

# Data Sheet for Joysticks

Finger Joystick

Series 828



- 1 to 3 Axes
- Small dimensions with high durability
- Small deflection angles of handle

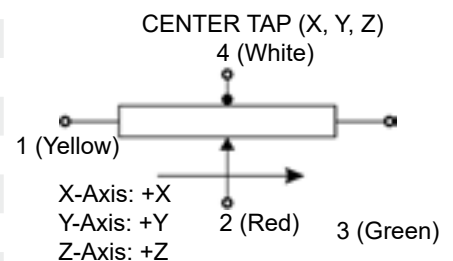
The 828 series meets the highest demands for joystick mechanics and sensor precision, combined with small dimensions and long life. It offers precision and durability in a compact size. The high-quality construction and the resulting convincing haptics provide a safe operating feeling and allow the user high-precision control in several dimensions despite the small travel.

## Technical Data Joystick

Angle of Movement X+Y Axis	$\pm 10^\circ.. \pm 15^\circ$
Angle of Movement Z-Axis	$\pm 30^\circ.. \pm 35^\circ$
Return to Center Accuracy X+Y Axis	$\pm 1^\circ$
Operating Force X+Y Axis	0.8 to 2 N
Operating Force Z-Axis	15 to 60 mNm
Lifetime	typ. 5 million cycles
Vibration 10 bis 55 Hz, 1 min.	10 G (MIL-STD-202F-204)
Shock	30 G (MIL-STD-202F-213)
Protection Grade	IP40 (IP54 with Rubber Boot, 2 Axes)
Operating Temperature	-20 °C to +65 °C
Weight	ca. 100 g (2 Axes), ca. 150 g (3 Axes)
Panel Thickness	1 to 2 mm
Length of Wires	300 mm, AWG28 (X-/Y-Axis), AWG27 (Z-Axis)

## Technical Data Potentiometer

	Type I (X- & Y-Axis)	Type H (Z-Axis)
Technology	Conductive Plastic	Conductive Plastic
Nominal Total Resistance	10 kOhm	10 kOhm
Resistance Tolerance	$\pm 15\%$	$\pm 15\%$
Independent Linearity	$\pm 3\%$	$\pm 3\%$
Power Rating @ 70°C	0.1 W	0.04 W
Effective Electrical Angle of Rotation	20°	60°
Max. Wiper Current	1 mA	1 mA



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Please contact us for information regarding stock articles, delivery times and minimum order quantities.

## Order Code

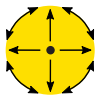
Description	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italics</i>							
<b>Series</b>	<b>828</b>							
<b>Axes:</b>								
1 Axis		1						
<b>2 Axes</b>		<b>2</b>						
<b>2 Axes with Pushbutton</b>		<b>3</b>						
3 Axes		4						
<b>Rubber Boot</b>				<b>5</b>				
<b>Round Dress Panel</b>				<b>6</b>				
<b>Return Mechanism:</b>								
<b>Spring Return</b>					1			
<b>Handles:</b>								
<b>Handle concave, 1-2 Axes, w/o Pushbutton</b>						2		
<b>Handle cylindrical, 1-2 Axes, with Pushbutton</b>						<b>6</b>		
<i>Handle, 3 Axes, w/o Pushbutton</i>						8		
<b>No Trim</b>							1	
<b>Potentiometer Type I (X &amp; Y), Type H (Z)</b>								<b>9</b>
<b>Limiters:</b>								
<b>Round</b>								<b>0</b>
<i>Single-axis Y</i>								8
<i>X-/Y-Axis „+“</i>								9

## For higher quantities or on-going demand, additional options are available

For example:

- Customer-specific cable
- Further Nominal Total Resistances

## Limiters



Round - Option "0"



1-axis "Y" - Option „8“



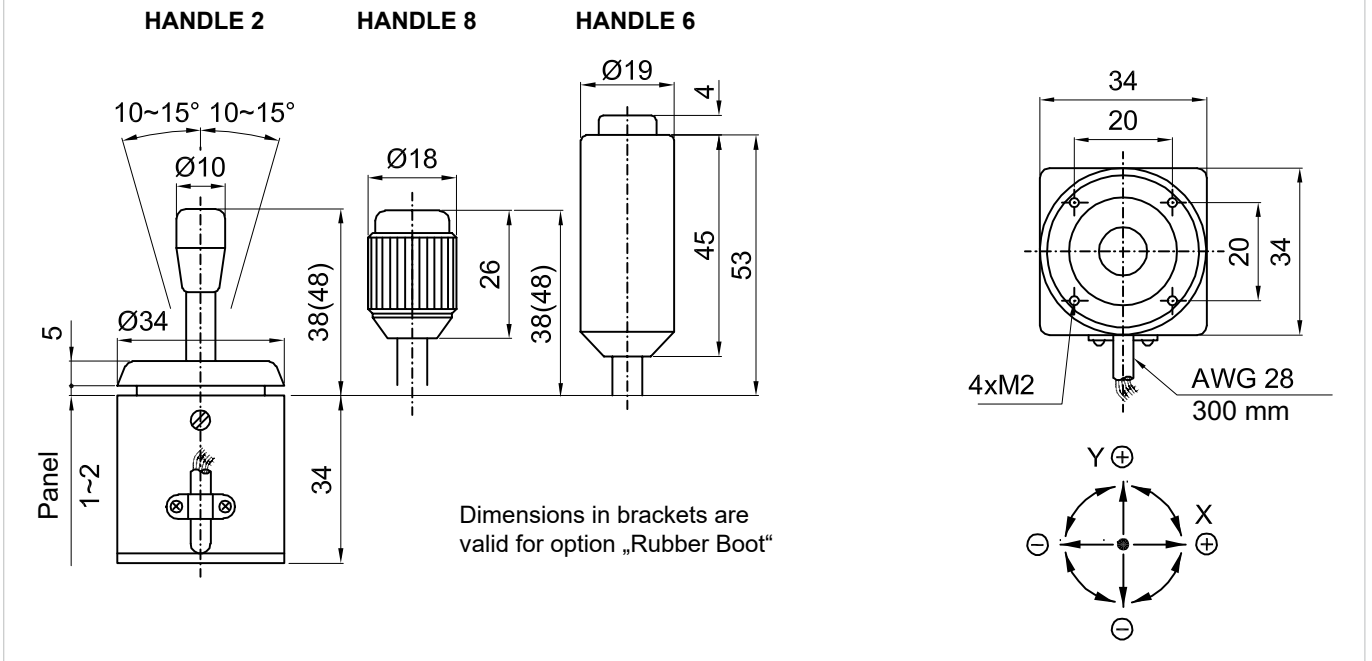
X/Y Plus "+ " - Option „9“

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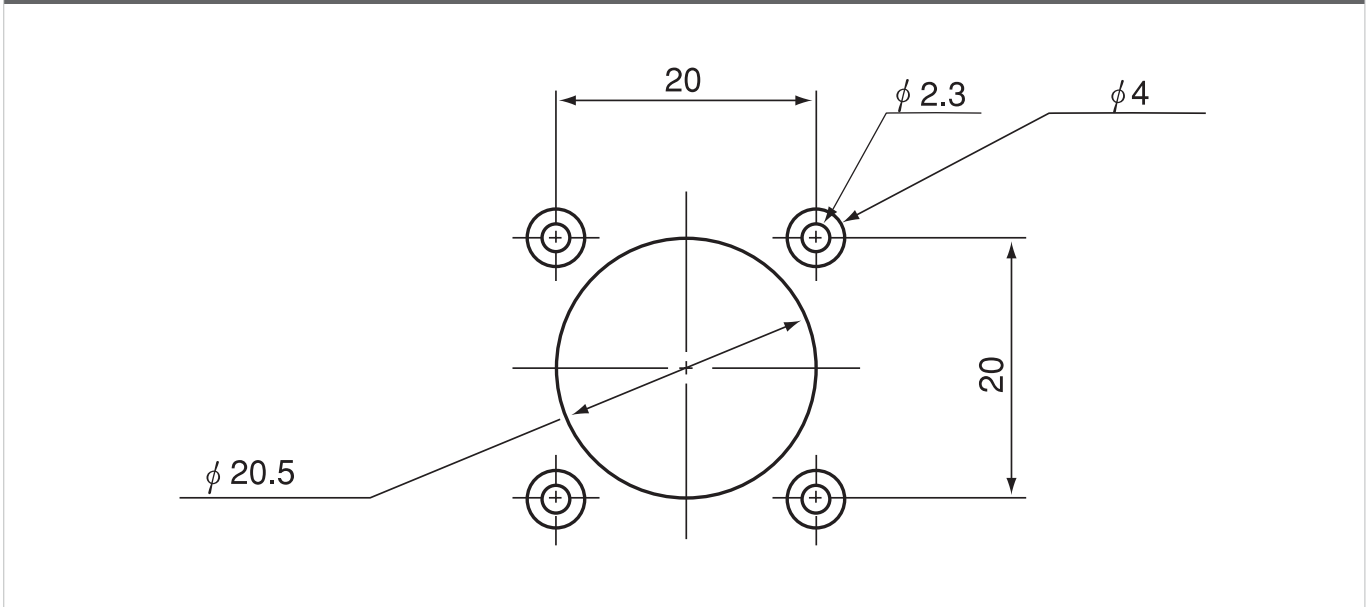
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## Drawing



Dimensions in mm

## Installation



Dimensions in mm