

# 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 (analogue, 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 analogue 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 $\pm$ 2 N  |
| Total Travel             | 2 mm + 0.25 mm   |
| Available Button Colours | White, grey, black, red, orange, yellow, green, blue, purple |

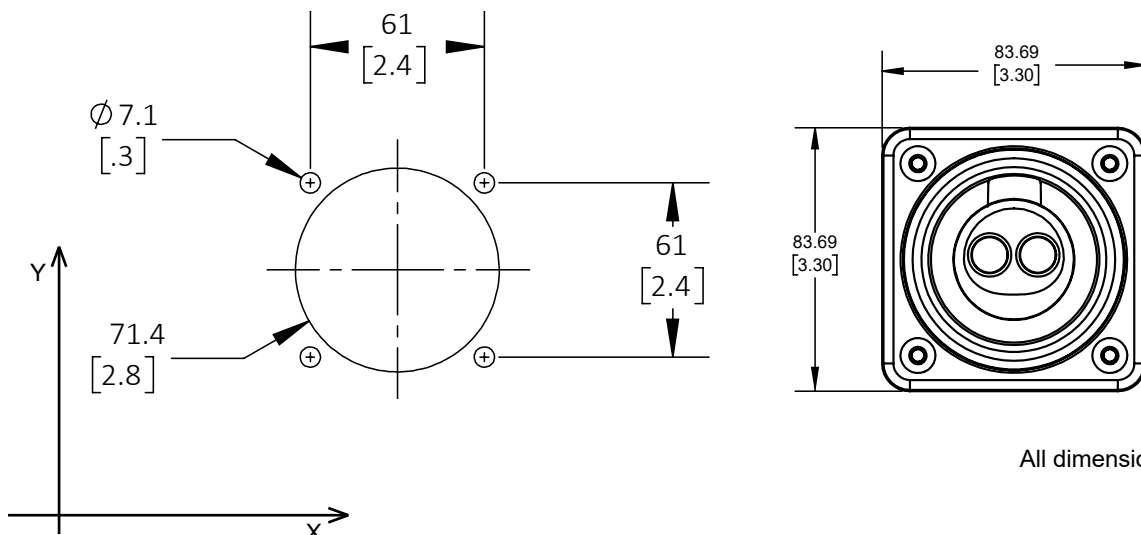


### Notes:

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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Please contact us for information regarding stock articles, delivery times and minimum order quantities.

## Order Code

### Description

|  |       |   |   |   |  |   |   |        |    |
|--|-------|---|---|---|--|---|---|--------|----|
| <b>Series</b>                                | TRY80 |   |   |   |  |   |   |        |    |
| <b>Axes*:</b>                                |       |   |   |   |  |   |   |        |    |
| 1 Axis                                       |       | 1 |   |   |  |   |   |        |    |
| 2 Axes                                       |       | 2 |   |   |  |   |   |        |    |
| <b>Sealing:</b>                              |       |   |   |   |  |   |   |        |    |
| Rubber Boot                                  |       |   | 5 |   |  |   |   |        |    |
| <b>Spring return:</b>                        |       |   |   |   |  |   |   |        |    |
| Spring Return                                |       |   |   | 1 |  |   |   |        |    |
| <b>Limiters:</b>                             |       |   |   |   |  |   |   |        |    |
| Square                                       |       |   |   |   |  | Q |   |        |    |
| Round  |       |   |   |   |  | R |   |        |    |
| Plus   |       |   |   |   |  | P |   |        |    |
| Single Axis X                                |       |   |   |   |  | X |   |        |    |
| Single Axis Y                                |       |   |   |   |  | Y |   |        |    |
| <b>Handle / Switches:</b>                    |       |   |   |   |  |   |   |        |    |
| 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  |       |   |   |   |  |   | 5 |        |    |
| Stock Grip long, 1 Top Pushb., 2 Side Pushb. |       |   |   |   |  |   | 6 |        |    |
| Stock Grip long, Top Rocker Switch           |       |   |   |   |  |   | 9 |        |    |
| Stock Grip short, no Pushbutton              |       |   |   |   |  |   | 7 |        |    |
| Stock Grip short, 1 top Pushbutton           |       |   |   |   |  |   | 8 |        |    |
| <b>Output Options:</b>                       |       |   |   |   |  |   |   |        |    |
| 0 to 5 V single (inverse dual output)        |       |   |   |   |  |   |   | 1 (1X) |    |
| 0.5 to 4.5 V (inverse dual output)           |       |   |   |   |  |   |   | 2 (2X) |    |
| 0.25 to 4.75 V (inverse dual output)         |       |   |   |   |  |   |   | 3 (3X) |    |
| USB Joystick                                 |       |   |   |   |  |   |   | 5      |    |
| USB Mouse Emulation                          |       |   |   |   |  |   |   | 6      |    |
| CAN J1939                                    |       |   |   |   |  |   |   | CAN    |    |
| CANopen                                      |       |   |   |   |  |   |   | COP    |    |
| Voltage Regulator                            |       |   |   |   |  |   |   |        |    |
| Supply 6 to 35 VDC, Output 0 to 5 VDC        |       |   |   |   |  |   |   | V1205  |    |
| Supply 11 to 35 VDC, Output ±10 VDC          |       |   |   |   |  |   |   | V1210B |    |
| <b>Special options</b>                       |       |   |   |   |  |   |   |        |    |
| max. IP grade (above panel)**                |       |   |   |   |  |   |   |        | IP |

\*For backward compatibility, the codes 3,4,5, and 6 are still valid for all 2 axes versions

\*\*IP protection class depends on the 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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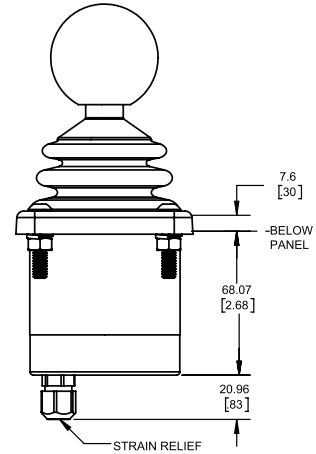
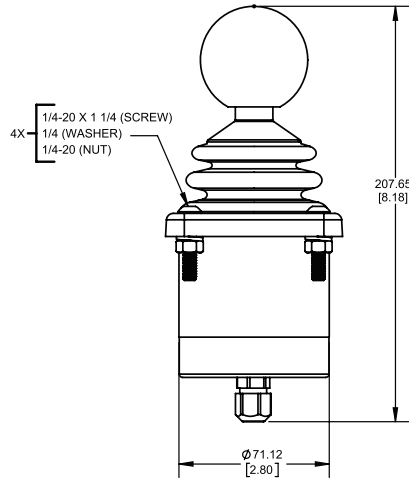


## Hand Joystick

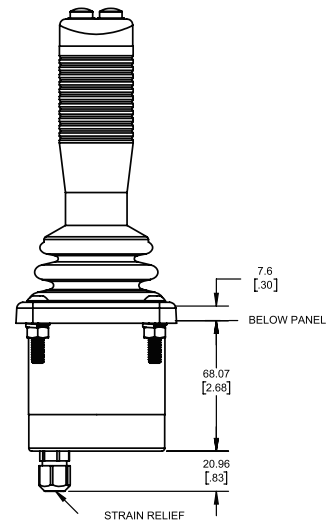
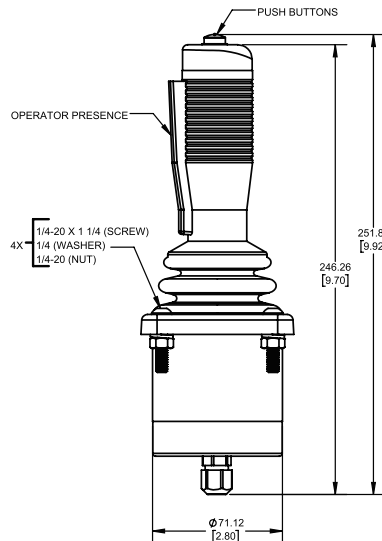
## Series TRY80

### Drawing

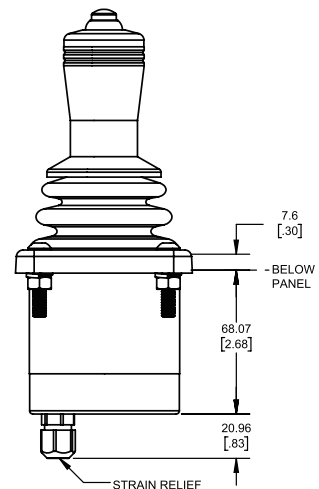
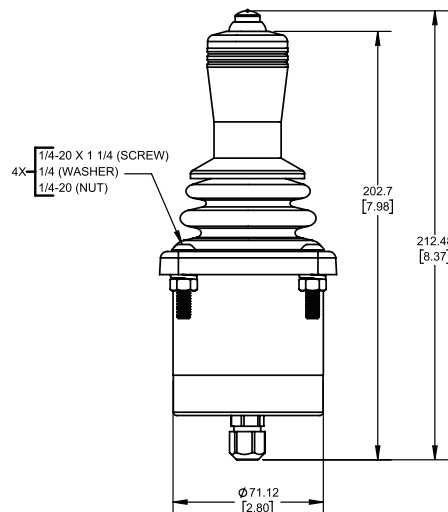
Ball Tip



Long Stock Grip



Short Stock Grip



All dimensions in mm

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## Wiring

| Colour | Function | Colour | Function      | Colour       | Function |
|--------|----------|--------|---------------|--------------|----------|
| BLACK  | Ground   | WHITE  | Switch Common | PURPLE/WHITE | Deadman  |
| RED    | Vcc      | ORANGE | Switch 1      |              |          |
| BLUE   | X Axis   | PURPLE | Switch 2      |              |          |
| YELLOW | Y Axis   | GREY   | Switch 3      |              |          |
| GREEN  | Z Axis   |        |               |              |          |

### 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.