XP95A Heat Sensor

VF5668

Overview

The XP95A series analog addressable heat sensor head, model VF5668, is molded from white polycarbonate material with a low air flow resistance design. Stainless steel wiper contacts connect the sensor to the terminals, which are polarity insensitive, in the mounting base. Inside the sensor case is a circuit board with the sensing system on one side and the address capture, signal processing, and communication electronics on the other side.

The Sensor monitors temperature by using a single thermistor network, which provides a voltage output proportional to the external air temperature. This analog voltage is converted to a digital signal, which is transmitted to the Elite Fire Alarm Control Panel for interpretation. The alarm threshold is programmed into the Elite Fire Alarm Control Panel.

Standard Features

- UL Listed and FM Approved
- Electronic temperature sensing
- Style 4, 6, or 7 communication wiring
- LED indicator
- Alarm flag for fast alarm reporting
- Alarm address for fast location of alarm
- Automatic addressing with the XPERT card
- Electronics free 4" or 6" bases
- Slide-easy bases
- Ease of installation
- Elegant design
- Ideal for environments that are dirty or smoky under normal circumstances
- Well suited for warehouses, loading bays and parking areas
- Unaffected by wind or atmospheric pressure

Response Characteristics of the VF5668 Heat Sensor	
Overheating/thermal combustion	Very Poor
Smouldering/ glowing combustion	Very Poor
Flaming combustion	Poor
Flaming with high heat output	Moderate/ Good
Flaming - clean burning	Moderate/ Good

Operation

The XP95A heat Sensors have a common profile with ionization and photoelectric smoke Sensors, but have a low air flow resistance case made of self extinguishing white polycarbonate. The devices monitor heat by using a single thermistor network which provides a voltage output proportional to the external air temperature. The standard heat sensors respond to increasing air temperature in such a way that they are classified as an A2S device. Both devices will give 55 counts at 131°F.

A high temperature CS heat Sensor which can be installed in a typical ambient temperature of 131°F is available. This device will give 55 counts at 194°F.

Electrical Description

The Sensors are designed to be connected to a two-wire loop circuit carrying both data and a 17V to 28V DC supply. The Sensors are connected to the incoming and outgoing supply via terminals L1 and L2 in the mounting base. A remote LED indicator requiring not more than 4mA at 5V may be connected between +R and -R terminals. An earth connection terminal is also provided. The Sensor is calibrated to give an analog value of 25±5 counts at 77°F.

Environmental Characteristics

XP95A Standard Heat Sensors operate over the range -4°F to +158°F, the High Temperature Heat Sensors operate over the range –4°F to +248°F. The Sensors are unaffected by atmospheric pressure.

Technical Specifications	
Detection Principle	Linear approximation over temperature range 77°F to 194°F
Sensor	Single NTC Thermistor
Sampling Frequency	Continuous
Sensitivity	77°F to 194°F: 38°F/count -4°F returns 8 counts
Supply Wiring	Two wire supply, polarity insensitive
Terminal Functions	L1&L2 supply in and out connections (polarity insensitive) +R remote indicator positive connection (internal 2.2kΩ resistance to supply +ve) -R remote indicator negative connection (internal 2.2kΩ resistance to supply - ve)
Supply Voltage	16-28VDC
Modulation Voltage at Detector	5 to 9 Volts peak to peak
Quiescent Current	250µA average, 500µA peak
Power-up Surge Current	1mA
Alarm Indicator	Red light emitting diode (LED)
Alarm LED Current	2mA
Remote LED Current	4mA at 5V (measured across remote load)
Alarm Temperature	135°F (57°C) (55 counts in 7 bits or 110 counts in 8 bits) UL class “Ordinary”
Style	Styles 4, 6, and 7
Terminations	(Detector Head) Stainless steel wiper contacts
End-of-Line resistor	None
Address Setting	XPERT Card
Mounting	4” or 6” round base
Termination	Field Wiring/Base Stainless Steel, Nickel Plated
Storage Temperature	-22°F to +176°F
Operating Temperature	-4°F to +158°F
Humidity	(No condensation or icing) 0% to 95% relative humidity
Wind Speed	Unaffected in fixed temperature use
Atmospheric Pressure	Unaffected
IP Rating	53
Detector weight	3.7 oz
Detector with base weight	5.54 oz
Dimensions	Diameter: 3.93” Height: 1.65” Height in base: 1.96”
Materials	Detector Housing: White polycarbonate V-0 rated to UL 94 Terminals: Nickel plated stainless steel