Data Sheet for Joysticks

Finger Joystick — Series TRY100



- Shallow installation depth < 26 mm
- Service-friendly due to connectors
- Available interfaces include USB, CAN-bus J1939 and CANopen
- Ideally suited for applications in CCTV, robotics, medical technology and audio/video productions

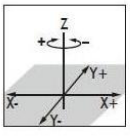
The TRY100 series can be considered as the successor of our famous TRY10 series. The TRY100 is also based on contactless Hall sensors, and is also offering most of the same options, like e.g. handle designs with up to two pushbuttons. Modern Hall sensors, reduced installation depth and further improved price-performance ratio are good reasons for these joysticks.

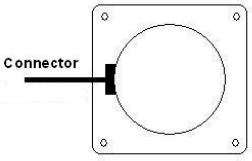
Technical Data

Sensor	Hall Effect Sensor
Supply Voltage	5 VDC ±0,5 VDC transient free
Output Linearity	±200 mV
Return to Center Voltage	±200 mV (output voltage span 0..5 V; no load)
Output Impedance	2 Ohm
Load Resistance	Min. 10 kOhm, recommended > 100 kOhm
Expected Life	5 million cycles
Output Voltages	0..5 V / 0,5..4,5 V / 0,25..4,75 V / see Order Description page 2 for further
Mech. Angle of Movement X&Y-Axis / Z-Axis	36° (±18° from center) / 60° (±30° from center)
Operating Force X-Y-Axis	2,8 N / Break Out Force 1,3 N / max. applied: 200 N
Operating Force Z-Axis	0,12 Nm / Break Out Force 0,09 Nm / max. applied: 2,5 Nm
Operating / Storage Temperature	- 40°C..+ 70°C / - 40°C..+ 70°C
Protection Class	up to IP68 (depending on handle version)
Panel Thickness	1,17..3,17 mm
EMC Immunity Level (V/M)	EN61000-4-3
EMC Emissions Level	EN61000-6-3:2001
ESD	EN61000-4-2

Wiring

Pin	Function	Colour	Pin	Function	Colour
1	Ground	black	7	Z-Axis Dual Output	grey (*old: green/black*)
2	Power	red	8	Z-Axis	green
3	X-Axis Dual Output	pink (*old: blue/white*)	9	Pushbutton 1	orange
4	X-Axis	blue	10	Pushbutton 1/2 Common	white
5	Y-Axis Dual Output	brown (*old: yellow/black*)	11	Pushbutton 2	violet
6	Y-Axis	yellow	12	n.c.	n.c.





Data Sheet for Joysticks

Finger Joystick — Series TRY100

Order Description / Options

Series	**TRY100**								
Axis									
2 Axes, with Pushbutton in handle		**3**							
3 Axes		**4**							
3 Axes, with Pushbutton(s) in handle		**5**							
2 Axes		2 (*)							
1 Axis		1 (*)							
1 Axis with Pushbutton in handle		6 (*)							
Rubber Boot			**5**						
Spring Return				**1**					
Handles									
Handle for 1-2 Axis, 1 Pushbutton, IP55					**4**				
Handle for 3 Axes, w/o Pushbutton, IP55					**7**				
Handle for 3 Axes, Low Profile, w/o P.button, IP55					**6**				
Handle for 3 Axes, 1 Pushbutton, IP55					**9**				
Handle for 3 Axes, 2 Pushbuttons, IP55					**A**				
Handle Ball Tip, IP67					3 (*)				
Handle Tapered (not compatible to mounting 2), IP67					1 (*)				
Handle for 1-2 Axis, 1 Pushbutton, IP67					5 (*)				
Handle for 3 Axes, w/o Pushbutton, IP67					B (*)				
Handle for 3 Axes, 1 Pushbutton, IP67					C (*)				
Handle for 3 Axes, 2 Pushbuttons, IP67					D (*)				
Handle for 3 Axes, 2 Pushbuttons, IP67					E (*)				
Limiter									
Square						**1**			
Round						**3**			
„Plus +“ X/Y						**9**			
Slotted X -						7 (*)			
Slotted Y |						8 (*)			
„Cross X“ X/Y						D (*)			
Square 45° rotated						2 (*)			
Output Signal (redundant signals available(*))									
0..5,0V (redundant signals parallel / inverse (1))							**1** (1P / 1X)		
0,5..4,5V (redundant signals parallel / inverse (2))							**2** (2P / 2X)		
0,25..4,75V (redundant signals parallel / inverse (3))							**3** (3P / 3X)		
USB (4)							**5**		
USB Mouse Emulation							6 (*)		
CANbus J1939							7 (*)		
CANopen							8 (*)		
Voltage Regulator (see below)							0 (*)		
Mounting / Housing									
Drop-In								**1**	
Rear Mount								**2**	
Desktop-Housing w/o Pushbuttons								M0 (*)	
Desktop-Housing w/ 2 small Pushbuttons								M2 (*)	
Desktop-Housing w/ 2 long Pushbuttons								M2L (*)	
Desktop-Housing w/ 3 small Pushbuttons								M3S (*)	
Desktop-Housing w/ 4 small Pushbuttons								M4 (*)	
Desktop-Housing w/ 4 small Pushbuttons								M4D (*)	
Desktop-Housing w/ 5 small Pushbuttons								M5 (*)	
Voltage Regulator (*)(5)									
Supply +12..+30 VDC, Output 0..+5 VDC									V1205 (*)
Supply +12..+30 VDC, Output ±10 VDC									V1210B (*)

(*) upon request
(1) Output Signals parallel: 0..5V / 0..5V; Output Signals inverse: 0..5V / 5..0V
(2) Output Signals parallel: 0,5..4,5V / 0,5..4,5V; Output Signals inverse: 0,5..4,5V / 4,5..0,5V
(3) Output Signals parallel: 0,25..4,75V / 0,25..4,75V; Output Signals inverse: 0,25..4,75V / 4,75..0,25V
(4) max. 4 pushbuttons (Handle + Housing)
(5) The switching power supply for the electronics of this device requires an initial current of at least 100mA.
The use of power supply units with current limiters operating below this threshold can damage the circuitry of the joystick!

Data Sheet for Joysticks

Finger Joystick — Series TRY100

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

For example:
- Redundant Output Signals (inverted or parallel), Mouse Emulation, Voltage Regulator
- Customer-specific cable

Limiters



Square - Option „1“



Round - Option „3“



Single Axis - Option „7“



Single Axis - Option „8“



X/Y Plus - Option „9“



X/Y Cross - Option „D“

Connection cable

For ratiometric output a suitable cable (length approx. 25cm) with Hirose DF11-12DS-2C connector is available (Art.nr. 129802, not included).

Other connectors and cable lengths available on request.

For Joysticks with USB interface the cable is included (please refer to chapter „USB Options“).





USB Options

USB Interface (USB 1.1 HID compatible)
The USB Controller is integrated into the Joystick. Power Supply will be provided by the USB host via the connection cable. This USB interface supports most versions of Microsoft Windows and Linux OS.
Cable included: USB cable (length approx. 1,75 m) with USB male type A connector. Other connectors and cable lengths available on request.
With integrated USB controller a maximum of 4 pushbuttons (handle + desktop housing) can be controlled. Please do not hesitate to contact us if you need a different configuration for your project.

USB Joystick as Mouse replacement
Cursor emulation optionally available. Supported protocols include Sun Microsystems (mouse systems 5vdc serial) and USB (most versions of Microsoft Windows and Linux OS).

Data Sheet for Joysticks

Finger Joystick — Series TRY100

Technical Data CAN	
Supply Voltage	6V to 35V
Current Consumption	Typical: 35mA @12V, 18mA @24V, 15mA @30V
Output Signal	CAN-bus
Reverse connection protected	Yes
Short-circuit protected against +UB max.	Yes
Short-circuit protected against GND	Yes
CAN	ISO 11898, CAN specification 2.0A/2.0B
Protocol	CANJ1939, CANJ1939-71, CANopen
Baud rate	125kbit/s, 250kbit/s, 500kbit/s, 1Mbit/s
CAN ID	11 / 29 bit/s as requested
BJM/EJM cycle time	50ms (standard; 15ms optional)
Terminating resistor	Optional
Operating / Storage Temperature	-40°C..+85°C / -40°C..+85°C

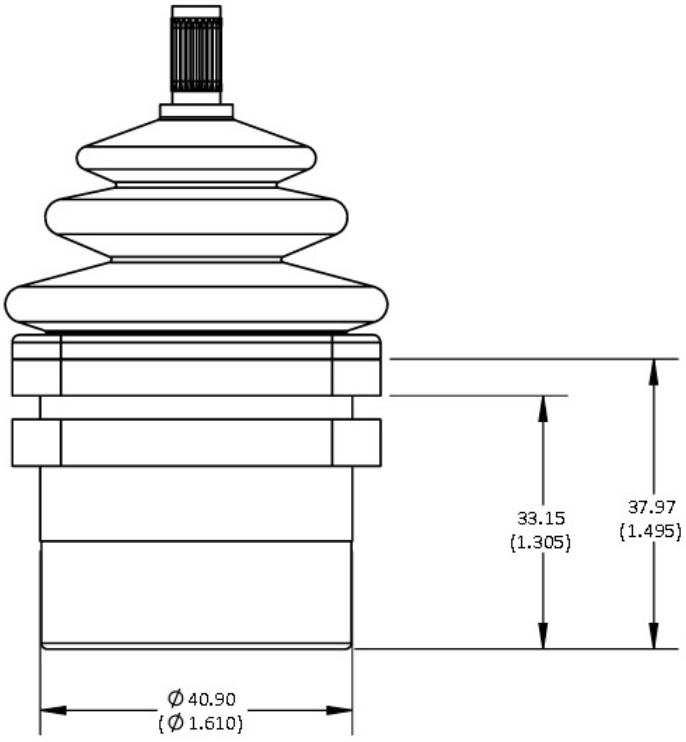
Wiring CAN

Color	Function	Color	Function	Color	Function
Red	Supply Power	Green	CAN High data	Blue	Identifier Select LSB
Black	Ground GND	White	CAN Low data	Orange	Identifier Select MSB

Cable: 22AWG, PTFE, Length ca. 56cm (specific lengths and connectors upon request)

Technical Drawing

Below panel dimensions for CAN-bus configurations



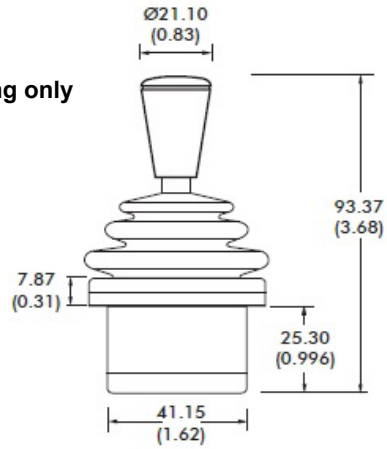
Finger Joystick — Series TRY100

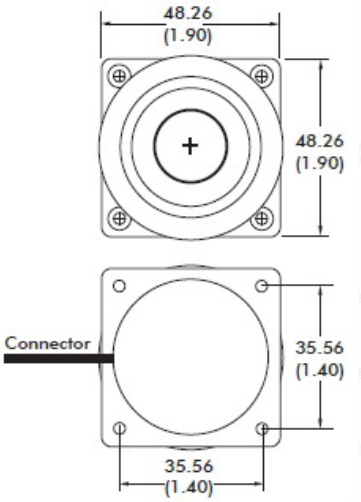
Handle versions

Handle 1



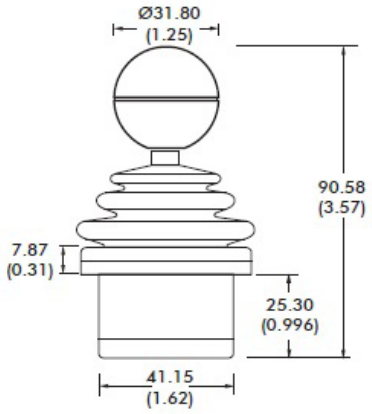
Drop-In mounting only

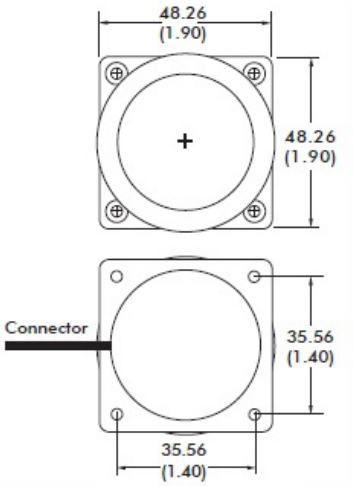




Handle 3

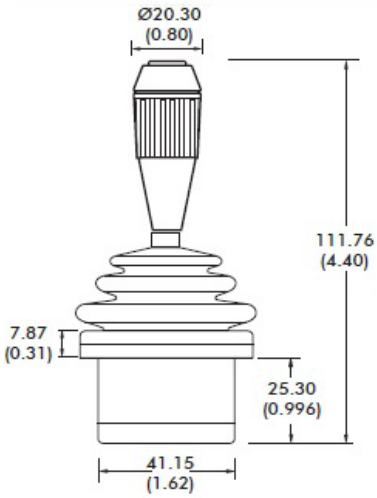


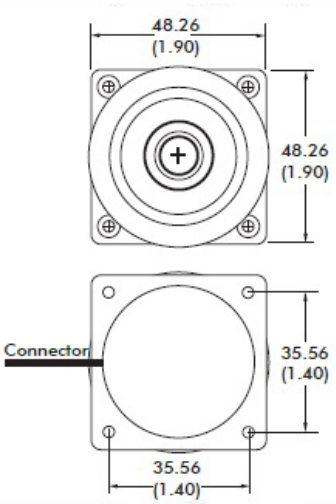




Handle 4





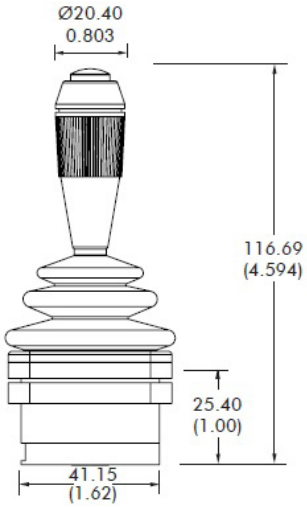


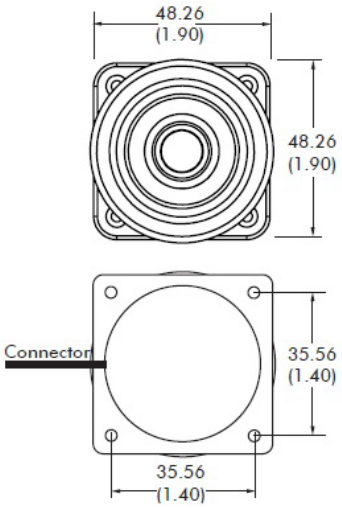
All dimensions in mm

Handle versions

Handle 5

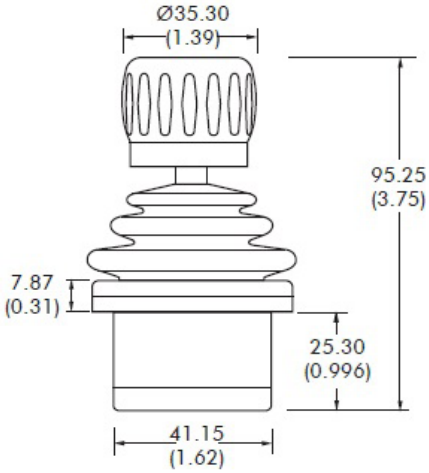


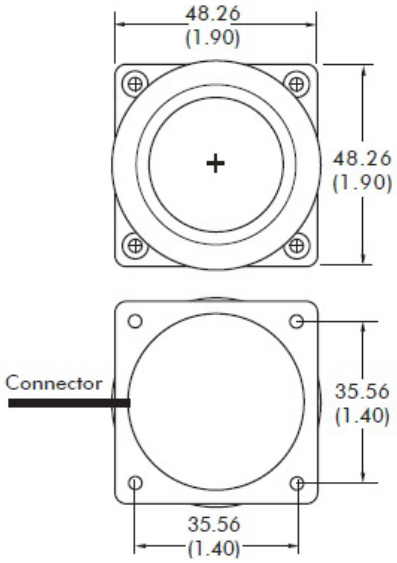




Handle 6

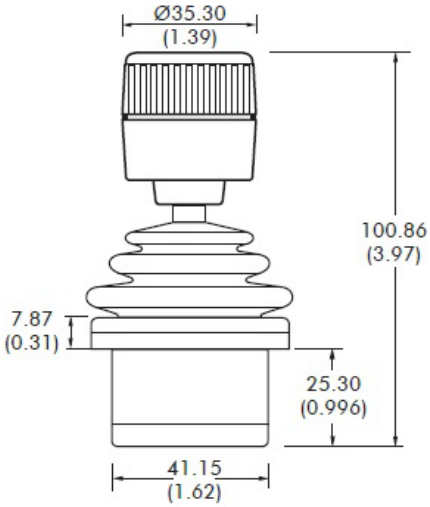


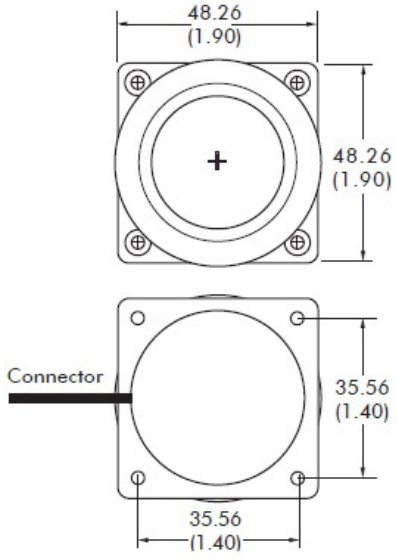




Handle 7





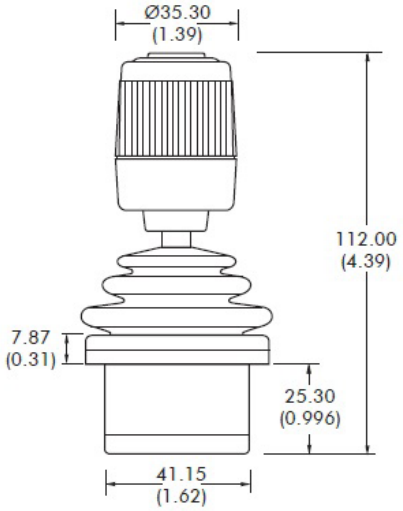


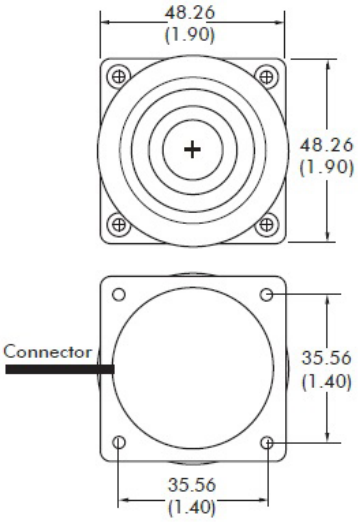
Finger Joystick — Series TRY100

Handle versions

Handle 9

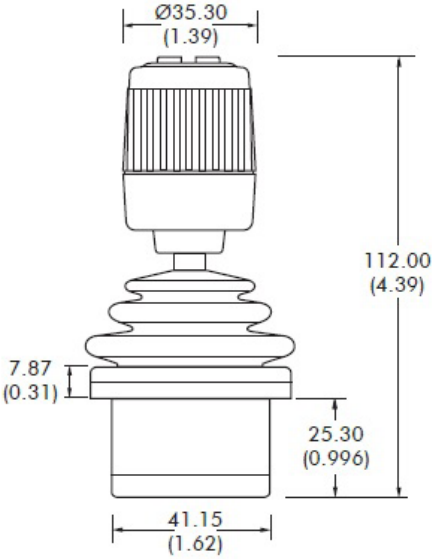


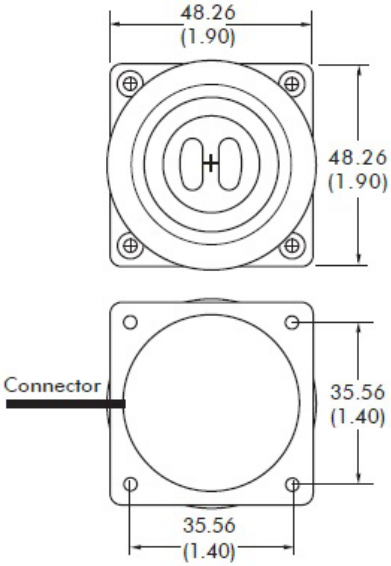




Handle A

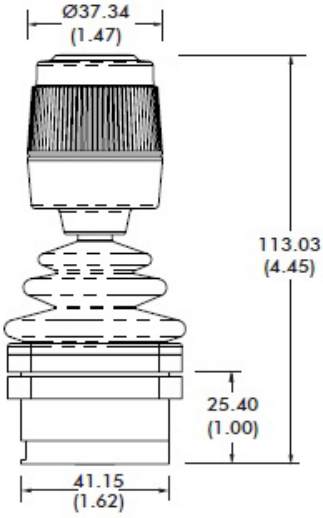


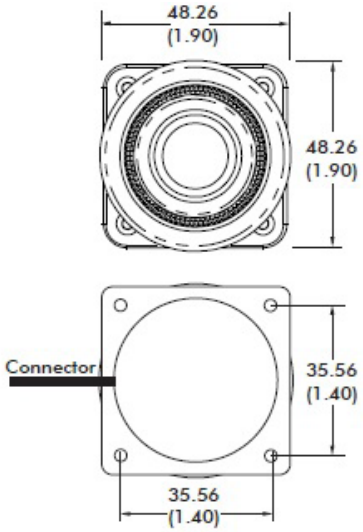




Handle B





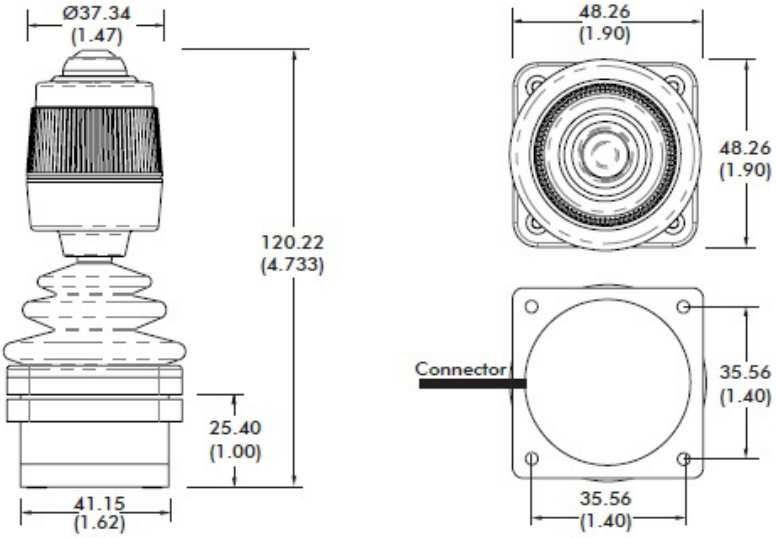


Finger Joystick — Series TRY100

Handle versions

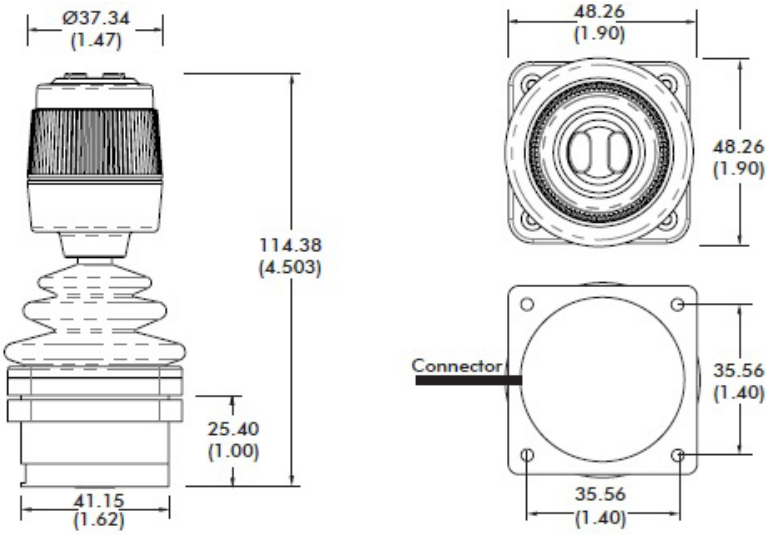
Handle C





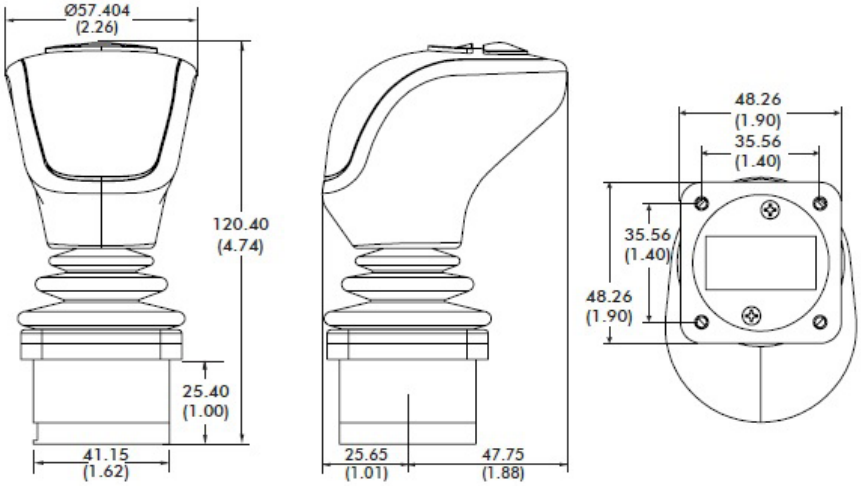
Handle D





Handle E





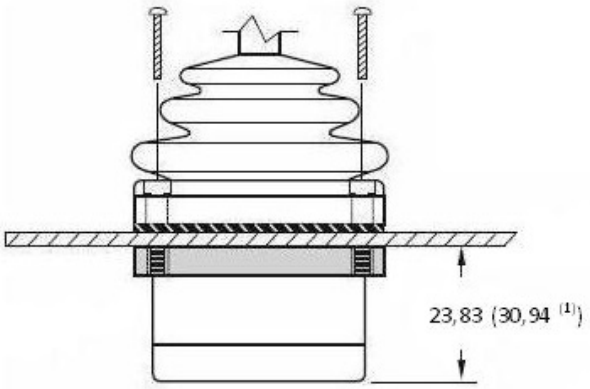
All dimensions in mm

Finger Joystick — Series TRY100

Mounting Options

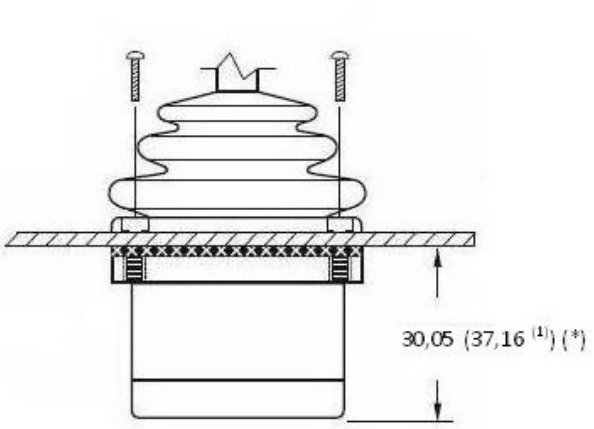
Drop-In
Option „Housing 1“

(Panel 1,17 - 3,17 mm)



Rear Mount
Option „Housing 2“

(Panel ≤ 1,6 mm)



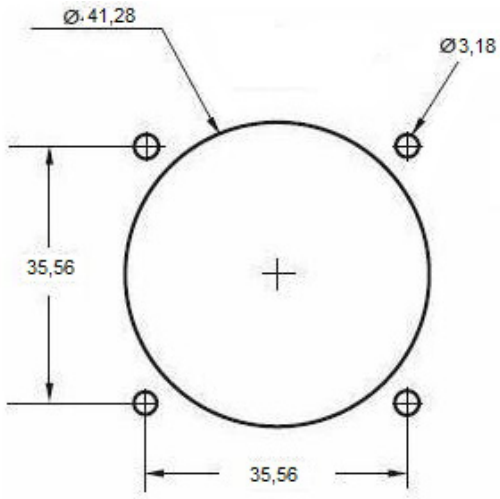
(*) at panel thickness 1,6 mm

Panel
Gasket
Rear Mount Gasket

(*) **Below-panel depth is extended by 7,11 mm with USB, Voltage Regulator, Dual Decode, Center Detect options.**

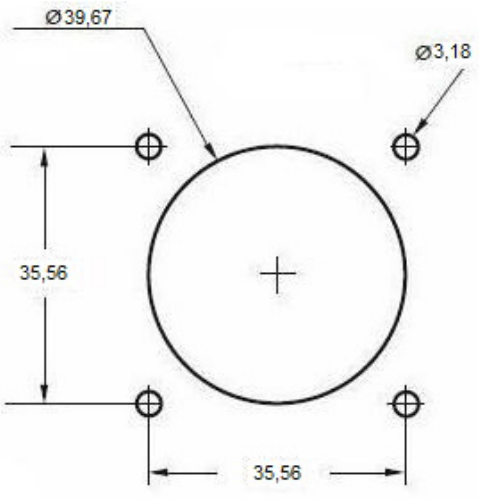
Drop-In

Option „Housing 1“



Rear Mount

Option „Housing 2“



All dimensions in mm (inches)

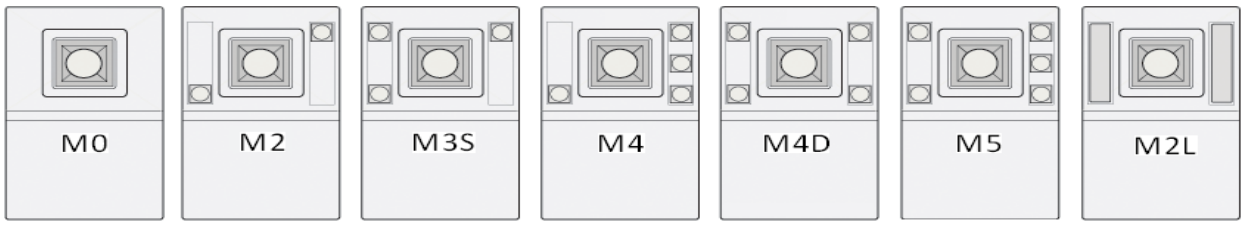
Finger Joystick — Series TRY100

Option Desktop Housing



Color of the Desktop Housing is black (handle and pushbuttons black).

With integrated USB controller a maximum of 4 pushbuttons (handle + desktop housing) can be controlled. Please do not hesitate to contact us if you need a different configuration for your project.



Dimensional Drawing Desktop Housing

