GS condition - 4212

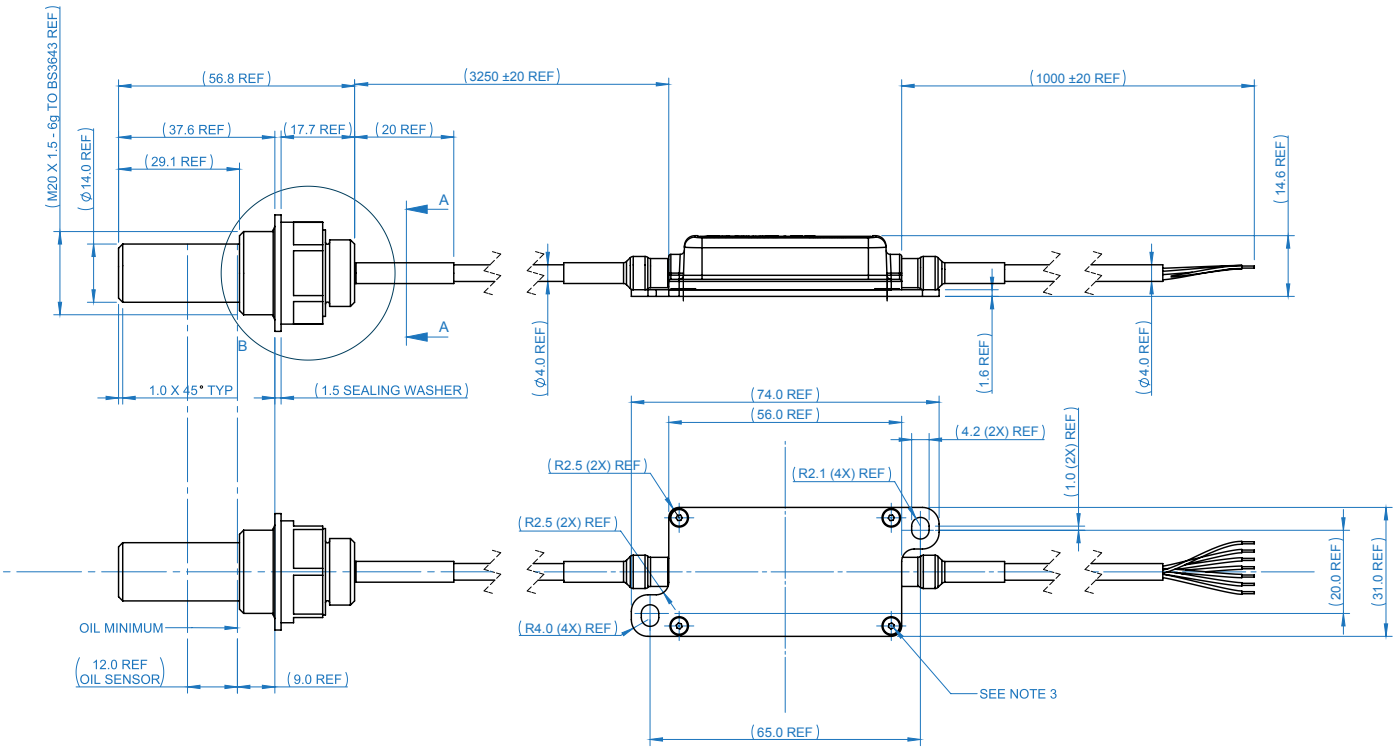
Standard Oil Condition Monitoring Sensor

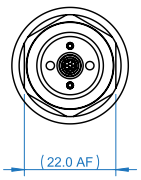
Key Features

- **Reduce unplanned downtime**
- **4 measurement options**
- **4-20mA, 0-10v & CAN outputs**
- **Captures and retains ferrous debris**
- **Continuous real-time monitoring**
- **Easy installation**
- **Low cost of ownership**

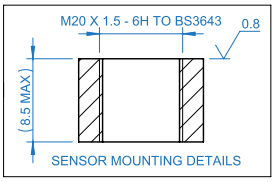
The Oil Condition Monitoring Sensor provides continuous real-time monitoring of ferrous wear and failure particles with a water in oil contamination, oil presence or temperature indication as a third channel. Providing an early indication of potential breakdowns in gearboxes and transmissions is key to allowing planned preventative maintenance.

RoHS Compliant





SECTION A-A
SCALE 1 : 1



SENSOR MOUNTING DETAILS

All dimensions in mm.
Due to ongoing product development specifications are subject to change.

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Standard Oil Condition Monitoring Sensor

ELECTRICAL

	Voltage	4-20mA	CAN
Supply Voltage	+6 to +32 VDC*	+9 to +32 VDC	+5 to +32 VDC
Over Voltage Protection	>32 VDC		
Power Consumption	<0.7 W	<2.6 W	<0.7 W
Reverse Polarity Protection	to -32 V DC		
Analogue Resolution	10 bit		
Report Rate	10 Hz		1 Hz
Sensor Configuration	Accessible via USB		

* Supply voltage to be minimum 0.5 V above output voltage

ANALOGUE OUTPUTS

	Voltage	4-20mA
Channel 1 (fine)	0 – 10 V DC (configurable)	1 mA – 20 mA (configurable)
Channel 2 (Coarse)	0 – 10 V DC (configurable)	1 mA – 20 mA (configurable)
Channel 3 (Oil/Temp)	0 – 10 V DC (configurable)	1 mA – 20 mA (configurable)
Error Indication	0 – 10 V DC (configurable)	1 mA – 20 mA (configurable)
Optional Output Inhibit (during zero/span)	0 – 10 V DC (configurable)	1 mA – 20 mA (configurable)

CONNECTIONS

Sensor Wiring	26 AWG PTFE 3G210 Screened with DR-25 Jacket

CHEMICAL COMPATIBILITY

Fuels	Diesel, Gasolene
Oils	Hydraulic, Gear, Mineral, Vegetable, Synthetic Ester, Semi-synthetic, Polyalphaolefin (PAO), Polyalkyleneglycol (PAG)
Coolants	Ethylene Glycol, water
Fluids	Salt water
Differential Pressure	10 Bar
Cable Pull	3 axis, 50 N
General Handling	1m Within Packaging on all 3 sides

MECHANICAL

Sensor Size	57mm x ø24.5mm
Enclosure	55mm x 30mm x 12mm
Sensor Mounting	2 off M4 Socket Cap Screws (not supplied)
Weight	0.21kg
Materials (sensor)	Aluminium Alloy, FEP, PEI
Materials (Enclosure)	Aluminium Alloy, st/steel, polyester

DIGITAL OUTPUTS

J1939 Data length	8 bytes
PGN	130816
Byte 0	Coarse measurement percentage, no scaling Value 255 – optional output inhibited during calibration
Byte 1	Fine measurement percentage, no scaling Value 255 – optional output inhibited during calibration
Byte 2	8 Status bits Bit 0 - High/Low temperature exceeded Bit 1 - Oil Upper threshold exceeded Bit 2 - Oil Lower threshold exceeded Bit 3 - Fine measurement error Bit 4 - Coarse measurement error Bit 5 - Oil measurement error Bit 6 - Internal temperature sensor error Bit 7 - External temperature sensor error
Byte 3-7	Manufacturer use

ENVIRONMENTAL

Protection class	Sensor	IP66 / IP68 / IP69k to EN60529
	Enclosure	IP66 / IP68 / IP69k to EN60529
Operating temp	Sensor	-40°C to +150°C to EN60945, EN60068-2-1, ISO16750-4
	Enclosure	-40°C to +125°C to EN60945, EN60068-2-1, ISO16750-4
Humidity		95% RH +55°C EN60945, EN60068-2-30 Test Db, ISO16750-4
Thermal Shock		EN60945, EN60068-2-14 Test Nb, ISO16750-4

EMC

Marine	EN60945
Vehicle Components	EN 50498 & Automotive E-marking to UN ECE Reg10
Light Industrial	EN61000-6-3, EN61000-6-1
Heavy Industrial	EN61000-6-4, EN61000-6-2
Measurement Control	EN61326-2-1
Construction Machinery	EN13309
Earth Moving Machinery	ISO 13766
Agricultural & Forest Machinery	ISO 14982

VIBRATION

Marine EN60945	3 axis 2 to 13Hz, +/-1mm 13.2Hz to 100Hz constant acceleration of 0.7g
Industrial EN60068-2-6	3 Axis 10 to 55 Hz 0.75mm or 10g
Motorsport / Automotive	3 Axis Random 5 - 2000 Hz Up to 36g
Shock EN60068-2-27	3 Axis 25g, 6ms, 1000 cycles

Connections

4-20 mA & 0-10V

	WHITE	FINE
	GREEN	COARSE
	ORANGE	OIL/TEMP
	BLACK	PWR GROUND
	RED	POWER
	BLUE	(NOT CONNECTED)
	SPARE (CLEAR)	SCREEN

CAN

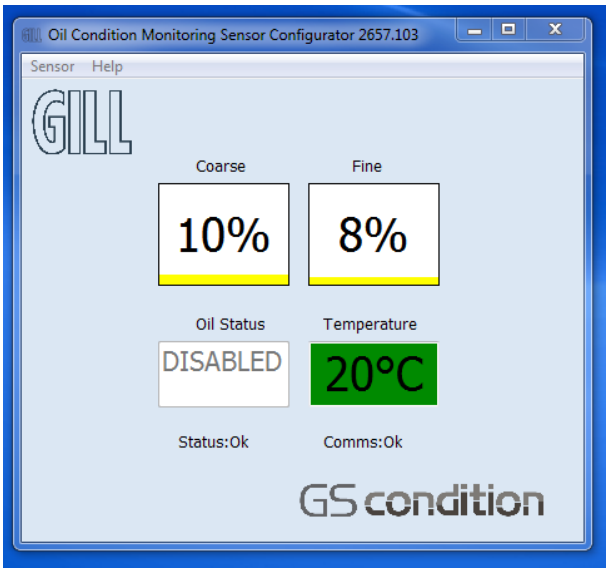
	WHITE	CAN H
	BLUE	CAN L
	ORANGE	(NOT CONNECTED)
	GREEN	(NOT CONNECTED)
	RED	POWER
	BLACK	GROUND
	SPARE (CLEAR)	SCREEN

Part Numbers

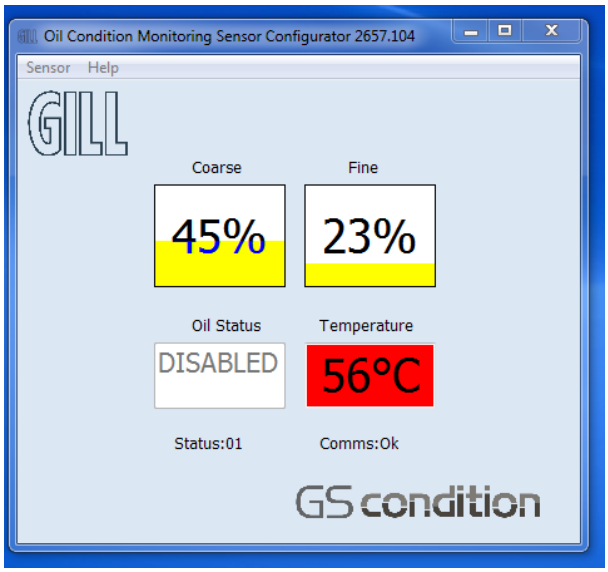
OIL DEBRIS SENSOR ASSY 4-20 mA	4212-PK-048
OIL DEBRIS SENSOR ASSY VOLTAGE	4212-PK-049
OIL DEBRIS SENSOR ASSY CAN	4212-PK-050
USB CONFIGURATION CABLE	1000-CO-116
USB WITH CONFIGURATION SOFTWARE	1000-SW-001

SENSOR CONFIGURATOR SOFTWARE

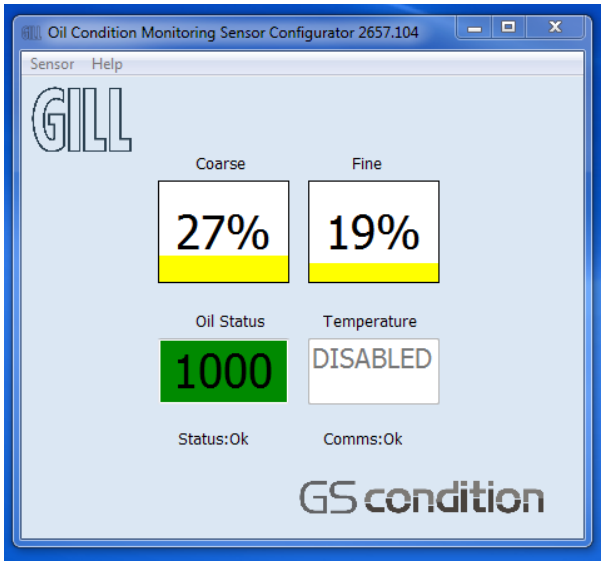
FINE / COARSE / TEMPERATURE



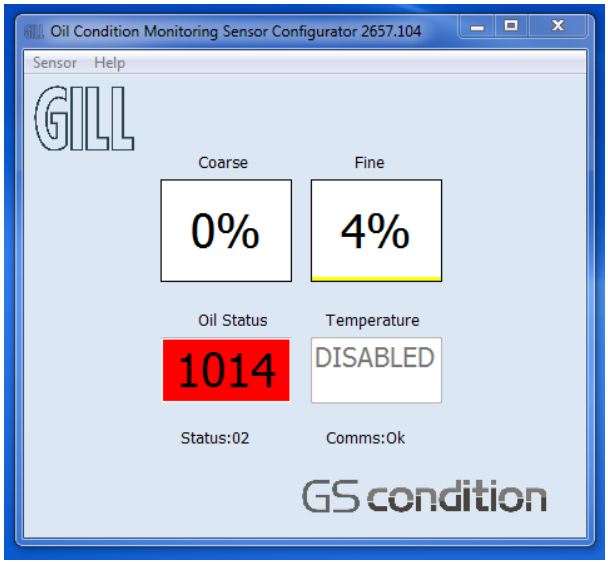
FINE / COARSE / TEMPERATURE



FINE / COARSE / DIELECTRIC



FINE / DIELECTRIC



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