Orbis I.S.
Optical/Heat Multisensor Detector

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

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.

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
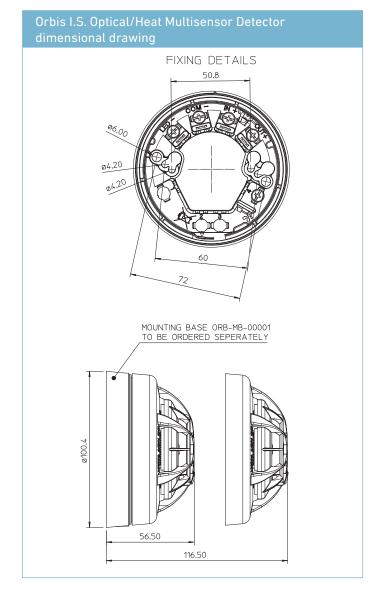
Marine Equipment Directive 2014/90/EU

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

FIXING DETAILS
50.8
ø6.00
ø4.20
ø4.20
COM – IN +
60
72

MOUNTING BASE ORB-MB-00001 TO BE ORDERED SEPERATELY
ø100.4
56.50
116.50

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