

## Electric Heating Coils Selection, Capacities and Features

### Model: 34RE

Nailor manufactures its own electric heating coils. They have been specifically designed and tested for use with pressure dependent, single duct bypass units.

Nailor electric coils are factory mounted as an integral part of the terminal unit in an insulated extended plenum section, located sufficiently downstream to ensure even airflow over the coil elements. Total length of the casing including heater terminal is only 31" (787), providing a compact, easy to handle unit. Freight costs are therefore also reduced. The unique inclined opposed blade damper design provides improved and more even airflow over the coil elements compared with round butterfly damper designs, which helps to minimize air stratification, avoid nuisance tripping of the thermal cut-outs and maximize heat pick-up.

For dimensional data, see page E8.

### Selection Guidelines:

The table below provides a general guideline as to the voltages and maximum kiloWatts available for each terminal unit size. Up to three stages of heat are available. A minimum of 0.5 kW/ stage is required.

For optimum diffuser performance and maximum thermal comfort, ASHRAE recommends that discharge temperatures do not exceed 15°F (8°C) above room set point, as stratification and short circuiting may occur. ASHRAE Standard 62.1 limits discharge temperatures to 90°F (32°C) or increasing the ventilation rate when heating from the ceiling. Never select kW to exceed a discharge temperatures of 115°F (46°C).

$$\Delta T \text{ (Air Temp. Rise, } ^\circ\text{F)} = \frac{\text{kW} \times 3160}{\text{cfm}}$$

The coil ranges listed are restricted to a maximum of 48 amps and do not require circuit fusing to meet NEC code requirements. Total pressure at the airflow switch should be at least 0.07" w.g. (17 Pa) to ensure correct coil operation and avoid possible nuisance tripping of the thermal cutouts due to insufficient airflow over the coil elements. Check that desired minimum airflow is within recommended operating range.

### Standard Features:

- Primary auto-reset high limit thermal cut-out (one per coil in control circuit).
- Secondary manual reset high limit thermal cut-outs (one per element).
- Positive pressure airflow switch.
- Class A 80/20 nickel-chrome alloy heating elements.
- Magnetic or safety contactors and/or PE switches as required.
- Control transformer. Class II, 24 Vac for digital and analog controls.
- Line terminal block.
- Hinged door control enclosure.
- High grade rib type ceramic insulator.
- Slip and drive discharge connection.
- Class A 80/20 wire.



Electric Heater

### Options:

- Quiet contactors.
- Mercury contactors.
- Toggle type disconnect switch.
- Door interlock disconnect switch.
- Power circuit fusing.
- Dust tight construction.
- SCR control.

### Electric Coil Limitations

Unit Size	Heating Range* cfm	Maximum kW						
		Single Phase				Three phase		
		120V	208V	277V	377V	208V	480V	600V
6	Min - 400	5.5	7.5	7.5	7.5	7.5	7.5	7.5
8	Min - 700	5.5	9.5	13.0	13.0	13.0	13.0	13.0
10	Min - 1100	5.5	9.5	13.0	16.5	17.0	21.0	21.0
12	Min - 1600	5.5	9.5	13.0	16.5	17.0	30.0	30.0
14	Min - 2100	5.5	9.5	13.0	16.5	17.0	31.0	38.5
16	Min - 2750	5.5	9.5	13.0	16.5	17.0	31.0	38.5

\* Minimum required airflow is 70 cfm per kilowatt (33 l/s/kW)  
The minimum airflow requires field setting using the mechanical minimum stop on the damper actuator.



**Intertek**

Tested and approved to the following standards:

ANSI/UL  
1996, 4<sup>th</sup> ed.  
CSA C22.2  
No. 155-M1986.