

# Data Sheet for Joysticks

Switchstick

Series 841



- Very robust finger joystick with switching functions
- Single/double pole or progressive switching
- Switching up to 1 A (optional with gold contacts), 125 V max.
- Center detect switch (optional)
- Up to IP class 65 (above panel)
- High durability
- Large selection of different handles

The 841 series switch joysticks are suitable for harsh environments and safety critical applications. Switching functions are provided by high quality microswitches. Whether switching in single-pole, double-pole or progressive mode, the robust mechanism guarantees a long life even under intensive use. There is also a wide choice of handles with or without pushbutton(s).

## Technical Data

|                              |                            |
|------------------------------|----------------------------|
| Lifetime                     | > 1 million cycles         |
| Max. Voltage                 | 125 VAC                    |
| Max. Current                 | 1 A                        |
| Switch contacts              | Gold plated                |
| Protection grade             | up to IP65 (above panel)   |
| Angle of Movement X-, Y-Axis | 36° (±18° from center)     |
| Breakout Force               | typ. > 1.6 N (from center) |
| Operating Temperature Range  | -25 °C up to +80 °C        |
| Weight                       | ca. 98 g                   |
| Max. Panel Thickness         | 3 mm                       |

## Wiring

| Colour | Function                              | Colour | Function                                       | Cable specification  |
|--------|---------------------------------------|--------|--|--|
| Black  | : First Switch East                   | Brown  | : First Switch North                           | Microswitch: 14/0,12 tinned annealed wire PVC insulated, nom. outer diameter 1 mm; length fo twisted cable harness ca. 150 mm. |
| Yellow | : Second Switch East                  | Orange | : Second Switch North                          |  |
| Green  | : First Switch West                   | Purple | : First Switch South                           |  |
| Blue   | : Second Switch West                  | White  | : Second Switch South                          |  |
| Red    | : Common                              | Grey   | : Center Detect                                |  |
| Orange | : First Pushbutton<br>(Top of handle) | Green  | : Second Pushbutton<br>(Side or top of handle) | Pushbuttons inside handle:<br>7/0,13 wires tinned copper wire ETFE insulated, nom. outer diameter 0,7 mm                       |
| Blue   | : Third Pushbutton<br>(Top of handle) |        |  |  |

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

## Order Code

| Description  | Selection: <b>standard=black/bold</b> , possible <i>options=grey/italics</i> |            |  |          |          |              |          |
|--|--|------------|--|----------|----------|--------------|----------|
| <b>Series</b>  | <b>841</b>   |            |  |          |          |              |          |
| <b>Axes:</b>   |  |            |  |          |          |              |          |
| <i>1 axis</i>  |  | <i>1</i>   |  |          |          |              |          |
| <b>2 axes</b>  |  | <b>2</b>   |  |          |          |              |          |
| <b>Rubber Boot:</b>                                  |  |            |  |          |          |              |          |
| <i>No bezel, below panel mounting</i>                |  |            |  | <i>1</i> |          |              |          |
| <b>Square bezel, drop-in mounting</b>                |  |            |  | <b>2</b> |          |              |          |
| <i>Circular bezel, below panel mounting</i>          |  |            |  | <i>3</i> |          |              |          |
| <b>Return Mechanism:</b>                             |  |            |  |          |          |              |          |
| <b>Spring return</b>                                 |  |            |  | <b>1</b> |          |              |          |
| <i>Spring return with guided feel in X &amp; Y</i>   |  | <i>(2)</i> |  | <i>2</i> |          |              |          |
| <b>Handles:</b>                                      |  |            |  |          |          |              |          |
| <i>Handle A, round</i>                               |  |            |  |          | <i>A</i> |              |          |
| <i>Handle B, cylindrical</i>                         |  |            |  |          | <i>B</i> |              |          |
| <i>Handle F, cylindrical, skirted</i>                |  |            |  |          | <i>F</i> |              |          |
| <b>Handle C, conical mid-size</b>                    |  |            |  |          | <b>C</b> |              |          |
| <b>Handle H, with 1 pushbutton</b>                   |  |            |  |          | <b>H</b> |              |          |
| <i>Handle G, with 2 pushbuttons</i>                  |  |            |  |          | <i>G</i> |              |          |
| <i>Handle E, with 1 pushbutton</i>                   |  |            |  |          | <i>E</i> |              |          |
| <i>Handle V, with 1 pushbutton</i>                   |  |            |  |          | <i>V</i> |              |          |
| <i>Handle X, with 3 pushbuttons</i>                  |  |            |  |          | <i>X</i> |              |          |
| <b>Limiters:</b>                                     |  |            |  |          |          |              |          |
| <i>Single axis (*)</i>                               |  | <i>(1)</i> |  |          |          | <i>1 (*)</i> |          |
| <i>Single axis Y</i>                                 |  | <i>(1)</i> |  |          |          | <i>2</i>     |          |
| <i>X-Y-plus „+“</i>                                  |  | <i>(2)</i> |  |          |          | <i>3</i>     |          |
| <b>Square</b>  |  | <b>(2)</b> |  |          |          | <b>6</b>     |          |
| <i>Circular</i>                                      |  | <i>(2)</i> |  |          |          | <i>5</i>     |          |
| <i>Square 45° rotated</i>                            |  | <i>(2)</i> |  |          |          | <i>4</i>     |          |
| <b>Switch Configurations:</b>                        |  |            |  |          |          |              |          |
| <i>Single axis, single pole (n.o.)</i>               |  | <i>(1)</i> |  |          |          |              | <i>1</i> |
| <i>Single axis, double pole (n.o.)</i>               |  | <i>(1)</i> |  |          |          |              | <i>2</i> |
| <i>Single axis, progressive (n.o.)</i>               |  | <i>(1)</i> |  |          |          |              | <i>3</i> |
| <i>Single axis, progressive (n.o.), with detents</i> |  | <i>(1)</i> |  |          |          |              | <i>4</i> |
| <b>Two axes, single pole (n.o.)</b>                  |  | <b>(2)</b> |  |          |          |              | <b>5</b> |
| <i>Two axes, double pole (n.o.)</i>                  |  | <i>(2)</i> |  |          |          |              | <i>6</i> |
| <b>Center Detect:</b>                                |  |            |  |          |          |              |          |
| <b>None</b>  |  |            |  |          |          |              | <b>0</b> |
| <i>Fitted (n.o.) (non-progressive only)</i>          |  |            |  |          |          |              | <i>1</i> |

\* obsolete, same as option 2. Single axis is always realised as Y type.

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

For example:

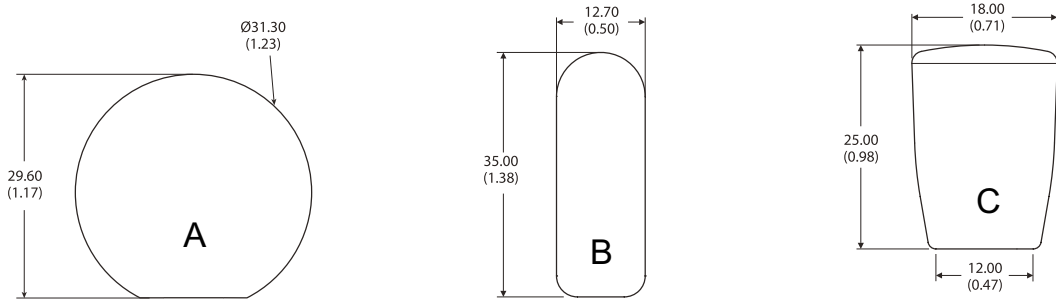
- Specific switch configurations
- Further handle versions
- Customer-specific cable

# Data Sheet for Joysticks

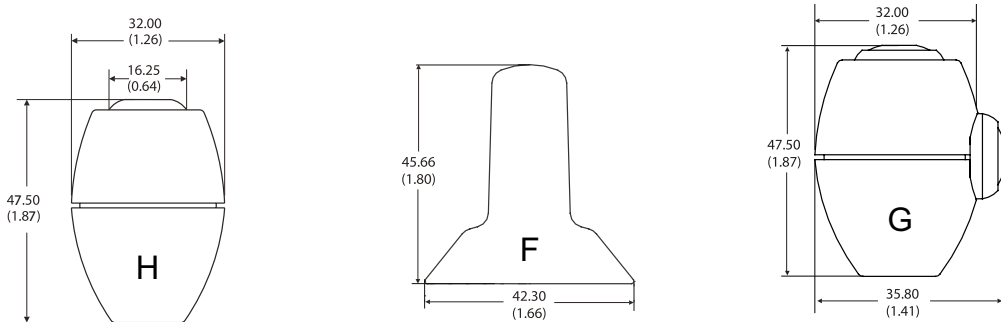
Switchstick

Series 841

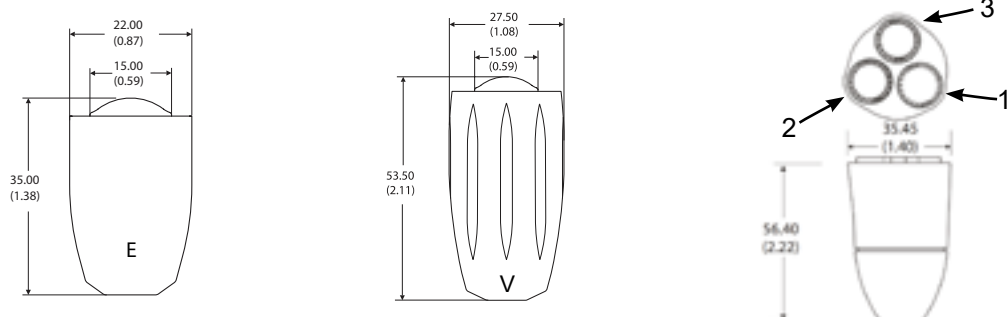
## Handles



| Handles  | A            | B         | C            |
|----------|--------------|-----------|--------------|
| Material | Nylon        | Aluminium | Nylon        |
| Finish   | Sparked Matt | Anodised  | Sparked Matt |
| Colour   | Black        | Black     | Black        |
| Remarks  | -            | -         | -            |



| Handles  | H            | F            | G             |
|----------|--------------|--------------|---------------|
| Material | ABS          | Nylon        | ABS           |
| Finish   | Sparked Matt | Sparked Matt | Sparked Matt  |
| Colour   | Black        | Black        | Black         |
| Remarks  | 1 Pushbutton | -            | 2 Pushbuttons |

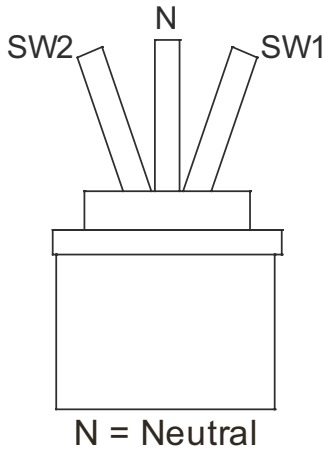


| Handle   | E            | V            | X             |
|----------|--------------|--------------|---------------|
| Material | Aluminium    | Aluminium    | Nylon         |
| Finish   | Anodised     | Anodised     | Sparked Matt  |
| Colour   | Black        | Black        | Black         |
| Remarks  | 1 Pushbutton | 1 Pushbutton | 3 Pushbuttons |

Dimensions in mm (inches)

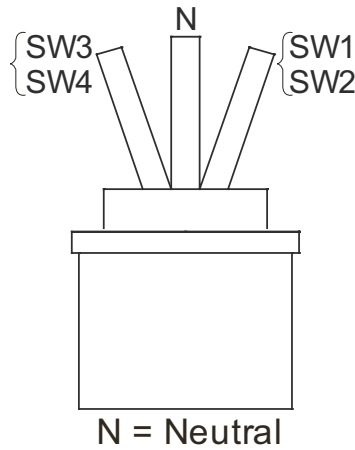
## Switch Configurations

**„1“ : One Axis, Single Pole**



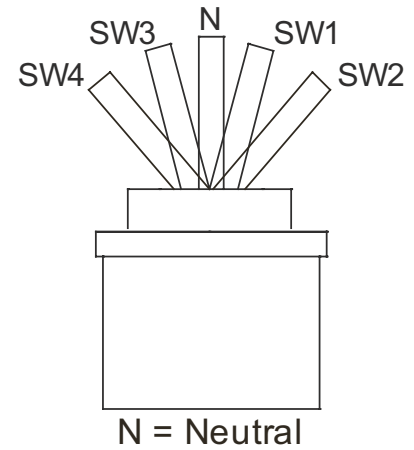
One switch will actuate as the joystick moves away from center in either direction.

**„2“ : One Axis, Double Pole**



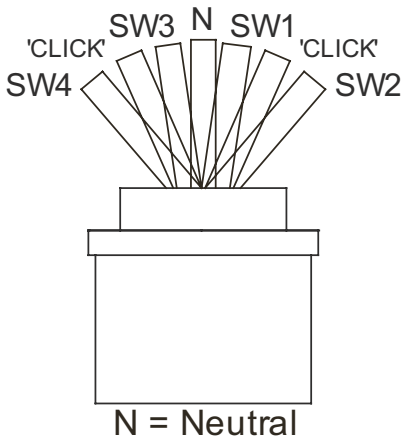
Two switches will actuate as the joystick moves away from center, in either direction.

**„3“ : One Axis, Progressive**



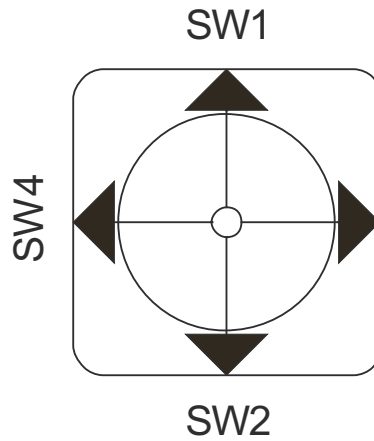
One switch will actuate after 50% of travel, with a further switch at the end of travel, in either direction.

**„4“ : One Axis, Progressive**



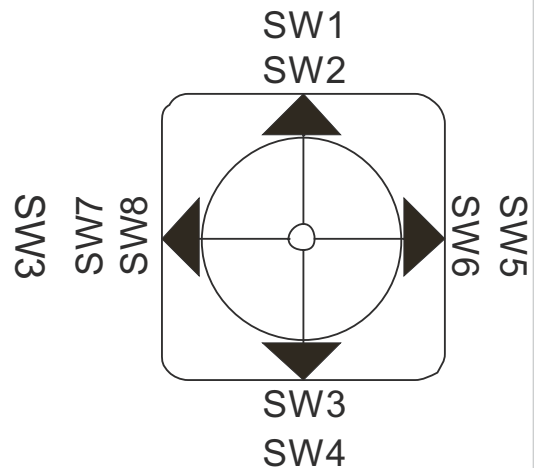
As per option „3“, but with a mechanical detent between actuation of the first and second switch.

**„5“ : Two Axes, Single Pole**



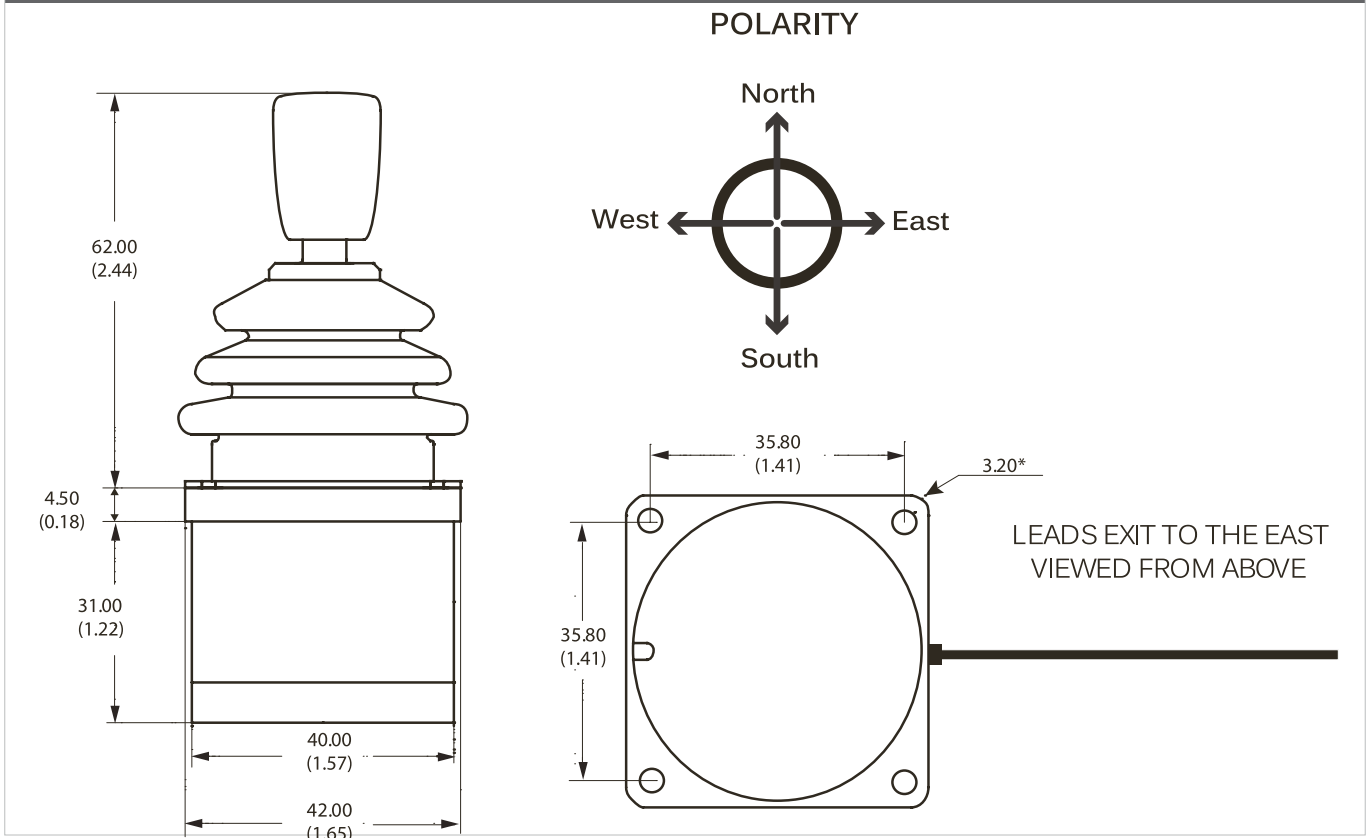
One switch will actuate in each of the four directions: North, South, East & West.

**„6“ : Two Axes, Double Pole**



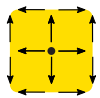
Two switches will actuate in each of the four directions: North, South, East & West.

## Technical Drawing



Dimensions in mm (inches)

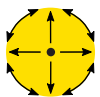
## Limiters



Square - Option „6“



1-axis "X" - Option „1“



Round - Option „5“



1-axis "Y" - Option „2“

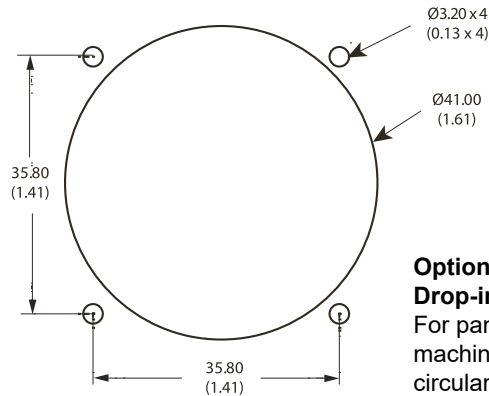


Square, rotated 45° ("Diamond") - Option „4“



X/Y Plus "+" - Option „3“

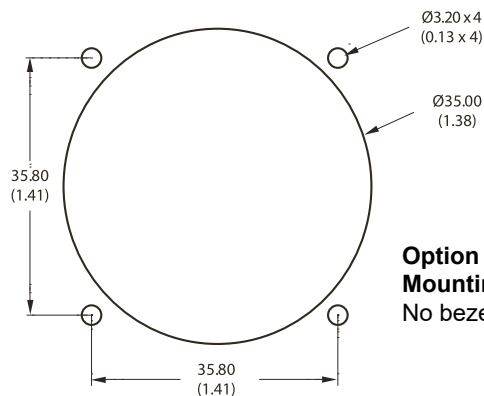
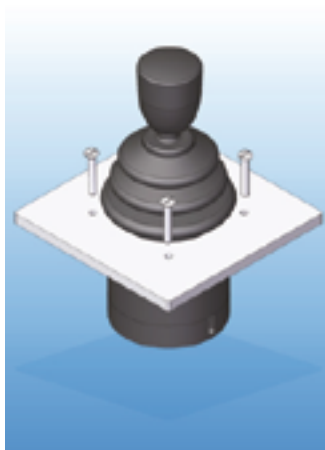
## Mounting Options



**Option „2“:**

**Drop-in of Joystick into panel cut-out.**

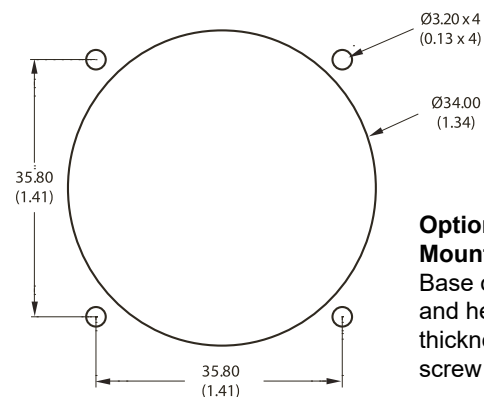
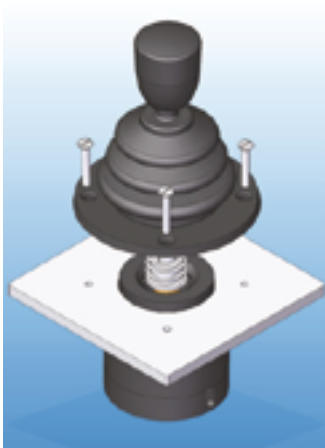
For panel thickness < 3 mm, M3 x 16 countersunk machine screw are recommended. Also available with circular bezel.



**Option „1“:**

**Mounting of Joystick from beneath the panel.**

No bezel needed. M3 machine screws recommended.



**Option „3“:**

**Mounting of Joystick from beneath the panel.**

Base of boot must be brought through panel cut-out and held in place with the circular bezel. For panel thickness < 3 mm, M3 x 16 countersunk machine screw are recommended.

Dimensions in mm (inches)