



## HEATPAC®

### EHS-72 Electric Heating System

Designed for installation in marine oil systems, Alfa Laval HEATPAC® EHS-72 is an automatic electric heating system (EHS) that heats all the types of mineral oils in booster and centrifugal separation systems in ship engine rooms. Compact and lightweight, it features specially designed heating elements that provide high-efficiency heat transfer and gentle treatment. It also features instant-response electronic temperature control with an accuracy of  $\pm 1^\circ\text{C}$ . This safeguards oil quality, thereby preventing quality degradation.

#### Application

HEATPAC EHS-72 automatically heats all the types of mineral oils, particularly high-density, high-viscosity fuel oils, sensitive lubricating oils and turbine oils, commonly used in booster systems, prior to centrifugal separation.

#### Benefits

- Compact and lightweight
- Easy to install
- Gentle treatment
- No deterioration of heated oil
- Automatic start-and-forget operation

#### Standard configuration

- HEATPAC EHM Heater, standard design

The heater comprises rectangular die-cast aluminium heating elements mounted on a flange to form a compact heating block, which is inserted in a pressure vessel made of mild steel. A baffle inside the vessel divides the flow into two passes. The oil inlet and outlet are located opposite each other on the same level, enabling installation in a series.

The terminal box housing at the top of the heater is separated from the hot pressure vessel to maintain a low temperature in the box. The hot side of the pressure vessel is adequately insulated with 25-mm mineral wool wrapped in aluminium sheet.



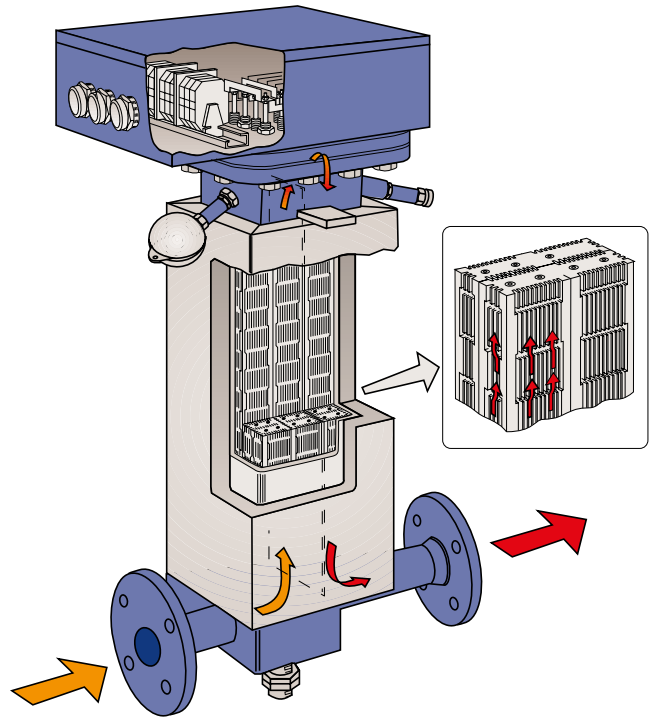
- **HEATPAC power unit**  
Housed in a robust cabinet feeds electric power to the heater. It is regulated by an external controller, such as the Alfa Laval EPC 60, which is connected to and controls the Alfa Laval separation systems.
- Ancillary equipment including PT-100 temperature sensor, high temperature sensor and safety valve.

**Working principle**

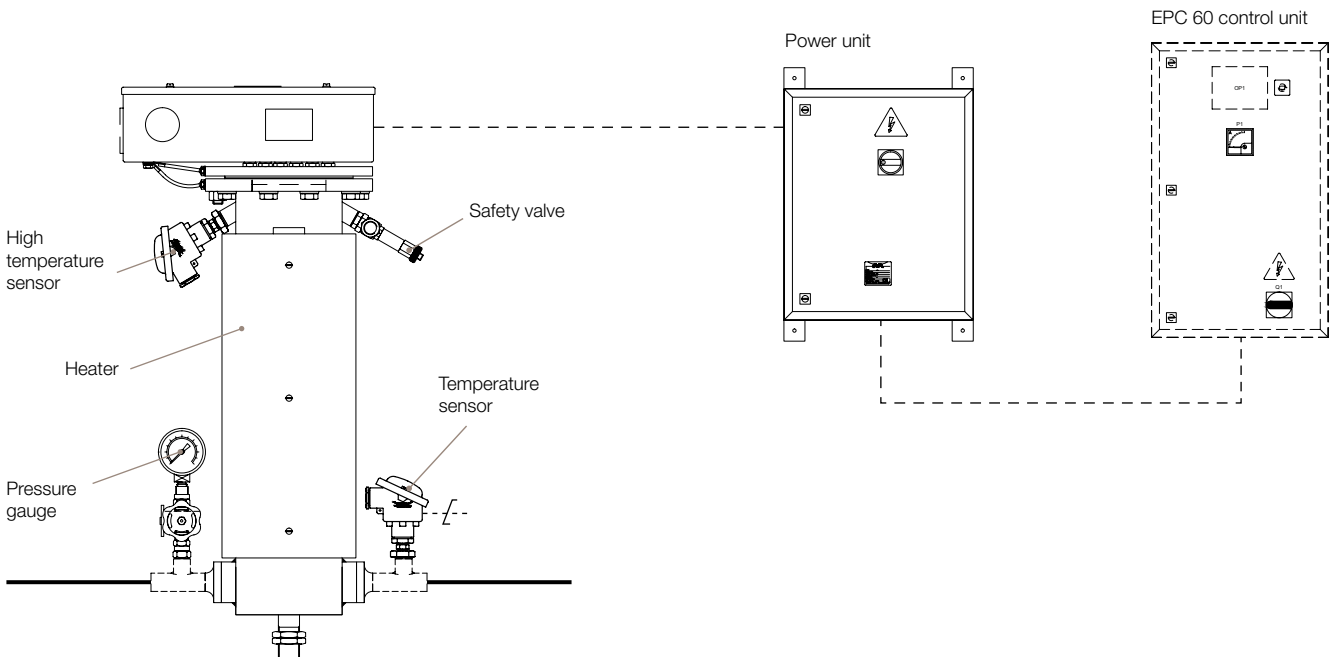
The fuel or lubricating oil is fed continuously to the HEATPAC heater. A signal from the PT-100 temperature sensor at the oil outlet is transmitted to the Alfa Laval EPC 60 controller, which regulates the amount of electric power to the heating elements. Heat is transferred to the oil through the corrugated aluminium surface (shown right).

Overall incremental operation is automatically controlled by the EPC 60 controller. The EPC 60 control unit and power unit are specially designed thyristor modules, which perform the incremental feeding of power and prevent any interference with other shipboard electric and electronic equipment.

A unique characteristic of the cast aluminium heating elements is the rapid response to any load change. This feature, in combination with the specially designed control system, ensures outstanding control performance, independent from any fluctuations in flow rate or oil temperature.



Working principle of the HEATPAC system.



Basic concept of the HEATPAC EHS system.

Standard safety equipment comprises a high temperature sensor located in close proximity to the aluminium heating element. The high temperature sensor cooperates with an independent temperature guard in the control unit/power unit to ensure protection from overheating. In addition, the heater automatically turns off if the pump starter is turned off. This feature ensures that the heater is fully protected from overheating in the event of a systems operations failure.

The Alfa Laval EPC 60 control unit and power unit are specially designed thyristor modules, which perform the incremental feeding of power and prevent any interference with other shipboard electric and electronic equipment. A unique characteristic of the cast aluminium heating elements is the rapid response to any load change. This feature, in combination with the specially designed control system, ensures outstanding control performance, independent from any fluctuations in flow rate or oil temperature.



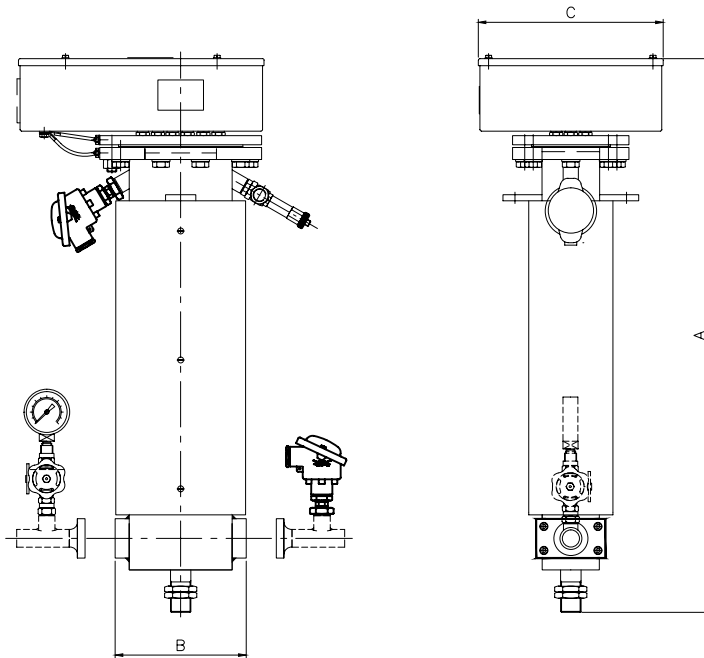
EPC 60 control unit.

## Technical data

<b>HEATPAC EHM Heater</b>	
Design pressure	1.5 MPa (15 bar)
Test pressure	2.25 MPa (22 bar)
Max. temperature	160°C (320°F)
Power supply	230, 400, 440, 480, 500, 690 VAC, 50/60 Hz
<b>Control module</b>	
Control module internal voltage	24 V
Protection class	IP 65
Max. ambient temperature	55°C (131°F)
External inputs	24 VAC potential-free contact PT-100 three-wire measurement 4–20 mA
<b>Installation</b>	
Capable of being installed in any position	
<b>Power unit</b>	
Four cabinet sizes are available	
<ul style="list-style-type: none"> <li>• Up to 24 kW</li> <li>• 36 to 56 kW</li> <li>• 65 to 72 kW</li> <li>• 100 to 130 kW</li> </ul>	
<b>Voltage</b>	
All sizes are available for 230, 400, 440, 480, 500 and 690 VAC	
<b>Certifications</b>	
Marine	ABS, BV, DNV, GL, LR, NK, RINA, RMRS

**Alfa Laval EHM**

Article number	Capacity kW	Dimensions (mm)			Connections mm	Weight	
		A	B	C		inch	kg
9016619-01	7/8	890	159	150	25	1	25
9016619-02	14/16	890	159	200	25	1	35
9016619-03	22/24	895	216	300	40	1.5	55
9016619-04	36/40	895	216	300	40	1.5	70
9016619-05	50/56	895	216	300	40	1.5	100
9016619-06	65/72	895	216	300	40	1.5	125
9016619-07	100/130	895	216	300	40	1.5	125



Alfa Laval reserves the right to change specifications without prior notification.

**How to contact Alfa Laval**

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com)