

# TANDELTA

## Oil Quality Sensor

### Giving you a 360 degree view of your oil

The Tan Delta Oil Quality Sensor has been designed and developed to the highest standards. Delivering accurate real time monitoring of the condition of any lubricating oil. Based on a patented method the Tan Delta Oil Quality Sensor gives you a true 360 degree view of how your oil is performing.



#### Key Features

##### Proven Technology

Based on a patented method which has been used for over 10 years.

##### Extremely Sensitive

The Tan Delta Oil Quality Sensor is on average over 60 times more sensitive to oil contamination, giving you 20/20 vision of your oil condition.

##### Robust and Reliable

Designed and built to withstand the harshest of industrial environments. Resistant to impacts, high temperatures, shocks and vibrations

##### Independently Tested

Has undertaken rigorous independent testing to verify the outstanding performance in a wide variety of applications.

##### Fully Certified

The Tan Delta Oil Quality Sensor is fully certified to International standards to work in most commercial and industrial environments.

#### Key Benefits



##### Reliability

Increase the reliability of your critical equipment, giving you the peace of mind knowing it's being looked after 24/7 x 365



##### Efficiency

Being able to proactively plan any maintenance stops you wasting time and money doing work that wasn't necessary.



##### Cost Saving

Reduces the amount of oil used, also reducing the disposal costs for the waste oil.



##### Reduced Carbon Footprint

By not wasting oil, you are not only saving time and money but saving the planet for future generations.

# TANDELTA

## Oil Quality Sensor

### Product Features

#### Physical

**Material:** Stainless Steel AISI304  
**Dimensions:** 90mm x 37mm (L x W)  
**Weight:** 160g

#### Power

9-30 V DC  
Average power consumption 0.4W  
Power consumption 30mA continuous

#### Analog Output

4-20mA

#### Digital Output

RS232: 9600 baud bi-directional  
RS485: 9600 baud half duplex  
Modbus protocol supported on RS232/RS485  
CANbus: CANopen protocol

#### Environmental

**Protection:** IP67 when connected  
**Operating Temperature:** -20 °C to +120 °C  
**External Pressure:** 0 bar to 20 bar  
**Fluid Pressure:** up to 20 bar  
**Fluid Type:** Any mineral, semi-synthetic or synthetic oil

#### Detection

Oxidisation  
Contamination - Water, Glycol, Fuel & Dirt  
TAN/TBN  
Viscosity Breakdown  
Wear Particles  
Soot  
Oil Temperature

#### Electrical Connection

6 Pin Lumberg

#### Mechanical Connection

M32 Hex Head  
3/8" or 1/2" BSP Thread  
DIN 3869 Ring Seal or Dowty Seal

#### Oil Measurement

**Oil Quality Index:** -2 to +21  
**Accuracy:** Repeatability +3%

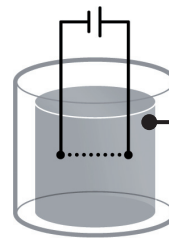
#### Compliant with the following standards

BS EN 60068-2-30 (Test Db - Cyclic Humidity)  
BS EN 60068-2-6 (Test Fc - Sine Vibration)  
BS EN 60068-2-27 (Test Ea - Mechanical Shock)  
EN 61000-6-4:2007 (Generic Emissions Standard for Industrial Environments)  
EN 61000-6-2:2005 (Generic Immunity Standard for Industrial Environments)



### How it Works

Traditionally, dielectric sensors are used to measure the capacitance of the oil, which changes as the oil becomes damaged...



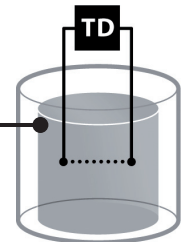
#### Dielectric Sensor

An a.c. electric voltage is applied across two electrodes, the change in current flowing indicates whether or not the oil is seriously degraded

#### Tan Delta Oil Quality Sensor (OQS)

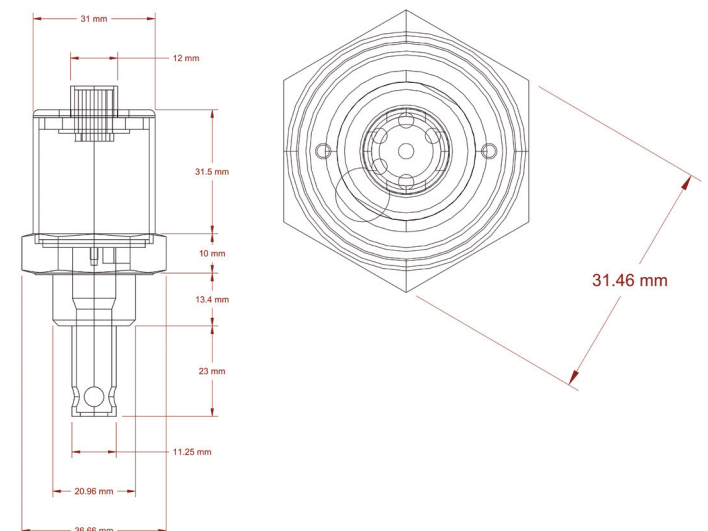
This device works in a similar way to the dielectric sensor but measures both the capacitance and the conductance (a combined measure known as permittivity) of the oil.

*The combined data provides a reading that is, on average, up to 60 times more sensitive to the change in quality of the oil*



As a result of the increased sensitivity, the Tan Delta OQS can detect the very early stages of deterioration or damage to oil, allowing timely planning of any intervention that may be needed.

### Mechanical Drawing



### Ordering information

Standard Sensor = OQS-1-AA-02-1

Tan Delta Systems Limited is always looking to exceed customer expectations, so for this reason reserves the right to alter, without notice, the specification, design or conditions of supply of any product or service. Information provided by Tan Delta Systems is believed to be accurate and reliable. However, no responsibility is assumed by Tan Delta Systems for its use, nor any infringements of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Tan Delta Systems © Tan Delta Systems Ltd 2012



**TANDELTA**  
Tan Delta Systems Ltd  
AMP Technology Centre  
Brunel Way  
Rotherham  
S60 5WG  
United Kingdom

T: +44 (0)845 094 8710  
F: +44 (0)845 838 6711  
E: info@tandeltasystems.com  
W: www.tandeltasystems.com  
Company No. 06362470