

360° Rotary Blade™

Non-Contact position sensor



Key Features

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



SENSOR



SIDE VIEW OF SENSOR/ACTIVATOR CONFIGURATION



UNDERSIDE VIEW OF SENSOR

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.



Electrical

Supply Voltage	+4.8 VDC to +32 VDC
Over Voltage Protection	>33 VDC
Supply Current	<25mA without comms
Reverse Polarity Protection	Up to -32 VDC
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	0-360° (configurable)
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
Sensor-Activator Concentricity	<0.5mm
Mounting	3 x M3 bolts (see overleaf)
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
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)

Options

Wiring	Side exit (26AWG) Centre exit (26AWG) Heavy duty (20AWG)
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.

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Activator Materials

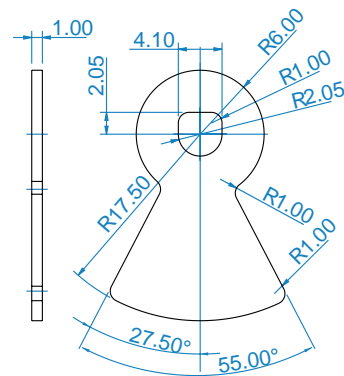
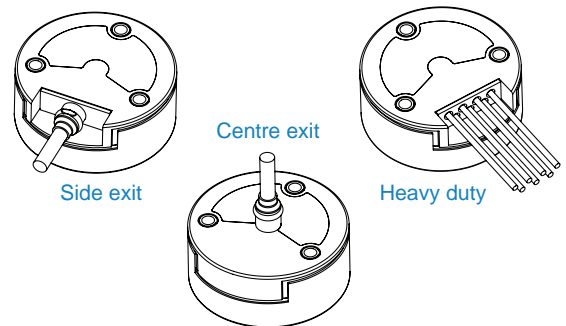
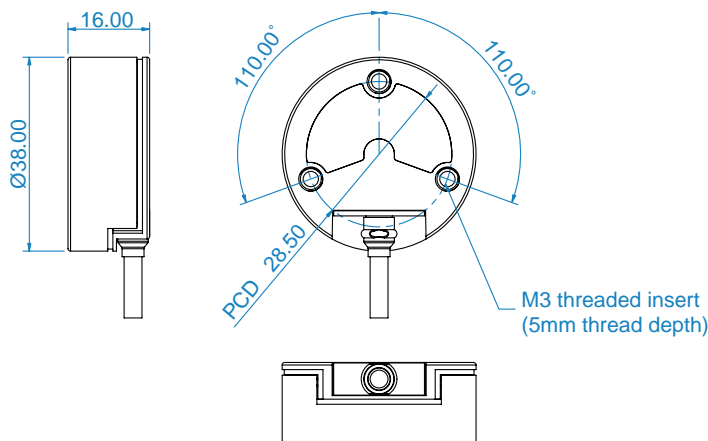
- Tinned steel
- EN3B painted mild steel or similar
- Plastic/Copper Foil
- Others compatible, contact Gill with your requirement.

360° Rotary Cable Options

- 26 AWG Side exit cable version
Part No:1498-00-068
- 26 AWG Centre exit cable version
Part No:1498-00-069
- 20 AWG Heavy duty cable version
Part No:1498-00-070
- Tinned mild steel activator
Part No:1498-30-065

Wiring

	Red	+4.8 VDC to +32 VDC 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. Shown right is a drawing showing the dimensions of the activator for optimum performance. Please consult Gill for more information on activator design.

*All undefined dimensions are non-critical



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