

Data Sheet for Joysticks

Hand Joysticks

Series TRY52



- 1 or 2 axes
- Life expectancy of 10 Millionen cycles
- Sealed up to IP68
- Multifunction handle for additional functions, e.g. Switches, Rockers, Deadman
- also available with USB- or CANbus-Interface

The TRY52 offers everything a joystick for heavy-duty applications needs: High durability of all components, IP68 (depending on specific configuration), and an ergonomic handle design for the integration of further functional devices like e.g. switches, rockers, mini joysticks, trigger, deadman switch, and others.

The Series TRY52 is the best choice for customer-specific projects requiring individual configuration optimal suited to your application. As there is a large variety of possible configurations for these joysticks, we kindly ask you to contact us to discuss the best solution for you.

Electrical Data Joystick

| | |
|------------------------------------|---|
| Sensors | Hall-Effect |
| Supply Voltage | 5 VDC ±0,5 VDC transient free |
| Supply Current | 13mA per sensor |
| Reverse Polarity Max | -10 V |
| Overvoltage Max | 20 V |
| Output Impedance | 2 Ohm |
| Resolution | 1,22 mV |
| Independent Linearity Tolerance | ±2% full scale |
| Return to Center Voltage Tolerance | ±200 mV initial |
| Output Voltages | 0..5 V / 0,5..4,5 V / 0,25..4,75 V / redundant output available |

Mechanical and Environmental Data Joystick

| | |
|------------------------------|---------------------------------|
| Expected Life | 10 million cycles (typical use) |
| Mechanical Angle of Movement | 40° (±20° from center) |
| Break Out Force | 5,6 N |
| Operating Force | 7,5 N |
| Maximum Applied Force | 650 N |
| Environmental Sealing | up to IP68 |
| Operating Temperature | - 40°C .. + 85°C |
| Storage Temperature | - 40°C .. + 85°C |
| EMC Immunity Level (V/M) | IEC 61000-4-3:2006 |
| EMC Emissions Level | IEC 61000-4-8:2009 |
| ESD | IEC 61000-4-2:2008 |

Notes:

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

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Lower Face Buttons



Pushbuttons Characteristics

| | |
|---|--|
| Max. Current / Voltage Rating with Resistive Load | 400mA 32VAC - 100mA 50VDC - 125mA 125 VAC |
| Low Level | 10mA at 30mV |
| Electrical Life at Full Load | 500000 cycles |
| Mechanical Life | 1 million cycles |
| Environmental Seal | IP67 |
| Action | Momentary, pushbutton |
| Operating Force | 7N ±3N |
| Total Travel | 1,9mm ±0,3mm |
| Pushbutton Colors available | white, grey, black, red, orange, yellow, green, blue, violet |

Notes:

1. The maximum possible configuration for the handle of TRY52 is up to 2 Front Buttons, 6 Top Buttons, and a Deadman lever
2. If unspecified, the pushbuttons will have momentary „normally open“ switches with red caps

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Order Code

| Series | TRY52 | | | | | | | | |
|---------------------------------------|-------|---|---|---|--|-----|---|----|---|
| Axes | | | | | | | | | |
| 1 | | 1 | | | | | | | |
| 2 | | 2 | | | | | | | |
| Rubber Boot | | | 5 | | | | | | |
| Return Mechanism | | | | | | | | | |
| Spring „Standard“ | | | | 1 | | | | | |
| Limiter Plate | | | | | | | | | |
| Square | | | | | | 1 | | | |
| Square rotated by 45° / Diamond | | | | | | 2 | | | |
| Round | | | | | | 3 | | | |
| Slotted X (single axis only) | | | | | | 7 | | | |
| Slotted Y (single axis only) | | | | | | 8 | | | |
| Plus | | | | | | 9 | | | |
| Square, Guided Feel in X & Y | | | | | | GS | | | |
| Round, Guided Feel in X & Y | | | | | | GR | | | |
| Output Options | | | | | | | | | |
| 0 .. 5V (rail to rail) | | | | | | 1 | | | |
| 0,5 .. 4,5V | | | | | | 2 | | | |
| 0,25 .. 4,75V | | | | | | 3 | | | |
| USB 1.1 HID | | | | | | 5 | | | |
| Voltage Regulator | | | | | | V | | | |
| CANbus J1939 | | | | | | CAN | | | |
| Custom | | | | | | X | | | |
| Upper Face Buttons | | | | | | | | | |
| None | | | | | | | 0 | | |
| 1 | | | | | | | 1 | | |
| 2 | | | | | | | 2 | | |
| 3 | | | | | | | 3 | | |
| 4 | | | | | | | 4 | | |
| 5 | | | | | | | 5 | | |
| 6 | | | | | | | 6 | | |
| Custom | | | | | | | X | | |
| Lower Face Buttons (s. page 2) | | | | | | | | | |
| None | | | | | | | | 0 | |
| 1A | | | | | | | | 1A | |
| 1B | | | | | | | | 1B | |
| 1C | | | | | | | | 1C | |
| 2 | | | | | | | | 2 | |
| Custom | | | | | | | | X | |
| Deadman Lever | | | | | | | | | |
| None | | | | | | | | | 0 |
| Deadman Paddle | | | | | | | | | 1 |
| Proximity Sensor | | | | | | | | | 2 |

Note:

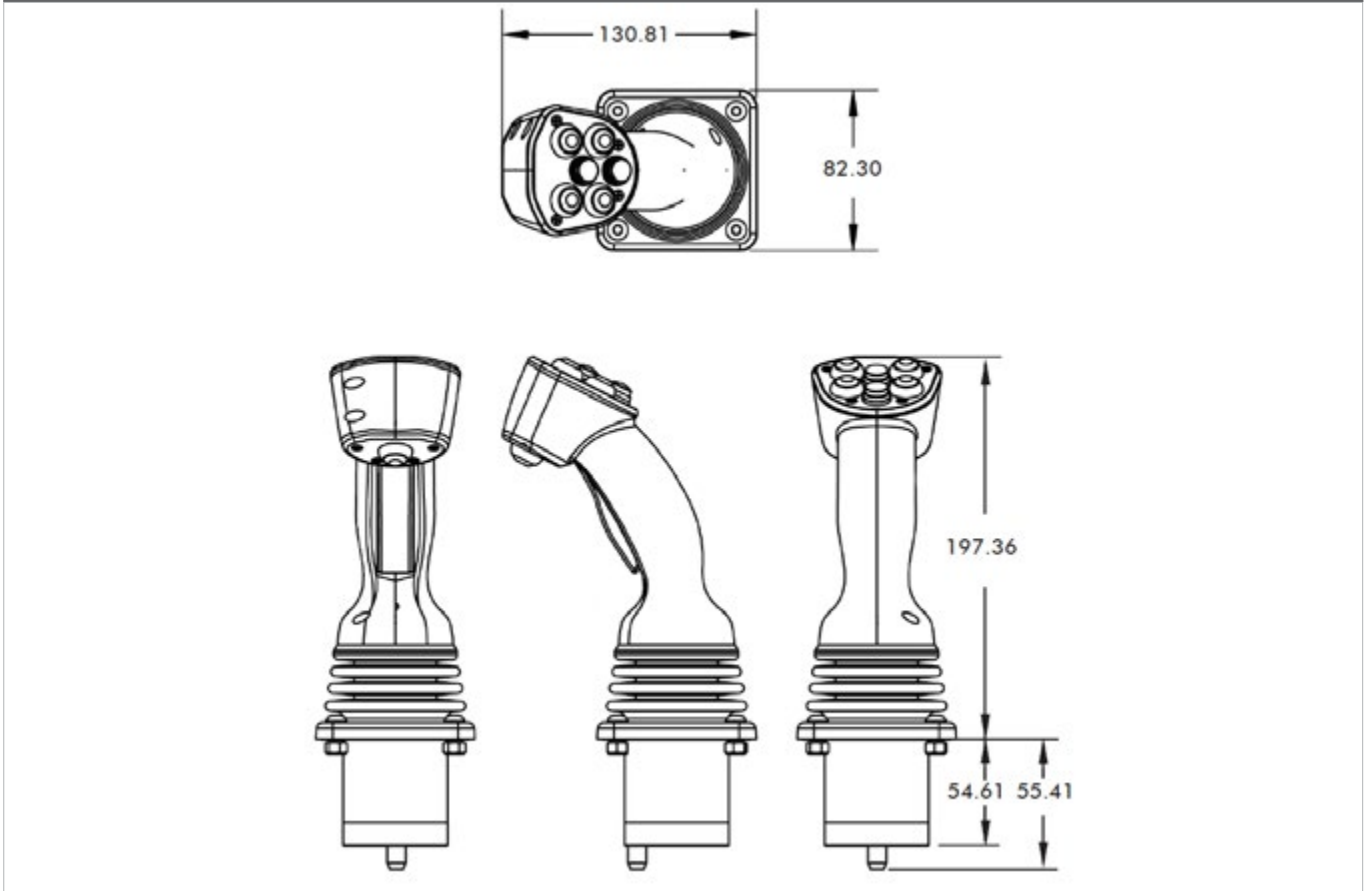
Further options like e.g. Dual Output Voltages (invers and parallel), Discrete Output, Mouse Emulation, Center Detect, different Spring Tensions, IP68 Sealing, etc. are available. Please contact us to discuss your specific requirements.

Data Sheet for Joysticks

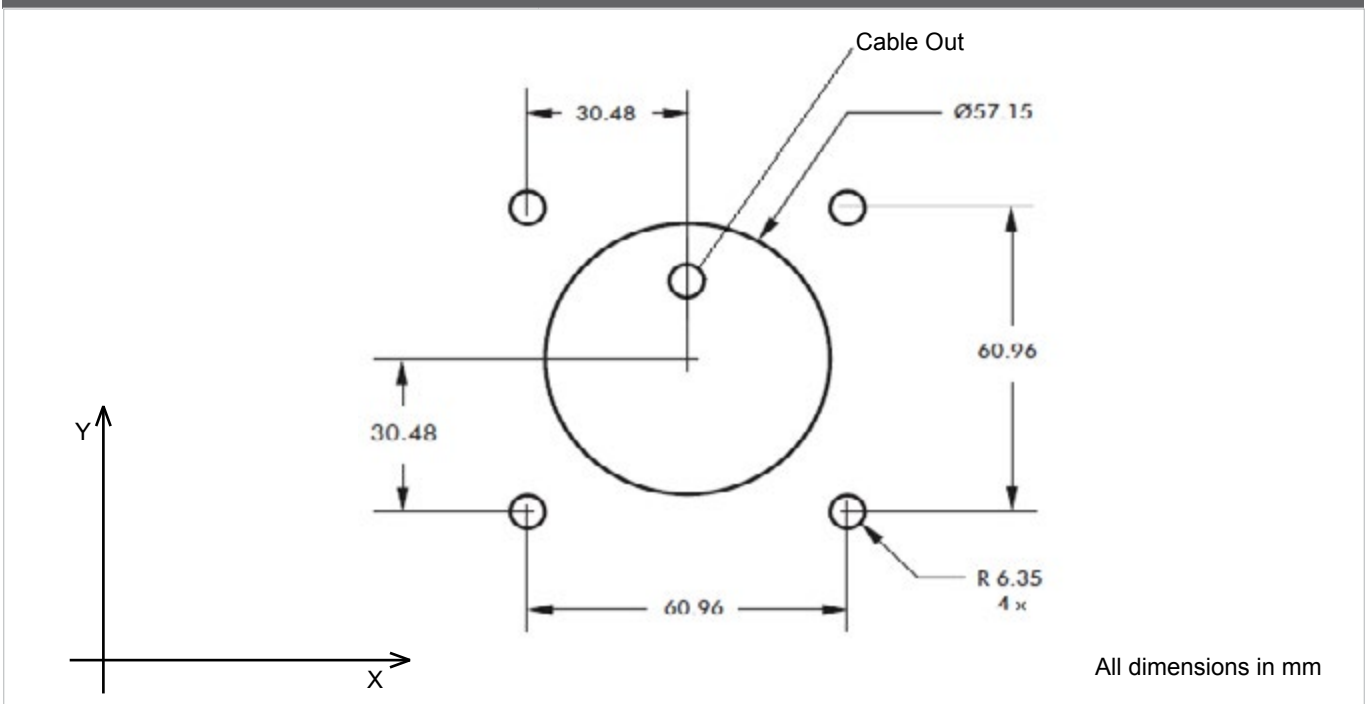
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Technical Drawings



Standard Panel Cutout Dimensions



All dimensions in mm

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Wire Color Code

| Color | Function | Color | Function | Color | Function |
|--------|----------|--------------|---------------|--------------|------------------|
| BLACK | Ground | WHITE | Switch Common | VIOLET/WHITE | Deadman |
| RED | Vcc | ORANGE | Switch 1 | YELLOW/WHITE | Proximity Sensor |
| BLUE | X Axis | VIOLET | Switch 2 | RED/WHITE | Index Trigger |
| YELLOW | Y Axis | GRAY | Switch 3 | LIGHT GREEN | LED 1 |
| GREEN | Z Axis | BROWN | Switch 4 | LIGHT ORANGE | LED 2 |
| | | PINK | Switch 5 | GRAY/WHITE | LED 3 |
| | | BLUE/WHITE | Switch 6 | BLACK/WHITE | LED 4 |
| | | YELLOW/BLACK | Switch 7 | | |
| | | GREEN/BLACK | Switch 8 | | |

Notes:

1. Standard cable length ca. 400mm; Cable AWG 28 for Joystick functions, Cable AWG 22 for 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

Technical Data - CANbus J1939 (*)

CANbus conform to SAE J1939 Serial Bus Specification.
I/O extensions for up to 24 digital and 11 analog inputs.

| | |
|-----------------------|--|
| Supply Voltage | 6 .. 35 VDC |
| Supply Current | min. 15 mA; +10 mA per axis; +5 mA per LED |
| Operating Temperature | -25°C .. +70°C |
| Storage Temperature | -40°C .. +70°C |

Wire Color Code - CANbus J1939

| Color | Function | Color | Function | Color | Function |
|-------|----------|-------|---------------|--------|-----------------------|
| BLACK | Ground | GREEN | CAN high data | BLUE | Identifier Select LSB |
| RED | Vcc | WHITE | CAN low data | ORANGE | Identifier Select MSB |

Notes:

1. Additionally to CAN J1939 a CANopen version is available. Please contact us.
2. Customer-specific and standard cable assembly available (e.g. Deutsch DT04)