

Data Sheet for Joysticks

Hand Joystick

Series TRY80



- Different handle designs available
- Optionally with push buttons and deadman trigger
- Industrial-suited robust design
- Several output options (analog, CAN J1939, CANopen, USB)

The TRY80 series provides very robust joysticks for usage in tough environments. With optionally available safety features it is also suited for critical applications. Besides standard analog signal output, bus interfaces like USB and CAN J1939 / CAN-open are available.

Electrical Data Joystick

Sensor	Hall Effect
Supply Voltage	5 VDC \pm 0.5 VDC transient free
Current Consumption Max	10 mA per axis
Reverse Polarity Max	-10 VDC
Overvoltage Max	16 VDC
Output Impedance	6 Ohm
Resolution	Infinite
Return to Center Voltage (no Load)	\pm 200 mV initially
Output Voltages	0 - 5 V / 0.5 - 4.5 V / 0.25 - 4.75 V / dual signals available

Mechanical Data Joystick

Expected Life	5 million cycles
Mechanical Angle of Movement	38° (\pm 19° from center)
Break Out Force	7.7 N
Operating force	14.0 N
Maximum Applied Force	900 N, 20 cm above panel
Environmental Sealing (above panel)	Stock Grip: up to IP63 (depending on handle configuration), Ball Tip: up to IP67
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
EMV Immunity Level (V/M)	IEC 61000-4-8:2009
EMC Emissions Level	IEC 61000-4-3:2006
ESD	IEC 61000-4-2:2008

Note:

1. All values are nominal.
2. Exact specifications may be subject to configuration.

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Technical Data Switches

Electrical Load	5 A resistive, 3 A inductive
DWV	1050 Vrms
Low Level	10 mA at 30 mV
Electrical Life	25000 cycles 5 A @ 28 VDC resistive snap-action
Mechanical Life	1 million cycles
Sealing	up to IP63
Action	Momentary, snap-action
Operating Force	7.5 N ±2 N
Total Travel	2 mm + 0.25 mm
Available Button Colors	White, grey, black, red, orange, yellow, green, blue, purple

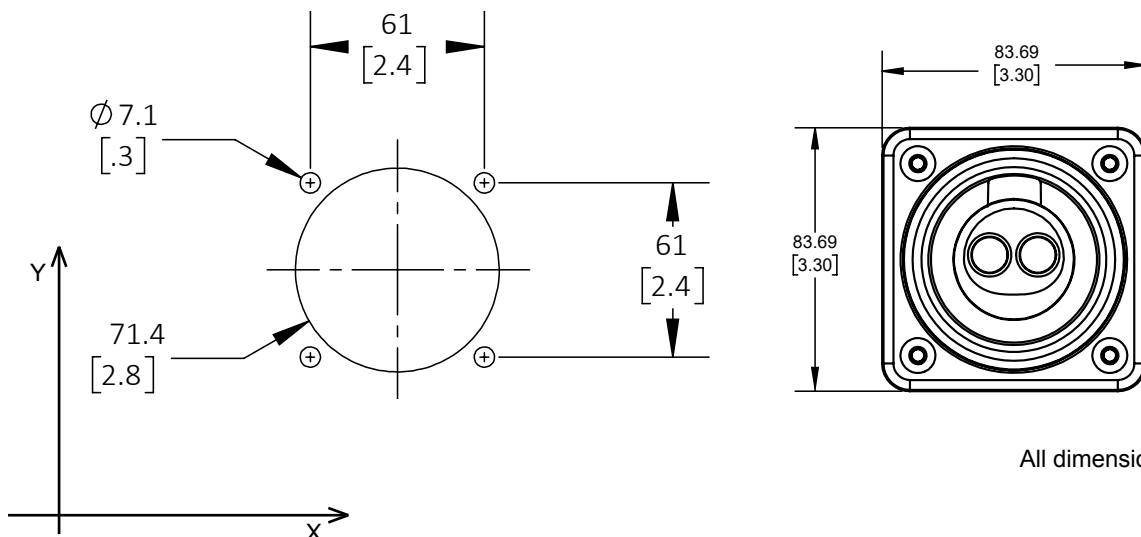


Notes:

1. Maximum possible configuration for the stock grip is up to 2 top buttons and 2 side buttons. A handle with deadman trigger can have 2 top buttons, but no side buttons.
2. Maximum possible configuration for the short stock grip is with 1 top button. It is not available with deadman trigger, index trigger or side buttons.
3. If unspecified, the pushbuttons will have snap action momentary switches („normally open“) and red button caps.

Mounting Cutout Dimensions

Drop-in mounting only



All dimensions in mm

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Order Code

Description	Selection: standard=black/bold, possible options=grey/italics							
Series	TRY80							
Axes:								
1 Axis		<i>1</i>						
2 Axes, no Pushbuttons		2						
2 Axes, 1 top Pushbutton		3						
2 Axes, 2 top Pushbuttons		4						
2 Axes, 2 top Pushbuttons, Deadman Trig.		<i>5</i>						
2 Axes, 1 top Pushbtn., 2 side Pushbuttons		<i>6</i>						
Sealing:								
Rubber Boot			5					
Spring return:								
Spring Return				1				
Limiters:								
Square					Q			
Round					R			
Plus					P			
Single Axis X					X			
Single Axis Y					Y			
Handle / Switches:								
Stock Grip long, no Pushbuttons						1		
Ball Tip (no Pushbuttons, IP67)						2		
Stock Grip long, 1 Top Pushbutton						3		
Stock Grip long, 2 Top Pushbuttons						4		
Stock Grip long, 2 Top Pushbuttons, Deadman						<i>5</i>		
Stock Grip long, 1 Top Pushb., 2 Side Pushb.						<i>6</i>		
Stock Grip short, no Pushbutton						<i>7</i>		
Stock Grip short, 1 top Pushbutton						<i>8</i>		
Output Options:								
0 - 5 V single (<i>inverse dual output</i>)							1	<i>(1X)</i>
0.5 - 4.5 V (<i>inverse dual output</i>)							2	<i>(2X)</i>
0.25 - 4.75 V (<i>inverse dual output</i>)							3	<i>(3X)</i>
USB Joystick							5	
USB Mouse Emulation							<i>6</i>	
CAN J1939							<i>CAN</i>	
CANopen							<i>COP</i>	
Voltage Regulator								
Supply 6 - 35 VDC, Output 0 - 5 VDC							<i>V1205</i>	
Supply 11 - 35 VDC, Output ±10 VDC							<i>V1210B</i>	
Additional Options								
max. IP grade (above panel)*								<i>IP</i>

*Dependent on handle configuration

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

For example:

- Stock Grip with further push button configurations
- Customer-specific wiring
- Redundant output signal (inverted and parallel), discrete output

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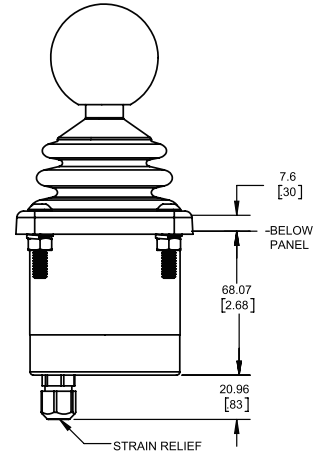
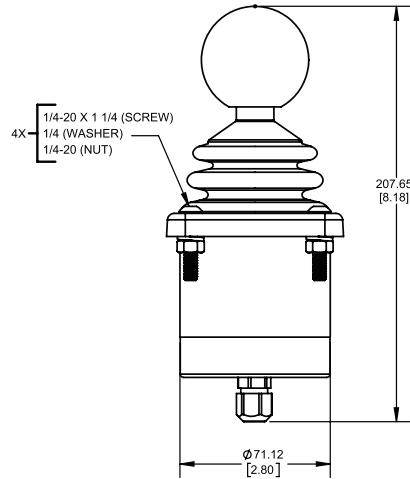


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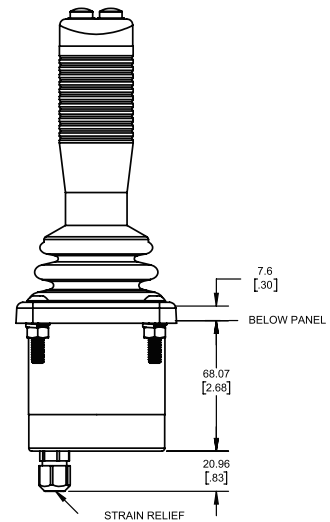
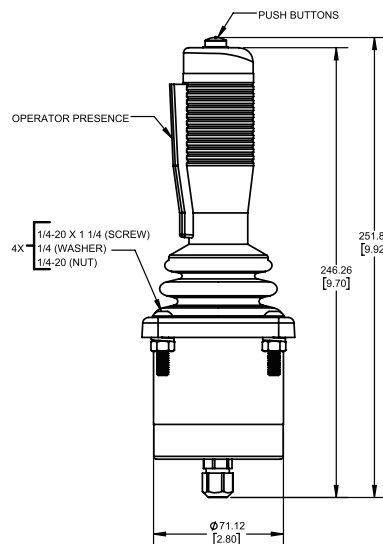
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Technical Drawing

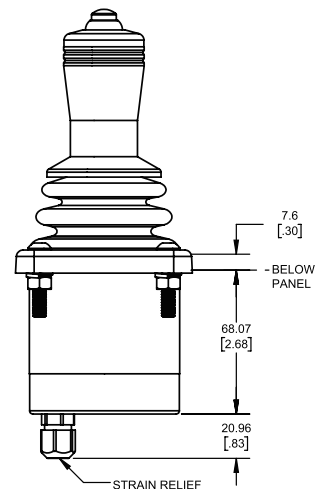
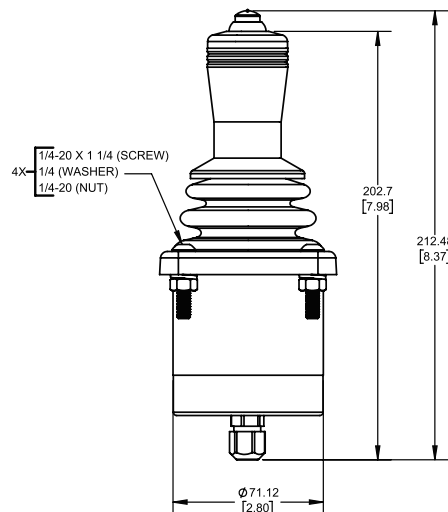
Ball Tip



Long Stock Grip



Short Stock Grip



All dimensions in mm

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Wiring

Color	Function	Color	Function	Color	Function
BLACK	Ground	WHITE	Switch Common	PURPLE/WHITE	Deadman
RED	Vcc	ORANGE	Switch 1	YELLOW/WHITE	Proximity Sensor
BLUE	X Axis	PURPLE	Switch 2	RED/WHITE	Index Trigger
YELLOW	Y Axis	GREY	Switch 3	LIGHT GREEN	LED 12
GREEN	Z Axis	BROWN	Switch 4	LIGHT ORANGE	LED 13
		PINK	Switch 5	GREY/WHITE	LED 14
		BLUE/WHITE	Switch 6	BLACK/WHITE	LED 15
		YELLOW/BLACK	Switch 7		
		GREEN/BLACK	Switch 8		

Note:

1. Standard cable length ca. 400 mm; wires AWG 22 for Joystick, switches, LEDs, etc.
2. For Joysticks with USB interface or mouse emulation a cable is included (USB male type A connector).
3. Wiring can deviate with special output options (CAN-bus, Center Detect, etc.), detailed information will be provided with your product.

Technical Data CAN J1939

Supply Voltage	6 V to 35 V
Current Consumption	Typical: 15 mA min, +5 mA per LED, +10 mA per Axis
CAN	SAE J1939 bus specification
Operating / Storage Temperature	- 25 °C to +70 °C / -40°C to +70°C

Wiring CAN J1939

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

Please contact us for further details on the CANbus interfaces and project-specific solutions.