

# Kyma Test Power Meter



**Reliable data for shaft torque and power are vital for verification of propulsion characteristics of a vessel and for safe operation of the main engine. These data are also key figures for evaluation of hull and propeller condition. Fast response to deterioration in vessel propulsion is critical for cost efficient operation and optimal planning of docking schedules.**

Kyma has for 20 years supplied the marine industry with accurate and reliable shaft power meter systems. With installations on more than 600 vessels world-wide, Kyma is today among the leading suppliers of this kind of technology.

*All components, tools and accessories are packed into a carrying suitcase. A fully portable solution for transport in rough environments at shipyards, in ports and at sea.*



In order to meet an increasing market demand, we have designed the Kyma Test Power Meter, TPM. This is a lightweight portable instrument for temporary installation on propeller shafts.

The measurement principle is based on the well-proven strain gauge technology as applied for the permanent type Kyma Shaft Power Meters.

Kyma Test Power Meter is a user-friendly instrument, designed for marine application and manufactured according to the highest standards of quality assurance.

- Applicable for a wide range of shaft diameters and speeds.
- Simple installation and calibration. Half a day work by one person.
- High accuracy and repeatability.
- Compact, waterproof design.
- Contact free signal transmission.
- Digital display unit.
- Selectable system of units.
- USB output.



*The center of attention during vessel speed trial. A user friendly display unit provides accurate information of instant and averaged propulsion data.*

Test Power Meter.

Portable, lightweight, test instrument for propeller shafts.

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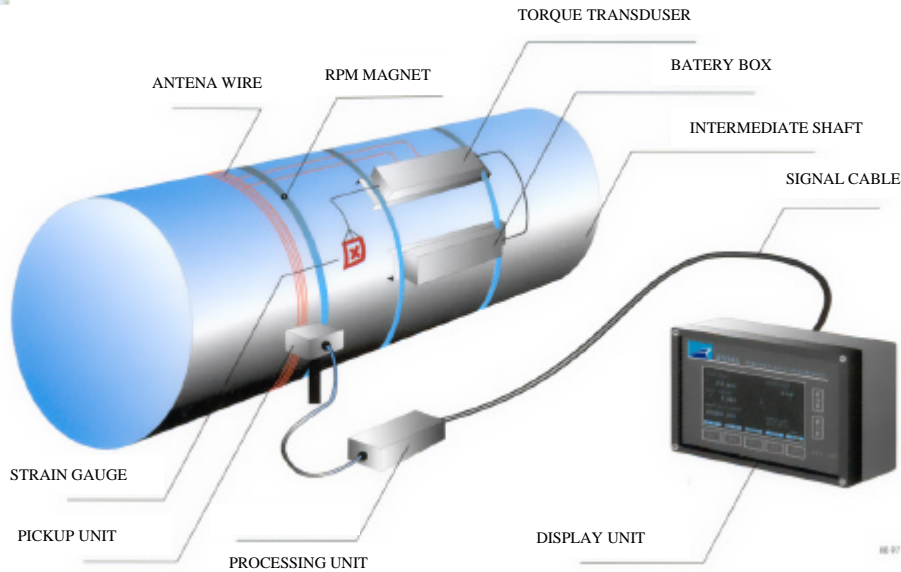
The Kyma Test Power Meter is an indispensable tool for shipyards during vessel sea trials, for special test purposes and for regular vessel performance evaluations.

The instrument can be applied by shipowners on a fleet basis by bringing the instrument from vessel to vessel for periodic measurements.

Kyma has a worldwide service network which can provide local support.



*The TPM comes complete with tools, and expendable supplies for 5 installations.*



The equipment installed on the shaft consists primarily of two units, the Torque Transducer and the Battery Box. These are secured to the shaft with glass fiber reinforced tape.

The strain gauge bridge is glued to the shaft surface and connected by a signal cable to the Torque Transducer. The voltage signal from the strain gauge bridge is amplified and converted to a frequency signal, normally in the range of 3 -6 kHz. This low frequency signal is transmitted from the rotating shaft to the stationary Pickup Unit through an antenna secured to the shaft. Shaft revolutions is detected from magnets attached to the shaft.

The system can be turned on and off during vessel operation by remote control from the Display Unit. The instrument will present instant values for Power, RPM and Torque. System of units are selectable between Metric, SI and US standard.

The Display Unit will normally be located in the Engine Control Room during a sea-trial, with transfer of data from the processing unit through a 50 m signal cable.

## Technical Specification

<b>Range of operation:</b>	Power shafts with diameters 100 -1000 mm Shaft revolutions up to 1000 rpm. Shaft material: Steel alloys.
<b>Principle of measurements:</b>	Strain gauges in Wheatstone bridge.
<b>Strain gauge resistance</b>	350Ω +/-1 Ω
<b>Strain gauge factor</b>	2.05- 2.10
<b>Accuracy</b>	For normal signals (> 200 iS): Torque: < 0.5% of span value. Power: < 0.5 % of span value. Rpm: < 0.1%
<b>Ambient temperature:</b>	5 -50 deg C.
<b>Torque Transducer:</b>	Size. 150 .65 .40 mm Weight (including support bracket): 1.0 kg Signal output 3000 -6000 Hz Power supply 8.5- 13 VDC Current cons: Stand By, Max. 3 mA Active, Max. 35 mA
<b>Battery Box:</b>	Size. 150.65 .40 mm Weight (including support bracket) 1.0 kg Batteries. 8 Alkaline type AA Capacity Min. 40 hrs active. Min. 400 hrs stand by.
<b>Pickup Unit:</b>	Size. 70.50 .25 mm Weight. 0.1 kg
<b>Processing Unit:</b>	Size. 70.55 .155 mm Weight. 0.6 kg
<b>Display Unit:</b>	Size. 240 .160 .120 mm Weight 3.3 kg Power supply: 90 -265 VAC, 50- 60 Hz. USB Output - ASCII.
<b>Total weight:</b>	Suitcase including all components, tools and accessories. 20 kg.