# Orbis
## Heat Detector



## Product overview

| Product | Orbis Heat Detector | Orbis Heat Detector with flashing LED |
|---|---|---|
| | Part No. | Part No. |
| Class A1R | ORB-HT-11001-APO | ORB-HT-11013-APO |
| Class A1S | ORB-HT-11166-APO | ORB-HT-11167-APO |
| Class A2S | ORB-HT-11002-APO | ORB-HT-11014-APO |
| Class BR | ORB-HT-11003-APO | ORB-HT-11015-APO |
| Class BS | ORB-HT-11004-APO | ORB-HT-11016-APO |
| Class CR | ORB-HT-11005-APO | ORB-HT-11017-APO |
| Class CS | ORB-HT-11006-APO | ORB-HT-11018-APO |

## Compliance



*Note: Not all standards and approvals apply to all Part Numbers, please check applicability at www.apollo-fire.co.uk*

## Product information

The Orbis Heat Detector range incorporates six heat detector classes to suit a wide variety of operating conditions in which smoke detectors are unsuitable.

The European Standard EN 54-5 classifies heat detectors to the highest ambient temperature in which they can safely be used without risk of false alarm. The classes are identified by the letters A to C (Class 1 is sub-divided into A1 and A2). In addition to the basic classification, detectors may be identified by a suffix to show that they are rate-of-rise (suffix R) or fixed (static) temperature (suffix S) types.

All heat detectors in the Orbis range are tested as static or rate-of-rise detectors and are classified as A1R, A2S, BR, BS, CR or CS.

## 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* | | *Measurement of heat by means of a thermistor* |
| *Sampling frequency* | | *Once every two seconds* |
| *Supply voltage* | | *8.5 V dc to 33 V dc* |
| *Supply Wiring* | | *Two wire supply, polarity sensitive* |
| *Maximum polarity reversal* | | *200 ms* |
| *Power up time* | | *< 20 seconds* |
| *Minimum 'detector active' voltage* | | *6 V* |
| *Power-up surge current at 24 V* | | *95 µA* |
| *Average quiescent current at 24 V* | | *95 µA* |
| *Alarm current* | *12 V* | *20 mA* |
| | *24V* | *40 mA* |
| *Alarm load* | | *600 Ω* |
| *Holding voltage* | | *5 V - 33 V* |
| *Minimum holding current* | | *8 mA* |
| *Minimum voltage to light alarm LED* | | *5 V* |
| *Alarm reset voltage* | | *< 1 V* |
| *Alarm reset time* | | *One second* |
| *Alarm indicator* | | *Integral indicator with 360° visibility* |
| *Remote output LED (-) characteristic* | | *1.2 kΩ connected to negative supply* |
| *Operating and storage temperature* | | *-40°C to +70°C* |
| *Humidity (no condensation or icing)* | | *0% to 98% RH* |
| *Effect of atmospheric pressure on optical sensor* | | *None* |
| *Effect of wind speed* | | *None* |
| *IP Rating* | | *IP44* |
| *Standards and approvals* | | *EN54-5, CPR, LPCB, VdS, BOSEC, SBSC, FG and CSIRO* |
| *Dimensions* | | *97 mm diameter x 36 mm height* |
| *Weight* | | *70 g detector* |
| *Materials* | | *Housing: White flame-retardant polycarbonate* |
| | | *Terminals: Nickel plated stainless steel* |

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## Operation

Orbis Heat Detectors have an open-web casing which enables air to flow freely across a thermistor which measures the air temperature every two seconds. A microprocessor stores the temperatures and compares them with pre-set values to determine whether a fixed upper limit - the alarm level - has been reached.

In the case of rate-of-rise detectors the microprocessor uses algorithms to determine how fast the temperature is increasing.

Static heat detectors respond only when a fixed temperature has been reached. Rate-of-rise detectors also have a fixed upper limit but they also measure the rate of increase in temperature. A fire might thus be detected at an earlier stage than with a static detector so that a rate-of-rise detector is to be preferred to a static heat detector unless sharp increases of heat are part of the normal environment in the area protected by the heat detector.

| Orbis Heat Detectors response modes | | | | | |
|---|---|---|---|---|---|
| Detector class | Application temperature | | Static response temperature °C | | |
| | Typ | Max | Min | Typ | Max |
| A1R | 25 | 50 | 54 | 57 | 65 |
| A2S | 25 | 50 | 54 | 61 | 70 |
| BR | 40 | 65 | 69 | 73 | 85 |
| BS | 40 | 65 | 69 | 73 | 85 |
| CR | 55 | 80 | 84 | 90 | 100 |
| CS | 55 | 80 | 84 | 90 | 100 |

## Where to use heat detectors

Heat detectors are used in applications where smoke detectors are unsuitable. Smoke detectors are used whenever possible since smoke detection provides earlier warning of fire than heat detection.

Heat detectors should be used if there is a danger of nuisance alarms from smoke detectors.

## EMC Directive 2014/30/EU

The Orbis Heat 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 Heat Detector with the EMC Directive, does not confer compliance with the directive on any apparatus or systems connected to them.
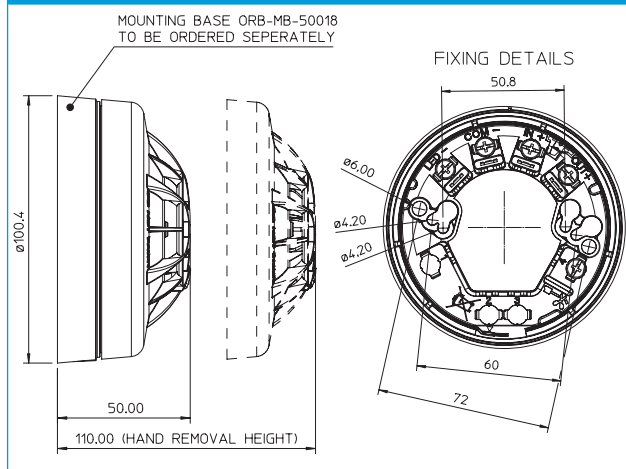
## Construction Products Regulation 305/2011/EU

The Orbis Heat 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

### Choosing a heat detector
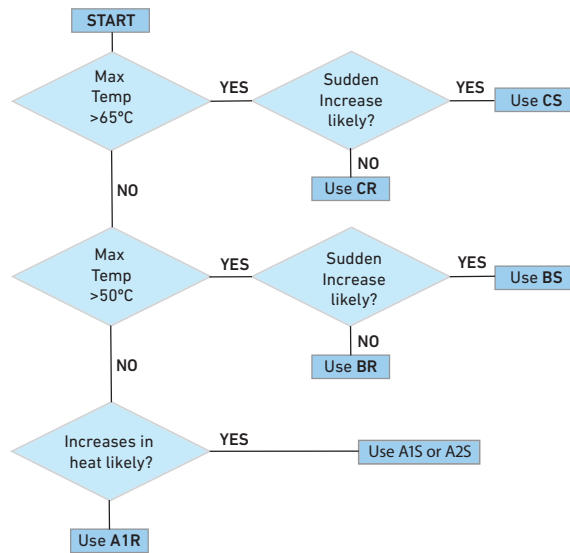


### Orbis Heat Detector dimensional drawing

## 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 |

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