




IS multisensor smoke detector

Where to use multisensor smoke detectors

Multisensor smoke detectors are recognised as good detectors for general use but are additionally more sensitive to fast burning, flaming fires—including liquid fires—than optical detectors.

They can be readily used instead of optical smoke 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.

As with Orbis IS optical smoke detectors the increased reliability of detection is combined with high immunity to false alarms.

orbis IS multisensor smoke detector

The multisensor smoke detector is a thermally enhanced smoke detector and as such will not give an alarm from heat alone. It is a development of the Orbis IS optical detector described in the previous chapter and goes further in its capabilities of fire detection.

How does the orbis IS multisensor detector work?

The optical sensor is identical to the one in the Orbis IS optical detector. Its sensitivity is, however, influenced by a heat sensing element which makes the detector more responsive to fast-burning, flaming fires.

It should be noted that the detector is a smoke detector. Although the Orbis IS multisensor relies on both smoke and heat sensors it is not possible to switch from smoke detection to heat detection.

Environmental performance

The environmental performance of the multisensor detector is the same as that of the Orbis IS optical smoke detector.

Also classification and BASEEFA certificate number are the same as for the optical smoke detector.

Distribuição: Segurança Industrial Equipamentos
 Fone/Fax: (41) 4063-9687 ou 3287-1364
 cml@segind.com.br - segindbr@hotmail.com
 www.segind.com.br

technical data

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

DETECTOR OPERATING PRINCIPLES

Principle of detection:
Photo-electric detection of light scattered by smoke particles over a wide range of angles. The optical arrangement comprises an infra-red emitter with a prism and a photo-diode at 90° to the light beam with a wide field of view. The detector's microprocessor uses algorithms to process the sensor readings. The heat sensing element increases the sensitivity of the detector as the temperature rises.

Sampling frequency:
Once every 4 seconds

ELECTRICAL

Supply voltage:
14—28V DC

Supply wiring:
2 wires, polarity sensitive

Polarity reversal:
Not allowed

Power-up time:
<20 seconds

Minimum 'detector active' voltage: 12V

Switch-on surge current at 24V:
105µA

Average quiescent current at 24V:
85µA

Alarm load:
325Ω in series with a 1.0V drop

Minimum holding voltage:
5V

Minimum voltage to light alarm LED:
6V

Alarm reset voltage:
<1V

Alarm reset time:
1 second

Remote output LED (-) characteristic:
4.7kΩ connected to negative supply

MECHANICAL

Material:
Detector and base moulded in white polycarbonate.

Alarm Indicator:
Integral indicator with 360° visibility (See Table 1 on page 14)

Dimensions and weight of detector:
100mm diameter x 50mm
Weight, 80g

Dimensions and weight of detector in base:
100mm diameter x 60mm
Weight, 140g

ENVIRONMENTAL

Operating and storage temperature
-40°C to +70°C
Operating temperature is restricted by the intrinsic safety gas classification.
Class T5: -40°C to +40°C
Class T4: -40°C to +60°C
The detector must be protected from conditions of condensation or icing.

Humidity:
0% to 98% relative humidity (no condensation)

Wind speed:
Unaffected by wind

Atmospheric pressure:
Insensitive to pressure

IP rating to EN 60529: 1992*:
23D

Electromagnetic Compatibility:
The detector meets the requirements of BS EN 61000-6-3 for emissions and BS EN50 130-4 for susceptibility.

**The IP rating is not a requirement of EN 54-7: 2000 since smoke detectors have to be open in order to function. An IP rating is therefore not as significant as with other electrical products.*



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www.segind.com.br