

# 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



### 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](http://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. 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.

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

*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-sieze compound.*

# WearDetect

## Oil Debris Sensor

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.

### 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, III.
- Replace the display electronics cover and gasket as shown in Fig 1 to a tightness of 4Nm +/- 0.4Nm during re-assembly.

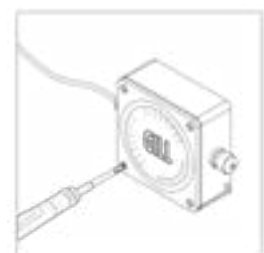
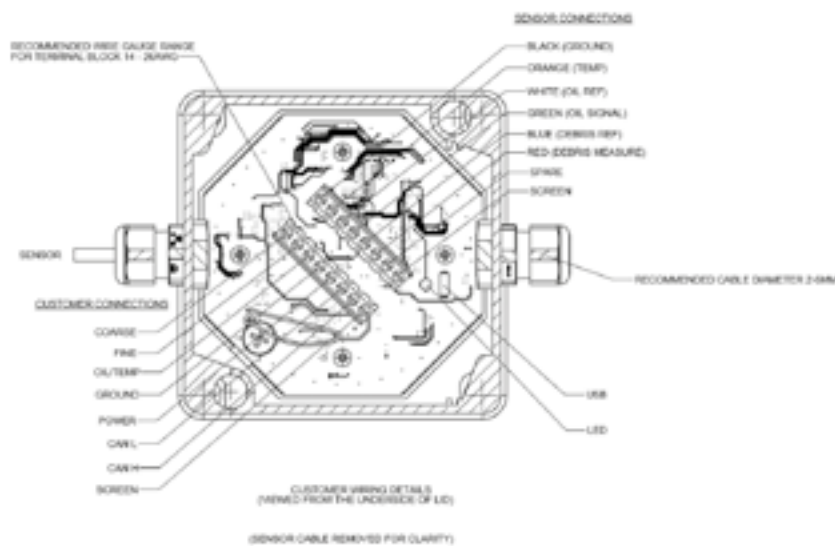


Fig 1

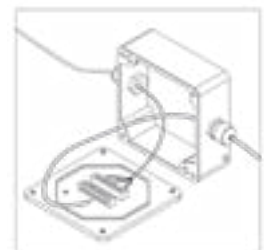


Fig 2

All Models:

- Using tables I & II, connect the sensor according the sensor output type being installed (4-20mA and 0-10V – table I, CAN – 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.*

4-20 mA & 0-10V	
WHITE	FINE
GREEN	COARSE
ORANGE	OIL/TEMP
BLACK	PAIR GROUND
RED	POWER
BLUE	(NOT CONNECTED)
SPARE (CLEAR)	SCREEN

Table I

CAN	
WHITE	CAN H
BLUE	CAN L
ORANGE	(NOT CONNECTED)
GREEN	(NOT CONNECTED)
RED	POWER
BLACK	GROUND
SPARE (CLEAR)	SCREEN

Table II

	Voltage Output	Current Output	CAN
Supply Voltage	+6 to +28 VDC	+9 to +28 VDC	+5 to +28 VDC
Power Supply Rating (min)	3W	4W	3W

Table III

### 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](http://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 section 5.4 of the manual.

### 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](http://www.gillsc.com) but the following highlights the default settings without any software changes.

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 [www.gillsc.com](http://www.gillsc.com) where you can request support by clicking on the "Get Support" button and filling out the form. Alternatively, call us during UK office hours on 01590 613900 (UK). Please have details of the product and serial number whenever possible.