

Required Tools

- ▶ Screwdrivers
- ▶ Wire stripper and wire cutter
- ▶ Crimper
- ▶ Adjustable wrench
- ▶ Voltmeter
- ▶ Drill and assorted bits
- ▶ Zip ties
- ▶ Bullhorn Tools Mobile App



WARNING: Turn off rectifier input power prior to installation. Use a digital voltmeter to confirm that rectifier output voltage is less than 5 V DC.

For a complete list of safety warnings and requirements, refer to the **RM5 Series User Guide** available at <https://support.aiworldwide.com>

Installation Video



Hardware Installation Steps

Refer to the insatallation diagram on page 3 for connection and wire routing details

1 Install the RM5 Power Supply

IMPORTANT: Only RM5 power supplies should be used with RM510C/RM510S units. **DO NOT** connect the RM5 power supply directly to AC power mains.

- Before turning off the rectifier, use a digital voltmeter to identify a 10-30 V AC power source across the recifier's secondary taps (separate from the taps bridged by the bus bar to deliver rectifier output voltage).
- Turn off the rectifier's input power.** Connect the input cables from the RM5 power supply to the 10-30 V AC power source. Secure connections with the provided nuts.
- The RM5 power supply can be secured to a ferrous metal surface using the integrated magnetic mounts, or to any other surface using the included screws.

2 Install the REL2510 Relay

IMPORTANT: The REL2510 Relay is rated for 70 Volts RMS Maximum. For installtions requiring higher voltage, an alternate relay should be used.

- Connect the input cables from the REL2510 relay to the 10-30 V AC power source identified in **step 1a** and secure connections with the provided nuts.
- Replace the bus bar on the the rectifier's secondary taps with the REL2510 relay's output cables. Secure the connections with the provided nuts. The bus bar **SHOULD NOT** be reinstalled.
- The REL2510 relay should be secured to a ferrous metal surface using the integrated magnetic mounts, or to a non-ferrous metal surface using the included screws. **DO NOT** use adhesives or any other materials between the bottom of the REL2510 relay and the metal surface it contacts.

3 Install the RM5 I/O 4 Module

IMPORTANT: The RM5 I/O 4 module must be installed inside the rectifier cabinet or an alternative enclosure.

- The RM5 I/O 4 module can be secured to a ferrous metal surface using the magnetic mounts, or to any other surface using the included screws.
- Connect wires to the included terminal blocks as per the installation diagram on page 3. On the Bullhorn website, channels 1 and 2 are preconfigured to read rectifier amps and volts, respectively.
- See the RM5 I/O 4 module label for maximum channel input ratings. Ensure all system connections make solid contact and are protected from moisture and dirt to prevent shorting or corrosion.

4 Install the RM5 Series Dome

IMPORTANT: The RM5 Series dome must be mounted outside of the rectifier cabinet with a clear view to the sky.

- Mount the RM5 Series dome in the desired location using the included screws. Use the provided mounting bracket if necessary.
- The RM5 Series dome should be mounted facing straight up with no obstructions between it and the sky. Surrounding structures may adversely impact the quality of cellular or satellite signal reception.
- Feed the included M8 cable through a 1/2 inch hole drilled through the bottom of the rectifier cabinet and secure it with the included grommet. To avoid damaging the M8 cable, hand tighten connections at the RM5 Series dome and RM5 I/O 4 module.
- Confirm the green **Dome Status** LED is lit on the RM5 I/O 4 module.

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WARNING: If wires are to be buried or covered, use conduit to protect the wires.



Download Bullhorn
Tools Mobile App

IMPORTANT: Restore input power and confirm the rectifier is functioning normally before proceeding with testing and validation steps.

For configuration details, refer to the **Bullhorn Tools Mobile User Guide** available at <https://support.aiworldwide.com>

Bullhorn Tools Mobile
Training Video



Testing & Validation Steps

Complete the following steps before leaving the installation location

1 Activate Bluetooth and Connect to the Unit

IMPORTANT: To complete testing and validation, you must install the Bullhorn Tools Mobile App on your Bluetooth enabled mobile device.

- a Activate Bluetooth on the RM5 I/O 4 Module by swiping a magnet across the access point (marked with a Bluetooth logo on the label). A blue flashing LED on the RM5 I/O 4 Module indicates that unit is ready to pair with a Bluetooth enabled mobile device.
- b Launch the Bullhorn Tools Mobile App on your Bluetooth enabled mobile device. Nearby RM5 Series units in pairing mode will appear on the screen. If your RM5 Series unit does not appear, swipe down to refresh the screen.
- c Tap the name of the unit you want to connect with. Tap **OK** in the confirmation dialog box.

2 Send a Test Message

IMPORTANT: Wait for the *Unit Info* screen to display valid RSSI, Lat, and Lon values before attempting to send a test message.

- a Tap the menu icon in the upper left corner of the screen and select **TestMessage**.
- b Enable **Auto Refresh** on the *Test Message Status* screen and tap the **Send Test Message** button. Depending on factors including RSSI, network traffic, and/or satellite coverage, it may take several minutes for a test message transmission to complete.
- c The test message transmission has completed successfully when the *Test Message Status* screen shows a **Transmission Successful** notification.

3 Validate Interruption

IMPORTANT: Follow these steps if you have installed a relay and are using the RM5 Series unit to interrupt your rectifier.

- a Tap the menu icon in the upper left corner of the screen and select **Interruption**.
- b Configure the *Interruption* screen settings as follows:
 - ▶ Interruption Mode - set to **Interruption On**
 - ▶ Output Mode - set to match your relay (**Normally Closed** for the REL2510 relay)
 - ▶ On/Off Times - set On Time to **3s**, set Off Time to **1s**
 - ▶ Cycle Begins With - set to **On**
- c Tap the **Update** button. Using a digital volt meter, read the rectifier's current output to verify that interruption is occurring.
- d Set Interruption Mode to **Interruption Off** and tap the **Update** button before exiting the Bullhorn Tools Mobile App.

(Continued on next page.)

Installation Diagram

