

## Warning

Certain actions can cause permanent damage to the detector. If the detector is subjected to any of the following it should not be used:

- Dis-assembly and re-assembly, apart from chamber replacement in the case of photoelectric smoke detectors (the detectors cannot be repaired and must be replaced in their entirety).
- Impact or shock.
- Suspected damage following a fire.
- In the case of heat detectors, touching the thermistor element.

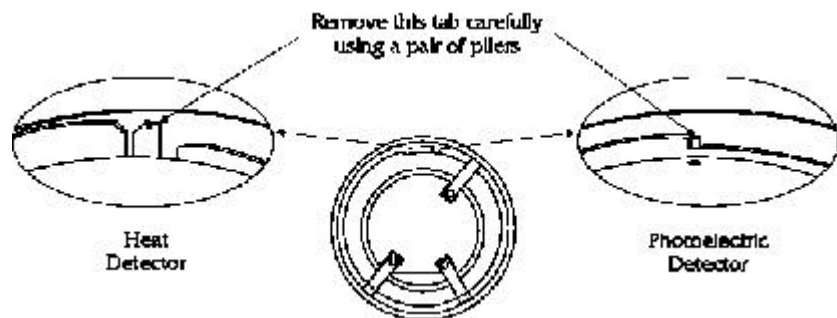
These detectors must be subject to periodic maintenance during regular service visits. This period should be outlined in the appropriate standards or recommendations. If there are no such standards existing, Hochiki recommend that the minimum period of maintenance should be 1 year and that the following should be taken into account:

- A regular operation test should be performed using suitable test equipment (certain types of test equipment should not be used in flammable/combustible atmospheres).
- A visual check for staining and mechanical damage should be made.

A magnetic test facility is incorporated into both detectors which can be operated using a suitable magnet.

A dust cover is included with these detectors to prevent contamination during installation and prior to commissioning. The dust cover must be removed for the detectors to operate.

The detectors can be locked on to the base by removing a plastic lug on the underside, please refer to the diagram below. The locked detector can then only be removed by using a special removal tool which is available from Hochiki Europe (UK) Ltd (part number TSC-A100/ALG).



World Class Leaders in Fire Detection  
since 1918

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2-3-0-345/Iss6/DEC02

## Hochiki Intrinsically Safe Smoke and Heat Detectors (and Mounting Base) Instructions.

**Products Covered: SLR-E-IS Flat Response Photoelectric Smoke Detector, DCD-1E-IS Combined Rate of Rise Heat Detector, YBN-R/4(IS) Electronics-free Mounting Base**

### Introduction

These Detectors are certified by BASEEFA as suitable for use in hazardous atmospheres as detailed below. It is essential that the detectors and base are installed and operated in conformance with the certification in order to remain safe. It is the responsibility of the installer to ensure that the detectors and base are installed according to the certification requirements, and it is recommended that the installation only be carried out by qualified personnel.

The YBN-R/4(IS) Base may only be used with Hochiki Intrinsically Safe specified detector heads. **The use of other detector heads is expressly forbidden and may cause fire or explosion.**

### Classification - SLR-E-IS

This Detector has BASEEFA certification classification according to EN 50020:1994 (BS 5501:Part 7:1977) and an ATEX Classification of II 1 G EEx ia IIC T5 Tamb = 55 °C. Areas suitable for installation: Category 1, 2 or 3 hazardous atmospheres, with a maximum ambient temperature of up to 55 °C.

### Classification - DCD-1E-IS

This Detector has BASEEFA certification classification according to EN 50020:1994, EN 50039:1980 and an ATEX Classification of II 1 G EEx ia IIC T5 Tamb = 55 °C. Areas suitable for installation: Category 1, 2 or 3 hazardous atmospheres, with a maximum ambient temperature of up to 55 °C.

Refer to the system drawing overleaf for important information concerning installation/wiring requirements which must be strictly observed in order to comply with BASEEFA certification. These detectors and base **MUST** be used with either a Zener Diode Barrier or a Galvanic Isolator, using suitable models as detailed in the system drawing overleaf. The Zener Diode Barrier or Galvanic Isolator should be installed according to the manufacturer's instructions.

### Note

These products have been designed to

- Avoid physical injury or harm by direct or indirect contact
- Not produce surface temperatures of accessible parts or radiation which could cause danger
- Eliminate any non-electrical dangers
- Not give rise to dangerous conditions in the event of overload

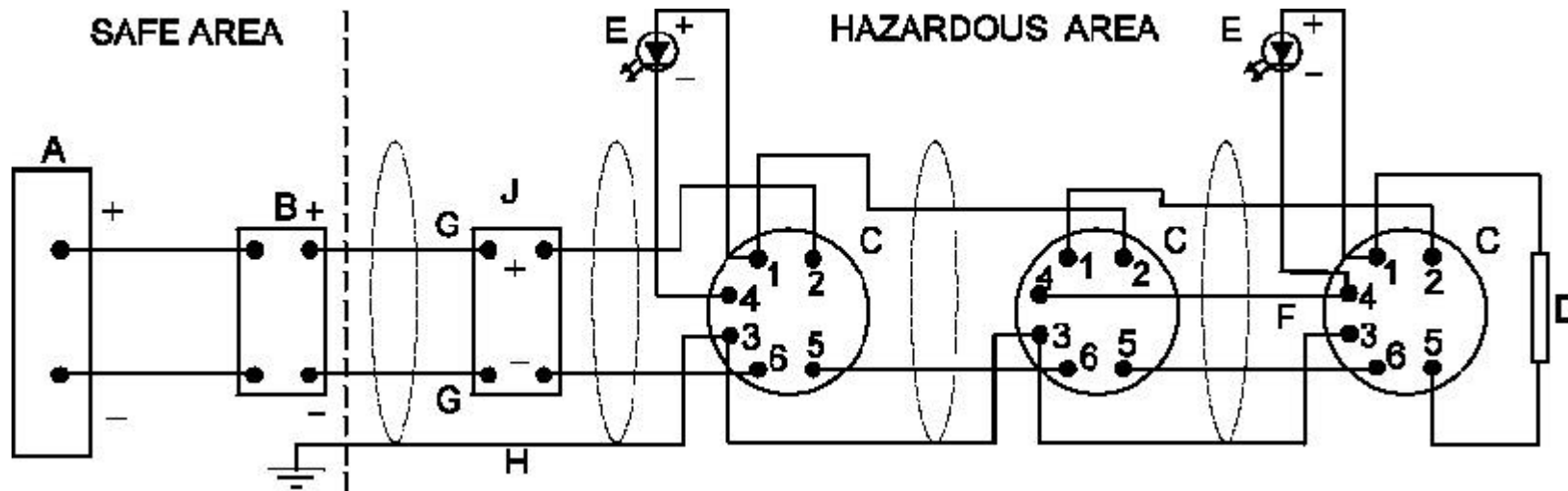
### Precautions

Hochiki smoke and heat detectors cannot be used to prevent a fire itself, they are intended only to detect certain characteristics of fire. When installing the detectors, check that the location of each one has been planned according to appropriate fire regulations and recommendations.

Hochiki detectors are suitable for indoor use only. A detector should not be installed in the following environmental conditions:

- Excessive ambient temperature.
- Where excessive condensation or moisture is present.
- Where corrosive gas or any other harmful agent is present.
- Where flammable dust or steam is present.
- Where obstructions are present which could impede the flow of air to the detector.
- Where mechanical stresses could affect the detector when fitted in accordance to these instructions.

(continued on back page)



- Notes**
1. The electrical circuit in the hazardous area must be capable of withstanding an a.c. test voltage of 500 volts to earth or frame of the equipment, for a period of one minute without breakdown.
  2. The installation must comply with National requirements (e.g. in the UK to BS 5345:Parts 1 and 4: 1977 or BS EN 600079-14 1997).
  3. The system must be marked with a durable label which should appear on or adjacent to the principal item of electrical apparatus in the system or at the interface between the intrinsically safe and non-intrinsically safe circuits. This marking shall include the word SYST or SYSTEM e.g. "System No. BAS Ex 98D2264" or "BAS No. Ex 98D2264 SYST".

A. Unspecified equipment except that no voltage shall exceed 250 V with respect to earth.

B. EITHER:  
Any BASEEFA Certified shunt safety Zener Diode Barrier with the following parameters:  
30 V or less  
200 mA or less  
1 W or less

The barrier earth must be connected via a high integrity connection, using an insulated conductor equivalent to a 4mm<sup>2</sup> copper conductor, such that the impedance from the point of connection to the main power system earth is less than 1 ohm.

OR:  
Any one channel from the following BASEEFA Certified Galvanic Isolators:

| Type Number         | Um=250V         | I.S. Output    | Certificate No. |
|---------------------|-----------------|----------------|-----------------|
| MTL 3043            | 2-3             | 5/6-7/8        | Ex86B2285       |
| MTL 4061 2Channel   | 9-8 or 12-11    | 1/2-3 or 4/5-6 | Ex94C2040       |
| MTL 5061 2Channel   | 9-8 or 12-11    | 1/2-3 or 4/5-6 | Ex96D2426       |
| P&F KFD0-CS-Ex1.51  | 11-12           | 1-2            | Ex96D2152       |
| P&F KFD0-CS-Ex2.51  | 11-12 or 9-8/10 | 1-2 or 4-5     | Ex96D2152       |
| P&F KFD0-CS-Ex1.51P | 11-12           | 1-2            | Ex96D2152       |
| P&F KFD0-CS-Ex2.51P | 11-12 or 9-8/10 | 1-2 or 4-5     | Ex96D2152       |

Note : Earthing requirements as described above for Zener Diode Barriers, is not required with Galvanic Isolators.

- C. Up to 20 SLR-E-IS Intrinsically Safe Photoelectric Smoke Detectors complete with YBN-R/4 IS Bases, BASEEFA Certificate No Ex98D2098 or BAS01ATEX1281  
OR:  
Up to 20 DCD-1E-IS Intrinsically Safe Heat Detectors complete with YBN-R/4 IS Bases, BASEEFA Certificate No BAS01ATEX1021  
OR:  
A combination of each type to a maximum of 20 units.

D. End-of-line resistor. The end-of-line resistor must have a body surface area of 230mm<sup>2</sup> or more.

E. Optional Remote Indicator consisting of Light Emitting Diode (LED) only. The LED must have a surface area of 230mm<sup>2</sup> or more. The interconnecting cable to any Remote Indicator(s) is to be considered as part of the interconnecting cable described at G below.

F. Optional interconnection for sharing a single Remote Indicator between any number of SLR-E-IS or DCD-1E-IS/YBN-R4/IS Detector/Base combinations as shown above. The terminal 4 in each base may be interconnected as shown at F above and a single Remote Indicator connected to any one such base. The interconnecting cable between any terminals 4 and the wiring to any Remote Indicator is to be considered as part of the interconnecting cable described at G below.

G. Interconnecting cable having the following maximum parameters:

| Group | Capacitance | Inductance | Inductance to Resistance ratio |
|-------|-------------|------------|--------------------------------|
|       | C<br>μF     | L<br>mH    | L/R<br>μH/ohm                  |
| IIC   | 0.07        | 0.62       | 36                             |
| IIB   | 0.56        | 1.86       | 146                            |
| IIA   | 1.82        | 4.96       | 286                            |

H. Optional cable screen. If used, this must only be connected to earth within the safe area and must be isolated from the electrical circuit and must be capable of withstanding an a.c. test voltage of 500 volts for a period of one minute without breakdown.

J. Up to 20 optional devices e.g. switches such as manual call points having appropriate BASEEFA Certification for use in the intended hazardous environment (Hochiki part no. CCP-IS) or otherwise classified as simple apparatus according to BS EN 50020:1995/EN 50020:1994. Such devices may be fitted with a resistor in series with the switch and /or an end-of-line resistor as per D above. Where such a resistor is used it must have a body surface area of 230mm<sup>2</sup> or more (typical resistance 470 - 680 ohm).