CCM Marine portable

multi cylinder combustion monitoring system for Marine Diesel Engines

The CCM Marine portable is a comprehensive system which can be rapidly installed on-site to enable acquisition of cylinder pressure data on 4-stroke Marine Diesel Engines.

Characteristics

• Optimise performance
• Advanced engine balancing
• Save fuel
• Reduce emissions
• Event recording of last 40 pressure cycles

Application:
- 4 stroke Diesel engines 350...1800 RPM

Technical data

<table>
<thead>
<tr>
<th>CCM portable</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Combustion control unit</td>
<td>Max. 12 analog inputs (option: extension to 20 analog inputs)</td>
</tr>
<tr>
<td>Resolution: 0.1°CA</td>
<td>Interface: Fast Ethernet LAN 100 Mbits/s</td>
</tr>
<tr>
<td>Wide range power supply 90...264VAC</td>
<td>Optical- or magnetic pick-up for TDC position</td>
</tr>
</tbody>
</table>

Pressure sensors CPS-01®, HTT-04®, FPS-01, FPS-02

<table>
<thead>
<tr>
<th>Characteristics</th>
<th></th>
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<tbody>
<tr>
<td>Measuring range pressure</td>
<td>0...300 bar</td>
</tr>
<tr>
<td>Over pressure static</td>
<td>400- or 600 bar static pressure</td>
</tr>
<tr>
<td>Thermal shock 1500 RPM pmi=9bar</td>
<td>&lt; +/- 0.5 bar</td>
</tr>
<tr>
<td>Accuracy</td>
<td>≤1% Full scale</td>
</tr>
<tr>
<td>Frequency</td>
<td>2- or 10 kHz</td>
</tr>
<tr>
<td>Temperature range of SCU</td>
<td>-40 °C ... + 75 °C</td>
</tr>
<tr>
<td>Output signal range</td>
<td>4...20 mA</td>
</tr>
</tbody>
</table>

CCM Marine portable_en_04_2018
Mounting:

The HTT-04® cylinder pressure sensors are installed at special designed Thompson adaptors on indicator valve for combustion pressure monitoring during engine optimisation. A permanent installation at the indicator valve is not recommended because the operating temperature may exceed the admissible temperature range. Permanent installation is only allowed on special designed adaptors.

HTT-04® sensor mounted on a special designed adaptor for permanent installation on Wärtsilä 46 engine

HTT-04® sensors mounted on Thompson adaptors on a 4-stroke diesel engine.

CCM Marine 4-stroke portable PC software

The CCM Marine PC software is a modernised version for online combustion monitoring on medium speed diesel engines.
Scope of supply

**CCM portable box (small) incl. the following:**

- Central unit incl. multi channel data acquisition unit 1…12 cylinder
- incl. front panel with connectors for power supply, pick-up signal, pressure signal from terminal box, LAN/Ethernet
- incl. wide range power supply 90…264VAC
- Firmware: Resolution 0.1°CA @ 1800 RPM incl. Event storing of 40 cycles/cylinder
- Calculation per cylinder: Pmax, Pcomp, Ipower and IMEP
- Communication: Fast Ethernet LAN Interface 100mBits/s
- Dimension and weight: 405 mm x 330 mm x 165 mm;
- Weight: 4.6 kg

**CCM portable box (big) incl. the following:**

- Central unit incl. multi channel data acquisition unit 1…20 cylinder
- incl. front panel with connectors for power supply, pick-up signal, pressure signal from terminal box, LAN/Ethernet
- incl. wide range power supply 90…264VAC
- Firmware: Resolution 0.1°CA @ 1800 RPM incl. Event storing of 40 cycles/cylinder
- Calculation per cylinder: Pmax, Pcomp, Ipower and IMEP
- Communication: Fast Ethernet LAN Interface 100mBits/s
- Dimension and weight: 543 mm x 419 mm x 218 mm;
- Weight: 10.3 kg

**Visualisation software 4-stroke (1…20 cylinder license)**

- Diagrams: pressure/CA, p/v , Pmax, Pmax balance, Event, Engine report
- Supported operating system: Microsoft WIN 7, WIN 10
Scope of supply

Sensors, cables and accessories

- HTT-04 cylinder pressure sensor         IW-6237
- CPS-01 cylinder pressure sensor         IW-5934
- FPS-01 cylinder pressure sensor         IW-6280
- FPS-02 cylinder pressure sensor         IW-6224
- Terminal box for 12 sensors incl. 10m connecting cable to CCM    IW-8129
- Sensor connecting cable 5 m             IW-4108
- Sensor connecting cable 10 m             IW-4109
- Ethernet cable 10m                     IW-8131
- Optical pick-up sensor                  IW-1240
- Variable friction arm for optical pick-up sensor    IW-1243
- Magnetic pick-up sensor                IW-1239
- Sensor connecting cable 10 m            IW-4109
- Thompson adaptor 4-stroke application   IW-1219

Option:

- Portable box for sensors and cables     IW-7990
- Industrial notebook PC WINDOWS 10 en    IW-6310