

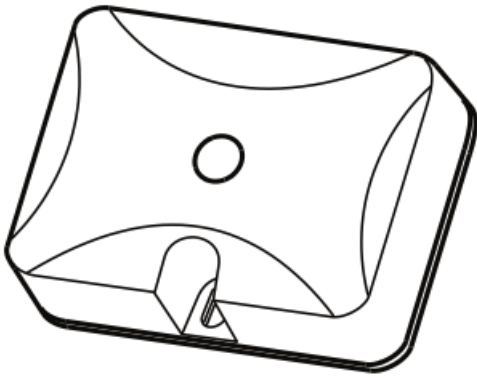
# Remotec ZRP-120NA Z-Wave Plus Range Extender/Repeater User Manual

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## Introduction

Thank you for choosing ZRP-120 Z-Wave Repeater product. ZRP-120 is a Z-Wave repeater with best RF performance to replicate Z-Wave signals in a network. The repeater re-transmits an input Radio Frequency (RF) signal by routing the signal around obstacles and radio dead spots to ensure that the signal is received at its intended destinations.

ZRP-120 is a security enabled Z-Wave plus device. A security Enabled Z-Wave Plus Controller must be used in order to fully utilize the product.

## Glossary

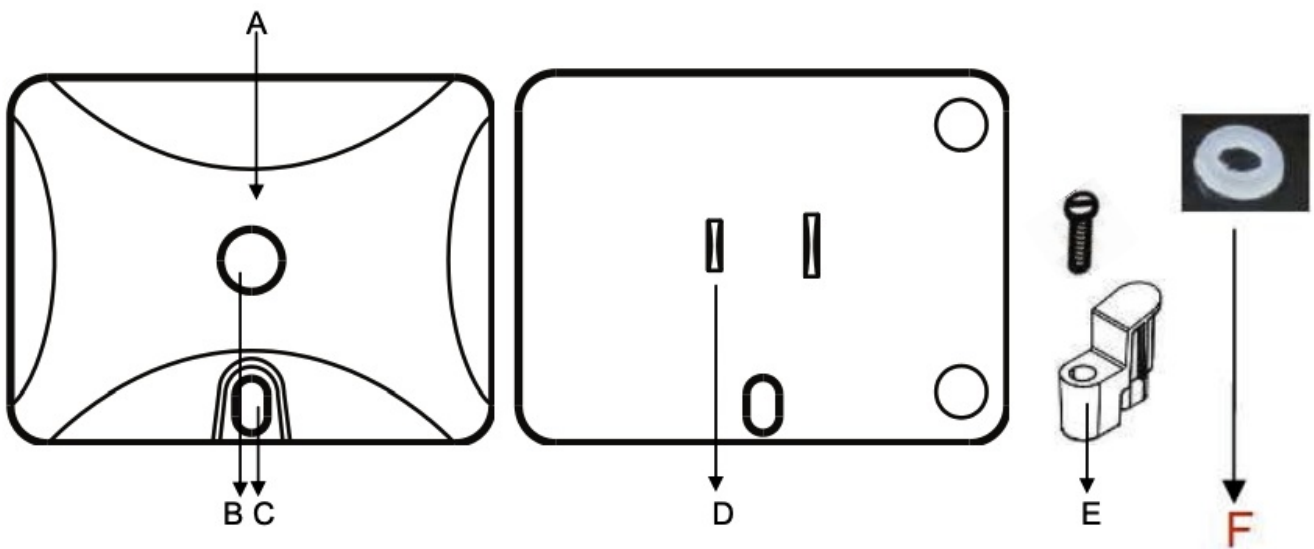
<b>Device or Node</b>	Devices and nodes are all terms to describe an individual Z-Wave device. These are all interchangeable when setting up your Z-Wave network.
<b>Inclusion</b>	Add a Z-Wave device to the network.
<b>Exclusion</b>	Remove a Z-Wave device from the network.
<b>Remove</b>	To take a device out of a group, scene or association group while that device still exists in the same Z-Wave network.
<b>Network Wide Inclusion (NWI)</b>	Network Wide Inclusion (NWI) enables both end-user friendly, Plug and Play like Z-Wave network installation as well as professional installation scenario where the inclusion process, in terms of time will be reduced significantly. NWI is a feature supported by a new frame type named Explorer which enables the Z-Wave protocol to implement Adaptive Source Routing.
<b>Z-Wave Network</b>	A collection of Z-Wave devices is controlled by primary and secondary controllers operating on the same system. A Z-Wave network has its own unique ID code so that controllers not in the network cannot control the system.
<b>Primary Controller</b>	The first controller is used to set up your devices and network. Only the Primary Controller can be used to include or remove devices from a network. It is recommended that you mark the primary controller for each network for ease in modifying your network.
<b>Association</b>	Association is used to organize nodes in different groups allowing the device to identify the nodes by a group identifier. The groups can also be copied to other devices.
<b>Security S2</b>	Security S2 enables secure communication for the devices that run for years on a single battery.

## Key Features

- Supports Network Wide Inclusion (NWI) and Explore Frames
- Reliable and best RF performance to repeat Z-Wave signals
- Ultra-low power consumption
- Complex, thin and small size form factor
- Does not block lower outlet when plugged into upper outlet of a duplex wall receptacle and vice versa
- External fixture for different wall receptacle mounting

## Product Overview

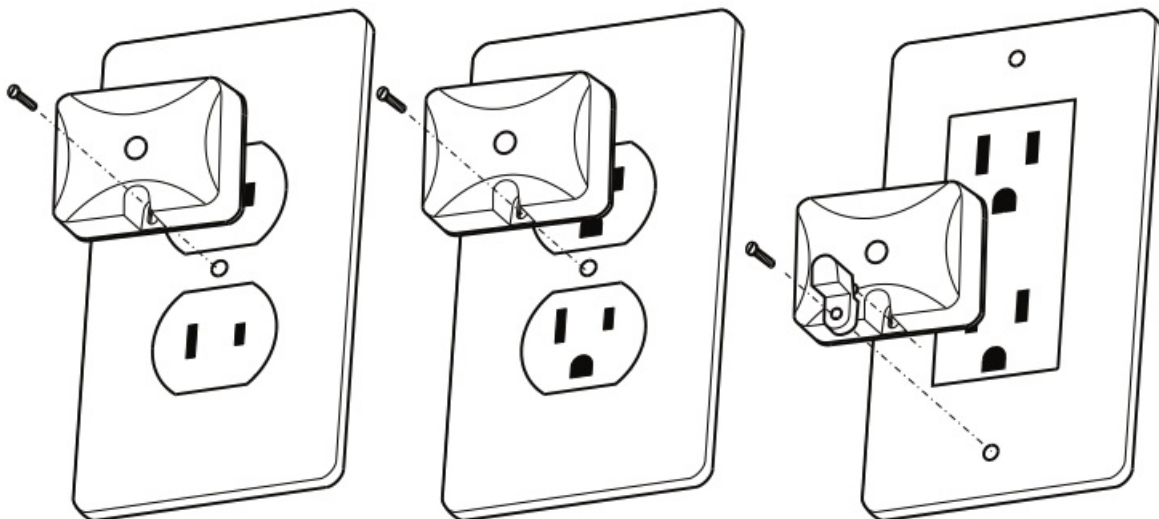
A Status LED  
 B PROG Push button  
 C Fixing hole  
 D AC plug  
 E External screw fixture  
 F Washer



## Installation Location

### WARNING:

To avoid fire, shock, or death; turn off power at circuit breaker or fuse and test that power is off before dismount or mount the unit with the screw!. In case that the user needs to mount the unit with screw, please refer to below figures and select the desired configuration. It is recommended that a qualified electrician perform this installation.



Un-grounded AC outlet  
with center screw

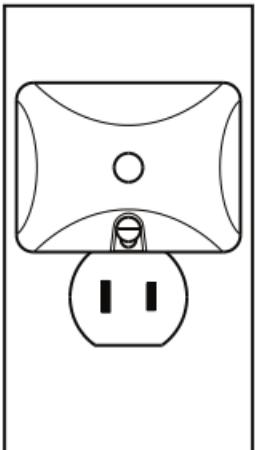
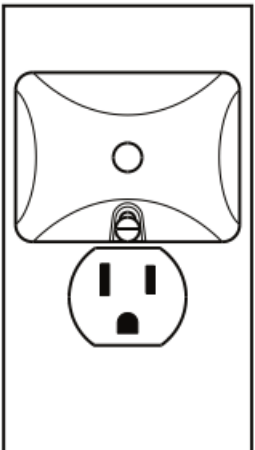
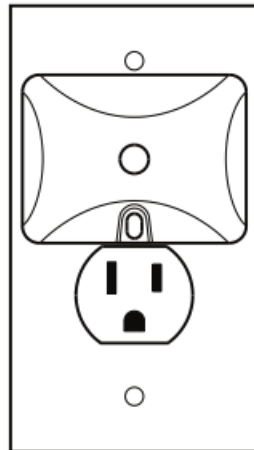
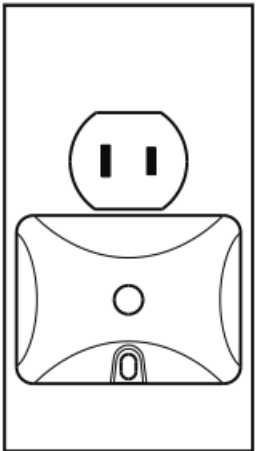
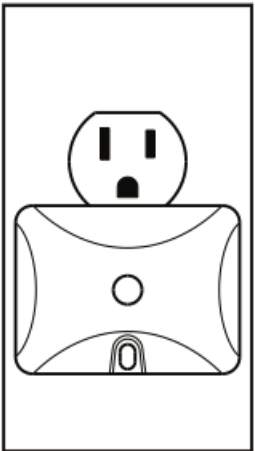
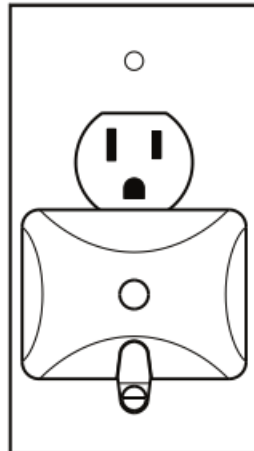
Grounded AC outlet  
with center screw

Grounded AC outlet with  
upper and lower screw

### Note:

When plug the ZRP-120 into the AC receptacles, there will be an air gap between ZRP-120 and wall plate. User can use additional 1 or 2 washers to fill up this air gap and to stabilize the installation.

ZRP-120 will not block lower outlet when plugged into upper outlet of a duplex wall receptacle and vice versa. Possible configurations are illustrated below.

	Un-grounded AC outlet with center screw	Grounded AC outlet with center screw	Grounded AC outlet with upper and lower screw
Installed at upper AC outlet			
Installed at lower AC outlet			

## Z-Wave setup and operations

### Include/Exclude ZRP-120 to/from a Z-Wave Gateway

Include or Exclude the ZRP-120 from the existing Z-Wave Home Control Network with your primary controller.

- Refer to your primary controller instructions to process the inclusion / exclusion setup procedure.
- When prompted by your primary controller, triple click the PROG button within 1 second.
- The primary controller should indicate that the action was successful. If the controller indicates the action was unsuccessful, please repeat the procedure.

#### Notes:

1. *It is recommended to perform the Remove (Exclude) procedure before performing an Add (Include) procedure.*
2. *The unit will enter classical inclusion/exclusion first, then jump to NWI, and after 20 seconds, it will finally exit NWI mode automatically if there is no inclusion/exclusion request.)*
3. *ZRP-120 will not support Basic Command Class*
4. *All configuration parameters value will keep no change after exclude the unit from network*
5. *ZRP-120 can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications.*

The Below listed Command Class are all supported the Security S2

COMMAND\_CLASS\_ASSOCIATION  
COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO  
COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY  
COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC  
COMMAND\_CLASS\_POWERLEVEL  
COMMAND\_CLASS\_SUPERVISION  
COMMAND\_CLASS\_VERSION

## LED Indication Status

Operations	LED Indication Status
Device not currently paired into a Z-Wave network	LED will continuously flash two times per second.
<b>Learning / NWI mode:</b> Triple click on PROG button	If the device already existing in the network, LED will flash slowly for 20 seconds, and then return to previous ON or OFF stage. If the device does not exist in the network, LED will keep flash slowly and waiting for Network Wide Inclusion (NWI) (The device will exit NWI mode automatically after 20 seconds)
Receive command / Send command or data	LED will flash 2 times, and then return to previous ON or OFF stage.
Configure command error	LED will rapidly flash 6 times, and then return to previous ON or OFF stage.

## Restoring Factory Defaults

All Configuration Parameter values and Association information will be restored to factory default settings and excluded from the network.

Step	Setup Key	LED Indication Status on ZRP-100
1	Press and keep holding the PROG button for not less than 10 seconds.	- LED state will toggle for first 5 seconds of being pressed. - LED state will toggle again after the remaining 5 seconds.
2	Release the PROG button then triple click the PROG button within 2 seconds of step 1.	- LED will stay in previous ON or OFF stage.

*Remark: All the setting and data will be permanently deleted. Please use this procedure only when the network primary controller is missing or otherwise inoperable.*

## Support for Association Groups

ZRP-120 supports 1 association group

Association Group #1

Association Group #1 (max. 1 node) is default to associate with the primary controller (Gateway/Hub/Controller) for Z-Wave Repeater Status change report, refer to below for report details:

a) Device Reset Locally Notification (Only report when the Z-Wave Repeater has been triggered the RESET TO

DEFAULT)

## Wireless Information

### Wireless range:

This device has an open-air line-of-sight transmission distance of 40m, which is compliant with Z-Wave Plus standards. Performance can be vary depending on the type of obstacles, such as walls and furniture, between the Z-Wave devices. Every Z-Wave device set up in your network will act as a signal repeater, allowing them to talk to each other and to find alternate routes in the case of reception dead spots caused by these obstacles. Radio frequency limitations:

1. Each wall or object (i.e.: refrigerator, bookshelf, large TV, etc) can reduce the maximum range by up to 20 to 30%. Plasterboard and wooden walls will have less effect on the signal than concrete, brick, or tile.
2. Wall mounted Z-Wave devices will also suffer a loss of range if they are housed in metal junction boxes, which could reduce the range by up to 20 to 30%.

## Maintenance

1. Do not expose your unit to dust, strong sunlight, humidity, high temperatures or mechanical shocks.
2. Do not use corrosive or abrasive cleansers on your unit.
3. Keep the unit dust free by wiping it with a soft, dry cloth.
4. Do not disassemble your unit; it contains no user-serviceable parts.

## Technical Specifications

<b>Model no.</b>	BW8141US (ZRP-120NA)
<b>RF frequency</b>	908.42MHz
<b>Input voltage / frequency</b>	120Vac / 60Hz
<b>Input power and current</b>	0.5W / 12mA @ 120Vac
<b>RF operating distance</b>	up to 40m (line of sight between the Wireless Controller and the closest Z-Wave receiver module at open area)
<b>Dimension (L x W x T)</b>	64 x 48 x 23mm
<b>Weight</b>	50g
<b>Storage Temperature</b>	-10~60°C
<b>Operation Temperature</b>	0~40°C
<b>Relative Humidity:</b>	5~95%
<b>Environment</b>	Indoor use only

Note: Specifications subject to change without notice due to continuing product improvement.

## Certifications

**UL Listed:** This power unit is intended to be correctly orientated in a vertical or floor mount position.

## FCC Information

FCC ID : **TBD**

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.

Note : 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.

Notice : Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

## **IC information**

IC : **TBD**

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

## **Warnings**

- Do not modify the unit in any way.
- Risk of fire.
- Risk of electrical shock.
- Risk of burns.
- Do not dispose of electrical appliances and unsorted municipal waste, use separate collection facilities.  
Contact your local government for information regarding the collection systems available.
- There is no user serviceable parts in this unit.

## **Warranty**

ONE-YEAR LIMITED WARRANTY: Remotec warrants this product to be free from defects in materials and



workmanship under normal use and service for a period of one year from the original date of purchase from the distributor or dealer.

REMOTEC shall not be liable for:


- damages caused by defective devices for indirect, incidental, special, consequential or punitive damages, including, inter alia, loss of profits, savings, data, loss of benefits, claims by third parties and any property damage or personal injuries arising from or related to the use of the device.
- Service trips to provide instruction on product use.
- Shipping costs for replacement products.

This warranty is limited to the repair or replacement of this product only, if the purchase date cannot be substantiated, the warranty period will begin on the date of manufacture as indicated on this product. All warranty claims must be made to Remotec appointed distributors or dealers during the applicable warranty period. This warranty gives you specific legal right and you may also have other rights which vary in each country.

**Website :** <http://www.remotec.com.hk>

Printed in China  
F820-8141-0000

## Documents / Resources

	<p><a href="#">Remotec ZRP-120NA Z-Wave Plus Range Extender/Repeater</a> [pdf] User Manual ZRP-120NA, Z-Wave Plus Range Extender, Z-Wave Plus Range Repeater</p>
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## References

- [R Remotec Technology – Redefining the future of remote controller, smart home and indoor climate control](#)