

**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/cm<sup>2</sup>) can be precisely adapted to the medium characteristics. Recommended surface loads:

<b>0,8 W/cm<sup>2</sup></b>	lube oil/low flow rate of medium
<b>1,1 W/cm<sup>2</sup></b>	high viscosity heavy fuel oils and average flow rate of medium
<b>1,4 W/cm<sup>2</sup></b>	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 <sup>2</sup>		

## 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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