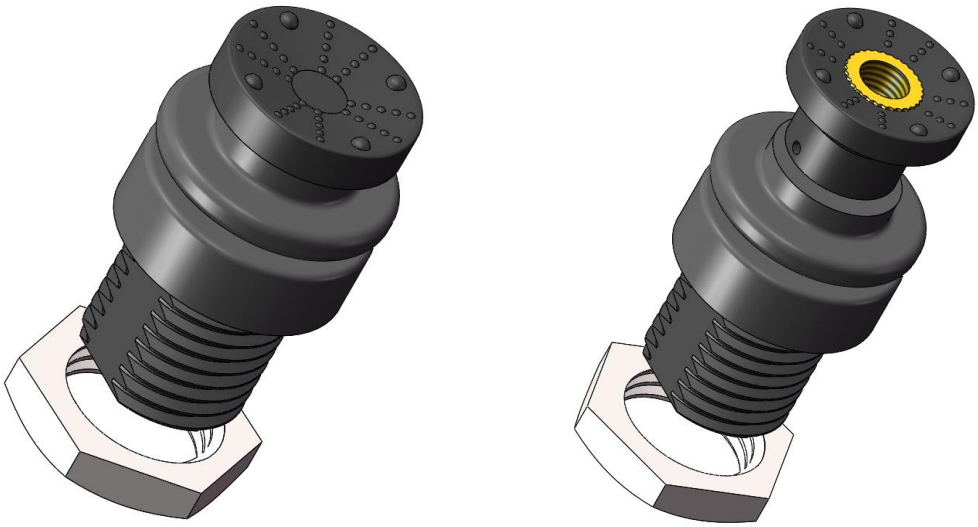
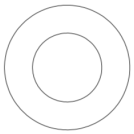
M12 Series

Dual-axis Hall-effect thumb joystick





M12-RR
Spring-return

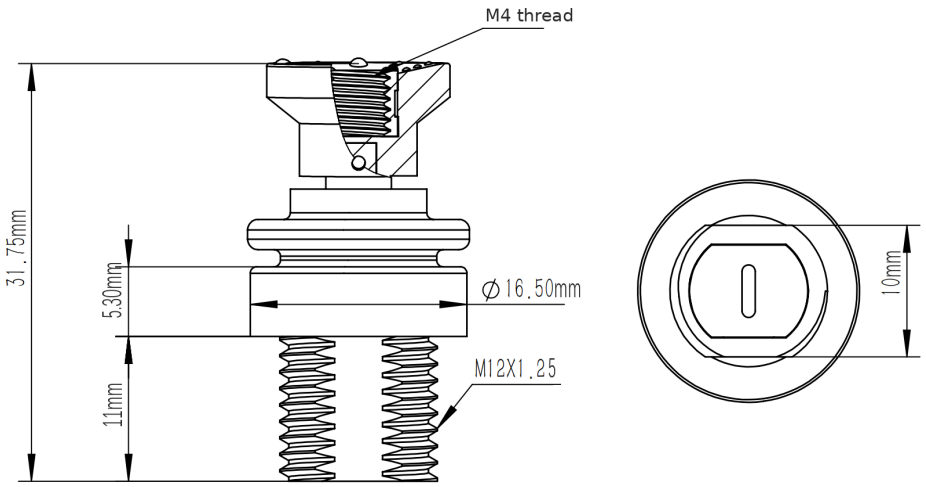
Key features

- Dual-channel output
- 3D Hall-effect sensing
- IP65–IP68 protection rating (customised on request)
- Output: analogue (0.5–4.5 V) / PWM (optional)
- Mechanical mode: spring-return
- M4 thread for top extension rod (optional)
- M12×1.25 mounting thread

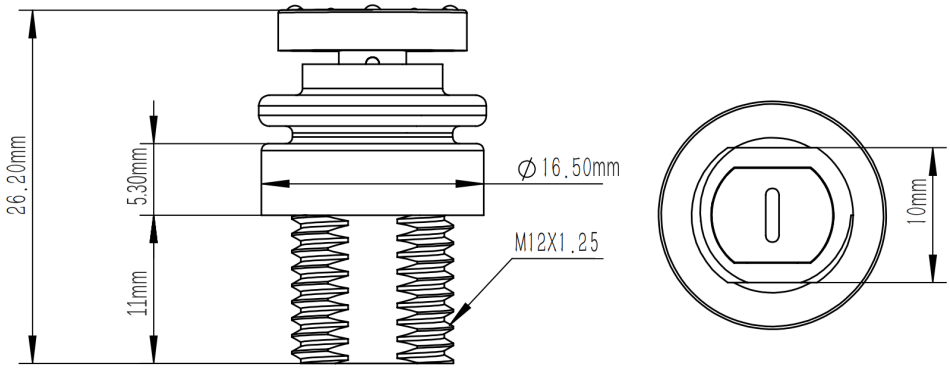
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Chengdu Gudao Technology Co., Ltd.
No. 24, Section 1, South 1st Ring Road, Wuhou District, Chengdu, Sichuan, China
Tel / WeChat: +86 139 8004 0082 · Email: 13980040082@139.com · www.gudao-tech.com

Mounting dimensions

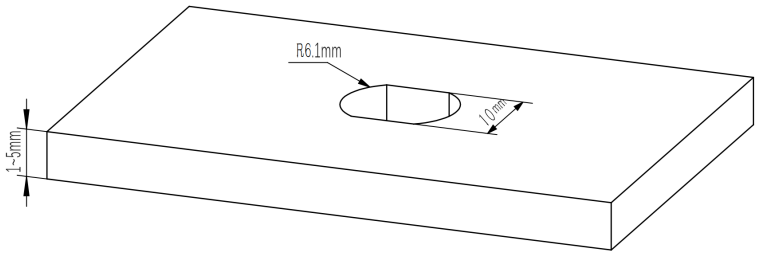


M12-RR-Y (with top thread)



M12-RR-N (without top thread)

Recommended panel cut-out

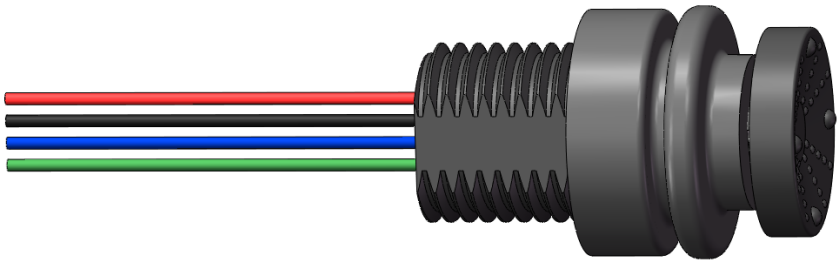


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Electrical parameters

Supply voltage	5 V
Output mode	Dual-channel analogue / dual-channel PWM
Output voltage range	0.5–4.5 V (customisable)
PWM duty cycle range	5%–95% (customisable)
PWM frequency	1000 Hz
Output current	8 mA (analogue output); 20 mA (PWM output)
Sensing method	Hall-effect



Wiring

Wire colour	Function
Red	Supply +5 V
Black	GND
Blue	OUT1
Green	OUT2

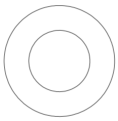
Environmental parameters

Protection rating	IP65–IP68 (customised on request)
Operating temperature	−40 °C to +85 °C
Storage temperature	−40 °C to +85 °C
EMC	Testing to the applicable standard (e.g. EN ISO 14982, ISO 13766-1) can be arranged per project.

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M12-RR · Spring-return



Operating characteristic: always returns to the centre position.

Maximum angle (each direction)	±25°
Operating force	3 N ± 0.5 N
Service life	> 1,000,000 cycles
Centring accuracy	0.3°

M12 series ordering code

M12 – **RR** – **N** – **45**

Series	Operating type	Top thread	Output type
M12	RR = spring-return	N = without top thread Y = with top thread	50 = 0–5 V 45 = 0.5–4.5 V 40 = 1–4 V PWM = PWM output

Example: M12-RR-N-45 = M12 series, spring-return, without top thread, 0.5–4.5 V analogue output.

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