

### Screw-in heater insulated mounting

### AHIR-BI-PV4-S...

with combination of temperature control, safety temperature limiter and power switching unit for photovoltaic systems

#### PV own power consumption

- Immersion heater with 3-stage switching via 3 built-in relays at 16 A
- 3 linear power stages
- For PV-controlling without load switching circuit



#### Application

Auxiliary heating system of industrial water and heating water in photovoltaic systems.

#### Features

- SH The heating element is made of three U-shaped heating tubes, which are mounted isolated into a 1½" conical brass nipple by food-safe plastic sleeves. Thanks to the insulated mounting of the heating tubes, the devices are also suitable for enamelled boilers. The unheated zone is 150 mm for all types.
- TC Electromechanical temperature control acc. EN 14597, not fail safe.
- STL Electromechanical safety temperature limiter acc. EN 14597, fail safe. If nominal value is reached, the limiter switches and stays locked in this position. Reset is performed manually and is only possible after the sensing element is cooled off by approx. 10 K.
- Time factor of sensing element acc. EN 14597
  - Operation type TC Type 2 B acc. EN 14597
  - Operation type STL Type 2 BK acc. EN 145979

#### Type summary

Industrial and heating water  
Incoloy 825, 2.4858

Type	Order-no.	Power	Immersion length [EL]
AHIR-BI-PV4-S-1.0	012-6161	<b>1.00 kW</b> (3 x 0.33 kW)	300 mm
AHIR-BI-PV4-S-2.0	012-6162	<b>2.00 kW</b> (3 x 0.66 kW)	300 mm
AHIR-BI-PV4-S-2.5	012-6163	<b>2.50 kW</b> (3 x 0.83 kW)	350 mm
AHIR-BI-PV4-S-3.0	012-6164	<b>3.00 kW</b> (3 x 1.00 kW)	400 mm
AHIR-BI-PV4-S-3.8	012-6165	<b>3.80 kW</b> (3 x 1.26 kW)	450 mm
AHIR-BI-PV4-S-4.5	012-6166	<b>4.50 kW</b> (3 x 1.50 kW)	500 mm
AHIR-BI-PV4-S-6.0	012-6167	<b>6.00 kW</b> (3 x 2.00 kW)	600 mm
AHIR-BI-PV4-S-7.5	012-6168	<b>7.50 kW</b> (3 x 2.50 kW)	700 mm
AHIR-BI-PV4-S-9.0	012-6169	<b>9.00 kW</b> (3 x 3.00 kW)	750 mm

#### Technical data

The following indications are valid for the above listed standard types. Due to the function, other types might show different data.

Application range	Adjustable cut-off temperature	0...*...28...85 °C
	Safety cut-off temperature $\vartheta_{off}$	110 °C (0-9 K)
	Ambient temperature on switching head	max. 50 °C (T50)
	Thermal switching differential	11.0 K ± 5.5 K
	Ambient temperature for storage and transport	-30...+90 °C
Calibration	Calibration tolerance	± 7 K
	Time factor in water	<45 s
Specification	Fitting thread	R 1½" conical
	Brass nipple	CuZn40Pb2
	Heating tube	Incoloy 825, 2.4858
	Surface load	8-9 W/cm²
	Electrical connection	Spring clip
	Operating pressure	max. 10 bar
	Housing cover	Polycarbonate, RAL 7035 (light gray)
	Housing base	Polycarbonate, RAL 7016 (anthracite gray)
	Protection mode	IP41 acc. EN 60529

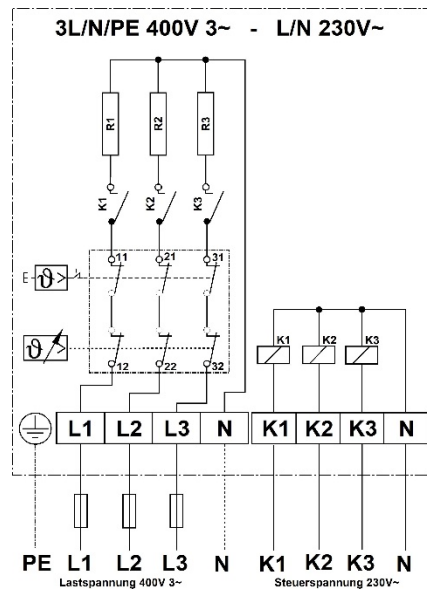
## Fitting notes

The device must be installed horizontally. The heating tubes must be covered entirely by the liquid. The circulation of the liquid shall not be inhibited.

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.

## Wiring diagram

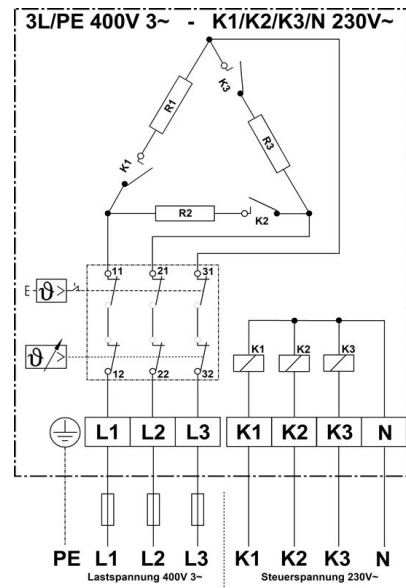
**Power range: 1.0 kW up to 3.0 kW**



**Operating voltage:**  
L1 / L2 / L3 400 V 3~

**Control voltage:**  
K1 / K2 / K3 / N 230 V~

**Power range: 3.8 kW up to 9.0 kW**



**Operating voltage:**  
L1 / L2 / L3 400 V 3~

**Control voltage:**  
K1 / K2 / K3 / N 230 V~

## Dimension drawing

