



ABSTRACT

The network equipment cabinet with temperature regulation and fire prevention mechanism comprises 3 main parts: outer casing **10**, temperature regulation unit **90** and fire prevention module **100**.

The outer casing is basically a rectangular cabinet, with a number of racks whereby the network server computer, hub or router modules, and other equipment can be placed.

The temperature regulation unit includes a temperature sensor and a cooling mechanism. It checks the internal temperature at all times and regulates the temperature within a safe region. The cooling mechanism can be compressor units, or a combination of compressor units and exhaust fans.

When the temperature reaches a critical high value, signifying a high possibility of fire, the fire prevention unit comes into play to kill the fire and prevent it from spreading beyond the cabinet. The fire prevention unit comprises a smoke detector and an inert gas fire extinguisher system. The smoke detector is able to detect the presence of smoke and indirectly, the existence of fire or sparks. The fire prevention unit serves to protect the server computers and the modules in the cabinet from catching fire. When activated, the fire prevention unit releases inert gases such as helium or argon, which flushes out oxygen from within the cabinet, to kill the fire upon detection. At the same time, the power supply is shut down until the fault is repaired.

See Figure 1.