

## 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

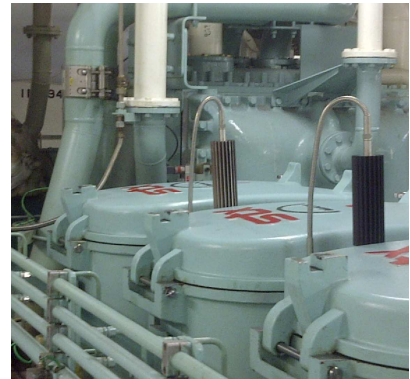
<b>CCM portable</b>	
Combustion control unit	Max. 12 analog inputs (option: extension to 20 analog inputs) Resolution: 0.1°CA Interface: Fast Ethernet LAN 100 Mbits/s Wide range power supply 90...264VAC Optical- or magnetic pick-up for TDC position
<b>Pressure sensors CPS-01®,HTT-04® FPS-01, FPS-02</b>	
Measuring range pressure	0...300 bar
Over pressure static	400- or 600 bar static pressure
Thermal shock 1500 RPM pmi=9bar	< +/- 0,5 bar
Accuracy	≤1% Full scale
Frequency	2- or 10 kHz
Temperature range of SCU	-40 °C ... + 75 °C
Output signal range	4...20 mA

## Mounting:

The HTT-04<sup>®</sup> 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.



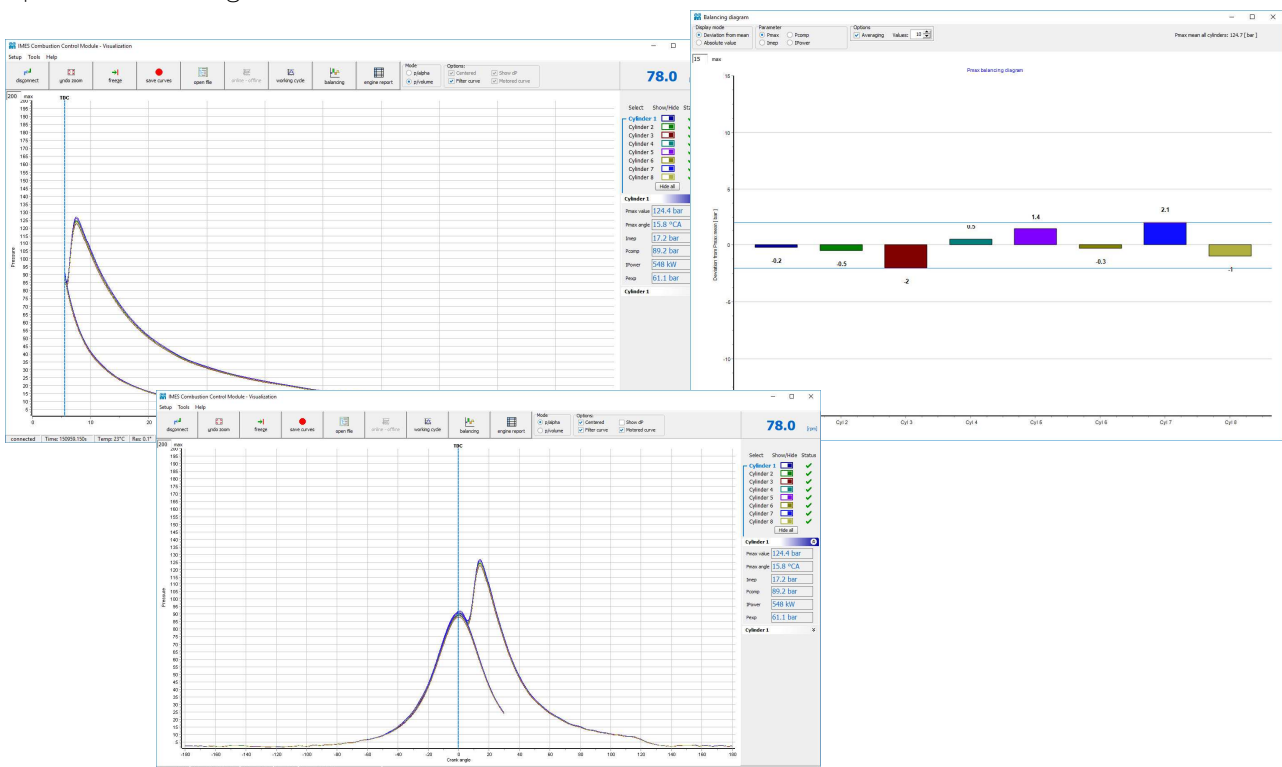
HTT-04<sup>®</sup> sensor mounted on a special designed adaptor for permanent installation on Wärtsilä 46 engine



HTT-04<sup>®</sup> 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

### Product No.

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

IW-8110

- 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:

IW-8105

- 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)

IW-8059

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



## Scope of supply

### Product No.

#### 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