

100° Arc Position Sensor

100° Arc QuantumTMR Non-Contacting Rotary Position Sensor

Introducing the KU-010-02, a non-contact, durable 100° Arc Position Sensor leveraging the latest advancements in Tunnel MagnetoResistance sensor technology.

Featuring QuantumTMR technology, the position sensor is a solid-state, lightweight measurement device with integrated CPU processing for a ratiometric analogue VDC output. 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 +125°C.

Boasting advanced accuracies of $\pm 0.5\%$ of reading, the sensor is capable of achieving measurement through up to 40mm air gaps from sensor to target and through up to 20mm of non-ferrous material such as aluminium or stainless steel. Delivered with a flying lead, the Arc Position Sensor offers easy installation and mounting. With a 100 degree sensing range, the Arc Rotary Position Sensor offers a precise measurement by detecting the position of the supplied magnet target relative to the sensor.



Key Features

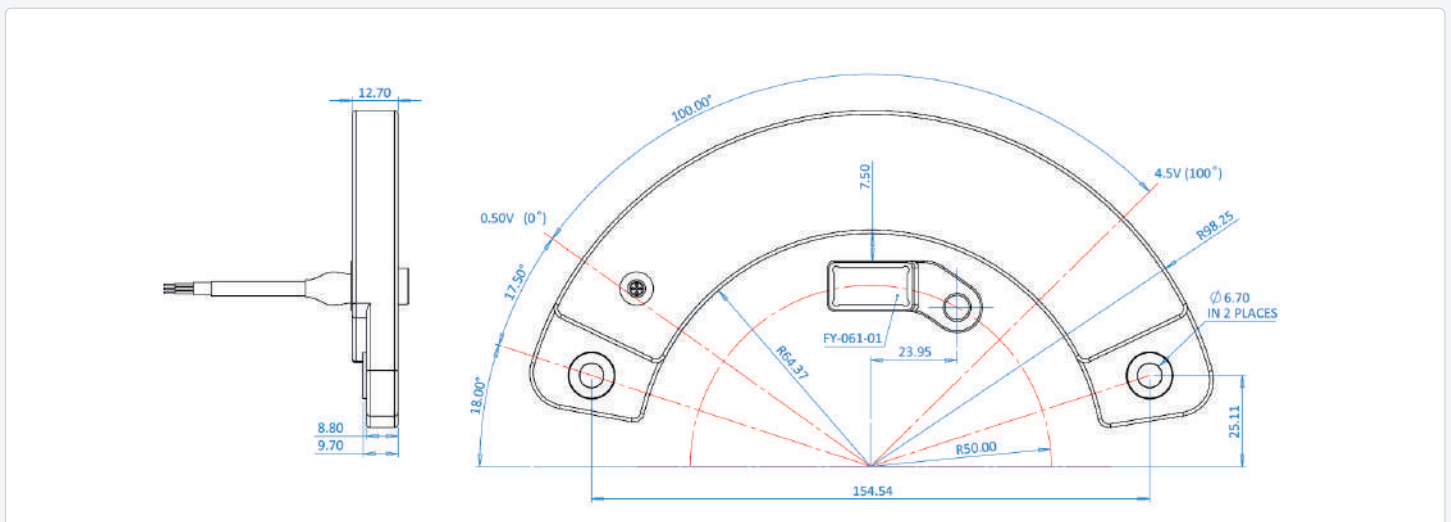
- Solid-state, non-contact alternative to potentiometers
- Rapid response rate of 5kHz
- Extremely accurate; $\pm 0.5\%$ of reading
- +/- 50 degrees of shallow arc measurement range
- 12bit Analogue output resolution
- Programmable to different arc sensing ranges
- Up to 40mm air gap to target*
- Accurate position sensing over a wide temperature range -40°C to +125°C

Benefits

- Avoids wear and degradation as seen in potentiometers.
- Capable of measuring through up to 40mm of non-ferrous material.
- Provides real-time measurement of components movement.
- Full customisation for specialist projects available.

*Subject to target

Example Sensor Dimensions



Measurement

Type	Angular Displacement
Typical Accuracy	±0.5% of reading
Measurement Rate	5kHz
Measurement Range	±50 degrees

Electrical

Supply Voltage	+6 VDC to +31 VDC
Typical Operating Current	<25mA at +12 VDC
Overvoltage Protection	+45 VDC continuous
Reverse Polarity Protection	-45 VDC continuous

Analogue Output

Type	Voltage
Typical Output Range	0-5 VDC 0-10 VDC only on 12V supply options
Typical Output Calibration	+0.50 VDC to +4.50 VDC (Configurable)
Resolution	12 bit
Stability	±0.1% over full temperature range

Dimensions

Sensor	Custom designs available. Contact us for standard drawings or step files.
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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 +125°C

Mechanical

Construction Material	PA66 Anodised Aluminium on request
Mass	From 95g

Wiring Specification

Harness	Flying lead Custom on request
Sleeve Elastomer	Typically DR-25 or RW-200E
Boot Elastomer	Viton FEP
Wire Type	1m, 5 core, Type 55, 24 AWG

Wiring Definition

Description	Wire Colour
Supply (+)	● Red
Ground (GND)	● Black
Signal (0.50-4.50V)	● Yellow
Tx Comms (Configuration only)	○ White
Rx Comms (Configuration only)	● Green

Accessories

USB Calibration Cable	P/N: 07-003-01
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Configuration Interface

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

Specifications may be subject to change without prior notice.