Continuous, multi-function oil condition sensing

- 4 oil condition measurement parameters
- Captures and retains ferrous debris
- Continuous real-time monitoring
- Easy installation
- Low cost of ownership
- 4-20mA, 0-10V & CAN outputs

**ANALOGUE OUTPUT**

<table>
<thead>
<tr>
<th></th>
<th>Voltage</th>
<th>4-20mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 1 (fine)</td>
<td>0.25 – 10V DC (configurable)</td>
<td>4mA - 20mA (configurable)</td>
</tr>
<tr>
<td>Channel 2 (coarse)</td>
<td>0.25 – 10V DC (configurable)</td>
<td>4mA - 20mA (configurable)</td>
</tr>
<tr>
<td>Channel 3 (oil/temp)</td>
<td>0.25 – 10V DC (configurable)</td>
<td>4mA - 20mA (configurable)</td>
</tr>
<tr>
<td>Error indication</td>
<td>&lt;0.25 – 10V DC (configurable)</td>
<td>1mA - 20mA (configurable)</td>
</tr>
</tbody>
</table>

**DIGITAL OUTPUT**

- 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

**ELECTRICAL**

<table>
<thead>
<tr>
<th></th>
<th>Voltage</th>
<th>4-20mA</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>6 - 32V DC</td>
<td>9 - 32V DC</td>
<td>5 - 32V DC</td>
</tr>
<tr>
<td>Over voltage</td>
<td>&gt;32V DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt;0.7W</td>
<td>&lt;2.6W</td>
<td>&lt;0.7W</td>
</tr>
<tr>
<td>Reverse polarity protection</td>
<td>to -32V DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analogue resolution</td>
<td>10Hz</td>
<td>10Hz</td>
<td>1Hz</td>
</tr>
<tr>
<td>Report rate</td>
<td>10Hz</td>
<td>10Hz</td>
<td>1Hz</td>
</tr>
</tbody>
</table>

**MECHANICAL**

- Sensor size: 57 x ø24.5mm
- Enclosure: 55 x 30 x 12mm
- Enclosure mounting: 2 off M4 clearance holes
- Materials (sensor): Aluminium alloy, FEP, PEI
- Materials (enclosure): Aluminium alloy, st/steel, polyester

**LIQUIDS**

- Fuels: Diesel, gasoline
- Oils: Hydraulic, gear, mineral, vegetable, synthetic ester, semi-synthetic, polyalphaolefin, polyalkyleneglycol
- Coolants: Ethylene glycol, Water
- Other: Salt water

**ENVIRONMENTAL**

- Sensor protection: IP66 / IP68 / IP69k
- Enclosure protection: IP66 / IP68 / IP69k
- Differential pressure: 10 Bar
- Sensor operating temperature: -40° to +150°C
- Enclosure operating temperature: -40° to +125°C
- Humidity: 95% RH @ +55°C

**ORDERING**

- Output: 048 = 4-20mA
  049 = 0-10V
  050 = CAN
- Mounting Thread Code: See table overleaf
- USB cable: 1000-CO-116
- USB software: 1000-SW-001

E sales@nvms.com.au

Distributed by NVMS Solutions

Sensors & Controls
4212 OIL CONDITION SENSOR

DIMENSIONS

MOUNTING THREADS

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Thread Size</th>
<th>Outside Dia A</th>
<th>Spanner A/F</th>
<th>Torque ±10%</th>
<th>Thread Code</th>
<th>Thread Size</th>
<th>Outside Dia A</th>
<th>Spanner A/F</th>
<th>Torque ±10%</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>M22 x 1.5</td>
<td>26.0</td>
<td>220</td>
<td>50 Nm</td>
<td>N</td>
<td>M42 x 2.0</td>
<td>67.0</td>
<td>60.0</td>
<td>100 Nm</td>
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<tr>
<td>B</td>
<td>M24 x 2.0</td>
<td>26.0</td>
<td>220</td>
<td>50 Nm</td>
<td>P</td>
<td>1 1/2&quot; BSPP</td>
<td>67.0</td>
<td>60.0</td>
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<tr>
<td>C</td>
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<td>220</td>
<td>50 Nm</td>
<td>Q</td>
<td>1&quot; BSPP</td>
<td>67.0</td>
<td>60.0</td>
<td>100 Nm</td>
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<tr>
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<td>50 Nm</td>
<td>S</td>
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<td>100 Nm</td>
</tr>
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<td>M</td>
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</tr>
</tbody>
</table>

WIRING DESIGNATION

4-20mA & 0-10V

- White: Fine
- Red: Power
- Black: Power ground
- Orange: Oil / temperature
- Blue: (Not connected)
- Green: Coarse
- Spare (clear): Screen

CAN

- White: CAN H
- Red: Power
- Black: Ground
- Orange: (Not connected)
- Blue: CAN L
- Green: (Not connected)
- Spare (clear): Screen