

## Fitting instructions, user manual and service

Please keep in a safe place

### Screw-in heater R 1½" for industrial and heating water

#### 1.0 to 9.0 kW (type A)

- AHIR-B-S-...
- AHIR-BI-S-...



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## General safety information

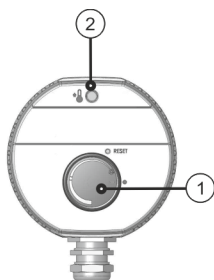


- Do not place the device into operation until after having read the user manual.



- These devices may be used by children aged 8 or more and by persons with reduced physical, sensory or mental capacity or those lacking in experience and/or knowledge if they are supervised or if they have been instructed in safe operation of the device and understood the resultant dangers. Children may not play with the device. The device may not be cleaned or serviced by children unless they are supervised.

**Installation, setting and removal must be  
carried out only by qualified electricians.**

**User manual** for the user and qualified installer

|        |                     |
|--------|---------------------|
| Item 1 | Temperature control |
| Item 2 | Operating light     |

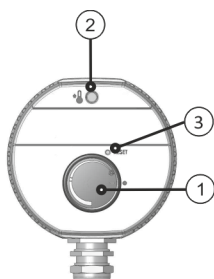
**Device description**

The switch-off temperature can be set steplessly at the rotary knob (item 1). The range extends from off (0) through frost protection (❄) to approx. 85 °C. It should be set to approx. 65 °C for reasons of economy.

The operating light (item 2) lights when the heating element is in operation.

**Operation**

The required temperature can be set by setting the temperature control (item 1) to the required temperature. When the temperature has been reached, the device automatically switches off and switches on again if necessary. If you only want frost protection when you are on holiday, you can turn the rotary knob to the required position (❄).

**User manual** for the qualified installer

|        |                     |
|--------|---------------------|
| Item 1 | Temperature control |
| Item 2 | Operating light     |
| Item 3 | Reset button        |

**Safety temperature limiter**

If the safety temperature limiter has tripped, you can reset it with a "00 screwdriver" through the opening marked "Reset". This cannot be done until the temperature has cooled down by approx. 10 K.

## Fitting instructions

Operating data, application, dimensions and model of the screw-in heater are on the identification plate and circuit diagram on the device, or can be found in the fitting instructions / user manuals.

**The conical thread must be provided with a sealant approved for industrial water before assembly.**

**For safety reasons, the device may not be installed from above or below.**

**The device must be installed horizontally and ensure that the "TOP" label point is upwards.**

Make sure that the heating tubes are entirely covered with liquid before placing into operation. The circulation of the liquid shall not be inhibited.

### Important information

If a heat exchanger is fitted in the same tank, the controller must limit the temperature caused by the heat exchanger to 85 °C. This prevents the safety temperature limiter of the screw-in heater tripping.

### Safety temperature limiter

The safety temperature limiter may trip at temperatures lower than approx. –15 °C (e. g. transportation or storage). If this happens, press the reset button. See the section intended for experts in the user manual.

**The device may only be used to heat water.**

### Corrosion protection

Please note: This heating element is applicable in stainless steel boiler as well as in black steel / black steel enamelled boilers. Select the settings via DIP switch according to the boiler type. For an installation of the heating element into black steel or black steel enamelled boilers, the red slide switch (DIP switch) has to be left in position "2" (factory setting).

When installing the heating element into a stainless steel or chrome steel boiler, the slide switch (DIP switch) has to be switched to position "ON".

In case of disregard corrosion damages on device and boiler could be caused.

### Electrical connection

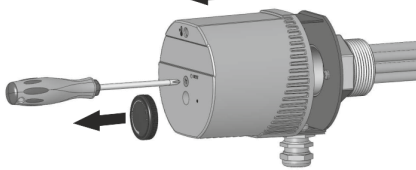
The device is intended for fixed connection only and may be connected only to fixed cables. Select a cable cross-section suitable for the power rating of the device. All poles of the device must be able to be disconnected from the mains by means of an at least 3 mm isolating distance. The PE wire must be 100 mm longer than the other conductors.

### In the event of the following the guarantee is void:

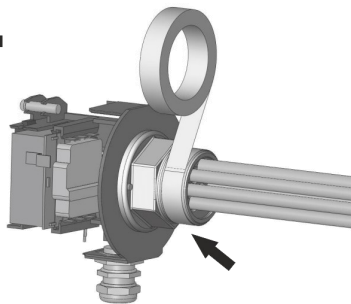
- Not complying with this paperwork „Fitting instructions, user manual and service“
- Not complying with the boiler manufacturer's fitting instructions
- Technical modifications, repairs or tampering with the device (including exchanging the thermostat)
- Applications for which the device was not designed
- Incorrect operation and maintenance
- Not complying with directive VDI 2035

## Fitting instructions

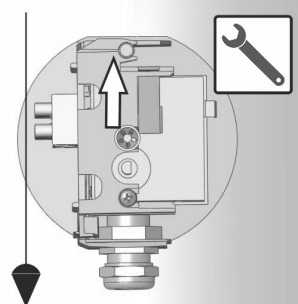
1.



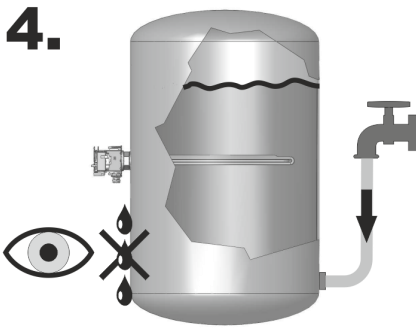
2.



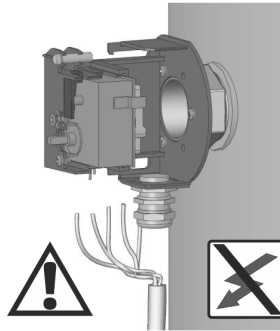
3.



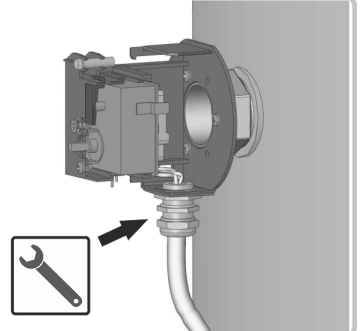
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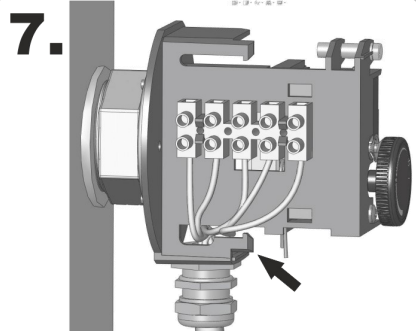
5.



6.



7.

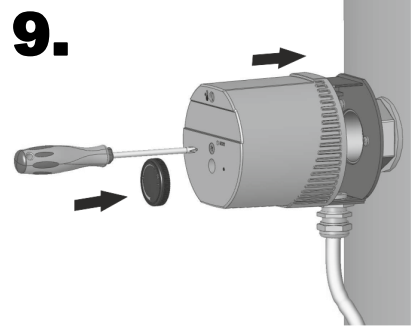


### 8.1 DIP-switch

Position ON:  
For stainless steel boiler

Position 2:  
For black steel- / enamelled boiler

9.



### Applicable standards

Safety: EN60335-1 / -2-21 / -2-73  
EMC: EN55014-1 / -2  
CEM: EN62233  
IP Code: EN60529

## Circuit diagram

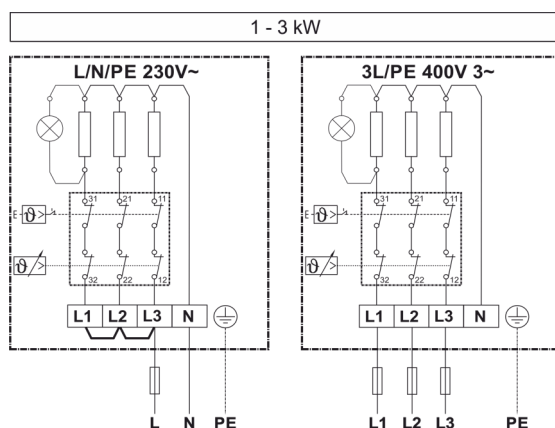


### **WARNING!**

All power supply circuits must have been switched off before accessing the connection terminals.

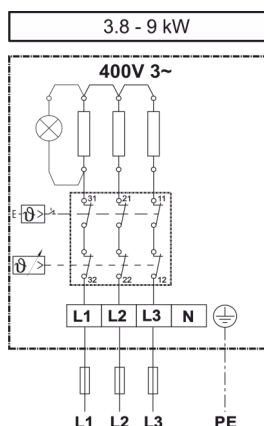
### 1.0 to 9.0 kW (type A)

- AHIR-B-S-...
- AHIR-BI-S-...



### Operating voltage:

- L/N 230 V ~ (1.0 - 3.0 kW)
- » Insert the L1-L2-L3 terminal for 230 V ~ !
- L1/L2/L3 400 V 3~ (1.0 - 3.0 kW)
- » The neutral conductor (neutral point) may **not** be connected for 400 V 3~!
- » The regulations of the local electrical power utilities must be complied with!



### Operating voltage:

- L1/L2/L3 400 V 3~ (3.8 - 9.0 kW)
- » The regulations of the local electrical power utilities must be complied with!

## Service

2x / year



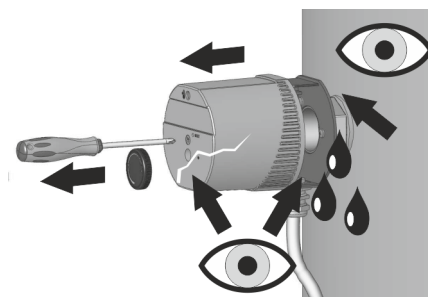
When the heater is used in hard water areas it must be regularly descaled.

**It is imperative that the local circumstances are paid attention to.**

The build up of scale in the heating element can lead to the activation of the safety temperature limiter or thermal overloading thereby destroying the heating element.

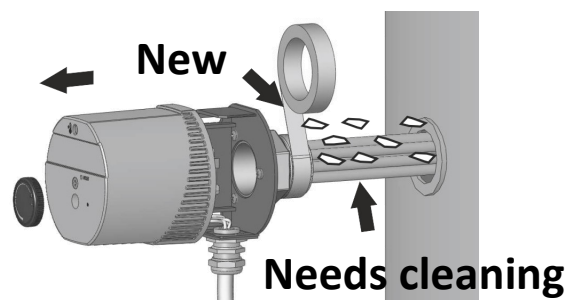
**In such cases the guarantee is not valid!**

1.



2.

The device must be cleaned (descaled) with a suitable, professional descaling agent, e.g. citric acid.



## Malfunction

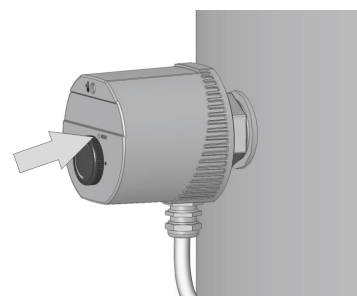


If the safety temperature limiter trips, there is a fault or error. A qualified expert must inspect the system in this case.



### Reset

See user manual  
for the qualified installer.



The version currently valid can be downloaded under "Downloads" from our homepage

For technical data see the data sheet

Subject to technical alterations