

Micro Rotary Hall Effect Sensor

O 030 370 021 XXX

The output of the Micro Rotary Hall-effect sensor is a voltage which changes in direct proportion to the rotation angle. The sensor is non-contact, using Hall elements to determine the angle of a magnet. The magnet is either mounted in a shaft integral to the sensor or can be mounted externally to the sensor. An integral shield is available to reduce interference from nearby ferrous objects and stray magnet fields*. Supply voltage is either 5.0 V ratiometric or 9 V - 13 V. Angular ranges up to 360° and output ranges between 0.1 V and 4.9 V are available.

This sensor is available in a single or dual channel version.

EXAMPLE APPLICATIONS

- Throttle Position

ELECTRICAL

- Supply voltage:
 - 5 $\pm$ 0.5 V_{DC} ratiometric or
 - 9 – 13 V_{DC}
- Over voltage protection
- Reverse polarity protection:
 - 10 V for 5 V supply or
 - 20 V for 9 – 13 V supply
- Supply current: 16 mA max. per channel
- Output current: 8 mA max.
- Output load: >10 k Ω recommended
- Start-up time: 15 ms

MEASUREMENT SPECIFICATIONS

- Maximum angular range: 360 °
- Output voltage:
 - 0.1 V to 4.9 V (maximum)
 - 0.2 V to 4.8 V (typical)
- Independent non-linearity: 1 % FSO max.
- Thermal drift:
 - 0.3 % FSO max. (20 to 150 °C) for 5 V supply
 - 0.5 % FSO max. (20 to 150 °C) for 9 – 13 V supply
- Half voltage position tolerance: $\pm$ 2 ° max.
- Update rate: 313 μ s (3.2 kHz)
- Resolution: <0.1 °
- Rotation direction for a rising or falling output is shown on product specific drawing
- Orientation for half voltage position shown on product specific drawing

Typical RHE sensor, for illustrative purposes only



CABLE AND CONNECTION

- 55 spec 26AWG unscreened cable
- Cable length 1000 mm (typical)[†]
- Various motorsport connectors are available, or can be supplied unterminated

WIRE COLOUR	CONNECTION
Red	Supply A
White	Signal A
Blue	Ground A
Orange ¹	Supply B
Yellow ¹	Signal B
Green ¹	Ground B

¹For 2 channel sensors

MECHANICAL

- Weight: < 20 g (excluding cable)
- Aluminium alloy body, hard anodised and dyed black
- Stainless steel shaft (where fitted)
- Optional internal shield to prevent interference from stray magnetic fields or nearby ferrous objects
- Integrated cable boss for strain relief to the sensor body

ENVIRONMENTAL

- Resistant to standard motorsport fluids
- Maximum humidity: 100 %
- DR25 jacketed cable
- Operating temperature: -40 to +150 °C
- Vibration: 50 to 2500Hz at 40g, 8hrs per axis
- Shock: 50g, ½ sine, 11ms, 10 times per axis

* Stray magnetic fields (>0.1mT) or nearby ferrous objects (<20mm away) may affect the output on sensors without an integral shield

[†] Other cable lengths available, please contact us to discuss requirements

Get in touch

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