Orbis I.S.

Optical/Heat Multisensor Detector

Product overview

Product	**I.S. Optical/Heat Multisensor Detector**
Part No.	**ORB-OH-53027-APO**
Product	**I.S. Optical/Heat Multisensor Detector with flashing LED**
Part No.	**ORB-OH-53028-APO**

Approvals

Note: *Only Part No. ORB-OH-53027-APO has VdS approval.*

Product information

The Orbis Intrinsically Safe (I.S.) Optical/Heat Multisensor Detector is recognised as a good detector for general use but is additionally more sensitive to fast burning, flaming fires - including liquid fires - than optical detectors.

Technical data

All data is supplied subject to change without notice. Specifications are typical at 24 V, 23°C and 50% RH unless otherwise stated.

Detection principle	*Smoke: Photo-electric light scattering* *Heat: Temperature-sensitive resistance*
Chamber configuration	*Smoke element only: Infra-red emitter with a prism and a photo-diode at 90° to the light beam with a wide field of view*
Sampling frequency	*Once every four seconds*
Supply voltage	*14 V dc to 28 V dc*
Supply Wiring	*Two wire supply, polarity sensitive*
Polarity reversal	*Not allowed*
Power up time	*< 20 seconds*
Minimum 'detector active' voltage	*12 V*
Power-up surge current at 24 V	*105 µA*
Average quiescent current at 24 V	*85 µA*
Alarm load	*325 Ω in series with a 1 V drop*
Minimum holding voltage	*5 V*
Minimum voltage to light alarm LED	*6 V*
Alarm reset voltage	*< 1 V*
Alarm reset time	*One second*
Alarm indicator	*Integral indicator with 360° visibility*
Remote output LED (-) characteristic	*4.7 kΩ connected to negative supply*
Operating and storage temperature	*-40°C to +70°C* *Operating temperature is restricted by the intrinsic safety gas classification.* *Class T5: -40°C to +45°C* *Class T4: -40°C to +60°C* *The detector must be protected from conditions of condensation or icing.*
Humidity (no condensation or icing)	*0% to 98% RH*
Atmospheric pressure	*Insensitive to pressure*
Effect of wind speed	*None*
Designed to IP Rating	*IP23D*
Standards & approvals	*EN54-7,CPD, LPCB, MED, LR, DNV-GL, BV, ABS, CCS, KRS, VdS, BOSEC, IECEx, ATEX, VNIIPO, SBSC, NANIO, PESO, FG*
BASEEFA certification	*Bas06ATEX0007X*
Dimensions	*97 mm diameter x 42 mm height* *100 mm diameter x 57 mm height in base*
Weight	*80 g detector* *140 g detector with base*
Materials	*Housing: White flame-retardant polycarbonate* *Terminals: Nickel plated stainless steel*

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Operation

Orbis I.S. Optical/Heat Multisensor Detectors can be readily used instead of optical detectors but should be used as the detector of choice for areas where the fire risk is likely to include heat at an early stage in the development of the fire.

The Multisensor detector has two sensors, one for smoke and one for heat with the alarm decision derived from either sensor or combination of both.

As with all the Orbis I.S. range of detectors the increased reliability of detection is combined with high immunity to false alarms.

EMC Directive 2014/30/EU

The Orbis I.S. Optical/Heat Multisensor Detector complies with the essential requirements of the EMC Directive 2014/30/EU, provided that it is used as described in this datasheet.

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

Conformity of the Orbis I.S. Optical/Heat 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 Orbis I.S. Optical/Heat 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 the Apollo website: www.apollo-fire.co.uk

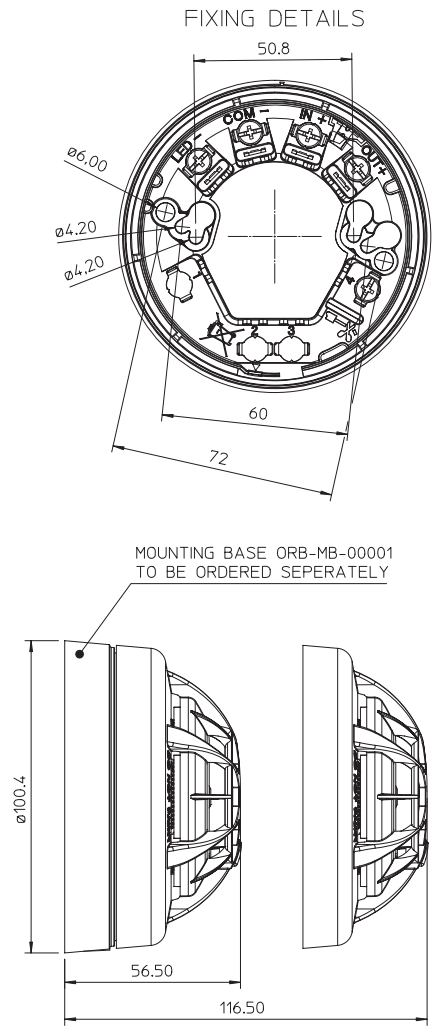
Marine Equipment Directive 2014/90/EU

The Orbis I.S. Optical/Heat Multisensor Detector complies with the essential requirements of the Marine Equipment Directive 2014/90/EU.

ATEX Directive 2014/34/EU

The Orbis I.S. Optical/Heat Multisensor Detector complies with the essential requirements of the ATEX Directive 2014/34/EU.

Orbis I.S. Optical/Heat Multisensor Detector dimensional drawing



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