Electric air heater with plain stainless steel heating coil

Electric air heater

EL

For the electric reheating of airflows in circular ducting

Circular electric air heater for the reheating of airflows, suitable for VAV terminal units Type TVE, TVR, and mechanically self-acting CAV terminal units RN or VFC

- Outlet airflow temperature 50 °C max.
- Plain heating coil, stainless steel 1.4301
- Integral overheating protection with temperature monitor (auto reset) and safety temperature limiter (manual reset)
- For horizontal or vertical air ducts
- Suitable for circular air ducts according to EN 1506 or EN 13180
- with lip seal
- Protection level: IP 43
- Casing air leakage according to EN 15727, class C

General information

Application
- Electric air heater for reheating airflows up to 50 °C in circular ducts
- For VAV terminal units Type TVR and for CAV control units RN or VFC

Nominal sizes
- 100, 125, 160, 200, 250, 315, 400

Parts and characteristics
- Ready-to-install air heater
- Twofold overheating protection:
  - Temperature monitor with automatic reset
  - Thermal cut-out with manual reset
- Connection terminals inside
- Casing is ready for cable feedthrough; strain relief and cable gland (M20 or M25) to be provided by others

Construction features
- Circular casing with rectangular switch cabinet
- Spigot with lip seal, for circular connecting ducts to EN 1506 or EN 13180
- The heating coil is an encased plain pipe
- IP 43

Material and surfaces
- Casing and switch box made of galvanised sheet steel with a zinc-magnesium (ZM) alloy
- Heating coil made of stainless steel 1.4301

Standards and guidelines
- Casing air leakage to EN 15727, class C

Maintenance
- Regular functional tests, especially of the thermal cut-out

Useful additions
- Capacity control is required (to be provided by others)
- Airflow monitoring is required (to be provided by others)

Technical data

Nominal sizes	100 – 400 mm
Volume flow rate range	12 - 750 l/s or 41 - 2700 m³/h
Electrical power consumption	0.4 – 9 kW
Minimum airflow velocity	1.5 m/s (airflow monitoring required, by others)
Maximum outlet airflow temperature	50 °C (capacity control required, by others)
Maximum operating temperature	Without integral control = 40 °C max.
Release temperature – temperature monitor TW	Approx. 60 °C (automatic reset if the value falls below this temperature; hysteresis approx. 15 K)
Release temperature for thermal cut-out	Approx. 90 °C (manual reset on the air heater required)
Air-side static differential pressure	1 – 20
Supply voltage NS 100	230 V AC, 400 W
Supply voltage NS 125	230 V AC, 900 W
Supply voltage NS 160	230 V AC, 1,200 W
Supply voltage NS 200	230 V AC, 2,100 W
Supply voltage NS 250	400 V AC 2-phase, 3,000 W
Supply voltage NS 315	400 V AC 3-phase, 6,000 W
Supply voltage NS 400	400 V AC 3-phase, 9,000 W
Protection level	IP 43
EC conformity	EMC to 2014/30/EU, low voltage to 2014/35/EU
Licence	CE, UKCA, S, EAC

Quick sizing

Technical data – electric air heater
Basic units: TVR, RN and VFC

NS	q_v		Δp_{st} [Pa]	te = 16 °C		
	[l/s]	[m³/h]		Φ [W]	t_a [°C]	U [V]
100	12	41	1	400	44.6	230
100	20	71	1	400	32.5	230
100	28	102	3	400	27.5	230
100	37	132	5	400	24.9	230
100	45	162	7	400	23.2	230
125	22	78	3	900	49.8	230
125	35	126	8	900	37	230
125	48	174	16	900	31.2	230
125	62	222	26	900	27.9	230
125	75	270	38	900	25.8	230
160	30	106	1	1,200	49.2	230
160	51	183	4	1,200	35.2	230
160	72	260	8	1,200	29.5	230
160	94	337	14	1,200	26.4	230
160	115	414	21	1,200	24.5	230
200	51	182	2	2,100	49.8	230
200	83	298	4	2,100	36.7	230
200	115	415	8	2,100	30.8	230
200	148	532	14	2,100	27.6	230
200	180	648	21	2,100	25.5	230
250	73	261	1	3,000	49.7	400
250	127	457	4	3,000	35.3	400
250	181	652	8	3,000	29.5	400

NS	q_v		Δp_{st} [Pa]	te = 16 °C		
	[l/s]	[m³/h]		Φ [W]	t_a [°C]	U [V]
250	236	848	13	3,000	26.4	400
250	290	1,044	20	3,000	24.4	400
315	144	518	2	6,000	50	400
315	223	802	5	6,000	37.9	400
315	302	1,087	10	6,000	32.2	400
315	381	1,372	15	6,000	28.8	400
315	460	1,656	22	6,000	26.6	400
400	216	777	2	9,000	50	400
400	349	1,258	4	9,000	37	400
400	483	1,738	8	9,000	31.2	400
400	616	2,219	14	9,000	27.9	400
400	750	2,700	20	9,000	25.8	400

P: Electrical power consumption
t_e: Inlet airflow temperature
t_a: Outlet airflow temperature
q_v: Volume flow rate
Δp_{st}: Static differential pressure

Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design program.

Specification text

Electric air heater for reheating airflows in ventilation and air conditioning systems. Dimensions fit VAV terminal units TVR as well as CAV terminal units RN and VFC. Integral twofold overheating protection with temperature monitor and safety temperature limiter. Spigot with lip seal for ducts according to EN 1506 or EN 13180. Casing air leakage according to EN 15727, class C.

Materials and surfaces

- Casing and switch box made of galvanised sheet steel with a zinc-magnesium (ZM) alloy
- Heating coil made of stainless steel 1.4301

Technical data

- Volume flow rate range: 12 – 750 l/s or 41 – 2700 m³/h
- Electrical power consumption: 0.4 to 9 kW
- Maximum outlet airflow temperature: 50 °C
- Static differential pressure: 5 to 20 Pa
- Supply voltage: 1 × 230 V AC to 3 × 400 V AC
- Protection level: IP 43

Sizing data

- q_v [m³/h]
- P [kW]

Order code

EL / 160
| |
1 2

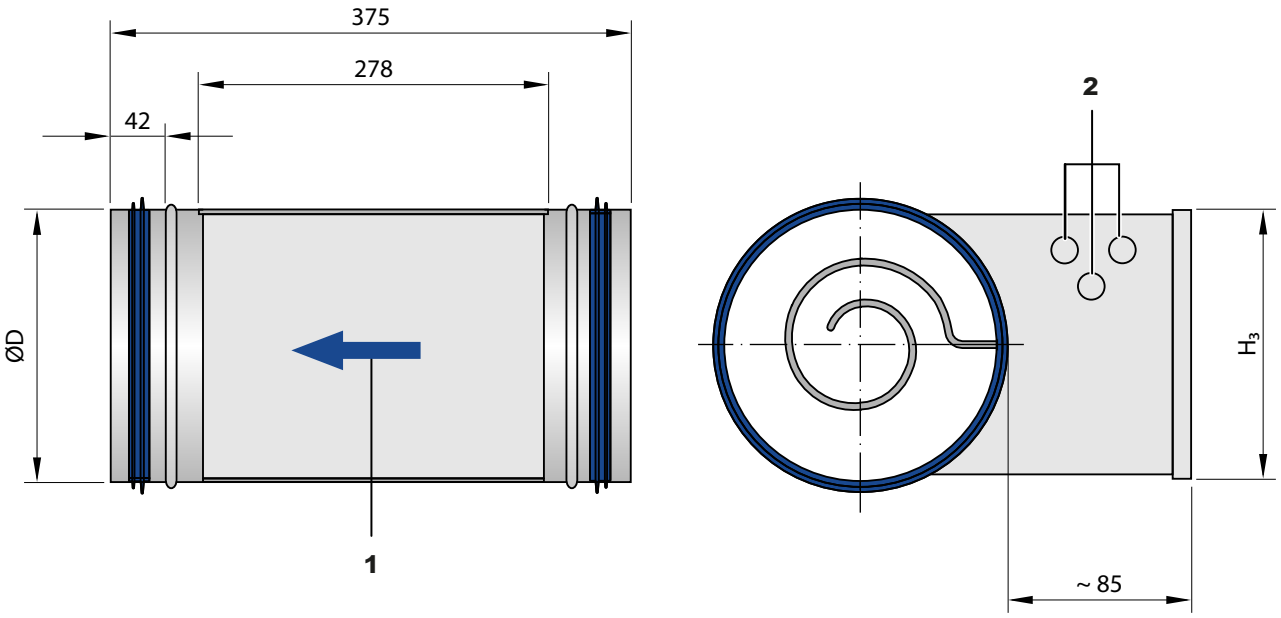
1 Type
EL Electric air heater for air terminal units TVE, TVR and for CAV controllers RN and VFC

2 Nominal size [mm]
100, 125, 160, 200, 250, 315, 400

Order Example: EL/160
Nominal size 160 mm

Dimensions and weight

Electric air heater – dimensions



1 Arrow indicating the airflow direction (on the side of the control equipment box)
2 Cable penetrations

Dimensions and weights of the electric air heater

NS	ØD	H_3	m [kg]
100	99	116	2
125	124	141	2.5
160	159	176	2.9
200	199	216	3.7
250	249	266	4.5
315	314	331	6.7
400	399	416	8.1

Installation details

General information on commissioning

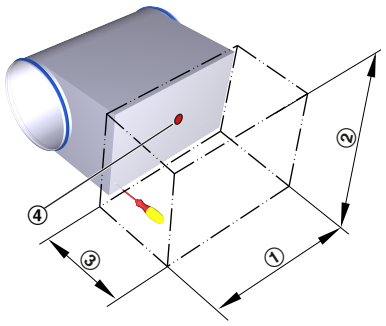
- Installation in horizontal or vertical ducts
- Installation only in ducts made of non-cumbustible and temperature resistant material
- An arrow at the side of the casing indicates the only acceptable airflow direction
- A straight duct section of at least 2D is required upstream and downstream of:
  - components such as volume flow controllers, flow adjustment dampers, valves and filters
  - bends, junctions or a narrowing or widening of the duct
- We recommend installing the air heater downstream of a VAV terminal unit, otherwise the terminal unit's flow rate measuring system may be affected by the higher air temperature
- The control equipment box may be fitted on the top or at the side (90° max.). The control equipment box must not be fitted at the bottom of the duct
- At least 30 mm distance between the sheet metal casing and wood or other combustible materials

- Capacity control and supply connections to be provided by others
- Airflow monitoring is required and to be provided by others

Correct assignment of types for installation, wiring and commissioning; see also the manufacturer's documentation

Order code	Type according to manufacturer (see installation manual)
EL/100	CV10 - 04 - 1M
EL/125	CV12 - 09 - 1M
EL/160	CV16 - 12 - 1M
EL/200	CV20 - 21 - 1M
EL/250	CV25 - 30 - 2M
EL/315	CV31 - 60 - 3M
EL/400	CV40 - 90 - 3M

Access to control equipment box and reset device for the thermal cut-out



④ Reset button

Space required

NS	①	②	③
100	320	125	300
125	320	150	300
160	320	185	300
200	320	225	300
250	320	275	300
315	320	340	300
400	320	425	300

Nomenclature

L [mm]; [in]
Length of unit including connecting spigot

FL_1 [mm]
Casing length

B [mm]; [in]
Duct width

B_1 [mm]; [in]
Screw hole pitch of flange (horizontal)

B_2 [mm]; [in]
Overall dimension of flange (width)

B_3 [mm]
Unit width

H [mm]; [in]
Duct height

H_3 [mm]
Unit height

m [kg]; [lb]
Unit weight including the minimum required attachments (control component)

q_v [m³/h]; [l/s]
Volume flow rate

Δp_{st} [Pa]; [inWg]
Static differential pressure

P [kW]
Electrical power consumption

t_e [°C]
Inlet airflow temperature

t_a [°C]
Outlet airflow temperature

Lengths
All lengths are given in millimetres [mm] unless stated otherwise.