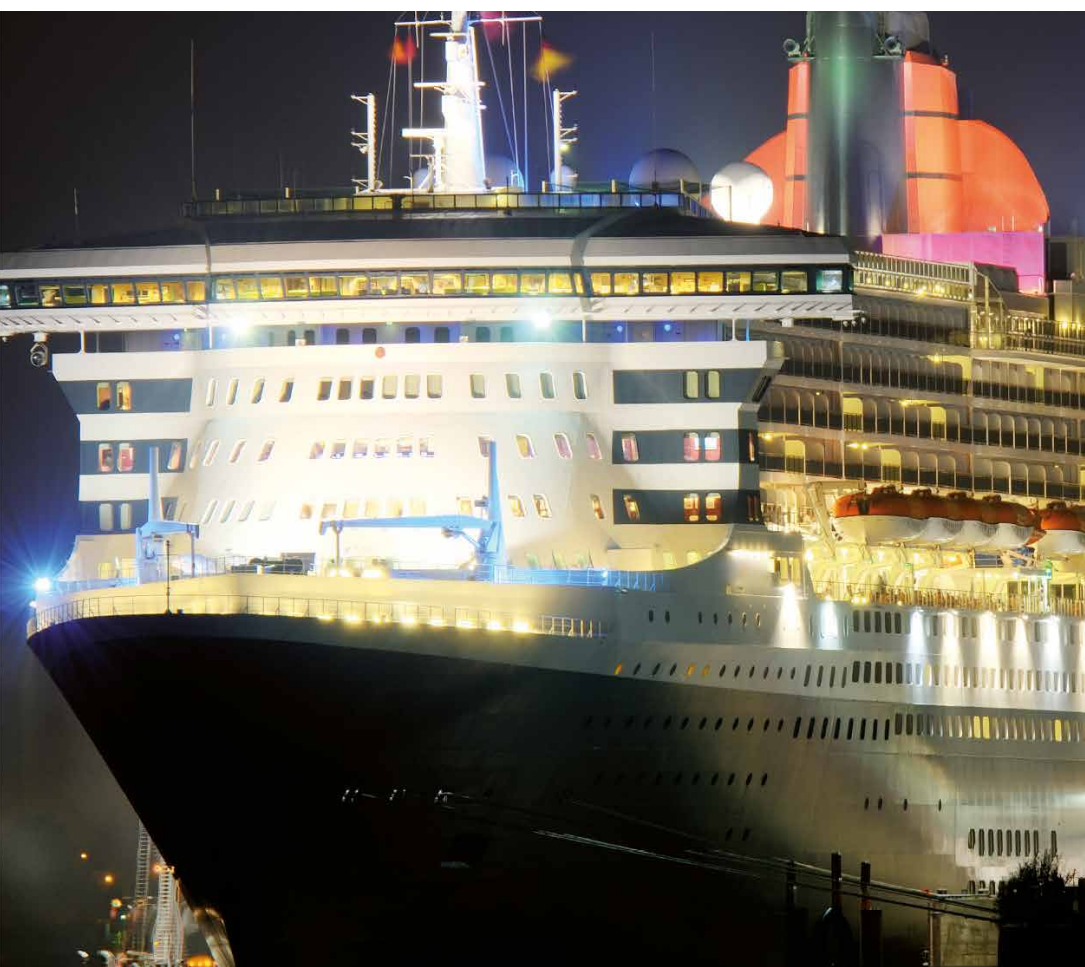


Electro Hydraulic System (EHS) for marine vessels and offshore installations



PLEIGER MASCHINENBAU

- _Electro Hydraulic Actuators
- _Pleiger Control Modules
- _Pleiger Control Loops

PLEIGER

System Solutions

Pleiger provides system solutions designed to match the individual needs of different types of vessels and offshore rigs. Pleiger offers a wide range of components for valve remote control, tank measuring systems and monitoring, covering all specific requirements. Complete system solutions made by Pleiger provide easy installation to the yards and reliability to the ship owners.

Supplier of **Complete** Valve Remote Control Systems and Customized Solutions
Process Control for Cargo, Ballast, Bilge, Fuel Oil, Black/Grey/Seawater,
Ballast Water Treatment, Scrubber Systems, Anti-heeling and
In Service Inclining Test Systems



EFFICIENT, RELIABLE AND COMPACT

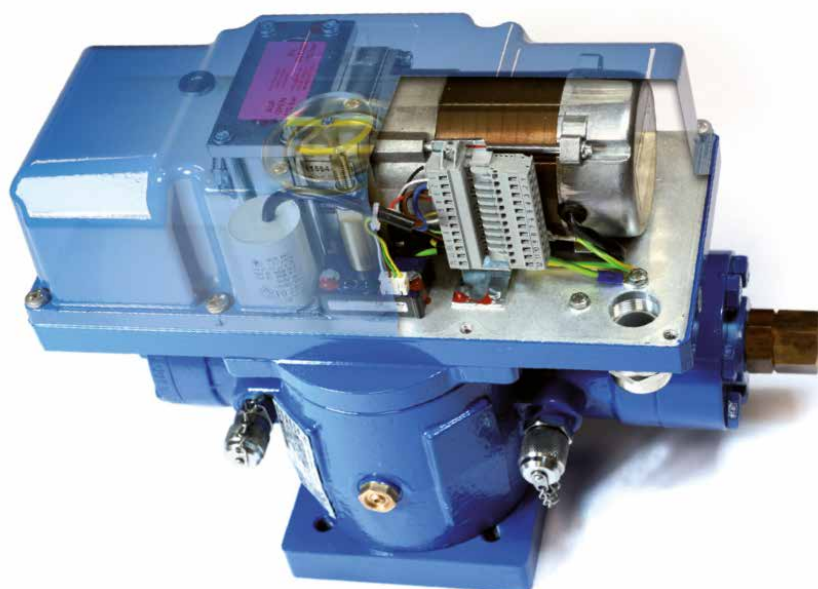


Electro Hydraulic System (EHS)



The Electro Hydraulic System EHS is designed as a de-centralized system, offering an alternative to the centralized system.

Each EHS forms a self-contained unit. Instead of hydraulic pipes, only cables need to be provided, therefore, this solution offers very easy handling and installation.



EHS – Electric Power – Hydraulic Transmission

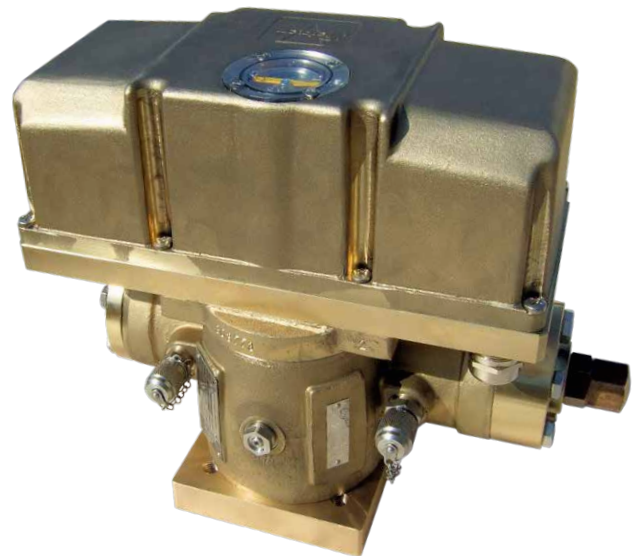
... a perfect combination!

The EHS System is constructed as a de-centralized system offering an alternative to the conventional system. Each EHS forms a self-contained unit. The connections between actuators and the control system are exclusively electrical. It combines the advantages of the hydraulic system and the electrical unit perfectly and reduces procuring and assembling time.



Highlights:

- _Small size – high torque
- _IP 67, IP 68 on request
- _Contact free limit switches
- _Position indicator
- _Small oil capacity
- _Low noise level
- _hydr. override
- _Energy efficient, cost saving
- _ATEX, optional
- _Bus Interface, optional
- _Submersible, optional
- _Bronze body material, optional
- _For conditions down to **-55°C**



SIMPLE AND EFFECTIVE



EHS – Designed for all requirements

compact and effective

The EHS System is approved by the classification organisations: ABS, BV, CCS, DNV-GL, LR, RINA. The electro hydraulic system EHS for rotary and linear operation with Pleiger actuators from the series STK (rotary actuator) and PVK (linear actuator) has been developed for the remote control of Butterfly valves, Ball valves and Globe valves.

For various applications the following different types are available:



_EHS-D3 - double acting rotary actuator, open/close and continuous operation

_EHS-SG - single acting rotary actuator, open/close operation with spring return

_EHS-S/G - single acting linear actuator for open/close operation with spring return

_EHS-Q - power pack unit used for separately installed linear or rotary actuators in dry, submerged or hazardous area

_EHS-EX - double-acting and single acting rotary and linear actuators, in explosion proof design

_EHS-UM - double acting rotary actuator for permanent submerged opened/closed and continuous valve operation



Pleiger Control Modules (PCM)

... a perfect combination!

Pleiger Control Module (PCM) is a building block system of different control and I/O modules. These modules can be combined to a system that is used to control and monitor EHS actuators, pumps, tank level sensors, etc. The small sized modules are ideally suited for designing compact control cabinets for de-centralized control systems.

BI, Bus Interface Module

- _BI bus interface connects all PCM modules to a supervisory control system
- _Profibus DP and Modbus RTU fieldbus provided

CM4, EHS Control Module

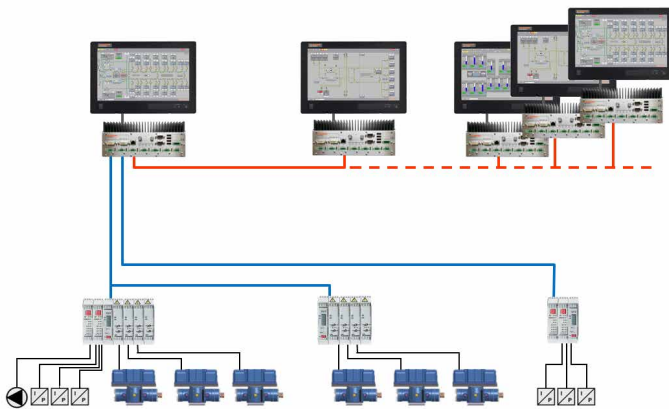
- _control module for all types of EHS actuators
- _control algorithms perfectly adapted to different actuators
- _can be directly connected to push buttons and LED of a mimic diagram
- _comfortable backup operation by means of double push button and LED status indication analogue output
- _PCM-PST for parameter settings of modules

Common features

- _hat rail plug connectors for DC power supply and serial data link
- _pluggable terminals are used for cabling of all modules
- _detailed status information eases diagnostics and fault localisation

Further modules

- _IO8/8/4 analogue and digital IO module for tank measuring etc.
- _RK16/8 digital IO module for valve control of centralized hydraulic actuators
- _CCM control module for continuous mode actuators in centralized hydraulic systems
- _IO/TII module for Pt 100 input, analogue input, analogue output
- _CM-ExE module for explosion proof EHS actuators



EASILY INTEGRATED



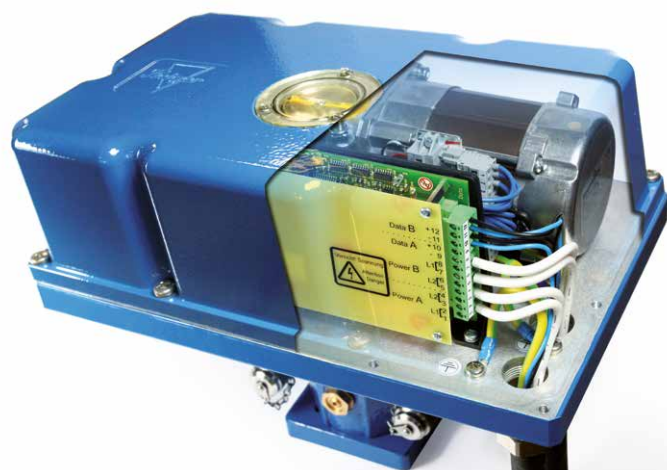
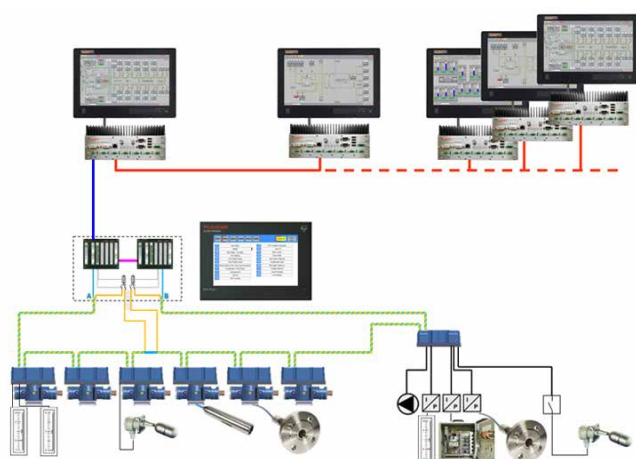
Pleiger Control Loop (PCL)

EHS data fieldbus system

PCL is a power AND data fieldbus system used to control and monitor EHS actuators, pumps, tank level sensors etc. The PCL system eases the electrical installation significantly. A single cable is used for power supply and data communication. Connecting all actuators and IO nodes by a simple cable loop saves a lot of cable and cabling effort.



- _for all types of EHS actuators
- _IO modules for tank measurement, pump control etc.
- _up to 250 nodes may be controlled by one bus master
- _each bus master provides up to 8 data loops and up to 8 power loops
- _local control panel for emergency operation and set-up
- _connection to supervisory control system via redundant Modbus RTU
- _single fault tolerant system
- _no more than 2 nodes are affected by a single fault even in case of interruption or short circuit of data or power lines
- _all faults are indicated and localised
- _redundant bus masters running in hot standby
- _separate BUS Master for SRTIP solutions



Tradition and Experience

More than 7,000 vessels equipped by Pleiger prove that Pleiger is the experienced and reliable partner that shipyards and ship owners can depend on, anytime and anywhere. Pleiger combines the innovative power of a German high-tech manufacturer with the down-to-earth character of a tradition-conscious family-owned company with long-term prospects and its own training and research centre. As a member of the Pleiger Group, with over 650 employees worldwide, Pleiger stands for stability and sustainable growth.



INNOVATION AND QUALITY – MADE BY PLEIGER!

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