

Flange Heater EFHR

Ø 280 mm
25 kW / 45 kW



**Assembly and
Operating Instructions
Version
11.08.2015**

Subject to technical changes

1. General

The operating data, dimensions and design of the flange heater can be found on the nameplate and the wiring diagram at the end of the operation instructions.

All damages caused by non-observance of the assembly and operating instructions are not covered by the works guarantee. Independent interventions on the device lead to loss of the guarantee.

2. Safety information

Before opening the device it must be ensured that the device is de-energised.

The electrical installation, testing, maintenance and repair work and the elimination of any faults must only be carried out by an approved electrician. The power company stipulations and the device-related regulations (e.g. VDE, DIN, TÜV (TÜV = Technical Control Board), heating systems provision etc.) must be adhered to.

For further information please refer to the following points.

3. Use

The electrical built-in heaters are intended as heaters for enclosed, electrically heated metal storage hot water heaters in enamelled execution.

The heating elements are carried out in an isolated design to the flange.

The electrical connection of controller and limiter must be supplied externally in compliance with the legal requirements and local conditions by a qualified electrician.

The desired temperature can be pre-selected using the adjustment knob. Low water temperatures are more economical. The water hardness should not exceed 14°dH. Deviating water quality, for example by increased mineral content or other contaminants, can lead to a reduced service life. The heating of water with aggressive contents (acids, alkaline solutions, ...) is not permitted.

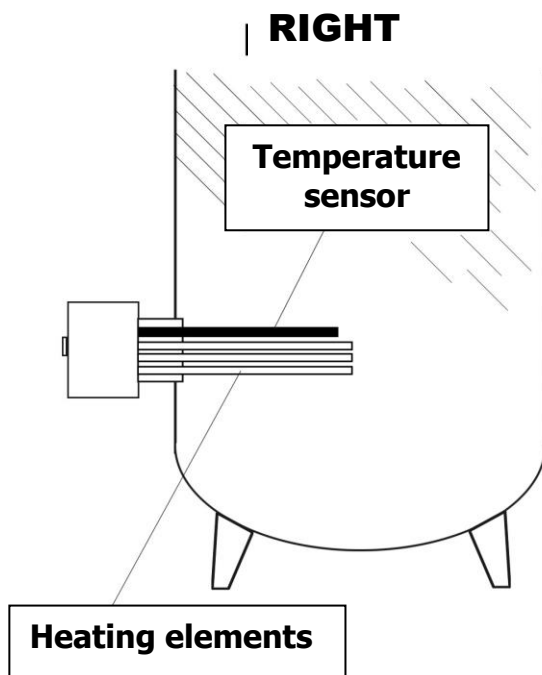
We shall not assume any liability for damages arising from

- **corrosion of the parts coming into contact with the media**
- **calcification or soiling of the heating elements**
- **improper or alienated use.**

The heater must only be switched on when the container has been filled with water. The plant operator must ensure that the built-in heater cannot run dry by taking suitable measures. Running dry leads to damage.

4. Assembly and connection

The electric built-in heater must be checked for signs of transportation damage before assembly, connection and commissioning. Assembly and connection work must only be carried out by authorised technical staff.



Only horizontal installation in the enamelled storage water heater is permitted for all types and should take place as far towards the bottom as possible!

Attention must be paid to the position of the temperature sensor according to the drawing!

Installation takes place horizontally in the enamelled storage water heater as far towards the bottom as possible. The flange frame must not be longer than 75 mm, so that the heating elements and the sensor sleeve still sufficiently protrude into the storage water heater. After assembly the tightness of the flange connection must be tested. The wiring diagram for the electrical connection is at the end of this manual. It is important that the earth wire connection is made carefully and all metal parts of the storage unit are included in the protective measures.

Check the screw connections tightness and tighten if necessary after the first heating up.

5. Temperature setting and limitation

The built-in heater is equipped with a temperature regulator (TR) and a temperature limiter (TB). The temperature regulator has a range of 30°C to 96°C. The temperature limiter is set at the works to 120 °C – 8 °K and sealed. The temperature setting takes place by turning the adjustment knob of the temperature regulator at the face end of the cap. A sensible operating temperature of 60 °C at the most should not be exceeded. The adjustment knob has a snap-in contact at 60 °C. The temperature limiter is not a dry protection. It must be ensured that the switched-on heating elements are completely and to an adequate height surrounded by the heating water storage media which is to be heated.

6. Release of the temperature limiter

Opening the device and release of the temperature limiter must only take place in a de-energised state by an approved electrician. A cutoff of the temperature limiter indicates a fault in the system. Release must only take place after elimination of the fault and is done as follows:

- De-energise the electric built-in heater and secure it against unintentional switching on
- Remove the adjustment knob
- Dismantle the cap
- Make sure that the component is de-energised
- Release of the temperature limiter is done by pressing the plastic button at the top of the regulator. The switching sound when the limiter is released is clearly audible. The sensor sleeve must cool down by approx. 10 K (waiting time approx. 5 – 15 min.).

7. Thermal disinfection

Thermal disinfection should cover the entire system including all withdrawal fittings. Drinking water heaters must be heated up to a temperature of above 70 °C (DVGW Worksheet W 552 Par. 4.2.1 (DVGW = German Technical and Scientific Association for Gas and Water)).

8. Maintenance instructions

The electrical installation, testing, maintenance and repair work and the elimination of any faults must only be carried out by an approved electrician.

All work on the device must only be carried out in a de-energised state.

The system must undergo a visual check at sufficiently short intervals. For this, devices and flange connections must be checked for tightness, corrosion damage, other damage and solid deposits on or between the heating elements.

Furthermore the electrical connection must be checked.

Check the screw connections for tightness and tighten if necessary after the first heating up and afterwards at regular intervals.

The temperature regulator and the temperature limiter as well as the entire switching system must be checked for function at least once a year.

Deposits between the heating elements can only be removed after disassembly of the flange heater. Cleaning of the heating elements must be carried out carefully so that the pipe sheathing of the heating elements is not damaged. The use of a wire brush for cleaning is not permitted. For this the heating elements must not be bent together. In case of extremely hard deposits that cannot be removed, replacement is necessary.

9. Storage / downtimes

The storage room must be dry and free from dust.

Before emptying the storage water heater the flange heater must be de-energised.

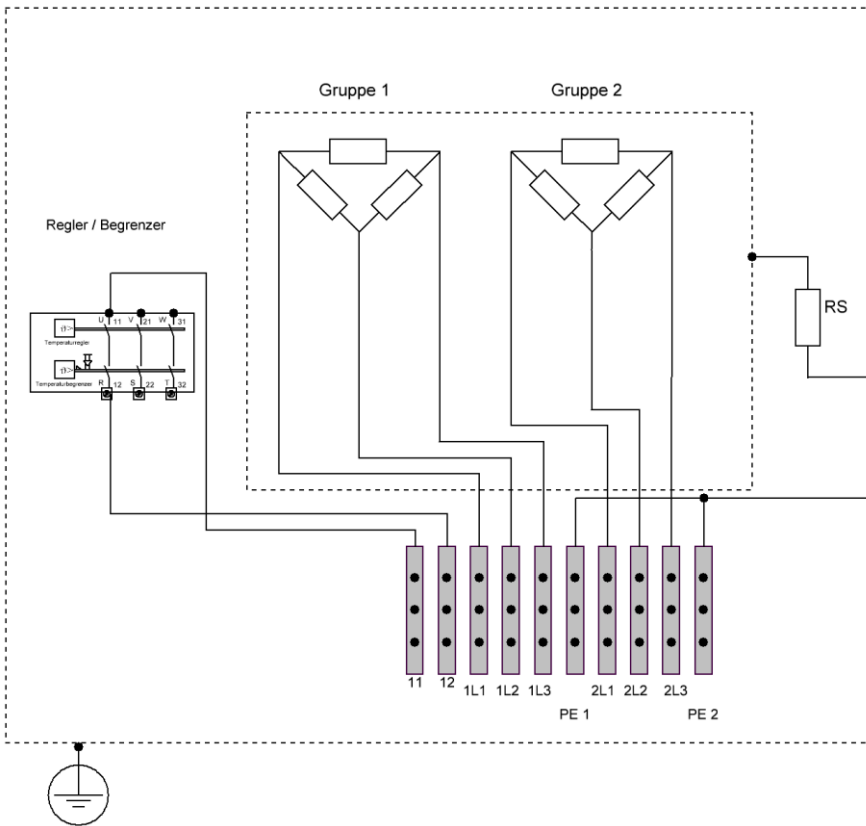
Suitable measures must be taken that prevent corrosion damage to the flange heater.

10. type overview

| designation | connection | power / kW | Installation length / mm |
|-------------|---------------|------------|--------------------------|
| 5E 1399 | 2 x 3 ~ 400 V | 25,00 | 620 |
| 5E 1025 | 3 x 3 ~ 400 V | 45,00 | 620 |

10. Electrical circuit diagram

EFHR 25 kW (2 groups with 12,5 kW in delta connection)



EFHR 45 kW (3 groups with 15 kW in delta connection)

