

Triple Channel Rotary Position Sensor

Quantum TMR 360° Triple Channel Rotary Position Sensor

The JD-030-01 is a programmable, non-contact Triple Channel Rotary Position Sensor with a singular split cable leveraging the latest advancements in Tunnel MagnetoResistance sensing.

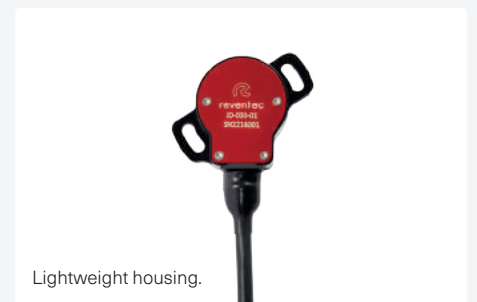
Featuring Quantum TMR technology and a 360 degree sensing range, the device offers precise measurement by detecting the position of the supplied magnet target relative to the sensor. Built to last, the sensor is a robust, reliable measurement instrument with integrated CPU processing for a ratiometric analogue VDC output.*

The configurable triple channel device boasts advanced accuracies of $\pm 0.5\%$ of reading making the sensor ideal for pedal applications where independent multi-channel functionality is required, either through regulation or desirability. With an IP rating of IP67, the sensor is suitable for extreme conditions that require a high operating temperature range of -40°C to $+150^{\circ}\text{C}$. This lightweight, vibration-tolerant device is an ideal choice for Motorsport, UAV, Industrial and Off-Highway Vehicles.

*CAN output available by request.



Sealed electronics rated IP67.



Lightweight housing.

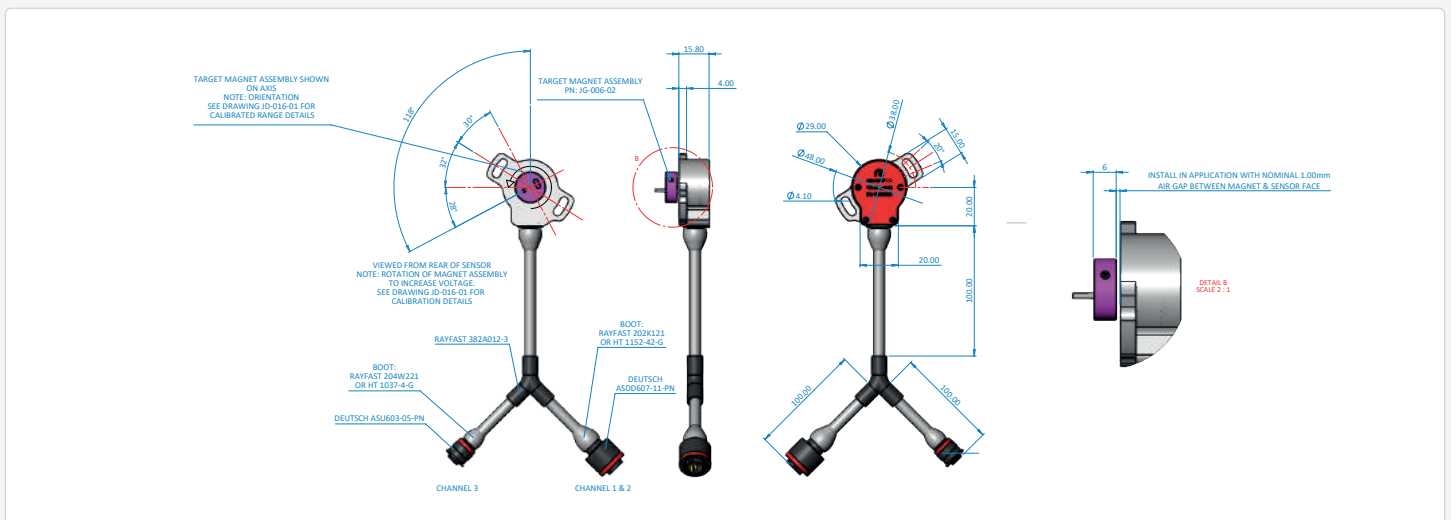
Key Features

- Solid-state, non-contact alternative to potentiometers
- Rapid response rate of 5kHz
- Extremely accurate; $\pm 0.5\%$ of reading
- Configurable triple channel output for reliability and redundancy
- 0 - 359 degrees of measurement sensing range
- 12bit Analogue VDC output resolution
- Accurate position sensing over a wide temperature range -40°C to $+150^{\circ}\text{C}$
- IP67 rated

Benefits

- Avoids wear and degradation as seen in potentiometers.
- Provides real-time measurement of component movement.
- Full customisation for specialist projects available.

Example Sensor Dimensions



Measurement

| | |
|-------------------|----------------------|
| Type | Angular Displacement |
| Typical Accuracy | ±0.5% of reading |
| Measurement Rate | 5kHz |
| Measurement Range | 0-359 degrees |

Electrical

| | |
|---------------------------|-----------------------------|
| Supply Voltage | +5 VDC ± 0.25VDC regulated |
| Typical Operating Current | <25mA per channel at +5 VDC |

Analogue Output

| | |
|------------------------|-------------------------------------|
| Type | Voltage |
| Channel 1 Output Range | 0.50 VDC to 4.50 VDC (Configurable) |
| Channel 2 Output Range | 0.25 VDC to 2.25 VDC (Configurable) |
| Channel 3 Output Range | 0.50 VDC to 4.50 VDC (Configurable) |
| Resolution | 12 bit |
| Stability | ±0.1% over full temperature range |

Environmental

| | |
|-----------------------------|------------------------------------------------------------------------|
| Environmental Protection | IP67 |
| Vibration | Designed to meet: 10Hz to 2000Hz sine sweep @10G (24hrs per each axis) |
| Shock | Designed to meet: 50G half sine wave for 11ms, 10 times each axis |
| Operating Temperature Range | -40°C to +150°C |

Mechanical

| | |
|-----------------------|--------------------|
| Construction Material | Anodised Aluminium |
| Mass | From 45g |

Specifications may be subject to change without prior notice.

Wiring Specification

| | |
|------------------|---------------------------------------------------------------------------------|
| Harness | Deutsch ASDD607-11PN-HE Deutsch ASU603-05PN. Custom available on request. |
| Sleeve Elastomer | RW-200E |
| Boot Elastomer | Viton FEP |
| Wire Type | Type 55, 26 AWG (see drawing) |

Wiring Definition

| Description | PIN Out |
|-----------------------------------|---------------|
| Supply Channel 1 (+) Regulated 5V | 1 - ASD |
| Ground Channel 1 (GND) | 2 - ASD |
| Signal Channel 1 (0.50-4.50V) | 3 - ASD |
| Ground Channel 2 (GND) | 4 - ASD |
| Signal Channel 2 (0.25-2.25V) | 5 - ASD |
| Tx Comms 1 (Configuration only) | 6 - ASD |
| Rx Comms 1 (Configuration only) | 7 - ASD |
| Tx Comms 2 (Configuration only) | 8 - ASD |
| Rx Comms 2 (Configuration only) | 9 - ASD |
| N/C (Spare) | 10 & 11 - ASD |
| Supply Channel 3 (+) Regulated 5V | 1 - ASU |
| Ground Channel 3 (GND) | 2 - ASU |
| Signal Channel 3 (0.50-4.50V) | 3 - ASU |
| Tx Comms 3 (Configuration only) | 4 - ASU |
| Rx Comms 3 (Configuration only) | 5 - ASU |

Configuration Interface

| | |
|------|------------------------------------------------|
| Type | RS-232 via FTDI USB cable. See Accessories. |
| GUI | Available on request |