

PowerNodes

NP160-F

NP162-F



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Introduction

The GreenWave Reality platform helps create a smart, energy-efficient home through the monitoring and controlling of your appliances and electronics (referred to as “devices”). You can conserve energy with minimal impact to your lifestyle by using our products to easily manage your devices. Simply connect our Gateway to your GreenWave Reality energy management system, plug your devices into our PowerNodes, and then monitor and control the devices’ power usage through a Web browser or smartphone application.



PowerNode Overview

The GreenWave Reality PowerNode is a smart outlet adapter that connects your devices to electrical outlets and your GreenWave Reality energy management system so that you can monitor and control your devices' power usage remotely through a Web browser or smartphone application. PowerNodes are available with a one-port or multi-port configuration.

The PowerNode automatically connects to your GreenWave Reality Gateway (the device that connects to your home network). This connection enables the Gateway to securely connect the devices you have powered through your PowerNode to your energy management system. The PowerNode collects data on the energy consumption of the connected devices and transmits the data to the Gateway. You can then control the energy consumption of each connected device automatically using GreenWave Reality Smart Controls. These user-defined Smart Controls allow you to turn devices on or off remotely through a Web browser or smartphone application or to set a schedule for automatically turning your devices on or off at pre-defined times.

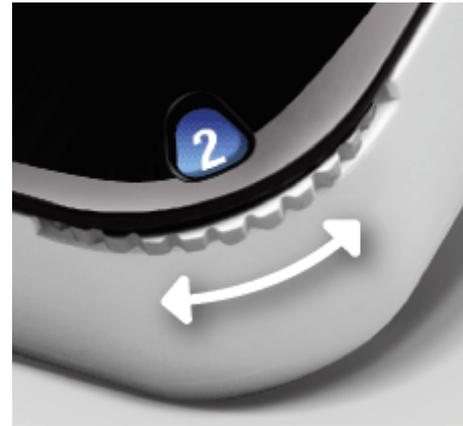


1. PowerNode plug: Prongs that you plug into your electrical outlet.
2. PowerNode port: Port where you plug in your device.
3. Room color selector: Wheel that you rotate you specify the associated room color.
4. Network button: Button that you press to sync PowerNode with Gateway.
5. Activity indicator and power on/off button. Shows the status of synced devices, and allows you to manually turn the PowerNode ports on or off.

Room Colors

Your PowerNode has a corner wheel with colored numbers to represent the room or device that the PowerNode is powering. Set the PowerNode to the colored number you want to use to identify the room or device (this is referred to as the “room color”). For example, you can set the room color to blue. Then, when you access your account through the Web or smartphone application, the corresponding room is identified by the same blue color as your PowerNode.

You can set PowerNodes in different rooms to different colors to make those rooms easy to identify when managing the power sources on the Web or smartphone application.



Indicators

Your PowerNode has an indicator that displays any of the following patterns and colors to show you its current status:



Off (no color): All PowerNode ports connected to the Gateway are off.



Steady white in center: All PowerNode ports connected to the Gateway are on.



Steady green in center: Some PowerNode ports connected to the Gateway are on (some are off).



Two flashing green bars on each side of white flashing center: PowerNode cannot communicate with Gateway. This may occur if the PowerNode is out of range from the Gateway. You can move the PowerNode closer to the Gateway to improve reception. Or you can add additional PowerNodes closer to the Gateway so that the PowerNode can connect to the Gateway via the additional PowerNodes (PowerNodes can “piggy back” on each other’s network connection).



Two rotating green bars: PowerNode is in inclusion mode to connect with Gateway. When inclusion is successful, the rotating bars stop and all bars turn green for five seconds.



Installation

Before you install your PowerNode and devices, make sure that your GreenWave Reality Gateway is already connected to your energy management system and operating (refer to the instructions that came with your Gateway).

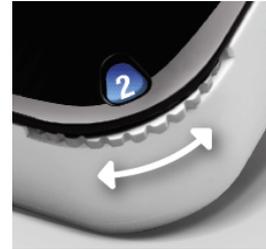
There are four basic steps to install your PowerNode and devices:

1. Set the PowerNode room color.
2. Choose the device to connect and its location.
3. Prepare the PowerNode for the device.
4. Plug in the device and turn on the PowerNode.

1. Set the PowerNode Room Color

Set the PowerNode to the colored number you want to use to identify the room or device (this is referred to as the “room color”).

The room color selection is strictly to help you identify the room when you monitor and control its power usage. Any color setting you use will work automatically with your Gateway. Refer to the section above on room colors.



2. Choose the Device and Location

Choose the device you would like to connect to your PowerNode. Turn the device off and unplug it from any power source. As discussed in the “Installation Tips” section, you should attach only one device to each PowerNode port (one device for a single-port PowerNode or up to six devices for a multi-port PowerNode). Locate a suitable electrical outlet nearby where you would like to place the device.

3. Prepare the PowerNode for the Device

Plug the PowerNode into the electrical outlet, and then turn the PowerNode off by pressing the power button. The indicator light on the power button turns off to indicate the power is off.

4. Plug in the Device and Turn on the PowerNode

Plug the device you want to power into the PowerNode port. Turn the PowerNode on by pressing the power button, which will illuminate white to indicate the power is on. Turn the device on.

The device is now part of your GreenWave home network.

Installation Tips

Review the safety information. Be sure to review the information contained in the “Safety Information” chapter for important safety information you should follow.

Connect only one device per PowerNode port. For best results, attach only one device to each PowerNode port (one device for a single-port PowerNode or up to six devices for a multi-port PowerNode). Do not connect power strips and extension cords (or other PowerNodes) to the PowerNode. The PowerNode can only reliably monitor and control one device connected to one port at the time. Connecting more devices to one port interferes with power consumption monitoring and may cause risk of malfunction and damage to your PowerNode from overloading. If you would like to control more devices, you can easily add more PowerNodes to your energy management system.

Keep radio signals clear. Your Gateway and PowerNodes have antennas built-in for radio communication with Internet services and other devices on your energy management system. Just as you might experience reception problems on your mobile phone inside a building, your Gateway can have trouble communicating with

PowerNodes if their radio signals are blocked by obstacles such as large metal panels or walls containing wire mesh. When placing these devices in your home, imagine invisible lines connecting between them. Try to keep these lines clear from obstruction as much as possible. Also place your PowerNodes at least 1.5-3 feet (.5-1 meters) above floor level to promote reception.

Common Z-Wave Tasks

The GreenWave Reality PowerNodes communicate wirelessly with the Gateway by use of Z-Wave mesh networking, which is a robust connection technology designed for home automation with security and privacy in mind. The more Z-Wave compatible devices installed in your home, the better coverage your private GreenWave Reality energy management system will have.

Network Inclusion Process

The process for adding a PowerNode to your home network is called “inclusion.” It must only be performed once, and you must have the Gateway plugged in and working first. You can start the inclusion process by pressing and holding the Gateway network button for two seconds so the rotating “inclusion mode” pattern appears on the Gateway activity Indicator. When this is completed, the Gateway is ready to perform the inclusion of the PowerNode.

If you attempt to include a PowerNode from another energy management system with an “alien” Gateway, the inclusion will fail and the indicator bars will flash rapidly.

To complete the process you must perform the following steps:

1. Plug the PowerNode into an electrical outlet.
2. Locate the network button on the PowerNode. It is a small round button on the side of the device, marked with the sync symbol.
3. Press and hold the network button for one second until the PowerNode activity indicator begins to display a clockwise-rotating pattern, which shows that the PowerNode is attempting inclusion.
4. After a few seconds, the rotating pattern should stop and all bars turn green for five seconds to indicate successful inclusion. The PowerNode is now part of your energy management system, and you can connect a device (refer to the instructions that came with your PowerNode to plug in your device).

If the rotating pattern has stopped but the bars rapidly flash green for five seconds, then the PowerNode inclusion process has failed, and you must start over.

Network Exclusion Process

Note: If your PowerNode is new and has never been used before, then you should not need to perform the exclusion process.

A PowerNode that has been previously used with a different Z-Wave network must have its association (homeID) with the other network removed before you can connect it to your GreenWave Reality energy management system. This process is called “exclusion” and requires two steps: one that must be performed with the Gateway and then one that is performed with the PowerNode.

You can start the exclusion process through your Gateway user interface or by pressing and holding the Gateway network button for five seconds until the “exclusion mode” pattern appears on the Gateway activity indicator. When this is completed, the Gateway is ready to perform the exclusion of the PowerNode.

To complete the process you must perform the following steps:

1. Plug the PowerNode into an electrical outlet.
2. Locate the network button on the PowerNode. It is a small round button on the side of the device, marked with the sync symbol.
3. Press and hold the network button for one second until the PowerNode activity indicator begins to display a clockwise-rotating pattern, which shows that the PowerNode is attempting exclusion.
4. After a few seconds, the rotating pattern should stop and all bars turn green for five seconds to indicate successful exclusion. Your PowerNode is now free of its former association, and you can perform an inclusion process to include it in your GreenWave Reality energy management system (refer to the “Network Inclusion Process” section above).

If the rotating pattern has stopped but the bars rapidly flash green for five seconds, then the PowerNode exclusion process has failed, and you must start over.

Factory Reset Process

The factory reset process allows you to reset your PowerNode to the factory defaults. This action is helpful if you are not able to perform a successful exclusion from the Gateway or if you simply want to revert back to the original factory settings. To complete the process you must perform the following steps:

1. Press and hold the power button while plugging the PowerNode into an electrical outlet.
2. Keep the power button pressed for five seconds until all bars turn green for five seconds, indicating that the factory reset process has completed. Your PowerNode is now free of its former association, and you can perform an inclusion process to include it in your GreenWave Reality energy management system (refer to the “Network Inclusion Process” section above).

If all bars did not turn green for five seconds, then the PowerNode was not previously included.

Safety Information

Indoor Use Only

Your PowerNode should be used only in dry, indoor locations. Do not use your PowerNode in high-humidity locations such as greenhouses, saunas, washrooms, or patios. Do not use your PowerNode in locations where it can get wet such as near aquariums or running water.

Do Not Disassemble

Your PowerNode has no user-serviceable parts inside. In case of persisting malfunction, please contact Customer Service to arrange for repair at a certified service location. Do not attempt to disassemble the PowerNode for any reason.

Arrange for Service if Needed

Should you encounter any problems with your PowerNode, turn the device off by unplugging it from the electrical outlet. Contact Customer Service to arrange for repair at a certified service location under the following conditions:

- When the power cable or plug is damaged or frayed
- If the product has been exposed to rain or water
- If the product casing has been damaged

About GreenWave

GreenWave Reality is a global innovator in the emerging Home Energy Management market. GreenWave Reality provides an affordable, easy-to-use, standards-based platform that allows utilities enhance their relationship with consumers and better balance energy on the grid while consumers can conserve energy with a minimal impact to their lifestyle by easily monitoring and controlling their appliances and adding intelligent LED lighting. GreenWave Reality is led by a diverse team of proven leaders with global experience.

NORTH AMERICA

39 Parker, Suite 100
Irvine, CA 92618
USA

Tel. +1 714 805 WAVE (9283)
na@greenwavereality.com

ASIA-PACIFIC

41 Science Park Road
#01-01 The Gemini (Science Park II)
SINGAPORE 117610

Tel. +65 3157 1700
apac@greenwavereality.com

EUROPE

GreenWave Reality ApS.
Dr. Neergaardsvej 3
2970 Hørsholm
DENMARK

Tel. +45 6913 2333
eu@greenwavereality.com

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Environmental Conditions

Operating Temperature: 0°C to +25°C
Storage Temperature: -20°C to +60°C
Maximum Humidity: 5% to 90% N/C
IP-Class (Moisture Tolerance): IP20

Power Rating

Maximum Load Current: 10A
Maximum Load Power: 2400W (@240V)
Load Monitoring Precision: ±0.1W
Overcurrent Protection: 10A internal fuse
Supply Power: 250V~ AC, 50Hz
Surge Protection: Yes
Standby Power Consumption: 0.4W
Appliance Receptacle: DIN49440 (Schuko)
Wall Plug: CEE 7/7 (Schuko)

Wireless Network Features

Z-Wave Radio Frequency: 868.42MHz
Z-Wave Maximum Inter-node Range: 30m (measured with line of sight, no obstacles, and height of devices above floor >1m)
GreenWave Reality DeviceDNA: v1.0

Z-Wave Command Classes Certified

Binary Switch
Power Meter
Multichannel
Firmware Metadata

(Back Cover)