



MARINE & OFFSHORE

SHIP ENERGY MONITORING SYSTEM





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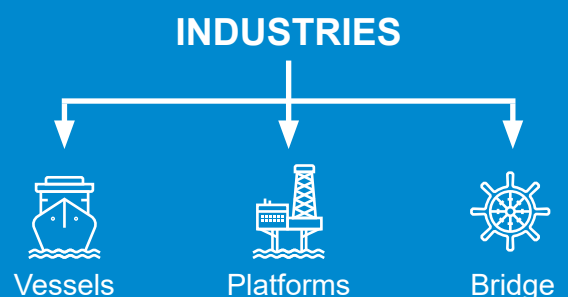
DEIF HAS A LONG AND RICH HISTORY OF PROVIDING CLASS APPROVED, RELIABLE BRIDGE INSTRUMENTATION, SWITCHBOARD EQUIPMENT AND POWER CONTROL.

Conceived and designed to anticipate user needs today and in years to come, DEIF **products respond to market demands** for easier integration, improved user-friendliness, fuel economy and **high ROI**.

THE WORLD'S PREFERRED SUPPLIER*

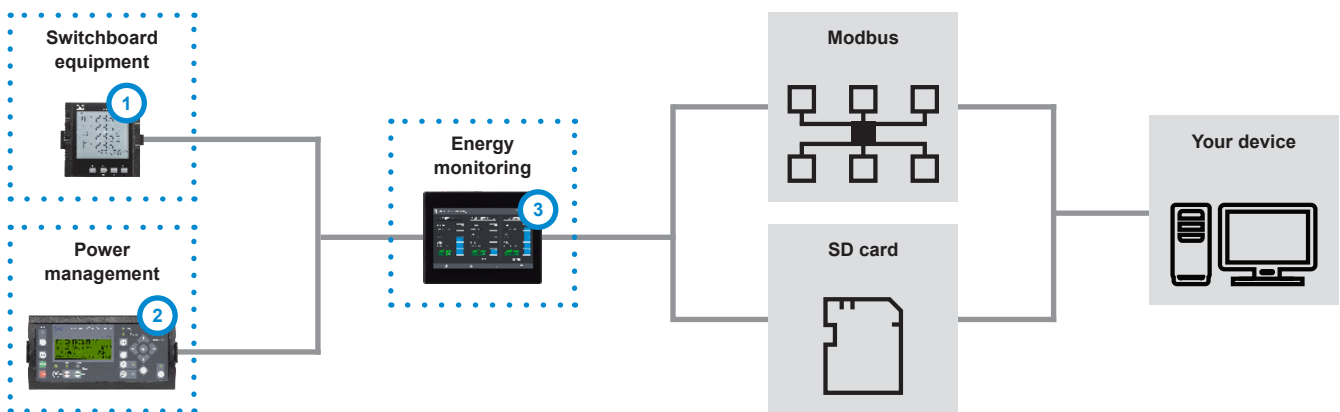
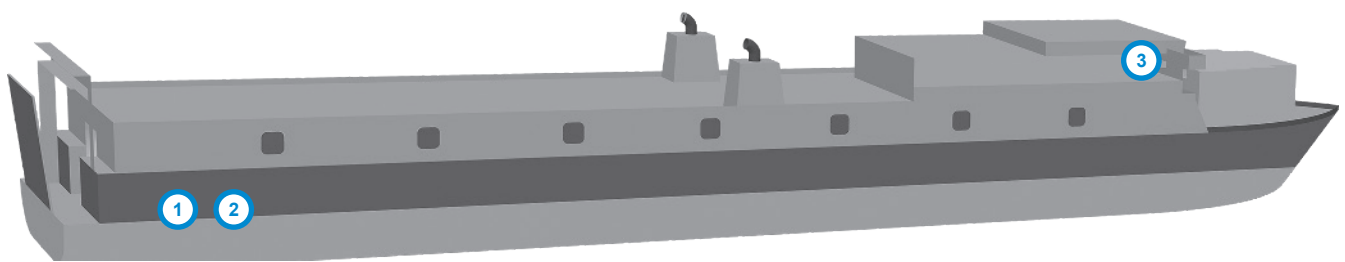
**Our market share in marine bridge instrumentation is estimated at 40 %.
See www.deif.com/marine*

Most customers are able to install and commission our standard products working from data sheets only. In cases of doubt, DEIF's **extended** network of sales and application centres, distributors, customer care teams, and technical support teams is available to assist you and ensure you invest in and implement the **best solution for your application**.



Ship energy monitoring system (SEMS)

Monitor and analyse energy generation and consumption



Power efficiency

DEIF's Ship Energy Monitoring System, SEMS, monitors real time and stores historical power data for analysis of energy generation and consumption. Use your insights to improve your power efficiency, save on fuel cost and reduce your environmental footprint.

Energy monitoring solution

- ▶ Preprogrammed AGI 407 touch screen
- ▶ Up to 16 power monitoring points
- ▶ Data from DEIF brand controller and/or DEIF MIC-2 power instruments
- ▶ Modbus TCP and RS-485 supported for DEIF controllers
- ▶ MIC-2 MKII using RS-485

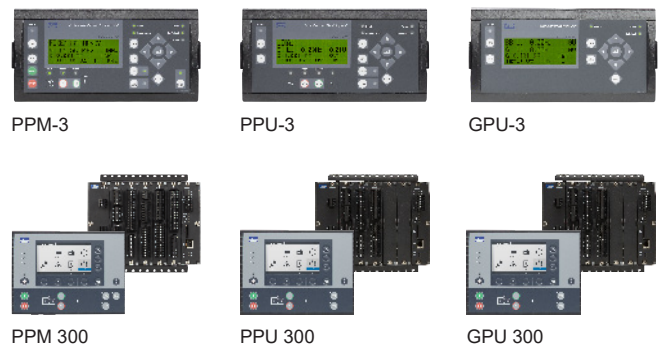
Why choose DEIF's SEMS

- ▶ Simple solution for energy monitoring
- ▶ Plug & play
- ▶ Pre-programmed graphical views for local monitoring of energy consumption on AGI display.
- ▶ Free technical support for SEMS
- ▶ SD card for historical data storage
- ▶ Data available on Modbus

Relevant SEMS components



Relevant controllers



Advanced graphical interface

Multi-touch widget HMI for system monitoring & control



A comprehensive HMI solution, DEIF's AGI 400 series connects to all DEIF Multi-line controllers, as well as third party electronics, via standard defined communication protocols, featuring functionalities which eliminate the need for other instruments, thus saving you both space and wiring.

The AGI 400 series is intended for visualisation and active control in multiple applications managed on board maritime vessels or platforms, where it provides full graphical overviews and user-friendly touch screen control with a quality display that is easily readable even at sharp angles. AGI 400 supports multiple users levels, and LAN clients, ensuring user control in several levels.

Application examples

- ▶ Power management systems – control and supervision: one point management, control and supervision of multiple gensets and bus tie breakers.
- ▶ Alarm – handling and monitoring: view historical alarm data and accept active alarms.
- ▶ Graphical interface – mechanical and electrical systems: system overviews for mechanical and electrical equipment. Trend measured values to monitor operation performance or when carrying out fault-finding procedures.

AGI 400 features

- ▶ TFT colour display, LED backlight 500cd/m²
- ▶ 24bit colour resolution
- ▶ Capacitive touch screen, supporting multi-touch widgets
- ▶ 3 Ethernet ports with individual MAC address with bridge option
- ▶ 2 USB 2.0 host ports
- ▶ RS-232, RS-422 and RS-485 serial communication
- ▶ SD card slot
- ▶ Slim design (mounting depth less than 60 mm)
- ▶ Multiple protocols
- ▶ Data transfer between protocols
- ▶ RTC with NTP synchronisation
- ▶ LED back light off with custom timeout
- ▶ TrueType fonts
- ▶ SVG images
- ▶ Multi-language
- ▶ Backlight dimming 0-100%
- ▶ Backlight time out
- ▶ Backlight service time: 50,000 h or more
- ▶ Multi-touch screen
- ▶ Operating temperature: -20° C to +60 °C (vertical installation)

Variant overview



AGI 407

AGI 410

AGI 415

AGI 421

Multi-instrument for panel

Access monitoring data remotely via the internet



Versatile and intuitive, DEIF's multi-instrument MIC-2 MKII is perfectly suited for monitoring and analysis of all types of power systems.

The MIC-2 MKII helps you optimise your energy system. Capable of logging all applications from single low voltage to multiple high voltage applications, the sturdy unit offers a complete overview of your SCADA system.

A microprocessor-based measuring unit for most electrical quantities on 2-phase or 3-phase electric energy distribution networks, readings are displayed on a large built-in LCD screen.

Fitted with the ethernet TCP/IP module, the unit offers direct access to Modbus data and is easy to access remotely via standard browsers.

KWh counter reset and change of settings can be password-protected, and using DEIF's programmable utility software it is a simple and fast job to configure and adapt the unit to fit most applications.

MIC-2 MKII features

- ▶ Measures voltage, current/active/reactive and apparent power, frequency, energy kWh/kvarh, PF, THD, demand
- ▶ For all 2- and 3-phase AC network topologies
- ▶ Suitable for power quality analysis
- ▶ Measures individual harmonics from 2nd to 63rd
- ▶ Min./max. statistic with time stamp
- ▶ Customised alarm settings with 16 different parameters
- ▶ RS-485 Modbus communication
- ▶ Large LCD screen with white backlight
- ▶ Optional communication modules
 - Ethernet (Modbus TCP, HTTP, SMTP)
 - Profibus DP
- ▶ Optional I/O modules
 - Relay
 - Analogue I/O
 - Digital I/O
- ▶ Free utility software with data logging
- ▶ Type approvals from all major classification societies

TORM Vita: The first of 38

TORM Vita is the first of a fleet of 38 vessels to have DEIF SEMS installed

Complete SEMS for 3 diesel generators

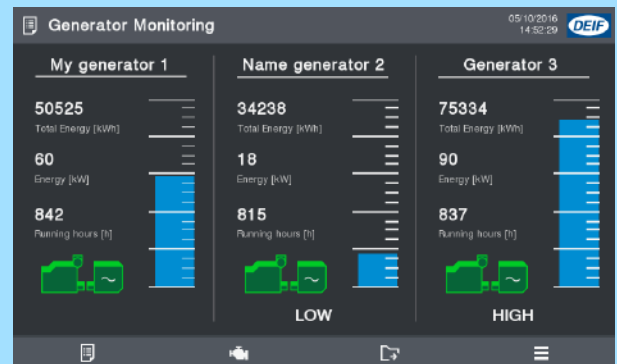
DEIF delivered complete SEMS solution with an AGI touch screen logging data and displaying all relevant data delivered by 3 DEIF multi-instruments.

Installation & support

DEIF SEMS will be provided with a detailed installation and operation guide. Contact DEIF Support at marinesupport@deif.com for further assistance.

Parallel running hours reduced by approximately 10 %.

Display examples





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LEARN MORE AT WWW.DEIF.COM/MARINE-OFFSHORE

