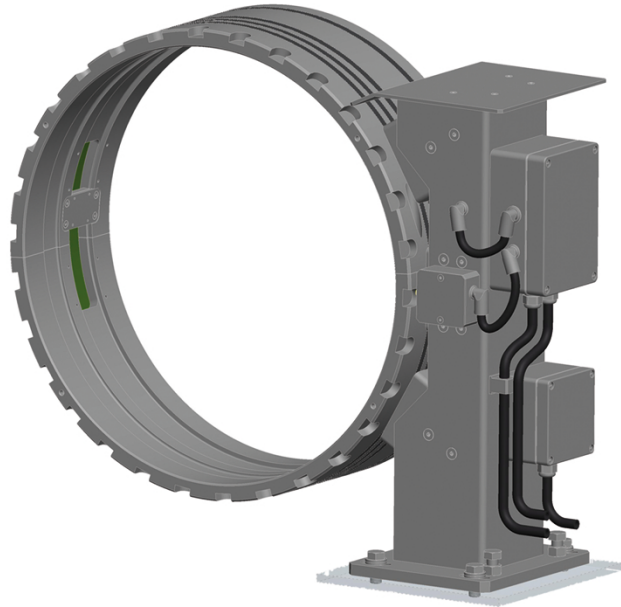




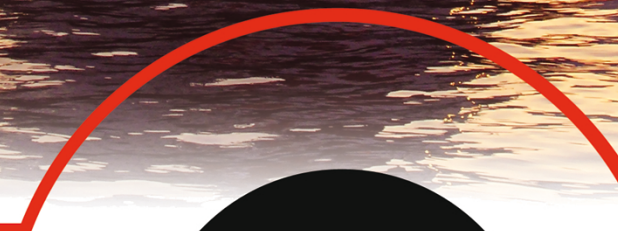
BOB Lab Marine Digital Torque and Engine Efficiency Monitoring System



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OVERVIEW

System highlights:

- 1 - modular, flexible and customizable digital measuring system
- 2 - suitable for permanent installation in ships and industry
- 3 - compact and robust mechanical design with anticorrosive protection
- 4 - simple installation and servicing
- 5 - suitable for all shaft sizes
- 6 - high-accuracy torque, power, rotational speed and fuel consumption measurements
- 7 - high temperature stability and noise immunity due to digital data transmission and processing (no information degradation between sensor and control module)
- 8 - excellent long-term measuring stability
- 9 - highly simplified calibration procedure
- 10 - automatic long-term zero drift compensation
- 11 - built-in failure indicators
- 12 - programmable analog (4 – 20 mA) and/or digital (RS – 232, RS – 485) signal outputs
- 13 - signal outputs galvanic isolation 2500 VRMS
- 14 - wide working temperature range -20 – 70 °C

Measuring quantities:

- 1 - torque, power, rotational speed, fuel consumption, specific consumption
- 2 - shaft direction indication (ahead / astern)
- 3 - data logging capabilities

Accuracy:

- Due to the 24-bit A/D conversion the overall system uncertainty of the electronics is better than $\pm 0.025\%$ of full scale over the full working temperature range, with negligible temperature drift (less than 5 ppm/°C) and no components aging effects.
- System linearity is better than $\pm 0.02\%$ of full scale.

User interface:

- 1 - programmable touch-screen LCD graphics display 320 x 240 with IP65 protection

BLOCK DIAGRAMS

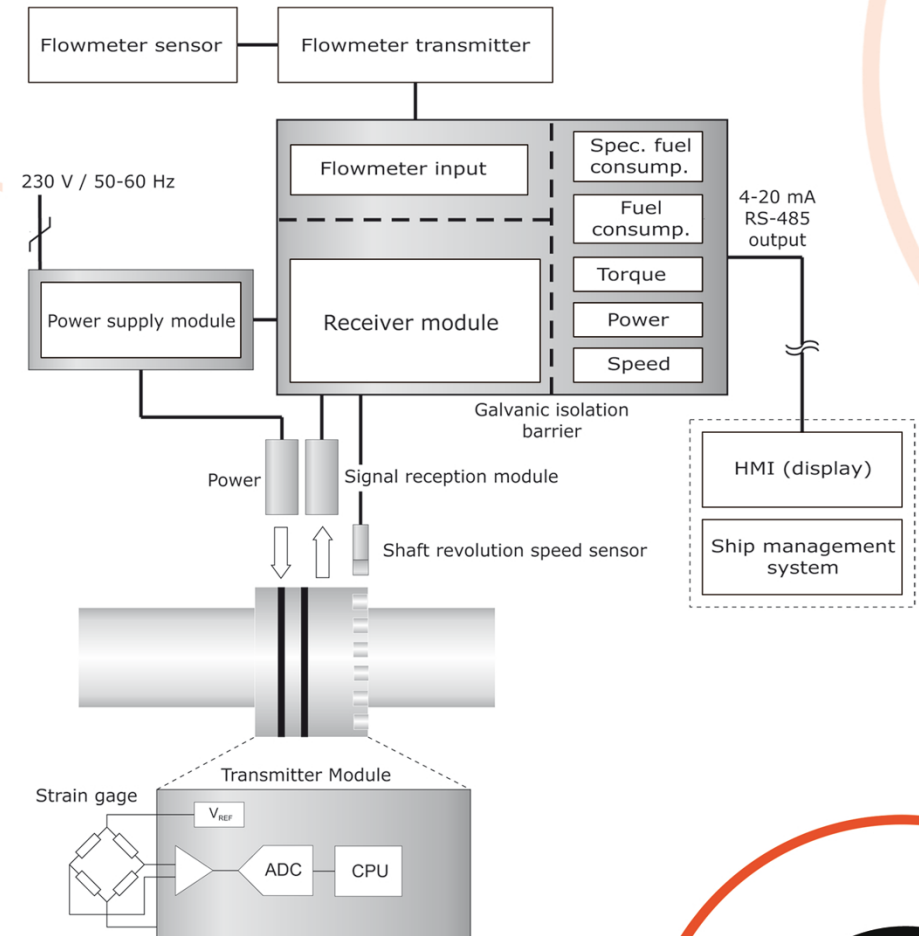


Fig 1. System block diagram