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 TRY20 series joysticks are unique in their size class on the market thanks to their rotatable knob, which acts as a z-axis, providing an additional third, proportional degree of freedom in the application. The industrial joysticks are of the highest quality in terms of mechanics, materials and workmanship. The high-quality haptics provide a secure feel and allow the user to precisely control movements in several dimensions.

Technical Data	
Sensor	Hall Effect
Supply Voltage	5 VDC ± 0,5 VDC transient free
Independent Linearity Tolerance	±3 % full scale
Return to Center Voltage	±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° (±15° from center)
Mechanical Angle of Movement Z-Axis	60° (±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. 1.5 Ncm (from center), approx. 3 Ncm (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/s² (10G)
Shock	294 m/s² (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=*grey/italics*							
Series	**TRY20**							
Axes:								
2 Axes		*2*						
3 Axes		**3**						
Sealing:								
Rubber Boot (2 or 3 axes, IP54 (*))			**5**					
Hard Cover (2 or 3 axes), IP40 (*)			*0*					
Improved sealing (only for 2 axes, IP65 (*))			*4*					
Return Mechanism:								
Spring Return				**1**				
Handles:								
Conical Handle					**1**			
Limiter:								
Square Limiter						**3**		
Output Signal:								
0.5 to 4.5 V							**1**	
0.25 to 4.25 V							*2*	
0 to 5.0 V (rail to rail)							*3*	
Signal Options:								
Single Output								**0**
Dual Output, parallel signals								*1*
Dual Output, crossed signals								*2*

(*) 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

Limiters

Square - Option "3"

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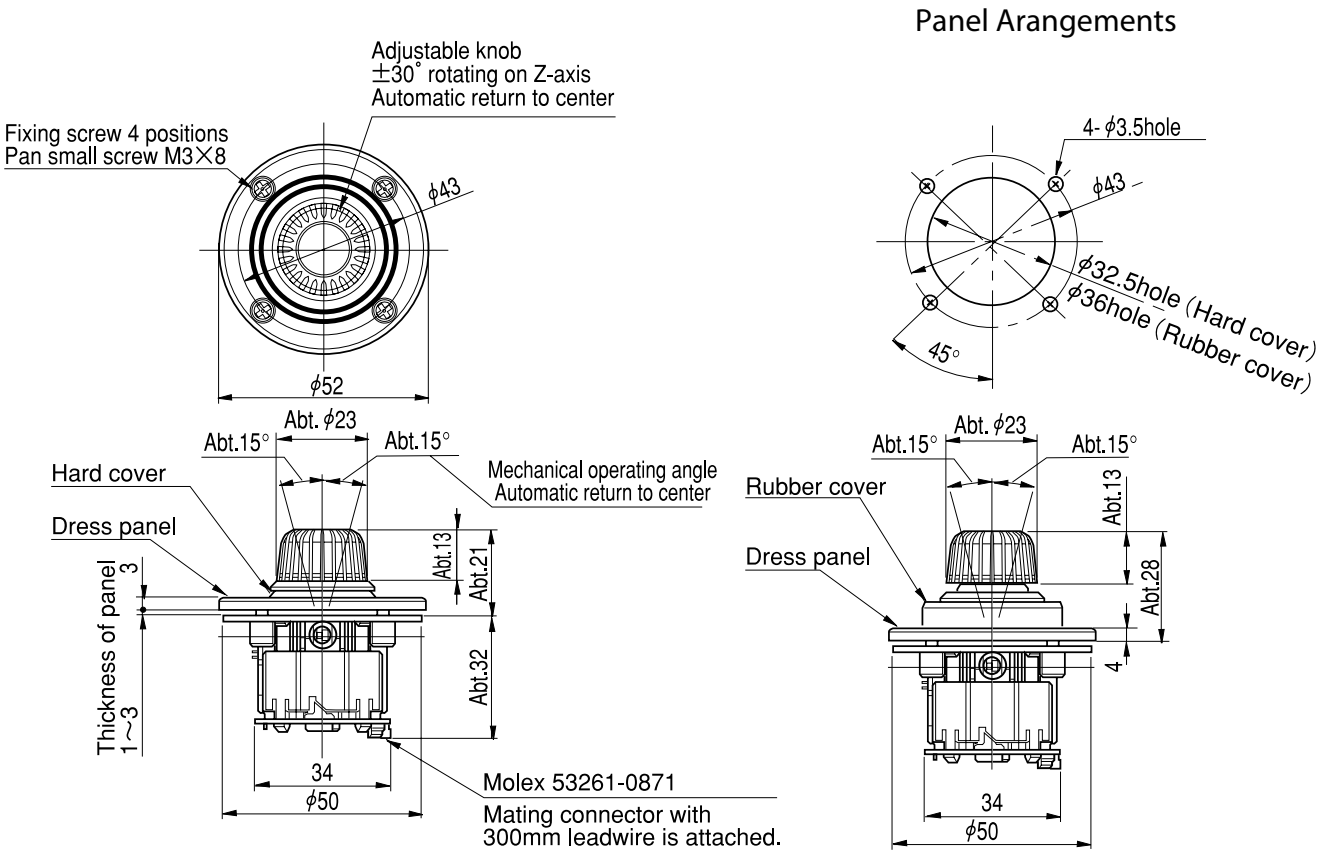
Drawings

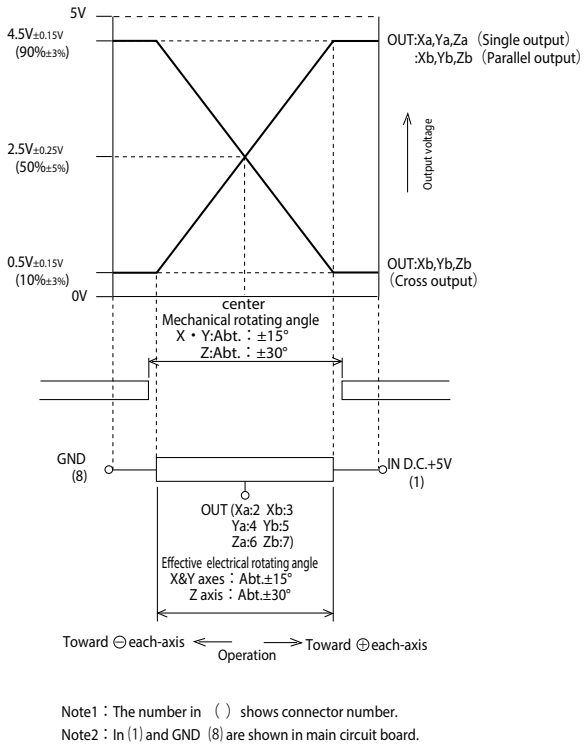


All Dimensions in mm

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. Included in delivery.



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