

# DISCOVERY QUAD MCW

Wireless PowerCode Quad PIR Detector



**Visonic**

Operational description

## 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

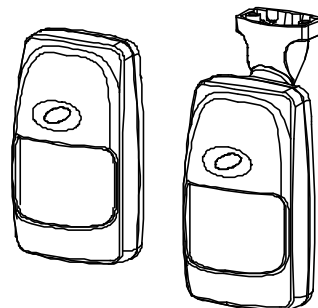


Figure 1. External View

## 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.

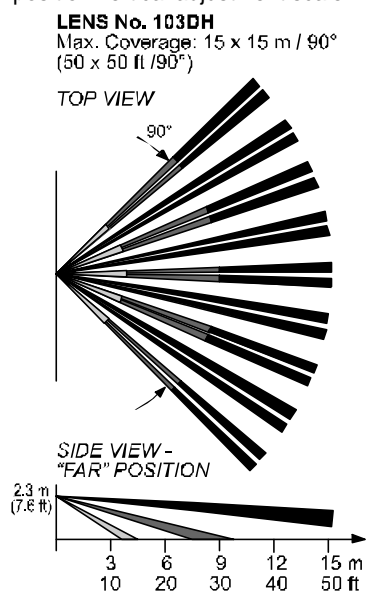


Figure 2. Coverage Pattern

2 (ON) motion events.

**Alarm Period:** 3 seconds.

### 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 DE3633

## 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).

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

## 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

# APPENDIX A. THE VISONIC LTD. POWERCODE SYSTEM

## A-1. The PowerCode Message Format

The PowerCode message transmitted by the DISCOVERY QUAD MCW includes the 24-bit ID and a status report (see Fig. A1).

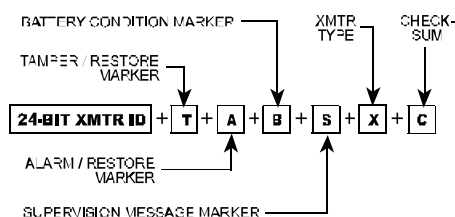


Figure A1. Transmitted Data

A message includes the following data:

- **Detector's ID:** Any message transmitted starts with the 24-bit ID assigned to the particular detector unit.
- **Tamper / Restore:** Upon removal of the unit's front cover, a message will be transmitted with a "tamper marker" ON. If the unit's cover is put back, a message will be transmitted with the tamper marker OFF ("Tamper Restore").
- **Alarm:** Once the detector is in alarm, a message will be transmitted with an "alarm marker" ON.
- **Low Battery:** A special battery condition marker is used to report the battery status in any message. The battery is tested once an hour and if found low, the "low battery marker" is set to ON in all following messages.
- **Supervision Message:** A special "supervision message marker", when set to ON, identifies the periodic supervision

messages transmitted automatically at 1 hour or 15 minute intervals. This marker will be OFF in all other messages.

- **Transmitter Type:** A special marker indicates the type of the transmitter:
  - Supervised or non-supervised
  - Reports or does not report restorals after alarm

The DISCOVERY QUAD MCW does not report restorals after alarms.

- **Checksum:** Checksum bits at the end of the message allow the receiver to determine whether an incoming message is valid (error-free). This feature considerably enhances the reliability of the wireless communication link.

## A-2. Anti-Collision

To overcome message collisions at the receiving end, PowerCode transmitters transmit 3 data bursts at random intervals, with 6 repetitions of the same message in each burst (Fig. A2). This redundancy improves the probability of reception.

**Note:** Periodic supervision messages are an exception to this rule - they consist of a single 6-message burst.

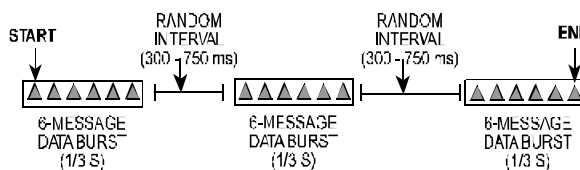


Figure A2. Anti-Collision Transmission Sequence

## 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

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

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.

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.

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