Thrust-Torque Measuring System
EVOthrust®

Shaft Power Measurement
The thrust-torque measuring system EVOthrust® measures the key parameters thrust, torque, speed/direction, power end efficiency by using the latest HD sensor technology.
Description

The EVOthrust® is much more than a simple shaft-power system, as it is providing the real efficiency of the ships’ propulsion systems by measuring the ration of the generated engine torque to the propeller thrust.

Our system allows to determine, how much energy is really converted into propulsion of the ship hull and not wasted only in rotation of the propeller.

The thrust-torque measuring system EVOthrust® measures the following key parameters by using the latest HD sensor technology:

- Thrust (kN)
- Torque (kNm)
- Shaft power (kWh)
- Shaft speed (RPM), direction of rotation
- Efficiency factor

The EVOthrust® was developed in a “heavy duty” design, with wireless energy transfer, radio transmission and the output of the measurement results via 4 to 20 mA or RS 485 interface. The measurement values will be shown on a numerical display or by connecting a PC using the supplied PC software. By means of this software the data can be stored and a further analysis is possible.

The EVOthrust® is completely pre-installed in our work shop, allowing an easy installation in a short time.

The EVOthrust® is supplied with powerful Windows-based analyzing software incl. a reporting function from ship to shore. A history viewer allows comparing measurements before and after dry-docking or engine overhaul.

Features

- Aided by German state as environmental innovation
- Revolutionary HD sensor technology (no strain gauges)
- High-definition thrust and torque measurement
- Contactless transmission of energy
- Telemetric data transfer
- No wear and tear
- Heavy duty design
- Supports slow-steaming
- For all shaft diameters (> 300 mm)
- Supports energy docking
- Shows thrust, torque, RPM, power, propulsion efficiency continuously

Technical specifications

- Power supply: 90/240 VAC, 50/60Hz, 5 A
- Temperature range: 0 to 60°C
- Shaft diameter: 300 to 1,000 mm
- Sensor accuracy: < 0.1 % FSO
- Speed range: 10 to 300 rpm
- RPM measuring: inductive
- Torque measurement: HD sensor, contactless
- Thrust measurement: HD sensor, contactless
- Analogue outputs: 4 x 4 to 20 mA
- Alarm outputs: 2 potential free contacts for system failure and overload
- Signal transmission: Telemetric frequency “g1“ 868.30 MHz, channel 106
- Interface: RS 232, RS 485, USB, optional Ethernet
- Pulse input: RPM pickups / SLOC / SFOC
Shaft sensor unit (complete)

Energy strap

Control unit

Power supply
90/240 VAC, 50/60Hz, 5A

Signal interface
4 x 4 to 20 mA analogue outputs: thrust, speed, torque, power

Alarm interface
2 potential free contacts: overload, system error

Communication interface
RS 485 (control display)

Communication interface
RS 485 (PC)

PC connection via RS 485 to USB converter

Typical configuration

EVOthrust mounted on the shaft
Analyzing Software

The EVOthrust® offers more than simply showing data on a local display. The system is supplied with powerful Windows-based software incl. a reporting function from ship to shore. A history viewer allows comparing measurements before and after drydocking or engine overhaul.

Start screen

Analyzing screen

Report