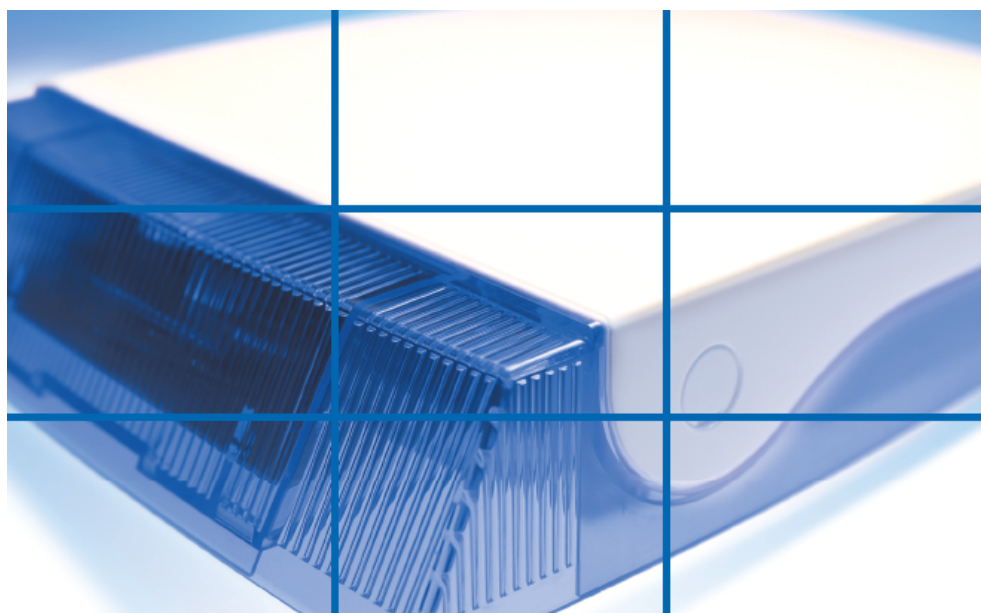


FR2_SIR Universal Wireless Siren with Strobe

Installation Guide

Edition II



Item: 4739_SIR (A4BKE). Rev 7, Mar 2012



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Device Compliance Standards

CE

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Manufacturing Compliance Standards

ISO 9001: 2000

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Introduction

The Freeko II universal wireless siren and strobe (item FR2_SIR) is composed of Transceiver Unit and Siren Alert devices.

The Transceiver unit is connected to Alarm System Control Panel; the panel sends its commands to activate the Siren by wireless communication Transceiver (receiver & transmitter)

Primary Tasks of the Siren System

Send commands from the control panel to the siren units in order to activate the high power Piezo siren and power LED strobe light.

Manage and report the status indications between the Siren Units and the Control Panel (Communication Status, tamper, arm, disarm and low battery).

Constantly monitors and synchronize the wireless communication from the Transceiver to each device in the system.

Transceiver Unit Description

The Transceiver Unit has two operation modes:

Connected to specific BUS (OEM products, not for Freeko II) and communicates to the Control Panel via this connection.

Connected to an alarm control panel via discreet inputs and outputs. This connection allows interface to any type of Alarm Control Panel.

New customers, or ordered system with programmed assigned siren: If your system supplied with wireless siren that been programmed don't change the programmed siren or transceiver, unless you must to do so or for training.

Freeko II Siren Features

- Jumper selection to switch between the two modes of operation – DIP switch 1 sets the operating mode (Bus – ON and Standalone - OFF)
- One transceiver controls up to eight sirens
- Two types of controls can be sent to each siren. One to activate/deactivate the siren, second to provide short beeps when arming and disarming the Alarm System.
- Compatible with Av-Gad and any Alarm Control Panel
- Two physical connections (IN-1 & IN-2) are used for both modes – For BUS mode IN-1= CLK, and IN-2 =DAT. Note: Bus mode is not available at present.
- Siren is protected by Tamper switch (optional for installation in separate housing).
- Tamper Out is used in both modes to signal the Control Panel about this condition
- Radio frequency jamming detection logic
- The unit has its Tamper Switch. It can be used if installed in separate housing. The Tamper Switch can be disabled by Dip Switch 2 if the Transceiver is installed in protected area (like inside Control Panel)
- In standalone mode IN-1 activates the siren (Piezo +LED) and IN-2 sends the indication of the arms or disarms of the control panel
- If the Siren is activated the Transceiver can send a reset control to shut it off
- Siren housing is available with Orange or Blue color (specify at order)

Pack Contains

Check that the frequency label on the siren and on the transceiver has the same marking (see figure 1), like 8F or 9F, if not you have a pair that do not fit.

- Outdoor siren & Orange or Blue Strobe light with battery inside. Keep the battery disconnected if not in use
- The siren transceiver electronic board in ABS box
- Installation manual

Siren Unit Features

- Outdoor IP43 with over 102 db sound level
- The Siren powered by none-rechargeable large battery pack (3.6V/14Ah Lithium), last for about three (3) years (depends on alarm duration).
- Four (4) mode jumpers are used to set the siren unit's features. The Siren activates the sound and an LED for short period (beeps) when Arming and Disarming controls are received. Control the beeps and flashes (on or off) by the option jumpers.
- Battery test generate every 18 hours.
- Multiple tamper switches protected (Front Cover Screws and Back tamper).
- Siren dimensions (H x W x D): 318 x 209 x 61 mm (12.5" x 8.2" x 2.4")

Communication Features

- Operating frequency is 868 MHz.
- The Transceiver communicates with the siren units every 1 min.
- Every seven minutes the Transceiver communicates over the bus (in BUS Mode) with the alarm system to report the status of the siren's system communication.
- If one of the siren units does not synchronize with the Transceiver after more than seven minutes the Transceiver notifies the control panel via the connected bus, if in BUS mode, by not sending (stopping) the Supervision messages as in normal operation. If in Standalone mode the Transceiver activates it's "Tamper Out" Signal after about 20 Minutes.
- If one of the siren units (up to 8) in the system reports a low battery condition the Transceiver will send the "Low Bat" status over the bus when in BUS mode. In standalone and in BUS modes extra beeps are added to the normal number of beeps that are heard when Arming and Disarming the System.
- The Transceiver is able to detect any jamming attempts and notifies the alarm system via the Bus (in BUS mode) and via the Tamper out signal in Standalone Mode.
- If the siren is activated for any reason (Alarm/Siren Tamper) it can be reset using the Control Panel's Keypad.
- If any siren unit is activated and not stopped by the User, it will automatically stop by a timeout timer after two minutes.
- Exception: Only In UK time out is 15 minutes (Jumper Selected)

Operating Modes

As mention above, there are two basic operating modes:

Bus mode – The Transceiver is connected to the specific bus *** **Not available for Freeko II *****

Standalone Mode – The Transceiver is connected to none bus Control Panel

Important Notice

The BUS mode is not available with the Freeko II products, it's OEM feature only

Physical Locations

Transceiver Unit

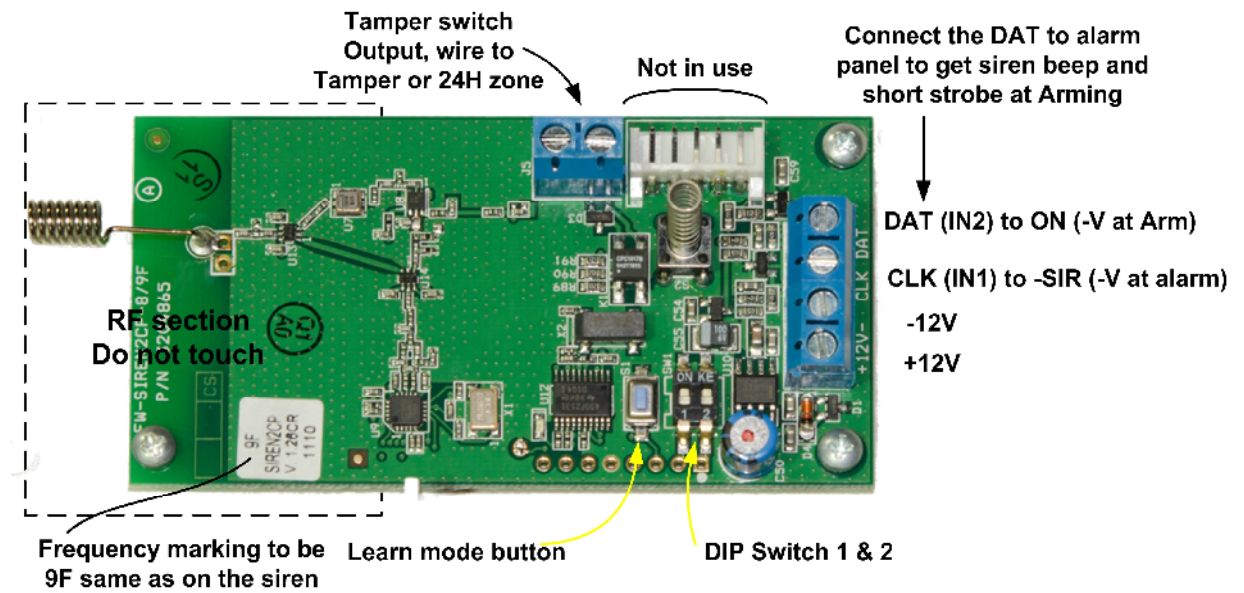


Figure 1: Transceiver wiring diagram

Figure 1A: Transceiver Dipswitch Setting

Dipswitch Setting	ON	OFF
DIPSWITCH 1	BUS Mode (<u>not</u> for Freeko II)	Set to OFF for standalone Mode (Freeko II)
DIPSWITCH 2	Tamper on board Enable	Tamper on board Disable

Figures 1, 1A: Transceiver Settings

Siren Unit

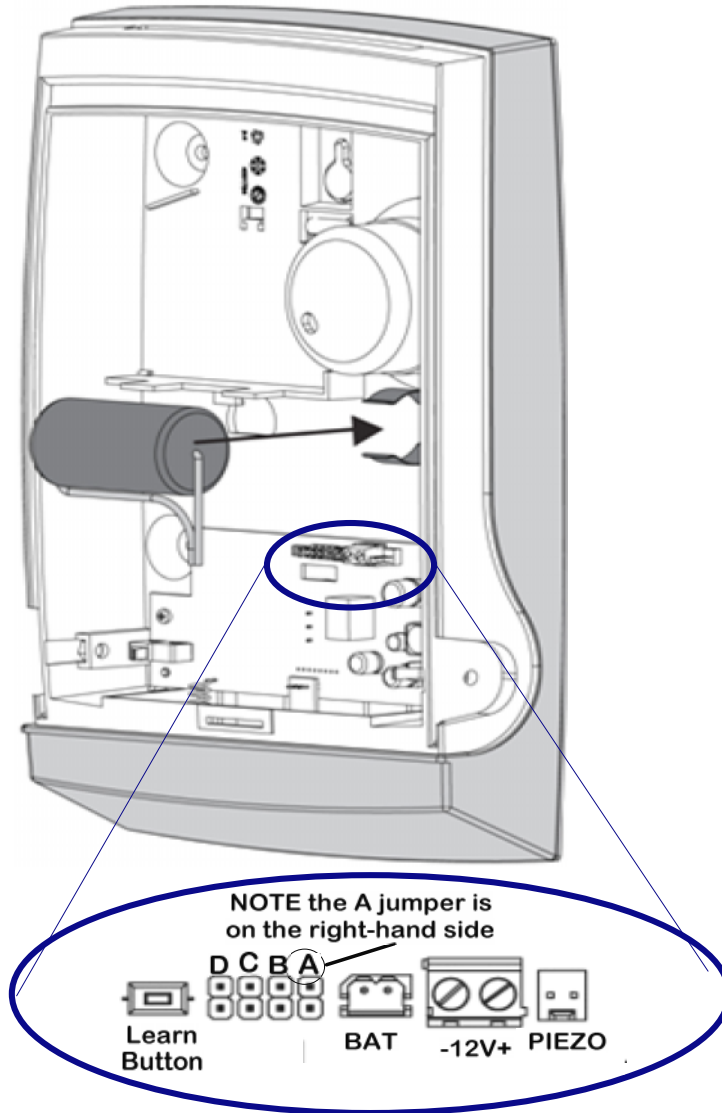


Figure 2: Siren Unit Location Diagram

Siren's Jumper's Mode Set-Up		
Jumper No.	Function if = 0 (Open)	Function if =1 (Close)
A	Area A Group	Area B Group (BUS Mode only)
B	NO Flashes with ARM/Disarm	Flashes appear with ARM/Disarm Arm: 2 Flashes (@LOW BAT 3+3 Flashes) Disarm: 1 Flash (@LOW BAT 2 Flashes)
C	NO Beeps with ARM/Disarm	Beeps sound with ARM/Disarm Arm: 2 Beeps(@LOW BAT 3+3 Beeps) Disarm: 1 Beep (@LOW BAT 2 Beeps)
D	2 Min Time out	15 Min Time out

Figure 3: Siren's Jumper's Mode Set-Up

Quick Reference

Important

Learning

Perform the Transceiver to the Siren learning units before installing the Siren unit. It's important to locate the Siren at about 3 - 4 meters distance from the transceiver. It's recommended to install the transceiver at least 2 meter from other RF receiver or sources (if there are any).

Tampers Switch Testing

The siren's Tampers (back and inside) are active and do not requires any settings. To test the siren's Tamper, keep it at idle for 3 minutes, with the front cover close with the two screws, after counting 3 minutes opening any Tamper will activate the siren.

Siren Memory Erasing

If a siren has to be re-programmed from zero for interfacing to new Transceiver reset required.

The reset activation is done by disconnecting the Power Supply and removing the battery and reconnects it while holding the Learn Switch for few seconds until the strobe start blinking.

Erasing the Transceiver Memory

In case of replacing or removing one Siren Unit from the installation, the memory of the Transceiver and other Sirens units should be cleared.

To clear the Transceiver memory, follow the next steps:

- Turn off the Transceiver power.
- Press continuously on Learn button and then power-up the Transceiver.
- Keep pressing until the Blue LED will blink fast 3 times.
- Release the Learn Button
- Memory clear completed.

Learning the Siren (Programming for Standalone)

Learning the siren step by step, arrange 12V or control panel for Transceiver power.

Locate the Siren at about 3 meters distance from the transceiver.

Instruction	Description
1) Erase the memory at Siren and Transceiver	See this page
2) At Transceiver set the DIP switch 1, 2 to OFF	As shown in fig. 1
3) Power up the Transceiver	Wait until LED is off (not blinking)
4) Power up the siren (insert the battery wire)	Wait until strobe light is off (about 60 sec's)
5) At Transceiver momentary press Learn switch	Blue LED start flashing
6) At siren hold learn switch (2-3 sec's) until the Transceiver Blue LED turns to solid ON	Notice that the Transceiver Blue LED turns off
7) Close the siren front cover with the two screws on front surface that keep the back Tamper close as well	All Tamper switches must be close

Testing the Siren (Standalone)

Verify that the siren front cover and back Tamper are fully close (both screws of cover tighten to the end), notice that the siren strobe and sounder are off, apply -V to the Transceiver CLK terminal (see fig.1).

Connecting the Transceiver at Standalone Mode

In standalone mode it is not required to register (learn) the Siren Transceiver with the Alarm Control Panel.

During setup and learning mode it's important to locate the Siren at least 2 meters from the transceiver to insure the RF communication is at good level.

Wiring Transceiver in standalone mode

1. Ensure that the Transceiver is located in an area that ensures a strong signal to the siren cluster.
2. Disconnect the mains power to the Control Panel.
3. If the Transceiver is inside its own enclosure, remove the cover.

OR

- If the Transceiver is to be installed inside the control unit, remove the cover.
4. Disconnect the control system battery.
 5. On the Transceiver card set the DIP switch 1 to OFF standalone mode. See Figure 1 on page 4 for location of the DIP switch.
 6. If Transceiver is installed in a secure location set DIP switch 2 to OFF (down). This disables the tamper circuit. When DIP switch 2 is ON the tamper is enabled
 7. Use the standoffs spacers supplied with the unit to mount the Transceiver in an external housing.
 8. Connect the Transceiver to Control Panel signals' per the table and figure 3 below.
 9. Reconnect the battery and plug the control panel unit back into the mains
 10. Do not close the cover at this time
 11. Ensure that the panel is powered up
 12. Go to found above

Control Panel's Connector	Transceiver Connector
Siren Activation Control Output	CLK (IN-1) to - SIR (if AV-Gad)
Arm/Disarm Status from Panel	DAT (IN-2) to -ON (if AV-Gad)
-12V	-12V
+12V	+12V
Tamper zone input to Control Panel	Tamper Out

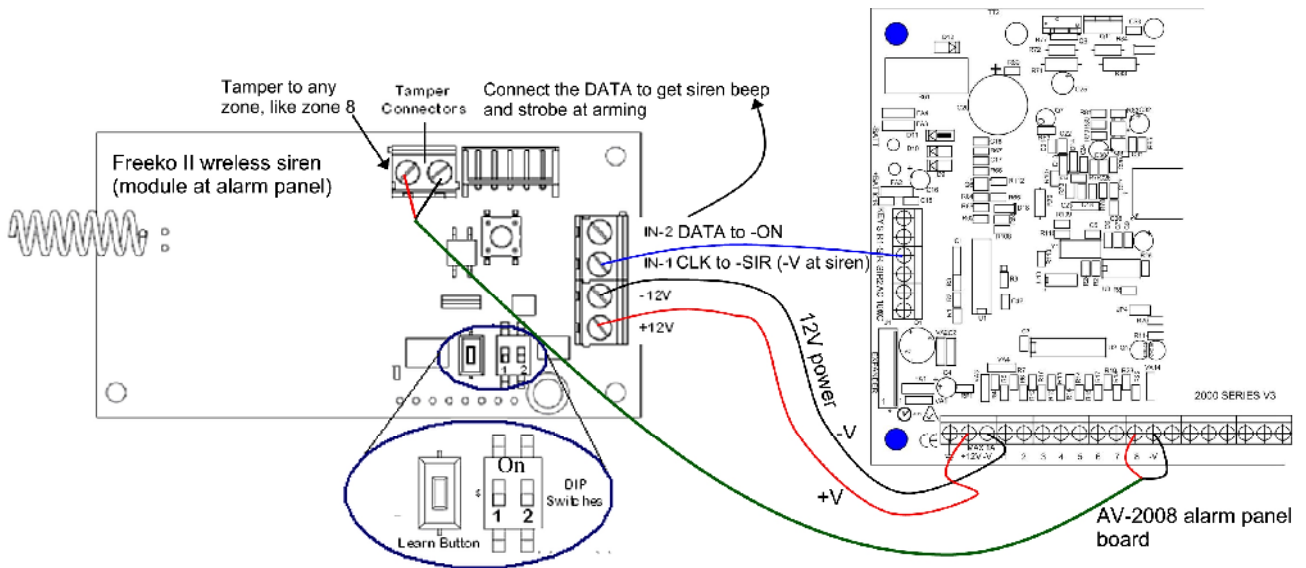


Figure 3: Unit Installing – Wired to Av-Gad alarm panel

Important: In installation that the Freeko siren is interfaced with Freeko II receiver or wireless alarm panel to obtain the siren beeps upon arming or disarming a relay type AV-01 is required. Refer figure 4. If wired without rely the receiver may be lock or other malfunction.

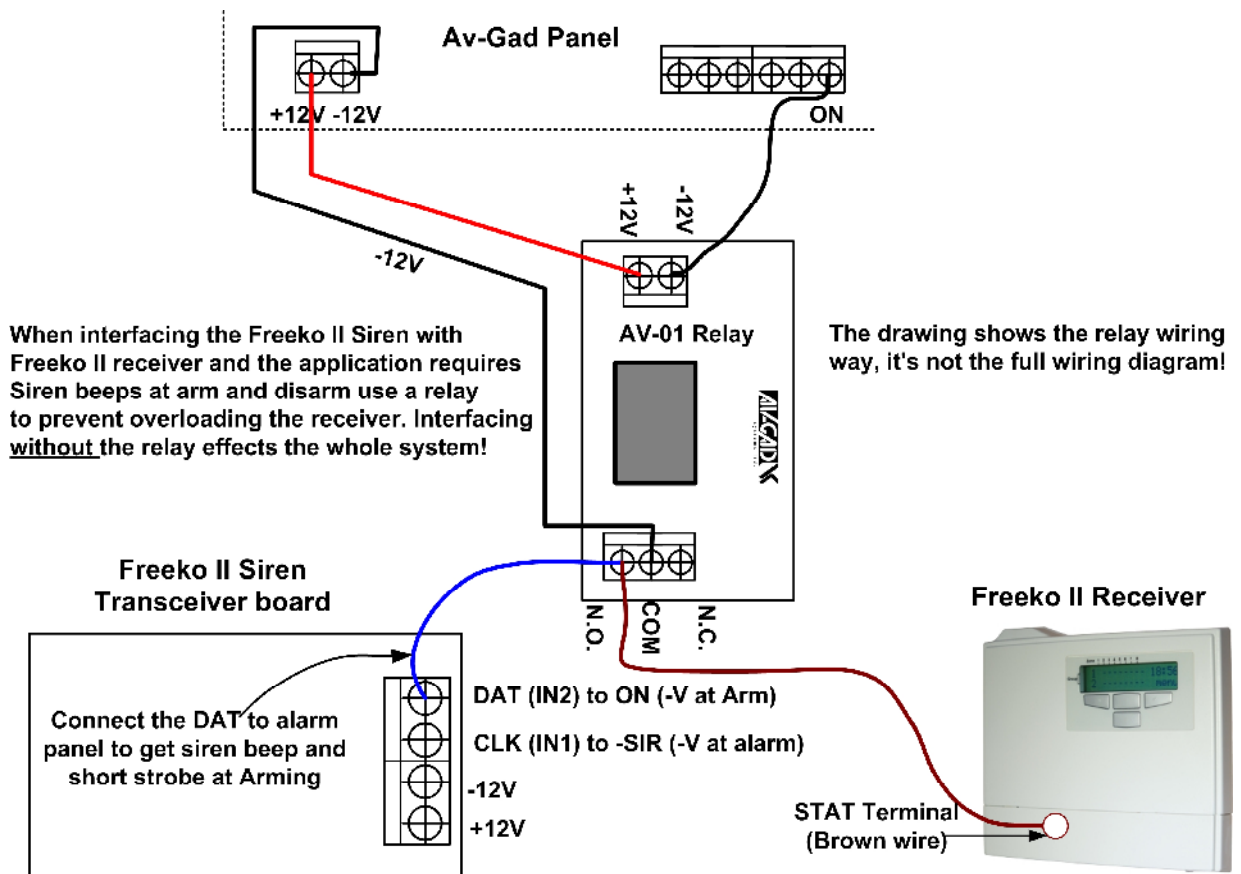


Figure 4: Freeko II siren to activate beeps at arm & disarm

Installing the Siren System

Siren Unit Installing

It is recommended to install the siren on a flat surface in hard to get location.

1. Choose a location for each one for the installation of each siren units. Make sure that there is Radio coverage to this location from the Transceiver. Place the Siren Units high enough off the ground in order to make them inaccessible to passers-by and well within the wireless range of the cluster Transceiver.

2. Remove the two pivot screws that secure the siren cover.

Note: Removing the screws activates the inside Tamper switches (2), there is one Tamper for each screw.

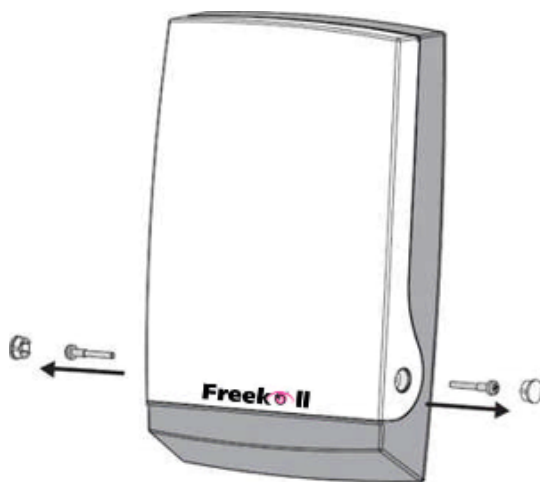


Figure 5: Siren Unit Installing – Screws activate the Tamperers

3. Remove the siren cover.

4. Place the unit on the installation surface and mark out the four screw holes.

Setting the Siren Unit Address Jumpers

Each unit in a system must be learned by the Transceiver as described above

Siren's Jumper's Mode Set-Up		
Jumper No.	Function if = 0 (Open)	Function if =1 (Close)
A	Area A Group	Area B Group
B	NO Flashes with ARM/Disarm	Flashes appear with ARM/Disarm
C	NO Beeps with ARM/Disarm	Beeps sound with ARM/Disarm
D	2 Min Time out	15 Min Time out

Figure 6: Siren Jumpers set-up

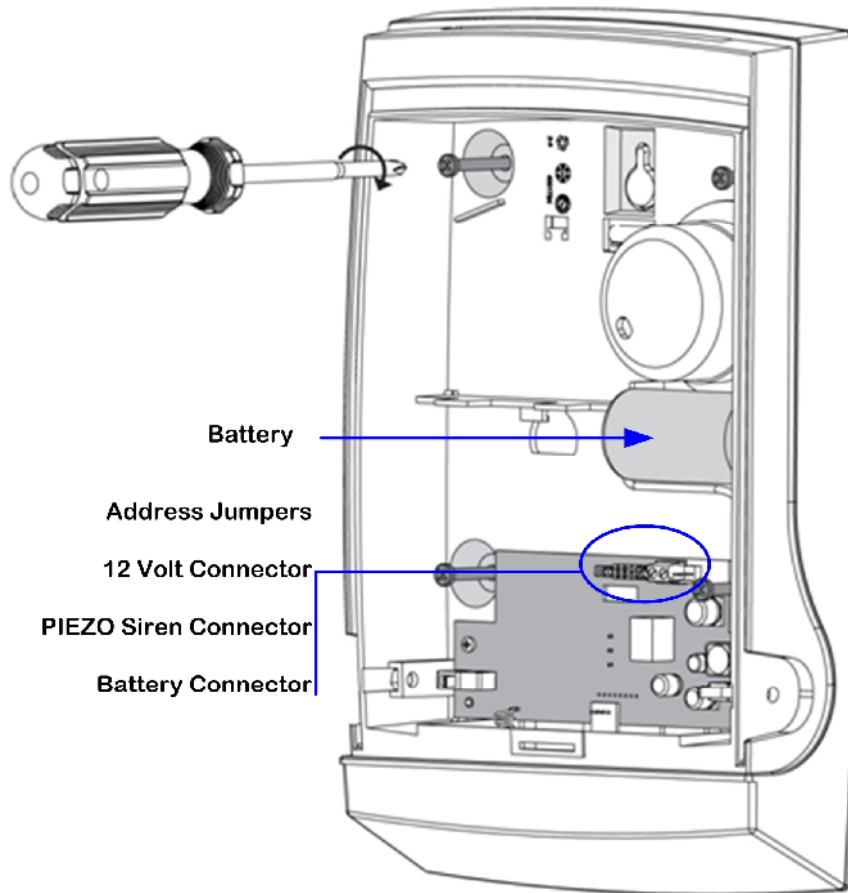


Figure 7: Open Siren Unit

5. Use an eight (8) mm bit to drill the holes
6. Fix the unit onto the installation surface.
7. Ensure that the Piezo siren is connected to the **Piezo** connector (as shown below).

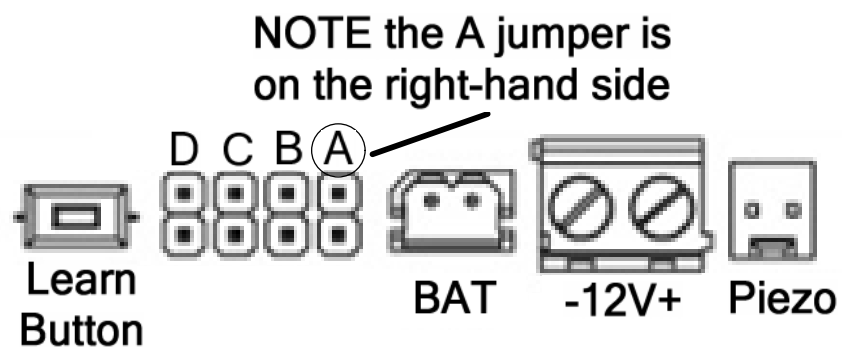


Figure 8: Siren Connectors

8. Insert the battery into the battery clip and connect it to the **BAT** connector (shown above).

Siren unit Mode Jumpers

1. As mention above, the Sirens that are connected to one Transceiver can be divided to two groups from operation purposes. Jumper A (See above) is setting these two groups. Jumper C is enabling the short beeps when arming and disarming the Control Panel - 2 beeps for Arm and 1 beep for Disarm. Notice figure 4 when interfaced to Freeko II system.
2. Jumper B is enabling the short Flashes from the Power LED when Arming and Disarming the Control Panel
3. Jumper D is setting the time-out of the siren; 2 minutes and 15 Minutes Mode Functions and Maintenance

Low Battery Indication

The battery is tested once a day (every 18 hours) and after power-up.

When the siren battery is low more beeps are added to the Arm/Disarm beeps in order to indicate the LOW BAT condition of the siren unit. When arming the siren there are 3 beeps, short pause and another 3 beeps instead of two beeps and when disarming the siren there will be 3 beeps instead of one.

This Low Battery indication's beeps and flashes will be "on" no matter what the status of Mode Jumpers B and C.

In Bus Mode the Low Battery status will be reported to the Control Panel via the BUS and will be indicated as Device's Low Bat Alarm.

Changing the Siren Battery

To change the internal battery:

Remove the two pivot screws as shown in Figure 2

Disconnect the Power Supply 12V and replace the battery by fresh one.

Connect the Power supply.



Note: Battery replacing by authorized installer only

The Siren will beep once and then the LED power will blink for a period of 30 seconds, please wait to the end of the blinking before activating or learning.

Specifications: Freeko II Siren

Sound Pressure Level	More then 102dB
Siren Tone	Yelp
Sounder Frequency Range	2700 ±500 Hz
Flash Light	Power LED (50 Lumens)
Power Supply and Battery	9V÷15V DC or Battery 3.6V /14Ah Lithium or both
Current consumption	Standby: 110uA ±10uA@ Battery operation 20mA±2mA@12V DC operation.. Alarm: Average: 950mA @ Battery operation. Max: 1.8A peak@ Battery operation. Average: 200mA @ 12V DC operation. Max: 1.2A peak @ 12V DC operation.
Power Supply current limitation	Up to 1.8A
Maximum Power	Average: 4W, Max peak: 17W
Siren Alarm Period	2 min/15 min (According the status of Jumper D)
Low Battery Level	2.8V
Low Battery Indication	LED Flash @ Arm/Disarm (According the status of Jumper B&C)
Arm/Disarm Indication	LED Flash: Arm-1 Disarm-3 LED Flash with Beeps: Arm-1 Disarm-3 (According the status of Jumper B&C)
Supervision	Sync signal every 1 min.
Tamper Switch	Normally Closed. After power up the Tamper will activate only after the second opening and then Activate the Piezo for 2 min or till reset by the C.P.
Battery Life	> 4 Years (Based on 2 min Piezo operation/month)
Material	External Box: Polycarbonate (3mm thick)
Dimensions	L = 318, W = 205, H = 75 (mm)
Weight (Without Battery)	1.2 Kg
Operating temperature range	-30oC to +70oC
RF frequency courier	868 MHz
Case Protection Level	IP 43 Plastic PC with UV protection Conformal coated circuit board

Specifications: Transceiver Unit (at the panel side)

Power Supply	9V-14V DC
Current Consumption	Receive: 30mA±5mA Transmit: 40mA±5mA
Max power	1W
Operating temperature range	-10°C to +50°C
Ambient temperature, storage	-20°C to +70°C
Inputs	IN-1: Trigger Alarm IN-2: Trigger Key Arm/Disarm BUS Connection via Fast Connection or Terminals
Outputs	Tamper Out Terminals, Dry contacts 12V DC/100mA
Indication	Blue LED indicates Rx/TX
Tamper	Connected by hardware to TAMP OUT output. Can be ignored (see Dipswitch 2)
Dipswitch 2	Dip#1: Define the Mode operation #1 On: BUS Mode. #1 OFF: Universal Mode Dip#2: Define Tamper #1 On: With Tamper #1 OFF: Without Tamper
Dimensions	L = 125, W = 70, H = 25 (mm)
RF frequency courier	868 MHz

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