HOPPE

FLUID MANAGEMENT

Valve Remote Control • Tank Content Measurement • Bunker Management
Ballast Water Management • Draught Measurement
Dynamic Draught Measurement • Sensor Toolbox HOSET

FLUID MANAGEMENT

Hoppe Marine Fluid Management systems are fulfilling the global market demand for smart, integrated systems such as Valve Remote Control, Tank Content Measurement, Draught Measurement, Ballast Water and Bunker Management.

Hoppe Marine Fluid Management systems are known for flexibility, easy handling, and reliability. All solutions are tailored to the customer demands, are continuously enhanced and can be cross-linked to other Hoppe systems.

All controls, components are type-approved by leading classification societies. All systems are based on Hoppe's own and proven hardware and software components, which ensures maximum reliability and avoids interfacing problems.

www.hoppe-marine.com

Content

ABOUT HOPPE

Hoppe is a family owned group of companies with global presence and activities focused and dedicated to the maritime market. It's passion for Technology has been the company's key of success in more than six decades with the permanent motivation to deliver customer-oriented products and services.

Starting with the business idea to deliver precise instruments and measuring equipment for seagoing vessels (ship speed and power), Hoppe Bordmesstechnik was founded in 1949 by the German engineer Dipl.-Ing. Hans Hugo Karl Hoppe. The work life of Hans Hoppe was characterized by many technical inventions and patents for on-board measuring systems. After 35 years of successful work life Hans Hoppe passed away and his colleague Jürgen Haas took over the company and put things on the right track for the future of Hoppe. Four years later (1990) Helmut Rohde joined Hoppe as partner before finally taking over all shares of the company in 1997. The Hoppe era of the Rohde family business started.

Besides many years of organic growth the Rohde family established business in further maritime markets to follow the globalization of the shipbuilding business. In 1997 Hoppe Korea was established, followed by Hoppe China in 2010 and Hoppe Singapore in 2017. In parallel, strategic investments were made with the acquisitions of Meramont Automatyka (Poland), MAIHAK Marine (Germany), Flume Stabilization (USA) and INTERING ship stabilization systems (Germany). Combined with many new inventions and patents Hoppe has established a leading position in several maritime business areas.

The passion for technology is still unbroken and all Hoppe products are fully designed in Germany by our skilled engineers. This means that Hoppe has the full technical control over its portfolio and remains dedicated to quality, accuracy and reliability. With this approach Hoppe has maintained a very good market reputation ever since.

Being a fully independent family-owned company Hoppe is well known in the market as a reliable long-term partner. Hoppe combines decades of engineering know-how, sustainable on-board experiences with the continuous development of new technologies and innovations. Based on the strategic product- and service-focus approach Hoppe is a key player also in the digitalization process of the marine industry.

VALVE REMOTE CONTROL

Hoppe Marine Valve Remote Control solutions are available for pneumatic, hydraulic, electrohydraulic or electric operation of valves, as well as for the control of pumps used in ballast, bilge, fuel oil and liquid cargo systems.

All systems are controlled by PLC unit HOMIP with 6“ touch screen and with several interfaces to other systems. It is designed for easy handling and operation.

Widescreen workstations are available for various operation locations and provide a clear visualisation of fluid systems including pipes, valves, pumps, flow lines and tank contents.

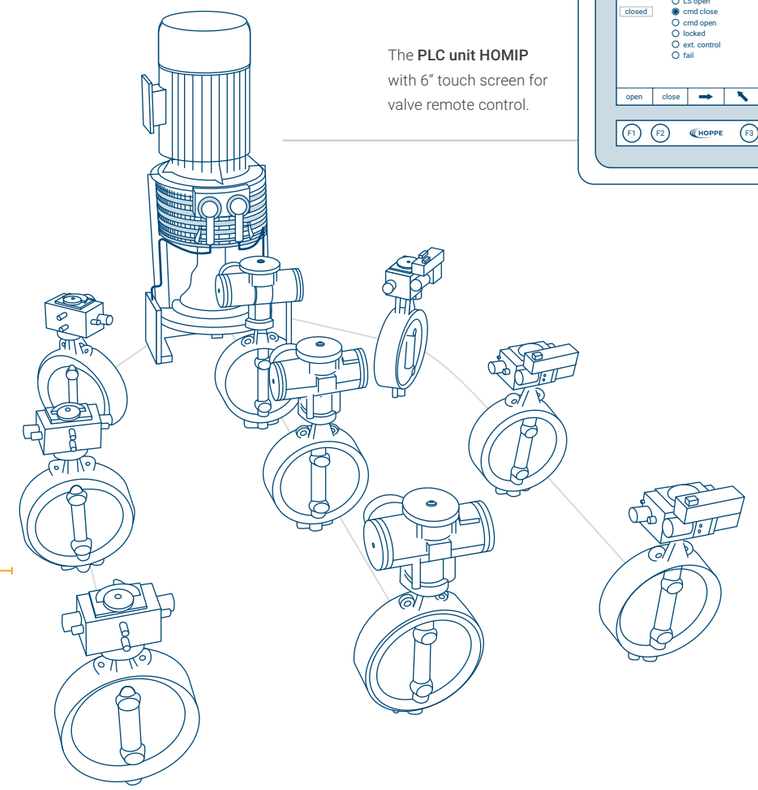
All main components are engineered and produced in-house. This allows continuous research and development activities for product improvement and optimization.

KEY FEATURES

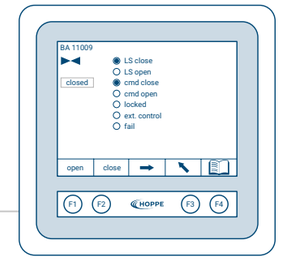
- All main components are in-house designed and engineered
- Experienced and customer related project engineering
- Systems with highly reliable actuators and valves installed in more than 1000 vessels worldwide
- Made in Germany with competitive market price
- Approved by major classification societies

COMPONENTS

- Rotating and linear actuators of pneumatic, hydraulic, electro-hydraulic or electric type for various valve types and makers.
- Control cabinets and/or substations for signal conversion and power feeding
- PLC unit HOMIP for logic control and interface to workstations or other systems
- Workstations as user interface with comprehensive live visualization



The **PLC unit HOMIP** with 6“ touch screen for valve remote control.



VALVE REMOTE CONTROL

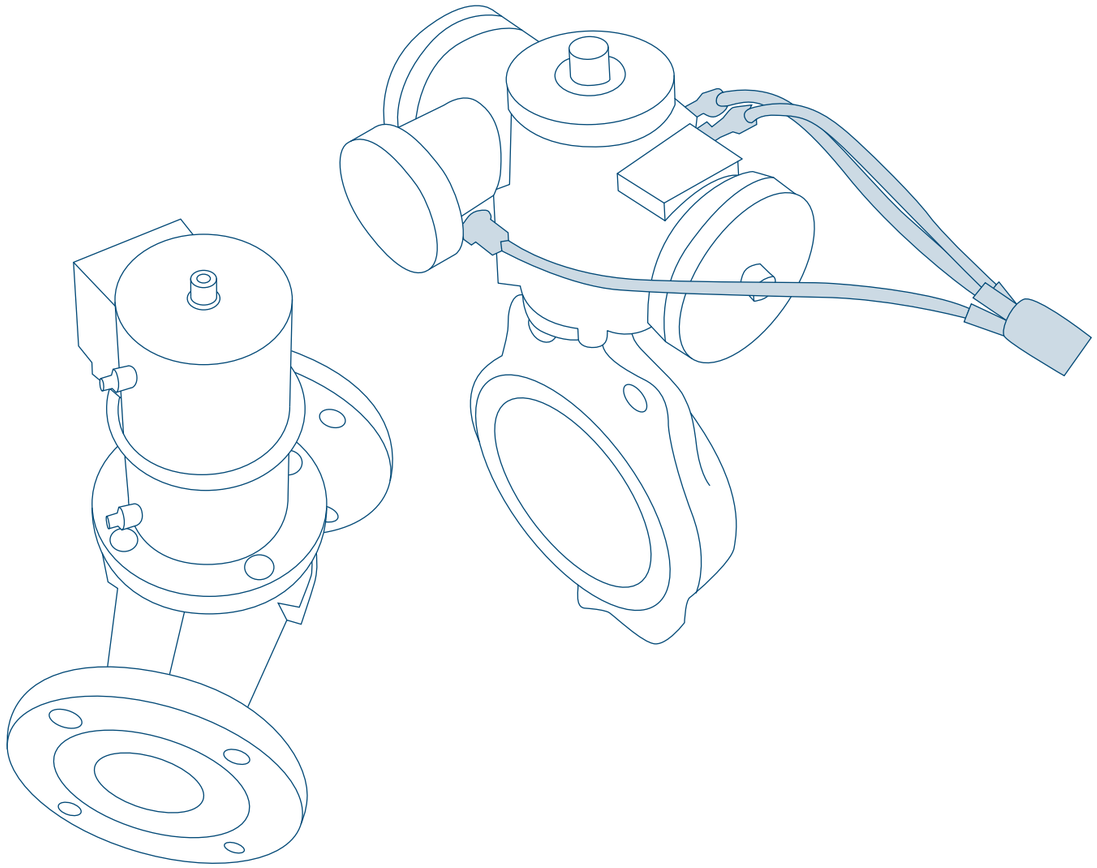
PNEUMATIC

KEY FEATURES

- Operates on standard on board working air without special air treatment
- Most cost efficient system solution
- Environmentally friendly
- Weight and space advantages
- Smart actuator design with integrated feedback signal and connections
- Significant installation savings by using Hoppe's unique hybrid connection cable HOCAB (incl. air supply and feedback signal)

EXECUTIONS

- Quarter turn actuators for butterfly-/ball valves
- Linear actuators for globe valves
- All on board installation requirements (hazardous area, submerged, open deck, etc.)
- All required functions (emergency close/open, keep-position, etc.)
- Open/close or intermediate operation



VALVE REMOTE CONTROL

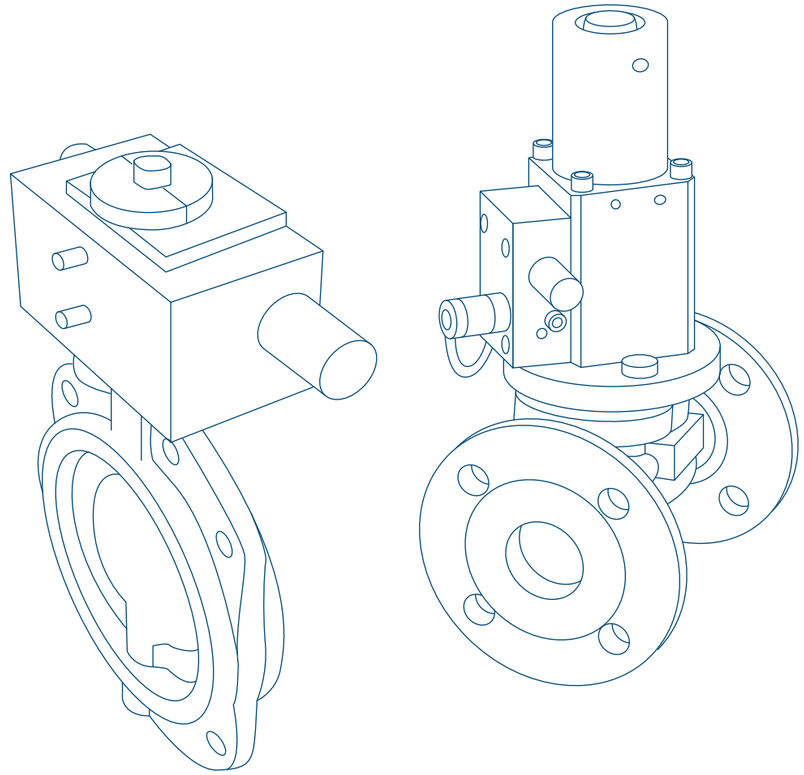
HYDRAULIC

KEY FEATURES

- Smart actuator design with integrated stop valve, flush function and quick connections for portable hand pump
- Weight and space advantages
- Compact solenoid valve manifolds with emergency operation function
- Reliable central hydraulic power unit (HPU) with bladder accumulator
- Wide torque range

EXECUTIONS

- Quarter turn actuators for butterfly-/ball valves
- Linear actuators for globe valves
- All on board installation requirements (hazardous area, submerged, open deck, etc.)
- All required functions (emergency close/open, keep-position, etc.)
- Hydraulic locking device function
- Open/close or intermediate operation with direct or indirect feedback signal



VALVE REMOTE CONTROL

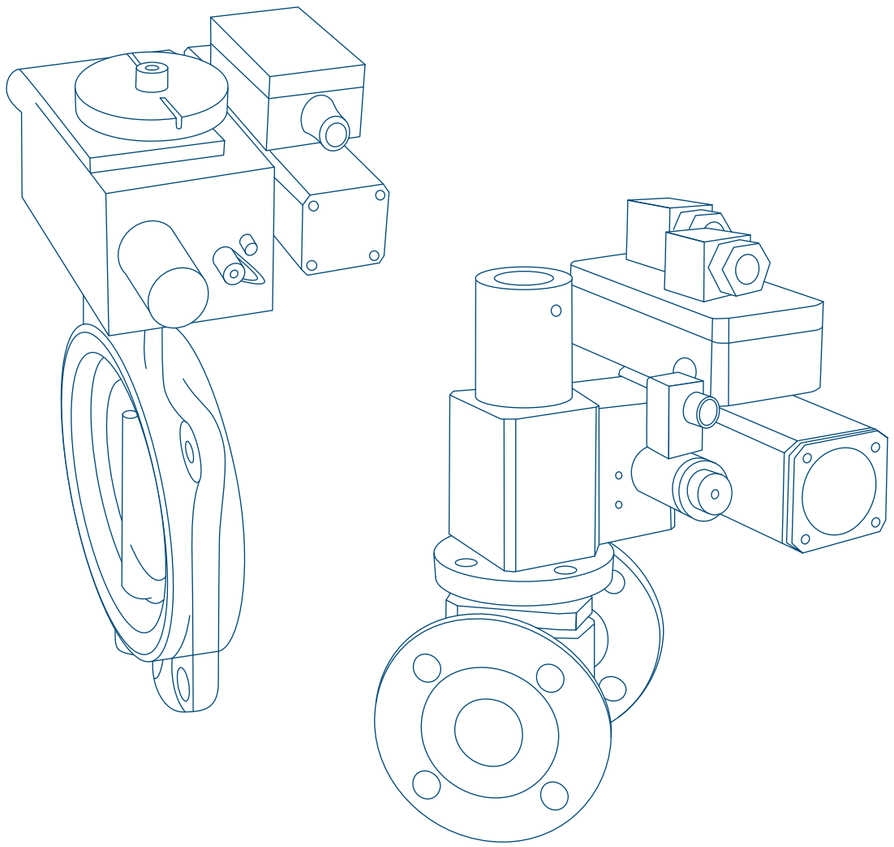
ELECTRO-HYDRAULIC

KEY FEATURES

- Modular design based on Hoppe's hydraulic actuator series
- Lightweight and compact local power units (LPU)
- Oil level visibility for easy maintenance
- Individual solutions with explosion prove LPU or separate control boards
- Smart control concept with hybrid motor starter solution

EXECUTIONS

- Quarter turn actuators for butterfly-/ball valves
- Linear actuators for globe valves
- All on board installation requirements (hazardous area, submerged, open deck, etc.)
- All required functions (emergency close/open, keep-position, etc.)
- Open/close or intermediate operation



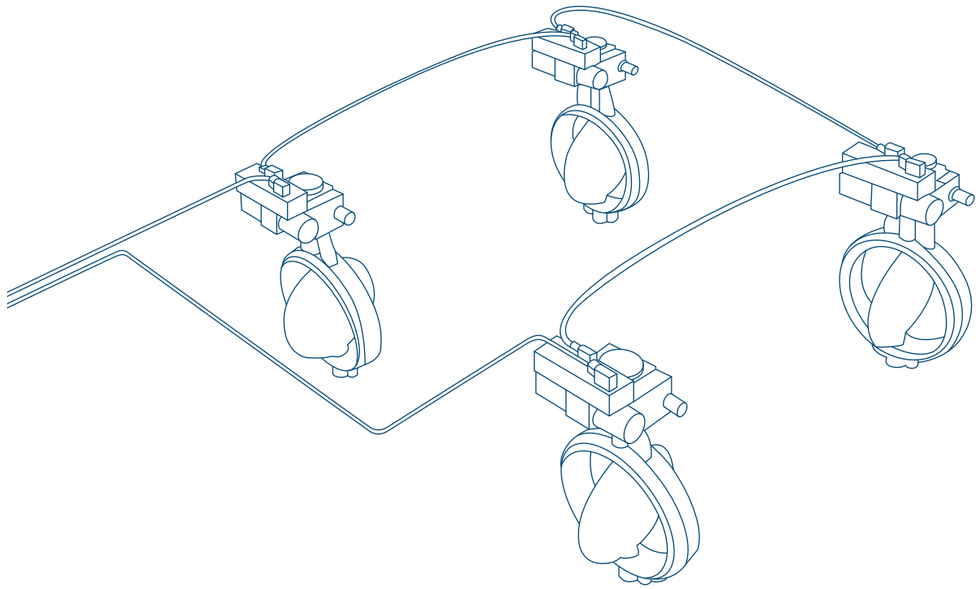
BUS CONTROLLED

KEY FEATURES

- Automatic failure and closed loop detection
- Individual configuration of actuator functions via BUS control
- Local control mode for LPU
- Easy address setting via PLC unit HOMIP
- Installation savings by cable loop design
- Space savings due to reduced cabinet dimensions

EXECUTIONS

- Same executions available as for standard electro hydraulic series
- Redundant power supply
- Ring supply units (RSU) with BUS communication and multi master control
- Suitable for single or double cable installations (power and control)



TANK CONTENT MEASUREMENT

Hoppe Marine Tank Content Measurement solutions continuously monitor the contents of ballast, fuel oil and other liquids on board, with various sensor types.

The **hydrostatic pressure sensors HCG 2011** and **HCG 4011** have been specially developed to detect the levels of wide range of liquids with different media properties. The pressure sensors of the HCG series can be configured to the required measuring range, housing material and process adaptor. They are based on a piezo resistive measuring cell, which converts the hydrostatic pressure into an electronic signal. Measurement with pressure sensors is independent of foaming (cappuccino effect).

The pressure sensor HCG 2011 provides a signal of 4 – 20 mA and allows customised measuring ranges, adjustable via HART protocol. The pressure sensor HCG 4011 is designed with a digital serial BUS interface, which allows cost saving cable loop installations.

The **electro pneumatic pressure sensors** are installed inside control cabinets and measure the liquid level via a system of continuously bubbling air. The measuring unit is fully equipped with all necessary features of air flow indication, air flow adjustment, purge function as well as stop and safety valves in order to protect the measuring cell against liquid ingress.

KEY FEATURES

- Full responsibility for the tank content data
- Reliable and accurate in house designed sensors
- Experience on more than 2,400 vessels worldwide
- Adjustable measuring range up to 4,000 mbar
- Installation savings by usage of BUS type sensor
- Sensor toolbox HOSET for optimized maintenance and lifetime analysis
- Made in Germany with competitive market price
- Approved by major classification societies

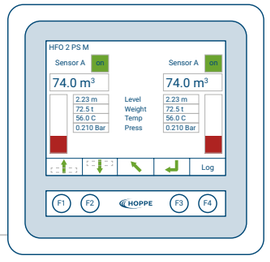
COMPONENTS

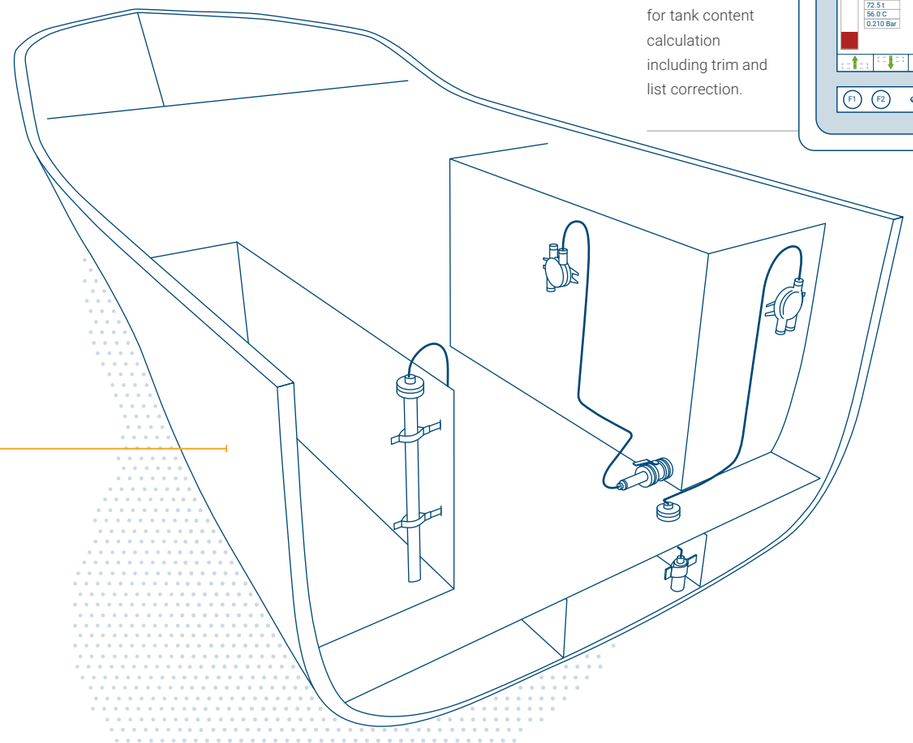
Hydrostatic pressure sensors HCG
- HCG 2011 analogue type, 4 – 20 mA
- HCG 4011 digital BUS type
- Stainless steel powder coated or titanium housing
- PT-100 temperature sensor integrated
- Plugable sensor cables

Electro-pneumatic pressure sensors inside cabinet
- Air flow indication and adjustment
- Stop and safety valves

PLC unit HOMIP for tank content calculation
- 6" touch screen
- Trim, list and density correction
- Interfaces to Hoppe or 3rd party systems

The **PLC unit HOMIP** with a 6" touch screen for tank content calculation including trim and list correction.





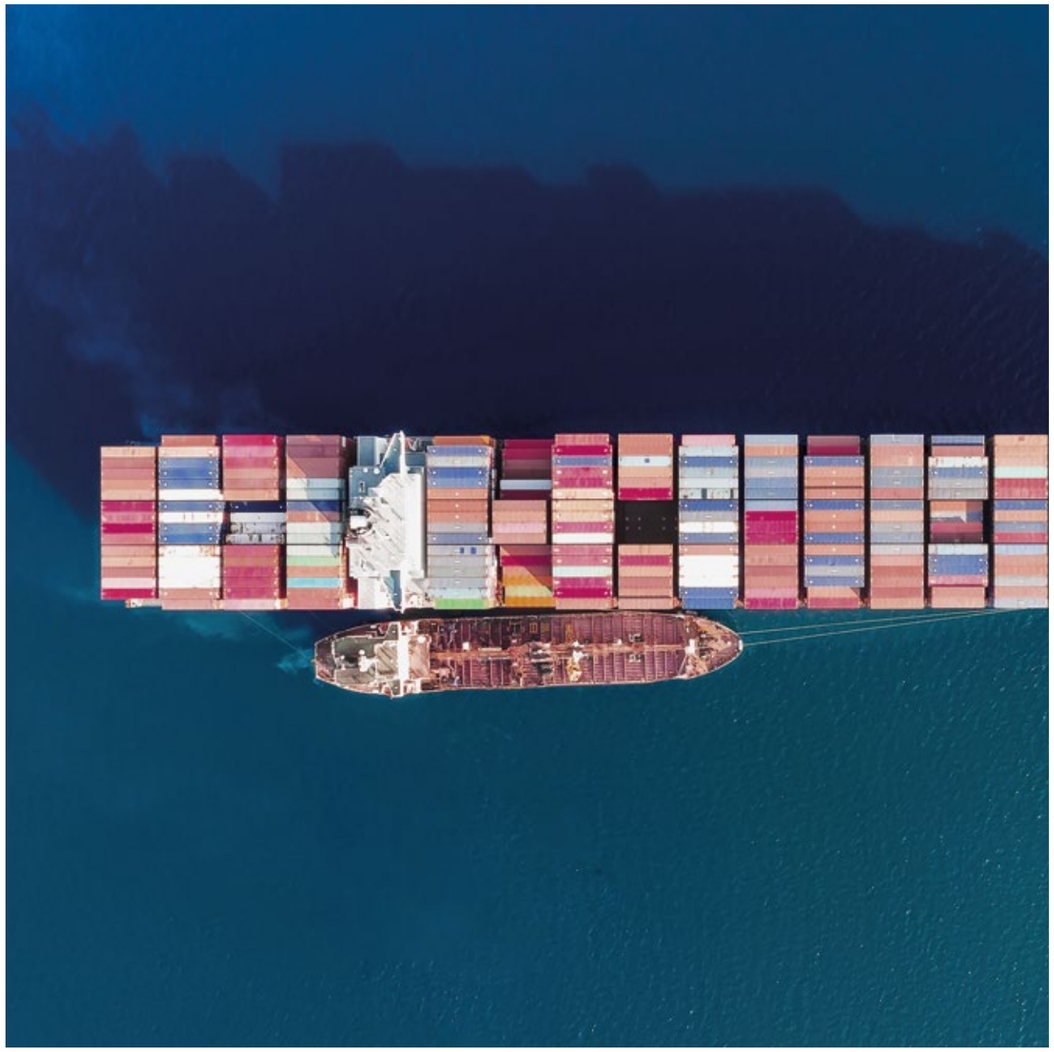
BUNKER MANAGEMENT

A precise and comprehensive overview of bunker activities and fuel oil consumption has become an essential key factor for efficient ship operation.

Hoppe Marine's Bunker Management system is a software solution for continuous monitoring and reporting of all bunker intakes, fuel oil transfer procedures, fuel oil consumptions and fuel remaining on-board. It is a smart add-on to a precise Tank Content Measurement system.

Hoppe's hydrostatic pressure senors of the HCG series are specialized for the precise bunker mass (mT) determination and recording. Foaming (cappuccino effects) are eliminated by measuring principle.

A total energy balance supervision is provided additionally, which is mainly based on data from Hoppe Marine Tank Content Measurement, MAIHAK Shaft Power and Performance Monitoring as well as mass flow counters.

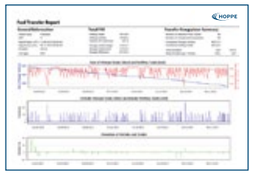


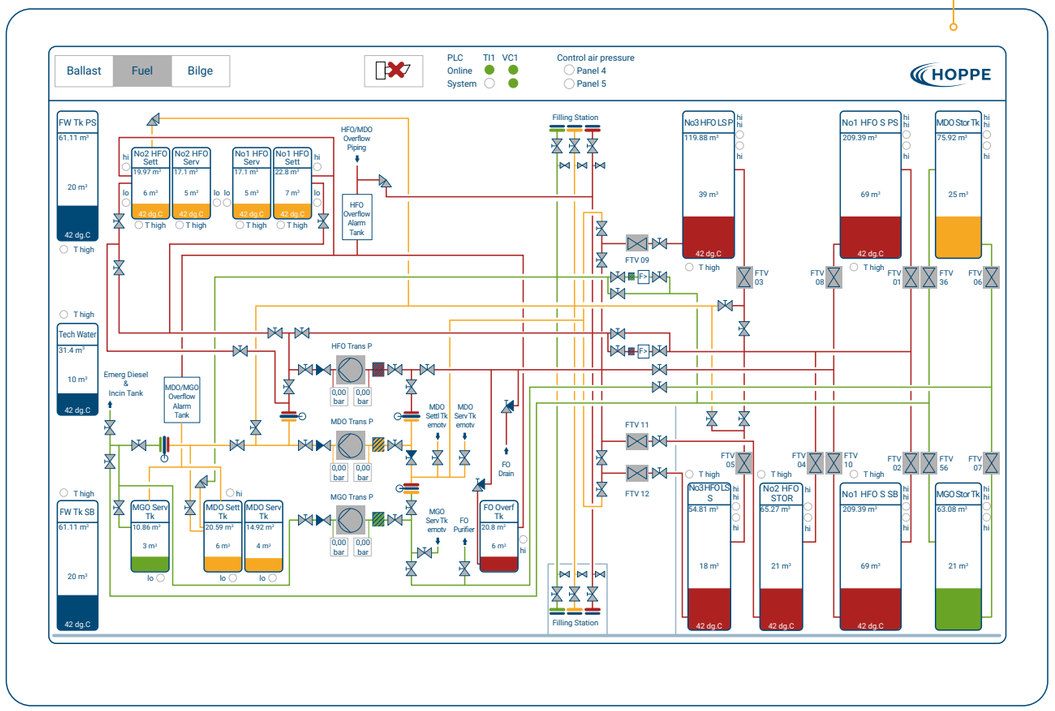
KEY FEATURES

- Intake supervision of fuel oil mass (mT) during bunkering process including report function for bunker intake and bunker discrepancy
- Supervision and recording of all bunker transfer activities within the vessel
- Voyage orientated bunker transfer supervision with deviation analysis and remaining bunker on board report
- Add-on possibility for evaluation of Energy Balance

ADVANTAGES

The system enables the ship operator to have a full overview about the movements and the storage of the valuable fuel oil at all time during ship operation. Influencing effects such as for example usage of back flush filter, sludge volume, separator operation or cappuccino effects are monitored by measuring principles and/or statistical analytics. Based on its permanently data logging and analysis features it is a valuable tool in parallel to manual entered fuel data and bunker barge recordings.





BALLAST WATER MANAGEMENT

Handling of ballast water, especially ballast treatment, based on IMO requirements has significant impact on the efficiency of the vessel's operation.

The Hoppe Ballast Management System is a sophisticated and user friendly software solution supporting all ballast water operations. The vessel's loading case, stability information, hull stress and floating criteria, e. g. optimum trim can be considered to determine improved ballast operations.

As a result ballast operations are proposed and supported by simulation routines which consider the vessel's stability criteria during the ballast process. The system provides ballast operation job lists which can be forwarded to Hoppe's Valve Remote Control System for automatic or manual source target control.

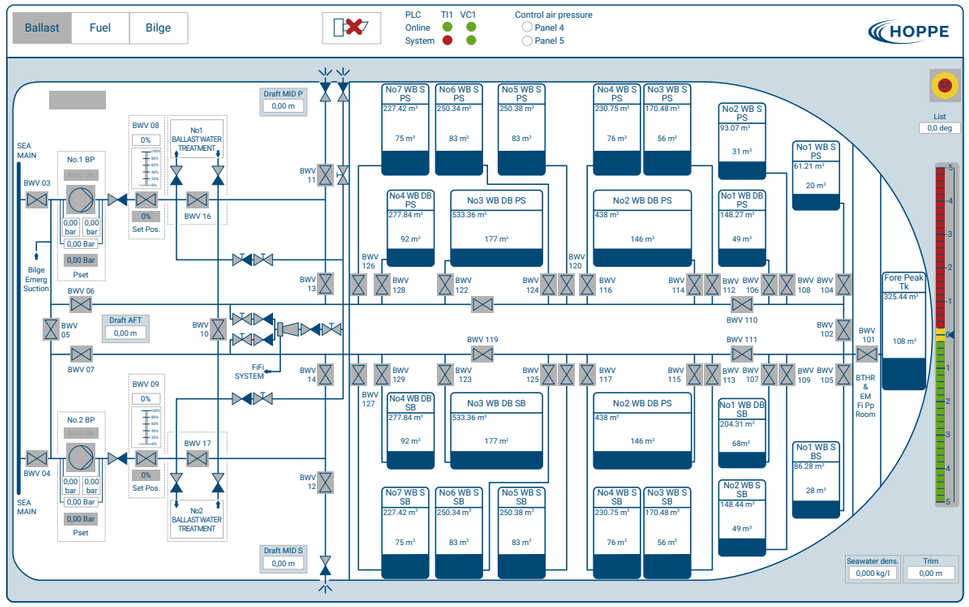
Ballast operation reports using data from pumps, valves, tank contents, treatment unit and GPS coordinates round up the scope of supply.

RETROFIT

Hoppe Marine provides assistance to ship owners for optimized retrofit solutions of ballast treatment systems on running vessels, based on our long term experience in overall ballast management systems. Support is given for selection of appropriate treatment system, integration concept into existing ballast systems considering optimized installation costs and adaption of Hoppe Valve Remote Control system.

BALLAST OPERATION & REPORTING

Hoppe provides a comprehensive ballast reporting based on data from pumps, valves, tank contents, treatment units as well as GPS coordinates. It covers all ballast operations from treatment units, by passes or other internal ballast water sequences. As result an automized digital ballast book report can be generated.



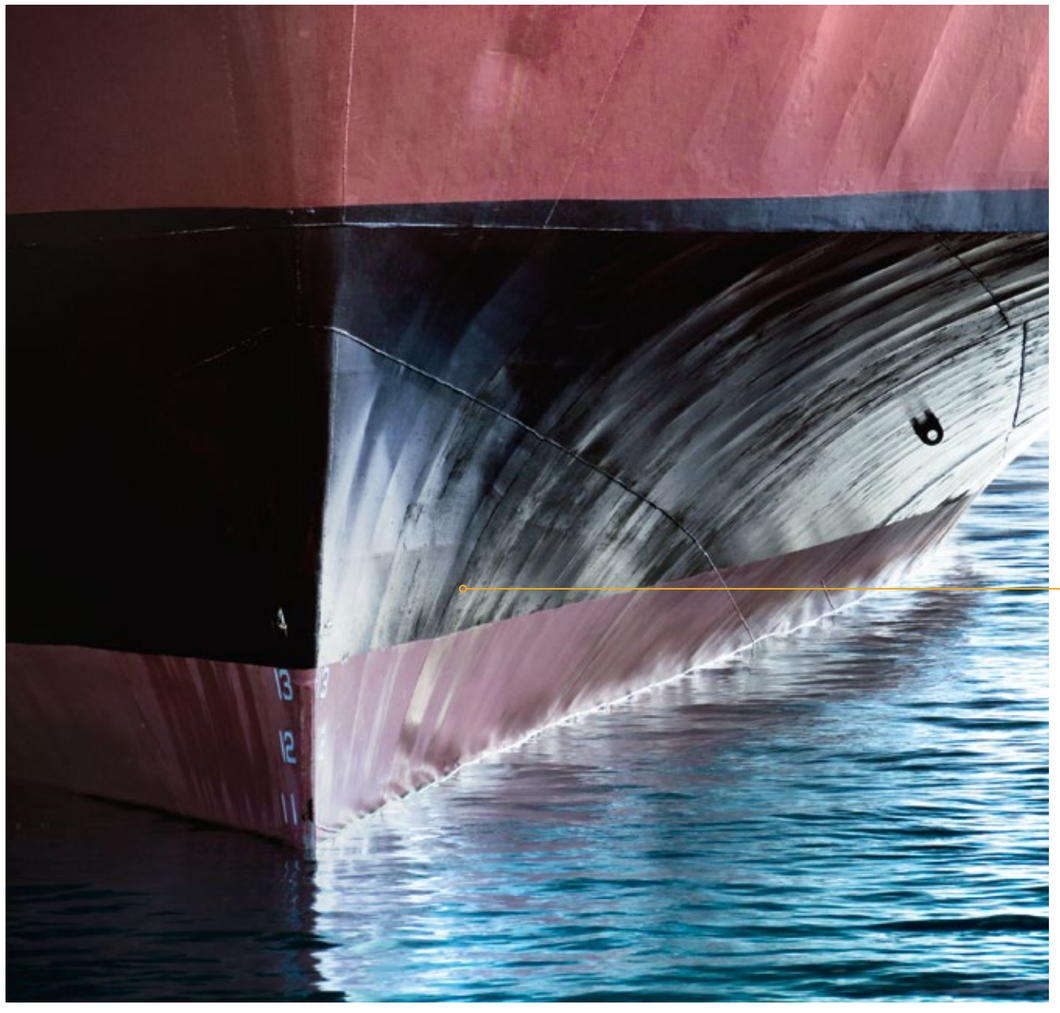
DRAUGHT MEASUREMENT

Hoppe Marine Draught Measurement solutions monitor the draught of the vessel and determine draught values precisely at perpendiculars and draught marks.

The standard Draught Measurement system configuration includes four measuring points with pressure sensors, located at bow, stern, mid ship port and mid ship starboard.

The **hydrostatic pressure sensors HCG 2011** and **HCG 4011** have been especially developed to detect the levels in a wide range of liquids with different media properties. The pressure sensors of the HCG series can be configurated to the required measuring range, housing material and process adaptor.

The **pressure sensor HCG 2011** provides a signal of 4 – 20 mA and allows customised measuring ranges, adjustable via HART protocol. The **pressure sensor HCG 4011** is designed with a digital serial BUS interface, which allows cost saving cable loop installations.



KEY FEATURES

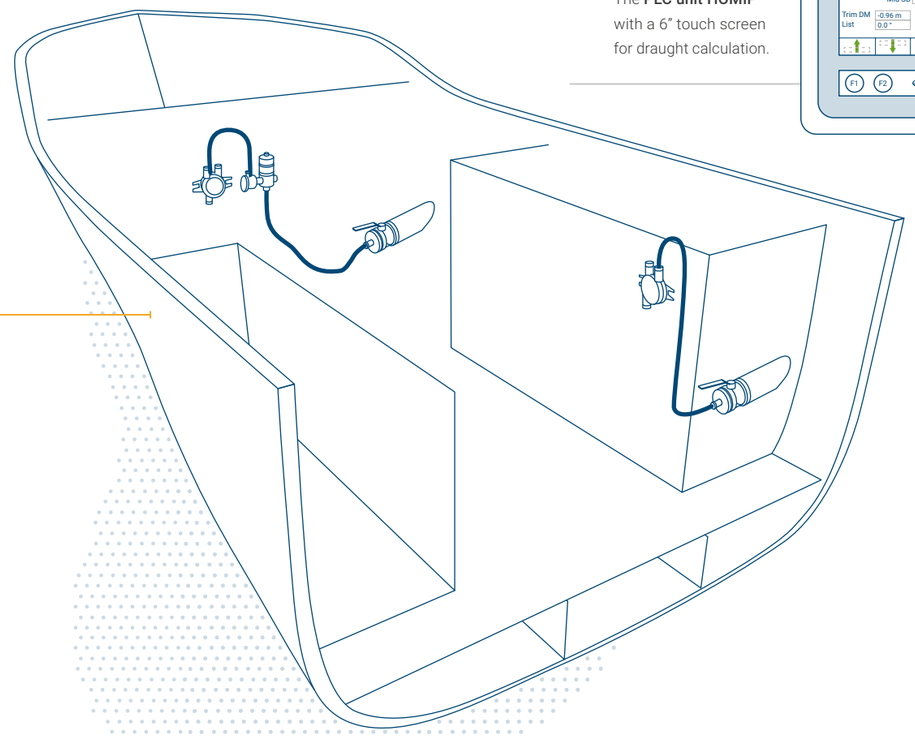
- Precise draught calculation at perpendicular and draught marks
- Trim and heel, sagging and hogging information
- Significant installation cost savings by smart welding block arrangements
- Reliable and accurate in house designed sensors
- Experience on more than 2,800 vessels worldwide
- Made in Germany with competitive market price
- Approved by major classification societies

COMPONENTS

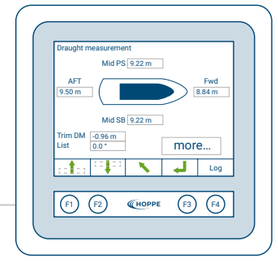
Hydrostatic pressure sensors HCG
- HCG 2011 analogue type, 4 – 20 mA
- HCG 4011 digital BUS type
- Stainless steel powder coated or titanium housing
- Titanium membrane

Solid class approved welding block unit including sensors

PLC unit HOMIP for draught calculation
- 6” touch screen
- Including trim, list and density correction
- Interfaces to Hoppe or 3rd party systems



The **PLC unit HOMIP** with a 6” touch screen for draught calculation.



DYNAMIC DRAUGHT MEASUREMENT

Hoppe Marine Dynamic Draught Measurement solutions monitor the draught of the vessel and determine the draught values precisely at perpendiculars and draught marks during vessel voyage.

The standard Dynamic Draught Measurement system configuration includes four measuring points with pressure sensors, located at bow, stern, mid ship port and mid ship starboard and two inertial measuring unit HOSIM.

The system delivers precise values unaffected of hydrodynamic effects during vessel voyage.

KEY FEATURES

- Precise draught calculation at perpendicular and draught marks during vessel voyage
- Trim and heel, sagging and hogging information
- Reliable and accurate in house designed sensors
- Made in Germany with competitive market price
- Upgrade possibilities to Dynamic Floating Monitoring
- Valuable data for vessel performance monitoring systems

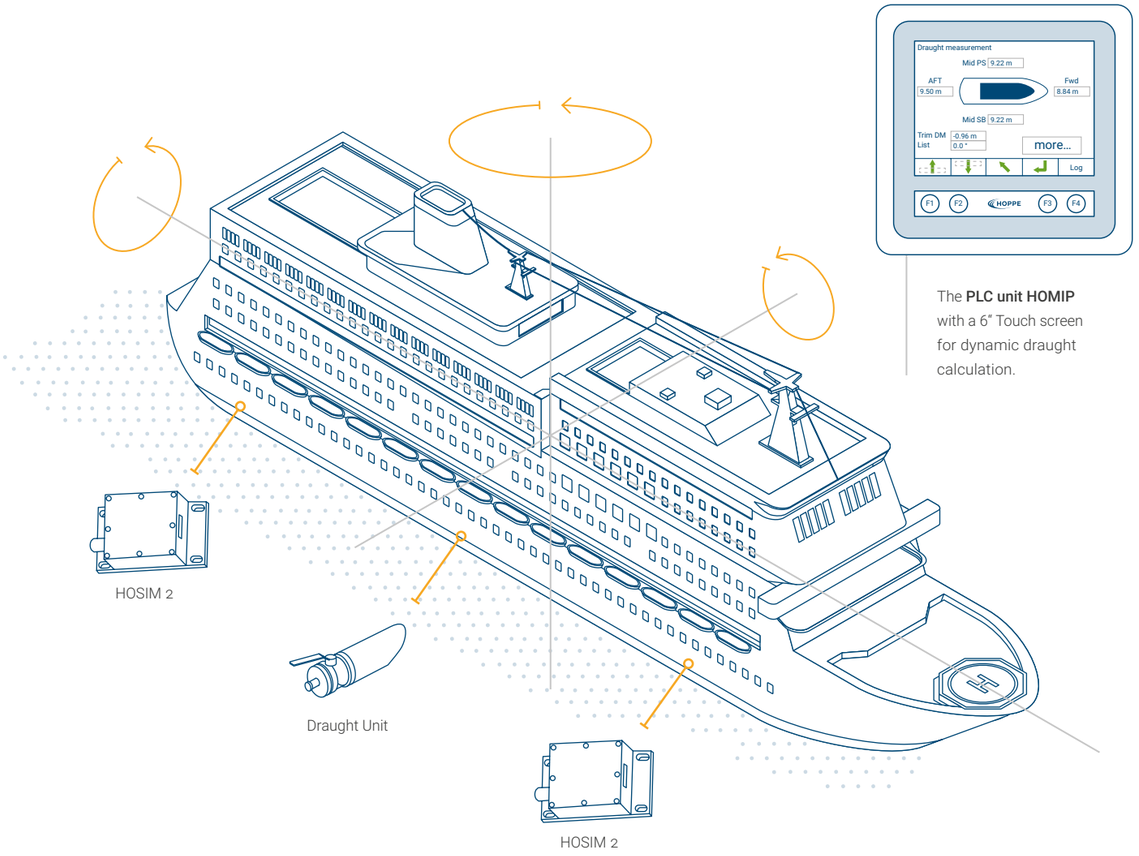
COMPONENTS

Hydrostatic pressure sensors HCG
- HCG 2011 analogue type, 4 – 20 mA
- HCG 4011 digital BUS type
- Stainless steel powder coated or titanium housing
- Titanium membrane

Solid class approved welding block unit including sensors

Precise inertial measuring unit HOSIM for vessels movement and floating condition

PLC unit HOMIP for draught calculation
- 6" touch screen
- Including trim, list and density correction
- Interfaces to Hoppe or 3rd party systems



The **PLC unit HOMIP** with a 6" Touch screen for dynamic draught calculation.

SENSOR TOOLBOX HOSET

Hoppe **Sensor Toolbox HOSET** supports maintenance, servicing, calibration and instant sensor replacement of Hoppe pressure sensors type HCG 2011/MO4. It helps to keep the Tank Content Measurement system in proper operation at all time. The design ensures easy handling and operation.

HOSET includes a software and HART-modem (Highway Addressable Remote Transducer), which allow an automized parameterization of the standard spare sensors as well as sensor zero point calibration.

The software includes all tank data to ensure failure free parameterization of sensors. After parameterization tank and sensor data shall be send to Hoppe head office to ensure comprehensive lifetime data analysis.

KEY FEATURES

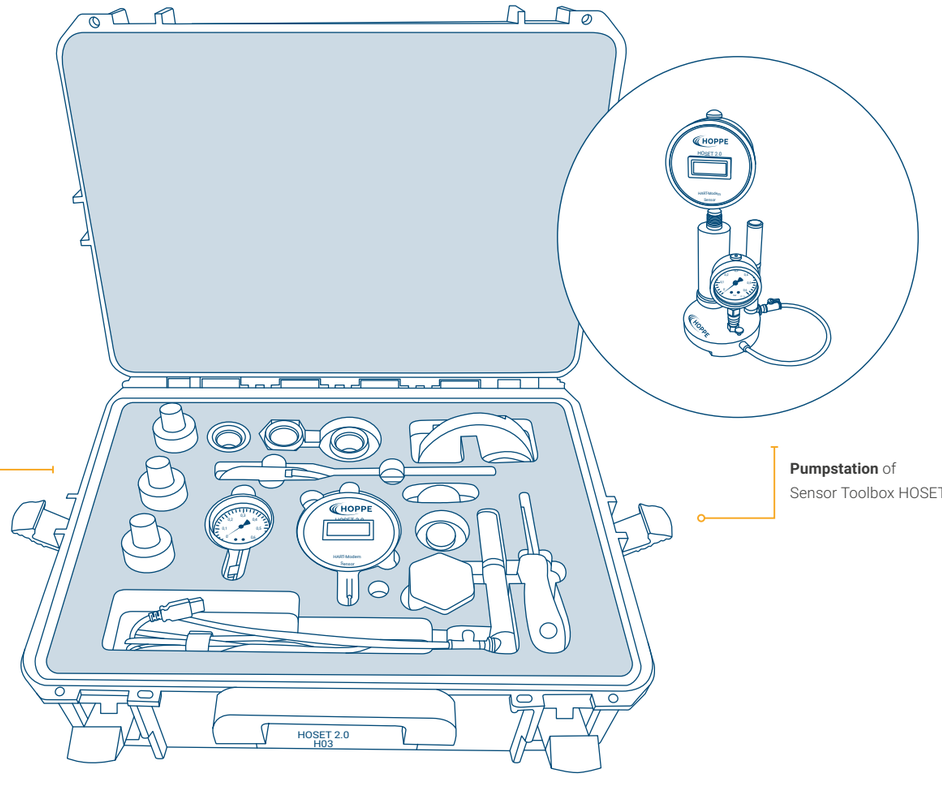
- Adhoc replacement of defective sensors on board
- Cost reduction by preventing dead stock on board
- Avoidance of unnecessary spare part orders
- Reduced service costs by self troubleshooting on board
- Calibration of pressure sensors zero point
- Sensor monitoring and lifetime analysis
- Designed for easy handling and operation

COMPONENTS

Sensor Toolbox HOSET

- Test unit with display for calibration and HART modem connection
- Pump station for sensor test and calibration
- Tools for process adapter replacement
- Standard spare pressure sensors type HCG 2011/MO4
- Separate process adapters
- Safe storage box IP 65

Software for automized parametrization and zero point adjustment



Pumpstation of Sensor Toolbox HOSET

HOPPE SYSTEMS AND COMPONENTS

		Electronic Devices		Valve-Actuator-Combinations				Motion Sensors				Heel Control and Trim units		Level Sensors			Power and Performance Meter	
		PLC unit HOMIP	I/O Modules	HOPAC (pneumatic)	HOHAC (hydraulic)	HOHEA (electro hydraulic)	electric	Inclination Sensor	Electronic Inclinometer	Inertial Measuring unit HOSIM 2	GPS Sensor	Reversible propeller pump	Blower unit	HCG2011 (electric)	HCG 4011 (electric BUS)	HOBUB (pneumatic)	Shaft Power Meter	Fuel Counter
Fluid Management	Valve Remote Control	•	•	•	•	•	•											
	Tank Content Measurement	•	•					•						•	•	•		
	Ballast Management	•	•	•	•	•	•	•						•	•	•		
	Bunker Management	•	•					•		•				•	•	•		
	Draught Measurement	•	•					•						•	•	•		
	Dynamic Draught Measurement	•	•					•		•	•			•	•	•		
Motion Control	Heel Control	•	•	•	•	•	•	•		•		•	•	•	•			
	Trim Control	•	•	•	•	•	•	•		•		•	•	•	•			
	FLUME® Roll Damping	•	•	•	•	•				•				•	•			
	U-Tank Roll Damping	•	•	•	•	•				•				•	•			
	Load Moment Control	•	•	•	•	•	•	•		•		•	•	•	•			
	Dock Control	•	•	•	•	•	•	•		•	•	•	•	•	•	•		
Ship Performance	Maihak Shaft Power Meter	•	•														•	
	Fuel Consumption Measurement	•	•														•	•
	Trim and Motion Measurement	•	•								•							
	Performance Monitoring	•	•							•				•	•	•	•	•

COMPACT OVERVIEW

Fluid Management

- Valve Remote Control
- Tank Content Measurement
- Bunker Management
- Ballast Water Management
- Draught Measurement
- Dynamic Draught Measurement
- Sensor Toolbox HOSET

Motion Control

- Heel Control
- Trim Control
- Roll Damping
- Load Moment Control
- Dock Control
- Tailored Control Systems
- Monitoring
- Engineering Service

Ship Performance

- Maihak Shaft Power Meter
- Fuel Consumption Measurement
- Dynamic Draught, Trim and Motion Measurement
- Performance Monitoring
- Fleet Data Quality
- Analysis Catalog

Ship Services

- Technical Support
- Spare Parts
- On Board Service
- Retrofit
- Service 4.0
- Predictive Maintenance and Self-Validation
- Fleet Data Quality
- Analysis Catalog
- Hoppe Global Service Points

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