

WiNG-MGR Quick Start Guide



Thank you for purchasing a WiNG-MGR wireless sensor network manager. This guide outlines basic WiNG-MGR installation and configuration.

Additional support information, including the WiNG-MGR User Guide, is available online at www.rletech.com. Before you install a WiNG-MGR check the website to ensure you are using the most recent version of our documentation.

If you need further assistance please contact RLE Technologies at support@rletech.com.



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Installation Supplies

Included with the WiNG-MGR

- WiNG-MGR device
- 24VDC power adapter
- Three antennas
- Rack mount tabs

Available from RLE, sold separately

- Wall mount tabs
- WiNG sensors as necessary for your application

Additional Supplies

- 18 – 22 AWG ground wire
- 18AWG shielded twisted pair stranded copper wire - no more than 2000ft (610m)
(for Modbus RTU communication via EIA-485 port)
- Ethernet cable
- USB mini B to USB A cable

Network Communications Information

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

- IP Address _____
- Subnet Mask _____
- Default Gateway _____

Mount the Device

The WiNG-MGR is designed to be installed in a 19-inch rack or mounted on a wall.

- If you're installing it in the front or back of a rack, use our rack mount tabs and orient them appropriately for your application.
- If you're mounting it on a wall, use RLE's wall mount tabs (sold separately).

Remove the mounting screws from the side of the device, put the mounting tabs in place, and reapply the screws. Use the proper anchoring method and hardware to mount the unit securely in your desired location.

Mount the Antennas

The WiNG-MGR ships with three antennas. After you connect each antenna firmly to its labelled terminal connection on the WiNG-MGR, you'll need to ensure proper antenna position. Antennas A and B can be close together, but to avoid signal interference they both need to be as far away from antenna C as your installation will allow. Extend the leader cables on the antennas to their fullest lengths and secure the antennas as far away from the WiNG-MGR - and as high off the ground - as possible.

Provide a Power Supply and Ground Connections

Power the WiNG-MGR from a UPS supply so the device can send alarm notifications during a power outage. Power can be supplied to the WiNG-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.

Never connect both power sources simultaneously - you will damage the device.

Connect the WiNG-MGR to the Network

The WiNG-MGR needs network connectivity in order to access the web interface, configuration screen, and to activate the email (SMTP), BACnet, Modbus, and SNMP features. Use an Ethernet cable to connect the WiNG-MGR directly to a PC or to a network hub or switch.

Set the IP Address Using a Web Browser

If you have not set an IP address before or are using IPv6, consult your IT Department for support.

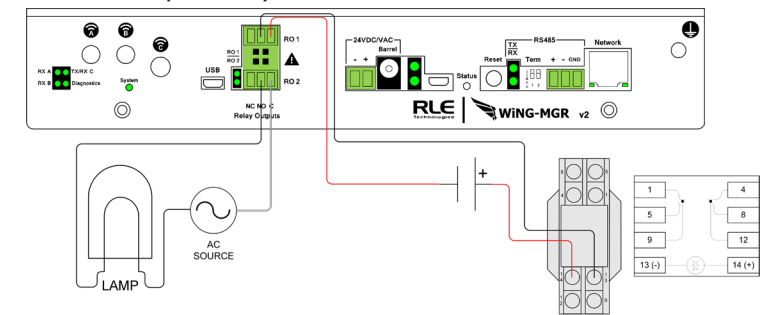
Note: The default IP address for the WiNG-MGR is 10.0.0.188
The default Subnet Mask is 255.255.255.0
By default there is no user name or password.

1. Contact your IT Department to obtain an available IP address, Subnet Mask, and default Gateway.
2. Plug an Ethernet cable into the laptop or workstation that will be used to configure the WiNG-MGR.
3. You'll need to change the IP address and Subnet Mask of your computer so it can communicate with the WiNG-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 WiNG-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 WiNG-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 WiNG-MGR's IP address (10.0.0.188).
5. Connect the other end of the Ethernet cable to the Ethernet port on the back of the WiNG-MGR.
6. Access the WiNG-MGR through a Web browser — type the WiNG-MGR's IP address (10.0.0.188) into the location bar.

7. From the WiNG-MGR's Dashboard, select the System Configuration link on the left side of the page. Then click the IP link to access the IP configuration tab. Change the IP address, Subnet Mask, and default Gateway to the one provided by your IT Department, or change it to 0.0.0.0 to enable DHCP. Press the Save Changes button. The WiNG-MGR will save the new IP address, Subnet Mask and default Gateway and then reboot itself.
8. 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.
9. The computer and the WiNG-MGR are now both configured to communicate on the network. Both should be accessible via the network. Connect the PC and the WiNG-MGR to the network. From the PC web browser, type in the new IP address of the WiNG-MGR. Enter the user name and password as stated above to verify network access to the device.

Wire the Relay Outputs

Two (2) wired relay outputs provide expanded monitoring and notification capabilities. Wired outputs may look like this:

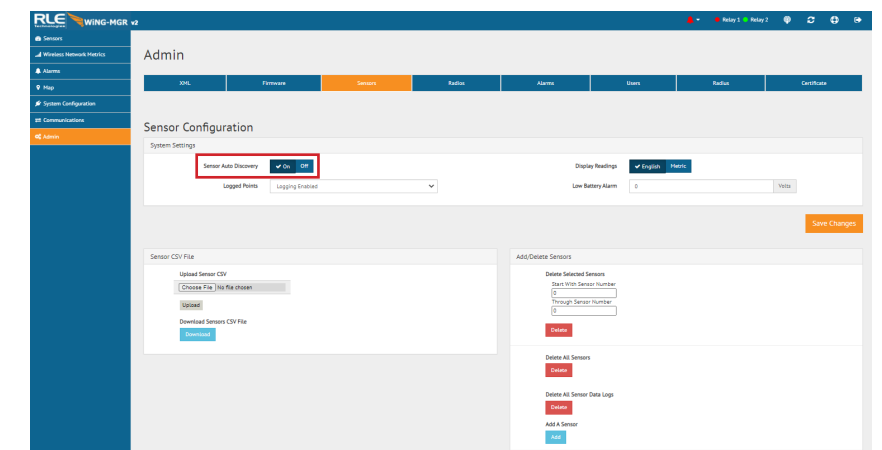


Configure the relay outputs in the System Configuration>Relay Outputs section of the WiNG-MGR web interface. Refer to the WiNG-MGR User Guide for more detailed information.

Configure your Sensors

There are several ways to configure sensors to communicate with a WiNG-MGR: sensor auto discovery (enabled by default), the sensor discovery wizard, manually entering a sensor by serial number, or uploading a sensor .csv file to the WiNG-MGR. Sensor auto discovery is documented here. If you'd like to use one of the other methods, reference the WiNG User Guide available at www.rletech.com.

Sensor auto discovery is enabled by default when you initially configure a WiNG-MGR. It can be toggled on and off on the Admin > Sensors page of the user interface. Click the Admin link in the left hand navigation and then the Sensors tab that appears in the top navigation.



To configure sensors to communicate with the WiNG-MGR:

1. Make sure sensor auto discovery is ON.

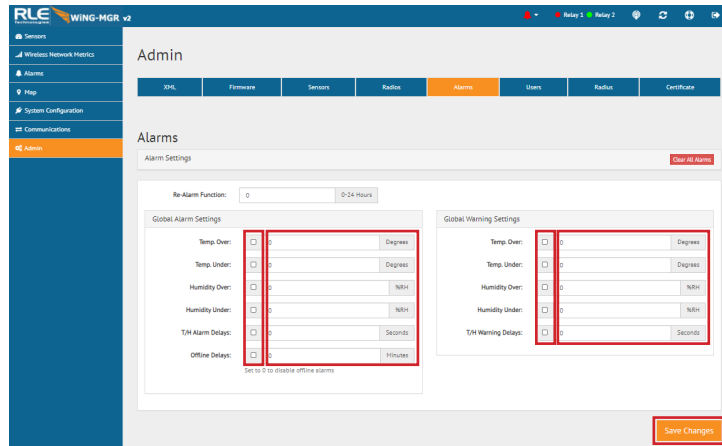
- Pull the tabs to activate the batteries in the sensors.
- Watch the sensor show up in the sensor list on the WiNG-MGR dashboard.
- Once all your sensors have been added, toggle the sensor auto discovery OFF on the Admin > Sensors page and click the Save Changes button.

Set Sensor Alarm and Warning Parameters

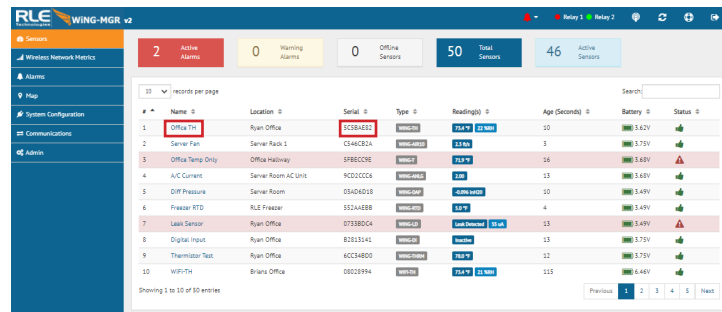
If you're configuring a new system, global settings are a quick way to configure settings for all your sensors at one time. To use this feature click the Admin link in the left hand navigation and then the Alarms tab that appears in the top navigation.

Any global settings configured on this page will apply to all the sensors associated with this WiNG-MGR. If you already have parameters set up for your sensors, they will be overwritten when you apply these global alarm settings. Once you apply the global settings, that value will be present on each sensor's individual configuration page. The global settings will not be recorded on this page - when you click through to another page of the user interface and then return to this global settings page, all the values in the alarm fields will have reverted back to zeros.

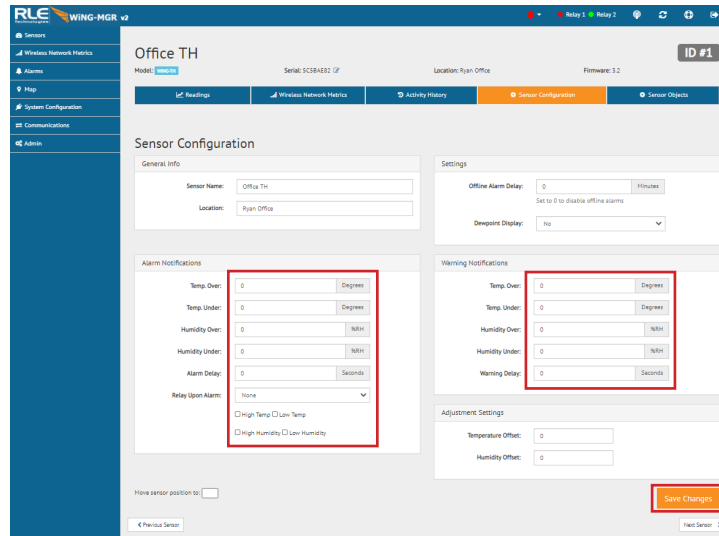
Check the checkbox next to each individual alarm setting to apply that particular setting to each sensor in the system. If you do not check the box next to the alarm parameter, that value will not be applied to the sensors in your system. Enter the threshold for that alarm or warning condition and click the Save Changes button to apply the settings to all sensors associated with this WiNG-MGR.



To configure sensor thresholds individually, use the sensor's serial number to locate it in the sensor list on the unit's dashboard. The sensor's name field in the table is a link. Click the link to access the to individual sensor's page.



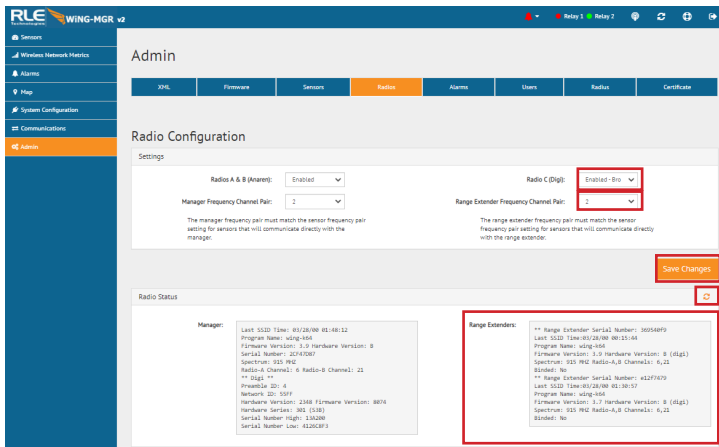
Click the Sensor Configuration tab to access the alarm and warning parameters available for the sensor. Enter the appropriate values and click the Save Changes button to activate the alarm parameters.



Install A Range Extender (WiNG-RXT)

Some WiNG applications may require the use of a range extender, WiNG-RXT. To add a WiNG-RXT to your application:

- Plug the provided wall adapter into the jack on back of the range extender and a wall outlet.
- The WiNG-RXT uses a different antenna configuration than the WiNG-MGR. The WiNG-RXT ships with three antennas, labelled A, B, and C. Antennas A and B connect to the WiNG-RXT via long leader cables, and antenna C is a fixed antenna that connects directly to the WiNG-RXT. After you connect each antenna firmly to its labelled terminal connection on the WiNG-RXT, you'll need to ensure proper antenna position. Antennas A and B can be close together, but to avoid signal interference they both need to be as far away from antenna C as your installation will allow. Extend the leader cables on antennas A and B to their fullest lengths and secure the antennas as far away from the WiNG-RXT - and as high off the ground - as possible.
- You'll need to configure the WiNG-MGR to recognize the WiNG-RXT. In the WiNG-MGR user interface, click the Admin link on the left and navigate to the Radios tab. The Range Extenders box on the bottom right side of the screen displays information about the range extenders that are currently operating on your network. If you don't see your range extender, click the refresh button to refresh the list.



- Use the drop down menu to turn Radio C (Digi) On and decide if the WiNG-RXT should be bound to this specific WiNG-MGR. Be sure to click the Save Changes button when you have finished your configuration.
- By default, all sensors communicate on channel 1. You may have an application

that requires the use of the alternate channel 2. If you need to switch to the alternate channel, reference our Alternate Channel Communications Guide on our website, www.rletech.com. You've installed a range extender to improve communications with a target group of sensors. Click the toggle button to select the range extender frequency channel pair that corresponds with the channel setting for that specific group of sensors. Click the Save Changes button to save the radio and frequency channel pair selections.

Troubleshooting

Basic WiNG-MGR troubleshooting information is included here. More in-depth troubleshooting is available in the WiNG-MGR User Guide, which can be found online at www.rletech.com.

Sensors Are Not Automatically Discovered by the WiNG-MGR

If an installed sensor is not detected by the WiNG-MGR, it is either too far away from the WiNG-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 WiNG-MGR. If it's then discovered by the WiNG-MGR:

- Its desired location may be too far away. Move the sensor away from the WiNG-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 WiNG-RXT range extender to boost the signal.
- The sensor has a wire whip antenna that can be extended out of the sensor case in an effort to resolve either a distance limitation or obstruction issue. To expose the whip antenna:
 - Access the sensor's circuit board. Hold the sensor upside down in your hand (label toward your palm) and squeeze the short side of the sensor enclosure's lid. Pull the base away to open the sensor enclosure. The sensor board should remain in the lid. Gently grasp the edges of the sensor lid and pull it to free it from the sensor enclosure.
 - Locate the whip antenna connection on the circuit board. Gently rotate the connection 180° so the antenna routes toward the U3 marking on the board, instead of routing past the Y1 marking on the board.
 - Now put the board back into the enclosure. The whip antenna will route out the vent hole in the enclosure near the tip of the orange wing icon on the enclosure label, and the sensor board will slip into the board slots in the enclosure. The whip antenna should extend directly out of the enclosure and not pass back over the length of the board. Reapply the sensor base.
 - You should end up with about three inches of antenna outside of the enclosure. This can dramatically increase the signal distance the sensor can achieve.

If the sensor is still not discovered by the WiNG-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 to 20 seconds.
- If the 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 2.7V), replace the battery with a 3.6V lithium AA battery.

Sensor Battery Issues

When you replace the battery, replace it with a 3.6V lithium battery. WiNG sensors will NOT operate with a standard alkaline AA cell.

Make sure you replace the battery with the terminals facing the correct direction. The sensor will not function if the battery is inserted backwards.