NITTAN

sensortec

ST-PY-AS

analogue addressable photoelectric sensor

instruction manual

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• sensortec • ST-PY-AS • analogue addressable photoelectric sensor instruction manual

Fire Industry Association

LPCB 0007 UKAS MANAGEMENT SYSTEMS

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

NITTAN

NITTAN EUROPE LTD. 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

The **ST-PY-AS** is elegantly designed, low profile fire sensor which is aesthetically pleasing, thus enabling it to blend unobtrusively into modern working environments.

CONTENTS:-

Section 1 - INTRODUCTION

The ST-PY-AS is an attractively-styled, low profile photoelectric sensor for use with Nittan 'AS' protocol control panels.

ST-PY-AS features:

- Low profile, stylish appearance
- EEPROM Addressing (Handheld Programmer)
- Low monitoring current
- Supplied with protective dust cover
- Patented OMNIVIEW™ 360° LED fire alarm indicator
- Remote indicator output
- Compatible with UB-4 and STB-4SE bases
- Polarised terminals
- Optical sensor, detecting visible particles of combustion

Section 2 - SENSOR MODELS

The ST-PY-AS photoelectric sensor has two terminals for connection onto the two wire loop. The remaining terminal provides a switched current sink function which operates when the sensor goes into alarm condition, suitable for the operation of an auxiliary function such as a remote indicator. Terminal 3 (RIL) is limited to 2mA.

Section 3 - BASE MODELS

A variety of bases are available for use with the ST-PY-AS sensor. It is important to use the correct base for each application. The available base models are:

i) **UB-4 base**: for standard use with ST-PY-AS series sensor.

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

Section 4 - INSTALLATION

In normal use, the ST-PY-AS 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 8 making sure the wiring does not obstruct fitting of the sensor head. Fit the 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 visibility 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 after commissioning 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 ST-PY-AS sensor is a high quality product engineered for reliability. 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 BS5839 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 after.
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 smoke 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.

v) Ensure no equipment which may generate combustion products or fine airborne particles 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 smoke condition.

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

To test the optical sensor, introduce a discrete amount of smoke into the detector head, e.g. using a 'No Climb - Solo' smoke test head. Check that the sensor gives an alarm condition within 15 seconds. Check the LED indicator on the ST-PY-AS sensor illuminates and any remote indicator LED fitted also illuminates.

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 smoke 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 smoke.

Functional Tests:

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

Cleaning

Note: The sensor head should NOT be disassembled.

i) Carefully remove the 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 artists paintbrush) carefully brush between the vanes of the case in a linear motion away from the apertures on the plastic case.

iv) Ensure that no debris is left on or around the case 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 6 - SPECIFICATION

Model Reference:	ST-PY-AS
Computer Reference:	F15-82100
Sensor Type:	Optical smoke sensor
Sensitivity:	3.9%/m
Operating Current:	*Quiescent:* 500µA
	Fire alarm (LED On): 5.5mA
Standard:	EN54 Part 7:2000 + A2:2006
Mass:	105g (excluding base)
Charging Time:	20 seconds
Ambient Temperature Range:	-10°C to +55°C
IP Rating:	41
Certified to standard:	
CE Certificate	2831-CPR-F2429
LPCB Certificate	1461a/03

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 deg. 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 - PROGRAMMING THE ST-PY-AS USING THE MTM PROGRAMMER

1) Insert batteries, 2x9v PP3. and switch on Power Switch.

2) The LCD will show “Ver 1.0D”, and Power LED will light after the LCD will blank (to save power).

3) Plug ST-PY-AS into base, and press “Search” button

4) LCD displays “WAIT….”

5) Then current address “xxx”, and Type “O” (for Optical for example), and prompts for address to be entered.

6) Press “UP” or “DOWN” Button.

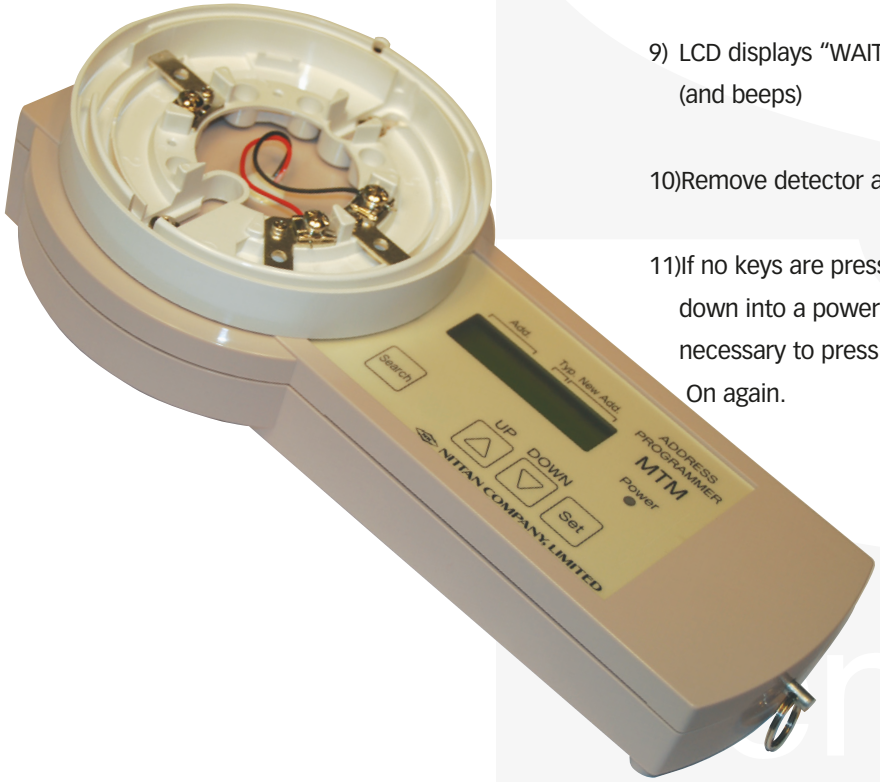
7) A Single press increments (or decrements) by 1, holding the button down speeds up the increment (or decrement) change.

8) Select the desired address, and press “Set”

9) LCD displays “WAIT….”, then new address , Type and “OK” (and beeps)

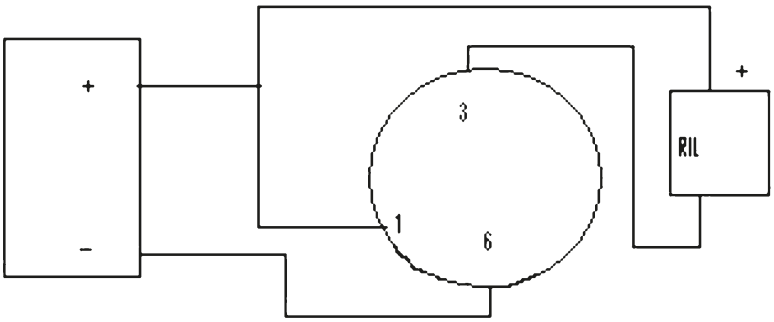
10)Remove detector and repeat from step 3

11)If no keys are pressed for 1 minute, the programmer will power down into a power saving mode (LCD goes blank). It will be necessary to press “Search” or switch the Power Off and back On again.



Section 10 – CONNECTIONS

If +ve supply derived from loop, RIL must be LED type

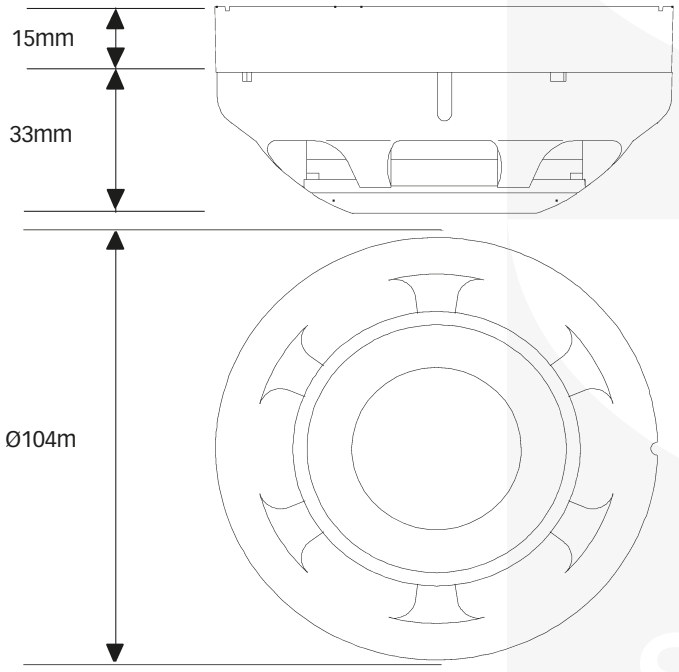


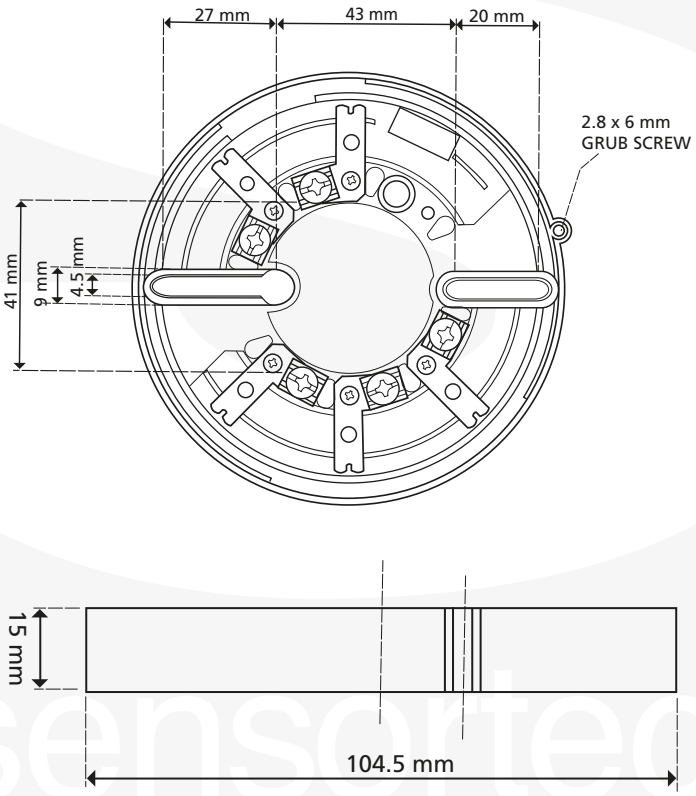
UB-4 / STB-4SE Bases

RIL must be 6v, 2mA max

Auxiliary terminal RIL current limited to 2mA. If the +ve supply for the auxiliary equipment is taken from the loop, care must be taken to not cause corruption of the data protocol by excessive current draw.

Section 11 – DIMENSIONS





Section 12 - DISPOSAL

This symbol on the ST-PY-AS 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 13 - 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