

7000 - SERIES Inductive Joysticks



- ◆ A robust industrial quality mechanism
- ◆ One, two, or three axis
- ◆ Wide variety of knobs
- ◆ Available ex-stock*
- ◆ High EMC immunity
- ◆ Optional 'at centre' and 'internal fault' detection
- ◆ 18 month warranty
- ◆ IP65 above panel
- ◆ Contactless sensing

“The 7000 Series truly is the next generation of inductive joysticks...”

The stainless steel and brass mechanism of the **7000 - SERIES** inductive joystick provides for the finest and most consistent performance yet, over the widest range of temperatures.

The precision ground and polished steel operating shaft pivots on stainless steel pins. The joystick is self-centering with brass bearing surfaces and has moving parts rigidly secured in the housing by the **OCS** locking cam** system.

**(WW patent applied for.)

High precision air-wound coils are mounted directly onto the circuitry delivering enviable accuracy whilst minimising the the installed depth of joystick.

Designed for maximum operational safety, the **7000 - SERIES** is configured with Dual decode as standard allowing for 'At centre' and 'Internal fault' detection without the need for additional external circuitry. **7000 - SERIES** joysticks also offers enviable EMC (electromagnetic compatibility) performance as standard.

Specification :-

Supply Voltage	4.7V to 15V	Shaft	5mm (nom) stainless steel
Output Voltage	See standard options	Shaft travel	+/- 18 Degrees
Output impedance	1.8K +/-1%	Operating range	-25C to +55C
Signal ripple	<1% of output	Environmental	IP65 above panel
Supply Current	Typically 10mA	Housing	Glass reinforced ABS

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Inductive Joysticks

7000 - SERIES overview.

Contactless joysticks became a production reality in 1980, transforming joystick reliability and life compared to potentiometer joysticks. The **7000 - SERIES** incorporates refinements that, not only further enhance the reliability and service life of this design, but also simplify the manufacture of the joystick.

Circuitry

The **7000 - SERIES** joystick operates by passing an oscillating current through a drive coil, directly mounted at the lower end of the operating lever, and immediately above four sensing coils. When the shaft, and hence the coil, moves away from centre the signals detected in each opposing pair of coils increase nominally in proportion to deflection; with phase depending on direction of deflection. Synchronous electronic switches followed by integrating amplifiers provide DC signals directly equivalent to those of potentiometer joysticks, but with fixed output impedance and free of wiper noise and track wear.

Dual Decode

Designed for use in the most safety-critical applications, the **7000 - SERIES** incorporates comprehensive internal monitoring circuitry whereby output signals are continually compared with separately generated 'mirror signals'. In the unlikely event of an internal fault, the Dual Decode system will generate a separate fault signal, enabling the controller to fail-to-safe.

The Dual-Decode system is a complete internal self-monitoring system, providing a far higher standard of protection than 'add on' circuitry as used on some currently available 'Hall Effect' joysticks.

An additional, 'away from centre' signal is also available whenever required.

Although the monitoring of the joystick is fully internal, the inverse 'mirror signals' can be made available as external outputs where the monitor function is incorporated within the controller circuitry.

Functional options.

The **7000 - SERIES** can be configured in three different modes -

Orthagonal, standard signals

Replicating that of a potentiometer.

Deliberate signal mixing

Signals orientated at 45 degrees.

e.g. - For twin propeller, tracked vehicles, or wheelchairs.

Deliberate signal interaction

Enables reduction in one signal as the other increases. This option is particularly beneficial where it is undesirable to maintain full forward speed while turning and vice versa.

The **7000 - SERIES** is designed to provide maximum versatility to the user.

The wide range of operating knobs and user specifiable output configurations ensures that your joysticks are fully customised to your exact requirements.



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Standard Options.

Specifying your joystick could not be easier, simply choose one option from each of the following ranges.

Configuration	Decoding	Gain	Limiter	Knob	Mounting	Gaiter
Standard* 710001 (S) <input type="checkbox"/>	Single Decode* (A) <input type="checkbox"/>	20% (+/-10%)* (10) <input type="checkbox"/>	Round* 710027 (R) <input type="checkbox"/>	None* (0) <input type="checkbox"/>	None* (0) <input type="checkbox"/>	None* (0) <input type="checkbox"/>
Mixed 710003 (M) <input type="checkbox"/>	Dual Decode - combined fault & centre (Y) <input type="checkbox"/>	40% (+/-20%) (20) <input type="checkbox"/>	Square 710028 (S) <input type="checkbox"/>	Round 'C'* 710039 (C) <input type="checkbox"/>	Bezel-std. 710011 (2) <input type="checkbox"/>	Bulbous 710010 (2) <input type="checkbox"/>
Interacting (Q) <input type="checkbox"/>	Dual Decode- separate fault ¢re (W) <input type="checkbox"/>	66%(+/-33%) (33) <input type="checkbox"/>	Diamond 710028 (D) <input type="checkbox"/>	Conical 'G' 710040 (G) <input type="checkbox"/>	Bezel-shallow 410022 (3) <input type="checkbox"/>	Vinyl Large Rib* 710044 (3) <input type="checkbox"/>
	Dual Decode - fault detect only (X) <input type="checkbox"/>	80%(+/-40%) (40) <input type="checkbox"/>	Cross 710029 (C) <input type="checkbox"/>	Knob 'D' 410031 (D) <input type="checkbox"/>		Vinyl Small Rib 710045 (4) <input type="checkbox"/>
	Dual Decode - Centre detect only (Z) <input type="checkbox"/>	100%(+/-50%) (50) <input type="checkbox"/>	Slotted-single axis - For single axis operation (A) <input type="checkbox"/>	Push button 'N' (N) <input type="checkbox"/>		
	Dual Decode Dual outputs (M) <input type="checkbox"/>		Specified (Z) <input type="checkbox"/>	Third axis 'S' (S) <input type="checkbox"/>		

* Denotes standard basic option.

All units are supplied as standard with a gaiter and are wired with 150mm of cable.
For any non-standard modifications, please specify the details in the notes.

Notes :-

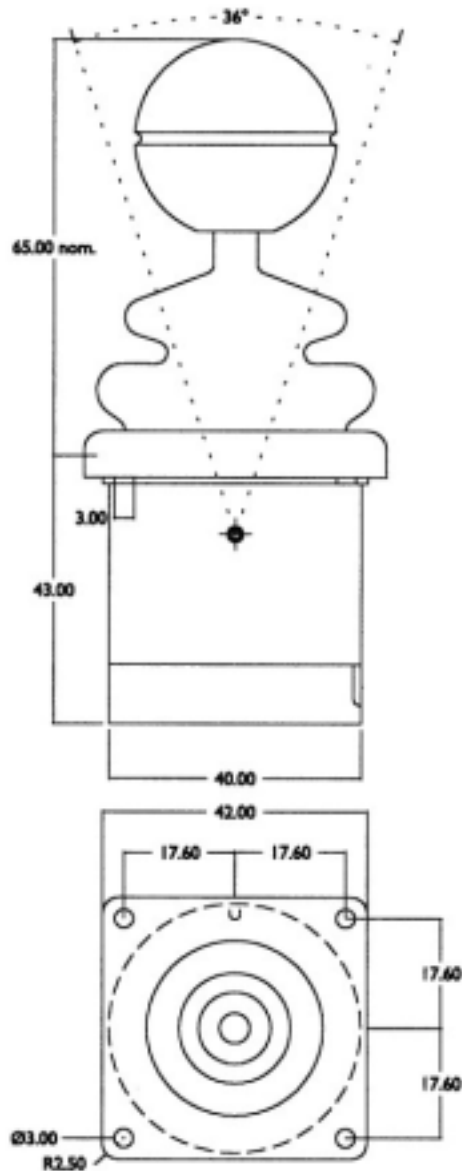
Signal Tolerancing.

Joysticks are calibrated to achieve a +/-0.5% centre tolerance, signal swings are subject to a +/- 10% tolerance.

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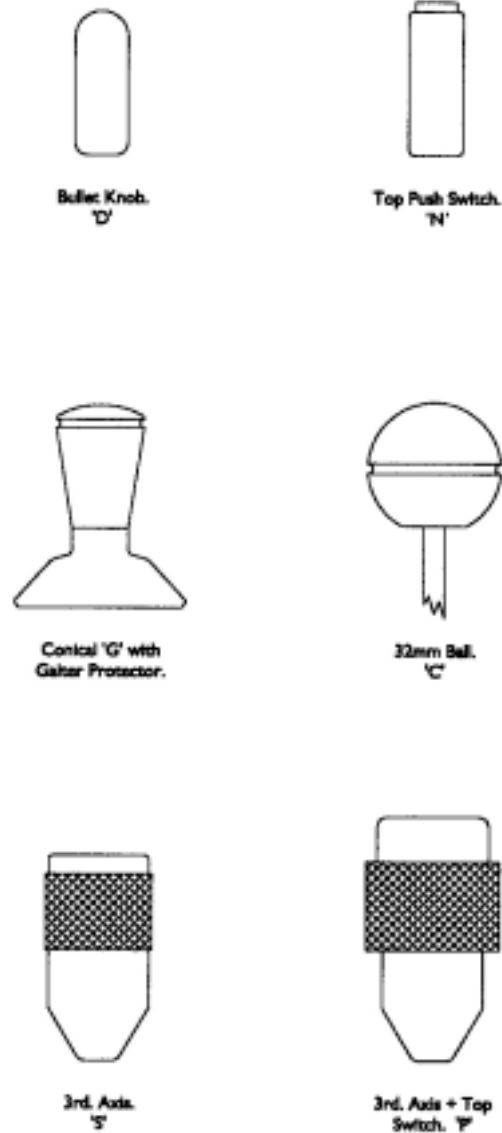
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Useful Dimensions



Panel cut-out and mounting dimensions

Knob Types



For custom knobs please contact
OCS

In addition to those stated **OCS** offers a further range of non-standard features and fittings, for details of these or any other **OCS** products and services please call our technical sales team.

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The Company reserves the right to change specification without notice. ADB0207