

Data Sheet for Joysticks

Thumb Joystick

Series TRY20



- 3-axis joystick with rotatable knob (2-axis version optional)
- Particularly low height above the panel (21 mm without rubber boot, 28 mm with rubber boot)
- Outstanding quality of mechanics and sensors
- Contactless, wear-free Hall sensor technology
- Redundant output signals optional
- IP40 variants (hardcover) and IP54 variants (rubber bellows) available (IP65 optional for 2-axis version)

The joysticks of the TRY20 series are unique in their size class on the market thanks to their rotatable knob, which, as a z-axis, enables an additional third, proportional degree of freedom in the application. The industrial joysticks achieve the highest level of quality in terms of mechanics, material and workmanship. The high-quality haptics convey a secure operating feeling and enable the user to precisely control movements in several dimensions.

Technical Data

Sensor	Hall Effect
Supply Voltage	5 VDC \pm 0,5 VDC transient free
Independent Linearity Tolerance	\pm 3 % full scale
Return to Center Voltage	\pm 250 mV
Expected Life	1 million cycles
Output Voltages	0 to 5 V / 0.5 to 4.5 V / 0.25 to 4.75 V
Currents	ca. 6 mA per Axis
Impedance	>10 kOhm (>100 kOhm recommended)
Insulation Resistance	>100 MOhm at 250 VAC
Dielectric Strength	1 minute at 250 VAC
Mechanical Angle of Movement X-, Y-Axis	30° (\pm 15° from center)
Mechanical Angle of Movement Z-Axis	60° (\pm 30° from center)
Operating Force X-Y-Axis	approx. 1.5 N (from center), approx. 3.5 N (full deflection), max. 50 N
Operating Torque Z-Axis	approx. 0.15 Nm (from center), approx. 0.30 Nm (full deflection)
Operating Temperature	-20°C to +60°C
Storage Temperature	-20°C to +65°C
Sealing (above panel)	Standard with rubber boot: IP54; with hard cover: IP40; IP65 as special version
Vibration	10 to 55 Hz, 98 m/s ² (10G)
Shock	294 m/s ² (30G)
EMC	50 V/m (80 MHz..1 GHz 1 kHz 80% AM, IEC/EN61000-4-3)
ESD	IEC/EN61000-4-2, 5 kV

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

Order Code

Description	Selection: standard= black/bold , possible options= <i>grey/italics</i>							
Series	TRY20							
Axes: <i>2 Axes</i>		<i>2</i>						
3 Axes		3						
Sealing: Rubber Boot (2 or 3 axes, IP54 ^(*)) <i>Hard Cover (2 or 3 axes), IP40 ^(*)</i> <i>Improved sealing (only for 2 axes, IP65 ^(*))</i>			5 <i>0</i> <i>4</i>					
Return Mechanism: Spring Return				1				
Handles: Conical Handle					1			
Limiters: Square Limiter						3		
Output Signal: 0.5 to 4.5 V <i>0.25 to 4.25 V</i> <i>0 to 5.0 V (rail to rail)</i>							1 <i>2</i> <i>3</i>	
Signal Options: Single Output <i>Dual Output, parallel signals</i> <i>Dual Output, crossed signals</i>								0 <i>1</i> <i>2</i>

^(*) Sealing is valid only above panel

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

For example:

- Customer-specific cables
- Custom handle shapes and colour

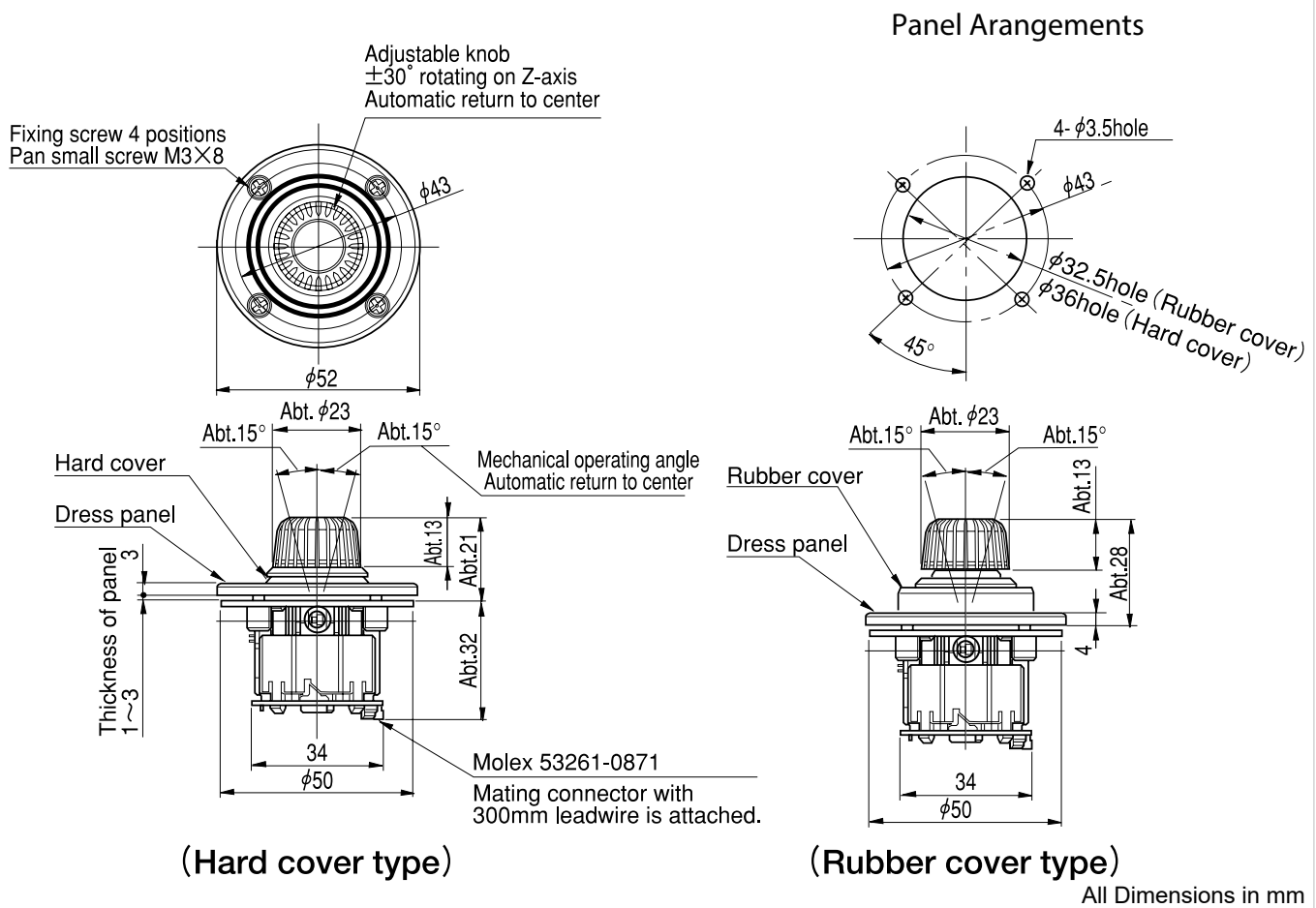
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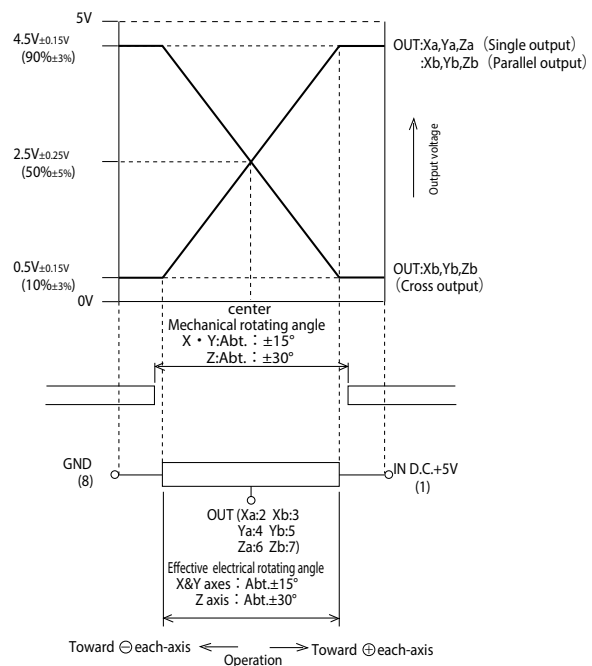
Drawings



Wiring

Pin	Function	Colour
1	Supply +5 VDC	brown
2	X-Axis	red
3	X-Axis Dual Output	orange
4	Y-Axis	yellow
5	Y-Axis Dual Output	green
6	Z-Axis	blue
7	Z-Axis Dual Output	purple
8	Ground	grey

Termination: wires AWG28, length ca. 300 mm. They are connected to the joystick housing via MOLEX 51021-0800 connector



Note1 : The number in () shows connector number.
Note2 : In (1) and GND (8) are shown in main circuit board.