

# Data Sheet for Joysticks

## Finger Joystick

## Series TRY22



- Outstanding quality of mechanics and sensors
- Contact-less, wear-free Hall sensor technology
- Safety due to redundant Hall sensors (optional)
- Protection IP65
- Available in 2- or 3-axis versions, with or without push-button
- Easy to install thanks to plug connection
- Custom version with see-saw rocker available as alternative to rotatable handle

The TRY22 range of finger joysticks offers the highest level of quality in terms of mechanics, materials and workmanship. This makes the joysticks a guarantee of success in demanding applications where quality, durability and reliability are paramount. The high quality haptics gives a safe feeling of operation and allows the user to precisely control movements in several dimensions.

The joystick is supplied with a 3rd axis and IP65 sealing as standard.

### Electrical Data Joystick

Sensors	Hall effect
Supply voltage	5.0 ± 0.5 VDC transient free
Signal at center position	2.50 ± 0.15 V
Independent linearity tolerance	±150 mV
Output voltage	0.5 VDC up to 4.5 VDC, redundant signal output available
Supply current	typ. 15 mA per axis
Output impedance	10 kOhm
Max. output current allowed	2 mA / axis
Resolution	Infinite
Expected electrical life	typ. 1,000,000 h

### Mechanical and Environmental Data Joystick

Expected life	5,000,000 (X-/Y-Axis), 3,000,000 (Z-Axis) cycles
Mechanical angle of rotation x-, y-Axes	40° (±20° from center)
Mechanical angle of rotation z-Axis	60° (±30° from center)
Operating force x-y axis	1 N up to 4 N
Operating momentum z axis	40 mNm up to 80 mNm
Return-to-center tolerance	±5% (center)
Maximum applied force x-y axis	200 N
Maximum applied force z axis	0.5 Nm
Mounting	Drop-in
Operating temperature	-20°C up to +60°C
EMC immunity level	100 V/m (80 MHz...1 GHz)
ESD	±8 kV contact discharge / ±15 kV air discharge (IEC61000-4-2)
Vibration	10Hz up to 55 Hz, 98 m/s <sup>2</sup>
Shock	294 m/s <sup>2</sup>

### Limiters



Square - Option "3"

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

### Order Description

Description	Selection: <b>standard=black/bold</b> , possible options= <i>grey/italics</i>							
<b>Series</b>	<b>TRY22</b>							
<b>Axes:</b> <i>2 axes</i> <b>3 axes</b>		<b>2</b> <b>3</b>						
<b>Sealing:</b> <b>Rubber boot</b>			<b>5</b>					
<b>Return Mechanism:</b> <b>Spring return</b>				<b>1</b>				
<b>Handles</b> <b>Handle "1" for 2 or 3 axes (handle can be rotated), no pushbutton, IP65</b> <i>Handle „2“ for 2 or 3 axes (handle can be rotated), 1 pushbutton, IP65</i> <i>Handle "3" for 3 Axes, with see-saw rocker, no pushbutton, IP40</i>					<b>1</b> <b>2</b> <b>3</b>			
<b>Limiters:</b> <b>Square</b>						<b>3</b>		
<b>Output Signals:</b> <b>0.5 to 4.5 V (rail to rail)</b>							<b>1</b>	
<b>Output Options:</b> <b>Single output</b> <i>Dual output parallel</i> <i>Dual output inverse</i>								<b>-</b> <b>1</b> <b>2</b>

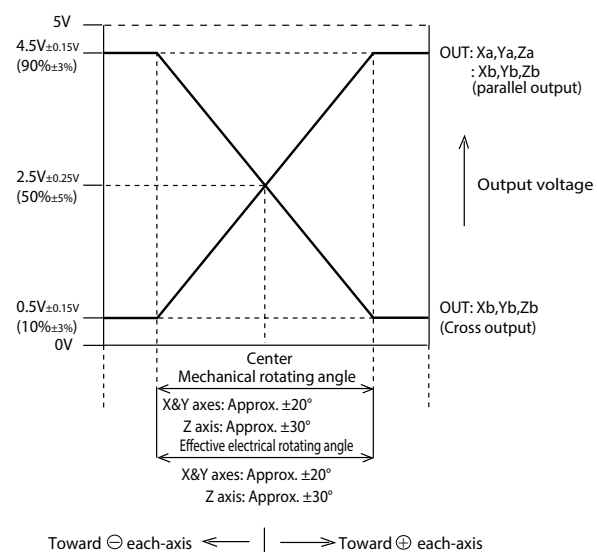
### For higher quantities or on-going demand, additional options are available

- Customer-specific cables
- Stronger or weaker spring return
- Handles with different/additional input elements

### Wiring

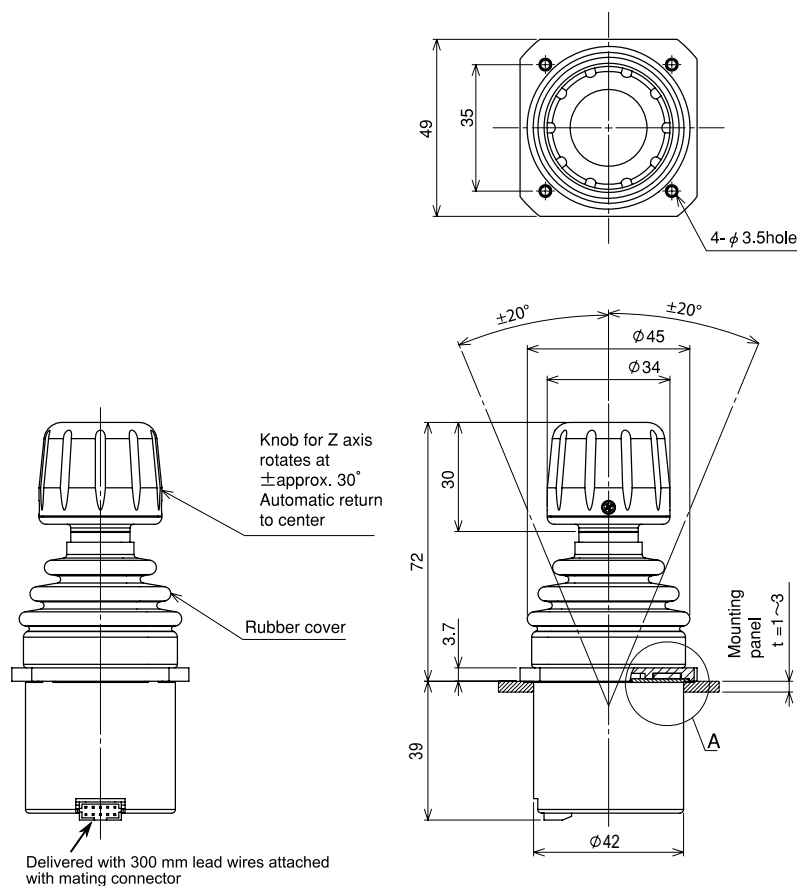
Pin	Function	Colour
1	Pushbutton common	black
2	Pushbutton	white
3	GND	grey
4	Z axis dual output	violet
5	Z axis	blue
6	Y axis dual output	green
7	Y axis	yellow
8	X axis dual output	orange
9	X axis	red
10	+5 VDC	brown

Joysticks are supplied with AWG24 lead wires, length ca. 300 mm, connected to the joystick (housing LY20-10P-DLT1-P1E, mating connector LY10-DC10BR)

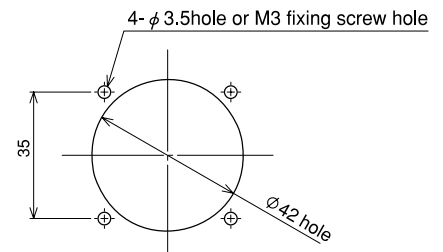


### Drawings

#### Handle 1

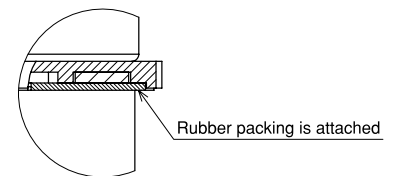


#### Panel arrangements

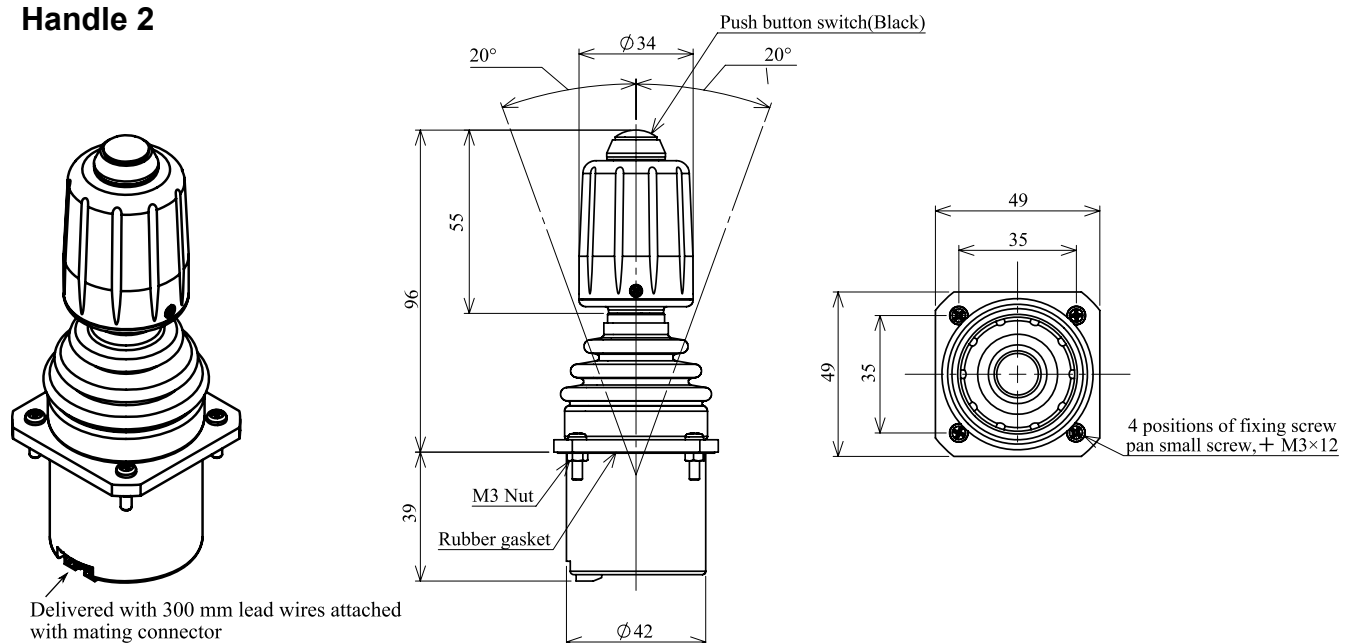


Note: 4 pcs. of mounting screws(M3X12) are attached.

Detailed cross-section diagram in the area A



#### Handle 2



All dimensions in mm

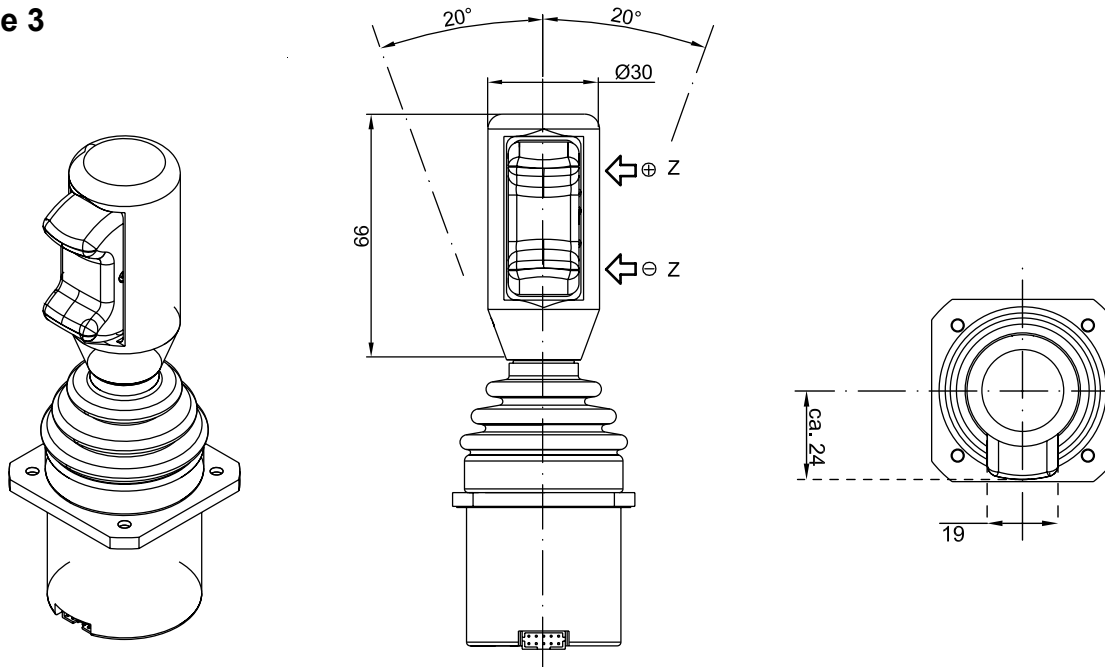
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## Drawings

### Handle 3



### Technical data pushbuttons of handle 2

Operating characteristics	ON when pushed (momentary)
Insulation resistance	> 1.000 MOhm at 500 VDC
Expected life	approx. 500,000 operations
Rating	50 VDC / 0.1 A
Dielectric strength	1 minute at 1.000 VAC

### Technical data see-saw rocker of handle 3

Current consumption	7 mA (14 mA with dual output)
Min. impedance	10 kOhm (>100 kOhm recommended)
Independent linearity tolerance	±3 % full scale
Return to center accuracy	±3 %
Expected life	ca. 5,000,000 cycles
Protection grade (electronics only)	IP65

All dimensions in mm