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comes **SENORTEC.....**



## **SENORTEC - CONVENTIONAL**

### **INTRINSICALLY SAFE, IONISATION SMOKE DETECTOR MODEL: ST-I-IS**



#### **INTRODUCTION**

The ST-I-IS forms part of Nittan UK's *SENORTEC* range of smoke and heat detectors. The ST-I-IS conventional ionisation intrinsically safe smoke detector complete with it's special STB-4IS base is for use in hazardous areas where EEx ia IIC T4 certification is required.

The ST-I-IS utilises the dual chamber, single source principle to provide optimum response to smoke. The Radioactive source is only 33.3 kBq (0.9 $\mu$ Ci) Americium 241, therefore conforming to OECD recommendations. The sensors design provides strong immunity to air velocities, contamination and RF interference.

The ST-I-IS has a chemically etched screen to improve smoke entry whilst reducing the ingress of insects and airborne contaminants.

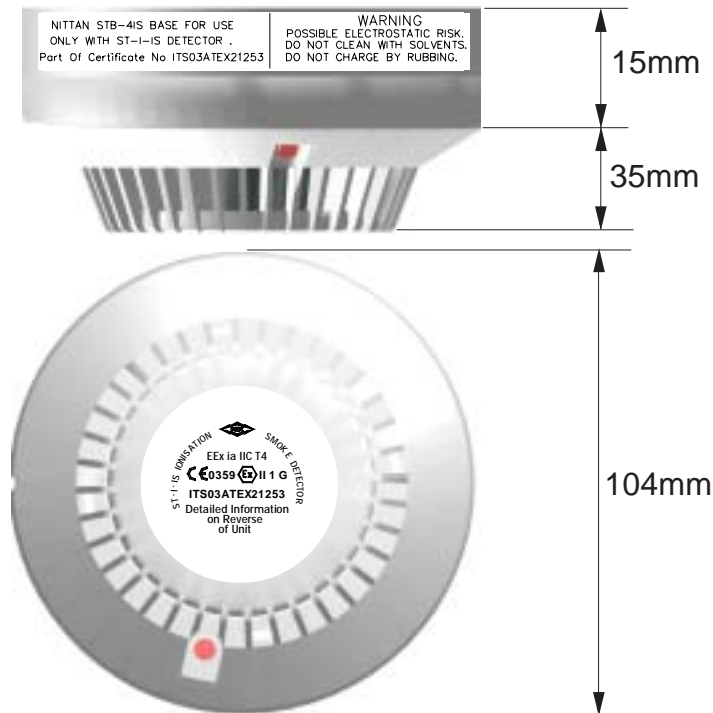
#### **TECHNICAL SPECIFICATION**

<b>Model References:</b>	-	Detector Head: ST-I-IS Base: STB-4IS.
<b>Detector Type:</b>	-	Ionisation smoke detector.
<b>Sensing Element &amp; Principle:</b>	-	Dual Ionisation Chamber , 33 kBq, (0.9 $\mu$ Ci) Americium 241.
<b>Supply Voltage:</b>	-	24V d.c. nominal (Range 16V. to 30V.).
<b>Voltage Ripple:</b>	-	20% maximum.
<b>Alarm Voltage:</b>	-	5V d.c.between + (terminal 3) and - (terminals 1,6) at 25 Deg. C.
<b>Monitoring Current:</b>	-	40 $\mu$ Amps max. at 24V dc.
<b>Alarm Current:</b>	-	65 mA. max.
<b>Charging Time:</b>	-	20 seconds maximum.
<b>Ambient Temperature Range:</b>	-	-10 Deg.C. to +50 Deg.C.
<b>Certification:</b>	-	EEx ia IIC T4 (Tamb -10 Deg.C. to +50 Deg.C.)  0359  11 1 G
<b>Certificate Number:</b>	-	ITS03ATEX21253
<b>EMC</b>	-	Complies with EN50130-4: 1996 and EN61000-6-3: 2001

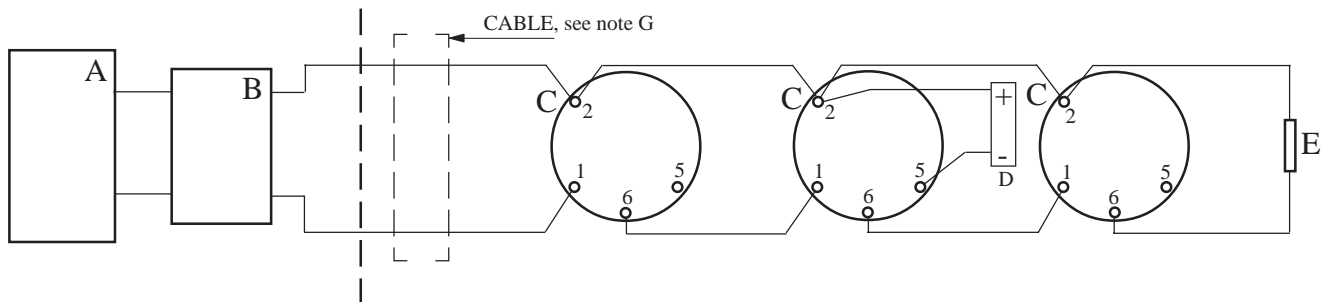


**NIITAN (UK) LTD - BRINGING STYLE INTO FIRE DETECTION SYSTEMS**

## DIMENSIONS



## SYSTEM DETAILS : WIRING AND ZENER BARRIER



**A)** Apparatus which is unspecified except that it must not be supplied from nor contain in normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts d.c..

**B)** Any single channel shunt zener diode safety barrier or single channel of a dual shunt zener safety barrier certified by any EEC Approved Certification Board to (EEx ia) IIC having the following or lower output parameters:-

U<sub>o</sub> = 28V  
I<sub>o</sub> = 93.3mA  
P<sub>o</sub> = 0.66W

In any safety barrier used the output current must be limited by a resistor 'R' such that I<sub>o</sub> = Uz/R

or

One of the following isolators:-

- 1) MTL5061 DC Isolator (BAS01ATEX7160)
- 2) MTL4061 Two channel Fire and smoke detector interface (BAS01ATEX7176)
- 3) KFDO-CS-Ex151 Isolator (BAS00ATEX7087X)
- 4) KFDO-CS-Ex251 Isolator (BAS00ATEX7087X)

**C)** Upto 20 Type ST-I-IS ionisation smoke detectors and type STB-4IS Bases (Certificate No: ITS03ATEX21253).

**D)** An optional RIL circuit, comprising an LED, two diodes and a resistor, may be connected to terminals 2 and 5 of a smoke detector and mounting base. The surface area of the RIL circuit components must be greater than 20mm<sup>2</sup>. The RIL circuit may be considered to

have a Temperature class of T4 in a maximum ambient temperature of 50 Deg. C.. The RIL circuit and its terminations must be afforded a degree of protection of at least IP20 and must be segregated from other circuits and conductors as defined in clause 6 of EN50020:2002.

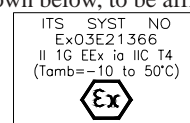
**E)** An end of line resistor meeting the same requirements as for the RIL circuit mentioned above may be connected to the base terminals 2 and 6.

**F)** The installation must comply with the European Harmonised Standard EN60079 Part 14: 1997.

**G)** The capacitance and inductance or inductance to resistance (L/R) ratio of the hazardous area cable must not exceed the values shown in the table below:-

GROUP	CAPACITANCE IN μF	INDUCTANCE IN mH	OR	L/R RATIO IN μH/Ohm
IIC	0.083	4.2		55
IIB	0.650	12.6		165
IIA	2.15	33.6		440

**H)** A durable label as shown below, to be affixed at the interface of the IS and non-IS circuits.



**I)** The electrical circuit in the hazardous area must be capable of withstanding an a.c. test voltage of 500V rms to earth or frame of the apparatus.

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