

# CONDITION MONITORING

## Oil Quality Sensor

*Real-Time Oil Quality Monitoring*

The Oil Quality Sensor (OQS) from RMF Systems puts you in control with real-time monitoring of oil quality and water ingress. Expensive oil changes are now based on oil condition, not on historical schedule.



# Overview

The requirement to implement an effective monitoring and maintenance program for lubricants in critical plant machinery has never been greater. With the escalating price of crude oil and the vast improvements that are being seen in the quality of lubricants available today, it is more important than ever for organisations to ensure that they are maximising the service life of the oil used. Monitoring oil condition is clearly fundamental

to understanding the optimal time to change. Change too early and the cost is significant, change too late and the costs can be even greater! The sensor is a live, highly flexible and cost effective condition based monitoring solution, designed to be permanently mounted within any lubrication system on any type of machine.

## Oil Quality Display

The Oil Quality Display is a simple but powerful device which allows you to read the oil quality and temperature of the oil from a sensor without a PC.

This enables you to set up the display box on site and then be able to see the oil quality and temperature readings as required. Use an Android app to connect your Smartphone with the OQD smart via Bluetooth. With it being IP67 rated (when connected) you do not need to worry about the need to keep it in a dry place. Also with it being made from polycarbonate it is a strong durable product which cannot be damaged easily. The new 'Rate of Change' feature allows you to easily monitor the degradation of oil over a programmable period of time.



OQS & OQD

## Benefits

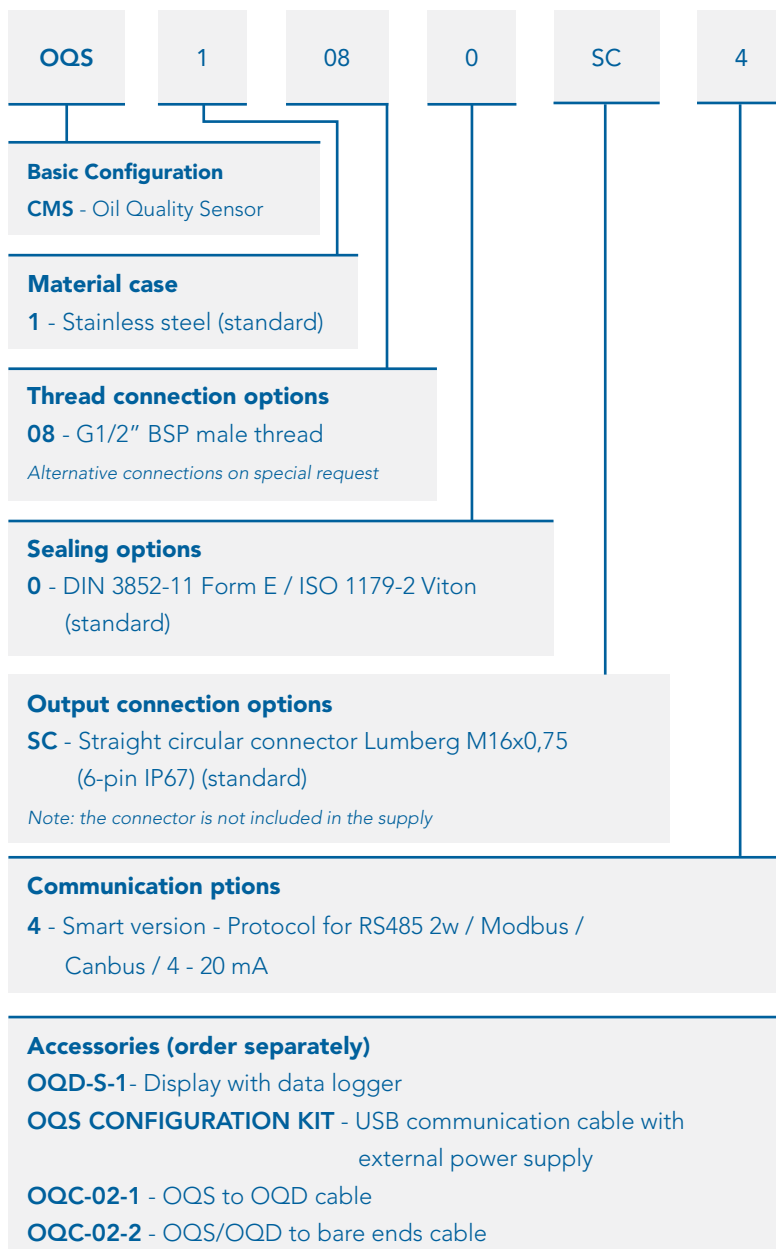
- 1 Extended oil change intervals
- 2 Scheduled downtime intervals for increased productivity
- 3 Reduced waste oil cost
- 4 Improved equipment reliability
- 5 Low cost investment tool
- 6 Reduced carbon foot print



“This truly is a **revolution** in oil condition monitoring. Until today, sensors could only give a very rough indication of oil condition. With our **state of the art** technology you know the exact condition of your oil at all times, so you know when to conduct a service”

Gerben Gerken  
Managing Director RMF Systems

## ORDERING CODE



### Environmental

Strict schedule based maintenance programmes have several downsides. Environmental experts argue that the greatest of these is the preventable waste. The Oil Quality Sensor (OQS) real-time monitoring sensor makes extending the oil service life effortless.

### Market leading

The Oil Quality Sensor (OQS) is 60 times more sensitive to oil degradation than any other dielectric constant measuring sensor.

### Intelligent

The OQS measures the energy loss component of oil permittivity. All contaminants such as metallic particles, soot, water, oxidation, glycol and particularly burnt fuel dilution increase this measured value.

### Universal

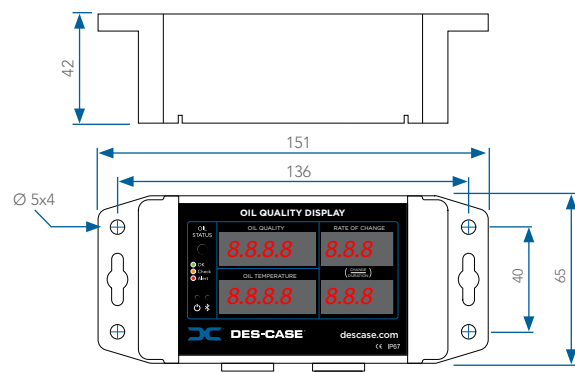
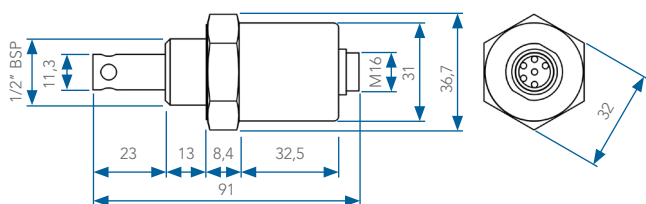
The sensors measures oil degradation in all industrial equipment, including;

- ▶ Diesel and petrol engines
- ▶ Compressors
- ▶ Industrial gear reducers
- ▶ Wind turbines
- ▶ Generator sets
- ▶ Hydraulic systems

# Specifications

OOS		
Material	Stainless Steel AISI 304	
Dimensions	90 mm x 37 mm	
Weight	160 g	
Mechanical connection	1/2" BSP Thread / M32 Hex thread	
Seals	FPM	
Output connection	6 pin Lumberg Male (IEC 61076-2-106)	
Power supply	9 - 30 VDC	
Power Consumption	Average 0,4 W	
Analogue output	2 x 4 - 20 mA (Current syncing, passive input)	
Digital output	1xRS485: 9600 baud half duplex, Modbus protocol supported on RS485 CANbus: CANopen protocol supported on RS485	
Fluid compatibility	Synthetic or mineral oil - including fuel oils such as diesel and bio-diesel	
Fluid temperature	-20° C to 120° C	
Fluid pressure	Up to 20 bar	
Oil Quality Detection Parameters	Frequency	15 per second
	Accuracy	±1%
Standards & Certification	<b>Water &amp; Dust</b> IP67 when connected	
	<b>Shock &amp; Vibration</b> IEC 60068-2-30:2005 (Test Db - Cyclic Humidity) IEC 60068-2-6:20007 (Test Fc - Sine Vibration) IEC 60068-2-27:2008 (Test Ea - Mechanical Shock)	
	<b>EMC</b> EN 61000-6-4:2007 (Generic Emissions Standard for Industrial Environments) EN 61000-6-2:2005 (Generic Immunity Standard for Industrial Environments)	

OOD	
Material	Polycarbonate
Dimensions (LxWxH)	120 mm x 66 mm x 42 mm
Weight	225 g
Mounting	Integrated flanges
Power	9 - 30 VDC
Average power consumption	0.4 W
Analog output	4-20 mA
Digital output	RMF Systems protocol
Bluetooth	4.1 Low Energy
Display	Oil Quality
	Oil Temperature
	Rate of Change
	Status indicator
Temperature (Operating)	-30° C to +65° C
Temperature (Storage)	-30° C to +70° C
Connections	M16 - 6 pins (IEC 61076-2-106) male, female
Compliant with the following standard	<b>CE marked:</b> Dust and Water ingress: IEC 60529:1989/AMD 2:2013 IEC 60068-2-30:2005 (Test Db - Cyclic Humidity) IEC 60068-2-6:20007 (Test Fc - Sine Vibration) IEC 60068-2-27:2008 (Test Ea - Mechanical Shock) <b>EMC:</b> EN 61000-6-4:2007 (Generic Emissions Standard for Industrial Environments) EN 61000-6-2:2007 (Generic Immunity Standard for Industrial Environments) EN 300 328 v1.8.1. (Transferable Electromagnetic Compatibility for Wideband Data Transmission Equipment operating in the 2.4GHz ISM Band and using Wideband Modulation Techniques.)



# OQS Sample Case

## THE WORLDS MOST ADVANCED PORTABLE TEST KIT

OQS Sample Case is the world's most advanced portable oil testing kit that enables accurate condition sample tests of any oil anywhere in seconds. From a small sample, advanced technology provides an instant readout of the oil's precise condition.

The OQS Sample Case has been created to provide accurate oil testing in the field and can be used in any application where the use of oil is important to equipment reliability and efficiency.

### SERVICE CENTRES

Make sure your equipment is operating with oil that is up to the job and reduce unnecessary wear and breakdowns.

### ENGINE ROOMS

Take the guess work out of monitoring the state of oil in large engines such as ships.

### MOBILE SERVICE CREWS

Ensure your equipment, from mobile generators, wind turbines to transformers, has the oil it needs to operate efficiently.



## HOW IT WORKS

### 1. Take Sample

Take a small sample oil using one of the bottles provides.

### 2. Connect Sensor

Connect sensor to a PC running the monitoring program & select oil type.

### 3. Attach Sample

Screw sensor to the bottle & turn upside down so oil covers the sensor node.

### 4. take reading

Oil condition statement provided in a clear easy to understand format.



### OQS Sample Case contains:

- ▶ RMF Systems Oil Quality sensor
- ▶ 6x Sample bottles
- ▶ Adaptor
- ▶ USB Normalisation Cable
- ▶ Sampling software
- ▶ Oil database (included in software)
- ▶ Cleaning solvent\*
- ▶ Instructions



\* Not included if shipped via Air freight