



High temperature heat detector

The detector has a moulded self-extinguishing white polycarbonate case. Nickel plated stainless steel wiper contacts connect the detector to the base. Inside the case a printed circuit board holds the signal processing electronics. A pair of matched negative temperature co-efficient thermistors are mounted on the PCB in such a way that one thermistor is exposed to give good thermal contact with the surrounding air while the other thermistor is thermally insulated.

Under stable conditions both thermistors are in thermal equilibrium and have the same value of resistance. If air temperature increases rapidly the resistance of the exposed thermistor becomes less than that of the insulated thermistor. The ratio of the resistance of the thermistors is monitored electronically and an alarm is initiated if the ratio exceeds a factory preset level. This feature determines the 'rate of rise' response of the detector.

If air temperature increases slowly, no significant resistance difference develops between the thermistors, but at high temperatures a fixed value resistance connected in series with the insulated thermistor becomes significant. When the sum of the resistance of the insulated thermistor and the fixed resistor compared to the resistance of the exposed thermistor reaches a preset value, an alarm is initiated.

The value of the fixed resistor is selected to set the detector into alarm state at a specified fixed temperature. The detector signals an alarm state by switching an alarm latch on, increasing the current drawn from the supply from about 50μA to a maximum of about 75mA.

[illegible]

+

AC5265-2021-V1