



# OMEGA Compact

## 3-way Rotary Control Valve

ROBUST  
COMPACT  
FLEXIBLE



### OMEGA Compact

With the OMEGA Compact Frese becomes your one supplier of a comprehensive temperature and flow regulating solution for the Marine market.

OMEGA Compact is Frese's 3-way rotary control valve, which provides simple, accurate, and reliable temperature regulation for both diverting and mixing applications in high and low temperature cooling systems.

It interacts perfectly with our dynamic valve technology to maintain full temperature and flow control, and helps you achieve significant energy savings. This will improve your CO2 emissions as well as your bottom line.

OMEGA Compact is by far the most compact 3-way rotary control valve on the market. Along with its low weight and equally compact actuator, this makes it much easier to install and handle in cramped engine room spaces.

Like all Frese products, all OMEGA Compact valves are designed with energy savings as a central target. It is optimized for minimum pressure drop and is therefore market leading in terms of high Kvs values.

In addition significant energy savings can be obtained in the Leakguard-series, where the LeakGuard™ technology, which is rated as Class IV, ensures very tight sealing in the valve, even over time. This reduces fuel oil consumption on the main engine in low temperature cooling systems, as well as on boilers in high temperature freshwater cooling systems.

Frese is your one stop supplier of flow and temperature control for marine fresh water cooling systems with high quality components and energy efficient systems.

### More than the sum of the parts

When it comes to OMEGA Compact, our in-house flow control experts ensure optimised valve selection and precise calculations, providing you with peace of mind regarding lifetime performance, safety and energy savings.

The OMEGA Compact is not just a component; it is an integral part of the Frese FUELSAVE® system. This system leverages Frese's automatic balancing and control valve technology to maximise fuel savings in

cooling water systems. By identifying the "index valve," which dictates the minimum required pump pressure, the Frese FUELSAVE® system adjusts pump speed to maintain minimal differential pressure, ensuring efficient cooling while minimising energy consumption.

Even as a standalone solution the OMEGA Compact valve will deliver substantial energy savings on various applications in both newbuilds or replacements of existing 3-way valves installed.



## OMEGA Compact - 3-way Rotary Control Valve

- Size: DN 65-DN800 (DN550-DN800 on request)
- Pressure Class: PN10/16
- Valve Housing: Nodular Cast Iron
- Leakage Rate: Standard-series: Max. 0.5 % of Kvs  
Leakguard-series: 0.01% of Kvs

Refer to datasheet for details



## Electric Rotary Actuator - ROL-series

- Electric Rotary Actuator for accurate valve control with feedback information to local or central control system.
- Robust design with protection class IP67.
- Optional items: Explosion proof, IP68, additional limit switches and modbus RTU communication.



## Pneumatic Rotary Actuator - ROP-series

- Pneumatic Rotary Actuator for accurate control with complementary positioner and filter regulator.



## ELCO-100 - Local Electric Controller

- Local PID Controller for control of supply temperature.
- Communication with central control system possible.
- Complementary marine type temperature sensors.

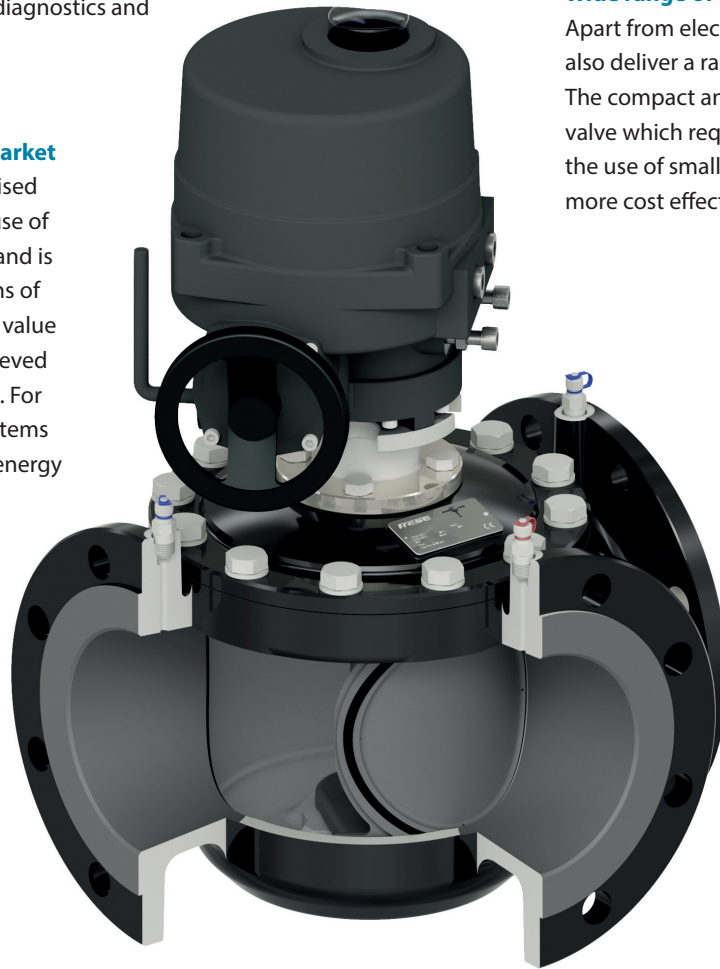


#### Differential pressure measurement ports

Ensuring easy onsite diagnostics and troubleshooting.

#### Lowest pressure drop in the market

Frese OMEGA Compact is optimised for minimum pressure drop by use of advanced CFD simulation tools and is therefore market leading in terms of high Kvs values. The highest Kvs value and lowest pressure drop is achieved when installed as a mixing valve. For typical marine cooling water systems this will result in 30-50% pump energy through the valve.



#### Wide range of actuators available

Apart from electrical actuators, Frese can also deliver a range of pneumatic actuators. The compact and optimised design results in a valve which requires less torque. This allows for the use of smaller actuators, which leads to a more cost effective valve solution.

#### Flexible maintenance

A special topflange ensures easy maintenance of the valve at installation site.

#### Leakage rate Class IV (0.01%)

Frese's 3-way rotary control valve is designed to finest tolerances. In the LeakGuard-series the embedded LeakGuard™ technology ensures leakage rate up to Class IV in the entire lifetime of the valve.

## Low leakage benefits

Standard 3-way valves will often have a high leakage rate between ports in closed position. This leads to increased pump energy consumption, reduced freshwater production and even increasing main engine fuel consumption. For below standard applications the benefits of a low leakage 3-way valve are described.

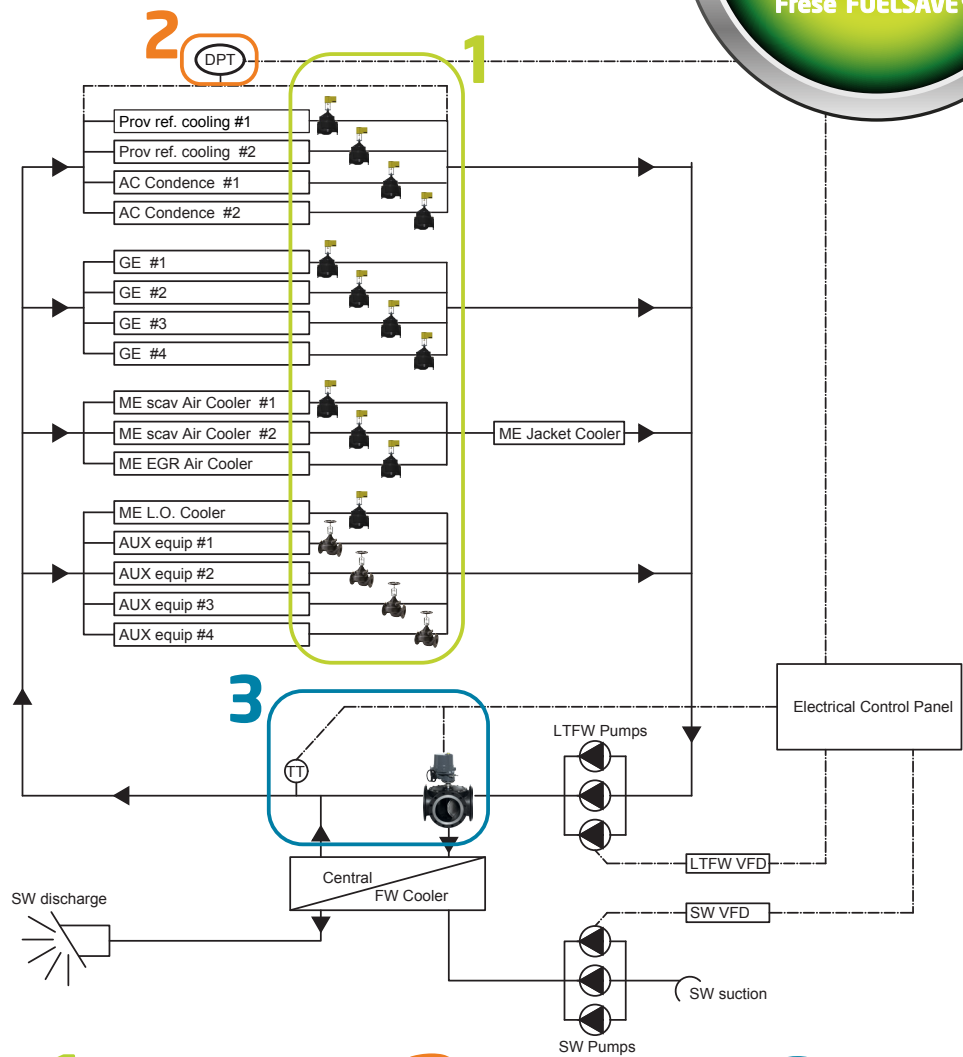
System / Application	Effect of high leakage
Low temperature freshwater cooling system	A leaking 3-way valve will result in energy loss due to increased supply temperature. This leads to an increased specific fuel oil consumption (SFOC) on the main engine.
Freshwater generator	A leaking 3-way valve results in increased flow bypassing the freshwater generator, which decreases freshwater production onboard.
HT FW cooling water system (2-stroke engines)	In port and under main engine low load operation the cooler should be in full bypass mode. When a 3-way valve is leaking excess heating from electric or oil fired heaters is needed to maintain temperature in the cooling system for the main engine.



**Save Energy  
Onboard**

with  
**Frese FUELSAVE®**

**ENGINE  
ROOM**



**1**

The flow is distributed by pressure independent control and balancing valves positioned at each client. Flow is reduced at any given load based on individual control signals.

**2**

Optimum pump savings are obtained by running the pump via signal from external differential pressure transmitter (DPT) positioned at critical points in the system.

**3**

Overall temperature is controlled by low pressure drop and zero leakage 3-way valve OMEGA Compact.



KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING  
EXCELLENCE

CUSTOMER  
FOCUS



[www.frese.eu/en/omega](http://www.frese.eu/en/omega)



[marine@frese.dk](mailto:marine@frese.dk)



+45 58 56 00 00