XP95
Multisensor Detector

The XP95 Multisensor Detector combines optical smoke and temperature sensors whose outputs are combined to give the final analogue value.

The signals from the optical smoke sensing element and the temperature sensor are independent, and represent the smoke level and the air temperature respectively in the vicinity of the detector.

- Sensitive to a wide range of fires
- Well suited to environments such as hotel bedrooms
- Unaffected by wind or atmospheric pressure

Technical data

All data is supplied subject to change without notice. Specifications are typical at 24 V, 25°C and 50% RH unless otherwise stated.

Detection principle
Smoke: Photo-electric detection of light scattered by smoke particles
Heat: Temperature-sensitive resistance

Chamber configuration - smoke element only
Horizontal optical bench housing an infrared emitter and sensor arranged radially to detect scattered light

Sensor - smoke element only
Silicon PIN photo-diode

Emitter - smoke element only
GaAs infra-red light emitting diode

Sampling frequency smoke element only
Once per second

Supply Wiring
Two wire supply, polarity insensitive

Terminal functions
L1 & L2 Loop in & out
+R Remote indicator positive connection (internal 2.2 kΩ resistance to supply +ve)
–R Remote indicator negative connection (internal 2.2 kΩ resistance to supply -ve)

Operating voltage
17 V to 28 V dc

Digital communication
XP95, Discovery and CoreProtocol compatible

Modulation voltage
5–9V peak to peak

Quiescent current
500 µA average, 750 µA peak

Power-up surge current
1 mA

Max power-up time
10 seconds

Alarm indicator
Two colourless light emitting diode (LED) emitting red light in alarm

Alarm LED current
3.5 mA

Remote LED current
4 mA at 5 V (measured across remote load)

Clean air analogue value
23 +4/-0

Alarm level analogue value
55

Storage temperature
-30°C to +80°C

Operating temperature
-20°C to + 60°C

Humidity (no condensation or icing)
0% to 95% RH

Effect of atmospheric pressure on optical sensor
None

Effect of wind speed on optical sensor
None

Vibration, impact and shock
To EN 54-5. EN54-7

Designed to IP Rating
IP23D

Standards and approvals
EN 54-5, EN 54-7, CPR, LPCB, VdS, VNIIPO, BOSEC, SBSC, CCMG

Dimensions
100 mm diameter x 50 mm height

Weight
105 g

Housing: White flame-retardant polycarbonate

Materials
Terminals: Nickel plated stainless steel

Compliance

All information in this document is given in good faith but Apollo Fire Detectors Ltd cannot be held responsible for any omissions or errors. The company reserves the right to change the specifications of products at any time and without prior notice.

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**Operation**

The XP95 Multisensor Detector contains an optical smoke sensor and a thermistor temperature sensor whose outputs are combined to give the final analogue value.

The Multisensor construction is similar to that of the optical detector but uses a different lid and optical moulding to accommodate the thermistor temperature sensor.

The signals from the optical smoke sensing element and the temperature sensor are independent and represent the smoke level and the air temperature respectively in the vicinity of the detector.

The detectors micro-controller processes the two signals. The temperature signal processing extracts only rate of rise information for combining with the optical signal. The detector will not respond to a slow temperature increase - even if the temperature reaches a high level. A large sudden change in temperature can however, cause an alarm without the presence of smoke if sustained for 20 seconds.

The processing algorithms in the multisensor incorporate drift compensation. The control panel must not have a drift compensation algorithm enabled.

The sensitivity of the detector is considered the optimum for most general applications since it offers good response to both smouldering and flaming fires.

**Environmental characteristics**

The XP95 Multisensor Detector is unaffected by wind or atmospheric pressure and operates over the temperature range -20°C to +60°C.

**Electrical description**

The XP95 Multisensor Detector is designed to be connected to a two wire loop circuit carrying both data and a 17 V to 28 V dc supply. The detector is connected to the incoming and outgoing supply via terminals L1 and L2 in the mounting base.

A remote LED indicator requiring not more than 4 mA at 5 V may be connected between the +R and -R terminals. An earth connection terminal is also provided. The detector is calibrated to give an analog value of 23 +4/-0 counts in clean air. This value increases with smoke density. A count of 55 corresponds to the EN 54 alarm sensitivity level.

**EMC Directive 2014/30/EU**

The XP95 Multisensor Detector complies with the essential requirements of the EMC Directive 2014/30/EU, provided that it is used as described in this data sheet.

A copy of the Declaration of Conformity is available from Apollo upon request.

Conformity of the XP95 Multisensor Detector with the EMC Directive, does not confer compliance with the directive on any apparatus or systems connected to them.

**Construction Products Regulation 305/2011/EU**

The XP95 Multisensor Detector complies with the essential requirements of the Construction Products Regulation 305/2011/EU.

A copy of the Declaration of Performance is available from Apollo upon request.