

FINGER JOYSTICK MJ-F16

The MJ-F16 is a redundant Hall-effect joystick with vibration and LED lighting. Its compact design allows multiple joysticks to be arranged in parallel in the smallest of spaces.

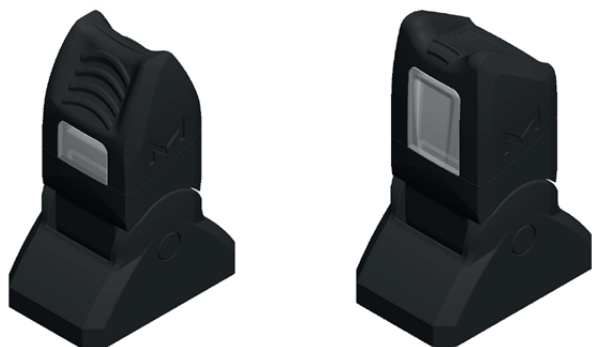
Available in numerous mechanical options:
With detent steps, locking, and spring return.

Advantages

- Various handle shapes
- Contactless Hall technology
- Fail-safe thanks to two springs

Application examples

- Radio remote controls
- Control element in armrests
- Industrial trucks
- Construction and agricultural machinery
- Forestry machinery



Electrical data

Sensor technology	Hall-effect
Supply voltage	3.3 to 5 VDC
Tolerance center position	±2.5 % FSO
Interfaces	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 iGrid 501645 10 pole
Others on request

Environmental data

Operating temperature	-20° C up to +85° C
Storage temperature	-40° C up 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
Dimensions	See drawings
Weight	22 – 30 g
Operating force	3 N ± 0.5 N
Max. vertical load	< 500 N
Max. horizontal load	< 200 N
Deflection angle	± 30° 0° to 60° or 60° to 0°
Center position	Two springs
Mounting	Screwed from below
Mechanical option	Spring return to center Detent steps, spring return to center Detent steps in end position, return to center Detent steps in end and center position, return to center Detent steps, locking Stepless locking Stepless locking, with detent step in end position Stepless locking, with detent step in end and center position
Limiter	Single axis
Lifetime	5 million cycles

Material

Housing	Plastic
---------	---------

Handle design

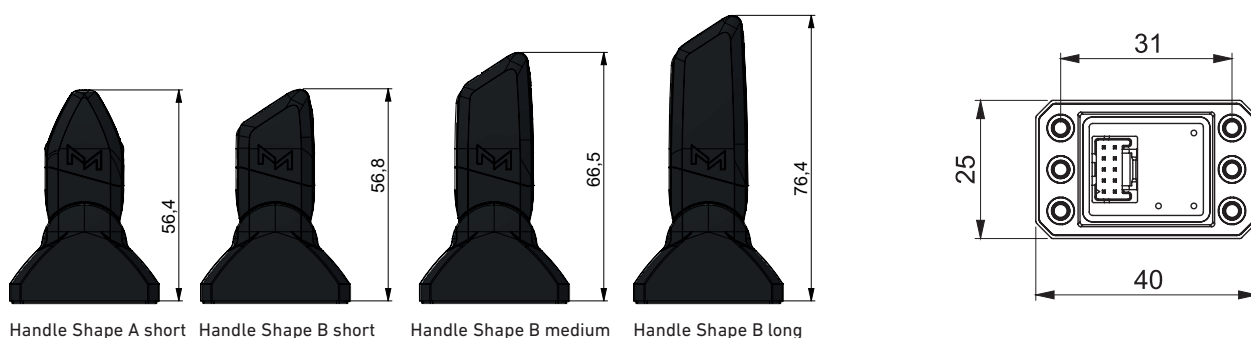
Handle Shape A short
Handle Shape B short | medium | long

Handle function

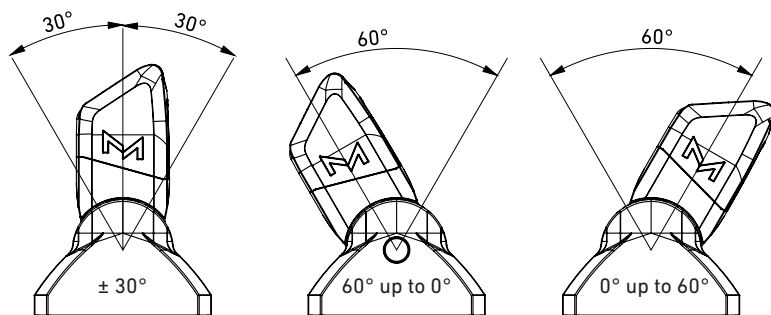
Optional	LED illumination Vibration
----------	-------------------------------

FINGER JOYSTICK MJ-F16

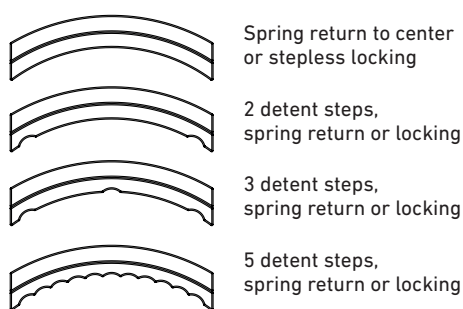
Dimensions



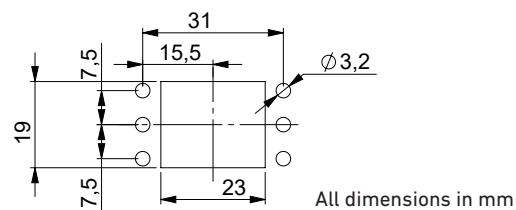
Deflection



Mechanical options



Mounting/Mounting Cutout

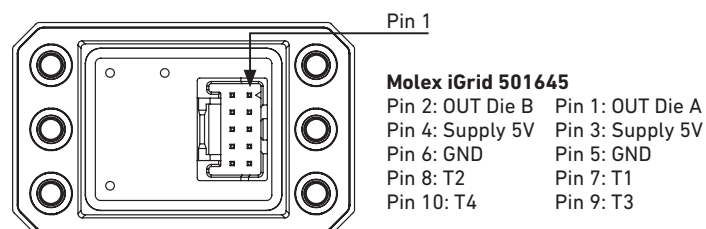


Mounting

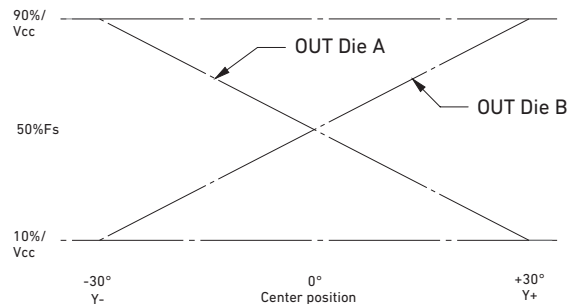
Plate thickness up to 3.5 mm	Screw STS KN1031 30x10-Z1 A2 Article no. H904080031
Plate thickness 4–6 mm	Screw STS KN1031 30x12-Z1 A2 Article no. H904080018
Drive mode	PH1/Z1
Torque	0,7 Nm

Screws are included

Electrical Connection/Circuit diagram



T1: Standard GND for RGB Diode or GND for Microcontroller
 T2: Standard Red Diode PWM or SCL for I²C
 T3: Standard Green Diode PWM or SDA for I²C
 T4: Standard Blue Diode PWM or Supply for Microcontroller



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).

FINGER JOYSTICK MJ-F16

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			
Interface				
00 None	00			
16 Hall ratiometric 0.5 - 4.5 V	16			
17 Hall ratiometric 0.5 - 4.5 V, redundant	17			
18 Hall ratiometric 0.5 - 4.5 V, reverse redundant	18			
19 SPI	19			
24 PWM	24			
99 Custom	99			
Mechanical Option				
A00 None	A00			
A01 Spring return to center	A01			
A07 5 detent steps, spring return to center	A07			
A09 Detent steps in end position, return to center	A09			
A10 Detent steps in end and center position, return to center	A10			
A15 5 detent steps, locking	A15			
A16 Stepless locking	A16			
A18 Stepless locking, with detent step in end position	A18			
A19 Stepless locking, with detent step in end and center position	A19			
A99 Custom	A99			
Limiter				
B06 Single axis			B06	
B99 Custom			B99	
Electrical connection				
C00 None			C00	
C02 Connector			C02	
C03 Cable			C03	
C99 Custom			C99	
Handle design				
D00 No handle, only base			D00	
D05 MJ-F16 shape A			D05	
D06 MJ-F16 shape B			D06	
D99 Custom			D99	
Handle function				
E00 None			E00	
E03 LED Illumination			E03	
E04 Vibration			E04	
E05 LED Illumination and vibration			E05	
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-F16: MJ-F16_XH16_A01_Y000_A00_Z000_A00_B06_C03_D05_E00

XH16_A01: X-axis Hall ratiometric 0.5 - 4.5 V, spring return to center

YH16_A01: No Y-axis

Z000_A00: No Z-axis

B06_C03_D05_E00: Single axis, Cable, MJ-F16 shape A, no handle function