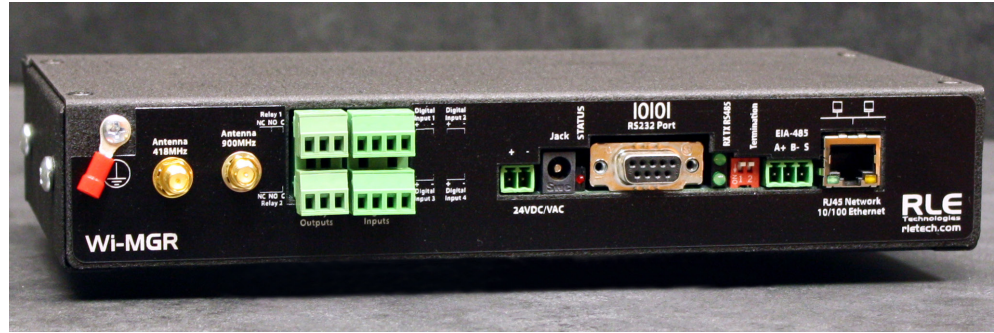


# Wi-MGR Quick Start Guide



Thank you for purchasing a Wi-MGR wireless sensor network manager. This guide outlines basic installation and configuration. Additional support information, including the User Guide, is available on our website - [www.rletech.com](http://www.rletech.com). Before you install and configure your device, check the website to ensure you are using the most recent version of our documentaiton.

If you need additional assistance, contact RLE Technologies at [support@rletech.com](mailto:support@rletech.com).



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## Installation Supplies

### Included with the Wi-MGR

- Wi-MGR device
- 24VDC wall-mount power supply
- CAT 6 Crossover Network Cable
- Two antennae - 418MHz (longer shafts) & 900MHz (shorter shafts)
- Rack-mount bracket

### Available from RLE, sold separately

- 18 – 22 AWG ground wire
- Wireless sensors and point repeaters, as necessary for your application

### Optional supplies

- 18AWG shielded twisted pair stranded copper wire - no more than 2000ft (610m) (Modbus RTU communication via EIA-485 port)
- Straight-through CAT5 cable
- Straight-through, nine-pin serial cable

### Network Communications Information

Consult your IT administrator and determine the following Wi-MGR network settings:

- IP Address \_\_\_\_\_
- Subnet Mask \_\_\_\_\_
- Default Gateway \_\_\_\_\_

## Mount the Device

RLE recommends installing the Wi-MGR in a 19-inch rack and provides mounting brackets with each Wi-MGR. Remove the screws from the side of the device, put the brackets in place, and reapply the screws. Use the proper anchoring method to mount the unit securely.

## Provide a Power Supply and Ground Connections

Power the Wi-MGR from a UPS supply so the device can send alarm notifications during a power outage. Power can be supplied to the Wi-MGR through either the power jack and the provided wall adapter or the power supply terminal block.

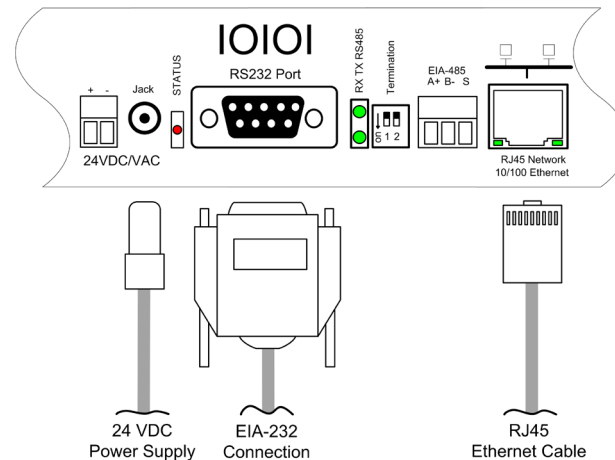
1. Connect an 18AWG ground wire from the ground terminal (marked on the upper left side of the enclosure) to a suitable earth ground.
2. Plug the provided wall adapter into the jack at P1 and the UPS outlet. The wall adapter has a five foot (1.524m) power cord.
3. If you're providing your own power supply, connect 24VDC to the unit through the power terminal block.

## Connect the Wi-MGR to the Network

The Wi-MGR needs network connectivity in order to access the web interface, configuration screen, and to activate the email (SMTP), BACnet slave, Modbus slave, and SNMP features. Use the provided CAT 6 crossover cable to the 10/100BASE-T Ethernet port directly to a PC. Use a straight-through CAT 5 cable (purchased separately) to connect the Wi-MGR to a network hub or switch.

## EIA-232 Connection

The Wi-MGR can be connected directly to a PC through its EIA-232 port. Designed for temporary use, this connection supports IP configuration, firmware downloads, and troubleshooting. Connect via a straight through, 9-pin serial cable.



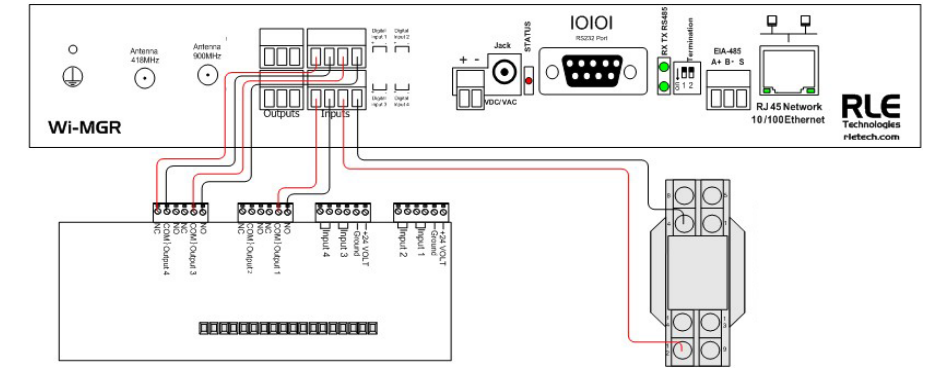
## Connect the Antennae

The Wi-MGR is shipped with a 418MHz, 6-foot cable antenna and a 900MHz, 6-foot cable antenna. The 418MHz antenna has longer shafts; the 900MHz antenna has shorter shafts. Plug each antenna into its labelled jack on the front of the Wi-MGR.

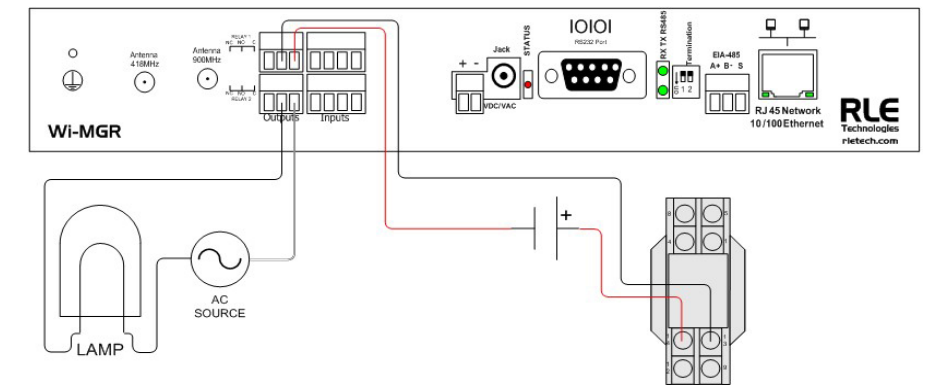


## Wire the Relay Outputs and Digital Inputs

Four (4) wired digital inputs and two (2) wired relay outputs provide expanded monitoring and notification capabilities. Your wired inputs may look like this:



Wired outputs may look like this:



Configure the digital inputs and relay outputs in the Configuration > Digital IO section of the Wi-MGR web interface. Refer to the Wi-MGR User Guide for more detailed information.

## Set the IP Address Using a Web Browser

If you have not set an IP address before, consult your IT Department for support.

Note: The default IP address for the Wi-MGR is 10.0.0.188  
The default Subnet Mask is 255.255.255.0  
The default user name is fds (all lowercase)  
There is no default password - leave the password field empty.

1. Contact your IT Department to obtain an available IP address, Subnet Mask, and default Gateway.
2. Plug a crossover network cable (provided) into the laptop or workstation that will be used to configure the Wi-MGR.
3. You'll need to change the IP address and Subnet Mask of your computer so it can communicate with the Wi-MGR in its factory-configured state. Before you change anything, write down the original IP address and Subnet Mask of your computer - you'll need to revert back to these original settings once the Wi-MGR is configured.
4. Change the IP address and Subnet Mask of the computer from its existing address to one that will allow it to communicate with the Wi-MGR, such as 10.0.0.189. It may be beneficial to set the IP address to one that is one number different from the Wi-MGR's IP address (10.0.0.188).
5. Connect the other end of the crossover cable to the Ethernet port on the back of the Wi-MGR.
6. Access the Wi-MGR through a Web browser — type the Wi-MGR's IP address (10.0.0.188) into the location bar. When prompted, enter the Wi-MGR user name, which is fds. There is no default password, leave it blank.
7. Select the Configuration Menu link, then change the IP address, Subnet Mask, and default Gateway to the one provided by your IT Department. Press the Submit Changes button. The Wi-MGR will save the new IP address, Subnet



Mask and default Gateway and reboot.

- Change the IP address of the computer back to its original IP address. If the computer was configured as DHCP (the network domain controller assigns an IP address) return it to this state. This may require assistance from your IT Department, or you may need to consult the computer's manual.
- The computer and the Wi-MGR are now both configured to communicate on the network. Both should be accessible via the network. Connect the PC and the Wi-MGR to the network. From the PC web browser, type in the new IP address of the Wi-MGR. Enter the user name and password as stated above to verify network access to the device.

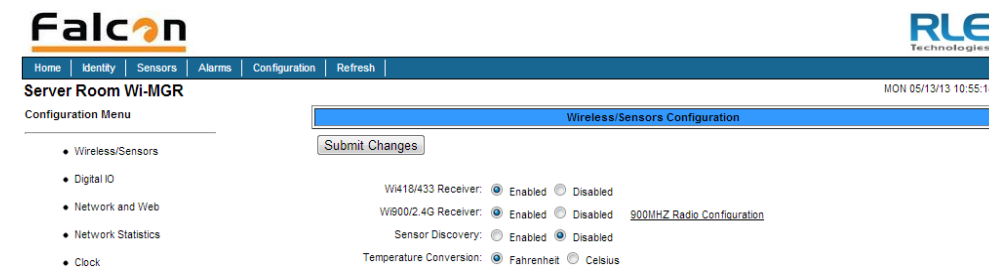
## Sensor Discovery

Sensor Discovery is a powerful, time-saving feature when used correctly. It allows the Wi-MGR to discover wireless sensor input signals within its transmission radius, and enters these sensors into the Sensor Summary page. **Under normal operating conditions and by default, sensor discovery should be turned OFF.** Enable this feature when you are installing or locating new sensors. Turn this feature off once all your sensors have been discovered. If you do not turn off Sensor Discovery, the Wi-MGR will continue to attempt to find new sensors - this can cause a device malfunction, or contaminate your list of active sensors with additional sensors that do not exist.

While it is easiest to use the Sensor Discovery feature, sensors can also be added to the Wi-MGR manually or via a .cfg file. Consult the Wi-MGR User Guide for more information pertaining to these methods.

To configure sensors through Sensor Discovery, follow these steps:

- In the Wi-MGR's user interface, go to the Configuration>Wireless/Sensors page. If it is not already enabled, click the Enabled radio button for Sensor Discovery.



Click the Submit Changes button to save the modification and enable the sensor discovery.

- Take off the sensor's lid by pinching on the outer corners of the lid.
- With the lid off, remove the polyester tab from the battery. Replace the lid.
- Turn the sensor over to show the product label on the bottom. This label contains the serial number of the sensor - you'll find it printed above the bar code. The serial number is unique to each sensor, and appears in the table on the Sensors page of the web interface once the sensor has been discovered by the Wi-MGR.
- Go to the Sensors page of the Wi-MGR's web interface and confirm the placement in the sensor discovery list.
- Place a label or other marking on the sensor to show its index number.
- Once the sensors have been discovered, turn off the Sensor Discovery option in the Configuration>Wireless/Sensors page of the Wi-MGR's user interface. If you do not turn off the sensor discovery feature, the Wi-MGR will continue to attempt to find new sensors. This could cause a device malfunction, or contaminate your list of active sensors with additional sensors that do not actually exist.
- Note each sensor's index number and location. Reference Chapter 3 in the User Guide to learn how to enter the location and any other necessary identifying information in each sensor's configuration information.
- Once you have configured the Wi-MGR, save a copy of the system configuration.

## Troubleshooting

Basic Wi-MGR troubleshooting information is included here. More in-depth troubleshooting is available in the Wi-MGR User Guide, which can be found online at [www.rletech.com](http://www.rletech.com).

### Sensors Are Not Automatically Discovered by the Wi-MGR

If an installed wireless sensor is not detected by the Wi-MGR, it is either too far away from the Wi-MGR, or there is an obstruction in its path. To determine the source of the problem, remove the sensor from its installed location and place it near the Wi-MGR. If it's then discovered by the Wi-MGR:

- Its desired location may be too far away. Move the sensor away from the Wi-MGR in small increments. This will help you determine the distance threshold of the sensor.
- An obstruction is blocking the signal. Either move the sensor, or install a repeater to relay the signal.
- If it's a single sensor application, installing a 900MHz sensor may be more cost-effective than a repeater.

If the sensor is still not discovered by the Wi-MGR:

- Verify the sensor's serial number. Make sure you're looking for the correct sensor at that position.
- Remove the sensor's cover and make sure the battery pull tab has been completely removed.
- Check to see that the heartbeat LED is blinking, once every 10 seconds. You'll find the red LED in the bottom right corner of the circuit board.
- If the red LED is not blinking, ensure there is not a gap between the battery clips and the side of the battery. Remove the battery, gently squeeze the clips in, and replace the battery.
- Check the battery's voltage. If the battery is reading a low voltage (lower than 3.4VDC), replace the battery with a 3.6V lithium AA battery.

### "Ghost" Sensors

This issue may occur when wireless sensors are used in conjunction with a Wi-MGR. When you installed your sensors, the automatic Sensor Discovery feature on the Wi-MGR was enabled. Initially everything configured correctly, but when you check the Wi-MGR several days later, it reports far more sensors than you have installed, and some of the reported data is very old.

When you configured your system, you left the Sensor Discovery feature on the Wi-MGR enabled. The sensors sometimes transmit messages with garbled data packets, and the Wi-MGR has interpreted the garbled data as new sensors. The "new" sensors have been added to the interface. To avoid this problem, you must disable the Sensor Discovery feature in the Wi-MGR once the initial configuration is complete and the Wi-MGR has discovered all the sensors.

To fix this issue once it's occurred:

- Turn OFF the Sensor Discovery feature in the Wi-MGR.
- Use the Wi-MGR interface to delete the "ghost" sensors. There are two ways to delete sensors:

Option 1:

- Click the Configuration link at the top of the page.
- Click the System link on the left side of the page. You'll see a box with a Delete Sensor Range button on the right side of the page.
- Enter the start and end sensor numbers for the range of sensors you'd like to delete. If you'd like to delete just one sensor, enter that sensor's number as both the start and end points of the sensor range.
- Click the Delete Sensor Range button.

Option 2:

- Click the Sensors link at the top of the page. You'll see a list of all the sensors the Wi-MGR is monitoring.
- Click on the number of the sensor you wish to delete. You'll be taken to the configuration page for that sensor.
- Delete the information in the Sensor Type ID field, the Description field,

and the Serial Number field. Click the Submit Changes button.

- Repeat the process for each sensor you need to delete.
- Once the "ghost" sensors are all deleted, there may be gaps in your list of sensors - if you needed to delete the sensors in spots 4, 7, and 9, these sensor numbers are now blank. You can renumber the existing sensors to fill in these gaps.
- To renumber your sensors, return to the Sensors page. Click the number of the sensor you wish to renumber.
- Scroll to the bottom of the page, and type the new number in the Move sensor position to: box. Click the Submit Changes button. You'll be returned to the Sensors page, and the sensor will appear in its new location in the list. Repeat this process for each sensor you wish to renumber.

### Sensor Issues

The transmission range of a wireless sensor depends on the distance between the sensor and the Wi-MGR, and the number of obstacles between the two. The more obstructions between the devices, the weaker the signal becomes.

Do not install a wireless sensor inside a solid metal cabinet. This can interfere with its transmission.

### Sensor Battery Issues

When the protective tab is pulled to activate a sensor's battery, the metal terminal clip on the PC board can bend slightly - not enough to see, but enough to cause intermittent connection with the battery. If this happens, the sensor will either operate erratically or not work at all. To fix this problem:

- Remove the battery.
- Gently squeeze the battery clips toward each other, bending them slightly.
- Insert the battery.
- Replace the cover. Press the button in the center of the sensor to reset it.

The small red sticker near the positive terminal of the battery may release some residue on either the battery terminal or the battery clips. This residue may affect the function of the battery. To ensure this is not a problem:

- Remove the battery.
- Clean the end of the battery and the battery clips with an alcohol swab. The rubbing alcohol should dissolve the adhesive and the residue should be removed. Keep cleaning the clips and battery until you can no longer see or feel any sticky residue.
- Insert the battery.
- Replace the cover. Press the button in the center of the sensor to reset it.

When you replace the battery, replace it with a 3.6V lithium battery, NOT a standard alkaline AA cell. Also make sure you replace it with the terminals facing the correct direction. The sensor will not function with an alkaline cell or if the battery is inserted backwards.

While all RLE products have a 1 year standard warranty, this same warranty does not apply to the battery within the wireless sensor. RLE warranties the batteries in wireless sensors for 90 days from the date of purchase.