

Optical Smoke Detector



Product overview	
Product	Optical Smoke Detector
Part No.	55000-600
Product	Optical Smoke Detector
Part No.	55000-620
Product	Optical Smoke detector - black
Part No.	55000-660
Digital Communication	XP95, Discovery and CoreProtocol® compatible

Compliance* BOSEC VdS

Note: Compliance*

Part No. 55000-600; CPR, LPCB only

Part No. 55000-620; CPR, LPCB, VdS, BOSEC, CCMG, FG, SBSC

Part No. 55000-660; CPR, LPCB only

Product information

The XP95 Optical Smoke Detector works on the light scatter principle and is ideal for applications where slow burning or smouldering fires are likely.

- · Responds well to slow burning, smouldering fires
- · Well suited to escape routes
- · 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 Photo-electric detection of light scattered in a forward direction by

smoke particles

Horizontal optical bench housing Chamber configuration

an infrared emitter and sensor arranged radially to detect scattered

Sensor Silicon PIN photo-diode

Emitter GaAs infra-red light emitting diode

Sampling frequency Once per second

Sensitivity Nominal response threshold value

of 0.12 dB/m when measured in accordance with EN 54-7

Supply Wiring Two wire supply, polarity insensitive Terminal functions L1 & L2 Loop in & out positive

> Remote indicator positive connection (internal 2.2 $k\Omega$ resistance to supply +ve)

-RRemote indicator negative connection (internal 2.2 $k\Omega$ resistance to supply -ve)

17 V to 28 V dc Supply voltage

Digital communication XP95, Discovery and CoreProtocol

compatible

Quiescent current 340 µA

Power-up surge current 1 mA for 1 second

Alarm indicator Clear light emitting diode (LED)

emitting red light

Alarm LED current 4 mA

Remote LED current 5 mA maximum -30°C to +80°C Storage temperature Operating temperature -20°C to + 60°C

0% to 95% RH (no condensation or Humidity

icing)

Effect of atmospheric Unaffected

pressure

Effect of wind speed Unaffected by wind

Vibration, impact and shock FN 54-7 IP44

EN 54, CPR, LPCB, VdS, BOSEC, SBSC, Standards and approvals*

CCMG, FG

Dimensions 100 mm diameter x 42 mm height

Weiaht 105 g

Materials Housing: White flame-retardant

polycarbonate

Terminals: Nickel plated stainless

36 Brookside Road, Havant Hampshire, P09 1JR, UK.

Tel: +44 (0)23 9249 2412 Fax: +44 (0)23 9249 2754

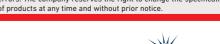
Email: sales@apollo-fire.com Web: www.apollo-fire.co.uk

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.











Operation

The XP95 Optical Smoke Detector uses the same outer case as the ionization smoke detector and is distinguished by the indicator LED which is clear in standby and red in alarm. Within the case is a printed circuit board which on one side has the light proof labyrinth chamber with integral gauze surrounding the optical measuring system and on the other the address capture, signal processing and communications electronics.

An infrared light emitting diode within its collimator is arranged at an obtuse angle to the photo-diode. The photo-diode has an integral daylight blocking filter.

The infrared LED emits a burst of collimated light every second. In clear air the photo-diode receives no light directly from the infrared LED because of the angular arrangement and the dual mask. When smoke enters the chamber it scatters photons from the emitter infrared LED onto the photo-diode in an amount related to the smoke characteristics and density. The photo-diode signal is processed by the optical ASIC and passed to the A/D converter on the communications ASIC ready for transmission when the device is interrogated.

Electrical description

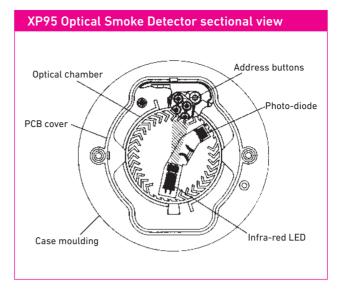
The XP95 Optical Smoke Detector is designed to be connected to a two wire loop circuit carrying both data and a 17 V to 28 V dc supply. The detector is connected to the incoming and outgoing supply via terminals L1 and L2 in the mounting base. A remote LED indicator requiring not more than 4 mA at 5 V may be connected between the +R and -R terminals. An earth connection terminal is also provided. The detector is calibrated to give an analogue value of 25±7 counts in clean air. This value increases with smoke density. A count of 55 corresponds to the EN 54 alarm sensitivity level.

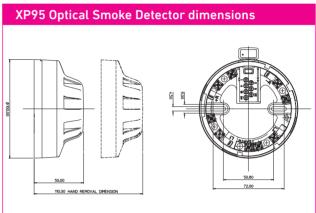
Environmental characteristics

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

Remote LED connection

A drive point is provided on the XP95 Optical Smoke Detector for a remote LED indicator. The indicator must be a standard high-efficiency RED LED and does not require a series limiting resistor since current is limited within the detector to approximately 1 mA.





EMC Directive 2014/30/EU

The XP95 Optical Smoke 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.

Construction Products Regulation 305/2011/EU

The XP95 Optical Smoke 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.

