Outdoor **Wireless**

**Dual Technology**

Intrusion Detector

the **Silentron**
GENERAL NOTICES AND WARNINGS - Read carefully before using the appliances

Installation: installation and maintenance of these devices must be carried out by qualified technicians. Correct operations is dictated by the correct installation and positioning. The device can be used outdoor but should be protected from exposure to very high and very low temperatures as well as tampering.

Batteries: these devices use batteries, which are potentially dangerous as they are pollutant and therefore constitute a health hazard if disposed incorrectly. Replace the batteries with same models observing correct polarity as indicated in the instructions.

Liability: MAMI declines all liability to incidents that were consequent to incorrect installation and/or failure to use the devices within the specifications supplied.

1. CONDITIONS FOR USE AND INSTALLATION CRITERIA:
Silentron DualTech is a detector with dual technology (PIR = passive infra-red detector + MW = microwave Doppler detector) developed to detect the movement of a human in protected areas and it has been designed specifically for outdoor use.

The use of Dual Tech technology and the "double alarm" function reduces the possibility of false alarms due to environmental factors typical of an outdoor installation (movement of animals of all types, movement of objects and/or meteorological phenomenon).

Correct positioning and adjustment of the unit are fundamental.

Brackets and supports: An adjustable mounting bracket (supplied separately) may be used to further correct the position of the unit.

2. FUNCTIONALITY:

a) General features: The device uses three AA 1.5V alkaline batteries and on detection transmits the alarm via radio, eliminating the need for physical wiring.

The PIR part of the device is permanently on and activates the MW part if an intrusion is detected: the Doppler confirmation of the existence of a moving mass in the area generates the alarm state.

The detection sequence is displayed by the LED on the front of the device, which changes colour (green-orange-red) through the various passages. The detector could also transmit twice in a 45 seconds window with 2 different codes:
To reduce battery consumption after every alarm the device is disabled for a while and is restored after no movement is detected in the area for 2 minutes. This to reduce consumption in busy areas. A special version will be available where the 2 minutes are reduced to 5 seconds.

b) Double Alarm function: by switching ON the dip 5 the detector transmits a first alarm with a code, and a possible second alarm, detected within 45 seconds, with a different code, as well as two different detectors. In this case the panel can apply the AND function, giving alarm only after the two different transmissions.

c) Adjustments: the PIR part can be adjusted in RANGE and in PULSE COUNTS, which provide an activation delay. The MW may be adjusted in RANGE and DELAY, which is the minimum duration time of the movement detected required to trigger the alarm (see drawings).

d) Tamper protection: a magnet fixed to the wall where the mounting bracket is positioned provides tamper protection. When the detector is correctly positioned on the bracket, the magnet closes a reed positioned inside the device: upward or downward sliding and/or the detachment of the appliance from the wall causes a "tampering" alarm and the successive "test" state. In the case of detector installation with swivel or angle brackets, the magnet must be correctly positioned in one of the three possible positions.

e) Opening detection: by opening the powered device, a relevant button controls the transmission of tampering independently from the condition of the anti-tamper magnet.

f) Test mode: Silentron DualTech is in TEST mode when it is removed from its mounting bracket, where the magnet is located. The test mode expires 3 minutes after the correct re-positioning of the unit. The LEDs are used to indicate each detection.

Note! The device will acknowledge use of the magnetic tamper through an internal reed switch. If it detects the rear magnet for 6 seconds after power up, the unit will make use of this tamper in its normal operation. Should the device not find the magnet, this tamper operation will be disabled.

To re-initiate test mode, simply slide the unit up or down on the bracket for 1 second.

Note! The appliance remains permanently in TEST when the internal TAMPER pushbutton is open (box open).

g) Supervision: Silentron DualTech transmits the operating status signal every 40 minutes, which is monitored in the receiver control panels.

h) Low Battery signal: the appliance signals via radio to the control panel and locally using 5 beeps that the batteries must be replaced.

3. START–UP – follow these instructions correctly

a) Programming the appliance on the control panel or receiver (also see the instructions of the control panel/receiver used):

- Open the appliance by loosening the screws on the bottom and open the lid of the battery compartment.
- Place the control panel in PROGRAMMING mode, in detector learning condition on the desired zone.
- Extract the battery isolating film, powering the appliance: programming will be confirmed by a Beep from the control panel.
- Terminate the procedure by assigning the name to the detector (if using the HomeGuard). Close the battery compartment.

b) Positioning:
Choose the position and the height of installation of the device in relation to the area to be protected keeping in mind of the area covered by the device PIR section (infra-red detector). It has a central detection beam of over 20m and a series of 4+4 side detection areas of up to 10m. The highest sensitivity of the device is achieved when the intruder crosses the areas perpendicularly. The MW part (microwave) entirely covers the zone, but it is activated only after a detection of the infrared (see 2a - Long range version).

All the detection areas operate on the same level, therefore the protected zone resembles an anomalous open fan, with the central detection area twice the length of others. When the device is installed vertically (normal position) the detection areas are parallel to the ground. The height of installation must be determined according to the area that should be left not protected to allow movement of small animals.

When the device is installed horizontally it forms a vertical or diagonal "curtain".

Do not place the device in direct sunlight to prevent internal overheating (greenhouse effect): this does not damage the appliance but decreases the sensitivity of PIR section. Where possible protect the detector from extreme weather conditions and from gutter overflows.

c) Adjustments (see diagram):
To check the adjustments, use the device's LED, which must be placed in TEST state: The green LED indicates the PIR detection: successively it changes to orange when the movement is confirmed by the MW part; when the delay time has passed (PT2) the LED turns red indicating the alarm transmission. The detection tests must be performed with the device closed.

- Adjust the PIR sensitivity (dip-switch 2), with pulse count on 1 (off), limiting the range to what is strictly necessary.
- Adjust the sensitivity of the MW part (RANGE - PT1), with activation time at minimum, as a consequence of the previous adjustment.
- Close the appliance, position it and check the coverage of the protected area (watch the LED), by moving the same: for a precise definition of the detection area it is recommended that you move around. If necessary open the unit and reduce or increase the range and repeat the previous tests.

WIRELESS DUAL TECHNOLOGY DETECTOR FOR OUTDOOR USE

Note!
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The appliance remains permanently in TEST when the internal TAMPER pushbutton is open (box open).

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d) LED exclusion: for safety reasons and to reduce power consumption disable the LED indication. This is done with dip-switch 4 set to ON. LEDs remain functional in TEST mode.

e) Temperature compensation: the function consists in the automatic adjustment of the PIR sensitivity when the temperature in the device exceeds 30°C, this function is enabled by placing dip-switch 6 to ON. In case of exposure to the sun the temperature inside the appliance can be much higher than the environment temperature.

TECHNICAL FEATURES (see diagrams also)

Power supply: 4.5V via three AA 1.5V 2.2Ah batteries – Current consumption 70uA at rest, 40mA in transmission – Autonomy of about 2 years, which could be greatly reduced in the case of a busy area and with LED active during normal functioning (dip-switch 4).

Functions: indication of movement in the protected area (intruder alarm) – tampering – supervision – flat batteries.

Radio transmissions: coded at 64 bit in simultaneous Dualband frequency – frequencies and power in compliance with the regulations. Range of about 100 m in free space and without interference on the frequency bands.

Warning! To keep the declared environmental class, it is necessary to tighten properly the screws closing the device!
5512 Dual Tech long range outdoor detector

MW (RADAR) RANGE
PT1 min<12m max>20

MW (RADAR) RANGE
PT2 min<1sec max>2sec

PIR RANGING
OFF = MIN  ON = MAX

P.I.R. ALARM AREA : h1.3m

P.I.R. ALARM AREA : h0.8m

P.I.R. PULSE COUNTING
x 1  x 2

LED
- P.I.R. DETECTION
- P.I.R.+MW DELAY
- P.I.R.+ MW ALARM

DOUBLE ALARM

TEMPERATURE COMPENSATION

M000060
5514 Dual Tech wide angle outdoor detector

MW (RADAR) RANGE

PT 1
MAX

MIN

MW (RADAR) RANGE

PT 2
MAX

MIN

PIR RANGE

OFF = MIN

ON = MAX

P.I.R. ALARM AREA : h1.3m

P.I.R. ALARM AREA : h0.8m

P.I.R. PULSE COUNTING

x 1

x 2

3 OFF

3 ON

LED

P.I.R. DETECTION
P.I.R. + MW DELAY
P.I.R. + MW ALARM

DOUBLE ALARM

x 1

x 2

5 OFF

5 ON

TEMPERATURE COMPENSATION

X 1

X 2

6 OFF

6 ON

M000060