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■ HVAC Controls ■ Electric Actuators ■ Actuated Valves
■ Humidifiers ■ Electric Heaters

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Wise to Read

Excerpts from the Electric Heater Installation Instructions

Following installation instructions is extremely important in order to avoid any damage or malfunction to the electric heater. Some experts with many years of experience in the HVAC industry may choose to ignore or neglect reading the instructions, believing that their knowledge and experience is sufficient. However, instructions may differ between different manufacturers. Therefore, it is worth spending a few extra minutes to ensure proper understanding of the product.

Here are some of the important points from Neptronic's "***Electric Heater Installation Instructions***"

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The table below shows basic information about standard open coil and tubular electric heaters.

Technical data	Model C Open Coil Elements	Models T or F Tubular Elements
Maximum Inlet air temperature	95°F (35°C)	81°F (27°C)
Maximum outlet air temperature	200°F (93°C)	
Minimum distance from obstacle or obstruction in duct	48" (1.2m) upstream and downstream of electric heater	
Inlet bushing	2 knock out 7/8" (22.2mm) or 1 3/4" (34.9mm)	
Control signal	Signal pneumatic or electric - On/Off or modulating See Electric diagram	
Air flow direction	Horizontal or Vertical (refer to name plate)	
Contact delay (ON/OFF stage(s))	ON: 1 minute; OFF: 30seconds	
Voltage	See the name plate	
Current		
Power		
Control voltage		
Minimum air velocity	Ensure minimum air flow – as marked on name plate.	

Prevent malfunction

The control panel is provided with knockouts to pass power lines. In case alterations are required during installation, such as drilling more holes to the electrical compartment, ensure proper protection of all electrical components installed. Metal debris or chips may cause short circuit or affect operation of electrical components. Dust or metal debris around the contactors could cause vibration or chattering noise.

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Protect components and elements

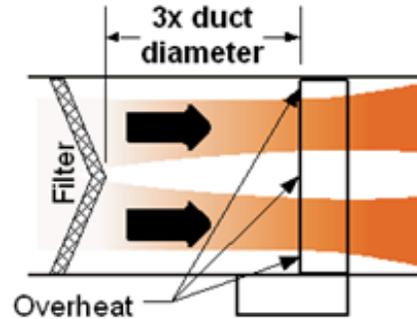
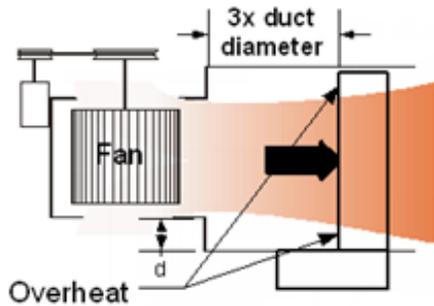
Ensure minimum required airflow. Insufficient or uneven airflow could lead to opening of mechanical airflow switch (PDN/PDA/EAS) and thermal cut-outs (automatic and manual). This could damage heating elements and controls. Direction of installation must be respected. Failure to do so will impair proper operation of thermal cut-outs and/or cause overheating of solid state relays.

Airflow conditions to avoid

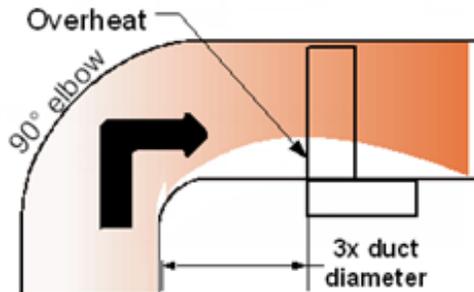
Below are some basic installation tips regarding minimum distances that must be respected for proper functionality. It is important to have the airflow evenly distributed over the entire coil section. Failing to do so could cause overheating and possibly damage the elements. Please check our TechTime article from July 2015 “***Does Distance Matter?***”, in which this subject is discussed in detail.

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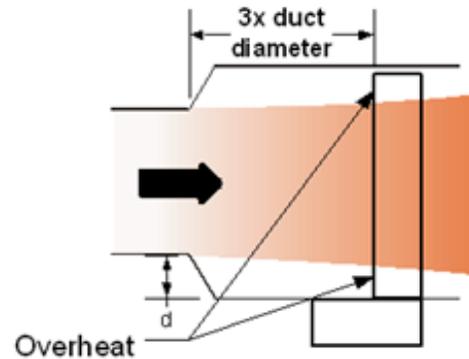
Avoid any abrupt transition after a fan



Electric heater too close to elbow.



Electric heater too close to transition.

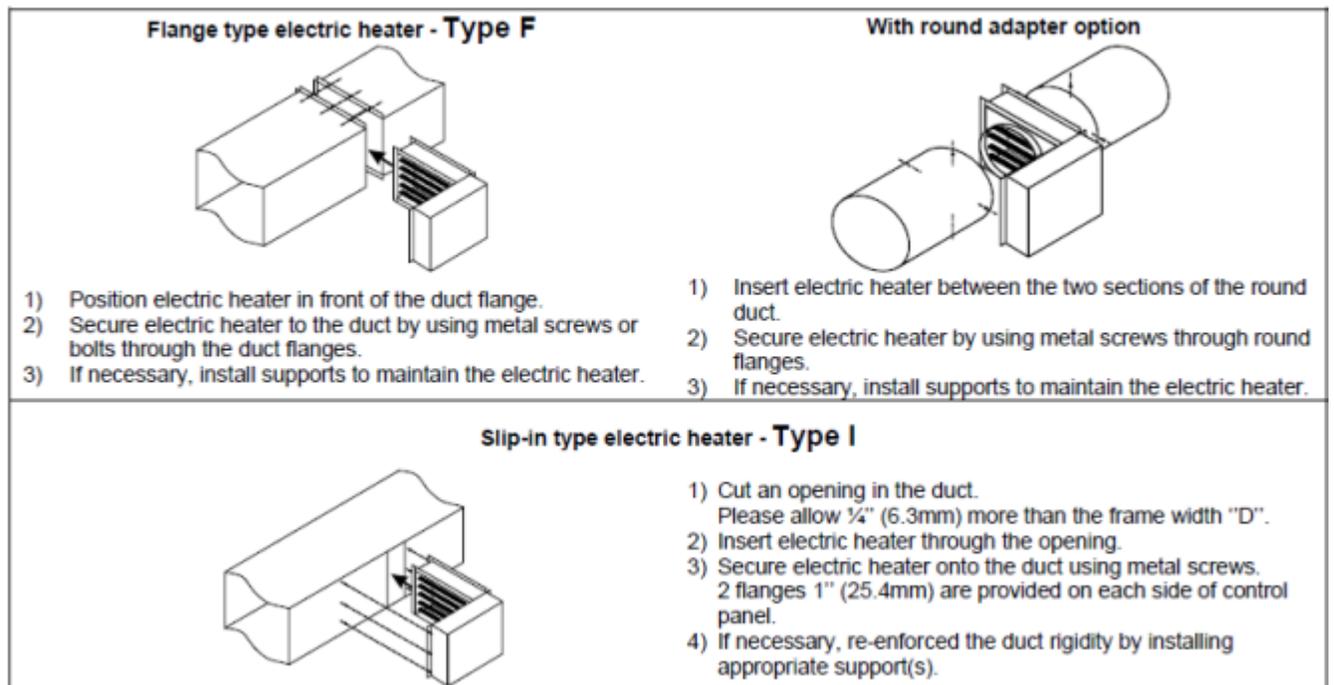


Our three types

Flanged, insert (slip-in) and round adapters.

Avoid modifying/altering duct work to install heaters. Knowing in advance the type of installation required can save you time, money and frustration.

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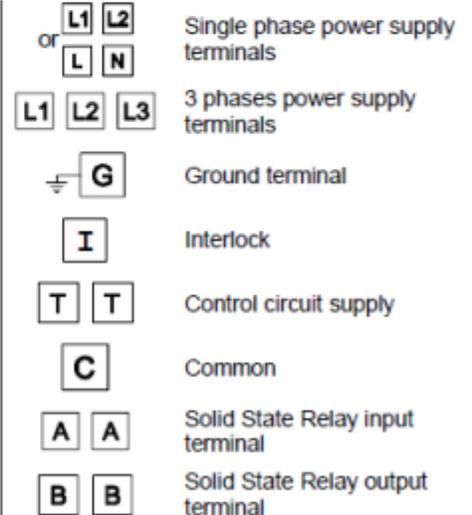
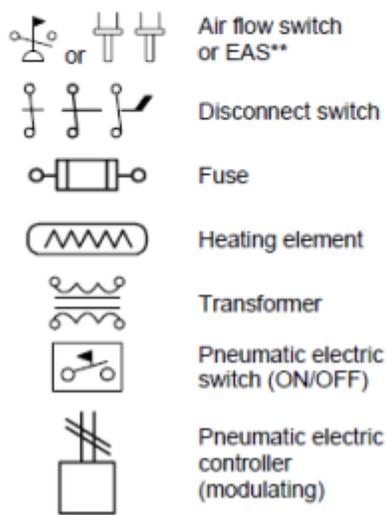
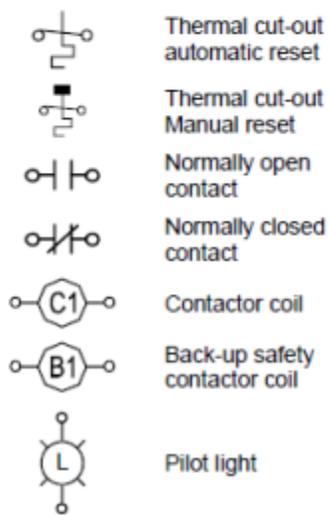
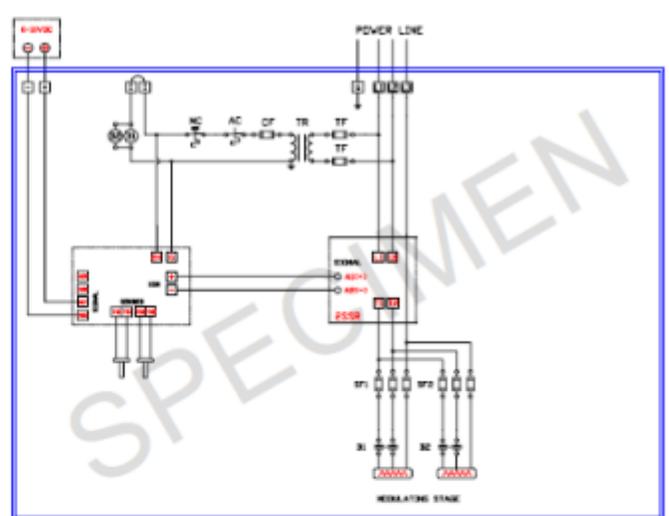
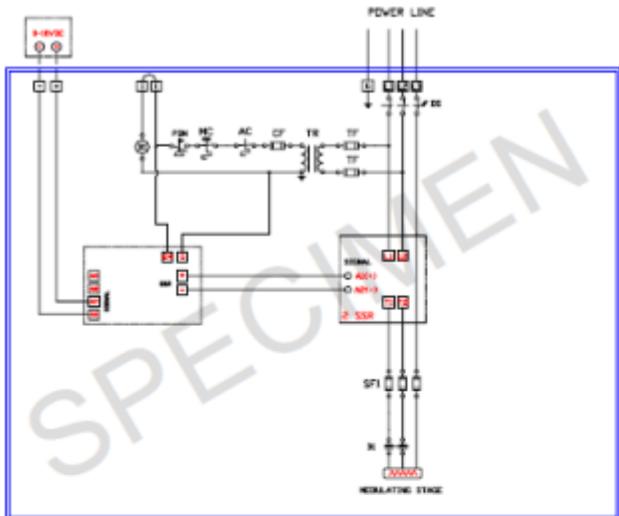


Electrical Installation

Voltage and current must match details on the heater's name plate. A wiring diagram specifically made for each heater is provided inside the control panel door. Connecting all wires to appropriate terminals as per the wiring diagram is highly important. Correct connection tightening should be verified before start up and after a short period of operation (typically after 2 weeks).

Know your diagram and components

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Maintenance

Neptronic heaters do not require specific maintenance. However, we recommend a yearly inspection, typically before winter season or after a long term shut down.

Visually:

- Inspect heating elements to verify if they are in good condition.
- Elements and ducts around the heater should be free of dust or lint.
- Verify any indication of overheating conditions (discoloration) as well as any trace of oxidation (rust).

Electrically:

- Verify electrical connection tightening.
- Verify that all fuses are in good condition.
- Verify resistance of each circuit against ground.
- Verify correct operation of contactor(s).

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Important

MAKE SURE TO DISCONNECT ALL SUPPLIES BEFORE WORKING ON ANY CIRCUIT. Use appropriate wire and correct gauge as recommended. Electrical installation should be done by a qualified electrician and should conform to local electrical code.

Do not proceed with any modification or alteration to internal connections or components of the electric heater. Any non-authorized modification will void the warranty.

Installation instructions are provided with every heater. Read and save the document as it contains very useful information.

Know what you are installing!

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