



# 360° Blade Rotary Sensor



## Key Features

- Non-Contact
- No Moving Sensor Parts
- Full 360° Measurement (configurable range)
- Various Wiring Options
- Analogue/Digital Output
- Unlimited Mechanical Life
- Submersible



The 360° Blade Rotary Sensor accurately senses the rotary position of a metallic 'activator' mounted away from the face of the sensor. The unique non-contact two-part design utilises Gill's patented inductive technology to provide a reliable, accurate output eliminating the need for seals or bearings and ensuring long term reliability.

Small, light and robust, the sensor is fully electronic with on-board processing providing considerable configuration flexibility. Output signals are provided in three different formats and diagnostic information is given to assist in system fail-safe functionality.

At just 38mm diameter installation is simple, and three available wiring options allow for a multitude of mounting configurations. Sealed to IP67, this sensor is ideal for a variety of applications where grime, moisture, temperature and vibration can have an adverse affect on other types of sensor.



## Specification

### Electrical

Supply Voltage	+4.8VDC to +32VDC
Supply Current	<25mA without comms
Reverse Polarity Protection	Up to -32VDC
Resolution	10 bit over configured range
Sample Rate	1KHz
Rise Time	2ms*
Pulse Energy Absorption	1.0J

### Analogue Output

Measuring Range	0-360° (Configurable)
Voltage Output Range	0-5.5V (Unless limited by V Supply)
Range Accuracy	±0.5° over temperature range
Error Level	0.3V default (configurable)

### PWM Output

Measuring Range	Defined by user
Frequency	1KHz

### Serial Output

Data Type	RS485, 19.2K 8N
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### Switch Output

Type	May be used as V Ref or switch from V Supply to ground
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### Mechanical

Size	16mm x ø38mm
Sensor-Activator Clearance	0.5-2mm
Mounting	3 x M3 bolts
Weight	33g without cable
Activator Materials	See notes overleaf
Materials Compatibility	Water, engine oil, engine coolant, diesel fuel, gasoline, salt spray, degreaser, degreaser tsp, ammonia and dust. All common automotive liquids and materials
Mechanical Drop Test	Withstands 10 drops from 1m height onto concrete
Cable Pull Out Strength	300N
Threaded Insert Pull Out Strength	400N
Mounting Torque Max	0.25Nm

### Environmental

Protection Class	IP67
Operational Temperature	-40°C to +85°C (32VDC Max) -40°C to +125°C (14VDC Max)
Storage Temperature	-40°C to +150°C
Thermal Shock	Withstands 10 cycles of 100°C temperature change within 5 seconds

### Options

Wiring	Side Exit Centre Exit Heavy Duty
Output	2nd Output Channel available

\*The sensor samples the position at 1ms intervals. Each sample is processed then made available via an analogue filter with a rise time of 1.5ms. The total delay to 50% output is approximately 2ms.

# Non-Contact Position Sensor

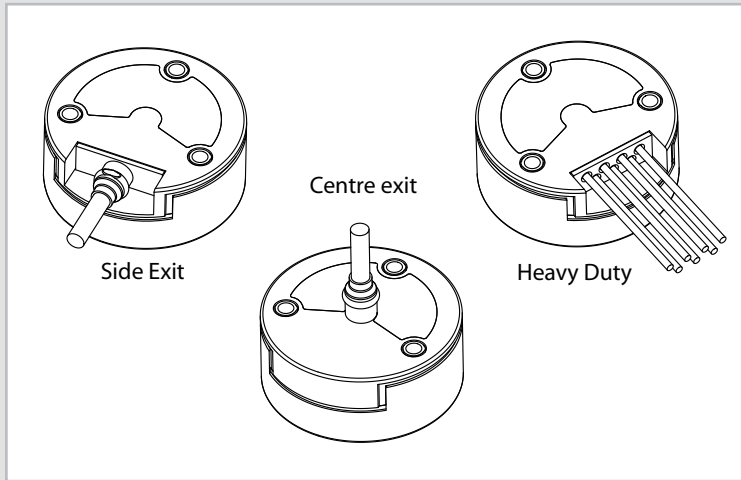
# 360° Blade Rotary Sensor



## Wiring

Red	+4.8VDC to +32VDC Supply
Black	System & Power Ground (GND)
Blue	Switch Output
Green	Serial Comms Input (Rx), RS485 Compatible
White	Serial Comms Output (Tx), RS485 Compatible
Yellow	Analogue Output #1: Voltage or PWM
Orange	Analogue Output #2: Voltage or PWM

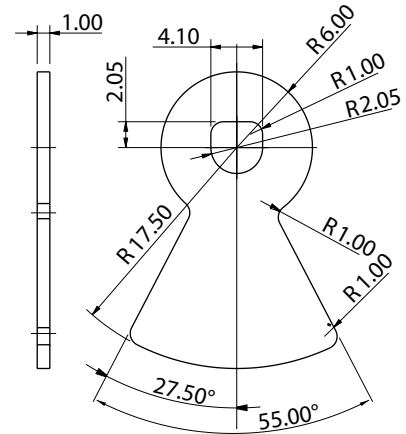
## Versions



## Activator

The sensor requires a metallic activator to be mounted 0.5-2mm away from the sensing face. This can either be mechanically mounted to the end of a rotating shaft or machined into the tip of a rotating part. Below is a drawing showing the dimensions of our recommended standard activator. Please consult Gill for more information on activator design.

Material: EN3B Mild Steel or suitable alternative



## Dimensions

