Submersible Speed Sensor

Submersible Hall Effect Gear Tooth Speed Sensor

The IF-010-01 is a submersible speed sensor engineered to deliver highly reliable speed sensing in extreme subsea environments. The speed sensor is a robust, non-contact, hall effect device that measures the rotational speed of gear teeth using a nominal 2mm air gap.

Constructed from stainless steel, the entire sensor is designed to withstand pressures of 5bar allowing it to operate reliably at a submersible depth of 50 metres. An integrated 3K pull-up resistor is embedded within a custom backshell on a Subsea connector, recommended for operating from a 24V supply. The speed sensor offers easy installation with a M12 x 1 thread with adjustable locknut.

Boasting advanced accuracies of ±0.5% of reading across the entire operating temperature range of -40°C to +105°C, the instrument is insensitive to orientation and operates with a maximum detection speed of 15kHz. For ultimate dependability, the IF-010-01 is solid-state with high vibration and shock tolerance.

The IF-010-01 is a speed sensor within our range of vehicle sensors for extreme environments and can be adapted to fit a variety of connector types depending on requirement and vehicle platform. This sensor is ideal for shallow subsea applications. Typical applications for the speed sensor include engine and wheel speed as this device is effective at detecting gears, flywheels, and other toothed ferrous targets.

Stainless steel probe for extreme conditions

Electronics fitted within connector backshell

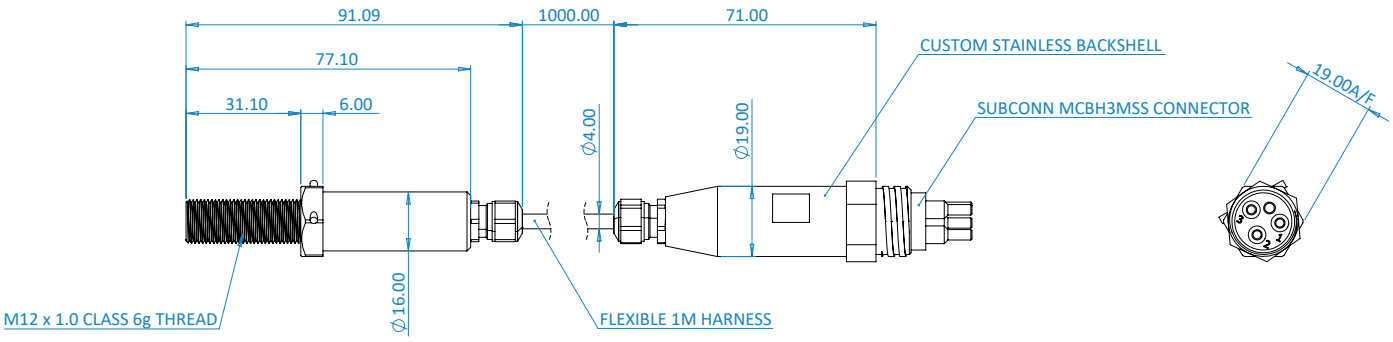
Key Features

- Solid-state, continuous speed sensing
- Constructed from stainless steel 316L for high pressure environments
- From near zero speed up to 15kkHz sensing capability
- Ideal for ferrous edge detection/near zero speed sensing
- Provides a sinking current output
- 10 bit dynamic threshold direction offers an automatically adjusting magnetic range and a self-compensating to target geometry

Benefits

- No moving parts for increased reliability of sensor measurements.
- Accurate factory calibration for easy plug and play installation.

Example Sensor Dimensions



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Speed Measurement

Accuracy	±0.5% of reading
Output Type	TTL or sinked output
Maximum Speed Detection	15 kHz
Output Rise Time	5uS
Output Fall Time	5uS

Electrical

Supply Voltage	24 VDC
Maximum Input Voltage	30 VDC
Maximum Reverse Voltage	24 VDC
Supply Current	3 mA typ., 6 mA max
Output Sink Current	20 mA max
Recommended Pull-Up Resistor	See drawing IF-010-01

Environmental

Environmental Protection	5 bar maximum
Vibration	Sinusoidal, 15g max from 40Hz to 2kHz
Shock	Designed to meet: 50G half sine wave for 11ms,10 times each axis
Electronics Operating Temperature	-40ºC to +105ºC
Storage Temperature	-40ºC to +125ºC

Mechanical

Construction Material	Stainless Steel 316L / 303
Mass	192g
Thread	M12-1.0
Maximum Installation Torque Limit	5.65 Nm (50 in lb) on threads
Operating Air Gap/ Sensing Distance*	Recommended 2.0mm (max of 4.0mm)
Sensor Orientation	Not sensitive

Wiring Specification

Connector Options	Subconn MCBH3M Flying lead Custom (Contact Us)
Jacket Elastomer	PFA
Wire Type	4 core, 7/0.2mm, silver plated copper, PFA twisted cores, silver plated copper braid screen, PFA jacket

*With recommended target type; please see drawing.

Specifications may be subject to change without prior notice.

Document: IF-010-01DS
Registered in England and Wales, #08561556

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