



TS1 Series Mini joystick



Features

- 1 or 2 axis thumb controller
- Contactless Hall effect technology
- Threaded, drop-in, or rear mount
- 4 actuator options
- Standard IP67 above panel
- Proportional analog output or USB

Applications

- Maritime and offshore deck machinery
- Agricultural machines
- Lifting equipment
- Industrial remote controllers
- Armrest control panels

Description

This 2-axis miniature thumb controller uses contactless Hall effect sensors that provide a precision proportional output with an exceptional return to center characteristics. This joystick has an elastomer actuator available in different shapes and it has standard IP67 seal above panel. The various mounting options make this joystick very easy to integrate into all kinds of heavy-duty machinery. The TS1 offers several output options and is supplied with 28AWG cable.

Specification

MECHANICAL (X & Y AXIS)	
Angle Of Movement	45° (22.5° Each Direction)
Expected Cycle Life	2.5 million
Centering	Spring Return
Max. Vertical load	300 N (67.5 lbf)
Max. Horizontal load	222 N (50 lbf*)
* Measured 15.75 mm (0.62") Above Panel Surface	
ELECTRICAL	
Sensor type	hall effect
Resolution	12 bit
Supply voltage	5VDC ± 0.01VDC
Output voltage	see options
Return to center voltage	± 50mV
Overvoltage max.	20VDC
Reverse polarity max.	-10VDC

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Specification

PUSHBUTTON SWITCH

Electrical life	300,000 cycles
Rating	50mA, 12VDC
Actuation force	5.12 N (1.15lbf)

ENVIRONMENTAL

Operating Temperature	-40°C to 85°C (-40°F to 185°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
IP Sealing Above Flange	IP67
EMC Immunity level	EN61000-4-3 *Compliance to 30A/m
EMC Emissions level	EN61000-6-3
ESD Immunity level	EN61000-4-2 *Compliance to ±15kV/±8kV
Vibration testing	Per SAE J1455 Section 4.9 & MIL-STD810G 514.6
Mechanical shock	Per SAE J1455 Section 4.10 & MIL-STD-202G

*Extended Testing Levels

MOLEX 530480510 CONNECTOR (ANALOG)

PIN	Wire colour	Description
1	red	power (+5V)
2	black	ground
3	blue	x axis sensor
4	yellow	y axis sensor
5	orange	pushbutton**

** optional

MATERIALS

Plastic housing	Mineral & glass filled nylon
Metal housing	Gold anodized aluminium
Boot & actuators	Silicone



254mm (10") CABLE PROVIDED, Analog version

IP RATING: IP67 (ABOVE PANEL, ALL CONFIGURATIONS)

TS1 electrical specifications (usb version)

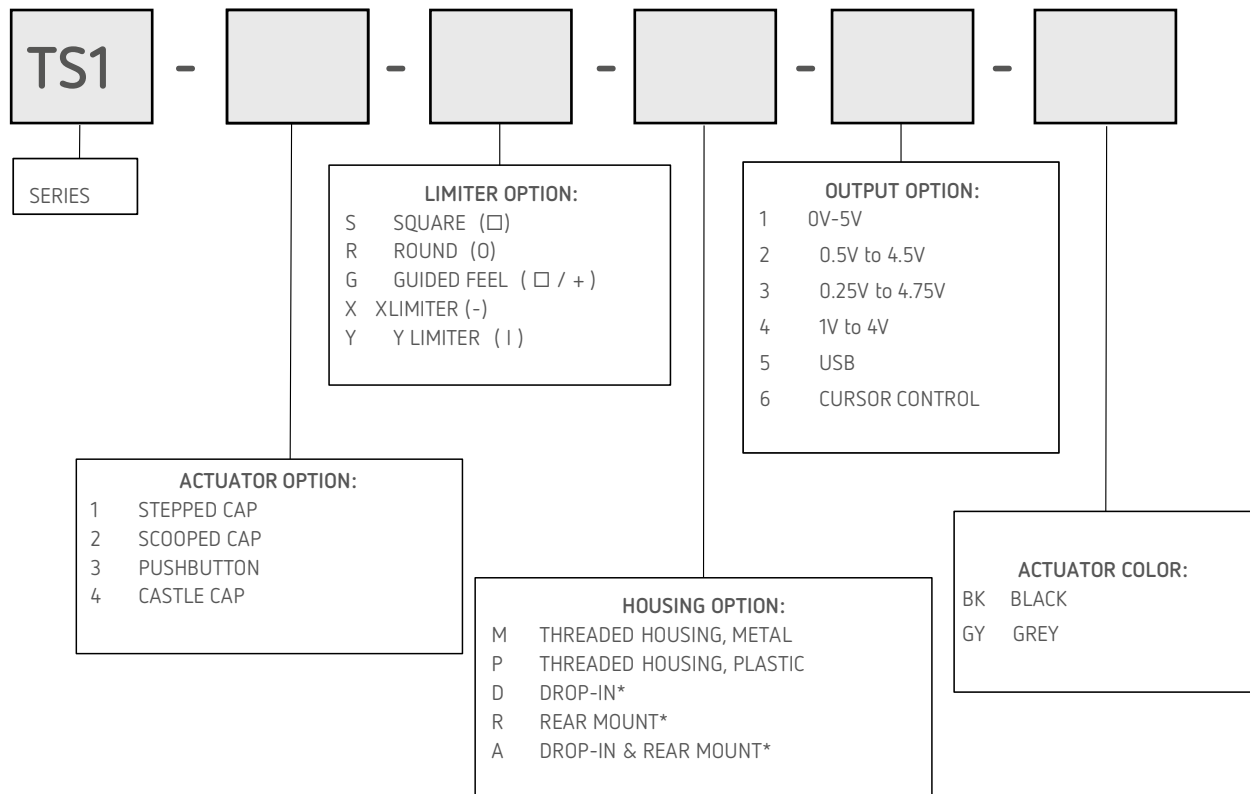
Resolution	10 bit
Supply voltage	5VDC via USB CABLE
System support	windows (all), osx, linux
Supported protocols	USB HID 1.1 game controller, standard Direct X HID drivers, joystick: 2 HID axes, pushbuttons: up to 1 HID Button
Cable	USB MALE TYPE A to RIGHT ANGLE MINI B 152cm (60") length (mini b to joystick)

Cursor control output option

The Cursor Control output option converts the analog joystick output into a USB cursor control device. This is achieved by the joystick's micro-processor converting the absolute position of the joystick into a cursor velocity or mouse position.

Cable	USB MALE TYPE A to RIGHT ANGLE MINI B 152cm (60") length (mini b to joystick)
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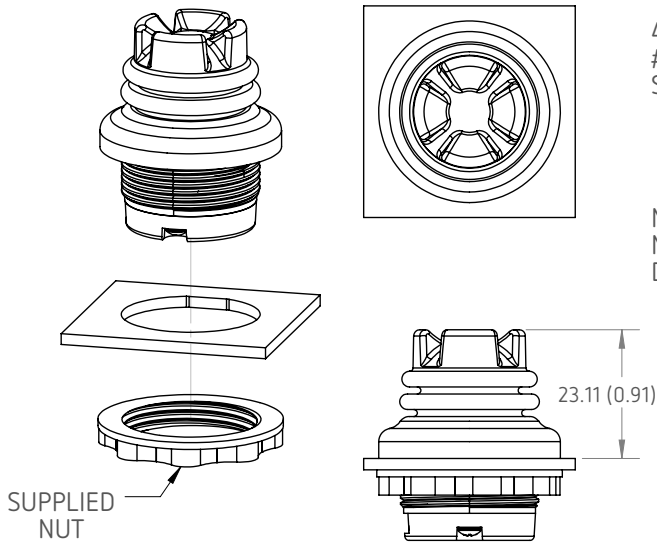
■ Product Configuration Guide



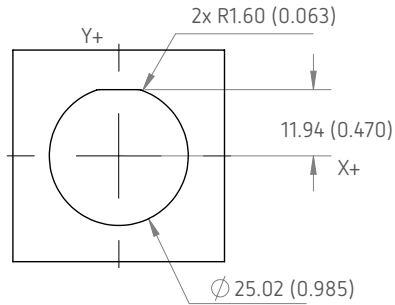
* Available with Castle Cap or Stepped Cap actuators only

Mounting Options
Dimensions in millimeters (inches).

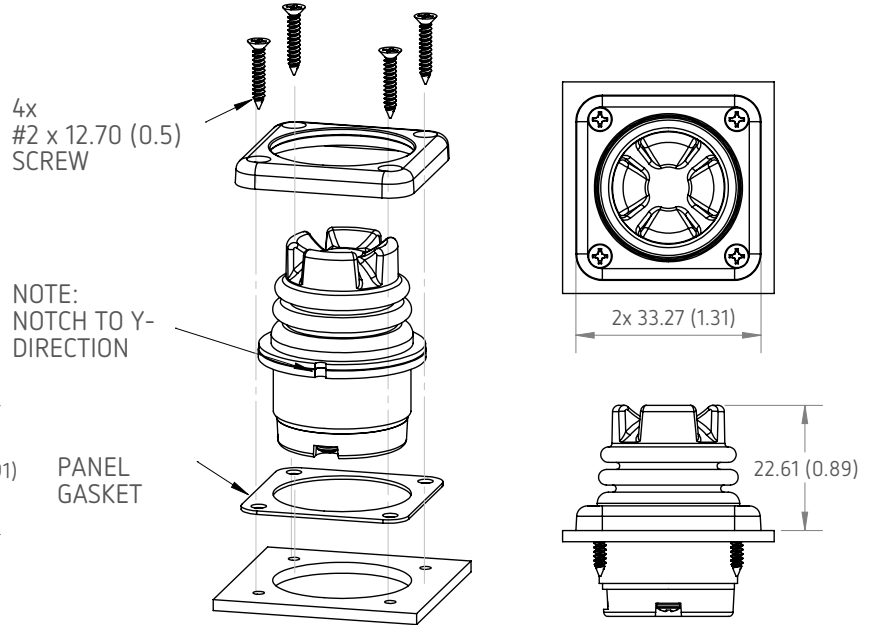
THREADED HOUSING



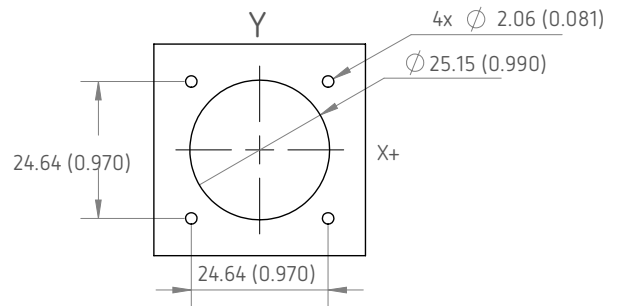
PANEL CUTOUT DIMENSIONS, THREADED HOUSING



DROP-IN MOUNT

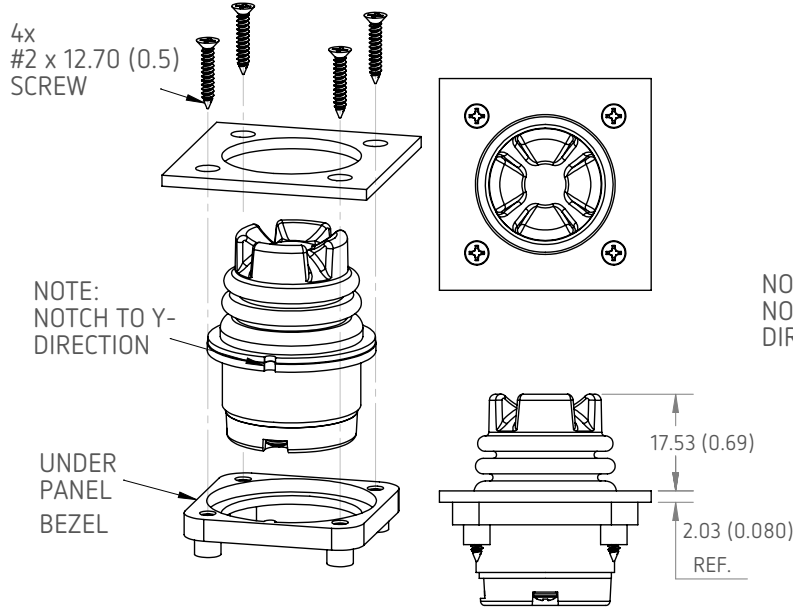


PANEL CUTOUT DIMENSIONS, DROP-IN HOUSING

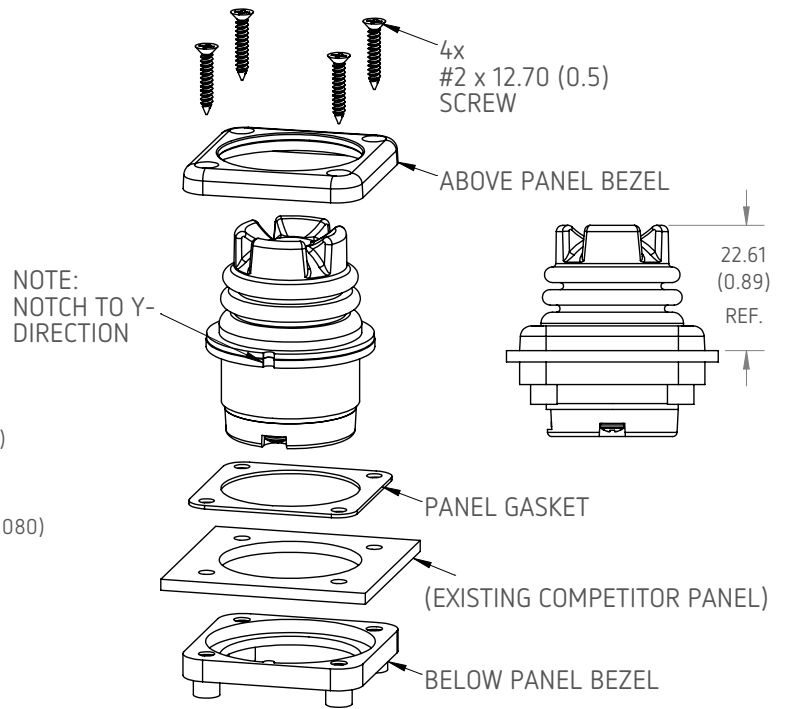


Mounting Options
Dimensions in millimeters (inches).

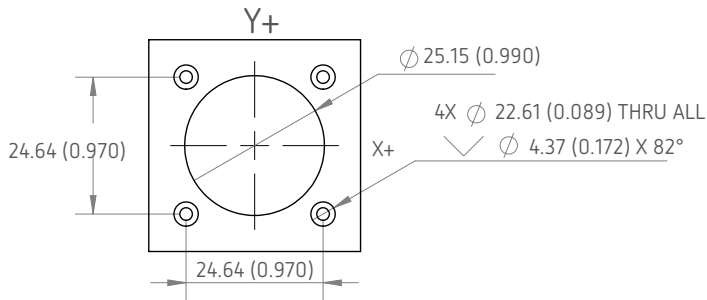
REAR MOUNT



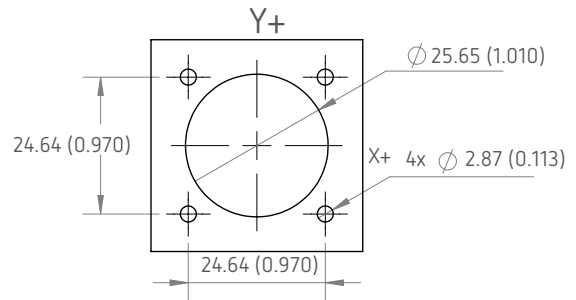
**REPLACING TS1 SERIES
DROP-IN MOUNT IN
EXISTING COMPETITOR
PANEL CUTOUT**



**PANEL CUTOUT DIMENSIONS,
REAR MOUNT HOUSING**

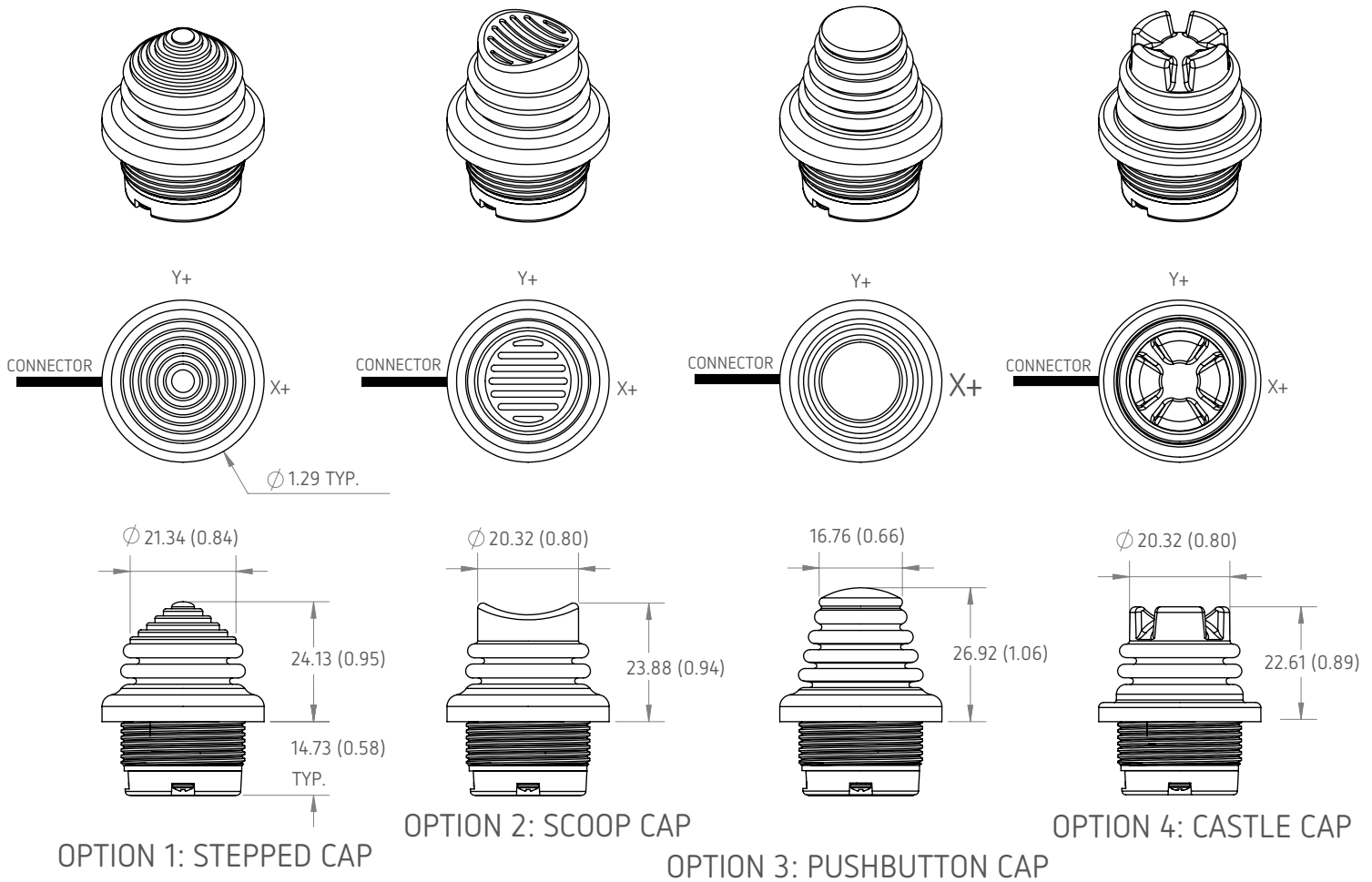


COMPETITOR PANEL DIMENSIONS



Actuator Options

Dimensions in millimeters (inches).



*NOTE: actuator options shown with threaded housing mount.
Additional drop-in and rear mount options available