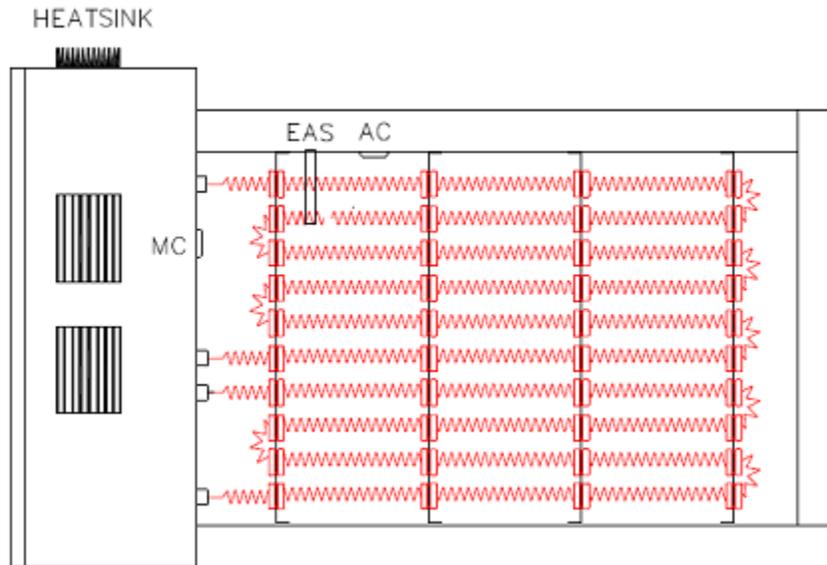




To FLIP or not to FLIP Duct Heater Orientation

Neptronic heaters can be custom built for horizontal or vertical airflow. Control panels can be side, bottom or top mount or even remote mount if space is an issue. With all these different options available, it is always good to have the correct construction confirmed at design stage so that the heater can be built accordingly. But at times Contractors/Engineers do not have these important points but rush onto fabrication.

Can a horizontal heater be mounted in a vertical duct or vice versa? Can a heater be flipped upside down? Is there a specific airflow direction to respect? We often get these questions from installers on site. The answer depends on the model or the type of heater. Our heaters come with automatic (AC) and manual (MC) thermal cut outs. These cut outs are located in specific places as per UL/CSA/ETL codes and regulations. 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. On modulating heaters, there are electronic airflow sensors (EAS), which are also on the top of the frame and heat sinks on the outside of the control panel. Typical locations are shown in the drawing below.



Horizontal heaters **CAN** be installed in vertical ducts. The heater will have to be turned sideways 90 degrees. In this case it is important to make sure that the heat sink(s) do not go in the bottom/under the control panel. Heat sinks are allowed be on the top or the sides of the panel but not under as they need to be properly ventilated. A minimum clearance of 6 inches above the heat sink and a minimum of 2 inches on the sides must be left. Note that some modulating heaters with large amperage could have many heat sinks, some on sides and some on top of the control panel. It gets a little more complicated in a case like this when you have to turn the heater sideways since one of the heat sinks could end up going under the panel which is not recommended.

Likewise, a vertical heater **CAN** be installed in a horizontal duct. Again all of the above concerns apply. Make sure the automatic thermal cut out goes to the top and no heat sinks go under the control panel.

Airflow direction does not matter with Neptronic heaters.

Heaters **CANNOT** be flipped upside down. As we all know, heat rises and therefore the automatic thermal cut out **CANNOT** be in the bottom. Also, the mechanical airflow switch (standard on ON-OFF and certain modulating heaters) **CANNOT** 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.

Check twice, build once!

To learn more about our duct heaters, visit our [website](http://www.neptronic.com).

www.neptronic.com