NITTAN

Document No: *NISM/EV-H/04*
Date: *FEBRUARY 2012*

evolution

EV-H–ANALOGUE ADDRESSABLE HEAT SENSOR INSTRUCTION MANUAL

LPCB REF: 041h/01 and 041h/02

Quality System Certificate No. 041
Assessed to BS EN ISO 9001:2008

NITTAN

Hipley Street, Old Woking, Surrey, England, GU22 9LQ. UK
Tel: +44 (0) 1483 769555 **Fax:** +44 (0) 1483 756686 **Web Site:** www.nittan.co.uk **E-mail:** sales@nittan.co.uk

evolution.....

*The **EV-H** advanced analogue addressable heat sensor forms part of a brand new range of analogue addressable fire sensors from Nittan UK called* **evolution.**

*The **EV-H** together with the **EV-PH, EV-P** and **EV-DP** are all elegantly designed, low profile fire sensors which are aesthetically pleasing, thus enabling them to blend unobtrusively into modern working environments.*

The **evolution** *analogue addressable range all feature the very latest technological advancements such as ASIC design, increasing reliability and performance.*

evolution.....

CONTENTS:-

Section 1 - INTRODUCTION

The EV-H is an attractively-styled, low profile heat sensor for use with Nittan 'evolution' protocol control panels.

EV-H features:

**** Low profile, stylish appearance***

**** Soft addressing***

**** Low monitoring current***

**** Supplied with protective dust cover***

**** Patented OMNIVIEW™ 360º LED fire alarm indicator***

**** Remote indicator output***

**** 'Base Control' auxiliary output***

**** Compatible with UB-4-EV and STB-4SE-EV bases***

**** Non-polarised terminals***

**** Rate of rise operation for high sensitivity model EV-H-A1R***

**** Static operation for high temperature model EV-H-CS***

**** Room temperature information can be separately taken.***

Section 2 - SENSOR MODELS

The EV-H heat sensor has two terminals for connection onto the two wire loop. The remaining terminals provide a switched current sink function which operates when the detector goes into alarm condition, suitable for the operation of an auxiliary function such as a remote indicator. Terminal 3 (RIL) is limited to 3mA. Terminal 2 (Base Control) is not current limited.

Section 3 - BASE MODELS

A variety of bases are available for use with the EV-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 EV-H series heat detector when auxiliary output not used.*

ii) UB-4-EV base: *For standard use with EV-H series heat detector when auxiliary output not used.*

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

Section 4 - INSTALLATION

In normal use, the EV-H heat sensor will be installed at ceiling level. Pass the field wiring through the cable hole in the centre and from the rear of the base. Offer up and affix the base to the ceiling or conduit fitting with screws via the base mounting holes. Connect the field wiring to the base terminals, as detailed on page 6 making sure the wiring does not obstruct fitting of the sensor head.
Fit the heat sensor head by inserting it into the base and turning clockwise until the notch in the sensor's rim aligns with base locking screw. The OMNIVIEW™ 360° LED alarm indicator permits visibilty from any angle.

Note: The address must be set before the sensor is fitted into place.

Fit the plastic dust cover supplied over the sensor to keep out dust etc, until the system is commissioned. If the dust cover is not fitted and the environment is slightly dusty, such as when building work is being completed, for example, problems of false alarms are likely to occur unless cleaning of the sensor is 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 5 - MAINTENANCE AND CLEANING

Maintenance:
The EV-H sensor 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 the sensor head is secure and undamaged.*

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

iii) *Ensure that the surface of the sensor's outer cover is clean. If there are deposits due to the presence of oil vapour, dust etc, then the sensor 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 sensor since the last routine inspection. If such equipment has been installed, then you should notify the Fire 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 sensor's correct operation in response to a heat condition.

Note: When carrying out site testing of Analogue Addressable Evolution sensors, the CIE shall be set to test mode prior to beginning the tests.

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

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

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

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

Functional Tests:
The functional test checks the sensors operation. These sensors may be returned to our factory for Functional Testing.

Cleaning:
Note: The sensor head should NOT be disassembled.

i) *Carefully remove the heat sensor 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 artist's 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 sensor to Nittan UK. for service.*

Section 6 - SPECIFICATIONS

Model Reference:	-	*EV-H-A1R* *EV-H-CS*
Computer Reference:	-	*EV-H-A1R - F15N82200* *EV-H-CS - F15N82201*
Sensitivity:	-	*EV-H-A1R: Rate of rise with 62°C fixed level.* *EV-H-CS: Static 83°C.*
Sensor Type:		*Thermistor of low thermal mass*
Operating Current:	-	*200× amps* *fire alarm (LED on)* *5.2mA*
Standard:	-	*EN54 Part 5:2000*
Mass:	-	*118g (excluding base)*
Charging Time:	-	*20 seconds*
Ambient Temperature Range:	-	*-10°C to +55°C (A1R)* *-10°C to +80°C (CS)*
IP Rating:	-	*42*

Section 7 - ENVIRONMENTAL PARAMETERS

Temperature Considerations:
Over the range from -10°C to +55°C

Humidity:
Relative Humidity of up to 95%, measured at 50°C, non condensing.

Section 8 - EMC

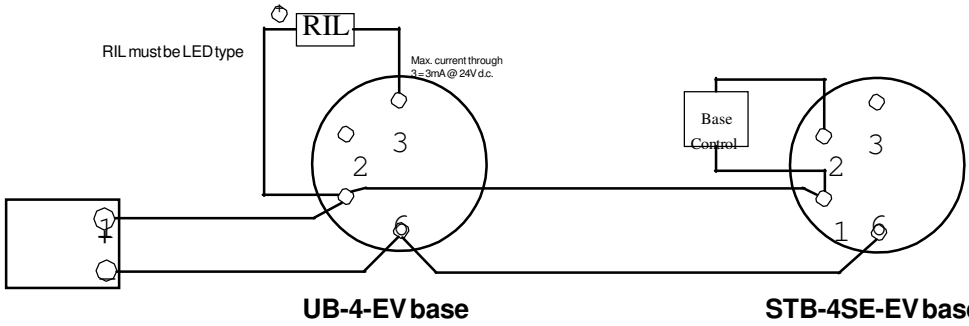
Installation
The installation shall be in accordance with the regulations either of the approval body for an approved system, or otherwise, to the national code of practice/ regulations for the installation of the fire alarm system, e.g. BS 5839 part 1.

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, care then 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 9 - ADDRESS SETTING

Use EV-AD2 Programmer for setting the address of all devices prior to installation.

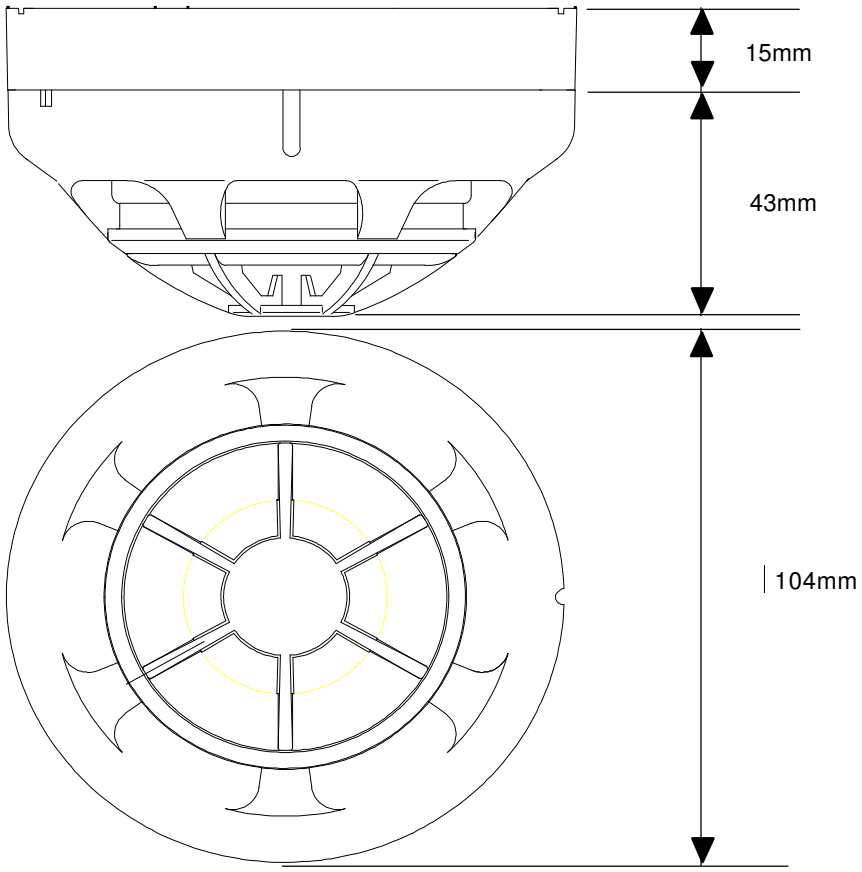
Section 10 - CONNECTIONS



UB-4-EV base **STB-4SE-EV base**

Auxiliary terminal RIL current limited to 3mA. Base control is not current limited as the auxiliary equipment provides the limiting. If the +ve supply for the auxiliary equipment is taken from the EV loop, care must be taken to not cause corruption of the EV protocol by excessive current draw.

Section 11 - DIMENSIONS



Section 12 - HEAT RESPONSE GRAPH