

HAND JOYSTICK MJ-H10 (prev. MJ-30K)

This multiaxial hand joystick is designed for precise drive and function control. State-of-the-art technology, a robust construction and an ergonomic design make it the ideal control element for demanding functions.

Advantages

- Hall or potentiometer technology
- Compact and robust design
- Low installation depth
- Freely configurable

Application examples

- Industrial trucks, forklifts and aerial work platforms
- Agricultural and construction machinery
- Municipal vehicles
- Cranes, excavators

Electrical data Hall-effect	
Sensor technology	Hall-effect
Supply voltage	3.3 to 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 data Potentiometer	
Sensor technology	Potentiometer
Resistance value	2.5 kΩ, 5 kΩ, 10 kΩ Others on request
Supply voltage	3 – 30 VDC
Tolerance center position	±1.5 % FSO
Tolerance max. deflection	±1 % to ±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 % Potentiometer Gray Code
Resolution	Analog

Electrical data CAN bus	
Sensor technology	Hall-effect
Supply voltage	8 to 32 VDC
Tolerance center position	±2 % FSO
Interface	CANOpen SAE J1939
Resolution Output Signal X-Y	min. 8 bit, max. 12 bit
Supply current	30 – 60 mA
Baudrate	250, 500, 1000 kbit/s
Digital I/O	Standard: 7, Extended: 15
Analog inputs	Standard: 2, Extended: 11

The wide range of possible configurations and communication protocols/mapping cannot be fully represented here. Please contact us with your specific requirements.



Mechanical data	
Number of axes	Multiaxial
Dimensions	See drawings
Weight	approx. 600 g
Operating force	13 N ±2 N
Max. vertical load	< 1000 N
Max. tilt load	< 500 N
Deflection angle	±20°
Mounting	Screwed from above
Mechanical option	Spring return to center
Limiter	Square Square, soft guided feel Round Round, soft guided feel
Lifetime	> 10 million cycles

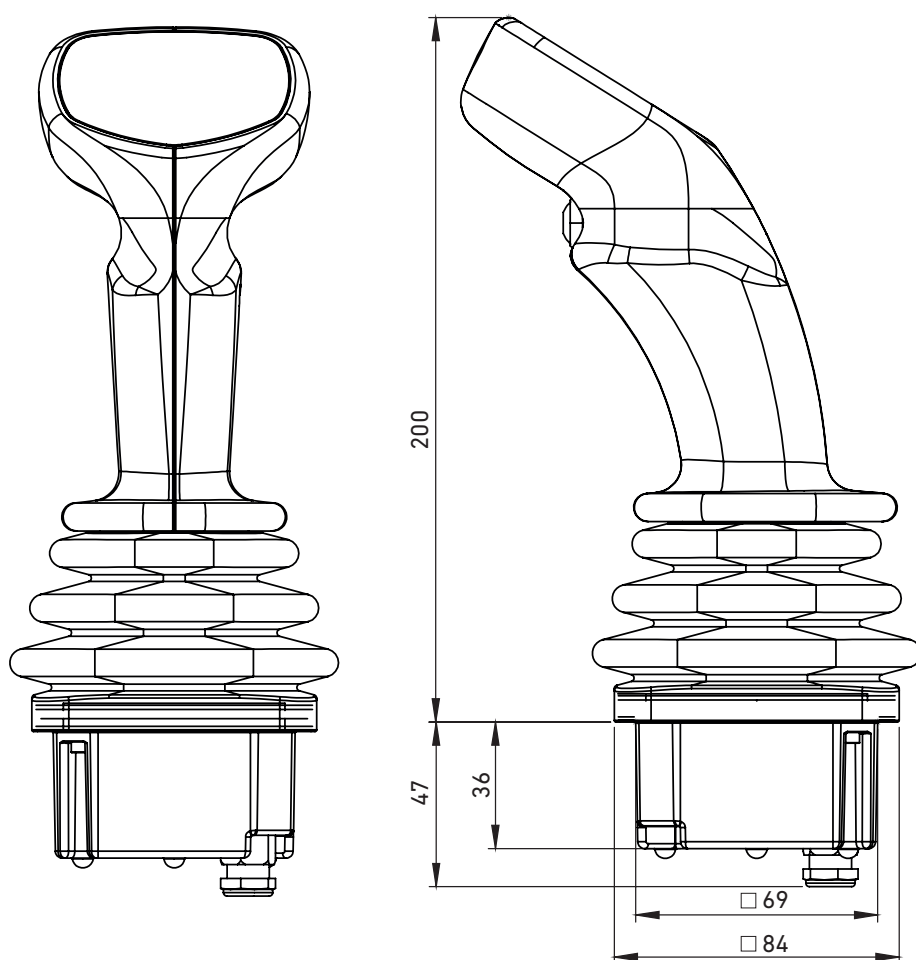
Electrical connection	
	Cable Others on request

Environmental data	
Operating temperature	-20 °C to +85° C
Storage temperature	-40 °C to +85° C
Protection level acc. to IEC 60529	IP 53
EMC Immunity acc. to	EN IEC 61000-6-2
EMC Emission acc. to	EN IEC 61000-6-4

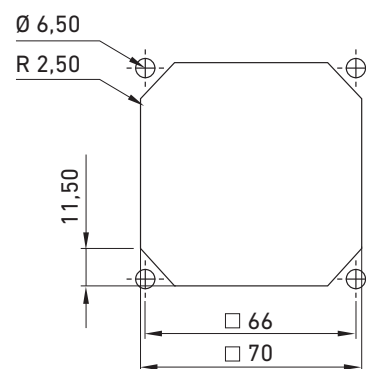
Handle function	
	Configurable control panel

HAND JOYSTICK MJ-H10 (prev. MJ-30K)

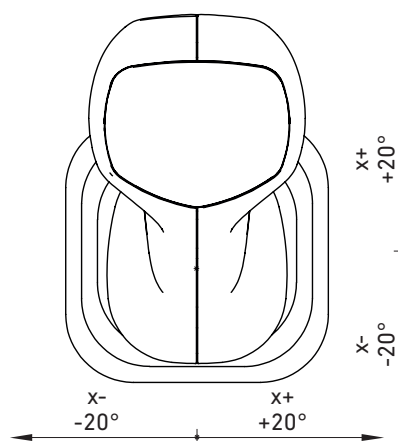
Drawings



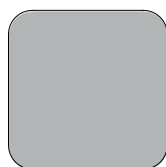
Panel arrangements



Lever operation



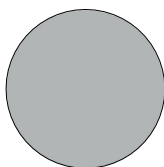
Limiter



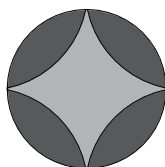
Square



Square, soft guided feel

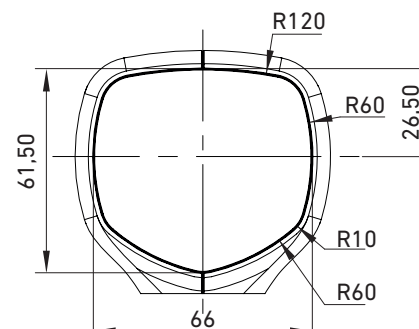


Round



Round, soft guided feel

Thumb plate configuration



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).

HAND JOYSTICK MJ-H10 (prev. MJ-30K)

Product codes for orders

	X-axis			Y-axis			Z-axis			
	X			Y			Z0	00	A00	
Sensor technology										
0 None	0			0						
H Hall	H			H						
P Potentiometer	P			P						
Interface										
00 None	00			00						
01 Potentiometer 0–100 % with directional switch	01			01						
02 Potentiometer 0–100 % with directional switch and center contact	02			02						
03 Potentiometer 0–100 % redundant	03			03						
04 Potentiometer 0–100 % redundant, center contact	04			04						
05 Potentiometer 0–100 % reverse redundant	05			05						
06 Potentiometer 0–100 % reverse redundant, center contact	06			06						
07 Potentiometer 10–90 % with directional switch	07			07						
08 Potentiometer 10–90 % with directional switch and center contact	08			08						
09 Potentiometer 10–90 % redundant	09			09						
10 Potentiometer 10–90 % redundant, center contact	10			10						
11 Potentiometer 10–90 % reverse redundant	11			11						
12 Potentiometer 10–90 % reverse redundant, center contact	12			12						
15 Potentiometer Gray Code and center contact	15			15						
16 Hall ratiometric 0.5–4.5 V	16			16						
17 Hall ratiometric 0.5–4.5 V, redundant	17			17						
18 Hall ratiometric 0.5–4.5 V, reverse redundant	18			18						
19 SPI	19			19						
20 CANOpen	20			20						
21 SAE J1939	21			21						
24 PWM	24			24						
26 Potentiometer 7.5–92.5 % with directional switch	26			26						
99 Custom	99			99						
Mechanical option										
A00 None			A00			A00				
A01 Spring return to center			A01			A01				
A02 Spring return to center, reduced operating force			A02			A02				
A99 Custom			A99			A99				
Limiter										
B00 None									B00	
B01 Square									B01	
B02 Square, soft guided feel									B02	
B03 Round									B03	
B04 Round, soft guided feel									B04	
B99 Custom									B99	
Electrical connection										
C00 None									C00	
C03 Cable									C03	
C99 Custom									C99	
Handle design										
D00 No handle, only base									D00	
D09 Handle MJ-H10									D09	
D99 Custom									D99	
Handle function										
E00 None									E00	
E06 Configurable control panel									E06	
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. The control panel is configured according to customer requirements and must be specified separately.

Example for the Product Code of a typical MJ-H10: MJ-H10_XH18_A01_YH18_A01_Z000_A00_B02_C03_D09_E06

XH18_A01: X-axis Hall ratiometric 0.5–4.5 V reverse redundant, spring return to center

YH18_A01: Y-axis Hall ratiometric 0.5–4.5 V reverse redundant, spring return to center

Z000_A00: No Z-axis

B02_C03_D09_E06: Square limiter, soft guided feel, Cable, Handle MJ-H10, Configurable control panel