



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 +14VDC |
| Supply Current | <25mA without comms |
| Reverse Polarity Protection | Up to 14V indefinitely |
| 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 |
|-----------|-----------------|

Switch Output

| | |
|------|--|
| Type | May be used as V Ref or switch from V Supply to ground |
|------|--|

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 +125°C |
| 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.

360° Blade Rotary Sensor



Wiring

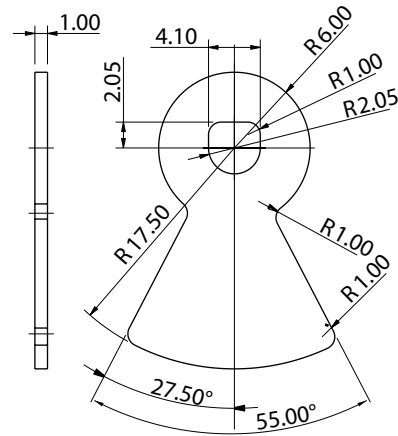
| | |
|--------|--|
| Red | +4.8VDC to +14VDC Supply |
| Black | System & Power Ground (GND) |
| Blue | Switch Output |
| Green | Serial Comms Input (Rx), RS485 Compatible |
| White | Serial Comms Output (Tx), RS485 Compatible |
| Yellow | Analogue Output #1: Voltage or PWM |
| Orange | Analogue Output #2: Voltage or PWM |



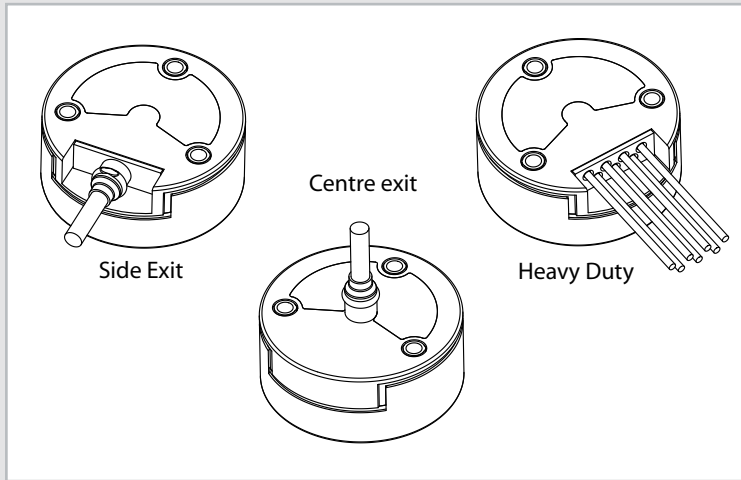
Activator

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



Versions



Dimensions

