

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.

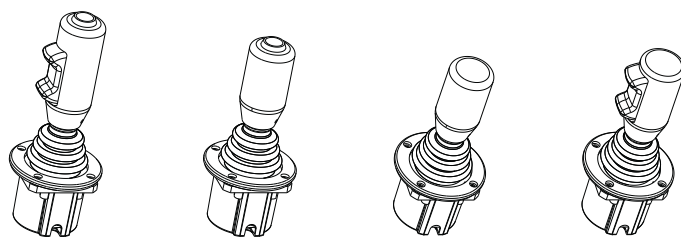
Other features making C15 irresistible:

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

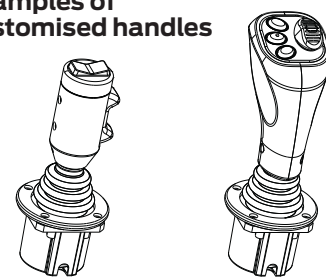
The C15 is available with a palette of handles to be suitable for every situation. Custom-made handles can be done, see below examples. This can be done even with a relatively small production batch.



Examples of standard handles

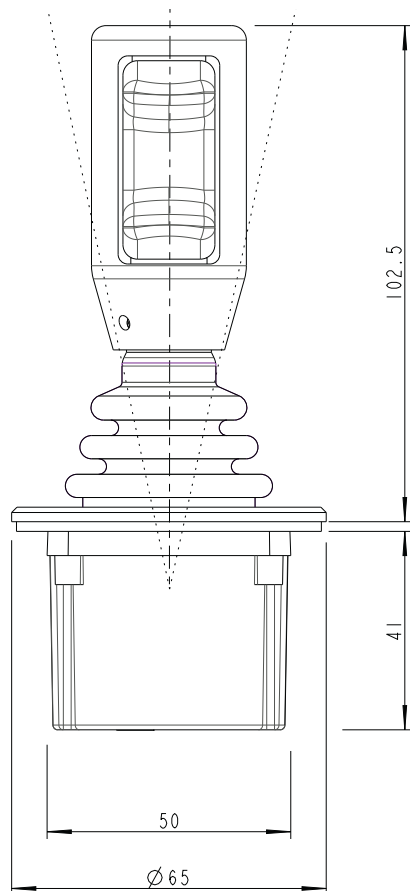


Examples of customised handles

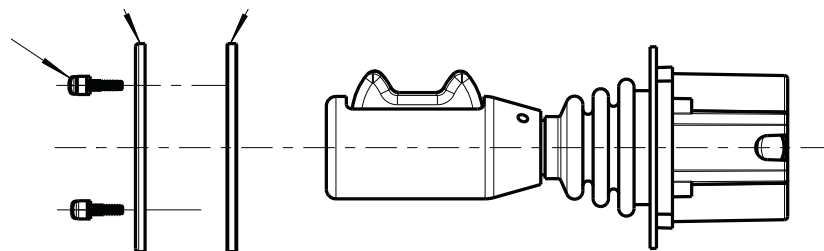


C15

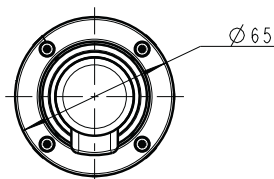
Standard dimensions



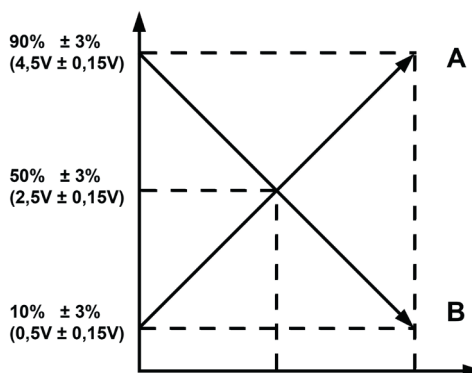
Mounting arrangement



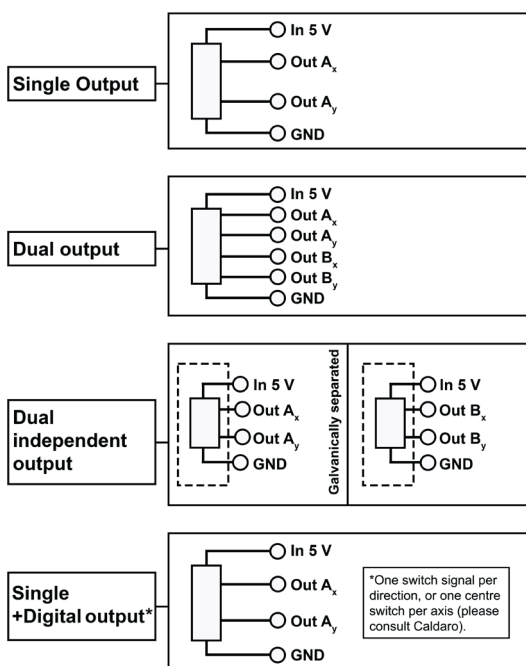
Top view



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	Max. 5,000,000 operations
Sensor type	Hall effect
Total current consumption	17 mA- 22 mA
Independent linearity tolerance	$\pm 1,5\%$ FS (FS=24°)
Applied voltage	5 VDC $\pm 10\%$
Load resistance	Max. 100 k Ω (10 k Ω recommended)
Effective output	Standard 10% - 90% Vin, other ratios on request
Resolution	Essentially infinite
Center return accuracy over lifetime	$\pm 0,15$ V

Environmental specifications

Thermal shock	100 cycles -40° C ~ +85° C
Exposure at low temp.	24 hours at -40° C
Exposure at high temp.	1000 hours at +85° C
Operating temp. range	-40° C ~ +85° C
EMC	100 V/m
ESD	According to ISO 11452 ± 8 kV contact discharge ± 15 kV air discharge According to ISO 10605