



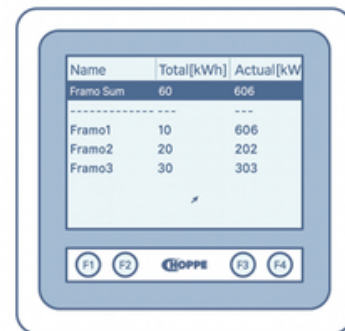
ENERGY MEASUREMENT

Comprehensive electrical energy monitoring for improved transparency and operational efficiency

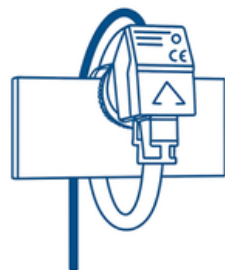
The Hoppe Energy Measurement System provides continuous monitoring of onboard electrical energy consumption. By delivering transparent and reliable power data from generators and consumers, the system supports energy management, operational optimization and regulatory compliance.

Why Energy Measurement

- Electrical power measurement for individual loads and generators
- Enables reporting of electrical correction factor for CII
- Enables load balancing and monitoring
- Standardize data logging including energy counter and actual power



Name	Total[kWh]	Actual[kWh]
Framo Sum	60	606
Framo1	10	606
Framo2	20	202
Framo3	30	303



System Design

- Holistic solution for vessel energy data monitoring
- Integrated visualization and data storage device
- Ready for MIIoT integration and data transmission
- Full transparency regarding onboard energy consumption
- Straightforward setup with low installation effort

Rogowski Coil

- Based on an open-loop current measurement coil
- Contactless measurement via magnetic field
- Can be clamped onto existing cables or bus bars
- Currents up to 10,000 A (single and three phase)
- All energy measurement devices connected via bus line

Possible Loads

- Reefer containers
- Cargo pumps
- Refrigeration systems
- Air conditioning systems
- Engine room fans
- Cargo hold fans
- Hotel loads
- And many more

Possible Generators

- Auxiliary generators
- Shaft generators
- Shore power / Cold ironing
- Fuel cells
- Battery systems

OUR PRODUCT RANGE

Fluid & Floating

- Valve Remote Control
- Anti-Heeling
- Tank Gauging
- Flume Anti-Rolling
- Interling Anti-Rolling
- Distance Measuring
- Draught Measurement
- Electronic Inclinometer
- Dynamic Draught and Floating Monitoring
- Floating Condition Control

Performance & Energy

- Emission Monitoring
- Energy Measurement
- Shaft Power Meter
- Fuel Measurement
- Energy Saving Solutions
- Crew Connect
- Performance Monitoring
- Data Collection and Acquisition

Fleet Services

- Spare Parts
- Technical Service
- Retrofit- And Upgrades
- MIoT Digitalization Upgrade

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