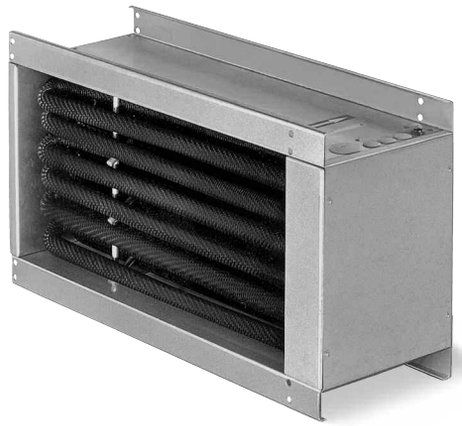
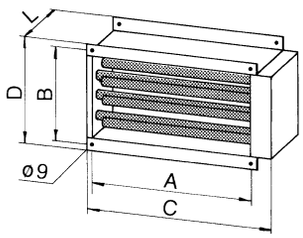
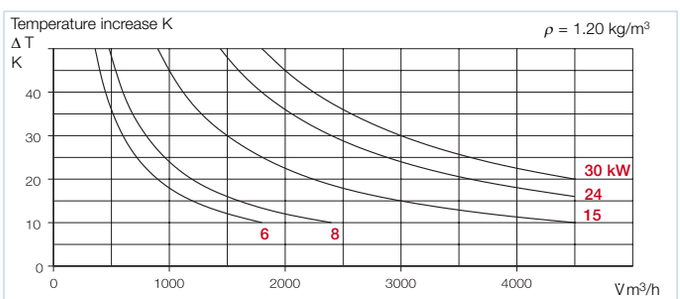
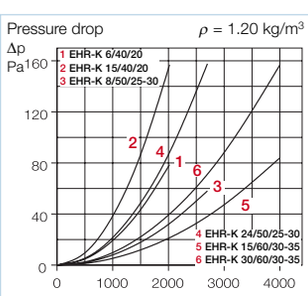
EHR-K



Dimensions in mm see chart







Electric heater battery EHR-K

Heating elements enclosed in a galvanised casing with MEZ flanges on both sides for in-duct installation.

Heating elements with low surface temperature are individually wired to the outer terminal box and coils can be wired in several groups.

Equipped with a thermal switch which opens at 90 °C and resets itself after cooling down. The other thermal switch opens at 120 °C and must be reset manually.

Note

DIN VDE 0100-420 must be observed on site; a proper air flow monitoring and electrical interlocking shall be provided.

Installation

The heater must be installed downstream of the fan. If installing it before the fan, make sure that the air flow temperature at the fan does not exceed the fan's maximum temperature. A rectangular duct with a length of at least 1 metre must be installed between fan and heater. The heater should not be used below the minimum air flow volume of the heater battery. The electrical connection must be interlocked so that the heater cannot operate if the fan is not running. If the thermal switch releases, the heater battery must cut off automatically. The coils can be wired in groups so that the heat output can be reduced arbitrarily.

Selection and operation

The heater batteries generate an additional resistance that must be considered when designing the system. The temperature increase depends on air flow volume and heat output (see diagrams above). In order to prevent an unwanted thermal cut out, the air flow volume must be higher than the minimum figure shown in the chart.

Accessories	Page
Electronic temperature controller EHS..	311

Accessories

Electronic temperature controller

EHS.. see model chart

Controls the heat output of the heating element by monitoring difference between the supply air temperature and the required temperature.

Duct sensor (Accessory for EHS..)

TFK Ref. No. 5005

Temperature sensor for detecting the air temperature in ducting.

Room sensor (Accessory for EHS..)

TFR Ref. No. 5006

Temperature sensor with integrated "desired value encoder" for surface mounting. Can also be used as temperature sensor or as desired value encoder only.

Type	Ref. No.	Power	Drives	Current	Minimum air flow volume	Fits fan nominal size	Wiring diagram[1]	Dimensions in mm A	B	C	D	L	Nominal weight	Suitable temperature controller Type	Ref. No.
		kW	x kW	A	m³/h	NG cm	Nr.						kg	Type	Ref. No.
3-phase motor, 400															
EHR-K 6/40/20	8702	6	2 x 3	8.7	430	40/20	361.4	423	223	550	250	200	7.3	**EHSD 16**	5003
EHR-K 15/40/20	8703	15	5 x 3	21.7	430	40/20	366.4	423	223	550	250	320	13.3	**EHSD 16**	5003
EHR-K 8/50/25-30	8704	8	2 x 4	11.3	680	50/25-30	362.4	523	273/323	650	350	200	9.2	**EHSD 16**	5003
EHR-K 24/50/25-30	8705	24	6 x 4	33.9	680	50/25-30	364.4	523	273/323	650	350	250	17.2	**EHSD 30**	5004
EHR-K 15/60/30-35	8706	15	3 x 5	20.9	980	60/30-35	365.4	623	323/373	750	400	200	12.9	**EHSD 16**	5003
EHR-K 30/60/30-35	8707	30	6 x 5	41.7	980	60/30-35	363.4	623	323/373	750	400	200	19.3	**EHSD 30**	5004

[1] Principal wiring for all models use wiring diagram No. SS-476.2

Electric heater battery EHR-R

Heating elements with low surface temperature made of stainless high-grade steel and are totally enclosed in a galvanised casing with terminal box for commercial in-duct installations.

Equipped with a thermal switch which opens at 50 °C and resets itself after cooling down. The other thermal switch opens at 120 °C and must be reset manually.

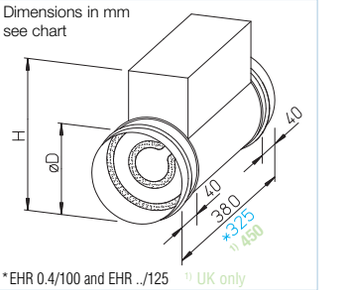
Accessories

Electronic temperature controller
EHS.. see model chart
Controls the heat output of the heating element by monitoring the difference between the supply air temperature and the required temperature.

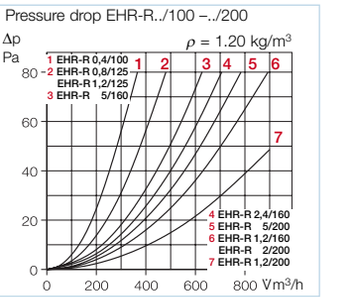
Duct sensor (for EHS..)
TFK Ref. No. 5005
Temperature sensor for detecting the air temperature in ducting.

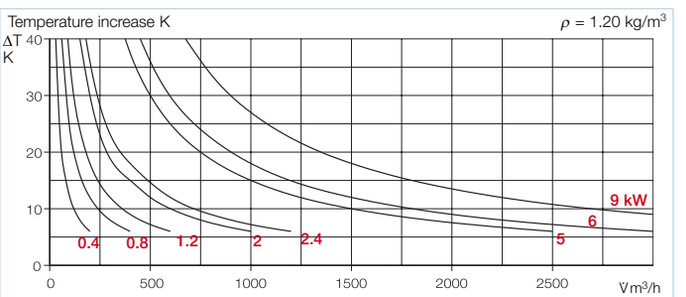
Room sensor (for EHS..)
TFR Ref. No. 5006
Temperature sensor with integrated “desired value encoder” for surface mounting. Can also be used as temperature sensor or as “desired value encoder” only.

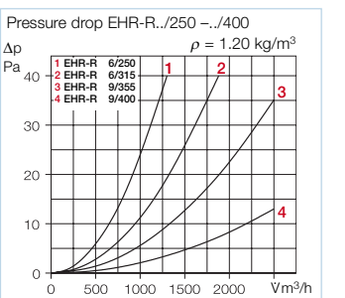
EHR-R



*EHR 0.4/100 and EHR ../125 1) UK only







Type	Ref. No.	Power	Drives	Current	Minimum airflow volume	Fits fan nominal size	Wiring diagram[1]	Dimensions ø D	H	L	Nominal weight	Suitable temperature controller	
		kW	x kW	A	m³/h	NG mm	No.	mm	mm	mm	kg	Type	Ref. No.
1-phase, 230 V													
EHR-R 0.4/100	8708	0.4	1 x 0.4	1.7	45	100	813	100	185	325	2.0	**EHS**	5002
EHR-R 0.8/125	8709	0.8	1 x 0.8	3.5	70	125	813	125	225	325	2.3	**EHS**	5002
EHR-R 1.2/125	9433	1.2	1 x 1.2	5.2	70	125	813	125	225	325	2.4	**EHS**	5002
EHR-R 1.2/160	9434	1.2	1 x 1.2	5.2	110	160	813	160	260	380	2.6	**EHS**	5002
EHR-R 2.4/160	9435	2.4	1 x 2.4	10.4	110	160	814	160	260	380	3.0	**EHS**	5002
EHR-R 1.2/200	9436	1.2	1 x 1.2	5.2	180	200	813	200	300	380	2.8	**EHS**	5002
EHR-R 2/200	9437	2.0	1 x 2.0	8.7	180	200	813	200	300	380	3.2	**EHS**	5002
2-phase, 400 V													
EHR-R 5/160	8710	5.0	1 x 5.0 parallel	12.5	110	160	815	160	260	380	4.0	**EHS**	5002
EHR-R 5/200	8711	5.0	1 x 5.0 parallel	12.5	180	200	815	200	300	380	4.6	**EHS**	5002
EHR-R 6/250	8712	6.0	1 x 6.0 parallel	15.0	270	250	815	250	350	380	7.3	**EHS**	5002
EHR-R 6/315	8713	6.0	1 x 6.0 parallel	15.0	420	315	815	315	415	380	9.2	**EHS**	5002
3-phase, 400 V													
EHR-R 9/355	8656	9.0	1 x 9.0 in Δ	13.0	550	355	816	355	455	380	12.5	**EHSD 16**	5003
EHR-R 9/400	8657	9.0	1 x 9.0 in Δ	13.0	680	400	816	400	500	380	13.1	**EHSD 16**	5003

[1] Principal wiring for all models use wiring diagram No. SS-476.2

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Type	Ref. No.	Power	Drives	Current	Minimum airflow volume	Fits fan nominal size	Wiring diagram[1]	Dimensions ø D	H	L	Nominal weight	Suitable temperature controller	
		kW	x kW	A	m³/h	NG mm	No.	mm	mm	mm	kg	Type	Ref. No.
1-phase, 230 V / 1 ph. / 50 Hz													
EHR-R 1/100	7620	1.0	1 x 1.0	4.2	71	100	802	98	170	450	2.2	**EHS**	5002
EHR-R 1.5/125	7621	1.5	1 x 1.5	6.3	110	125	802	123	190	450	2.2	**EHS**	5002
EHR-R 2.5/150	7622	2.5	1 x 2.5	10.5	159	150	802	148	220	450	3.2	**EHS**	5002
EHR-R 5/200	7623	5.0	2 x 2.5	21.0	283	200	802	198	270	450	4.2	**EHS**	5002
EHR-R 6/250	7624	6.0	2 x 3.0	25.4	440	250	802	248	320	450	5.3	**EHS**	5002
EHR-R 8/315	7625	8.0	4 x 2.0	33.6	700	315	802	313	313	450	6.7	**EHS**	5002

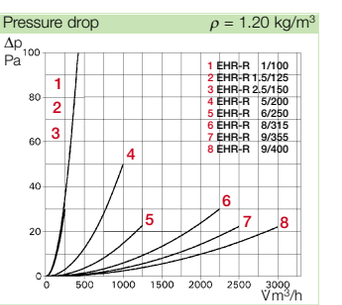
[1] Principal wiring for all models use wiring diagram No. SS-476.2

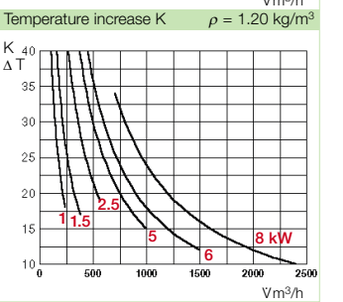
Notes

Information on installation, selection and operation see EHR-K on page 309.

DIN VDE 0100-420 must be observed on site; a proper air flow monitoring and electrical interlocking shall be provided.

Accessories	Page
Electronic temperature controller EHS..	311





■ Electronic temperature controller 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
SWE	Ref. No. 0065
– mechanic, from NW 315	
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)

EHS Ref. No. 5002

Temperature sensitive semi conductor 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. g.

Voltage	230 V, 1 ph. / 400 V, 2 ph. (automatic detection)
Loading capacity (current)	16 A
Protection to	IP 30
Dim. in mm	H 153 x W 93 x D 40
Weight	ca. 0.3 kg
Wiring diagram No.	SS-531

EHSD

Electronic temperature controller for electric heater batteries up to 17 kW

EHSD 16 Ref. No. 5003

Temperature sensitive semi conductor 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 ph.
Loading capacity (current)	25 A
Protection to	IP 40
Dim in mm	H 207 x W 160 x D 95
Weight	ca. 1.7 kg
Wiring diagram No.	SS-550.2

☐ Other accessories for EHSD

In-duct temperature sensor for limiting functions.
TFKB Ref. No. 5009

☐ Note

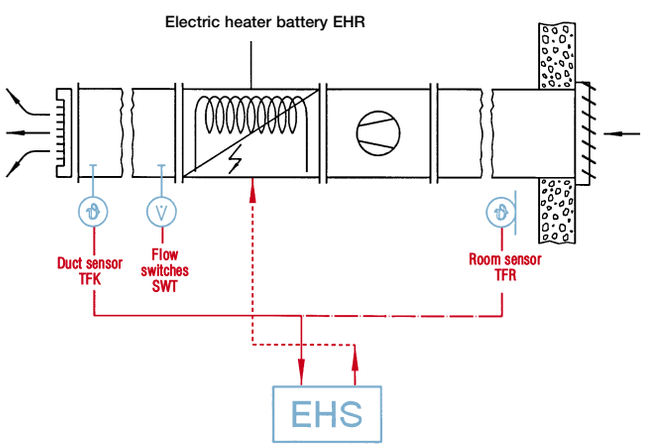
The on site required system control which is consequential to wiring diagrams shall be provided.

Electronic temperature controller for electric heater batteries up to 34 kW

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 ph.
Loading capacity (current)	25 A
Protection to	IP 40
Dim in mm	H 207 x W 160 x D 95
Weight	ca. 1.7 kg
Relay	voltage 230 V, 1 ph.
Current	max. 5 A
Contactor	voltage 400 V, 3 ph.
Current	max. 25 A
Wiring diagram No.	SS-550.2



Duct sensor (Accessory for EHS..)

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
Protrusion into duct.	130 / 50 mm
Dia. of sensor element	ø 10 mm
Weight	ca. 0.1 kg

Room sensor (Accessory for EHS..)

TFR Ref. No. 5006

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

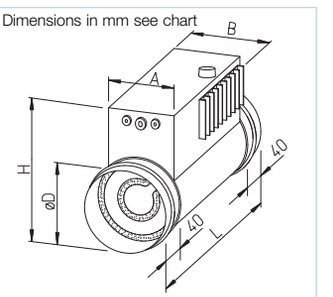
Temperature range	0 – 30 °C
Protection to	IP 20
Dim in mm	H 85 x W 85 x D 30
Weight	ca. 0.1 kg

Electric heater battery for round ducting with integrated temperature control CV

AVAILABLE IN THE UK ONLY!

CV

The CV Electric Heater battery with integrated temperature control. An easy to install solution for all areas where a constant room or air supply temperature is required.
The CV Electric Heater battery is equipped with an integrated temperature controller and can be mounted in the ducting in any position. The installation is simple, easy and space saving.



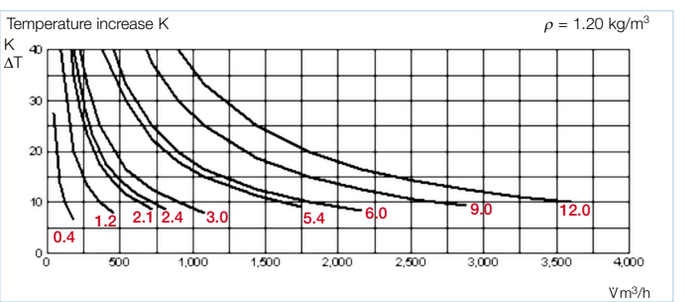
Heater battery

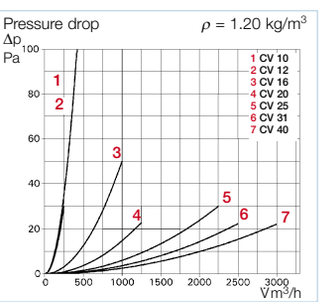
Low surface temperature high-grade steel heating elements enclosed in a galvanised steel casing with integrated temperature control, fitting nominal duct sizes for in-line installation.
Equipped with an automatic temperature cut-out (operating temperture 60 °C) and a manual resetting temperture cut out (operating temperture 120 °C). resets itself after cooling down.

Temperature control

☐ Constant supply air control by connecting a duct sensor (TFK, accessory). Desired temperture to be set using the heater setting knob, located outside the unit. Room temperture control by conneting a room sensor (TFR, accessory); desired temperature to be controlled either via the room sensor TFR or via the setting knob on the unit. Supply voltage 230 V or 400 V.

☐ Stepless control is achieved by pulse/pause technology, which allocates power in time intervals. The relation between on and off time periode is adjusted to the required heat (switching sequence in comliance with IEE regulation even with high switching power).





Application

☐ The CV heaters are suitable for constant supply air temperature or for constant room temperture. With rapid change in 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.

☐ For safety reasons air flow monitoring is required. The DDS pressure switch, when fitted accros the fan, will not allow the unit to heat when there is no pressure and thus no airflow in the system.

Installation

The heater is to be installed after the fan and at least one duct diameter away from the fan.

Selection and operation

The heater will add an additional resistance to the system that must be considered when designing the system. The temperture increase depends on power output and air flow volume (see diagram above).
The prevent the thermal cut-out from tipping the air flow volume must be higher than the minimum figure shown in the table.

Accessories

Duct sensor

TFK Ref. No. 5005

Temperature sensor for detecting the air temperature in ducting.

Room sensor

TFR Ref. No. 5006

Temperture sensor with setting dial, to achieve room requirements.

Pressure sensor

DDS Ref. No. 0445

Sensor to monitor pressure to ensure air flow.

Type	Ref. No.	Power	Current	Minimum air flow volume	Fits fan nominal size	Dimensions ø D	H	L	A	B	Nominal weight	
		kW	A	m³/s	NG	mm	mm	mm	mm	mm	kg	
1-phase, 230 V												
CV 10-04-1	S582	0.8	1.6	0.012	100	100	171	375	100	120	2.4	
CV 12-12-1	S588	1.2	5.0	0.018	125	125	196	375	125	145	2.7	
CV 16-24-1	5294	2.4	10.4	0.030	160	160	260	380	150	170	3.4	
CV 20-21-1	S579	2.1	8.75	0.037	200	200	271	375	160	180	4.4	
CV 25-30-1	S577	3.0	3.0	0.074	250	250	321	375	200	220	4.8	
CV 31-54-1	S585	5.4	22.5	0.117	315	315	386	375	250	270	6.4	
CV 40-54-1	S590	5.4	22.5	0.188	400	400	471	375	315	335	6.9	
3-phase, 400 V												
CV 25-60-3	5296	6.0	15.0	0.075	250	250	350	380	150	170	4.8	
CV 31-60-3	S589	6.0	8.67	0.117	315	315	386	375	315	335	6.9	
CV 31-90-3	S584	9.0	13.0	0.117	315	315	386	375	315	335	6.9	
CV 35-90-3	5297	9.0	13.0	0.152	355	355	455	380	150	182	8.5	
CV 40-90-3	5299	9.0	13.0	0.189	400	400	500	380	150	182	8.9	
CV 40-120-3	S591	12.0	12.0	0.188	400	400	471	375	400	420	8.9	