neptronic®
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HVAC Controls | Electric Actuators | Actuated Valves
Humidifiers | Electric Heaters

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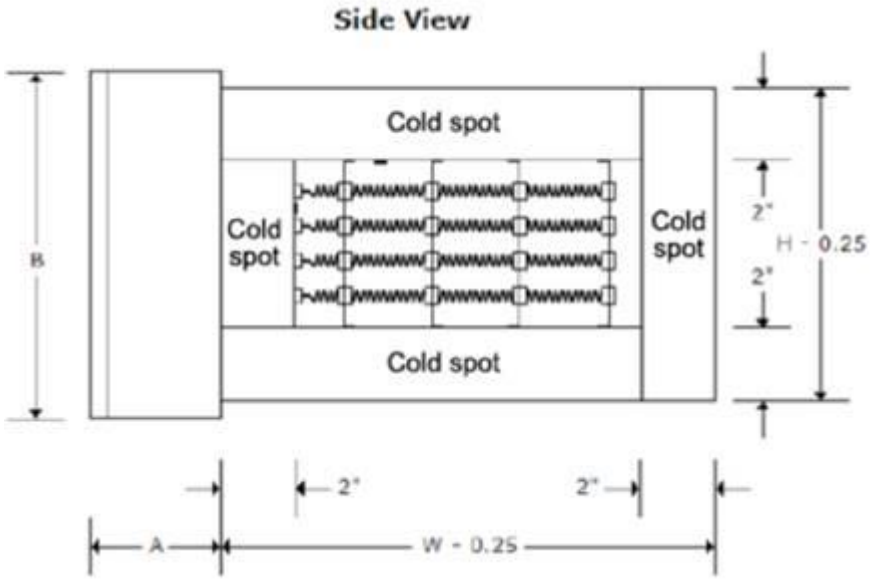
Flashback:

Quick Tech Glance, Part Two

It's all about choice. Here we explore different options for solving different issues.

Fixed duct size but low velocity?

Make use of our "cold spot" option to reduce the inside area of the heater and increase velocity. Cold spots are sheet metal add-ons that extend the distance between the control panel and the thermal cutouts (and coil) while keeping the same overall inside duct dimensions. They can be used on all four sides depending on the situation (box, end, top and bottom).



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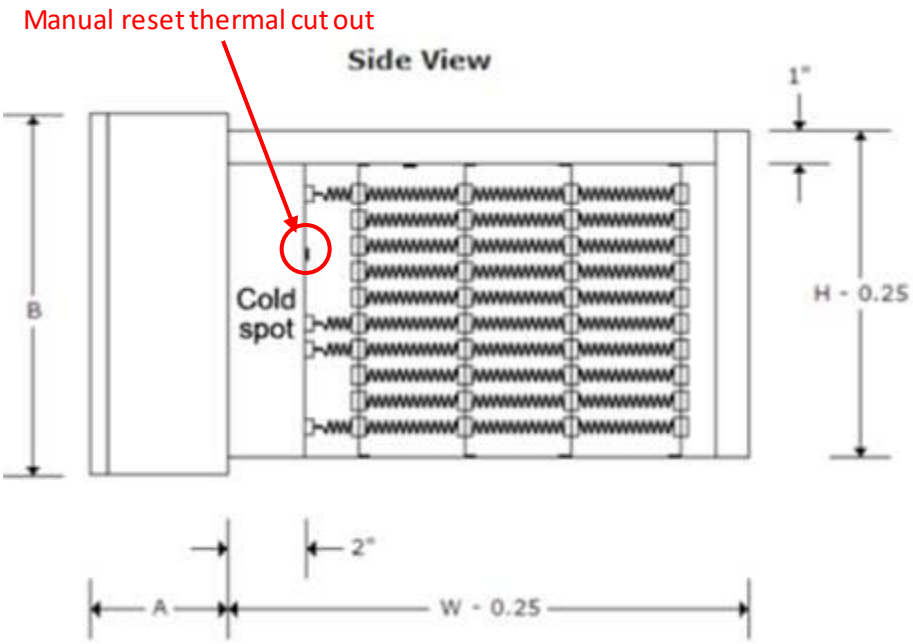
If the heater is going into an air handling unit or into a duct that has inside insulation, you must first determine the wall thickness of the AHU or the thickness of the insulation and decide the length of the cold spot needed on the box side. It's important to remember that the manual reset thermal cut out (MC) is located behind the control panel – always make sure the MC is exposed to the airstream and that no obstruction/wall overhang blocks the airflow.



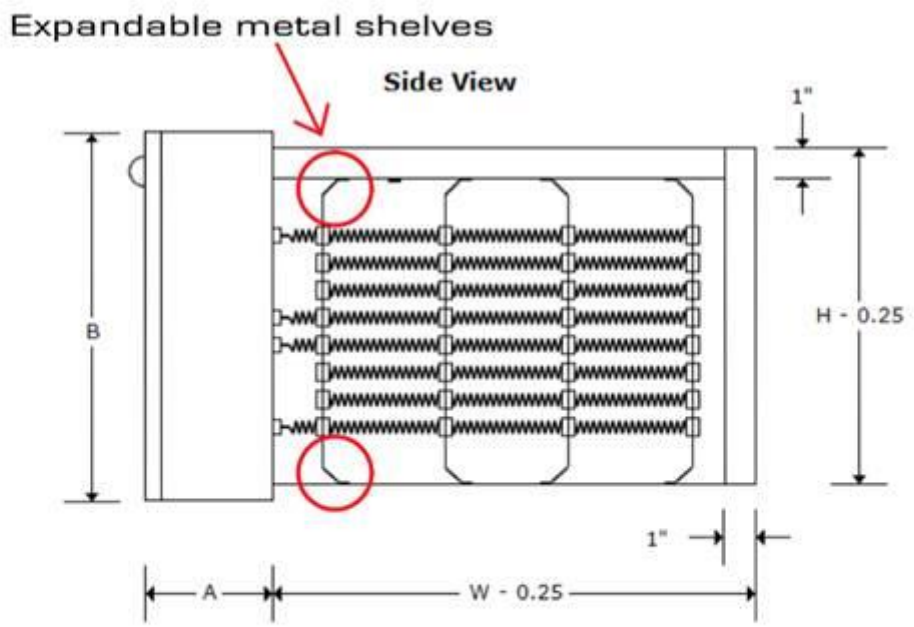
High temperature application?

Look into our process heaters. Neptronic's proven standards and design means that these heaters are made to withstand extremely high temperatures - up to 1200°F (648°C).

Standard heaters come with thermal cut outs and are rated to a certain temperature as per codes and regulations. Process heaters are not equipped with these thermal cut outs and for that reason they are not UL/CSA/ETL certified. However, they do come equipped with connection points in order to install the cutouts on the user end. This saftey measure is highly recommended by Neptronic.

Construction of a process heater

Angled corners (expandable metal shelves) are employed in the design to allow flex for the natural expansion of metal under extremely high temperatures.



Note that a regular Electric Heater cannot be modified in the field to use for high temperature applications. Neptronic does not recommend bypassing or removing the thermal cut outs on a regular heater. Neptronic assumes no responsibility for modifications made on heaters unless performed by Neptronic authorized personnel. The warranty shall cease in the event of misapplication or misuse of the product.

Vertical or Horizontal Installation?

While Neptronic heaters can be custom built for horizontal or vertical airflow it is always preferable to confirm the orientation of the unit at the construction stage. Sometimes however, this is not possible and questions arise with regard to our heaters directional versatility.

The main points to be aware of are:

• Horizontal heaters **CAN** be installed in vertical ducts and likewise, a vertical heater **CAN** be installed in a horizontal duct. In both cases it is important to make sure that the heat sink(s) are properly ventilated. Always allow a minimum clearance of 6 inches above the heat sink and a minimum of 2 inches on the sides for ventilation. Please do not cover heat sink with any material or paint over it.

• In a horizontal heater, the automatic cut out (AC) **MUST** be located on the top of the heater's frame right above the heating element. The manual cut out is located on the side right behind the control panel, exposed to the airstream.

• Heaters **CANNOT** be flipped upside down. Because heat rises, the automatic thermal cut out must never be located below the heat source. Additionally and of equal importance, the airflow switch must never be upside down. Note that relocating these cut outs or sensors are not recommended by Neptronic. The warranty shall cease to be valid in the event of misapplication, incorrect installation, improper maintenance or any other incorrect uses or misuse of heaters.