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Z-Wave Plus® Plug-In Power Monitor

P/N **15903**

User's Manual

SAFETY WARNINGS AND GUIDELINES

• This device is intended for indoor use only.

• Do not expose this device to water or moisture of any kind. Do not place drinks or other containers with moisture on or near the device. If moisture does get in or on the device, immediately remove the battery and allow it to fully dry before reapplying power.

• Do not expose this device to excessively high temperatures. Do not place it in, on, or near heat sources, such as a fireplace, stove, radiator, etc. Do not leave it in direct sunlight.

• Clean using a soft, dry cloth only. Do not use chemical cleaners, solvents, or detergents. For stubborn deposits, moisten the cloth with warm water.

• This device has no user serviceable parts. Do not attempt to service or modify this device.

INTRODUCTION

Thank you for purchasing this Z-Wave Plus® Plug-In Power Monitor! This is a wireless Z-Wave enabled device and is fully compatible with any Z-Wave enabled network. Z-Wave is an interoperable, two-way RF mesh networking technology used for home automation and security. Every AC powered Z-Wave device acts as a signal repeater, so multiple devices result in more possible transmission routes, which helps eliminate RF "dead spots" in the network. Any Z-Wave enabled device displaying the Z-Wave logo can be used with Z-Wave devices from other manufacturers.

This Plugin can be operated remotely, using the Z-Wave controller, or directly, using the Program Switch on the device. It plugs into a standard NEMA 5-15 power outlet and includes both a Z-Wave controlled outlet and standard, unswitched outlet. It is designed so that when it is plugged into a standard two-plug wall outlet, it will not block the other power socket. In addition to controlled switching, it monitors energy consumption and can report consumption values in several common energy scales. As an AC powered Z-Wave device, this Plugin will act as a Z-Wave repeater (supporting FLiRS).

FEATURES

• Includes a Z-Wave® controlled grounded NEMA 5-15 power outlet and an unswitched grounded NEMA 5-15 pass-through outlet

• Z-Wave and manually controlled on/off switching plus energy monitoring

• Multicolor LED indicates current usage

• Z-Wave controlled reporting of energy consumption in kilowatt hours (kWh), kilovolt-ampere hours (kVAh), wattage (W), voltage (V), amperes (A), and power factor

• Supports over-the-air firmware updating

• Features automatic shutoff overload protection when current usage exceeds 15.5 amperes

• Functions as a Z-Wave repeater for the Z-Wave mesh network

• Uses the latest backward compatible revision of Z-Wave technology

• Z-Wave Plus® provides 50% more power than previous generations

• Z-Wave Plus provides 67% improvement in transmission range

• Z-Wave Plus offers Plug-n-Play inclusion network wide

CUSTOMER SERVICE

The Monoprice Customer Service department is dedicated to ensuring that your ordering, purchasing, and delivery experience is second to none. If you have any problem with your order, please give us an opportunity to make it right. You can contact a Monoprice Customer Service representative through the Live Chat link on our website **www.monoprice.com** during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at **support@monoprice.com**

PACKAGE CONTENTS

After receiving the product, please inventory the contents to ensure you have all the proper parts, as listed below. If anything is missing or damaged, please contact Monoprice Customer Service for a replacement.

• 1x Z-Wave Plus® plug-in power monitor

• 1x User's manual

Z-WAVE SETUP

Note: If you are installing a complete Z-Wave® system for the first time, please refer to the installation guide of your Z-Wave Interface Controller (ZIC) before installing this sensor.

1. Plug the device you wish control into the AC outlet next to the Z-Wave® logo on the plug-in module, then plug the module into a nearby AC power outlet. The LED will flash green and red alternately. *For best results, use the top outlet in a two outlet wall plate.*

2. Bring your Z-Wave Interface Controller (ZIC) to within 3 feet (1 meter) of the plug-in module.

3. Following the instructions that came with your ZIC, put it into "inclusion" mode.

4. Press the **Program Switch** three times within two seconds. The sensor will broadcast a Network Identification Frame (NIF) to the network. In response, the ZIC will send an auto-inclusion signal to the sensor to include it into the network. The module will then appear in your ZIC's device list and the LED will change color, depending on the current level, as indicated in the table below.

5. Press the **Program Switch** to manually turn the switched outlet on or off.

LED Color	Current Level
Green	0 ~ 5 amps
Orange	5 ~ 10 amps
Red	10 ~ 15 amps

EXCLUSION

Perform the following steps to remove the module from your Z-Wave® network.

1. Following the instructions that came with your Z-Wave Interface Controller (ZIC), put it into "exclusion" mode.

2. When prompted, press the **Program Switch** to complete the "exclusion" process. The LED will begin flashing green and red alternately, indicating that the module is no longer "included" in your network.

ASSOCIATION

This module can be part of a single Association Group of up to 5 nodes. The module will report every time its ON/OFF status changes and will report every notification to all devices in the association group. Perform the following steps to associate the sensor with another Z-Wave® device.

1. Press the Program Switch on the sensor. The sensor will send a Network Identification Frame (NIF) and the LED will flash once.

2. Put your Z-Wave Interface Controller (ZIC) into association mode, then follow the instructions to associate the module with another device.

OPERATION

• Use the **Program Switch** on the module to manually switch the outlet on or off.

• Use the Z-Wave Switch Binary Command Class (or Basic Command Class) to switch the outlet on or off. Send command level 0 (0x00) to turn the outlet off and send command level 255 (0xFF) to turn it on.

• Use the Meter Get command with one of the values in the following table to query the energy consumption.

Command Value	Report Scale
0x01	KWh
0x02	kVAh
0x03	W
0x04	V
0x05	A
0x06	Power Factor

CONFIGURATION

Use the Meter Auto Report function with the values in the following table to configure the module.

	Parameter	Size	Value	Notes
Auto Report Timing	1	1 byte	60 ~ 255 seconds (default 60 seconds)	Reports kWh/kVAh
Report When Wattage Changes	2	2 bytes	5 ~ 3600 watts (default 50 watts)	Reports V/A/W

RESET

You can reset the module to the factory default values by pressing and holding the **Program Switch** for 5 seconds.

Z-WAVE COMMAND CLASSES

This module supports the following Z-Wave command classes:

COMMAND_CLASS_APPLICATION_STATUS

COMMAND_CLASS_ASSOCIATION_GRP_INFO

COMMAND_CLASS_ASSOCIATION_V2

COMMAND_CLASS_CONFIGURATION

COMMAND_CLASS_DEVICE_RESET_LOCALLY

COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

COMMAND_CLASS_METER_V4

COMMAND_CLASS_POWERLEVEL

COMMAND_CLASS_SECURITY

COMMAND_CLASS_SWITCH_ALL

COMMAND_CLASS_SWITCH_BINARY mapping COMMAND_CLASS_BASIC

COMMAND_CLASS_VERSION_V2

COMMAND_CLASS_ZWAVEPLUS_INFO

SPECIFICATIONS

Protocol: Z-Wave® (ZM5202)

Operating Frequency: 908.42 MHz

Operating Voltage: 100 ~ 240 VAC

Operating Range: Up to 100 feet line of sight

Operating Temperature: +14 ~ +104°F (-10 ~ +40°C)

Data Rate: Up to 9.6k/40k/100kbps

Maximum Load: 110 VAC/15A/1600W (resistive), 220 VAC/15A/3200W (resistive)

REGULATORY COMPLIANCE

Notice for FCC

This device complies with Part 15 of the FCC rules. 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 that may cause undesired operation.

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

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 for help.

Radio Notice for FCC

Caution

This FCC Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Monoprice, including the use of non-approved antennas, could void the user's authority to operate this device.

This device complies with Part 15 of the FCC Rules. 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 that may cause undesired operation.

Notice for Industry Canada

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.

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