

# Data Sheet for Joysticks

Miniature Switchstick

Series 821



- 1 to 3 Axes
- Available with up to 6 micro switches
- High durability

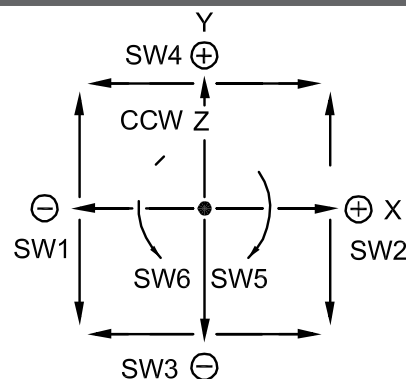
The 821 series is your choice for rugged, accurate switching in a small footprint. The high-quality construction and the resulting convincing haptic give the user a safe feeling and enable precise control of switching operations in several dimensions.

## Technical Data

Angle of Movement X-, Y-Axis	$\pm 10^\circ$ up to $\pm 15^\circ$
Angle of Movement Z-Axis	$\pm 30^\circ$ up to $\pm 35^\circ$
Return to Center Accuracy X+Y Axis	$\pm 2^\circ$
Operating Force X+Y Axis	0.8 N up to 2 N
Operating Force Z-Axis	15 mNm up to 60 mNm
Power Rating X+Y Axis	50 mA at 24 VDC
Power Rating Z-Axis	100 mA at 24 VDC
Lifetime	typ. 1 million cycles
Vibration (10 to 55Hz)	98 m/s <sup>2</sup>
Shock	294 m/s <sup>2</sup>
Protection Grade	IP 40; (IP54 with rubber boot above panel; X+Y Axis versions only)
Operating temperature range	-20 °C up to +65 °C
Weight	ca. 80 g (2 Axes) resp. ca. 100 g (3 Axes)
Panel Thickness	1mm up to 2 mm
Length of Wires	300 mm, AWG28

## Wiring

Colour	Micro Switch
2x Green	SW1 (ON at 10° into -X)
2x White	SW2 (ON at 10° into +X)
2x Yellow	SW3 (ON at 10° into -Y)
2x Red	SW4 (ON at 10° into +Y)
2x Orange	SW5 (ON at 30° CW)
2x Grey	SW6 (ON at 30° CCW)



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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>821</b>						
<b>Axes:</b>							
<i>1 Axis</i>		<i>1</i>					
<b>2 Axes</b>		<b>2</b>					
<i>2 Axes with Pushbutton</i>		<i>3</i>					
<b>3 Axes</b>		<b>4</b>					
<b>Rubber Boot</b>				<b>5</b>			
<i>Circular dress panel, threaded flange</i>				<i>6</i>			
<b>Return Mechanism:</b>							
<b>Spring Return</b>					<b>1</b>		
<i>Without Spring Return (applies only to Z-Axis)</i>					<i>2</i>		
<b>Handles:</b>							
<b>Handle concave</b>						<b>2</b>	
<i>Handle cylindrical, with Pushbutton</i>						<i>6</i>	
<b>Handle for 3 Axes</b>						<b>8</b>	
<b>No Trimm</b>							<b>1</b>
<b>Micro Switches:</b>							
<i>2 Switches (1 Axis)</i>							<i>2</i>
<b>4 Switches (2 Axes X &amp; Y)</b>							<b>4</b>
<b>6 Switches (3 Axes X &amp; Y &amp; Z)</b>							<b>6</b>

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

For example:

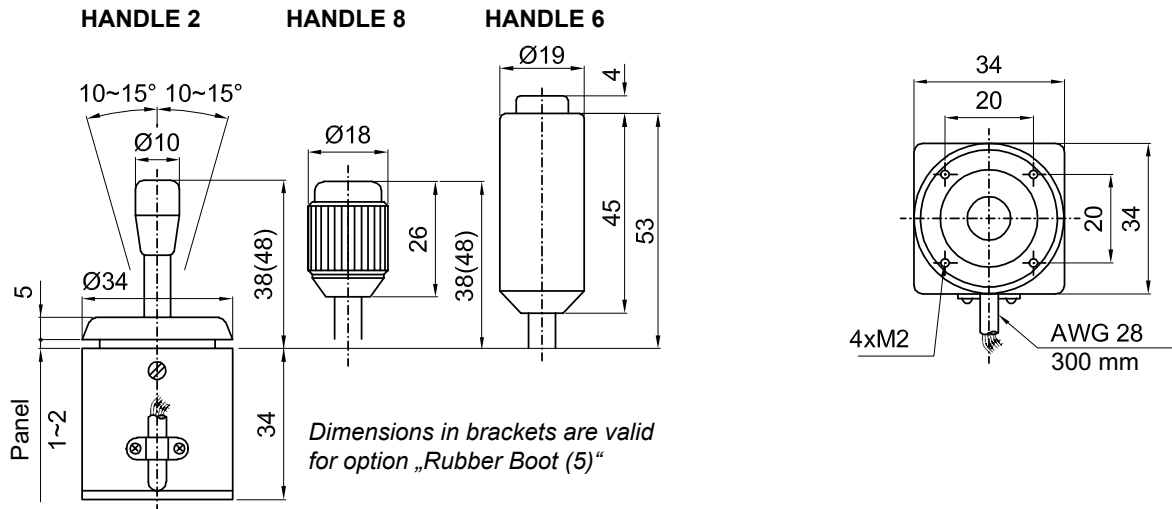
- Customer-specific cable

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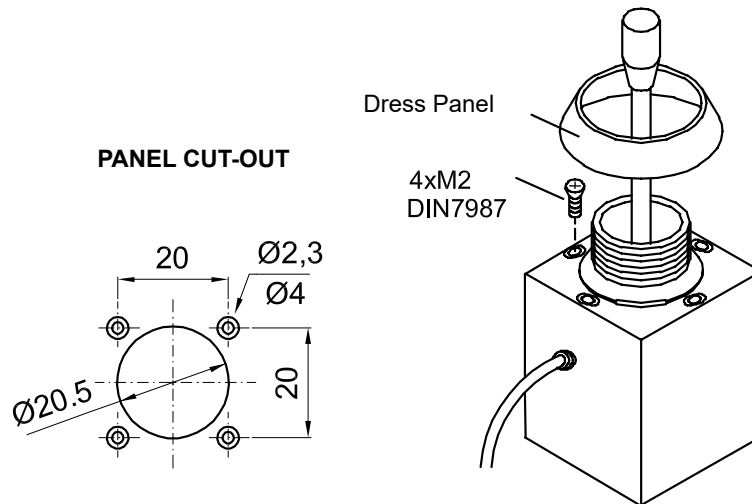
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## Technical Drawing



Dimensions in mm

## Installation



Dimensions in mm