

# SF1000

## ANALOGUE PHOTO DETECTOR

### GENERAL DESCRIPTION

This type of detector (figure 1) 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.

The digital communication protocol employed by the monitoring control panel provides high rates of information exchange in combination with comprehensive features that ensure fast and secure responses.

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 control panels that use the proprietary analogue-intelligent addressable communication protocol for monitoring and control.

The centrally positioned three-colour LED indicator (red, green and amber) 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.

### SHORT CIRCUIT ISOLATOR

All standard series devices are provided with short-circuit monitoring isolators on the intelligent loop's line and can be activated by the control panel.

*Note: Before installing this device please thoroughly read this leaflet and refer to the applicable European Standards and National Codes of Practice (e.g. BS5839-1:2002 for UK) for guidance on location, spacing and acceptable use. Also seek guidance from the compatible control panel instructions to ensure appropriate design criteria and configuration specifications are followed.*

### TECHNICAL SPECIFICATIONS

Power supply *	from 18 V (min) to 40 V (max)
Average standby current consumption	70 uA @ 24 V
Remote output max current consumption (externally limited)	20 mA
Operating temperature range	-30 °C / +70 °C (no icing)
Humidity	95% RH (no condensation)
Height (standard base included)	54 mm
Diameter	110 mm
Weight (standard base included)	130 g

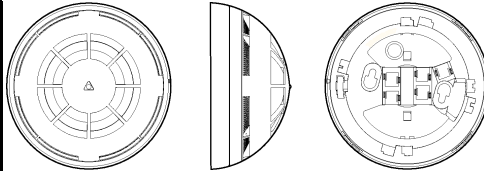


Figure 1 - View of the detector on its base.

\*Product operates down to 15 V, but without LED indication.

### INSTALLATION

This photo detector must be used in combination with compatible control panels employing the communication protocol. The location of detectors should follow recognised national or international application codes of practice.

The detector may be mounted on any of the following bases:

adaptor base / deep adaptor base

Universal adaptor base / deep adaptor base

adaptor base with shorting clip / deep adaptor base with shorting clip

Universal adaptor base with shorting clip / deep adaptor base with shorting clip

Bases supplied with a metal shorting clip installed between the two negative terminals allow more flexibility when connecting detectors to the loop and permits the continuity of the loop cabling to be tested after installation and prior to the detectors being fitted.

**Care must be taken to ensure that the shorting clip is either cut or removed prior to system commissioning!**

Connections to the base terminals are polarity sensitive thus please check by referring to the wiring diagram in figures 2, 3, 4 and 5!

### 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.**

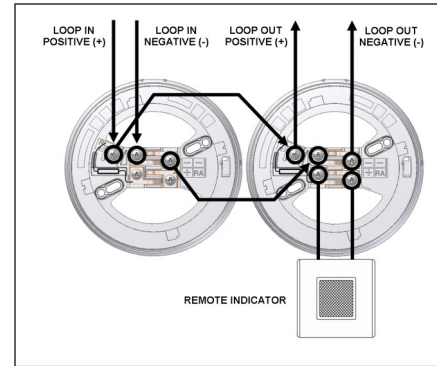


Figure 2 - adaptor base and deep adaptor base loop wiring.

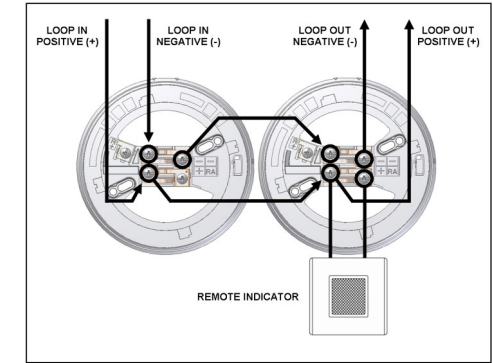


Figure 3 - Universal adaptor base and deep adaptor base loop wiring.

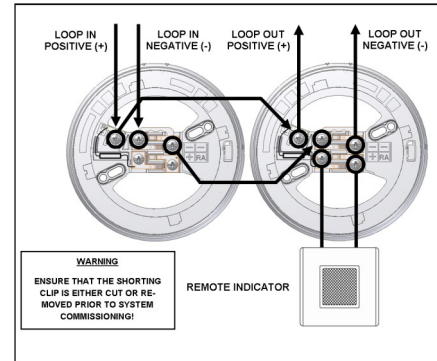


Figure 4 - adaptor base with shorting clip and deep adaptor base with shorting clip loop wiring.

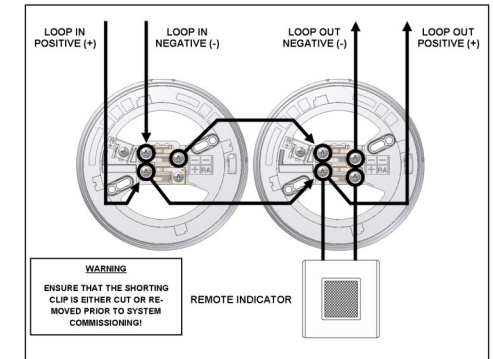


Figure 5 - Universal adaptor base with shorting clip and deep adaptor base with shorting clip loop wiring.

## SETTING THE ADDRESS

Detectors can be addressed using a special hand-held programming unit or they can be auto-addressed by the control panel after they have been installed (the implementation of the auto-addressing feature depends on the control panel's manufacturer). Addresses may be selected from a range from 1 to 240, although, of course, each device on the loop must have a unique address.

## SENSITIVITY SETTINGS

A choice of four sensitivity levels are available which can be set via the hand-held programming unit or by panel selection (if provided). Level 1 is most sensitive, level 4 is least sensitive.

### WARNING

Disconnect loop power before installing the detector.

### 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, detectors 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 detector may be locked onto its base by moving the small plastic element on the base's detector blocking hook by using a suitable tool (e.g. a small screwdriver) inserted through the access hole on the side of the mounting base (figure 6). To remove the detector from the base, if mechanically blocked, insert a suitable tool (e.g. a small screwdriver) through the access hole on the side of the mounting base (figure 6).

## TAMPER DETECTION

A fault condition is triggered on the protocol compatible control panel if a detector, on the loop, is removed from its mounting base.

## TESTING

Detectors 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 detector, between the two raised marks on the base (figure 7). The magnet test simulates smoke in the optical chamber and verifies the function of all electronic circuits of the detector and its communication with the control panel. The detector should trigger an alarm message to the control panel, and, successively, the detector's red LED should be activated by the control panel itself.

1. Position the detector centrally on its mounting base (ensure it is level).

2. Rotate clockwise applying gentle pressure. The detector will drop into its keyed location.

3. Press more firmly to win the force of the contacts.

4. Continue to rotate clockwise a few degrees until the detector has fully engaged in the mounting base.

5. When the detector is firmly engaged verify the alignment between the detector and the raised reference marks on the base (figure 7).

6. After all detectors and other loop devices have been installed, apply power to the loop in accordance with the control panel's installation instructions.

7. Test the detectors as described in the section headed "TESTING".

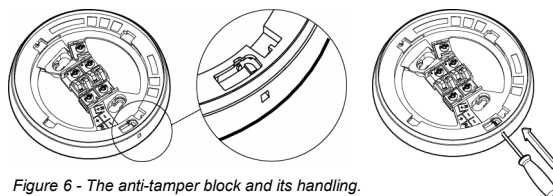
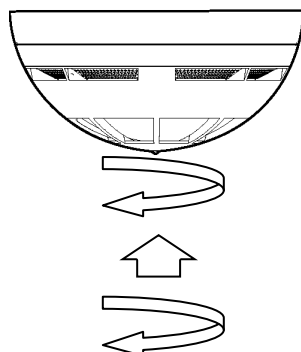


Figure 6 - The anti-tamper block and its handling.



## Aerosol (simulated smoke) test

For this test only use test aerosols from an approved manufacturer, in accordance with their application instructions, in order to prevent contamination or possible damage to the detector. We suggest to spray the aerosol into the detector by using a recommended applicator. The detector should trigger an alarm message to the control panel, and, successively, the detector's red LED should be activated by the control panel itself.

If the detector does not respond to the tests correctly it may be necessary to clean it: in this case follow the instructions indicated in the "MAINTENANCE" paragraph.

If testing fails again after maintenance then replace the detector with a new one and return the faulty one for servicing.

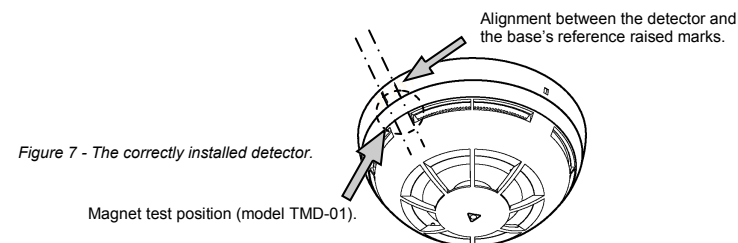


Figure 7 - The correctly installed detector.

## MAINTENANCE

Before starting any maintenance work, isolate and disable the system in order to avoid accidental and unwanted alarm or fault conditions. Remove the detector from its mounting base to allow inspection in good light at ground level. Inspect the smoke entry ports around the detector 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 detector with a clean, damp, lint free cloth to remove any surface film that can later attract airborne contaminants. Use the hand-held programming unit to read the pollution percentage of the chamber; please, refer to the programming unit instruction manual.

After all detectors 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 3 year 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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Italy

EN 54-7  
Point type smoke detector  
(optical)  
EN 54-17:2005  
Short circuit isolator  
SF1000  
Technical data: see document  
TDS-V100X held by the  
manufacturer.