

WearDetect

Oil Debris Sensor

Quickstart Guide

Sensor with display

4212-PK-145
4212-PK-146
4212-PK-147



Sensor without display

4212-PK-148
4212-PK-149
4212-PK-150
4212-PK-151



Thanks

Thank you for purchasing this sensor. The WearDetect Oil Debris Sensor is a high precision device designed to give accurate results and long service. The following guidance will allow initial set-up after which Gill recommend downloading the full user manual and optimising operation by using the WearDetect software at www.gillsc.com/support.

This guide covers all WearDetect oil debris sensors in the range.

Note: This product requires a fitting adaptor (available from Gill or your distributor) to match the installation thread type and size of the equipment.

Note: Please only begin installation if you have the correct adaptor. Use without a Gill approved adaptor may invalidate the warranty.

What's in the box

- 1 x Oil Debris Sensor with generic sensor head
- 7 x Bootlace ferrules (Blue) (Sensors with display only)
- 1 x USB Cable 1.8m
- 1 x Quick Start Guide

What's required (All Models)

- Thread adaptor (available from Gill to fit the sensor to the equipment)
- 2mm hex key and spanner to fit the adaptor (see separate adaptor guidance document)

What's required (Models with Display 4212-PK-145 / 4212-PK-146 / 4212-PK-147)

- Phillips screwdriver (to remove electronics enclosure case lid)
- Small flat blade screwdriver (to tighten cable terminals)
- A 19mm or adjustable spanner (to tighten the enclosure cable grommet)
- A crimp tool (to fix the bootlace ferrules to the wires)
- Multi-strand cable with a diameter between 2 – 6mm to connect for power and data.



CAUTION: The sensor head assembly contains strong magnets. Any sensitive objects or devices (including pacemakers) should be kept away from the sensor head.

Note: The sensor head is a precision assembly and is factory sealed to ensure correct performance. Any damage to this part not reported on receipt of the sensor may invalidate the warranty.

When installing into a stainless steel fitting, Gill recommend using anti-seize compound

Your new sensor has been factory set up to operate straight from the box using factory default parameters suited to a wide variety of applications. This allows the minimum of set up activities for most applications. See factory default settings for more information.

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Getting Started

Models with display:

- Remove the display electronics cover as shown in Fig 1. Using a Phillips screwdriver.
- Thread multi-core wire through the enclosure grommet as shown in Fig 2 and add the bootlace ferrules ready for connection within the display enclosure.
- Connect the wires to the terminal blocks within the sensor according to tables I & II.
- Replace the display electronics cover and gasket as shown in Fig 1 to a tightness of 4Nm +/-10% during re-assembly.

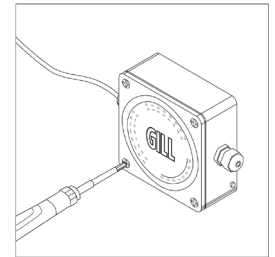
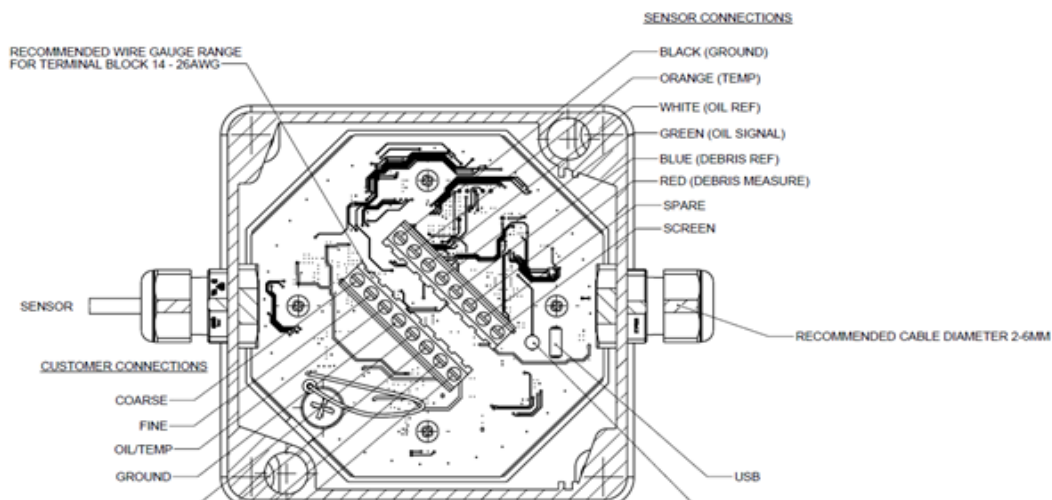


Fig 1

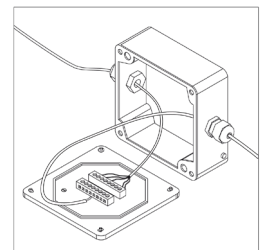


Fig 2

All Models:

- Using the wiring table below, connect the sensor according the output type (analogue voltage or current, digital CAN or RS485 Modbus)

Connections				
	Wire Colour	Analogue	CAN	Modbus
	White	Fine	Can H	Signal ground
	Blue	(Not connected)	Can L	(Not connected)
	Orange	Oil / Temp	(Not Connected)	Data - (B)
	Green	Coarse	(Not Connected)	Data +(A)
	Red	Power (V+)	Power (V+)	Power (V+)
	Black	Power Gnd (V-)	Power Gnd (V-)	Power Gnd (V-)
	Clear	Screen	Screen	Screen

Table I

Electrical				
	Voltage	Current	CAN	Modbus
Supply Voltage	+6 to +32 VDC	+9 to +32 VDC	+5 to +32 VDC	+5 to +32 VDC
Power Consumption	<0.7W	<2.6W	<0.7W	<0.7W
Power consumption (Display model)	<2.9W	<5.6W	<2.8W	-

Table II

Note: Please observe the minimum and maximum operating values for the sensor as shown in the table above.

Note: For voltage devices, the analogue output is limited by the supply voltage provided to power the sensor and a minimum 0.7V power supply headroom above the desired analogue output is recommended for stable sensor output.

Fitting the sensor head

- Fitting the sensor to the equipment requires a thread adaptor available separately from Gill sized to fit the thread size of the equipment and is mandatory for all installations.
- Secure the thread adaptor into the equipment then fit the sensor head using the grub screws provided. Detailed steps to fitting the sensor head are contained in the Quick Start Guide available with the adaptor and should be observed prior to installation.
- Where an NPT fitting is to be used, Gill recommend downloading the WearDetect software from www.gillsc.com/support, restoring the factory defaults in the sensor menu to the "Small sensitivity" settings and resetting the sensor head by pressing the zero/tare prior to use. Details can also be found in WearDetect manual.

Note: Ensure the equipment the sensor head is fitted into is grounded. See the Weardetect User Manual for more details.

Factory default settings

- From the factory the sensor is set to the small sensitivity scale (see below) for debris size for the Fine and Coarse debris channels. The sensor can also be set to sense temperature or water presence, either as an alarm or continuously. From the factory, the sensor will sense water presence as an alarm.
- In addition, there are a number of sensor functions (see below) that can be enabled or disabled through downloading the software from www.gillsc.com but the following highlights the default settings without any software changes.

Note: whilst defaults are included, Gill strongly recommend calibrating the sensor and thresholds to your application

Parameter	Sensitivity Scale		
	Small	Medium	Large
100% FSD Coarse	1 x 3mm Chrome steel ball bearing	1 x 5mm Chrome steel ball bearing	4 x 5mm Chrome steel ball bearing
100% FSD Fine	0.1g iron powder	0.25g iron powder	0.5g iron powder

Parameter	Sensitivity Scale	
	Small	
Water Contamination / Temperature Channel	Water Contamination (alarm)	
Inhibit Outputs During Configuration	Switched Off	
Disable Fine Channel	Switched Off	
Disable Coarse Channel	Switched Off	
Disable Water Contamination / Temperature Channel	Switched Off	

After Sales Support

Should you require after sales assistance with this product, please go to gillsc.com/product-support. Alternatively, call us during UK office hours on 01590 613900 (UK). Please have details of the product and serial number whenever possible.