

Orbis

Optical Smoke Detector



Product overview	
Product	Optical Smoke Detector
Part No.	ORB-0P-12001-AP0
Product	Optical Smoke Detector with flashing LED
Part No.	ORB-0P-12003-AP0

Compliance*			
C€	LPCB.	VdS	BOSEC
PRODUKT	FG	IIIII	

Product information

Optical smoke detectors have always been recognised as good detectors for general use. They are regarded as particularly suitable for smouldering fires and escape routes.

The performance of Orbis optical detectors is good with black as well as with white smoke. In this respect Orbis detectors are different from traditional optical smoke detectors which perform far better in white smoke than in black.

Orbis Optical Smoke Detectors are also designed to reduce significantly the incidence of false alarms through oversensitivity to transient phenomena.

Orbis Optical Smoke Detectors are recommended for use as general purpose smoke detectors for early warning of fires in most areas.

- Improved sensitivity to black smoke
- Compensation for build-up of dirt
- Extra confirmation of smoke before an alarm signal is given

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 by smoke particles over a

Two wire supply, polarity sensitive

wide range of angles.

Sampling frequency Once every four seconds

Operating voltage 8.5 V dc to 33 V dc

Supply Wiring Maximum polarity reversal 200 ms

Power up time < 20 seconds

Minimum 'detector active' voltage

95 μA Power-up surge current at

Average quiescent current 95 µA

Alarm current

12 V 20 mA

40 mA 600 Ω Alarm load 5 V - 33 V Holding voltage Minimum holding current 8 mA

Minimum voltage to light alarm LED

< 1 VAlarm reset voltage

Alarm reset time One second

Alarm indicator Integral indicator with 360° visibility Remote output LED (-) 1.2 k Ω connected to negative supply

5 V

characteristic

Operating and storage -40°C to +70°C

temperature

Humidity (no condensation 0% to 98% RH

or icing)

Effect of atmospheric None pressure on optical sensor

Effect of wind speed None IP Rating IP44

Standards and approvals EN54-7, CPR, LPCB, VdS, BOSEC,

SBSC. FG. CSIRO

Dimensions 97 mm diameter x 31 mm height

Weiaht 75 g

Materials Housing: White flame retardant

polycarbonate

Terminals: Tin plated stainless steel

Compliance*

Part No. ORB-OP-12001-APO - CPR, LPCB, VdS, BOSEC, SBSC, FG Part No. ORB-OP-12003-APO - CPR, LPCB, BOSEC, FG, CSIRO

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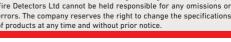
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All information in this document is given in good faith but Apollo Fire Detectors Ltd cannot be held responsible for any omissions or errors. The company reserves the right to change the specifications of products at any time and without prior notice













Operation

Orbis Optical Smoke Detectors work on the well established light scatter principle. The remarkable optical design of the Orbis Optical Smoke Detector enables it to respond to a wide spectrum of fires.

The sensing chamber contains an optical sensor which measures back-scattered light as well as the more usual forward-scattered light. Sensitivity to black smoke is greatly improved.

The detector is calibrated so that Orbis is highly reliable in detecting fires, but is much less likely to generate false alarms.

The stability of the detector-high reliability, low false alarm rate is further increased by the use of algorithms to decide when the detector should change to the alarm state. This removes the likelihood of a detector producing an alarm as a result of smoke from smoking materials or from another non-fire source.

EMC Directive 2014/30/EU

The Orbis 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.

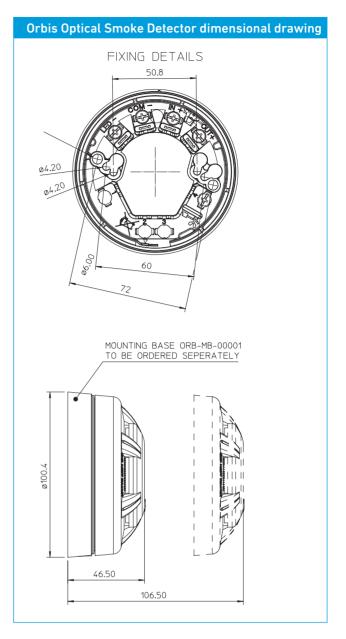
A copy of the Declaration of Conformity is available from the Apollo website: www.apollo-fire.co.uk

Conformity of the Orbis Optical Smoke 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 Orbis 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 the Apollo website: www.apollo-fire.co.uk



Orbis detectors - LED status

Feature	Description	Red LED status	Yellow LED status
StartUp™	Confirms that the detectors are wired in the correct polarity	Flashes once per second	No flash
FasTest™	Maintenance procedure, takes just four seconds to functionally test and confirm detectors are functioning correctly	Flashes once per second	No flash
DirtAlert™	Shows that the drift compensation limit has been reached	No flash	Flashes once per second in StartUp (Stops flashing when StartUp finishes)
SensAlert™	Indicates that the sensor is not operating correctly	No flash	Flashes every four seconds (Flashes once per second in StartUp)
Normal operation	At the end of StartUp and FasTest (without flashing LED as standard)	No flash	No flash
Flashing LED version	Detectors red LED flashes in normal operation (at the end of FasTest)	Flashes every four seconds	No flash

