

# TOWER 40

Wireless PowerCode Digital Mirror PIR Detector



## Installation Instructions

### 1. INTRODUCTION

The TOWER 40 is a microprocessor-controlled wireless digital PIR detector, designed for easy installation, free of vertical adjustment. It features parabolic and cylindrical mirrors with uniform detection sensitivity throughout its operating range, up to 18 meters (59 ft), with creep zone protection.

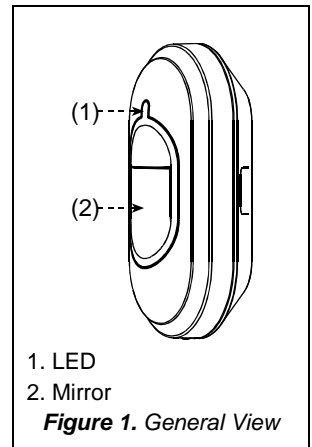
The advanced **True Motion Recognition™** algorithm (patented) allows the TOWER 40 to distinguish between true motion of an intruder and any other disturbances which may cause false alarms.

An on-board motion event jumper determines whether 1 or 2 consecutive motion events trigger an alarm.

The TOWER 40 includes the following features:

- Incorporating patent pending black mirrors for extremely high white light immunity.
- Advanced elliptical / parabolic mirror technology (patent pending).
- Provides multiple curtain coverage (patent pending).
- **V-slot® optic technology (patent pending) for improved robustness, anti-vandalism and for very high reliability.**
- The entire electronic circuit is enclosed in the front cover with the optics. The sensor element is isolated from gusts of wind and insects.

- Creep zone protection.
- Back tamper switch to prevent unauthorized removal from wall.
- Incorporates a fully supervised PowerCode transmitter.
- Sophisticated frequency domain digital signal processing.
- No vertical adjustment is needed.
- Battery compartment for easy battery replacement without access to the electronic circuit.
- Programmable motion event counter.
- **Specially constructed against vandalism.**
- Very low current consumption



1. LED
2. Mirror

Figure 1. General View

- Sealed chamber protects the optical system.
- Tamper switch for detector opening / removal alert.
- Improved white light protection.
- Elegantly styled, sturdy case.

### 2. SPECIFICATIONS

**Detector Type:** Dual element low-noise pyroelectric sensor.

**OPTICAL** (see Figure 2)

**Mirror Data:**

**No. of Beam Elements:**

18x3=54 far parabolic mirror segments.

**No. of Curtain elements:** 18

**Max. Coverage:** 18 m (59 ft) / 90°

**White Light Immunity:** Above 20000 lux

**ELECTRICAL**

**Internal Battery:** 3V Lithium battery, type CR-123A. For UL installations, use Panasonic or Sanyo only.

**Nominal Battery Capacity:**

1400 mA/h.

**Battery Life (with LED on):**

Typically over 3 years.

**Battery Power Test:** Performed immediately upon battery insertion and periodically after every several hours.

**FUNCTIONAL**

**True Motion Event Verification:** 2 position selector - 1 (OFF) or 2 (ON) motion events.

**Visual Indications:**

**LED Lights** for about 3 seconds upon transmission of alarm & tamper messages and upon motion detection in the walk test mode.

**LED Flashes** during the power-up stabilization period, or after restoring (pressing) the tamper switch.

**LED Does not light** upon transmission of supervision messages.

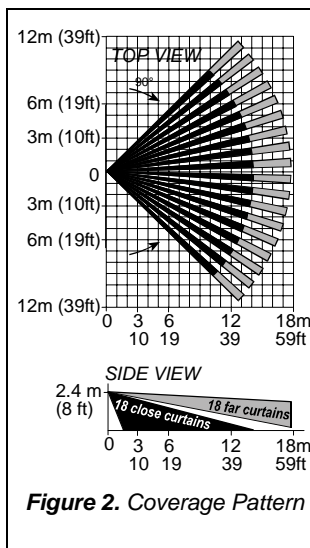


Figure 2. Coverage Pattern

**Rearm Timer:** Rearms the detector 2 minutes after the last motion detection. The detector reverts to the initial state if there is no movement during 2 minutes. The timer is disabled in the walk test mode.

**WIRELESS**

**Frequency (MHz):** 315 (U.S. version), 433.92, 868.95, 869.2625 or other frequency according to local requirements.

**Transmission Sequence:** 3 data bursts at variable / random intervals within 3 seconds.

**Encoding:** Over 16 million possible combinations.

**Total Message Length:** 36 bits.

**Supervision Message:** Signaling at 60-minute intervals (U.S. version) or 15 minute intervals (UK version), or according to the local standards.

**MOUNTING**

**Height:** 1.8 - 2.4 m (6 - 8 ft).

**Installation Options:** Surface or corner.

**ENVIRONMENTAL**

**RFI Protection:** >10 V/m up to 2000 MHz.

**Operating Temperatures:** -10°C to 50°C (14°F to 122°F).

**Storage Temperatures:** -20°C to 60°C (-4°F to 140°F).

**Compliance with Standards:** Designed to meet FCC Part 15 and Directive 1999/5/EC of the European Parliament.

EN 50131-2, Grade 2, Class II

**PHYSICAL**

**Size (H x W x D):** 122 x 63 x 42 mm (4-13/16 x 2-1/2 x 1-11/16").

**Weight (with battery):** 114 g (4 oz).

**Color:** White.

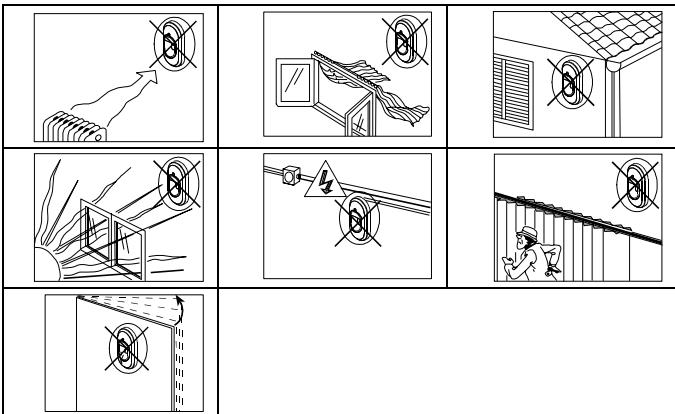
**PATENTS**

U.S. Patents 5,693,943 • 6,818,881 (other patents pending).

# 3. INSTALLATION

## 3.1 General Guidelines

Do Not Install in the Following Locations:



## 3.2 Illustrated Installation Procedure

### A. Rear Cover Removal

Release the screw **1** and remove the rear cover **2**, as shown below.

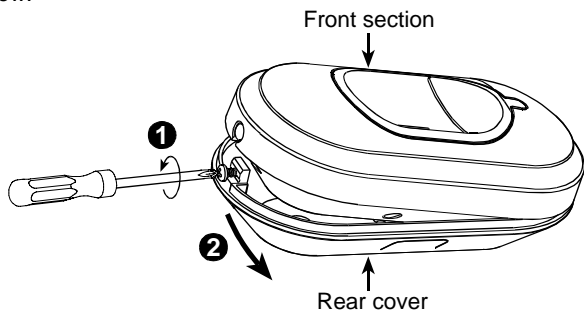


Figure 3 - Rear Cover Removal

**Warning:** Do not open the detector internal cover!

### B. Mounting (see figure 4)

The detector can be mounted on a surface / corner, at height of 1.8 - 2.4 m (6 - 8 ft).

Place the detector rear cover on the mounting surface / corner. Mark and drill 2 holes in the mounting surface / corner, insert wall anchors and fasten the rear cover with 2 screws.

**Caution** To ensure proper functioning of the back tamper switch, one of the screws should be in the break-away segment (see point A in the illustration above).

**Warning:** The top of the detector (see below) must point upward!

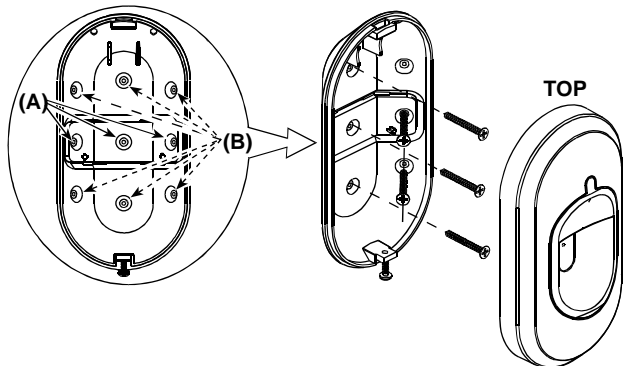


Figure 4 - Mounting

#### Legend

- (A) Marking / drillings locations (left / centre / right) in back tamper break-away segment.
- (B) Other Marking / drilling locations.

### C. Jumpers Settings

Set event count jumper and LED jumper as required, as described in the following illustration:

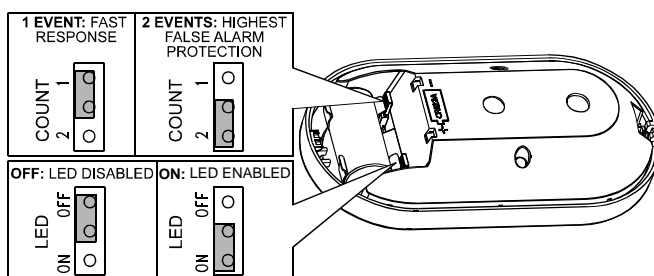


Figure 5 - Jumpers Settings

### LED Functions Summary

After battery insertion and rear cover closure, the LED flashes for 2 minutes approximately until the detector stabilizes.

After stabilization, the detector enters automatically walk-test period of 15 minutes (see par. G below). In this mode the LED lights and the unit sends an RF alarm signal on every detection (regardless of LED jumper position).

After the walk-test period, the LED operates according to the LED jumper setting, as follows:

LED Jumper Position	LED Activity in "Normal Mode"
ON	LED lights during alarm transmission.
OFF	LED <u>does not light</u> during alarm transmission.

After the first 15 minutes, after every motion detection and alert transmission, the detector disarms itself to save battery power. It rearms (reverts to the ready state) if there is no subsequent detection during the following 2-minute period. Therefore, if you want to check the detector, you have to exit the room for at least 2 minutes and then enter the room.

### D. Battery Insertion

Insert the battery as shown below. Verify proper polarity.

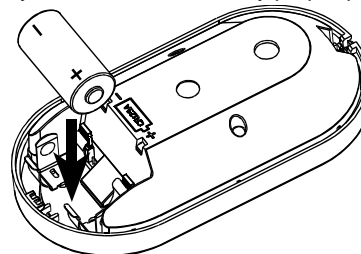


Figure 6 - Battery Insertion

### E. Detector Closure

Close the detector and secure with the screw as shown below (follow the numbered steps).

Wait for the detector to stabilize (the LED stops flashing).

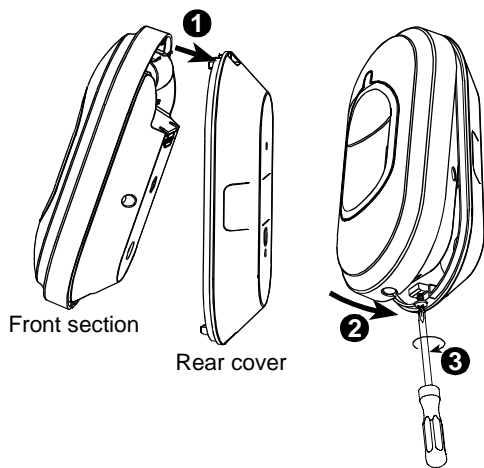


Figure 7 - Detector Closure

## F. Enrolling

In order that the PowerMax+ or PowerMax Pro will identify the detector signal, perform enrolling as described in the PowerMax+ or PowerMax Pro installer guide, respectively.

## 4. SPECIAL COMMENTS

### 4.1 Product Limitations

Visonic Ltd. wireless systems are very reliable and are tested to high standards. However, due to their low transmitting power and limited range (required by FCC and other regulatory authorities), there are some limitations to be considered:

- A. Receivers may be blocked by radio signals on or near their operating frequencies, regardless of the code selected.
- B. A receiver can only respond to one signal at a time.
- C. Wireless equipment should be tested regularly to determine whether there are sources of interference and to protect against faults.
- D. Even the most sophisticated detectors can sometimes be defeated or may fail to warn due to: DC power failure / improper connection, malicious masking of the lens, tampering with the optical system, decreased sensitivity in ambient temperatures near that of the human body and unexpected failure of a component part.  
The above list includes the most common reasons for failure to detect intrusion, but is by no means comprehensive. It is therefore recommended that the detector and the entire alarm system be checked weekly, to ensure proper performance.
- E. An alarm system should not be regarded as a substitute for insurance. Home and property owners or renters should be prudent enough to continue insuring their lives and property, even though they are protected by an alarm system.

### 4.2 Compliance with Standards

The 315 MHz version of this device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

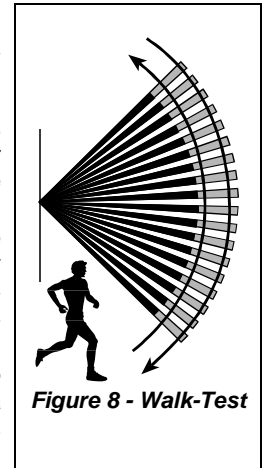
**WARNING! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

## G. Walk-Test

After closing the cover and after the detector stabilization period (2 minutes approximately), the detector enters a 15 minute walk-test mode. In this mode, the LED flashes each time a motion is detected, regardless of LED jumper settings and the detector transmits the occurrence of each event.

Walk across the far end of the coverage pattern in both directions. The indicator should light for 3 seconds approximately each time your motion is detected.

**Important: Instruct the user to perform walk-test at least once a week to assure proper detector's function.**



The digital circuit of this device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a circuit different from the one which supplies power to the receiver.
- Consult the dealer or an experienced radio/TV technician.

### 4.3 Frequency Allocations for Wireless Devices in European (EU) Countries

- 315 MHz is not allowed in any EU member state.
- 433.92 MHz has no restriction in any EU member state.
- 868.95 MHz (wide band) is allowed in all EU member states.
- 869.2625 MHz (narrow band) is not restricted in any EU member state.

### 4.4 Battery Handling

- A. Replace battery ONLY with recommended battery (see specifications).
- B. Dispose used batteries according to their manufacturer's instructions.

## WARRANTY

Visonic Ltd. and/or its subsidiaries and its affiliates ("the Manufacturer") warrants its products hereinafter referred to as "the Product" or "Products" to be in conformance with its own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve months from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or replace the product or any part thereof. The Manufacturer shall not be responsible for dismantling and/or reinstallation charges. To exercise the warranty the product must be returned to the Manufacturer freight prepaid and insured.

**This warranty does not apply in the following cases:** improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than the Manufacturer.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express or implied, including any warranty of merchantability or fitness for a particular purpose, or otherwise. In no case shall the Manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties whatsoever, as aforesaid.

This warranty shall not be modified, varied or extended, and the Manufacturer does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the Product only. All products, accessories or attachments of others used in conjunction with the Product, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products.

The Manufacturer does not represent that its Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. User understands that a properly installed and maintained alarm may only reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no death, personal damage and/or damage to property as a result.

**The Manufacturer shall have no liability for any death, personal and/or bodily injury and/or damage to property or other loss whether direct, indirect, incidental, consequential or otherwise, based on a claim that the Product failed to function.** However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall not in any case exceed the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Manufacturer.

**Warning:** The user should follow the installation and operation instructions and among other things test the Product and the whole system at least once a week. For various reasons, including, but not limited to, changes in environmental conditions, electric or electronic disruptions and tampering, the Product may not perform as expected. The user is advised to take all necessary precautions for his/her safety and the protection of his/her property.

6/91



### W.E.E.E. Product Recycling Declaration

For information regarding the recycling of this product you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. This product is not to be thrown away with everyday waste. Directive 2002/96/EC Waste Electrical and Electronic Equipment.



**VISIONIC LTD. (ISRAEL):** P.O.B 22020 TEL-AVIV 61220 ISRAEL. PHONE: (972-3) 645-6789, FAX: (972-3) 645-6788  
**VISIONIC INC. (U.S.A.):** 65 WEST DUDLEY TOWN ROAD, BLOOMFIELD CT. 06002-1376. PHONE: (860) 243-0833, (800) 223-0020 FAX: (860) 242-8094  
**VISIONIC LTD. (UK):** FRASER ROAD, PRIORY BUSINESS PARK, BEDFORD MK44 3WH. PHONE: (0870) 730-0800 FAX: (0870) 730-0801

INTERNET: [www.visonic.com](http://www.visonic.com)

©VISIONIC LTD. 2007 TOWER 40 D-300430 (Rev. 2, 11/07)



MADE IN  
ISRAEL