EK-N – DUCT TYPE ELECTRIC HEATER

Description

- Designed for air heating on supply side in ventilation and air-conditioning installations.
- Cannot be used with flammable and explosion mixtures.
- Protection class – „First" - BDS 2099/1-9.

Construction

- Corpus of galvanized metal sheets with flanges from steel profiles.
- A battery of electric heaters (covered type) with capacity Nel. from 3 kW up to 48 kW. Heating capacity is divided in steps of 3 kW or 6 kW. The control options and steps number is defined when ordering.
- Emergency thermostat is provided to prevent overheating. The thermostat turns OFF the control signal in power board at 70°C.
- Power supply:
  - 3-phase 380V/50Hz – standard version
  - Mono-phase 220V/50Hz – by customer's request.

Installation

- Construction allows incorporation in the air duct installation or ventilation equipment with flange connector. For service and inspection of the unit it is not necessary dismounting.
- Air flow direction to be kept when installing.

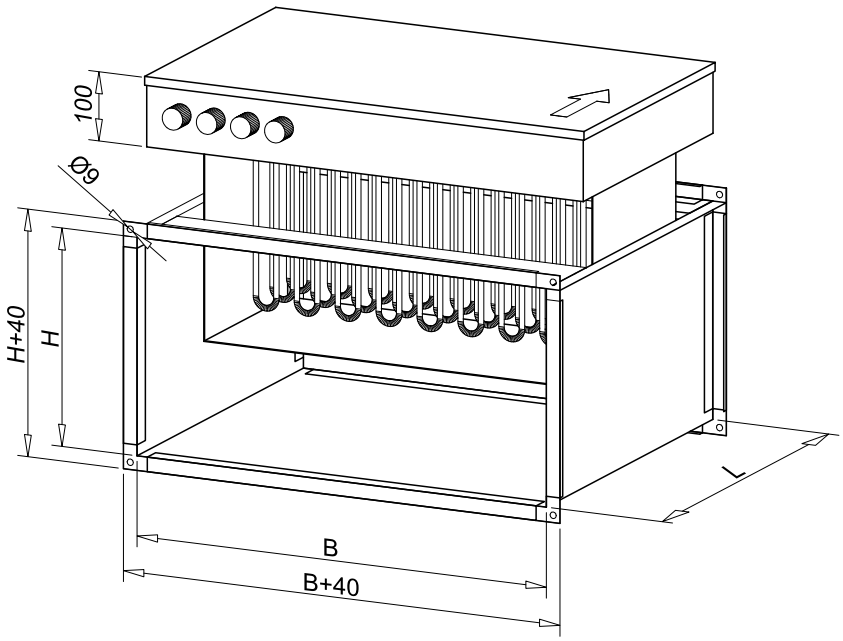
Control

- It is necessary EK power supply interlock with supply fan work to be provided.
- Manual n-steps control.
- Automatic control on 2- or 3-steps with controller and working thermostats.
- Fluent 1-step regulation with controller, working thermostats and frequency converters type SSR, incorporated into the battery of EK-N. In this case the unit length is increased with 200 mm.

Options

- External corpus insulation.
- By customer's request – power board with options for control and automation with additional elements of the ventilation installation.

Overall and joined dimensions



Model	B [mm]	H [mm]	L [mm], f ($N_{EL.}$ [kW])								
			6 kW	9 kW	12 kW	15 kW	18 kW	24 kW	30 kW	36 kW	48 kW
EK 200 - N	200	400	650	800	950	-	-	-	-	-	-
EK 225 - N	500	250	500	650	650	800	800	950	-	-	-
EK 250 - N	500	300	500	650	650	800	800	950	-	-	-
EK 285 - N	600	300	500	500	600	600	700	800	900	1000	-
EK 315 - N	600	350	500	500	500	650	650	650	800	800	950
EK 355 - N	700	400	500	500	500	650	650	650	800	800	950
EK 400 - N	800	500	-	-	450	500	500	550	600	650	750
EK 450 - N	1000	500	-	-	450	500	500	550	600	650	750

Notes:

- Dimension B (width of EK) marks the service and inspection side.
- EK with capacity from 1÷6 kW can be produced on request.
- EK with capacity up to 6 kW can be produced in mono-phase version -220V/50Hz.
- EK with different dimensions BxH – on request.
- In case of one-step flow regulation (SSR) standard length is increased with 200 mm.
- In case of capacity higher than 48 kW is recommended 2 units to be installed contiguously.
- Unit control type and steps number have to be specified additionally.
- In case unit control type and steps number are not specified, units are produced with 6kW steps.

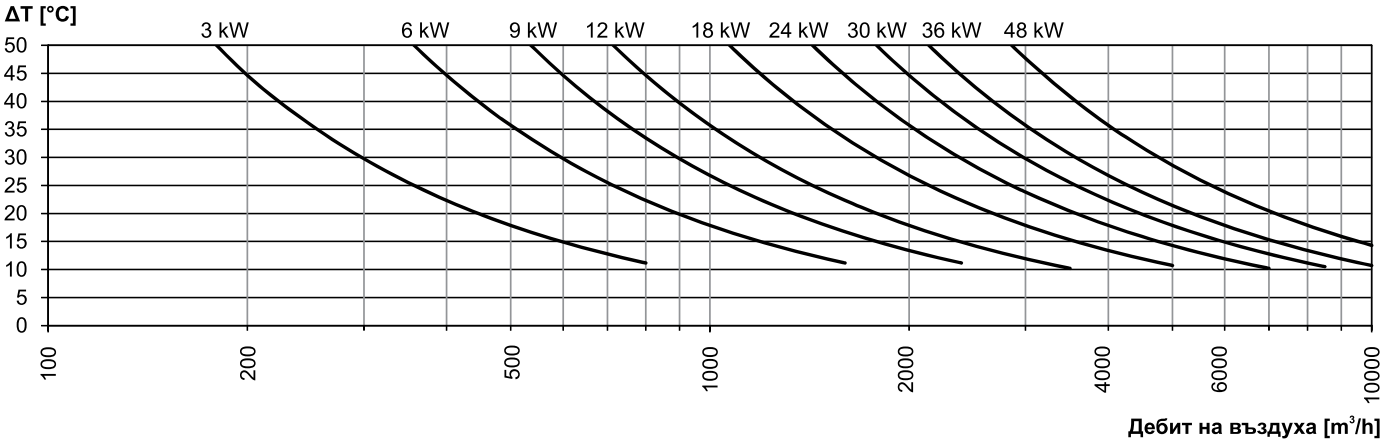
Pressure drop ΔP [Pa]

Model	Resistance table, f ($N_{EL.}$ [kW])								
	6 kW	9 kW	12 kW	15 kW	18 kW	24 kW	30 kW	36 kW	48 kW
EK 200 - N	B	C	D	-	-	-	-	-	-
EK 225 - N	A	B	B	C	C	D	-	-	-
EK 250 - N	A	B	B	C	C	D	-	-	-
EK 285 - N	A	A	B	B	B	C	C	C	-
EK 315 - N	A	A	A	B	B	B	C	C	C
EK 355 - N	A	A	A	B	B	B	C	C	C
EK 400 - N	-	-	A	A	A	B	B	B	C
EK 450 - N	-	-	A	A	A	B	B	B	C

Resistance table	ΔP [Pa], f (W_0 [m/s])						
	2	2.5	3	3.5	4	4.5	5
A	7	11	16	21	28	35	43
B	8	13	18	25	32	41	50
C	10	16	23	31	40	51	63
D	12	19	27	37	48	61	75

W_0 [m/s] – speed in the inlet section

Nomogram for fast selection of the power capacity $N_{EL.}$ [kW]



Example:

Initial data:

- EK 285 (600/300)
- Air volume: Q=1800 m³/h
- Inlet temperature: -5°C
- Outlet temperature: 24°C

Results:

Necessary capacity:
P = Q x 0.336 x ΔT = 1800 x 0.336 x [24-(-5)] = 17539 W
-> **$N_{EL.}$ = 18 kW**

Pressure drop:
From table for EK 285-18kW -> B and W_0 = 2.78 m/s
-> **ΔP = 15 Pa**

Order designation