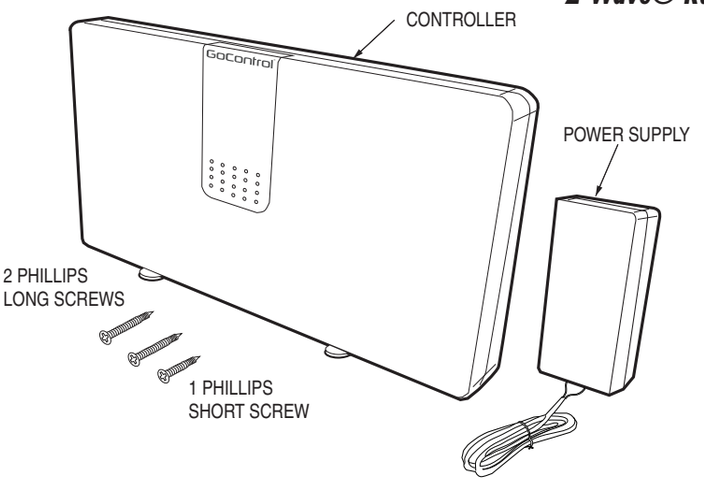
NORTEK SECURITY & CONTROL

GoControl

WI15VZ-1 IRRIGATION CONTROLLER

Z-Wave® Radio Frequency (RF) Controlled



WI15VZ-1 IRRIGATION CONTROLLER

The GoControl™ family of Z-Wave® certified wireless lighting products (smart LED fixtures, bulbs, switches, dimmers, outlets, and plug-in modules) Control Products (thermostats, irrigation controller and garage door controller) and Sensors (flood, leak, alert sounder, motion sensor and door/window sensor) bring a new level of intelligent wireless Home Automation capability to commercial and residential environments.

The Z-Wave wireless protocol is an international wireless standard for remote home automation, security and other applications. This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

GoControl Z-Wave products are easy to install, are Z-Wave certified, and allow you to create an integrated wireless network with nearly limitless expansion and interoperability with security, energy management, home entertainment, appliances, and more.

The WI15VZ-1 allows you to take charge of your sprinkler and landscape watering usage, saving money and this precious resource. Using real-time micro-climate information from your Z-Wave Hub, up to 15 connected valves are tailored to your specific irrigation environment.

Z-WAVE PLUS FEATURES

The GoControl Irrigation Controller contains a Z-Wave 500 Series Module that supports Z-Wave Plus® features. A Z-Wave certified portable or stationary Controller can communicate with the Z-Wave 500 Series Module.

Depending on the capability of the Z-Wave Controller or gateway software, the following operations can be performed with the GoControl Irrigation Controller. Refer to the Z-Wave Controller or gateway manual for details.

- Turn the 24 VAC residential irrigation valve ON and OFF.
- Add or Remove the GoControl Irrigation Controller.
- Over-the-air firmware update by the gateway or static controller.
- Lifeline function which automatically notifies the associated modules and the network that a manually reset device is no longer in the network, thus, the corresponding association becomes invalid.

INSTALLATION

Location of Controller

When installing the WI15VZ-1 Controller keep the following points in mind:

- Choose a location near an electrical outlet.
- Place unit away from direct sunlight.
- Locate WI15VZ-1 Controller so that there is easy access to the sprinkler valve wires.
- Install indoors or in a waterproof box.

Installing Controller

1. Mount the WI15VZ-1 Controller in the desired location. Install the short screw into the wall and hang controller by the locking slot center hole.
2. Remove front cover of controller and install the two long screws to lock unit in place on the wall (See Figure 2).

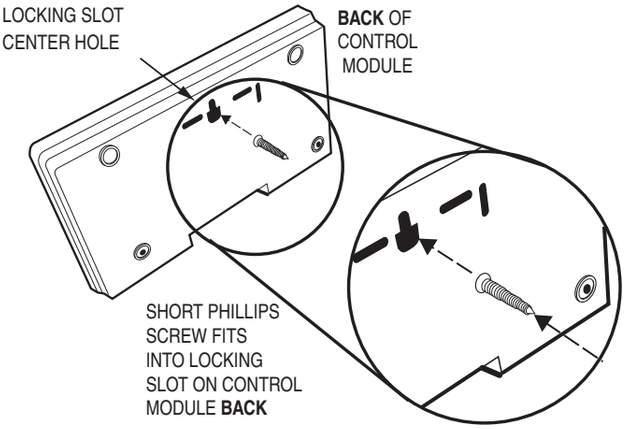


Figure 1. Screw in Locking Slot

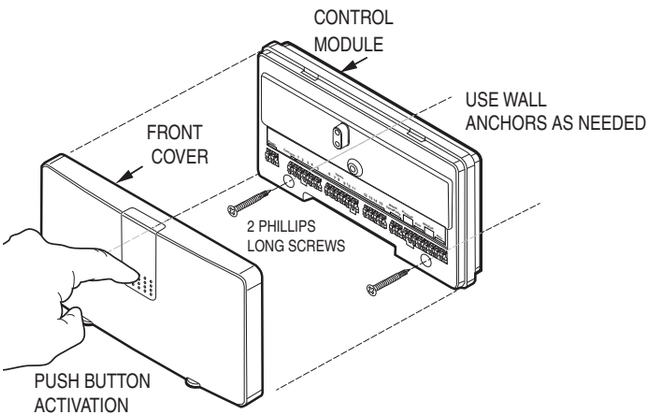


Figure 2. Control Module Locking Screws

Wiring to the Controller

The WI15VZ-1 Controller has 28 terminal connections The recommended wire used to connect to terminals is in the range of 16 to 22 gauge solid. To connect a wire to the terminal, use a small screwdriver or pen. While pushing in on the terminal block, insert the wire end into receptor hole (See Figure 3).

Terminal Connection Identification

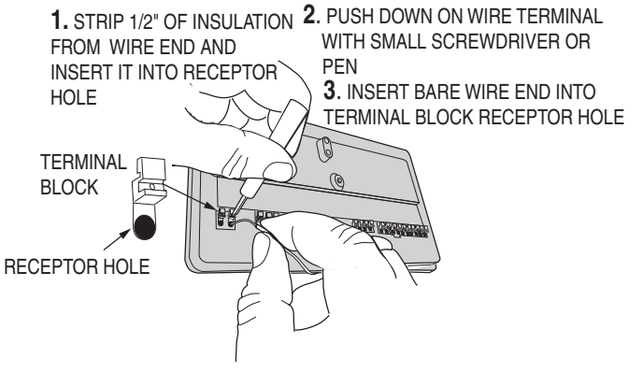


Figure 3. Wiring to Terminal Connection

Wiring Valves to Controller

The WI15VZ-1 Controller accommodates 15 valves.

1. Begin the wiring sequence by stripping a wire end and inserting it into the "Common" terminal on the controller.
2. Connect the Common wire to (1) one of the valves. (For simplicity only two valves are shown in diagram below). A maximum of 15 valves can be wired to the controller. Connect the other wire of each valve to a corresponding wire of the cable bundle. All connections should be made with wire nuts. To prevent electrical overload one common wire should be connected to each valve and only one valve should be connected to each station (See Figure 4).

IMPORTANT: The connection wires can be buried in the ground, however for more protection, wires can be fed through PVC pipe then buried. Be sure to avoid placing wires in the vicinity where future trenching or digging may occur as this can damage the connections.

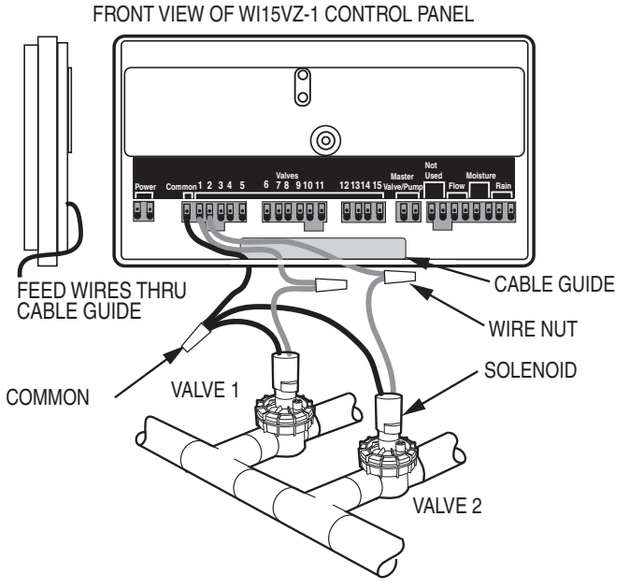


Figure 4. Wiring Valves to Controller

Irrigation Controller Front Cover Removal

During the valve wiring process, it will be helpful to label the valve name and location on the Backside of the Controller Front Cover. Remove the Front Cover of the Irrigation Controller by pulling up on the lower tabs with your thumbs (See Figure 5).There is a Valve Identification Label located on the inside of the WI15VZ-1 front cover (examples: front lawn, roses, grass, south-side, drip). Here is where any valve information can be written (See Figure 6).

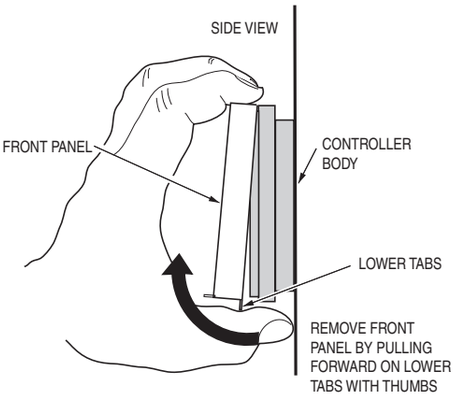


Figure 5. Removing Front Cover from Irrigation Controller

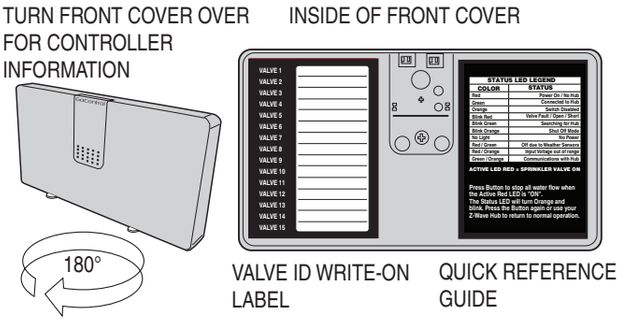


Figure 6. ID Write-On Label and Quick Reference Guide Label

Wiring of Optional Third Party Components to Controller

The WI15VZ-1 Controller has provisions for a number of additional components. Each component has two terminal connections. See the figures below for more details.

✓ *NOTE: Be sure to run the wires from the terminals, through the cable guide on the lower edge of the controller.*

Flow Sensor

The WI15VZ-1 supports standard 3rd party flow sensors. In order for a flow detector to work effectively, the Configuration Command is used to configure the sensor.

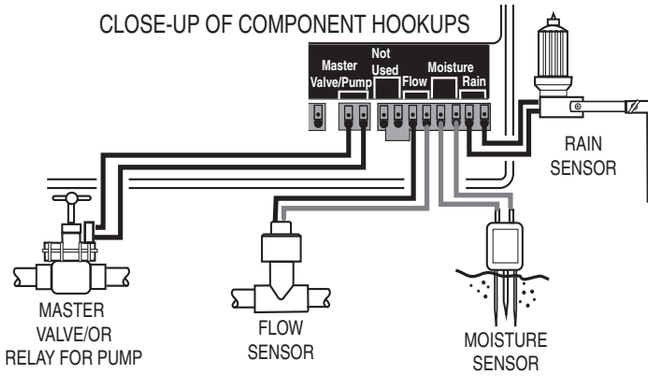


Figure 7. Third Party Component to Controller Wiring

Parameter	Length	Valid Values	Configuratiion Options
12	4 bytes	Refer to Flow Sensor Manual	K Factor Unique to specific flow sensor
13	4 bytes	Refer to Flow Sensor Manual	Offset Value: Unique to specific Flow Sensor.

When connecting the Flow Sensor, connect the RED wire to the Left connector. The BLACK wire is connected to the right (next to the Moisture connectors).

Master Valves

A 3rd party Master Valve/Pump can connect directly to the inputs of the Irrigation Controller. If the Master Valve is using a relay to drive a pump, the relay coil needs to be rated for 24VAC at up to 15W. Some systems require a delay time for the pump to pressurize the water. This delay is set as a Configuration Command.

Parameter	Length	Valid Values	Configuration Option
2	2 bytes	1 to 255 Seconds	Default=2 seconds

When connecting the Master Valve to the Irrigation Controller, either wire can go into either of the Master Valve / Pump connectors.

Rain / Moisture Sensors

If your Z-Wave hub supports Rain / Moisture sensors, these can also be used to control the Irrigation Controller. Settings in the Z-Wave Hub will need to determine whether the rain sensor is closed for rain or no rain. The hub will also have settings for setting what the moisture sensor threshold for 'wet' does open or close the switch.

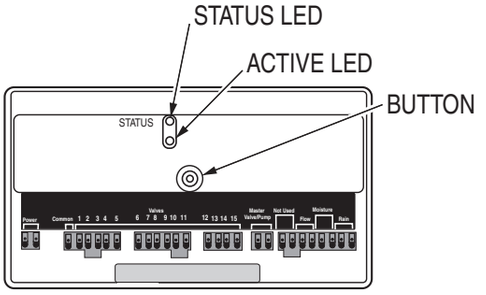


Figure 8. LED Status/Button Location

Power Connection

Connect the power adapter(included) to the power terminal.

The Status LED will illuminate Red when power is first applied. It may briefly flash during a power up self test.

✓ *NOTE: The Red Active LED below the Status LED will only illuminate when a sprinkler valve is ON.*

Connect the power adapter (included) to the power terminal.

Adding to a Network

✓ *NOTE: If you have trouble adding the GoControl Irrigation Controller to a group it may be that the Home ID and Node ID were not cleared from it after testing. You must first "RESET UNIT" to remove it from the network. Although adding it to a group includes it in the network, removing it from a group does not remove it from the network. If removed from a group, it functions as a repeater (only). "RESET UNIT" removes it completely from the network.*

When the WI15VZ-1 is first powered up, the Status LED should be Red. If the Status LED is Green, the WI15VZ-1 needs to be reset (see below). To add it to your network refer to your controller operating instructions.

1. With your controller in Discovery or Add Mode, tap the button (See Figure8).
2. You should see an indication on your controller that the "device was added" to the network and the Green LED will blink. The device will appear in the list of switches. It should display as a switch. If the controller shows the addition failed, repeat Steps 1-3.

To Reset Unit (If Required):

In the event that your Hub is lost or otherwise inoperable, to reset the GoControl Irrigation Controller and clear all network information, follow these steps:

1. Tap the button five (5) times.
2. Then press and hold the button for 15 seconds. The Status LED will increasingly blink faster to indicate that a Reset is taking place.

Removing from a Network:

The GoControl Irrigation Controller can be removed from the network by the controller. Refer to the controller operating instructions for details.

1. Set the controller into Removal Mode and follow its instructions to delete it from the controller.
2. Remove the Irrigation Controller by tapping the button 2 times.
3. You should see an indication on your controller that the "device was removed" from the network and the Green LED will blink then turn Red.

OPERATION

The WI15VZ-1 is designed to run the irrigation system based on your preprogrammed schedule. Utilizing your Z-Wave Hub, you can create this schedule. It will be saved in the WI15VZ-1 and run automatically unless an Interrupt is sent or received.

Each valve can run independently and be triggered as part of a scene. See the Hub instructions on how to configure your system to operate in this manner.

To trigger a specific valve that is connected to the WI15VZ-1, use the control application associated to your Z-Wave Hub.

Weather/Optional Water Sensor Interrupt

The WI15VZ-1 can take instructions from your Hub to not run the predetermined irrigation schedule. In the event that your local weather causes the WI15VZ-1 to not run the predetermined irrigation schedule, the LED will blink red/green for as long as the valves are supposed to be running. Once the valves are scheduled to be turned off, it will stop blinking.

All Stop

In the event that you wish to stop the running of the Irrigation Controller, press the button on the front of the WI15VZ-1. The Active LED will turn off.

The Status LED will blink Orange. It will continue to blink Orange until the user presses the button again, or the Hub tells it to go back to normal mode.

Valve Fault Detection

The WI15VZ-1 can detect if a valve is disconnected or has damaged or shorted control wires. In the event that a Fault is detected, the Status LED will blink Red as long as the valve is scheduled to be running. Once the valve is scheduled to be off, or turned off by the Hub, it will stop blinking Red.

Power Fault Detection

The WI15VZ-1 can determine if there is a problem with the power provided by the power supply. In the event that a Fault is detected, the Status LED will toggle Red/Orange until the problem is corrected.

Status LED	
Color	**Status**
Red	No Hub
Green	Connected to Hub
Orange	Stuck Button
Red - Blinking	Valve Fault
Green - Blinking	Searching for Hub
Orange - Blinking	Flow Fault (too low/too high)
Red/Green - Toggle	Off due to sensors or weather.
Red/Orange - Toggle	Power out of range.
Green/Orange - Toggle	Communicating with Hub
None	No Power

TROUBLESHOOTING

Problem	Resolution
When adding the WI15VZ-1 to a network, the Status LED blinks Green then goes back to Red	The WI15VZ-1 did not get the signal from Hub. You may need to add a Z-Wave Repeater between the Hub and WI15VZ-1 or move the Hub closer to the WI15VZ-1
The WI15VZ-1 shows up as a Binary Switch	Your Hub software needs to be updated to support the Irrigation Command Class
Green LED is illuminated but WI15VZ-1 does not appear in my Z-Wave hub application or is not responding to the Z-Wave Hub	WI15VZ-1 is not properly added to your Z-Wave network. Remove or Reset the unit as described under "To Reset Unit" or "Removing from a Network"
Cannot create a schedule in the Z-Wave Hub	Contact your Z-Wave Hub manufacturer to determine if Schedules are supported
The Status LED is not illuminated	Check all power connections. Confirm that the provided AC adapter is being used and not plugged into a switched outlet. Replace AC adapter if necessary.
The Status LED is blinking Red / Orange	Confirm that the provided AC adapter is being used. Replace AC adapter if necessary.
The Status LED is blinking Red	Check all wiring to controlled sprinkler valves. Repair as needed.

Z-WAVE COMMAND CLASSES

COMMAND_CLASS_ZWAVEPLUS_INFO
COMMAND_CLASS_BINARY_SWITCH
COMMAND_CLASS_ASSOCIATION
COMMAND_CLASS_ASSOCIATION_GRP-INFO
COMMAND_CLASS_BASIC
COMMAND_CLASS_VERSION
COMMAND_CLASS_MANUFACTURING_SPECIFIC
COMMAND_CLASS_DEVICE_RESET_LOCALLY
COMMAND_CLASS_POWERLEVEL
COMMAND_CLASS_CONFIGURATION_V1
COMMAND_CLASS_IRRIGATION
COMMAND_CLASS_FIRMWARE_UPDATE_MD
COMMAND_CLASS_NOTIFICATION
COMMAND_CLASS_SCHEDULE

SPECIFICATIONS

Power:	Input: 100-240 VAC, 50 - 60 Hz Output: 18 VDC at 1A
Signal (Frequency):	908.42 MHz/916 MHz
Range:	130 feet line of sight
Valves Supported:	15 plus 1 Master Valve Residential 24 VAC
Operating Temperature:	0-120°F (-20 - 50°C)
Humidity	5% to 95% Relative Humidity (Non Condensing)

NOTICES

Z-Wave® and Z-Wave Plus® are registered trademarks of Sigma Designs and its subsidiaries in the United States and other countries.

WARRANTY

What is Covered?

Nortek Security & Control ("NS&C") warrants to consumers who purchase this product for personal, family or household purposes new from NS&C directly or from an authorized NS&C dealer, that the product will be free from defects in materials and workmanship for a period of (1) year from the date of purchase. This warranty only applies if the product is installed at a residence in the 50 United States or District of Columbia, and only at the site of the original installation. It is not transferable. This warranty is not extended to resellers.

If a defect exists, NS&C will have you ship the defective part or product to us and we will, at our option, either repair or replace it. This warranty does ***not*** cover the cost of labor to remove a defective part or product or to reinstall any repaired or replacement part.

This warranty does ***not*** cover defects or damages caused by improper handling, maintenance, storage, installation, removal or re-installation, misuse, non-factory authorized modification or alteration, use of incompatible accessories, electrical power problems or surges, impact by foreign objects, accident, fire, acts of God, normal wear and tear or shipping damage other than a shipment from NS&C. Note that all NS&C products are designed to be installed, removed and serviced by trained individuals or professionals.

Keep your original sales receipt as it will be required to obtain warranty service.

This warranty shall not be extended or restarted upon receipt of any repaired or replacement part or product under this warranty. No person is authorized to extend or otherwise modify this warranty.

How do I Obtain Warranty Service?

To obtain warranty service, email our Returns Department at returns@nortek.com. Include your name, address, telephone number, the model number of your product, a copy of your original sales receipt, and a description of the problem. Unless we need to discuss the situation further with you, you will be emailed a Return Authorization Number and shipping instructions. If we need to discuss the situation further with you, we will call or email you. NS&C may require troubleshooting on installed product before a Return Authorization Number is issued. Anything shipped to us without a Return Authorization Number will be automatically returned unopened. You are responsible for the charges for shipment to us, unless you are a California resident.

Limitations

THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXCEED THE WARRANTY PERIOD PROVIDED HEREIN.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

NS&C SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE BREACH OF ANY WRITTEN OR IMPLIED WARRANTY.

Some states do not allow the exclusion of limitation or consequential damages, so the above limitation or exclusion may not apply to vary from state to state.

This warranty gives you specific legal rights, and you may also have other legal rights which vary from State to State.

FCC & IC Notice

We, Nortek Security & Control, LLC of 1950 Camino Vida Roble STE 150, Carlsbad, CA 92008, declare under our sole responsibility that the device, WI15VZ-1 complies with Part 15 of the FCC rules. This device complies with Part 15 of the FCC Rules and Industry Canada license exempt standard(s). Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference received that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician to help.

WARNING:

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

IMPORTANT !!!

Radio controls provide a reliable communications link and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- For U.S. installations only: The radios are required to comply with FCC Rules and Regulations as Part 15 devices. As such, they have limited transmitter power and therefore limited range.
- A receiver cannot respond to more than one transmitted signal at a time and may be blocked by radio signals that occur on or near their operating frequencies, regardless of code settings.
- Infrequently used radio links should be tested regularly to protect against undetected interference or fault.
- A general knowledge of radio and its vagaries should be gained prior to acting as a wholesale distributor or dealer, and these facts should be communicated to the ultimate users.