

## Unbreakable

Caldaro tackled the challenge of constructing an unbreakable joystick. The result is the C15. This can be used across an application spectrum from the toughest working environments to exquisitely high precision fine-tuned medical equipment.

### A masterpiece of construction:

- **Protected electronics** – Circuit board and electronics are potted with compound which protects them from threats such as salt, mist, water, lubricants and virtually all chemicals.
- **The strongest shaft** – The shaft is manufactured in one single piece and with extended dimensions. This makes it practically impossible to bend.
- **The best materials** – The best material has been chosen for each component. The rubber mixture endures the toughest conditions.
- **Full redundancy** – The C15 offers single, single + direction switches, double or double independent sensors.

### Other features making C15 irresistible:

- Guide feeling
- Operating angle 9, 12 or 20 degrees
- Sealed panel mounting
- Made in Sweden

The C15 is available with a palette of handles to be suitable for every situation. Custom-made handles can be done, see below examples. This can be done even with a relatively small production batch.

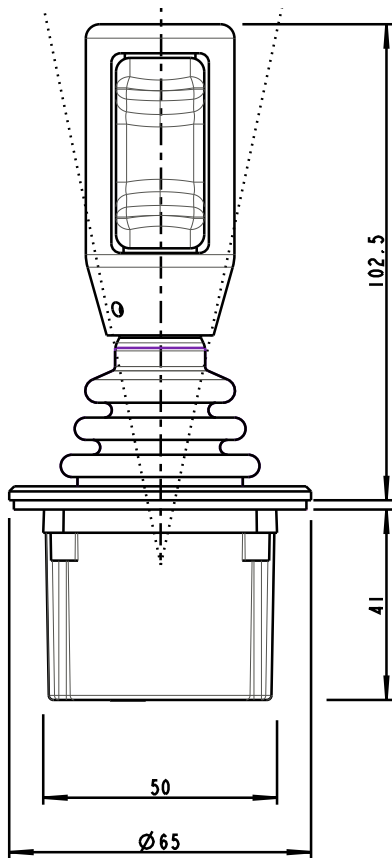


### Examples of available grips

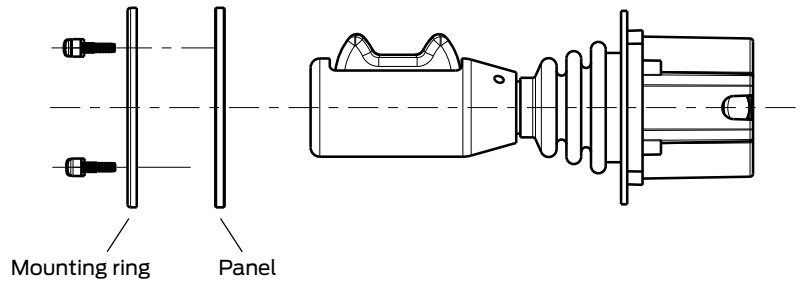


# » C15

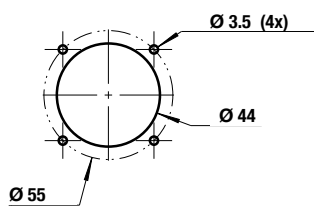
## Standard dimensions



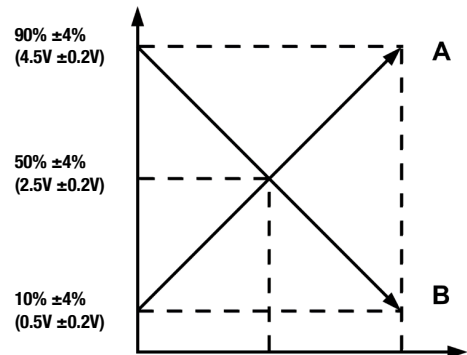
## Mounting arrangement



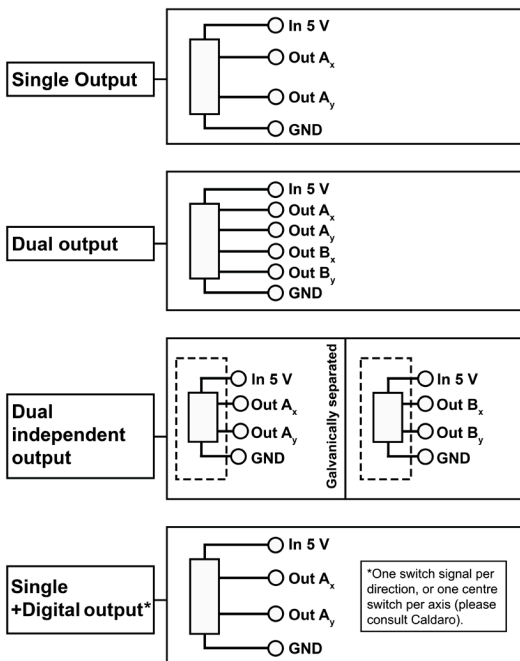
## Panel cutout



## Example of output signal



## » Output options



## » Specifications

### Mechanical and electrical specifications

|                            |  |
|----------------------------|--|
| Mechanical operating angle | X / Y axis: $\pm 9^\circ$ , $\pm 12^\circ$ or $\pm 20^\circ$ |
| Lever strength             | Max. 500 N static load                                       |
| Life expectancy            | 5,000,000 full operations                                    |
| Sensor type                | Hall effect  |
| Total current consumption  | 17 mA—22 mA  |
| Applied voltage            | 5 VDC $\pm 10\%$   |
| Load resistance            | 4,7 k $\Omega$ —100 k $\Omega$ pull down                     |
| Effective output           | Standard 10% - 90% $V_{in}$ , other ratios on request        |
| Resolution                 | Essentially infinite   |

### Environmental specifications

|                       |   |
|-----------------------|---|
| Operating temp. range | -40°C ~ +85°C   |
| Storage temp. range   | -40°C ~ +85°C   |
| EMC                   | 100V/m  |
| ESD                   | $\pm 8$ kV (contact discharge)<br>$\pm 15$ kV (air discharge) |