Hydroplane Arc Position Sensor

Dual Channel Quantum TMR Hydroplane Arc Position Sensor

The Dual Channel Quantum TMR Hydroplane Arc Sensor is a rugged, non-contact Tunnelling MagnetoResistive instrument engineered to measure the hydroplane arc movement across a 22° arc sensing range.

Designed for a specific defence marine application that require product longevity and accuracy, the Hydroplane Arc Sensor has advanced accuracies of ±0.5% of reading and a rapid update rate of 5kHz. Fitted with a SubConn MCBH-12-MP 12 pin connector for simple plug and play installation, the IP69 rated arc sensor has a wide operating temperature range of -40°C to +125°C with both the sensor electronics and magnet target encased in hard anodised aluminium for a 5 bar pressure rating.

The HU-050-02 offers dual channel enabling engineers to utilise a dual channel CAN output that delivers a ratiometric output across the 22° arc measurement sensing range.

EMC APPROVALS

MIL STD 461F Army Ground Limits: CS114, CS115, CS116, RE102, RS103, RS101, CE102, CS101 RTCA DO160F: Section 25 ESD Cat. A



22° arc measurement range.



IP69 rated with integrated subsea connector.

Key Features

- · Solid-state, non-contact alternative to potentiometers
- Advanced accuracies of ±0.5% of reading
- Designed for durability in corrosive marine and subsea environments
- Accurate position sensing over a wide temperature range -40°C to +125°C
- Configurable dual CAN output for redundancy
- Rapid 5kHz update rate
- Integrated subsea connector
- IP69 rated for harsh environments
- · Certified to MIL-STD-461F and RCTA DO160F EMC standards

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 available.

*Subject to target

Example Sensor Dimensions





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Measurement

Туре	Angular Displacement
Typical Accuracy	±0.5% of reading
Measurement Rate	5kHz
Measurement Range	±11 degrees

Electrical

Supply Voltage	+6 VDC to +31 VDC
Typical Operating Current	nom 80mA at +24 VDC
Overvoltage Protection	+45 VDC continuous
Reverse Polarity Protection	-45 VDC continuous

CAN Output

Design Standard	ISO 11898-2
Message Format	2.0A (11-bit identifier)
Baud Rate	1 Mbit/sec
CAN termination resistor	No
Configuration Interface	3.3V serial interface

Dimensions

Sensor

Custom designs available. Contact us for standard drawings or step files.

Environmental

Environmental Protection	IP69
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	AL 6082T6 (Hard Anodised)
Mass	From 284g
Mass	From 284g

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	PIN Out
Supply Channel 1 (+)	1
Ground Channel 1 (GND)	2
CAN HI Channel 1	3
CAN LO Channel 1	4
Tx Comms 1 (Configuration only)	5
Rx Comms 1 (Configuration only)	6
Supply Channel 2 (+)	7
Ground Channel 2 (GND)	8
CAN HI Channel 2	9
CAN LO Channel 2	10
Tx Comms 2 (Configuration only)	11
Rx Comms 2 (Configuration only)	12

Configuration Interface

Salisbury, Wiltshire, SP5 3HU, UK

Туре	RS-232 via FTDI USB cable. See Accessories.
GUI	Available on request
Specifications may be subject to change without prior notice.	

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