

ELWA

Flow heater ERH 4600 RF

The reference class for oil/emulsion



Service Hotline

+ 49 (0) 8141 – 22866-980



Description



The series 4600 heaters feature design characteristics which make these units unrivalled on the market. The high variability of the design allows a perfect adaption to any process conditions. Thousands of these heaters are in service on ships, in power stations or industrial applications all over the world.

Design

The series 4600 heaters consist of a welded pressure vessel with an electric heating insert. The heating elements are positioned in protection tubes and are not in direct contact with the medium. They can be exchanged **without draining and opening** the pressure vessel. The design of the heating elements ensure excellent thermal reaction time and control accuracy.

Electrics

Due to the flexible design, the heating elements can be adapted to any operating voltage between 230 VAC and 690 VAC.

Operating pressure

6 bar in standard design/10 bar in HP design

Operating temperature

Max. 150 °C

Heat transfer

Due to the perfect hydraulic flow around the heating elements, the medium is gently heated to the specified temperature. The surface load (W/cm²) can be precisely adapted to the medium characteristics. Recommended surface loads:

| | |
|-----------------------------|--|
| 0,8 W/cm² | lube oil/low flow rate of medium |
| 1,1 W/cm² | high viscosity heavy fuel oils and average flow rate of medium |
| 1,4 W/cm² | marine diesel fuels, light diesel fuels and high flow rate of medium |

Material

The pressure vessel and the heating insert with the protection tubes for the heating elements can be made of any material to suit the application. By standard and with short delivery times: P265GH (mild steel) and 1.4571 (stainless steel). Other materials are available on request.

Controls (ELWA)

The majority of our heaters are delivered with ELWA control cabinets specially designed for the specific applications. The heating steps can be controlled either with mechanical or electronic temperature controllers. The power is then switched with conventional contactors, solid state relays or thyristor controllers. Please see data sheets for ELWA ETU/ELWA SPC/ELWA STC. The control cabinets can either be mounted directly on the heaters or can be installed separately.

Typical applications

The series 4600 heaters are the perfect choice for heating fluids like fuel oils (MGO/HFO), lubrication oils or emulsions.

Safety

All heaters are equipped with built in safety temperature limiters (STB). Optional additional safety devices: flow switch, temperature limiter (self reset), PT-100 sensors and safety valves.

Thermal insulation

The heaters come with an efficient thermal insulation made of rockwool and galvanised steel sheet cover. The cover is also available made of stainless steel (polished upon request).

Painting

Heavy duty industrial painting with 2K structured PUR paint

Process connections

Standard: Flanges according to DIN EN 1092-1/11B1/DN15-DN250/PN16

Optional: Triclamp or threaded connections

The position of the connections can be adapted on request.

Classifications

ABS, BV, DNV, CCS, GL, LRS, RINA, TÜV, MRS, others on request





Overview table

| Type | heating power (kW) | | | heating steps (kW) | | | Nozzle size | | |
|--------------|--------------------|-----|-----|--------------------|---------|---------|-------------------|------|-----|
| | | | | | | | Min | Norm | Max |
| 4603RF-V | 3 | 4 | 5 | 1x3 | 1x4 | 1x5 | 25 | 32 | 40 |
| 4606RF-V | 6 | 8 | 10 | 2x3 | 2x4 | 2x5 | 25 | 32 | 50 |
| 4609RF-V | 9 | 12 | 15 | 3x3 | 3x4 | 3x5 | 25 | 32 | 50 |
| 4612RF-V | 12 | 16 | 20 | 2x6 | 2x8 | 2x10 | 25 | 32 | 80 |
| 4620RF-V | 16 | 20 | 24 | 2x8 | 2x10 | 2x12 | 25 | 32 | 80 |
| 4624RF | 18 | 24 | 30 | 3x6 | 3x8 | 3x10 | 25 | 32 | 80 |
| 4624RF-V | 24 | 30 | 36 | 3x8 | 3x10 | 3x12 | 25 | 32 | 80 |
| 4636RF | 27 | 36 | 45 | 3x9 | 3x12 | 3x15 | 25 | 40 | 80 |
| 4636RF-V | 36 | 45 | 54 | 3x12 | 3x15 | 3x18 | 25 | 40 | 80 |
| 4648RF-V | 48 | 60 | 72 | 4x12 | 4x15 | 4x18 | 25 | 40 | 100 |
| 4660RF-V | 60 | 75 | 90 | 5x12 | 5x15 | 5x18 | 25 | 50 | 100 |
| 4672RF-V | 72 | 90 | 108 | 6x12 | 6x15 | 6x18 | 25 | 50 | 125 |
| 4696RF-V | 96 | 120 | 144 | 8x12 | 8x15 | 8x18 | 25 | 65 | 125 |
| 46128RF-V | 128 | 160 | 192 | 8x16 | 8x20 | 8x24 | 25 | 65 | 150 |
| 46152RF-V | 152 | 190 | 228 | 12+7x20 | 15+7x25 | 18+7x30 | 25 | 65 | 150 |
| surface load | 0,8 | 1,1 | 1,4 | 0,8 | 1,1 | 1,4 | W/cm ² | | |

Complementary products

ELWA SPC

smart.power.control

Control box with heating steps and step-less control of a part of the heating power with our intelligent ELWA SPC control unit and solid state relays

ELWA STC

smart.thyristor.control

Control box with fully step-less regulation of the heating capacity using ELWA STC control

ELWA EVM

electronic.viscosity.measurement

Inline unit to measure the viscosity of the heated fluid

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