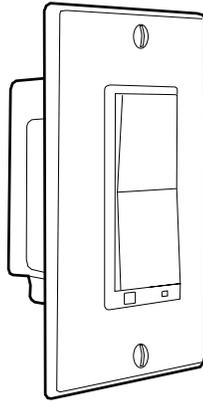


# NuTone®

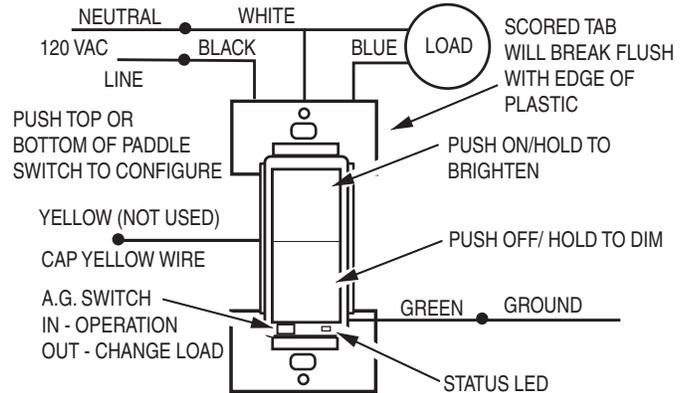


# NWD500Z

Z-Wave Radio Frequency (RF) Controlled  
Wall Mounted Dimmer  
500 Watts, 120 VAC, Series 300



SUPPLIED WITH DECORATIVE SWITCH PLATE



NOTE: This module must be “included in the Network” **only where it will be permanently installed.** The proper operation of this node in the mesh network is dependent on it knowing its location with respect to other nodes. You cannot “test bench” configure this module.

## NWD500Z WALL MOUNTED DIMMER

NuTone's family of Z-Wave® certified wireless lighting controls (switches, dimmers, outlets and plug-in modules) brings a new level of intelligent wireless capability to commercial and residential environments.

The Z-Wave wireless protocol is an international wireless standard for remote home automation, security and other applications. Embedded in each device, the Z-Wave smart chip enables two-way RF communication among hundreds of Z-Wave enabled devices, allowing products and services from multiple manufacturers to work seamlessly.

NuTone Z-Wave products are easy to install, and allow dealers to create an integrated wireless network with nearly limitless expansion and interoperability with security and health monitoring systems, energy management, home entertainment, appliances, and more.

### Air Gap Switch

The NWD500Z has an air gap switch on the face (lower left), that when pulled out, completely removes the power available to the load (simply turning the dimmer off does not). This enables the lamps that are controlled by the device to be changed with minimal danger of electrical shock. The air gap switch must be pushed all the way back in for the dimmer to operate the lamps again.

## INSTALLATION

**DANGER! SHOCK HAZARD.** Read and understand these instructions before installing. This device is intended for installation in accordance with the National Electric code and local regulations in the United States, or the Canadian Electrical Code and local regulations in Canada. It is recommended that a qualified electrician perform this installation. Make sure the total load controlled does not exceed 1800 watts. For indoor use only. Retain instructions for future use.

**CAUTION:** To reduce the risk of overheating and possible damage to other equipment, do not install to control a receptacle, a motor operated appliance, a fluorescent lighting fixture, or a transformer-supplied appliance, **but only permanently installed incandescent lamp fixtures.** Make sure the lamp(s) to be controlled directly from the dimmer receiver total no more than 500 watts. Retain instructions for future use.

### Proper Single Gang Installation

Using NWD500Z's standard full heat-sink (all tabs), the connected incandescent lamp load shall not exceed 500W. If a tab is removed from one side of the NWD500Z unit, the connected incandescent lamp load must not exceed 400W. If both tabs are removed from the NWD500Z unit, the connected incandescent lamp load must not exceed 300W.

### Proper Dual Gang Installation

The connected incandescent lamp load must not exceed 400W for each of the two NWD500Z units.

### Proper Triple Gang Installation

The connected incandescent lamp load must not exceed 300W for each of the three NWD500Z units.

### Wiring

With power off, wire this NWD500Z according to the diagram shown above. **Caution!** Do not wire unit “live” (with power on the circuit) and do not allow the yellow wire to contact line voltage, neutral or ground or you will damage the device. Apply power when completed

## INTEROPERABILITY WITH Z-WAVE DEVICES

A Z-Wave network can integrate devices of various classes of products, and these devices can be made by different manufacturers. The NWD500Z has Z-Wave certification which guarantees interoperability.

## INCLUDING NWD500Z TO THE NETWORK

1. Prepare the Controller to include a unit to the network by adding it to a group (method of adding a node to the network). Refer to controller instructions.
  2. The NWD500Z **must be in its permanently installed location.** Tap either the top or bottom of the NWD500Z switch once.
  3. You should see an indication on your Controller that the “device was included” in the network.
- ✓ **NOTE:** If you have trouble adding the NWD500Z 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” with your controller 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 only as a repeater.

## CONFIGURATION

The NWD500Z supports the Configuration command. The NWD500Z can be configured to operate differently than how it works when you first install it. Using the Configuration command you can change the following:

### Set Ignore Start Level Bit When Transmitting Dim Commands

The NWD500Z can send Dim commands to Z-Wave enabled dimmers. The Dim command has a start level embedded in it. A dimmer receiving this command will start dimming from that start level if this bit is set to 0. If the bit is set to 1, the dimmer will ignore the start level and instead start dimming from its current level.

- Parameter No: 1 • Length: 1 Byte • Valid Values = 0 or 1 (default 1)

### Night Light

The LED on the NWD500Z will by default, turn ON when the load attached is turned ON. To make the LED turn ON when the load attached is turned OFF; set this parameter to a value of 1.

- Parameter No: 3 • Length: 1 Byte • Valid Values = 0 or 1 (default 0)

### Invert Switch

To change the top of the switch to OFF and the bottom of the switch to ON, set parameter 4 to 1.

- Parameter No: 4 • Length: 1 Byte • Valid Values = 0 or 1 (default 0)

### LED Transmission Indication

The NWD500Z will flicker its LED when it is transmitting to any of its groups. This flickering can be set to not flicker at all (set to 0), to flicker the entire time it is transmitting (set to 1), or to flicker for only 1 second when it begins transmitting (set to 2). By default, the NWD500Z is set to flicker for only 1 second.

- Parameter No: 19 • Length: 1 Byte • Valid Values = 0, 1, 2 (default 2)

### Resetting to Defaults

Each Configuration Parameter can be set to its default setting by setting the default bit in the Configuration Set command. See your controller's instructions on how to do this (and if it supports it).

All Configuration commands will be reset to their default state when the NWD500Z is excluded from the Z-Wave network by using the controller to reset the node.

## BASIC OPERATION

### Local Control

The top or bottom of the NWD500Z switch can be used to carry out inclusion (add to a group), association, exclusion (remove from group) or reset (remove from network). Pushing the top or bottom of the switch, the NWD500Z allows the user to do the following:

- Turn ON, OFF, DIM or BRIGHTEN the load attached.
- Include or exclude the module from the Z-Wave network.
- Configure to Control Shades or Window Coverings via Z-Wave network.
- Control other Z-Wave enabled devices.

Also, when a controller prompts you to “Send Node ID” or to “Press Button on Unit”, quickly tap the top or bottom of the switch once to satisfy those instructions.

- Tapping top of the switch turns the load attached ON.
- Tapping bottom of the switch turns the load attached OFF.
- Pressing and holding the top of the switch will brighten the load attached, and pressing and holding the bottom of the switch will dim the load. When OFF, pressing and holding the bottom of the switch will cause the load will go to the minimum dim level.

✓ *NOTE: Upon restoration of power after a power loss, the NWD500Z returns to previous known state.*

### Remote Control

The NWD500Z will respond to BASIC and MULTILEVEL commands that are part of the Z-Wave system. Refer to your controller's instructions as to whether your controller can transmit those commands.

### All On/All Off

The NWD500Z supports the ALL ON / ALL OFF commands. The NWD500Z can be set to respond to ALL ON and ALL OFF commands four different ways. Refer to your controller for information on how to set the NWD500Z to operate in the manner you desire. Some controllers may be only able to set certain settings of ALL ON / ALL OFF response. The four different ways the NWD500Z can be setup to respond to ALL ON and ALL OFF commands are:

- NWD500Z will not respond to ALL ON or the ALL OFF command.
- NWD500Z will respond to ALL OFF command but will not respond to ALL ON command.
- NWD500Z will respond to ALL ON command but will not respond to ALL OFF command.
- NWD500Z will respond to ALL ON and the ALL OFF command (default)

## POWER LEVEL

The NWD500Z supports the Power Level command. The Power level command allows controllers to set and get the RF transmit power level of a node and test specific links between nodes with specific RF transmit power. Refer to your controller's instructions for more information if it supports this command. This command is typically used by professional installer

### SUC Support

There must be a Static Update Controller (SUC) in your Z-Wave system for this feature to work. A Static Controller is one that is not moved after addition to the network. The Static Update Controller can act as a gateway in the system, since other nodes always know its position. The “always listening” advantage of the Static Update Controller is that other nodes can transmit information frames to it whenever needed.

You can assign an “SUC Route” to the NWD500Z. Refer to your Controller's instructions on how to do this (if it supports it). Assigning an SUC Route to the NWD500Z allows it to request an update of the Z-Wave devices that are between it and the Z-Wave device to which it was trying to transmit. The NWD500Z will only request an update when a transmission fails.

## SPECIFICATIONS

<b>Power:</b>	120 VAC, 60 Hz
<b>Maximum Load:</b>	500 Watts for control of permanently installed incandescent lamp fixtures only (not for control of receptacles)
<b>Signal:</b>	(Frequency) 908.42 MHz
<b>Range:</b>	Up to 100 feet line of sight between the Controller and / or the closest Z-Wave repeater

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## REGULATORY INFORMATION

The NWD500Z is certified to comply with applicable FCC and IC rules and regulations governing RF and EMI emissions.

### FCC NOTICE

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

### IC NOTICE

This Class B digital apparatus complies with Canadian ICES-003. 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.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. 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, (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Les changements ou modifications non approuvés expressément par la partie responsable de la conformité pourrait annuler l'autorité de l'utilisateur à faire fonctionner l'équipement.

## LIMITED WARRANTY

**WARRANTY PERIOD AND EXCLUSIONS:** Broan-NuTone LLC (the “Company”) warrants to the original consumer purchaser of its product (the “Product”) that the product will be free from material defects in the Product or its workmanship for a period of one (1) year from the date of original purchase. The warranty on the light bulbs provided with the product is one (1) year and does not cover lamp/bulb breakage. This warranty does not cover accessories or parts that may be purchased separately and installed with the Product.

The limited warranty period for replacement parts, and for Products repaired or replaced under this limited warranty, shall continue for the remainder of the original warranty period.

**NO OTHER WARRANTIES: THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY DISCLAIMS AND EXCLUDES ALL OTHER EXPRESS WARRANTIES, AND DISCLAIMS AND EXCLUDES ALL WARRANTIES IMPLIED BY LAW, INCLUDING WITHOUT LIMITATION THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT THAT APPLICABLE LAW PROHIBITS THE EXCLUSION OF IMPLIED WARRANTIES, THE DURATION OF ANY APPLICABLE IMPLIED WARRANTY IS LIMITED TO THE PERIOD SPECIFIED FOR THE EXPRESS WARRANTY.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Any oral or written description of the Product is for the sole purpose of identifying it and shall not be construed as an express warranty.

**REMEDY:** During the applicable limited warranty period, the Company will, at its option, provide replacement parts for, or repair or replace, without charge, any Product or part thereof, to the extent the Company finds it to be covered by and in breach of this limited warranty under normal use and service. The Company will ship the repaired or replaced Product or replacement parts to you at no charge. You are responsible for all costs for removal, reinstallation and shipping, insurance or other freight charges incurred in the shipment of the Product or parts to the Company. The Company reserves the right to utilize reconditioned, refurbished, repaired or remanufactured Products or parts in the warranty repair or replacement process. Such Products and parts will be comparable in function and performance to an original Product or part and warranted for the remainder of the original warranty period. This warranty does not cover (a) normal maintenance and service including light bulbs, batteries or other accessories, (b) normal wear and tear, (c) any Products or parts which have been subject to misuse, abuse, abnormal usage, negligence, accident, improper or insufficient maintenance, storage or repair (other than repair by the Company), (d) damage caused by faulty installation, or installation or use contrary to recommendations or instructions, (e) any Product that has been moved from its original point of installation, (f) damage caused by environmental or natural elements, (g) damage in transit, (h) natural wear of finish, (i) Products in commercial or nonresidential use, or (j) damage caused by fire, flood or other act of God. This warranty covers only Products sold to original consumers in the United States by the Company or U.S. distributors authorized by the Company.

**EXCLUSION OF DAMAGES: THE COMPANY'S OBLIGATION TO PROVIDE REPLACEMENT PARTS, OR REPAIR OR REPLACE, AT THE COMPANY'S OPTION, SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY AND THE COMPANY'S SOLE AND EXCLUSIVE OBLIGATION. THE COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL, INDIRECT, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE PRODUCT, ITS USE OR PERFORMANCE.** Incidental damages include but are not limited to such damages as loss of time and loss of use. Consequential damages include but are not limited to the cost of repairing or replacing other property which was damaged if the Product does not work properly.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

This warranty supersedes all prior warranties and is not transferable from the original consumer purchaser.

**THE COMPANY SHALL NOT BE LIABLE TO YOU, OR TO ANYONE CLAIMING UNDER YOU, FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING, BUT NOT LIMITED TO, OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT OR ANY THEORY OF STRICT LIABILITY, WITH RESPECT TO THE PRODUCT OR THE COMPANY'S ACTS OR OMISSIONS OR OTHERWISE.**

This warranty covers only replacement or repair of defective Products or parts thereof at the Company's main facility and does not include the cost of field service travel and living expenses.

**GENERAL PROVISIONS:** (1) Any assistance Company provides to or procures for consumer outside the terms, limitations or exclusions of this warranty will not constitute a waiver of such terms, limitations or exclusions, or extend or revive the warranty. (2) Any action by you for breach of this limited warranty must be commenced within one year after the breach occurs. (3) Whenever possible, each provision of this limited warranty shall be interpreted in such manner as to be effective and valid under applicable law, but if any portion is deemed invalid or unenforceable, the remaining portions shall still be enforceable. The Company will not reimburse you for any expenses incurred by you in repairing or replacing any defective Product, except for those incurred with the Company's prior written permission.

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**HOW TO OBTAIN WARRANTY SERVICE:** To qualify for warranty service, you must (a) notify the Company at the address or telephone number stated below within seven (7) days of discovering the covered defect, (b) give the model number and part identification and (c) describe the nature of any defect in the Product or part. At the time of requesting warranty service, you must present evidence of the original purchase date. If you cannot provide a copy of the original written limited warranty, then the terms of the Company's most current written limited warranty for your particular product will control. The most current limited written warranties for the Company's products can be found at [www.NuTone.com](http://www.NuTone.com).

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If you must send the Product or part to the Company, as instructed by the Company, you must properly pack the Product or part—the Company is not responsible for damage in transit.