NITTAN

evolution

EVC-H

CONVENTIONAL HEAT DETECTOR

instruction manual

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• evolution • EVC-H • Conventional Heat Detector

Fire Industry Association

Quality System Certificate No. 041
Assessed to BS EN ISO 9001

NITTAN

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evolution.....

The ***EVC-H*** Heat Detector forms part of a brand new range of fire detectors from Nittan Europe Ltd. called evolution.

The ***EVC-H*** is an elegantly designed, low profile detector which is aesthetically pleasing, thus enabling it to blend unobtrusively into modern working environments.

The ***EVC-H*** is compatible with other existing conventional fire detection systems.

CONTENTS:-

Section 1 - INTRODUCTION

The ***EVC-H*** is an attractively styled, fast response, low profile heat detector.

It has been designed to replace any previous Nittan heat detector.

EVC-H features:

- Low profile, stylish appearance
- Different response grades available
- Non-polarised terminals
- Unauthorised head removal signal facility
- Low monitoring current
- Patented OMNIVIEW™ 360º LED alarm indicator
- Remote indicator output
- Compatible with UB-4, UB-4SD and STB-4SE bases

Section 2 - OPERATION

The ***EVC-H*** range of heat detectors are non mechanical and use a thermistor of low thermal mass as the sensing element giving a fast response. Although these detectors operate on a fixed temperature threshold only, their fast response makes them generally suitable for use where rate-of-rise detectors would be used.

Fig. 1. Block Diagram of **EVC-H** Detector Circuit

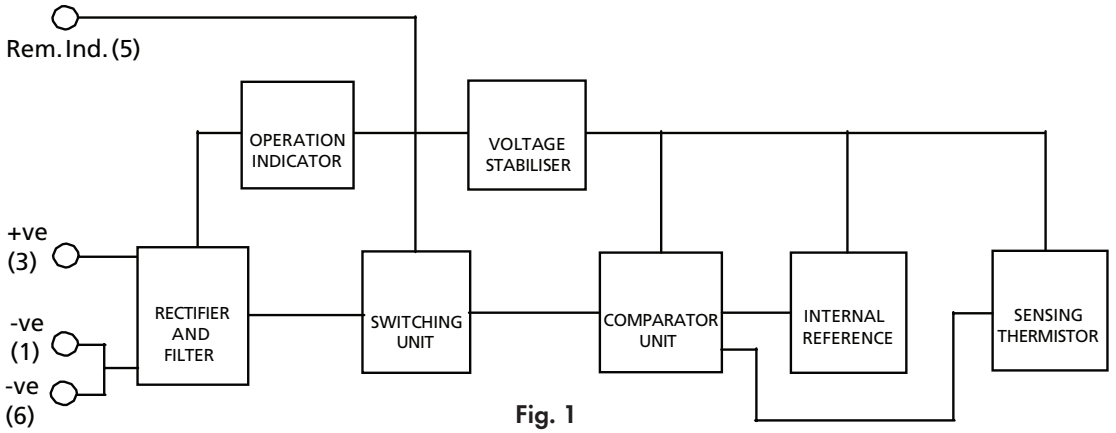


Fig. 1

Section 3 - DETECTOR MODELS

The ***EVC-H*** range of heat detectors are currently available in two versions. Others can be made available upon demand.

i) EVC-H-A2S

ii) EVC-H-CS

These versions have three terminals for connection onto the two wire zone circuit. The remaining terminal (5) provides a switched current sink function which operates when the detector goes into alarm condition, suitable for the operation of auxiliary function such as a remote indicator.

Section 4 - BASE MODELS

A variety of bases are available for use with the ***EVC-H*** detectors. It is important to use the correct base for each application. The available Base models are:

i) UB-4 base: for standard use with EVC-H series heat detector.

ii) UB-4SD base: This is similar to the standard UB-4 base, but also includes a schottky diode for head removal fault monitoring. The schottky diode is used in some fire systems to ensure power is maintained, in the event of an unauthorised detector head removal, to other detectors further on the zone.

iii) STB-4SE base: Similar to UB-4 base, except deeper.

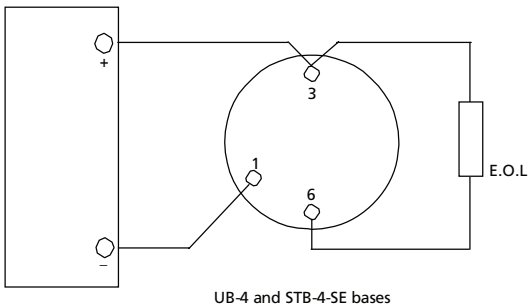
Section 5 - INSTALLATION

In normal use, the ***EVC-H*** detector will be installed at ceiling level. Pass field wiring through cable hole in centre of base from rear of base. Offer up and affix base to the ceiling or conduit fitting with screws via the base mounting holes. Connect field wiring to base terminals as detailed in below section 'Connections', making sure that wiring will not obstruct fitting of detector head. Fit detector head by inserting into base and turning clockwise until notch in detector rim aligns with the sensoris undertaken. At commissioning, the dust cover should be removed and discarded.

NOTE: THE PLASTIC DUST COVER MUST BE REMOVED FROM THE SENSOR IN ORDER FOR THE SENSOR TO FUNCTION CORRECTLY.

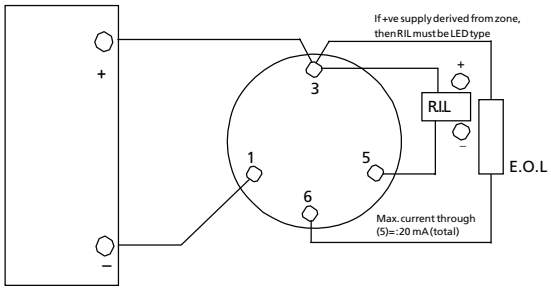
Section 6 - CONNECTIONS

Connections are made to the detector base. The connections used depend on the type of base and the functions required. See Section 4 'Base Models', to identify the required type of base and functions supported.
See below Figures 2, 3 & 4 for wiring to the detector's base:-



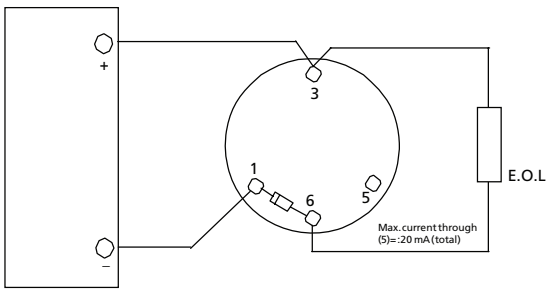
UB-4 and STB-4-SE bases

FIG. 2



UB-4 base

FIG. 3



UB-4-SD base

FIG. 4

Section 7 - MAINTENANCE AND CLEANING

Maintenance:

The ***EVC-H*** detector is a high quality product engineered for reliability. In order to obtain optimum performance, periodic maintenance is required. If proper preventative maintenance is not carried out, there is a likelihood of malfunction, including false alarms.

Servicing:

Servicing of the system should be carried out in accordance with the requirements of BS 5839 Part 1, Fire Detection and Alarm Systems for Buildings: Code of Practice for System Design, Installation and Servicing.

The maintenance procedures described below, should be conducted with the following frequency:

One month after installation:	Routine Inspection and every 3 months thereafter.
Every 6 months:	Operational Test.
Every 12 months:	Functional Test and Cleaning.

All above frequencies of maintenance are dependent on ambient conditions.

Routine Inspection:

i) Ensure that the detector head is secure and undamaged.

ii) Check that the heat entry apertures are in no way obstructed.

iii) Ensure that the surface of the detector's outer cover is clean. If there are deposits due to the presence of oil vapour, dust etc, then the detector should be cleaned in accordance with the cleaning instructions detailed later in this manual. It may be advisable to ensure that such cleaning is conducted regularly in future.

iv) Ensure that no equipment which may generate excessive heat has been installed in the vicinity of the detector since the last routine inspection. If such equipment has been installed, then you should notify the Safety Officer or other competent authority that its presence may cause false alarms.

Operational Test

The purpose of the Operational Test is to confirm the detector's correct operation in response to a heat condition.

i) Take any necessary precautions at the control panel to limit the sounding of the alarm sounders/bells and any fire service summoning device.

ii) Test the detector with heat from a warm air gun designed for heat detector testing (e.g. 'No Climb - Solo' heat sensor tester). Check that the detector gives an alarm condition within 10-20 seconds depending upon the detector grade and the applied air temperature. Check that the LED indicator on the detector illuminates.

N.B. Hot air blowers sold for paint stripping, soldering pipes etc, generate sufficient heat to damage the detector and should not be used for testing heat detectors.

iii) After the detector has given the alarm condition, reset the detector from the control. It may be necessary to allow some short time to elapse before resetting the detector, to allow any residual heat from the test to disperse.

iv) Before proceeding to the next detector, ensure that the detector just tested does not re-operate due to the presence of residual heat.

Functional Test:

The Functional Test checks the detectors operation. These detectors may be returned to our factory for Functional Testing.

Cleaning:

Note: The sensor head should NOT be disassembled.

i) Carefuly remove the heat detector from its base.

ii) Use a soft, lint-free cloth, moistened with alcohol for sticky deposits, to clean the plastic cover.

iii) Using a soft bristle brush (e.g. an artists paintbrush) carefully brush between the vanes and thermistor in a linear motion away from the apertures on the plastic case.

iv) Ensure that no debris is left on or around the thermistor once cleaning is complete.

v) If the unit needs further cleaning or is damaged or corroded, please return the complete detector to Nittan Europe Ltd. for service.

Section 8 - SPECIFICATIONS

Model References:	EVC-H-A2S, EVC-H-CS
Computer References:	EVC-H-A2S - F04-82505 EVC-H-CS - F04-82507
Sensing Element & Principle:	Thermistor of low thermal mass.
Supply Voltage:	24V dc nominal (range 11to 32V)
Voltage Ripple:	20% maximum
Alarm Voltage:	6V d.c. in series with 375R between +(terminal 3) and -(terminals 1,6) at 25ºC
Monitoring Current:	30 µA maximum at 24Vd.c.
Alarm Current:	50 mA maximum at 24Vd.c
Charging Time:	30 seconds
Typical Application Temperature:	EVC-H-A2S 25 ºC EVC-H-CS 55 ºC
Maximum Application Temperature:	EVC-H-A2S 50 ºC EVC-H-CS 80 ºC

Min. and Max. Static Response Temperature:	EVC-H-A2S 54 ºC / 70 ºC EVC-H-CS 84 ºC / 100 ºC
Min. Ambient Temperature:	-10 ºC
IP Rating:	40
Standards:	EN 54-5: 2017 + A1: 2018
CPR Certificate:	2831-CPR-F0423 2831-CPR-F0426 2831-CPR-F2421 2831-CPR-F2422
UKCA Certificate:	0832-UKCA CPR-F0031 0832-UKCA CPR-F0032 0832-UKCA CPR-F0033 0832-UKCA CPR-F0034
Declaration of Performance:	F0423 / F2421 F0426 / F2422

Section 9 - EMC

Installation

The installation shall be in accordance with the regulations either of the approval body for an approved system, or otherwise, to the national code of practice/ regulations for the installation of the fire alarm system, e.g. BS 5839 part 1.

Electromagnetic Compatibility (EMC)

On a site where there is an unusually high level of potential electrical interference, e.g. where heavy currents are being switched or where high levels of R.F. are prevalent, then care must be taken in the type and routing of cables. Particular care should be given to the separation of zone wiring from the cable carrying the interference.

Section 10 - DIMENSIONS

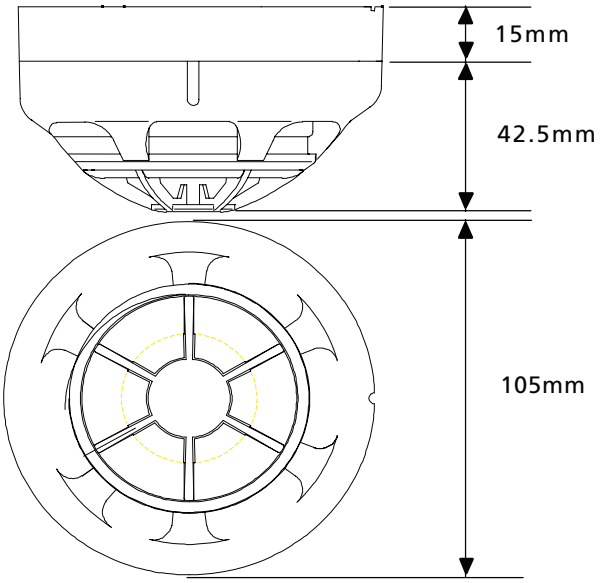


Fig. 5

Section 11 - DISPOSAL

This symbol on the ***EVC-H*** indicates that this product must not be disposed of with household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office or your household waste disposal service.

Section 12 - ROHS COMPLIANCE STATEMENT

(RoHS compliant and lead-free)

This product complies with the European Union RoHS (Restriction of Hazardous Substances) directive (EU) 2015/ 863 which restricts the use of the following ten hazardous materials in the manufacture of electronic and electrical equipment.

- **Cadmium (Cd):** < 100 ppm
- **Lead (Pb):** < 1000 ppm
- **Mercury (Hg):** < 1000 ppm
- **Hexavalent Chromium (Cr VI):** < 1000 ppm
- **Polybrominated Biphenyls (PBB):** < 1000 ppm
- **Polybrominated Diphenyl Ethers (PBDE):** < 1000 ppm
- **Bis(2-Ethylhexyl) phthalate (DEHP):** < 1000 ppm
- **Benzyl butyl phthalate (BBP):** < 1000 ppm
- **Dibutyl phthalate (DBP):** < 1000 ppm
- **Diisobutyl phthalate (DIBP):** < 1000 ppm