Monitoring

Electronic Cylinder Pressure Indicator

LEMAG®

ECI

Improves engine uptime and lowers operating costs by allowing technicians to balance, fine-tune and monitor main and auxiliary engines.









Application areas

- 2-stroke and 4-stroke engines

Key benefits

- Offers performance reporting for all large 2-stroke and 4-stroke engines no matter if they are running on HFO/MDO, LPG or natural gas
- Enables fine tuning of engine performance and lowers operating costs
- Designed to withstand the harsh conditions found on ships and power plants
- Protects Has the ability to take continuous engine readings without the risk of overheating the sensor
- Detects problems before downtime occurs
- Optional safe, innovative and precise crank angle sensor delivers unmatched reading accuracy

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ECI

Intuitive & Easy-to-Use Interface

The ECI is ergonomic and easy to use even when wearing gloves. The handheld unit shows measurements on its large color display, so it can be confirmed on site that the measurement process was successful. The results may be copied to a PC and analysed with the included software, or sent to the superintendent for further comparison with historical or reference data.

- Step-by-step graphic instructions for different tasks
- Self-guiding, easy-to-understand menus, even for new operators
- Easy-to-press buttons, while wearing gloves
- Automatic sensor recognition
- Large, color display shows graphs and charts in real time

ECI and ECI-MS

For accurate cylinder pressure measurements, power calculation, misfiring analysis and engine balancing function with a high-quality pressure sensor with leak-proof, patented design and excellent thermal specifications. Includes handheld unit, pressure sensor & PC software.

ECI-MS

Includes the easy-to-mount, MS Crank Angle Sensor solution, which allows high-resolution crank angle measurements. This ensures precise MIP and cylinder power calculations. Recommended for use with low-speed engines.

ECI system calibration

To ensure the quality of the instrument you can easily send it to Chris-Marine Germany for test and calibration. A renewed certification will be provided for each unit. Recommended interval: 12 to 24 months.

ECI Handheld Unit Software

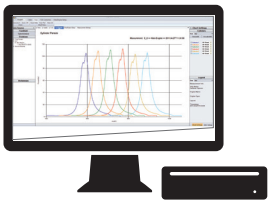
Cylinder Misfire Analysis



The handheld unit can display a visual diagram to show the detected misfirings and calculates the percentage outside the specified range. This alerts the technician to make the necessary adjustments for optimal engine performance.

ECI PC Software

Cylinder Parade



The ECI software automatically sorts and aligns the pressure curves according to the engine configuration and angle data. This makes it easy to detect whether the unit is correctly set up with regard to firing order and firing angle.

Features ECI and ECI-MS

- Handheld unit
- Pressure sensor
- PC software
- Crank angle sensor and belt
- Mean indicated pressure (MIP)
- Pressure vs. crank angle (p/alpha) diagram
- Pressure vs. volume (p/volume) diagram
- Cylinder parade
- ISO-correction
- Indicated power calculation
- Derivative curve (dp/da)
- Pressure vs. time (p/t) diagram
- Bar graphs
- Results table

Features ECI-MS only

- MS Crank Angle Sensor for compensation of errors caused by torsional vibration

Technical specifications

• Pressure range	0-350 bar	• Max. no. of strokes	30
• Pressure accuracy	< ±1%	• Battery life	Min. 4 hrs
• Temperature range	-50° to 400° C	• Connection type	USB
• Speed range	30-2000 rpm	• Weight (handheld unit)	1.4 kg
• Pressure sensor	Piezo Electric type, leak-proof	• Weight (entire product case)	6.9 kg
• Max. engines	8	• Display dimension	H 55 mm (2.2") W 97 mm (3.8")
• Max. cylinders/engine	20	• Dimensions (handheld unit)	H 150 mm (5.9") W 260 mm (10.2"); D 55 mm (2.2")

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