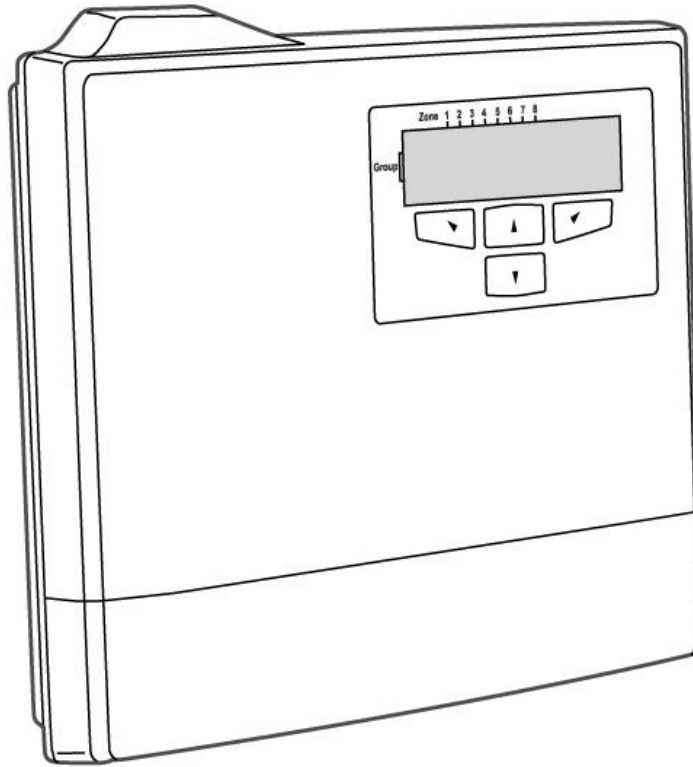


ARROWHEAD ALARM PRODUCTS



FREEWAVE SA

Programming & Installation Guide

V1.010P

Introduction:

The Freewave SA is a programmable standalone receiver with a small LCD display for easy programming and status indication.

The programming is performed by an onboard 4 button keypad.

It can learn up to 64 wireless detectors and 256 Remotes Control, 8 Devices for every output.

The Freewave SA contains 8 Outputs (Dry contact) that can be connected to Zones inputs on a control panel.

The Freewave SA is protected with tampers that activate when opening the service cover or while there is a tamper alarm from one of the detectors.

Features:

- Small LCD 2 x 16 Characters.
- Keypad on board.
- Rolling menu.
- Easy to program.
- Can learn up to 64 wireless detectors (8 detectors to each output).
- Can learn up to 256 Remotes Control with 5 modes: Toggle, 1, 3, 5, sec pulse, 1 & 2.
- Access to Installer mode requires a Password.
- Real Time Clock with back up battery.
- Protected by tamper.
- Full supervised – beeps every minute while supervision missing for more the two hours.
- Beeps every minute while Low battery signal from one of the detectors.
- Log events of 64-recorded events (FIFO).

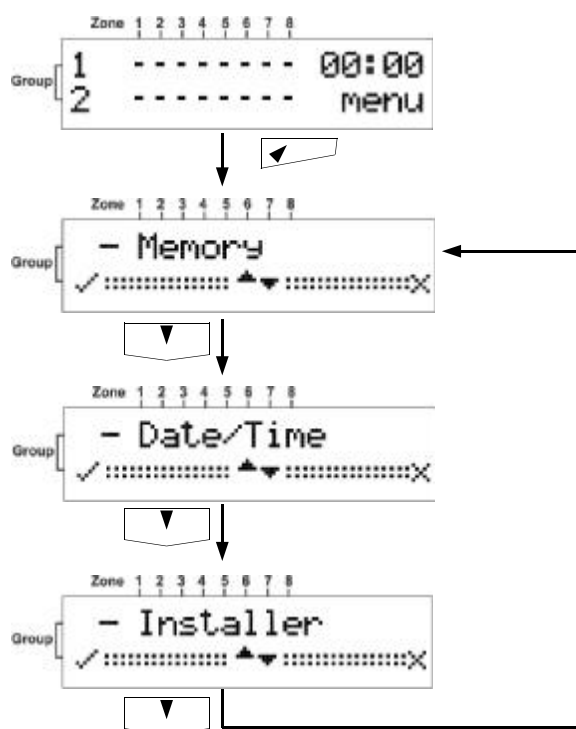
Programming Procedure:

It's recommended to program the Merlin Pro on the workbench before the actual installation.

1. First set the Clock.
2. Enter Installer mode (the password is 111).
3. Program all the detectors and remotes that you need for the installation it's recommended to mark the detectors according the zone assigned.
4. Locate the detectors and the Merlin Pro close to the point you want to install them and perform RSSI test. (signal strength)
5. Final Installation.

Display Indications:

Icon	Signification	Description
	Tamper	Tamper transmission from the detector
	Alarm	Alarm transmission from the detector or the remote.
	Supervision	Missed supervision transmission for more then 120 minutes
	Low Battery	Low Battery in the Detector
	New Event	New events record in Log.

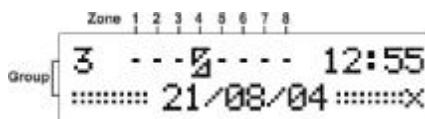


User Programming:

The user can program the Date /Time and show the list of the events in the Memory.

Memory:

The memory buffer can store up to 64 events, to view the memory use the ▲ ▼ keys. Events are recorded when the 'STAT' input is low. Every event is displayed with the date and the time
For Example:

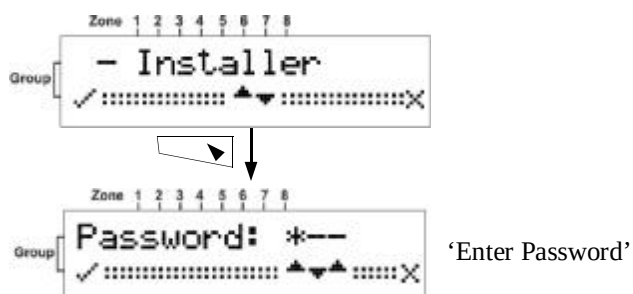


Detector at Zone 4, group 3 transmitted a tamper at 21/08/04 on 12:55.

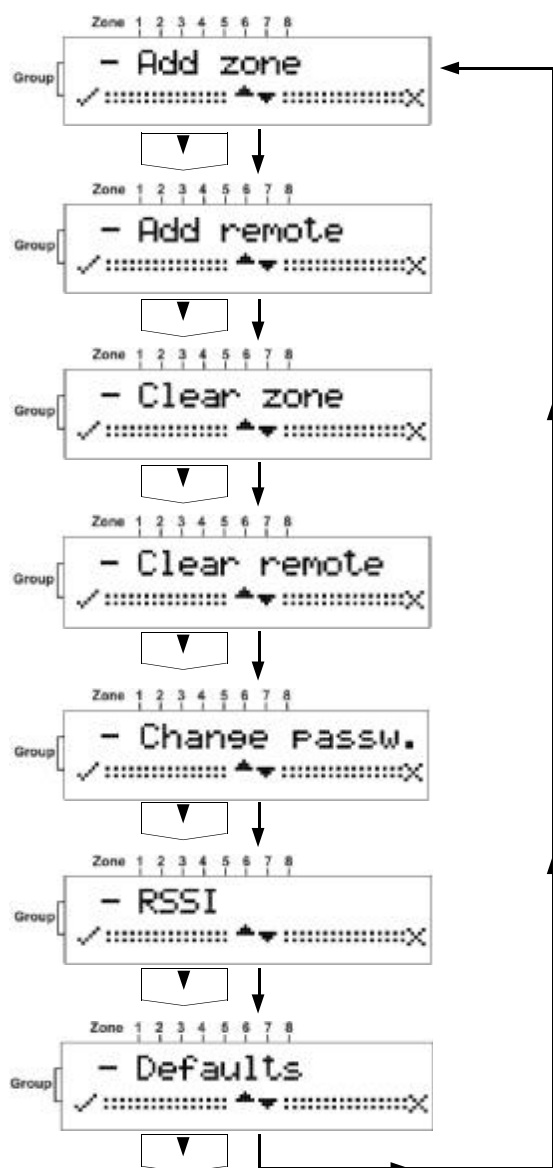
Date/Time:

Setting the date and the time, the setting is done by Up/Down arrows ▲ ▼. The Freewave SA has a Real Time clock with back up battery which mean that the date and time is stored even while The power to the Receiver is off.

Installer Programming:

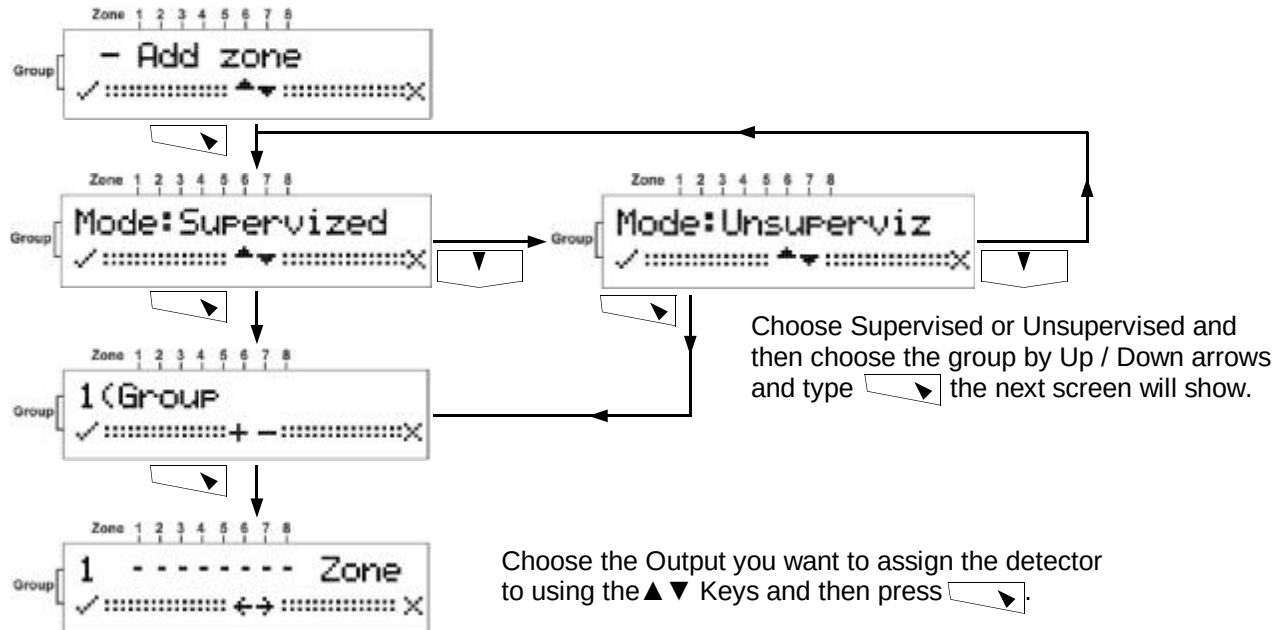


Enter the Password, the Factory default is 111 that means : ▲▼▲ and then  To Confirm.

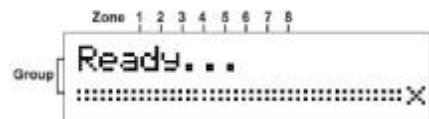


Add Zone:

This screen is for learning the wireless detectors (FW-PIR, FW-MAG, FW-Glass Break 8.2GHz).



The Receiver will Start beeping and the display will show:

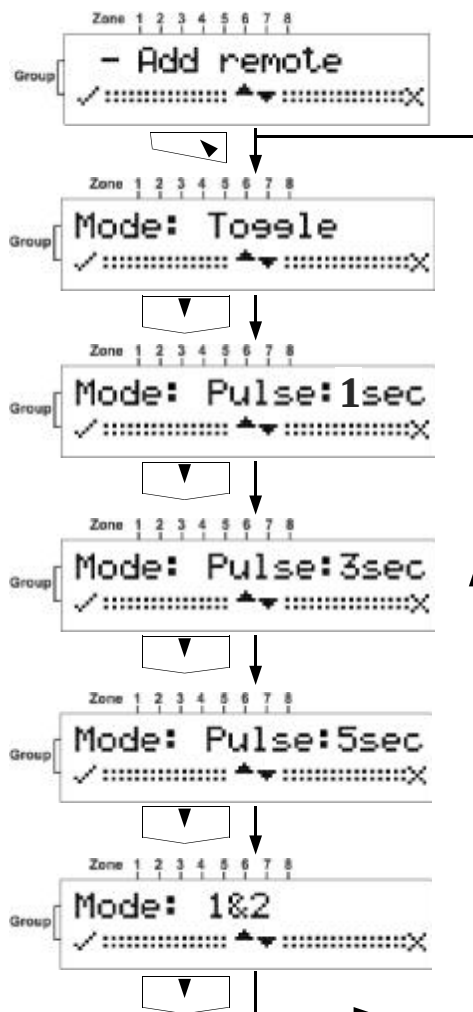


Activate the Tamper of the detector, two beeps for O.K will be heard and the screen will be closed and return to Add Zone screen.

Up to 8 Detectors an be programmed to each output.

Add Remote:

This screen is for learning the FW-Remotes.



Toggle: Every transmission by the Remote Control change the status of the Output

Pulse 1Sec: Every transmission by the Remote Control activates the output for 1 sec.

Pulse 3Sec: Every transmission by the Remote Control activates the output for 3 sec.

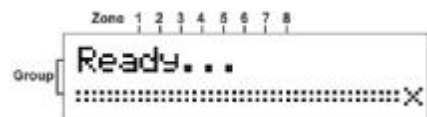
Pulse 5Sec: Every transmission by the Remote Control activates the output for 5 sec.

1 & 2: Key #1 Turns Output on and key #2 Turn Output off.

Choose the mode: then Press the  key.



Choose the Output you want to assign to the remote using the ▲ ▼ keys, then press . The Receiver will start beeping and this screen will be show.



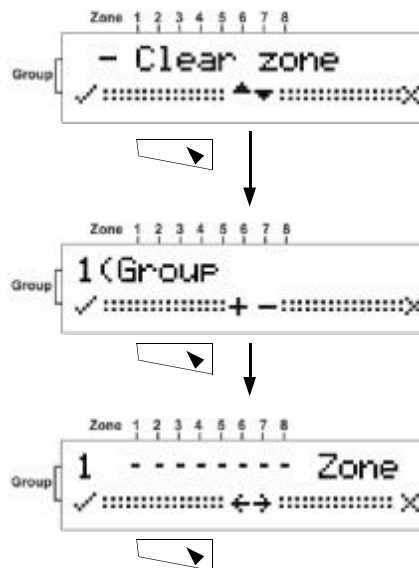
Activate the Remote, two beeps for O.K will be heard and the screen will be closed and return to Add Remote screen.

For Mode 1 & 2 choose the output and learn key 1 at the remote (the top key) and repeat the procedure and on the same output learn key 2 (the second from top) at the remote.

Clear Zone:

Choose the group, using the ▲▼ Keys.

Choose the zone that you want to clear, using the ▲▼ keys.

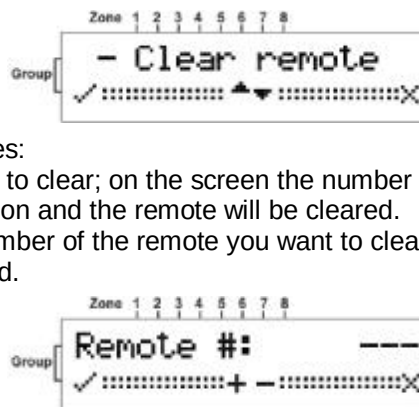


a double beep will be heard and the screen will jump to Clear Zone screen.

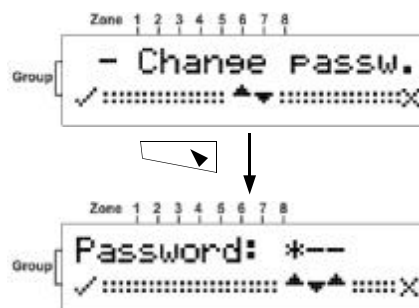
Clear Remote:

There are two options to clear remotes:

1. Transmit with the remote you want to clear; on the screen the number of the remote will be displayed, Press  for confirmation and the remote will be cleared.
2. Use the ▲▼ keys to select the number of the remote you want to clear and press  to confirm and the remote will be cleared.



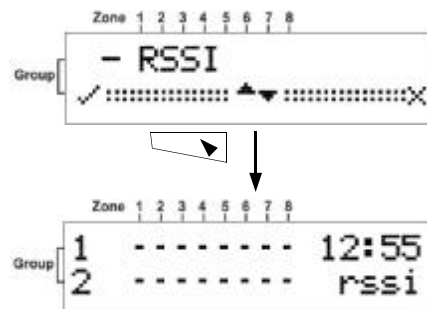
Change Password:



Type the new Password for example 123 ▲, ▼, ▼, ▲, ▲, ▲ and confirm with the  Button.

RSSI: Signal Strength.

This screen is to show the installer the strength of the received signal from the detector.



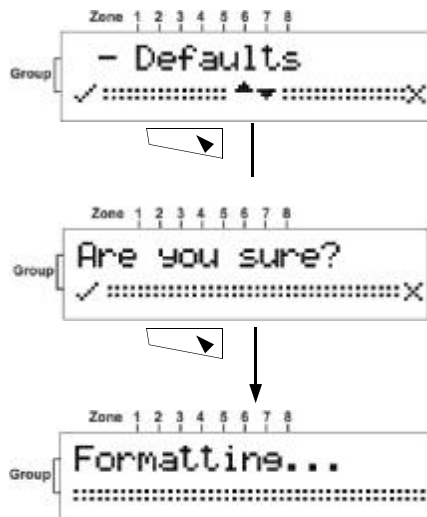
The value of the strength is indicating on numbers 1 to 9 and F (F-indicate 10 and 1 is the weakest).

Note: for this test you can use Tamper transmit or Alarm transmit.

Default:

This action will erase all the detectors, remotes and the events in the buffer.

It will not reset the Password.



Function:

While the Freewave SA is working it must be on the main screen.
In any others screen It will ignore all the events.

Outputs: Outputs 1 to 8 and Tamper are dry contact (are not related to GND)

Outputs 1 to 7: Normally closed. (100mA max)

Output 8: Relay C/O (C-Common, NC- Normally closed, NO- Normally open, 1Amp 24VDC)

Tamper: Normally closed.

STA Input: While this Input is "Low" it will record all the events to the Log buffer.

Alarm event: Will be displayed on the LCD screen and activate the assigned output to "Open" for 3 sec.

Tamper Event: Will activate the tamper and the assigned Output to "Open" until the restore, and will recorded to the memory log.

Supervision missing: If a detector is programmed as Supervised and the Receiver didn't received any transmission from it for more then 120 minutes it will indicate Supervision missing by warning beep every 1 minute and will record it in the memory log.

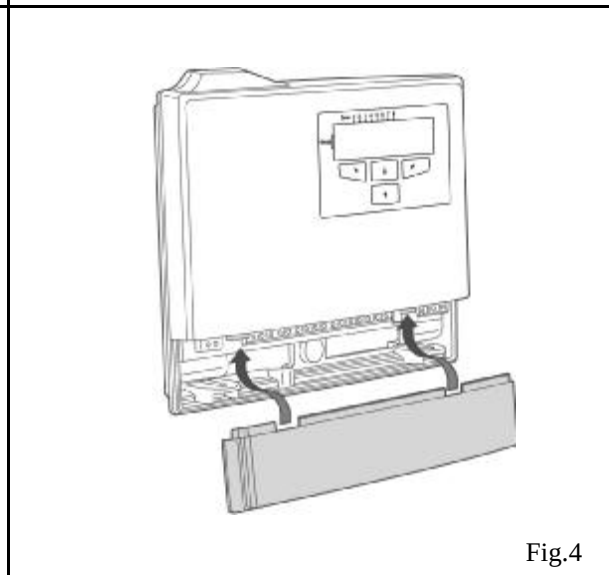
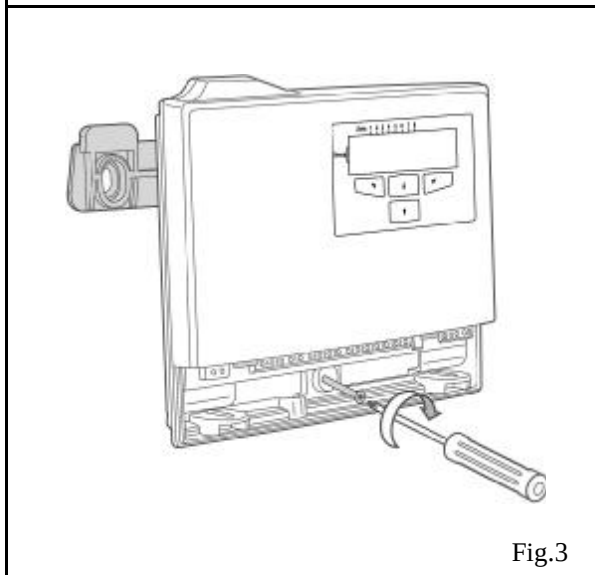
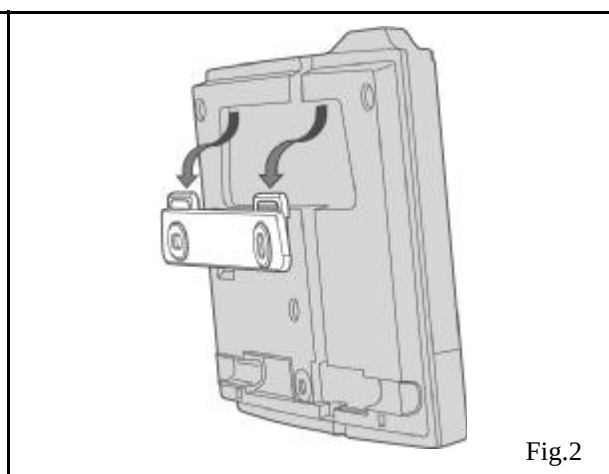
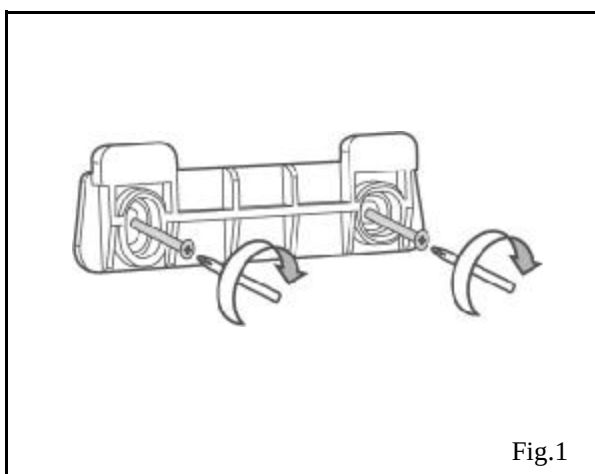
Detector Low Battery: While a detector will transmit a Low Battery the Freewave SA will record it on the Log events and will beep every 1-minute.

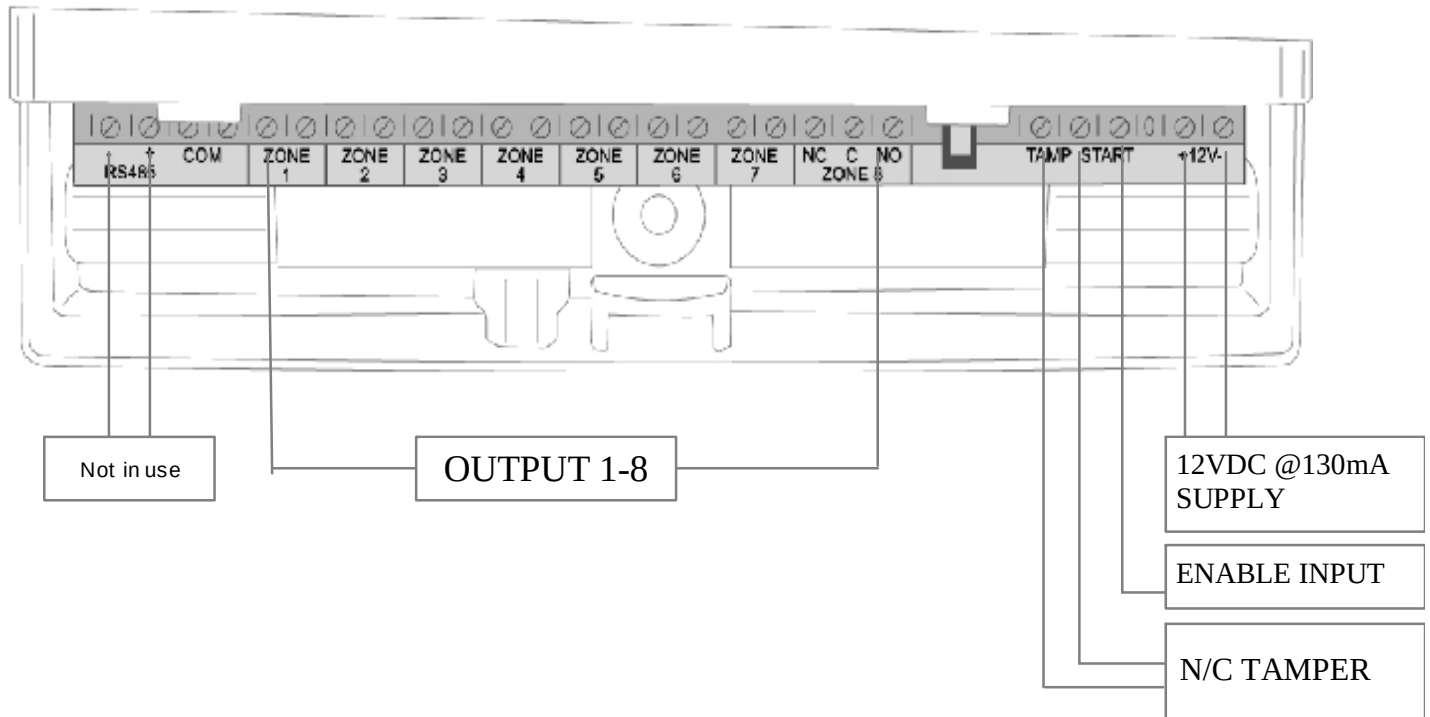
Note: The warning beeps can be stopped by pressing the  Button.

Installation Instructions:

Choose the right location for installation:

- *It's recommended to install the Freewave SA in a central Point to the wireless detectors.*
- *In an accessible place in order to view the status on the LCD when it's needed.*
- *Away from possible points of interference (such as switchboards).*
- Mount the Receiver using the supplied bracket as per fig 1&2





NOTES:

- Be aware that the Tamper opens if the Service cover is removed.

Technical Specifications:

Input Voltage: 10 to 15V DC.

Current Consumption: Max. 130mA

Outputs:.

Outputs 1 to 7: Opto MOSFET, Contact Resistance- 17 ohm, Current Capability - Up to 100mA.

Output 8: Relay, Contact Resistance- 0 ohm, Current Capability –1A.

Tamper: Opto MOSFET, Contact Resistance- 17 ohm, Current Capability - Up to 100mA.

STA Input: Keep this input connected to ground at all times.

Real Time Clock: Real time clock with back up battery for 2000 hours /5 years.

Wireless Detectors: Up to 64 –8 detectors to each Output.

Wireless Remotes: Up to 256.

Log Buffer: 64 records (FIFO).

Receiver Sensitivity: Up to 300 meter in open space.

CROW ELECTRONIC ENGINEERING LTD. ("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 distributor.

Crow warrants these products to be free from defects in materials and workmanship under normal use and service for a period of 1 year from the last day of the week and year whose numbers are printed on the printed circuit board inside these products (hereunder the "**Warranty Period**").

Subject to the provisions of this Warranty Certificate, during the Warranty Period, Crow undertakes, at its sole discretion and subject to Crow's procedures, as such procedures are from time to time, to repair or replace, free of charge for materials and/or labor, products proved to be defective in materials or workmanship under normal use and service. Repaired products shall be warranted for the remainder of the original Warranty Period.

All transportation costs and in-transit risk of loss or damage related, directly or indirectly, to products returned to Crow for repair or replacement shall be borne solely by the Purchaser.

Crow's warranty under this Warranty Certificate does not cover products that is defective (or shall become defective) due to: (a) alteration of the products (or any part thereof) by anyone other than Crow; (b) accident, abuse, negligence, or improper maintenance; (c) failure caused by a product which Crow did not provide; (d) failure caused by software or hardware which Crow did not provide; (e) use or storage other than in accordance with Crow's specified operating and storage instructions.

There are no warranties, expressed or implied, of merchantability or fitness of the products for a particular purpose or otherwise, which extend beyond the description on the face hereof.

This limited Warranty Certificate is the Purchaser's sole and exclusive remedy against Crow and Crow's sole and exclusive liability toward the Purchaser in connection with the products, including without limitation - for defects or malfunctions of the products. This Warranty Certificate replaces all other warranties and liabilities, whether oral, written, (non-mandatory) statutory, contractual, in tort or otherwise.

In no case shall Crow be liable to anyone for any consequential or incidental damages (inclusive of loss of profit, and whether occasioned by negligence of the Crow or any third party on its behalf) for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever. Crow does not represent that these products can not be compromised or circumvented; that these products will prevent any person injury or property loss or damage by burglary, robbery, fire or otherwise; or that these products will in all cases provide adequate warning or protection.

Purchaser understands that a properly installed and maintained product may in some cases reduce the risk of burglary, fire, robbery or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss or damage as a result.

Consequently, Crow shall have no liability for any personal injury; property damage or any other loss based on claim that these products failed to give any warning.

If Crow is held liable, whether directly or indirectly, for any loss or damage with regards to these products, regardless of cause or origin, Crow's maximum liability shall not in any case exceed the purchase price of these products, which shall be the complete and exclusive remedy against Crow.



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