

Data Sheet for Joysticks

Hand Joysticks

Series TRY81



- Up to 3 axes
- Spring Return, Friction Clutch optionally
- Sealed up to IP68
- Multifunction handle for additional functions, e.g. Switches, Rockers, Deadman
- Also available with USB- or CAN-Bus-Interface

The TRY81 series derives from the TRY80 series, providing the same specifications regarding robustness, durability and precision. The handle can be individually configured with different kinds of pushbuttons, switches, rocker switches - even our TRY13 and TRY14 can be integrated.

Electrical Data JOYSTICK

Sensor	Hall Effect
Supply Voltage	5 VDC $\pm 0,5$ VDC transient free
Power Rating	10 mA per Axis
Reverse Polarity max.	-14,5 VDC
Overvoltage max.	18 VDC
Output Impedance	6 Ohm
Resolution	Infinite
Independent Linearity Tolerance	$\pm 2\%$ full scale
Return to Center Voltage (no Load)	± 200 mV initial
Output Voltages	0..5 V / 0,5..4,5 V / 0,25..4,75 V / redundant signals available

Mechanical Data JOYSTICK

Expected Life	10 million cycles
Mechanical Angle of Movement X & Y / Z Axis	38° ($\pm 19^\circ$) / 42° ($\pm 21^\circ$)
Break Out Force X & Y / Z Axis	7,7 N / 0,6 Nm
Operating Force X & Y / Z Axis	14,0 N / 1,1 Nm
Maximum Applied Force X & Y / Z Axis	1000 N / 24,5 Nm
Environmental Sealing	up to IP65
Operating Temperature	-25°C..+70°C
Storage Temperature	-40°C..+70°C
EMC Immunity Level (V/M)	IEC 61000-4-8:2009
EMC Emissions Level	IEC 61000-4-3:2006
ESD	IEC 61000-4-2:2008

Notes:

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

Data Sheet for Joysticks

Hand Joysticks

Series TRY81



Configuration Examples Oval Faceplate



Configuration Examples Square Faceplate

Technical Data PUSHBUTTONS

Max. Electrical Resistive Load	400 mA 32 VAC - 100 mA 50 VDC - 125 mA 125 VAC
Low Level	10 mA at 30 mV
Electrical Life	25000 cycles 5 A @ 28 VDC
Mechanical Life	1 million cycles
Environmental Sealing	IP67
Action	Momentary, snap-action
Operating Force	7,5 N \pm 2 N
Total Travel	2 mm + 0,25 mm
Available Button Colors	white, grey, black, red, orange, yellow, green, blue, purple



Note:

1. Max. configuration of the handle takes up to 8 pushbuttons and 4 LEDs in the faceplate, plus an Index trigger or Proximity sensor
2. If unspecified, the pushbuttons will have snap-action momentary switches with red button caps.

Data Sheet for Joysticks

Hand Joysticks

Series TRY81

Order Code									
Series	TRY81								
Axes									
1		1							
2		2							
3		3							
Rubber Boot			5						
Return Mechanism									
Spring Return „Standard“				1					
Limiters									
Square					Q				
Round					R				
1 Axis Y					Y				
X/Y „Plus“					P				
Handles									
Handle with rectangular faceplate						1			
Handle with 2 Pushbuttons, rect. faceplate						2			
Handle with 4 Pushbuttons, rect. faceplate						3			
Handle with 8 Pushbuttons, rect. faceplate						4			
Handle with oval faceplate, customer-spec.						S			
Trigger									
None							0		
Trigger							1		
Proximity Sensor							3		
Output Signal									
0..5 V (rail to rail)								1	
0,5..4,5 V								2	
0,25..4,25 V								3	
USB								5	
Voltage Regulator								V	
CAN-bus J1939								CAN	
Customer-specific								X	
Additional Options									
Dual Encoding									D
IP68 above Panel (Standard = IP65)									IP68
Dual Sensor									DS

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

For example:

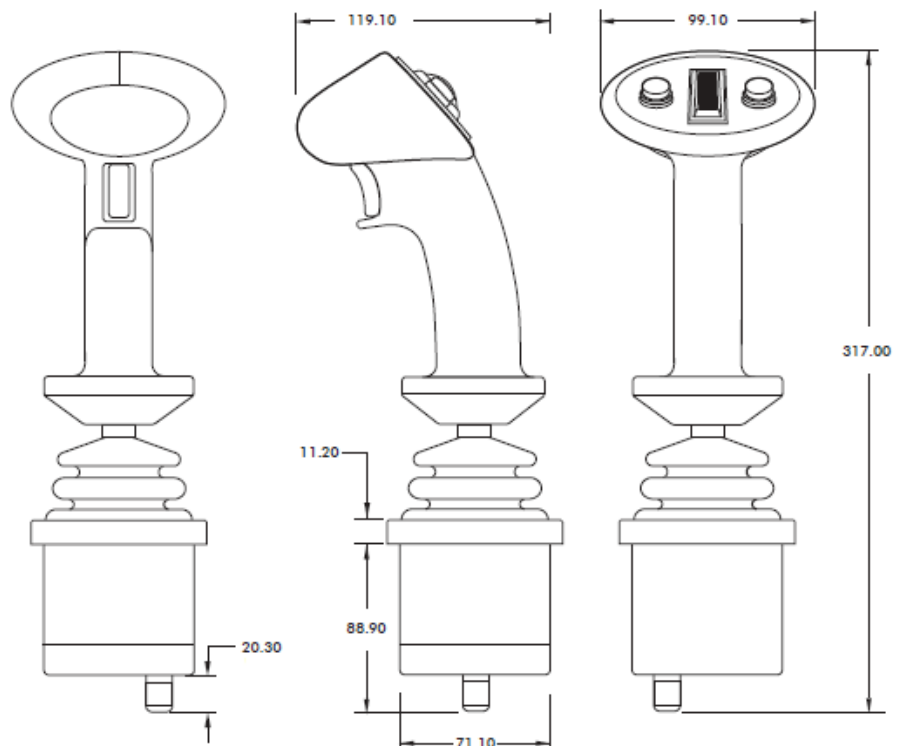
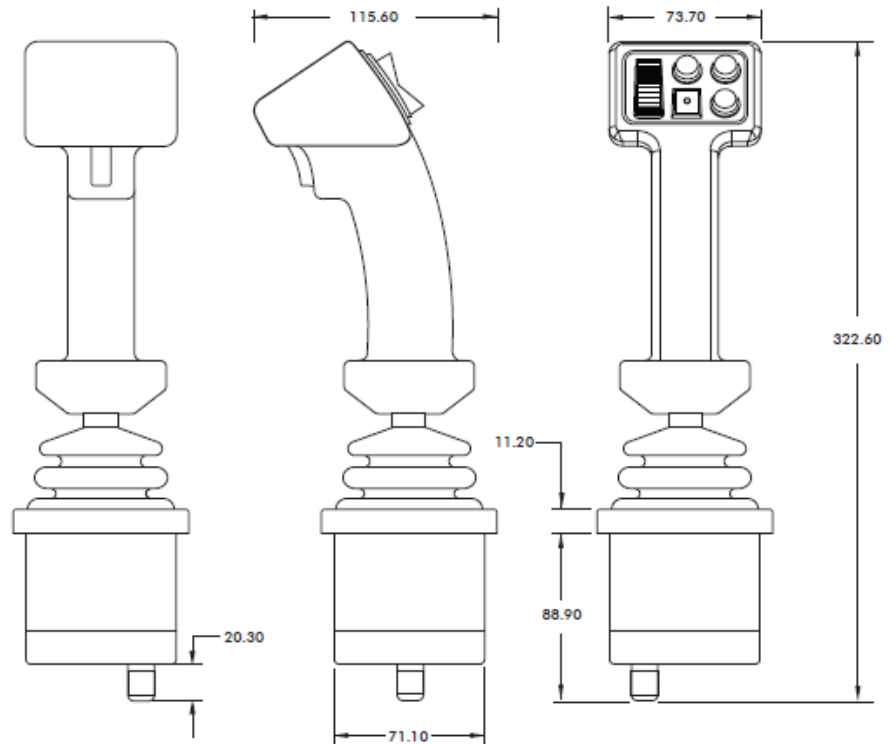
- Redundant Output Signals (inverted or parallel)
- Customer-specific cable
- Further handle versions

Data Sheet for Joysticks

Hand Joysticks

Series TRY81

Technical Drawing



All dimensions in mm

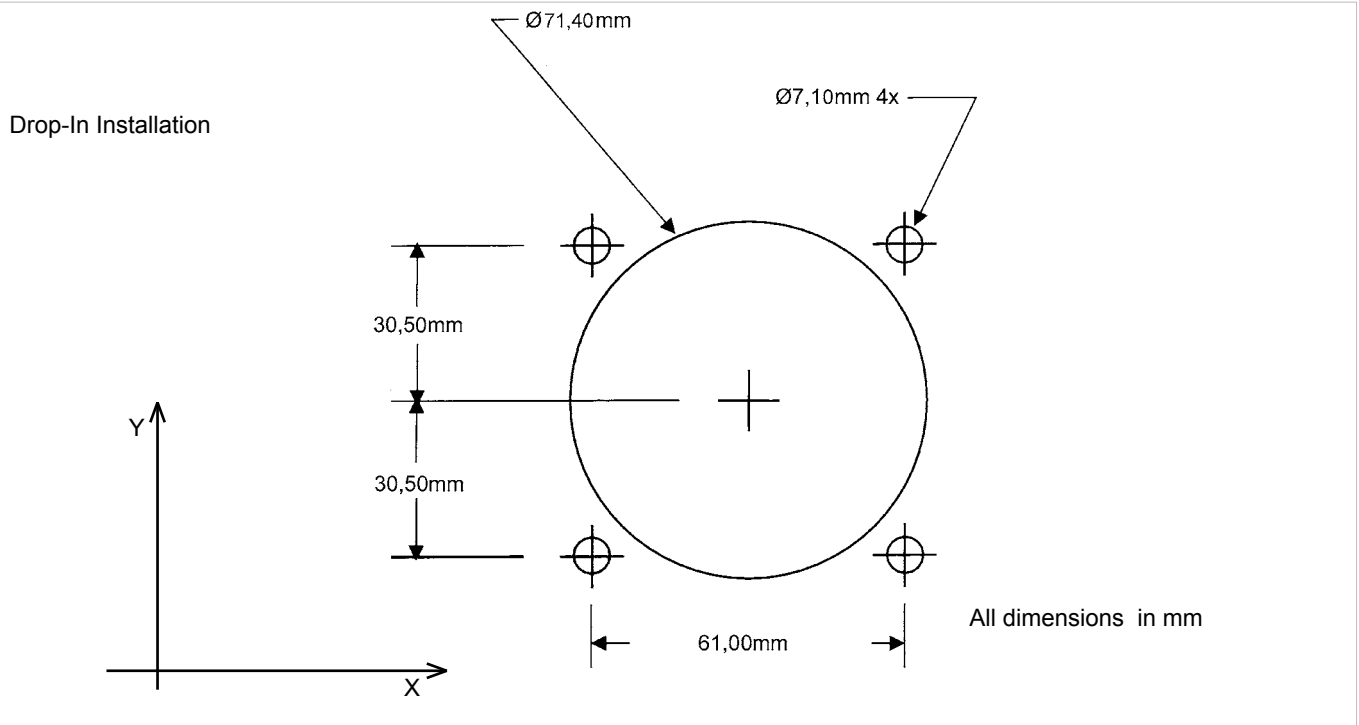
Data Sheet for Joysticks



Hand Joysticks

Series TRY81

Panel Cut-Out



Wiring

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

Notes:

1. Standard cable length ca. 400 mm; Cable AWG 22 for Joystick functions, Switches, LEDs, etc.
2. Joysticks with USB interface or Mouse Emulation are supplied with wiring with USB Male type A connector; optionally ruggedized military connectors are available
3. Wire Color Code might deviate from this table for special output options (CANbus, Center Detect; etc.), detailed information will be given with your specific product