INTRODUCTION

The FW2-MAG is an advanced magnetic contact sensor with integrated RF transceiver designed to be a fully supervised low-current device. The FW2-MAG is a part of the FREEWAVE2™ which is a supreme wireless line of devices that uses an advanced 2way RF transceiver combined with an intelligent communication protocol. A built-in reed switch and/or an external wired input may be applied in this device. To maximize security, an 8.2k end-of-line resistor is monitored on the external wired input. FW2-MAG uses smart message control, which verifies that all messages are successfully transmitted, so that no intrusion event will be uninformated to the system. Each FW2-MAG has a unique factory set ID code (24bit) which by registration is set into memory of the paired FREEWAVE2™ TRANSCIEVER, enabling more secured communication and devices to be remotely controlled from a specific transceiver.

OPERATION

The Wireless Magnetic detector transmits the following events data:

SUPERVISION - a periodical transmission every 7 min. indicates detector’s presence.

ALARM - Alarm transmission triggered by intrusion detection by REED SWITCH and WIRE input. (Selectable. See section 8: SETTING THE OPERATION MODE).

LOW BAT – Whenever the battery reaches a preset low level (~2.4V) Battery Low signal will be sent with the next scheduled message (Supervisor, Alarm, etc.).

TAMPER – Whenever the FW2-MAG cover is removed or tore off wall, a message will be transmitted with "Tamper" signal.

FEATURES

- State-of-the-art 2 way wireless security system
- Freewave2 advanced & secured RF protocol
- Low current Technology
- Powered by a single 3V Lithium battery
- Battery life: more than 5 years
- Available Frequencies: 868.35MHz / 916.5MHz
- Contact Open/Close transmission
- Tamper Open/Close transmission
- Supervision transmission
- Battery status send on every transmission
- LED indications for monitoring
- Range up to 500m on open space.
- Unique ID number
- Front and back tamper
- Alarm trigger either by the internal reed switch and / or by wired terminal
- Wired terminal with E.O.L. 8X2 resistor

ID REGISTRATION

Refer to the system transceiver’s installation instructions and follow the procedure given there for “learning” detector IDs. Place battery as instructed & wait until start up LED stops blinking. Make sure that the transceiver is on learning mode according to control panel installation instruction. Generate a transmission by pressing and releasing tamper switch - this will start the "learn" data transmitting by the device to the control panel transceiver. Note the LED indications on the device:
- Green/Red LED flashes alternately – for 5 sec Magnet was registered successfully cover may be closed only after verification with control panel.
- Green LED blinks periodically – Device was not sighed into FW2-TRANSCIEVER
- Repeat registration process
- Red LED blinks – for over 20sec Battery voltage is critically low. Replace battery.

SELECT MOUNTING LOCATION

It is recommended to mount the FW2-MAG vertically on a flat area to get maximum range. As the detector is a wireless transceiver, and in order to take full advantage of it’s sophisticated operation, do not install the detector in areas where large metal objects could interfere with the transmission of signals. It is recommended to attach transmitter to the fixed frame and the magnet to the moveable part (door or window), as shown on section 14. Installation is not allowed on a ferromagnetic surface.

For detector installation it is recommended to use

SCREW 3x30 PH. FLAT HEAD
CAUTION: using a different or a bigger screw can damage the electronic board.

RSSI – RF SIGNAL INDICATION

The FREEWAVE2™ control panel has “RF Signal Strength Indication” (RSSI) for each transceiver in order to help the installer to define the best location for the detector from RF perspective. The indication value is between 10 and 100, where 100 is the best RF received signal. If the RSSI indication value is less than 30, it is a sign for a weak RF link and it is recommended to find a better installation for the FW2-MAG.

NOTES:

Supported only on selected Crow CP.
MOUNTING THE DETECTOR

1. To remove the front cover, unscrew the holding screw, insert a flat screwdriver in the slot between the front and the bottom while pushing and twisting it gently until the front cover is disengaged. (Fig. 1)

2. Mount the detector base: place all 3 screws and make sure you tighten the tamper screw (the middle screw) easily, so the back tamper switch will press the switch successfully when PCB is placed back - over windling may result in false mechanical adaptation and lack of tamper press.

3. Mount the Magnit Unit near the Marking.

4. Place the CR123A BAT according to the right polarity

5. Place the cover by inserting it back in the appropriate closing pin and screw the holding screw.

INSTALLATION

Basic installation at 10mm between FW2-Mag and Magnet Unit.

<table>
<thead>
<tr>
<th>Opening</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>X (slide)</td>
<td>14mm</td>
</tr>
<tr>
<td>Y1 (slide up)</td>
<td>15mm</td>
</tr>
<tr>
<td>Y2 (slide down)</td>
<td>15mm</td>
</tr>
<tr>
<td>Z (providing)</td>
<td>17mm</td>
</tr>
</tbody>
</table>

ALARM TRANSMISSION TEST

Removing and placing of magnet unit enables the alarm transmission test feature.

Check that the transceiver unit indicates at least 2 events – one for removing and one for placing the magnet.

To check this function it is necessary to verify that the FREEWAVE2 control panel displays the following massage:

Zone # X Open

The message appears when removing the magnet unit and disappears while placing the magnet back (X – zone number from which the message received).

TAMPER TRANSMISSION TEST

Pressing and releasing the tamper (push button) enables the TAMPER transmission test feature.

Verify the Control Panel indicates “Zone Tamper open” and TROUBLE LED is ON.

Close the Tamper and verify the Control Panel indicates ZONE TAMPER OPEN is restored and TROUBLE LED is OFF.

In some control panels READY LED will turn OFF when tamper is open and ON when closed.

Transmission can also be reviewed on the transceiver unit as a rapid Red-Green-LED blink.

BATTERY REPLACEMENT

- Remove the front cover.
- Pull out the old battery.
- Install a new battery according to polarity marking.
- After assembling the battery the LED will flash Green then Red alternately for 45 seconds.
- During this time the detector does not function, wait until the LED stop flashing.
- Press tamper for 2 sec and then release it.
- Note LED indications:
  - Green LED flashes 5 times alternately: The detector was successfully registered in system.
  - Green LED blinks 20 times: No response from Transceiver / device was not assigned on CP - Repeat installation procedure.
  - Red LED blinks continually (over 20 sec): Battery voltage is critical low device won’t function - Replace battery.
  - Green/Red LED flashes 6 times alternately: The cover may be placed back and closed.

EXTERNAL MAG

It is optional to use additional magnet units connected to the MAG terminal input.

This connection is protected by End Of Line resistor value 6,2Kohm

Alarm transmission, triggered by intrusion detection at WIRE terminal input, provides signals of door/window open/close up to 15m.

Connect two wires communication cable to the MAG terminal block inputs. See Fig.3.

REGULATORY APPROVALS

The FWG MAG conforms to the essential requirements set out by:
- RTTE directive:1999/5/EC
- EMC directive: 2004/108/EC
- Low Voltage directive: 2006/95/EC
- EN300220-2
- EN301489-1
- EN50131-2-6
- EN50130-3-3
- EN50601-6-3
- EN60950
- EN61000
- EN50131-6
- EN50130-5
- EN50131-6-5
- Security Grade 2 Environmental Class II
- RoHS directive: 2002/95/EC
- EN50131-2-6

TECHNICAL SPECIFICATIONS

Data Protocol: FreeWave2
Modulation Type: GFSK (1 Frequency)
Frequency: 868.35MHz / 916.5MHz
Identification: Unique ID serial number – 24 bit
Event Transmission: Alarm, Tamper, Supervision, Low Bat
Detection Method: Internal Reed Switch or External Magnet Device
Range in open space: 500m
Battery: Lithium, 3V Type: CR123A Size: 3/2AA
Battery life expectancy: >5 years (10 activation per day)
Current Consumption:
- Standby: -3 µA
- Receive mode: -29 mA
- Transmit mode: -38 mA
- Low Battery: -2.4Vdc
- Transmit power: -10dBm
- Tamper Switch: Front Cover Removal;
- External Input: Up to 15m with 8.2Kohm EOL resistor
- Operating temperature: -10°C to +50°C
- Dimensions: 97mm x 22mm x 21mm
- Weight (inc. battery): 46 gr.

CAUTION !!!

RISK OF EXPLOSION IF BATTERY IS REPLACED BY DIFFERENT TYPE / MODEL.

DISPOSE USED BATTERIES ACCORDING TO ITS INSTRUCTIONS

CROW (“CROW”) - WARRANTY POLICY CERTIFICATE

This Warranty Certificate is given in favor of the purchaser (hereunder the “Purchaser”) purchasing the products directly from Crow or from its authorized distributors.

Crow warrants these products to be free from defects in materials and workmanship under normal use and service for a period of 12 months from the day of purchase by the Purchaser. Should any such defects occur during the warranty period, the Purchaser shall be entitled to the repair or replacement of the product and all related expenses directly attributable to such defects.

This warranty does not cover the cost of labor to install, remove or replace the defective product, nor the cost of any other accessories, labor, or other cost which Arrow may incur in connection with the repair or replacement of the product. This warranty is null and void if the purchased product has been subject to misuse, neglect, or unauthorized modifications, or if the product has been damaged due to an accident, abuse, misuse, or improper maintenance.

There are no warranties, express or implied, of merchantability or fitness of the products for a particular purpose or otherwise, which extend beyond the description herein. This limited Warranty Certificate is the Purchaser’s sole and exclusive remedy against Crow and its representatives for any and all claims based on the use, condition or performance of所述产品.

This Warranty Certificate is subject to the following terms and conditions:

1. The Purchaser must notify Crow in writing of any claimed defects within the Warranty Period.
2. Crow will inspect the product to determine if the claimed defect is covered by this Warranty Certificate.
3. If the claimed defect is covered by this Warranty Certificate, Crow will either repair or replace the product at its discretion.
4. The Purchaser must pay all transportation costs and insurance charges associated with the return of the product to Crow.
5. The Purchaser must obtain a Return Merchandise Authorization (RMA) number from Crow before returning the product.
6. Crow may refuse to accept any product returned under this Warranty Certificate if it is not in good operating condition and/or if it has been improperly used.

In no event shall Crow have any liability for any incidental, special, direct, or consequential damages, losses, costs, or expenses, including but not limited to loss of profits, revenues, or data, or any claims made by third parties, arising out of or related to the use of this product, even if Crow has been advised of the possibility of such damages.

These instructions supersede all previous instructions in circulation prior to July 2016.

CROW ELECTRONIC ENGINEERING LTD
12 Kineret St. - Airport City
70100 Israel

www.thecrowgroup.com

sales@crow.co.il
support@crow.co.il

<figures and tables related to technical specifications and warranty policies>