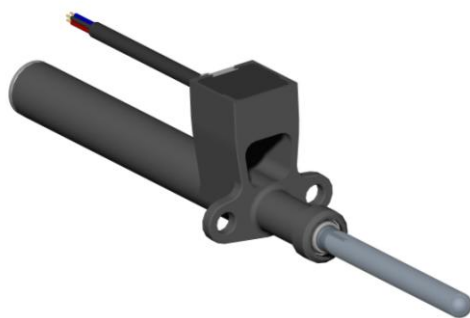


LINEAR POSITION

SPRING LOADED NON-CONTACT HALL EFFECT



The output of a linear hall sensor is a voltage which changes in proportion to the shaft extension. A constant voltage is required across the supply and ground wires of the sensor. The sensor consists of a Hall Effect element, and a shaft which houses a magnet. When the magnet moves within the sensor, the change in magnetic field changes the output voltage. The gain, offset and thermal drift of each channel is digitally compensated to minimise errors. The gain, offset and compensated temperature range can be modified electronically at the factory. The shaft is sealed to keep out dirt and dust but is not captive in the sensor body.

Electrical

- Electrical stroke 50mm
- Supply current 10mA (max per channel)
- Output is proportional to supply voltage. The following values assume a precision 5.00V supply:
- Output voltage @ 0mm $0.5 \pm 0.05V$ (@25°C)
- Output voltage @ 50mm $4.5 \pm 0.05V$ (@25°C)
- Independent non-linearity $\pm 2\%$ FS
- Thermal shift¹ $< \pm 0.05\%$ FS/K
- Insulation resistance $> 100M\Omega$ @ 500Vdc
- Hysteresis due to magnet rotation $\pm 4\%$ FS typ
- The output increases as the shaft enters the housing (this can be reversed – please contact our technical consultancy service if this is of interest).

¹Over compensated temperature range

Cable and Connection Definition

- 24 AWG un-screened cable
- Cable length 1000mm
- Various automotive and military standard connectors are available
- Connection

Channel A	
Red wire	Supply A
White wire	Ground A
Green wire	Signal A
Channel B	
Yellow wire	Supply B
Black wire	Ground B
Blue wire	Signal B
Brown wire	
Filler – do not connect	

Application

- Clutch and Gear selector drum position, throttle position

Mechanical

- Body aluminium alloy, hard anodised and dyed black
- Shaft 316 stainless steel
- Mechanical stroke 55mm
- Spring rate 0.32N/mm
- Actuating force at full extension $6.9N \pm 10\%$
- Weight (including cable) included in order details
- Polyester boss for strain relief to the sensor body

Design and manufacture is in-house, so if our existing designs do not suit your application, we can provide cost effective customised parts to suit even the most demanding application. No engineering charges are made for simple modifications such as customer specific connectors, cable protection and cable lengths. Please contact our technical consultancy service who will be pleased to help.

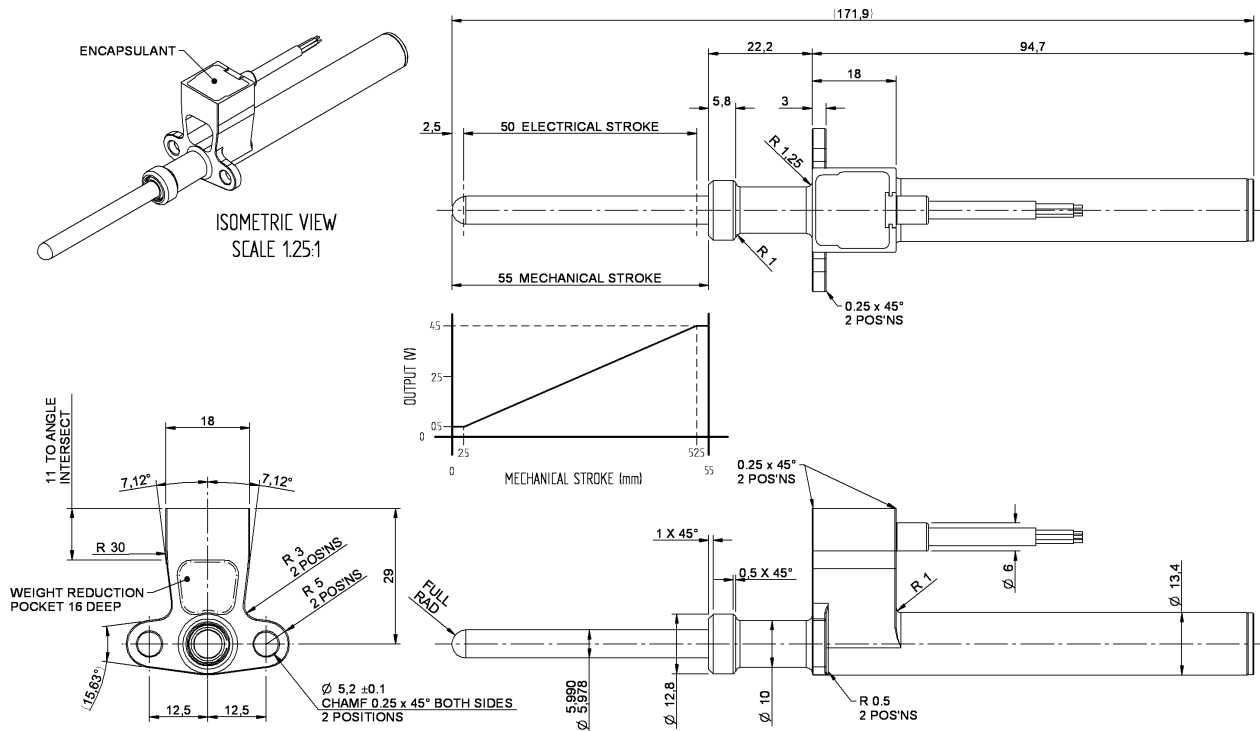
Environmental

- Shaft sealed by wiper seal
- Resistant to standard motorsport fluids
- Maximum humidity 100%
- Operating temperature -40 to +170°C
- Compensated temperature range +20 to +150°C
- Viton jacketed cable
- Vibration 50 to 2500Hz @ 40g 8hrs per axis

The sensor may be permanently damaged if the shaft is exposed to strong magnetic fields. During operation, the sensor should be kept clear of magnetic fields and ferromagnetic materials.

10/02/10

LINEAR POSITION SPRING LOADED NON-CONTACT HALL EFFECT



Stroke Length	Weight	Cable Length	Order Code
50mm	80g	1000mm	O 030 320 009 076