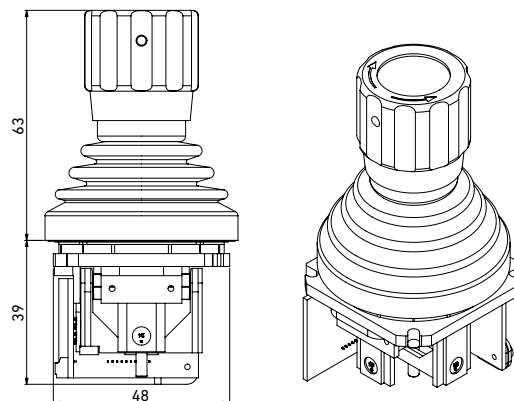
# FINGER JOYSTICK MJ-F12 (prev. MJ-2K)

## Dimensions

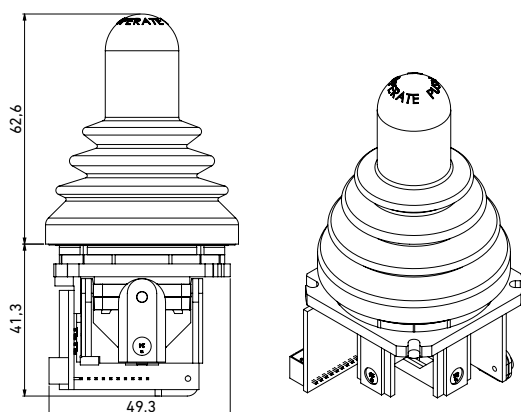
3-axis, Z-axis with rubber boot



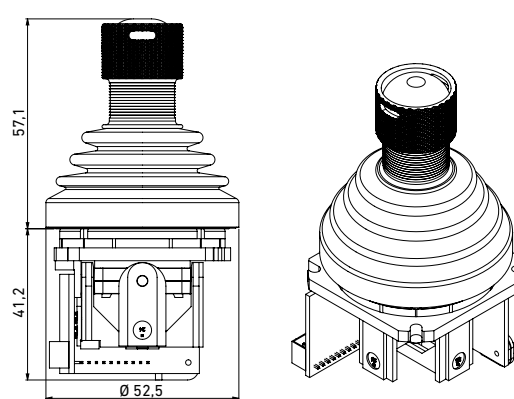
3-axis, Z-axis with ribs



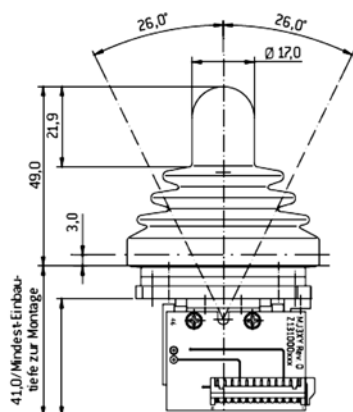
Integrated push button



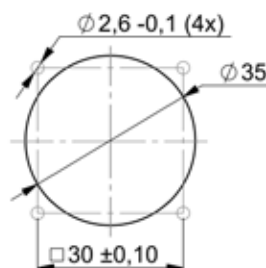
External push button



Without push button



Mounting/Mounting Cutout



All dimensions in mm

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).

### Product codes for orders

### Explanation of Product Codes

**Example for the Product Code of a typical MJ-F12:** MJ-F12\_XP02\_A01\_YP02\_A01\_Z000\_A00\_B02\_C02\_D07\_E00  
 XP02\_A01: X-axis with potentiometer 0 - 100 % with directional switch and center contact, spring return to center  
 YP02\_A01: Y-axis with potentiometer 0 - 100 % with directional switch and center contact, spring return to center  
 Z000\_A00: No Z-axis  
 B02 C02 D07 E00: Square limiter, soft guided feel, Connector, Handle with rubber boot closed, No handle function