



# S1000

## CONVENTIONAL PHOTO DETECTOR



G210110 928e/02

### GENERAL DESCRIPTION

This type of detector continuously samples the air in the protected area to provide the earliest warning of fire and yet offers a high level of false alarm rejection. This device benefits from a "Double Dust Trap" incorporated into the design of the smoke entry ports, hence limiting potential contamination and extending periods between maintenance without compromising sensitivity of response. These detectors are designed for open area protection and must only be connected to conventional control panels. The centrally positioned red LED indicator provides 360° visibility and thus does not require any orientation during installation. An in-built magnet test allows easy activation to verify correct functioning of the detectors on site.

### IMPORTANT INSTALLATION WARNINGS

**CONFIRM YOUR SYSTEM'S COMPATIBILITY BY CONSULTING WITH YOUR SUPPLIER OR WITH THE CONTROL PANEL'S MANUFACTURER.**

**FOR SPECIFIC INFORMATION REGARDING DETECTOR AND DEVICE'S SPACING, PLACEMENT AND SPECIAL APPLICATIONS REFER TO YOUR SPECIFIC NATIONAL OR INTERNATIONAL STANDARD CODES OF PRACTICE.**

**BEFORE INSTALLATION ENSURE THAT POWER IS REMOVED FROM THE SYSTEM.**

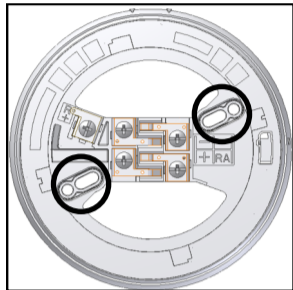
**DURING DEVICE'S CABLING, REMEMBER THAT CONNECTIONS TO THE TERMINALS ARE POLARITY SENSITIVE: SO, PLEASE, CHECK THEM BY REFERRING TO THE WIRING INFORMATION GIVEN IN THIS MANUAL.**

**REMEMBER THAT THE ALARM CURRENT ABSORBED BY THE SENSOR MUST BE LIMITED IN ORDER TO AVOID PERMANENT DAMAGE (SEE THE FOLLOWING PARAGRAPHS).**

### ADAPTOR BASE INSTALLATION

In order to fix a sensor to the wall it is necessary to use its adequate adaptor base. So:

- 1) select the position where you want to install the sensor and the base.
- 2) Install the base in the selected position by inserting the screws in the points indicated in picture 1.



Picture 1 - Wall fixing screw entry points on the adaptor base.

### TECHNICAL SPECIFICATIONS \*

Power supply	10 - 30 Vdc
Average standby current	60 uA @ 24 V
Maximum allowed alarm current	40 mA (externally limited)
Maximum allowed remote device current	20 mA (externally limited)
Operating temperature range	-30 °C / +70 °C (no condensation)
Humidity	95% RH (no condensation)
IP rating	40 (42 with base's water-proof protection)

\*Check latest version of document TDS-S1000 for further data, obtainable from your supplier.

### LIMITATION OF THE ALARM CURRENT

When alarmed, the detector absorbs more current than usually does when quiescent: the absorbed current by the sensor in this state is indicated as "alarm current"; since:

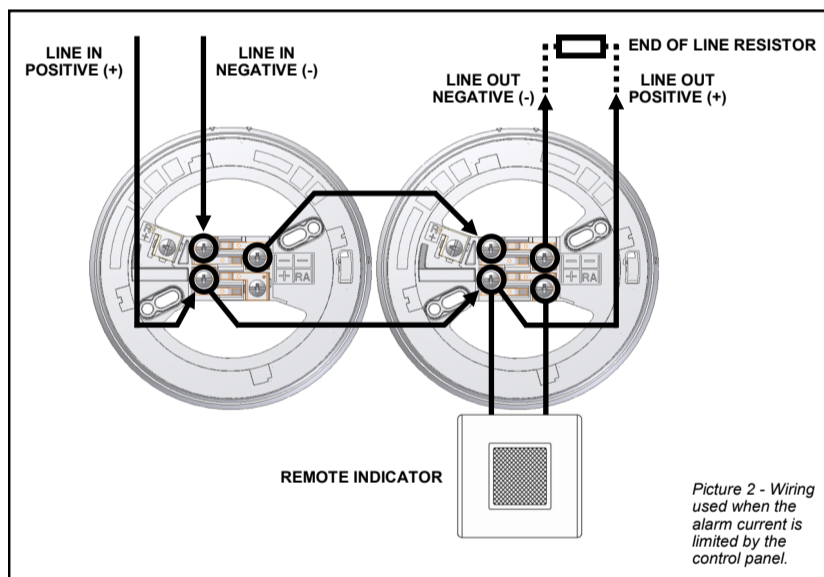
**IF THE ALARM CURRENT EXCEEDS THE MAXIMUM SPECIFIED VALUE (SEE THE TECHNICAL SPECIFICATIONS TABLE), THE DETECTOR CAN BE PERMANENTLY DAMAGED!**

So, the alarm current must be limited in two different ways:

- 1) having a control panel which limits the alarm current through an in-built limiter.
- 2) By limiting the alarm current through a resistor fitted on the detector base (see the following wiring paragraphs).

If a remote LED indicator or another remote device is connected to the adaptor base and, so, the sensor, remember that:

**ITS ABSORBED CURRENT WILL BE ADDED THE SENSOR'S ALARM CURRENT.**



Picture 2 - Wiring used when the alarm current is limited by the control panel.

### REMOTE OUTPUT CAPABILITY

Remote output capability is available as a standard feature so a remote indication lamp or a compatible platform sounder (check power requirements) may be wired to the base terminals.

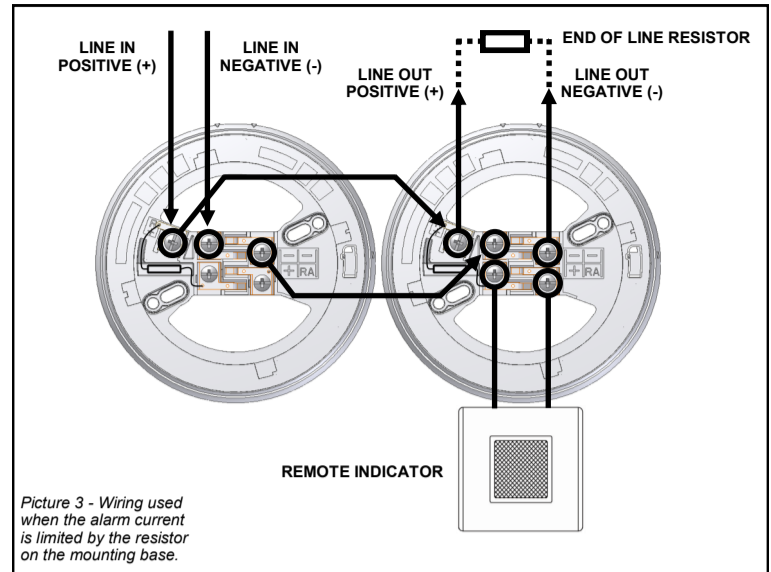
**If other equipment is connected to the remote output, its supply current must be eventually limited by using an adequate resistor. Consult the TECHNICAL SPECIFICATIONS table and assess the external device current absorption's value.**

### WIRING - BASE WITHOUT RESISTOR

This configuration is to be used only when the control panel limits the alarm current to less than the sensor's allowed maximum value (picture 2).

### WIRING - BASE WITH RESISTOR AND BASE WITH RESISTOR AND SCHOTTKY DIODE

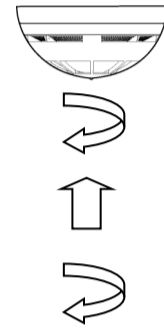
This configuration is to be used when the alarm current depends only on the value of the resistor fitted on the base (picture 3).



Picture 3 - Wiring used when the alarm current is limited by the resistor on the mounting base.

### INSTALLATION

1. Position the detector centrally on its mounting base.
2. Rotate clockwise applying gentle pressure. The detector will drop into its mechanical holding location.
3. Push the detector to win the force of the contacts.
4. Continue to rotate clockwise a few degrees until the detector is firmly held on the detector base.
5. When the detector is firmly held verify the alignment between the detector and the raised marks on the base (picture 5).
6. After installing all detectors, apply power to the fire security system.
7. Test the detectors as described in the paragraph headed "TESTING".



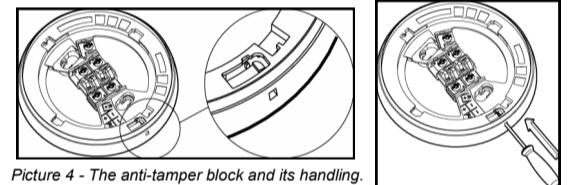
1. Position the detector.
2. Rotate.
3. Push.
4. Rotate.

### CAUTION

**Dust covers help to protect the devices during shipping and when first installed. They are not intended to provide complete protection against contamination, therefore, sensors should be removed before construction, major re-decoration or other dust producing work is started. DUST COVERS MUST BE REMOVED BEFORE THE SYSTEM CAN BE MADE OPERATIONAL.**

### ANTI-TAMPER MECHANICAL BLOCK FEATURE

The sensor may be blocked onto its base by removing the small plastic element on the base's detector blocking tongue by using a suitable tool (e.g. a small screwdriver) inserted through the access hole on the side of the mounting base (picture 4). To remove the sensor from the base, if mechanically blocked, insert a suitable tool through the access hole on the side of the mounting base (picture 4).



### TAMPER DETECTION

Each detector's mounting base has two "-" marked terminals. These are electrically identical, but they are connected to each other only when a detector is correctly fitted onto the base; this feature is used in combination with an appropriate "end of line" (EOL) component, designated by the control panel manufacturer, in order to indicate a fault condition if a detector is removed from its base. To enable the function to operate correctly it is important that incoming and outgoing negative wires are separated in the above said way.

### TESTING

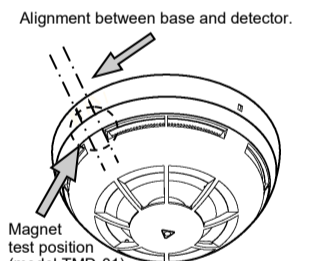
Sensors should be tested after installation and during periodic maintenance visits (it is recommended each device should be tested at least once per year). When the system has been reset, allow, after each test, at least one minute for power stabilisation before the next test. Detectors can be tested as follows:

#### Magnet test

Position the magnet (model TMD-01, optional) next to the sensor between the two raised marks on the base (picture 5). The magnet test verifies the function of all electronic circuits of the sensor and its communication with the control panel. The sensor should trigger an alarm condition on the control panel and turn the red LED on.

#### Aerosol (simulated smoke) test

Use a test aerosol from an approved manufacturer in accordance with their application instructions. This is important to prevent contamination or possible damage. The red LED alarm indicator on the detector should illuminate (normally within 60 seconds, but may vary) and trigger an alarm condition on the control panel.



Picture 5 - The correctly installed detector.

**If testing fails after installation or maintenance then replace the sensor and return it for servicing.**

### MAINTENANCE

Before starting any maintenance work, isolate and disable the system in order to avoid accidental and unwanted fault conditions. Remove the sensor from its mounting base to allow inspection in good light at ground level. Inspect the smoke entry ports around the sensor and use a small, soft bristle brush to dislodge any evident contaminants such as insects, spider webs, hairs, etc. Use a small vacuum tube or clean, dry and compressed air to suck up or blow away any remaining small particles from the smoke entry screen area. Wipe the exterior housing of the sensor with a clean, damp, lint free cloth to remove any surface film that can later attract airborne contaminants. After all sensors have been inspected, repositioned on their mounting bases and power has been re-applied, check correct operation as described under the "TESTING" paragraph.

### WARNINGS AND LIMITATIONS

Our devices use high quality electronic components and plastic materials that are highly resistant to environmental deterioration. However, after 10 years of continuous operation, it is advisable to replace the devices in order to minimize the risk of reduced performance caused by external factors. Ensure that this device is only used with compatible control panels.

Detection systems must be checked, serviced and maintained on a regular basis to confirm correct operation. Smoke sensors may respond differently to various kinds of smoke particles, thus application advice should be sought for special risks. Sensors cannot respond correctly if barriers exist between them and the fire location and may be affected by special environmental conditions. Refer to and follow national codes of practice and other internationally recognized fire engineering standards.

Appropriate risk assessment should be carried out initially to determine correct design criteria and updated periodically.

### WARRANTY

All devices are supplied with the benefit of a limited 5 years warranty relating to faulty materials or manufacturing defects, effective from the production date indicated on each product. This warranty is invalidated by mechanical or electrical damage caused in the field by incorrect handling or usage. Product must be returned via your authorized supplier for repair or replacement together with full information on any problem identified. Full details on our warranty and product's returns policy can be obtained upon request.



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S1000

For use in compatible fire detection and alarm system