1. FEATURES

- Employs a real quad element low-noise pyroelectric sensor
- Includes a fully supervised PowerCode transmitter
- Patented sophisticated motion analysis algorithm - True Motion Recognition (TMR™)
- Two-position vertical adjustment for coverage pattern
- Integral swivel bracket for wall or ceiling installation
- Programmable motion event counter - ON or OFF (default)
- Front and back tamper switches for improved tamper protection
- Full stabilization achieved 30 seconds after power up
- After detection, the detector disables itself to save battery power. It reverts to the ready state if there is no subsequent detection throughout the following 2-minute period

Automatic termination of walk-test after 15 minutes
Low current consumption
Microprocessor-controlled temperature compensation
Sealed chamber protects the optical system
White light protection
Elegantly styled, sturdy case
Keyhole-shaped slot for easy removal of PCB

2. SPECIFICATIONS

OPTICAL
Detector Type: Quad element low-noise pyroelectric sensor.
Detection Pattern: 90° wide angle lens with 19 quad zones in 3 detection layers. Max. coverage is 15 x 15 m (50 x 50 ft).
Adjustment: 2-position vertical adjustment scale: FAR and NEAR.

ELECTRICAL
Internal Battery: 3 V Lithium battery, Panasonic CR-2 or equivalent
Nominal Battery Capacity: 750 mAh
Standby Current Drain: 0.015 mA
Transmit Current Drain: 20 mA (including LED)
Battery Life Expectancy: 3 years (for typical use)
Battery Supervision: Automatic reporting of battery status with each alarm and with periodic supervision message.

FUNCTIONAL
True Motion Event Verification: 2 position selector - 1 (OFF) or 2 (ON) motion events.
Alarm Period: 3 seconds.

Visual Indications:
LED lights for about 3 seconds upon transmission of alarm & tamper messages and upon each 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.
Rearm Timer: Rearms the detector 2 minutes after the last alarm. Timer disabled in the walk test mode.

WIRELESS
Frequency (MHz): 315, 433.92, 868.95, 869.2625 or other frequencies according to local requirements.
Transmission Sequence: 3 data bursts at variable intervals within 3 seconds.
Encoding: 24-bit ID, over 16 million possible combinations.
Total Message Length: 36 bits.
Tamper Alert: Reported when a tamper event occurs and in any subsequent message, until the tamper switch is restored.
Supervision Message: Once per 15 minutes, 60 minutes or according to local standards.

MOUNTING
Height:
With bracket: Up to 3.6 m (12 ft)
Without bracket: 2 - 2.6 m (6.5 - 8.5 ft)
Installation Options:
With bracket: Surface or ceiling
Without bracket: Surface or corner
Bracket Adjustment: 20° downward, 20° left and right.

ENVIRONMENTAL
RFI Protection: >30 V/m up to 1000 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).

PHYSICAL
Dimensions (H x W x D): 117 x 65 x 47 mm.
(4-5/8 x 2-9/16 x 1-7/8 in.).
Weight: 92 g (3.25 oz) without bracket, 107 g (3.75 oz) with bracket.
Color: White
PATENTS: U.S. Patent No. 5,693,943
3. INSTALLATION

3.1 Installation Hints

To minimize false alarms:

- Do not aim at heat sources
- Mount on solid, stable surfaces
- Do not expose to air draughts
- Do not install outdoors
- Prevent direct sunlight from reaching the detector
- Keep wiring away from electrical power cables
- Do not install behind partitions

3.2 Battery Insertion

It is recommended to power up the detector and let the target receiver "learn" the transmitter’s ID before actual installation. This can be done only after battery installation.

1. Remove the front cover as shown in Figure 3.

2. Insert the battery into the battery clip - observe polarity (see Figure 4).

3. Press the tamper switch once and release it. This will perform the reset necessary for smooth power up.

4. Put the cover on and observe the LED. It will flash until the detector stabilizes (within about 30 seconds).

3.3 Enrolling the Transmitter ID

Refer to the target receiver’s installation instructions and follow the procedure given there for “teaching” the transmitter’s ID. It is much easier to carry out this operation in close proximity to the receiver.

3.4 Mounting without Swivel Bracket

1. Remove the front cover as shown in Figure 3.

2. Loosen the vertical adjustment screw, slide the PCB down and remove it via the “keyhole” (see Figure 4).

3. Punch out the mounting knockouts at the base (for surface mounting) or mounting knockouts at the angled sides of the base (for corner mounting).

**Attention!** The unit has a special tamper switch under the PCB. As long as the PCB is seated firmly within the base, the switch lever will be pressed against a special break-away base segment that is loosely connected to the base (Figure 5). Be sure to fasten the break-away segment to the wall. If the detector unit is forcibly removed from the wall, this segment will break away from the base, causing the tamper switch to open. It is advisable to pierce the anti-tamper knockouts from within the base outward, while pressing the rear surface of the break-away segment against a piece of wood.

3.5 Mounting with Swivel Bracket

1. Remove the front cover as shown in Figure 3.

2. Loosen the vertical adjustment screw, slide the PCB down and remove it via the “keyhole” (see Figure 4).

3. Punch out the large knockout in the round bulge at the top part of the base (see Figure 6).

4. Hold the base against the wall at the selected location, mark the drilling points, drill the holes and attach the base to the wall.

5. Return the PCB to its place: align the “keyhole” with the head of the vertical adjustment screw, press the PCB against the base, slide the PCB up and temporarily tighten the screw.

4. **Figure 3. Cover Removal**

5. **Figure 4. Inside View**

6. **Figure 5. Anti-Tamper Break-Away Base Segment**

7. **Figure 6. Attaching the Bracket**

8. **Figure 7. Swivel Bracket Pivot**
6. Mark the points for drilling through the two mounting holes of the bracket. Attach the bracket to the mounting surface.

7. Tilt down or swivel the detector to face the desired direction. Figure 8 shows the tilt/swivel possibilities.

3.6 Setting the Motion Event Counter

The location of the motion event jumper is shown in Figure 4. Refer to Figure 9 below and mount the jumper as desired.

3.7 Setting the LED Control Jumper

ON Position: Setting the jumper as shown enables the LED. Remember that the detector disables itself for 2-minutes after detection!

OFF Position: Setting the jumper as shown disables the LED.

Note: At power up or reset, the LED flashes for 30 seconds regardless of the jumper position and then enters walk-test mode.

3.8 Vertical Adjustment

Refer to Figure 10. Loosen the vertical adjustment screw and slide the printed circuit board up or down to obtain the desired coverage. When done, tighten the screw well.

3.9 Walk Testing

Upon battery insertion or closing of the cover (which results in closing of the tamper switch) the detector goes into walk-test mode and automatically exits the mode after 15 minutes.

1. Set the motion event counter as required (see Paragraph 3.6).

2. Adjust the vertical angle as desired (see Paragraph 3.8).

3. Remount the cover and fasten the case closure screw. This results in the resetting of the detector and the start of walk-test mode.

4. Wait until the LED stops flashing (about 30 seconds).

5. Walk-test the entire protected area by walking slowly across the detector’s field of view, observing the LED. Pause for 5 seconds after each detection to allow the detector to complete its 3-transmission sequence (see Appendix A); the LED will light for about 3 seconds.

6. When the walk-test is completed (after 15 minutes), the detector’s setting automatically changes according to the LED control jumper setting.

Notes:

1. The OFF setting is recommended to prevent unauthorized people from tracing the detector’s coverage pattern.

2. If the LED is disabled, you may use the control panel’s visual and audible indicators to verify proper function of the detector.

Attention! To assure proper function of the detector, the range and coverage area should be checked at least twice a year. Furthermore, the user should be instructed to perform a walk test at the far end of the coverage pattern to assure an alarm signal prior to each time the alarm system is armed.

4. MISCELLANEOUS 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 transmitted signal at a time.

C. Wireless equipment should be tested regularly to determine whether there are sources of interference and to protect against faults.

4.2 Frequency Allocations for Wireless Devices in European (EU) Countries

- 433.92 MHz has no restriction in any EU member state.
- 315 MHz is not allowed 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.
The manufacturer warrants this product only to the original purchaser, for use only for the purposes intended, and only the original purchaser, and has no liability for products, accessories, or attachments of others, including batteries, used in conjunction with the Product, including, without limitation, any degradation, failure, or damage resulting from such use. This warranty is null and void if the Product is not properly installed, maintained, and operated in accordance with the manufacturer’s recommendations. The manufacturer shall not be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function.

A special ‘supervision message marker’ is set to ON in all following messages. A message includes the following data:

- Confirmed battery status
- Low Battery: Once the battery status is low, a message will be transmitted with the low battery marker set ON in all messages.
- Tamper / Restore: If the tamper marker is set OFF, the receiver will know the tamper condition has been restored.
- Supervision message marker: When set to ON, the receiver will know the supervision message has been transmitted.

A-1. The PowerCode Message Format

The PowerCode message format is used to transmit data between the DISCOVERY QUAD MCW and various detector units. This format includes a check on its validity and a checksum on the message. The PowerCode message is a 24-bit hexadecimal number that is transmitted in a random sequence of 3 bursts, each consisting of 6 messages. Each message contains 24 bits of data, and the receiver uses the check bits to verify the correctness of the data.

A-2. Anti-Collision Transmission Sequence

To overcome message collisions at the receiving end, PowerCode transmits 3 data bursts at random intervals. This redundancy improves the probability of reception.

WARNING:
This Warranty is in addition to and does not affect your legal rights. Any provision in this warranty which is found to be illegal or unenforceable is void and the remainder of this warranty remains in full force and effect. The Manufacturer does not authorize anyone to change or extend this Warranty in any manner. The Manufacturer is not liable for any representative, agent, or employee, and the Manufacturer does not authorize anyone to act on its behalf in the modification, variation or extension of this Warranty. This Warranty shall be void if the Product is damaged or fails to perform as specified in this Warranty due to products, accessories, or attachments of others, including batteries, used in conjunction with the Product. The Manufacturer shall not be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The Manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The Manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The Manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function. The Manufacturer shall in no event be liable for any special, indirect, incidental, consequential, or punitive damages or for loss, damage, or expense, including loss of use or data, arising out of the use or inability to use the Product, or for loss or destruction of property, or from any other cause, whether direct, indirect, incidental, or otherwise, based on a claim that the Product failed to function.

**A.4. Compliance with Standards**

The device is designed to comply with the essential requirements and provisions of Directive 1999/5/EC of the European Parliament and of the Council of 19 March 1999 on radio and telecommunications terminal equipment.

The user is cautioned that changes or modifications to the product, not expressly approved by the party responsible for compliance, could void the user’s FCC authority to operate the equipment.