

# Triple Channel Rotary Position Sensor

## Quantum TMR 360° Triple Channel Rotary Position Sensor

The JD-040-02 is a solid-state, programmable Triple Channel Rotary Position Sensor with 3 cables leveraging the latest advancements in Tunnel Magnetoresistance sensing. With a 360 degree sensing range, the device offers precise measurement by detecting the position of the supplied magnet target relative to the sensor.

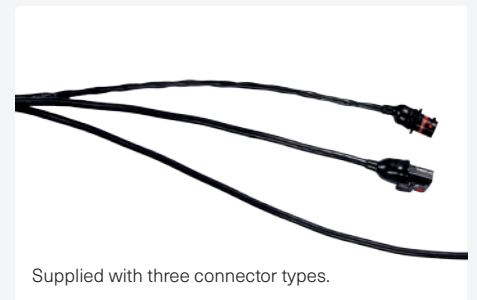
Featuring Quantum TMR technology, the sensor is a robust, non-contact measurement instrument with integrated CPU processing for a ratiometric analogue VDC output.\*

Boasting advanced accuracies of ±0.5% of reading, the sensor is 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 submersible and suitable for extreme conditions with a high operating temperature range of -40°C to +150°C. This lightweight, vibration-tolerant device is an ideal choice for Motorsport, Defence, UAV, Industrial and Off-Highway Vehicles.

\*CAN output available by request.



Sealed electronics rated IP67.



Supplied with three connector types.

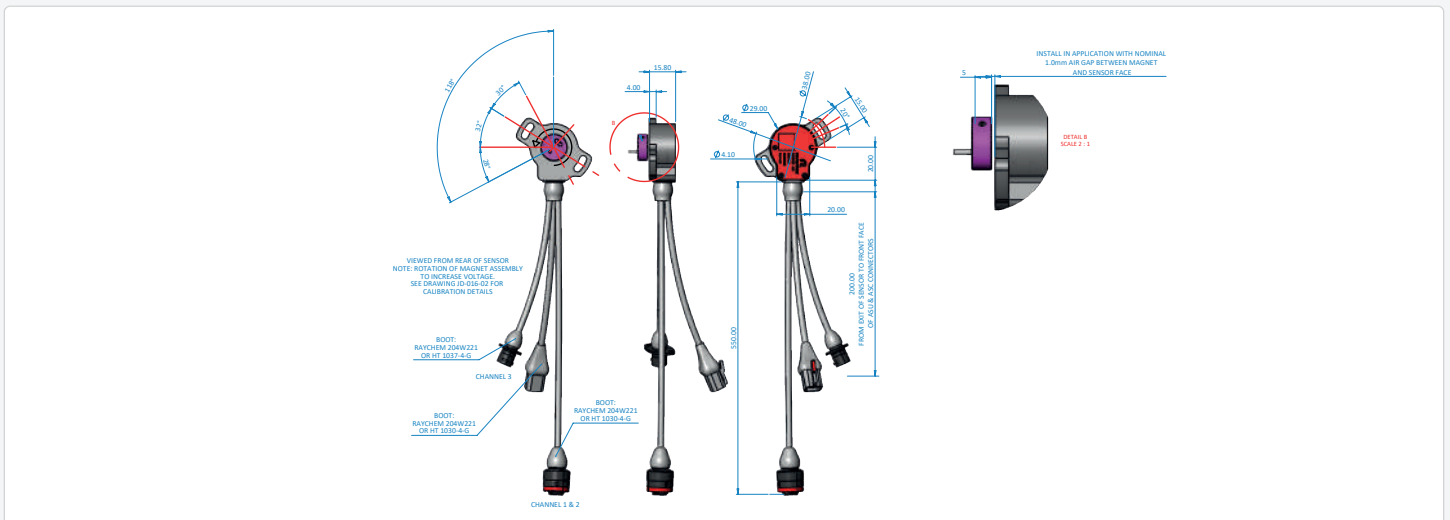
### Key Features

- Solid-state, non-contact alternative to potentiometers
- Rapid response rate of 5kHz
- Extremely accurate; ±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°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

\* common

## Wiring Specification

Harness	Deutsch ASC605-06PN, Deutsch ASU003-03PN, Deutsch AS607-35PN-HE. Custom available on request.
Sleeve Elastomer	RW-200E
Boot Elastomer	Viton FEP
Wire Type	Type 55, 26 AWG (see drawing)

## Wiring Definition

Description	Wire Colour	PIN Out
Supply Channel 1 (+) Regulated 5V	● Red *	1 - AS
Ground Channel 1 (GND)	● Black	2 - AS
Signal Channel 1 (0.50-4.50V)	● Yellow	3 - AS
Supply Channel 2 (+) Regulated 5V	● Green	4 - AS
Ground Channel 2 (GND)	○ White	5 - AS
Signal Channel 2 (0.25-2.25V)	● Violet	6 - AS
Supply Channel 3 (+)	● Red *	1 - ASU
Ground Channel 3 (GND)	● Grey	2 - ASU
Signal Channel 3 (0.50-4.50V)	● Orange	3 - ASU
Tx Comms 1 (Configuration only)	○ White	1 - ASC
Rx Comms 1 (Configuration only)	● Green	2 - ASC
Tx Comms 2 (Configuration only)	● Violet	3 - ASC
Rx Comms 2 (Configuration only)	● Blue	4 - ASC
Tx Comms 3 (Configuration only)	● Black	5 - ASC
Rx Comms 3 (Configuration only)	● Red	6 - ASC

## Configuration Interface

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

Specifications may be subject to change without prior notice.