

Data Sheet for Joysticks

Thumb Joystick

Series TYR14



- Contactless Hall Sensors
- Optionally with Pushbutton function in handle
- Mounting option Threaded housing
- Waterproof, IP class 68 (1 metre) / IP69K

The TRY14 series offers proportional miniature-size thumb josticks with Hall sensors for long durability and enduring signal quality. Signal output is available in different versions, like dual output or PWM output. The size of this joysticks can be compared with widely used gamepads, but integrated into an industrial-suited housing with a reliable mechanism. Typical applications range from remote controls, arm rest integration or integration into larger joystick handles to swivel arms.

Technical Data Joystick

Sensor	Hall Effect
Power Supply	5 VDC ±0,5 VDC transient free
Resolution	1,22 mV
Return to Center Voltage Tolerance	±200 mV
Expected Life	1 million cycles
Output Signal	0..5 V / 0,5..4,5 V / 0,25..4,75 V / further options see page 2
Mechanical Angle of Movement X-Y-Axis	50°
Operation Force X-Y-Axis	3,1 N ± 0,5 N
Max. Force applied vertical	200 N (on handle)
Max. Force applied horizontal	150 N (on handle)
Operating Temperature	-40°C.. 85°C
Storage Temperature	-40°C..+85°C
Sealing	IP68 / IP69K (sealing of panel opening excluded)
Panel thickness	max. 2,03 mm

Technical Data Pushbutton, Handle F

Electrical life	100.000 cycles
Rating	50 mA, 12 VDC
Terminal	Brass with silver plating
Contact resistance	100 mΩ max.
Insulation resistance	100 MΩ min. 500 VDC
Dielectric strength	250 VAC / 1 minute
Contact arrangement	1 pole 1 throw
Operation Force	6,7 N
Stop strength	Max. 29,4 N vertical static load for 15 seconds
Operating Temperature	-25°C..+70°C
Storage Temperature	-30°C..+85°C
Vibration resistance	MIL-STD-202F METHOD 201A
Shock resistance	MIL-STD-202F METHOD 213B

Data Sheet for Joysticks

Thumb Joystick

Series TYR14

Wiring

Function	Wire Color ⁽¹⁾
Ground & Pushbutton Common	Black
Supply +5 VDC	Red
Output X-Axis	Blue
Output X-Axis Dual Output	Blue/White
Output Y-Axis	Yellow
Output Y-Axis Dual Output	Yellow/Black
Pushbutton (Handle F)	Orange
Ground redundant Dual Output	Black/White
Supply redundant Dual Output	Red/White

Function	TE Connector Standard ⁽²⁾	TE Connector Dual Output ⁽³⁾
Output Y-Axis	Pin 1	Pin 6
Supply +5 VDC	Pin 2	Pin 5
Output X-Axis	Pin 3	Pin 3
Ground & Pushbutton Common	Pin 4	Pin 2
Pushbutton (Handle F)	Pin 5	Pin 1
Output Y-Axis Dual Output	-	Pin 4
Output X-Axis Dual Output	-	Pin 7

⁽¹⁾ Wire AWG22 or AWG28 (ref. to Order Description)

⁽²⁾ 5 position Connector TE 3-647166-5, pitch 2,54 mm

⁽³⁾ 7 position Connector TE 3-647166-7, pitch 2,54 mm



Data Sheet for Joysticks

Thumb Joystick

Series TYR14

Order Description

Series	TRY14								
Axes									
1 Axis (*)		1 (*)							
1 Axis with Pushbutton (*)		6 (*)							
2 Axes		2							
2 Axes with Pushbutton		3							
Mounting Options									
Rubber Boot without Bezel (*)			5 (*)						
Rubber Boot, drop-in mounting			6						
Rubber Boot, below panel mounting			7						
Threaded housing (*)			8 (*)						
Spring Return					1				
Handles									
Handle A						A			
Handle F with Pushbutton						F			
Handle B (*)						B (*)			
Handle C (*)						C (*)			
Handle D (*)						D (*)			
Handle E (*)						E (*)			
Handle G (not Mounting option 8) (*)						G (*)			
Handle H, Low Profile (not Mounting option 8) (*)						H (*)			
Limiter									
Square							1		
X-Y Guided Feel (*)							4 (*)		
X-Y „Plus +“ (*)							5 (*)		
Single Axis X (*)							8 (*)		
Single Axis Y (*)							9 (*)		
Output Signal									
0..5,0 V (rail to rail)								1	
0,25..4,75 V								2	
0,5..4,5 V								3	
1..4 V (*)								4 (*)	
PWM (*)								P (*)	
USB (1) (*)								5 (*)	
USB Mouse-Emulation (1) (*)								6 (*)	
Output Signal Options									
none									0
Dual parallel (2) (*)									1 (*)
Dual parallel redundant (3) (*)									2 (*)
Dual inverted (2) (*)									3 (*)
Dual inverted redundant (3) (*)									4 (*)
Connection									
Wires AWG 28, 25 cm									1
Wires AWG 22, 25 cm									2
TE Connector, pitch 2,54 mm (4) (*)									3 (*)
Devices with Output Signal „5“ and „6“ (USB) (1)									--

Bold print = Standard options

(*) upon request

(1) Overmold Cable with USB Male Type connector, length ca. 1,75 m

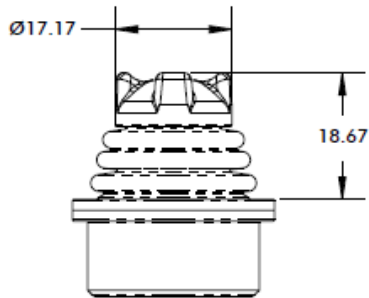
(2) Common Power Supply of Signals

(3) Individual Power Supply for each Signal

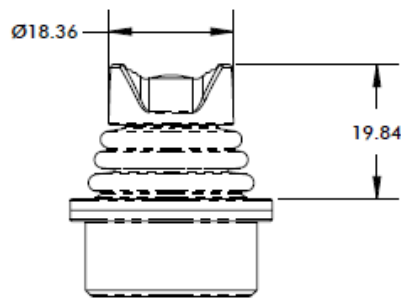
(4) 5- resp. 7-position, ref. to Sect. „Wiring“

Technical Drawings HANDLES

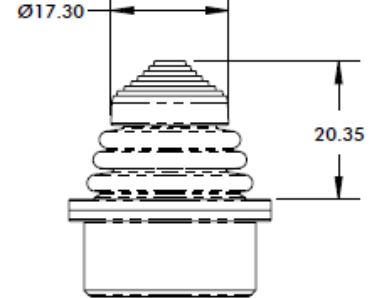
HANDLE A



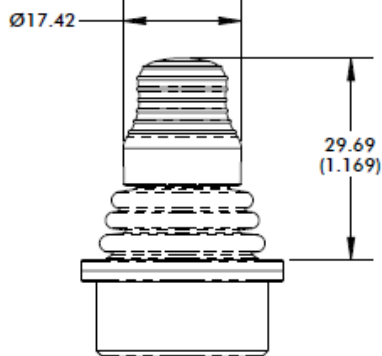
HANDLE B



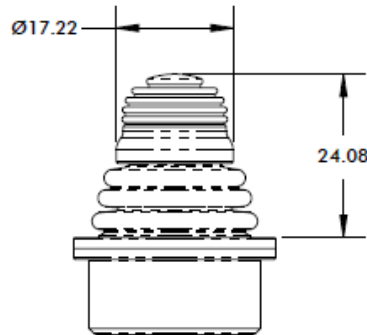
HANDLE C



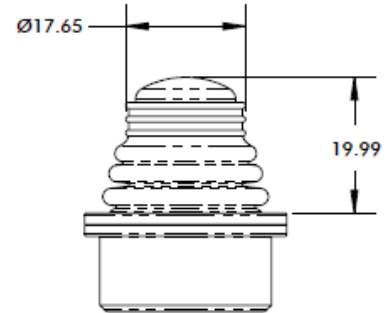
HANDLE D



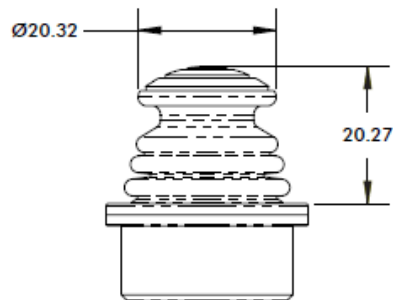
HANDLE E



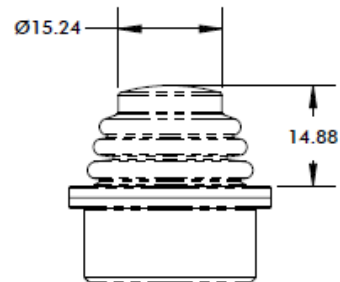
HANDLE F
WITH PUSHBUTTON



HANDLE G ⁽¹⁾



HANDLE H ⁽¹⁾
LOW PROFILE



⁽¹⁾ Handles G and H not compatible to Mounting option 8 „Threaded housing“

All Dimensions in mm

Data Sheet for Joysticks

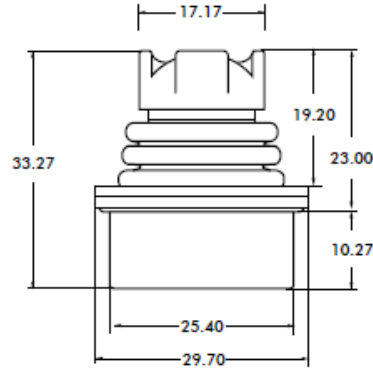


Thumb Joystick

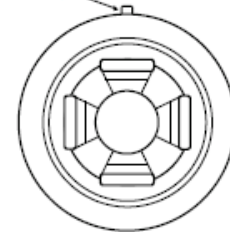
Series TYR14

Technical Drawing DIMENSIONS

PLASTIC HOUSING

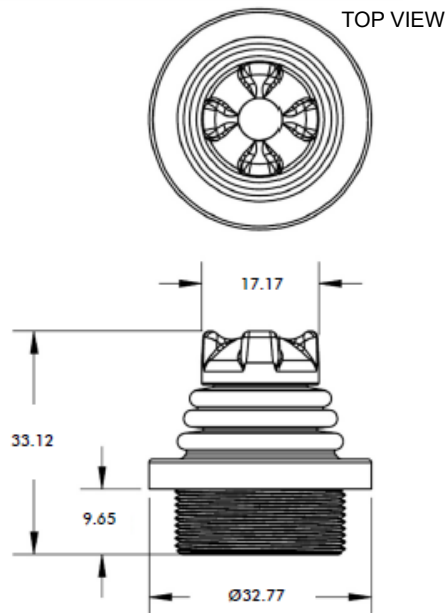


PIN INDICATES +Y DIRECTION (NORTH)

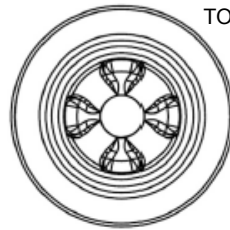


TOP VIEW

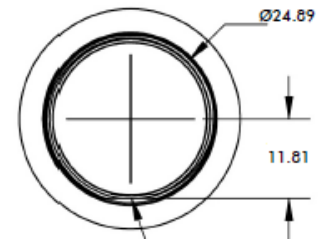
METAL THREADED HOUSING



TOP VIEW



BOTTOM VIEW



LOCATING FEATURE +Y (NORTH)

All Dimensions in mm

Data Sheet for Joysticks

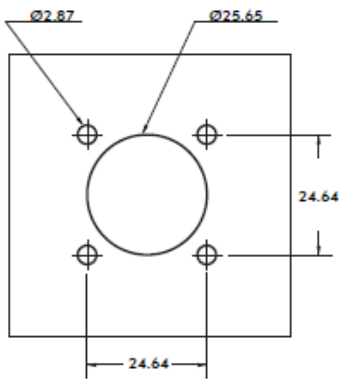
Thumb Joystick

Series TYR14

Technical Drawing MOUNTING CUTOUT

PLASTIC HOUSING - DROP-IN (MOUNTING OPTION 6)

=> Installation depth below panel 16,02 mm

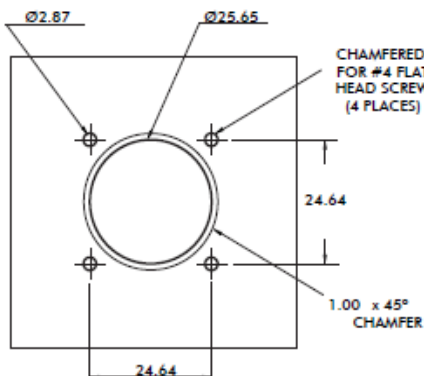


4x PUSH IN CONNECTORS



PLASTIC HOUSING - REAR MOUNT (MOUNTING OPTION 7)

=> Max. Panel Thickness 2,032 mm

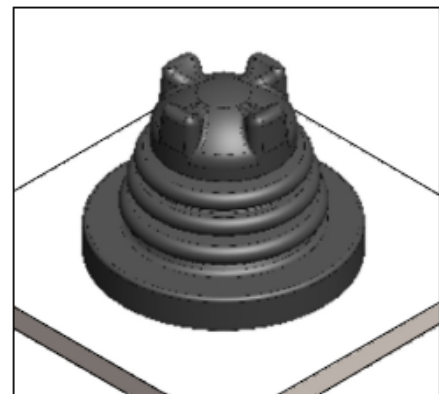
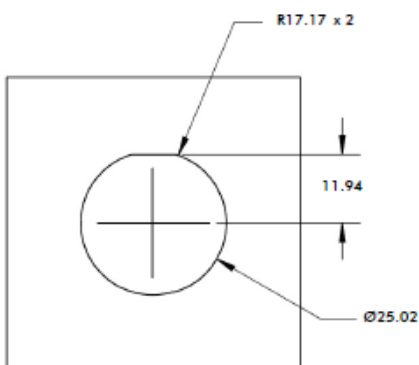


4x 1/2 FH SS PHIL SCREW



THREADED HOUSING - DROP-IN (MOUNTING OPTION 8)

=> Installation depth below panel 14,55 mm



All Dimensions in mm