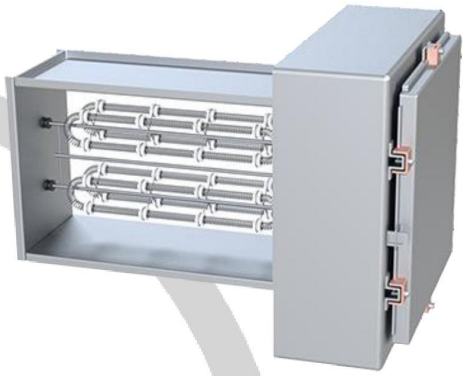
Technical Data Sheet

AirQon Synergies

H48 Duct Heaters

PRODUCT DESCRIPTION



The AirQon Electric Coil is available on single duct terminal units.

Electric coils meet all applicable requirements of Nationat Electric Code

are UL listed, Heater frames and boxes are constructed of 20 gauges Steel.

Factory pre-wiring of components eliminates costly field installation.

A specified wiring diagram is furnished for every heater

Other Features Include :

- Automatic reset primary thermal cutout.
- Replaceable secondary thermal cutout.
- Low-pressure drop/sound levels.
- Power terminal blocks.
- Control line terminal blocks.
- De-energizing magnetic contactors as required
- Airflow interlock switch.Coils are provided with S and Drive connections on the inlet and flange connection on the discharge.
- 80-20 Nickel-Chromium wire.
- Airflow proving switch with total pressure pick up probe.
- Control transformer in heaters for electric or electronic control options.
- Ground connector for earth,
- Disconnect switch/fusing and mercury contractors as required /optional.
- Isolators with the mixture of porcelien powder, silica and boric acid

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Performance selection data

Power (kw) required to match Heat Loss

$$Q\ (Kw) = \frac{Q\left(\frac{Btu}{hr}\right)}{3413}$$

Sensible Heat Load

$$Q\left(\frac{Btu}{hr}\right) = 1.08 \text{ x CFM x Temp. Rise}$$

Load Requirement

$$KW = \frac{CFM\ x\ Air\ Temp.Rise}{3160}$$

Temperature Rise

$$TR = \frac{KW\ x\ 3160}{CFM}$$

Watts = Volts x Amps

Single Phase Current = $\frac{watts}{Voltage}$

Three Phase Current = $\frac{watts}{Voltage\ x\ 1.73}$

Static pressure = $\frac{\frac{kw}{ft2}}{760}$ x $\frac{(Velocity\ (FPM))2}{(500)2}$

$$Kw/ft^2 = \frac{KW}{Duct\ width(ft)\ x\ Duct\ height\ (ft)}$$

Max. Discharge Temp. = 125 °F

Note: Maximum heater discharge temperature should not exceed 125 F to avoid nuisance tripping

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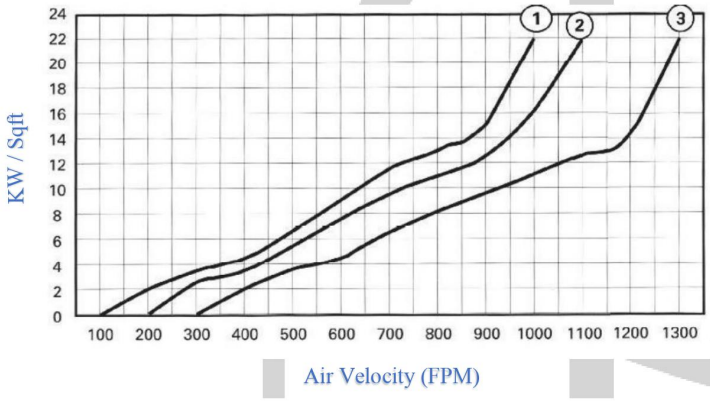
Performance Data

Since an electric duct heater has a constant BTU output as long as the heater is energized, a minimum air velocity must be maintained through the heater. Proper airflow will prevent over-temperature causing nuisance tripping and will maintain element life expectancy. The velocity of airflow in the duct is determined by the formula:

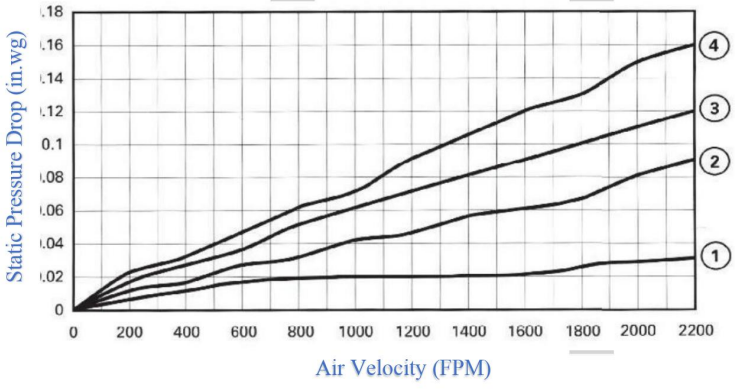
VELOCITY = CFM / DUCT AREA (ft^2)

And has to be compared with the minimum airflow velocity through the electric heater based on discharge duct area (Ft.`). The minimum uniform airflow in a duct heater is directly related to the inlet air temperature and consideration must be given to both the airflow across the heater and the inlet air temperature.

Divide the total watts by square footage of duct area to calculate the watts per so foot of that duct area. Use the chart to determine the minimum FPM based on inlet entering air temperature.



1. Below 70°F inlet air ; 2. 70°F to 90°F inlet air ; 3. 91°F to 110°F inlet



1,2,3 & 4 are the number of rows of heater coils

S# NO.	BTU/ hr	KW	AMPHERES			
			220 VOLTS		380 VOLTS	
			10	30	10	30
01	3413	1	4.5	2.6	2.6	1.52
02	6826	2	9.1	5.3	5.26	3.04
03	1023	3	13.6	7.9	7.89	4.56
04	1365	4	18.2	10.5	10.52	6.08
05	1706	5	22.7	13.1	13.15	7.6
06	2047	6	27.3	15.8	15.78	9.13
07	2389	7	31.8	18.4	18.42	10.65
08	2730	8	36.4	21	21.05	12.17
09	3071	9	40.9	23.6	23.68	13.69
10	3413	1	45.5	26.3	26.31	15,21
11	3754	1	50	28.9	28.94	16.73
12	4095	1	54.5	31.5	31.58	18.25
13	4436	1	59.1	34.2	34.21	19.77
14	4778	1	63.6	36.8	36.84	21.29
15	5119	1	68.2	39.4	39.47	22.81
16	5460	1	72.7	42.0	42.1	24.33
17	5802	1	77.3	44.7	44.73	25.85
18	6143	1	81.8	47.3	47.37	27.38
19	6484	1	86.4	49.9	50.0	28.9
20	6826	2	90,9	52.5	52.63	30.42

BTU/H-KW-AMPERES CHART

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Duct heater accessories

- Manual Thermostat for Temperature set / Cutout
- Power Breaker
- Digital Temperature Controller
- Magnetic Contactors
- Flow Switch
- Access Door