

■ Electronic temperature control system EHS for electric heater batteries

□ Electronic controller for electric heater batteries installed in circular or rectangular ventilation systems. Controls the heat output of heating element by monitoring the supply air temperature against the required temperature.

■ Continuous control is achieved by a proportional timer which allocates power in time intervals. The relation between on and off time periods is adjusted to the required heat. Switching sequence in compliance with electricity boards can be obtained even with high switching power.

■ Power regulation without contacts through electronic power switch.

■ Control via desired value encoder (internal or external, room sensor TFR) or via remote signal 0–10 V DC (only in EHSD models).

■ Application

□ The controllers are designed to maintain a constant supply air temperature and a constant room temperature. With rapid change in supply air temperature the unit first gives a considered response whilst checking whether the change is going to be sustained and then goes to full proportional response. All models feature a night set-back facility which can be activated using a time clock (to be supplied on site externally).

□ For safety reasons an additional air flow sensor is required to monitor the air flow.

Air flow sensor, – electronic

Type SWE Ref. no. 0065
– mechanical, from NW 315

Type SWT Ref. no. 0080
see product page.

EHS



Electronic temperature controller for electric heater batteries up to 3.5 kW (230 V) / 6.4 kW (400 V)

Type EHS Ref. no. 5002

Temperature sensitive semiconductor controller. Attractive white polymer casing suitable for wall mounting. Constant supply air or room air control via built-in temperature sensor for temperature detection on installation site. Switchable on remote duct sensor or room sensor (TFK or TFR, accessory). Automatic detection of supply voltage 230 V 1 ph. or 400 V 2 ph.

Voltage 230 V, 1~ / 400 V, 2~ (automatic detection)

Loading capacity (current) 16 A

Protection to IP 30

Dim. in mm H 153 x W 93 x D 40

Weight approx. 0.3 kg

Wiring diagram no. 531

EHSD



Electronic temperature controller for electric heater batteries up to 17 kW

Type EHSD 16 Ref. no. 5003

Temperature sensitive semiconductor controller. Robust aluminium casing suitable for wall and switchboard mounting. Constant supply air or room air control via external duct sensor or room sensor (TFK/TFKB or TFR, accessory). Remote control via external desired value encoder TFR or external control voltage 0–10 V DC.

Voltage 400 V, 3~

Loading capacity (current) 25 A

Protection to IP 40

Dim. in mm H 207 x W 160 x D 95

Weight approx. 1.7 kg

Wiring diagram no. 550.2

■ Other accessories for EHSD

In-duct temperature sensor for limiting functions.

Type TFKB Ref. no. 5009

■ Note

The on-site required system control which corresponds to the wiring diagrams shall be provided.

Electronic temperature controller for electric heater batteries up to 34 kW

Type EHSD 30 Ref. no. 5004

As EHSD 16 but with a maximum output of 34 kW. The total output is split into a controlled output (max. 17 kW) and an uncontrolled basic output (17 kW). If the required power exceeds approx. 17 kW the basic output of 17 kW will be activated permanently via an internal contactor. The remaining output will be temperature controlled.

Voltage 400 V, 3~

Loading capacity (current) 25 A

Protection to IP 40

Dim. in mm H 207 x W 160 x D 95

Weight approx. 1.7 kg

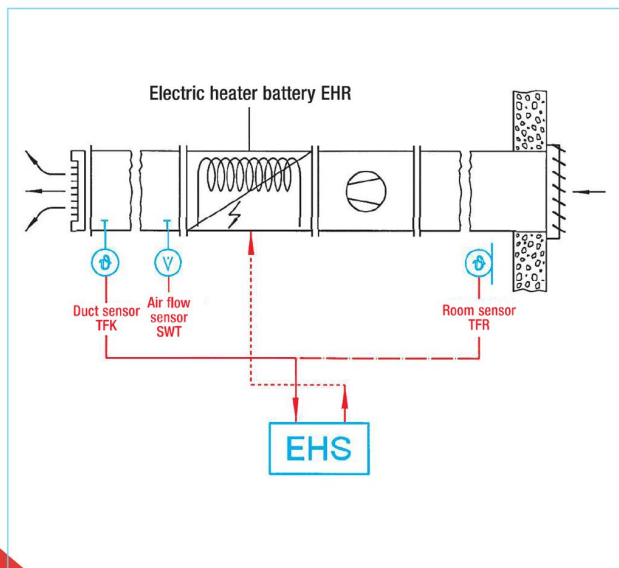
Switch relay Voltage 230 V~

Current max. 5 A

Switch relay Voltage 400 V, 3~

Current max. 25 A

Wiring diagram no. 550.2



Duct sensor (accessory for EHS)

Type TFK Ref. no. 5005

Temperature sensor to detect the airflow temperature in ducting. Includes mounting plate to fit on duct wall.

Temperature range 0–30 °C

Protection to IP 20

Length inner/outer 130 / 50 mm

Ø 10 mm

Weight approx. 0.1 kg



Room sensor (accessory for EHS)

Type TFR Ref. no. 5006

value encoder for surface mounting. Also suitable as desired value encoder or sensor only. Attractive casing made of polymer.

Temperature range 0–30 °C

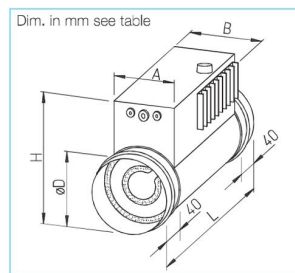
Protection to IP 20

Dim. in mm H 86 x W 86 x D 30

Weight approx. 0.1 kg



EHR-R TR



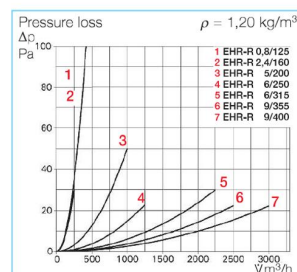
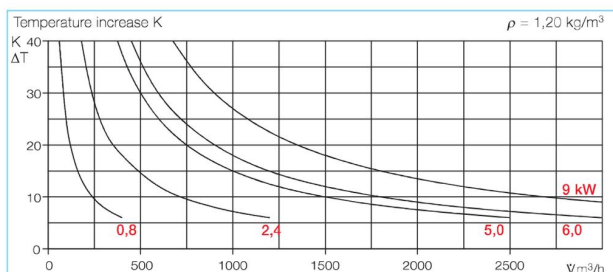
Electric heater battery EHR-R TR with integrated temperature control.
A convenient and easy-to-install solution for all areas where a constant room or supply air temperature is required. Electric heater batteries EHR-R TR are equipped with an integrated temperature controller and can be mounted in the ducting in any position. The installation is remarkably easy and space saving.

Heater battery

Enclosed, high-grade stainless steel heating elements with low surface temperature. Casing with terminal box made from galvanised sheet steel and integrated temperature controller for installation in commercial ducting systems. Equipped with an automatically resetting temperature limiter (activation temperature 50 °C) and a manually resettable temperature limiter (activation temperature 120 °C).

Temperature control

- Constant supply air control by connecting a duct sensor (TFK, accessories). Setpoint specification (0 – 30 °C) via potentiometer on outside of unit. Room air temperature control by connecting a room sensor (TFR, accessories); Optional setpoint specification via room sensor TFR or potentiometer. Automatic detection of supply voltage 230 V or 400 V. Load capacity 16 A. Protection class IP 20.
- Stepless control is achieved by pulse/pause technology, which allocates power in time intervals. The ratio between on and off time periods is adjusted to the required performance. The max. switching cycles per time unit specified by the electricity suppliers are also observed for large switching applications.



Application

- EHR-R TR are suitable for constant supply air temperature or for constant room temperature control. In case of rapid temperature changes in the supply air, PI control behaviour is achieved; in case of slow changes in room air, the control behaviour corresponds to a P controller.
- Air flow monitoring is required for safety reasons.

Flow monitors

- electronic
 - Type SWE** Ref. no. 0065
 - mechanical, over nom. size 315
 - Type SWT** Ref. no. 0080
- see product page

Installation

See description EHR-R, page 426.

Selection and operation

Heater batteries create additional pressure loss, which must be considered with regard to the dimensioning of the entire system. The temperature increase depends on power output and air flow volume (see diagram on right). In order to prevent the unintentional disconnection of the temperature monitor, the air flow rate must be higher than the minimum figure (see table).

Accessories

- Duct sensor**
Type TFK Ref. no. 5005
Temperature sensor for detecting the air temperature in ducting.
- Room sensor**
Type TFR Ref. no. 5006
Temperature sensor with integrated setpoint device for surface installation. Also suitable purely as a temperature sensor or setpoint device.

Type	Ref. no.	Power kW	Switch. group no. x kW	Current A	Minimum air flow volume m³/h	fits fan nominal size mm	Wiring diagram No.	Dimensions					Weight approx. kg
								Ø D mm	H mm	L mm	A mm	B mm	
1-, 230 V													
EHR-R 0,8/125 TR	5293	0.8	1 x 0.8	3.5	70	125	799.1	125	225	325	125	145	2.6
EHR-R 2,4/160 TR	5294	2.4	2 x 1.2	10.4	110	160	799.1	160	260	380	150	170	3.4
2-, 400 V													
EHR-R 5/200 TR	5295	5.0	2 x 2.5	12.5	180	200	800.1	200	300	380	150	170	4.4
EHR-R 6/250 TR	5296	6.0	2 x 3.0	15	270	250	800.1	250	350	380	150	170	4.8
EHR-R 6/315 TR	5301	6.0	2 x 3.0	15	420	315	800.1	315	415	380	150	170	6.4
3-, 400 V													
EHR-R 9/355 TR	5297	9.0	3 x 3.0	13	550	355	801.1	355	455	380	150	182	8.5
EHR-R 9/400 TR	5299	9.0	3 x 3.0	13	680	400	801.1	400	500	380	150	182	8.9

