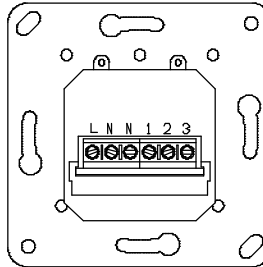




ZDW230



### ZDW230 Connections:

- L: Line Voltage Input
- N: Line Neutral
- N: Load Neutral (Line Neutral)
- 1: Switched Load Output
- 2: Auxiliary Switch reference (Line Neutral)
- 3: Auxiliary Switch Signal Input



**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.

### **ZDW230 WALL MOUNTED DIMMER**

The ZDW230 Wall Mounted Dimmer is a component of the HomePro lighting control system. Wire the Wall Mounted Dimmer in place of the standard wall switch according to the diagram above and configure from the Wireless Controller to operate loads. Inclusion of the ZDW230 Wall Mounted Dimmer on the ZTH200 Wireless Controller menu allows remote ON/OFF control and dimming of light connected.

There are no field repairable assemblies on this unit. If service is needed, the unit must be returned where purchased.

### **INSTALLATION**

**DANGER! Shock Hazard.** Read and understand these instructions before installing. It is recommended that a qualified electrician perform this installation.

**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.

1. Remove the paddle. Using small screw driver, push out the paddle through holes in back side of mounting plate. The paddle can also be pried out from the face, from the top or the bottom of the paddle.
2. Remove the four screws through the retaining ring holding the Trim ring to the mounting plate. This will allow removal of Trim ring. When removing the Trim ring make sure not to bend or disrupt the shape of the antenna wire.
3. Wire the product according to the diagram.
4. Install the product in the wall box.
5. Re-install the Trim ring and the retaining ring with the four screws. Position of this ring is important. The stamped word “Bottom” on the Metal and retaining ring will be aligned with each other. Again do not disrupt the integrity of the antenna wire.
6. Return the Paddle to the face of the product. Simply press into place. Make sure the LED window is also toward the stamped word “Bottom” on the retaining ring.

## INCLUDING ZDW230 TO THE NETWORK

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### ***Including to the Network (Must be installed in its permanent location, not on test bench).***

1. Setup the controller you are using to include a device into network.
2. Tap either the top or bottom of the switch once

### ***Excluding from the Network***

1. Setup the controller you are using to exclude a device from the network.
2. Tap either the top or the bottom of the switch once.

## BASIC OPERATION

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### ***Local Control***

From the switch, the ZDW230 allows the user to do the following:

- Turn ON or OFF, BRIGHTEN or DIM, 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. **Caution: When dimmed to the lowest setting, even though the load looks like its off, it still has power.** Tap bottom of switch to turn off completely. **It is best to turn off the power at the circuit breaker to service the load.**

Note: Upon restoration of power after a power loss, the ZDW230 returns to previous known state.

### ***LED indication***

The LED on the ZDW230 will turn on when the load attached is ON. However, the LED can be user configured to turn ON when the load attached is OFF, if so desired, to act as a night light.

The ZDW230 will flicker its LED when it is transmitting to any of its 4 groups. This can be changed if desired. See “LED Transmission Indication”.

### ***Auxiliary Switch***

An AS200 auxiliary switch on the ZDW230 (providing 3 or 4-Way operation) will also control Group 2 and 3 with multiple taps. Single tap = Group 1 ON/OFF, Hold = Group 1 Dim/Bright, Double tap = Group 2 ON/OFF, Tap - Press & hold = Group 2 Dim/Bright, and Triple tap = Group 3 ON/OFF, Double Tap - Press & hold = Group 3 Dim/Bright

### ***Remote Control***

The ZDW230 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.

## ADVANCED OPERATION

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### ***All On/All Off***

***The ZDW230 supports the ALL ON/ ALL OFF commands.***

The ZDW230 can be set to respond to ALL ON and ALL OFF commands 4 different ways.

Refer to your controller for information on how to set the ZDW230 to operate in the manner you desire. Some controllers may be only able to set certain settings of ALL ON/ALL OFF response.

The 4 different ways the ZDW230 can be setup to respond to ALL ON and ALL OFF commands are:

- ZDW230 will not respond to ALL ON or the ALL OFF command.
- ZDW230 will respond to ALL OFF command but will not respond to ALL ON command.

- ZDW230 will respond to ALL ON command but will not respond to ALL OFF command.
- ZDW230 will respond to ALL ON and the ALL OFF command (default).

## Association

### ***The ZDW230 supports the Association command.***

The ZDW230 can be set to control other Z-Wave devices. **Those devices must be installed in their permanent location.** You can turn on and off, and even dim other Z-Wave devices once they are “**associated**” into 1 of 4 groups within the ZDW230.

Each group is turned on or off (brightened or dimmed) by tapping or holding the switch a differing amount of times.

**Group 1 Control:** If you **associate** a Z-Wave device into Group 1, you can turn that device ON and OFF by tapping the top or bottom of the switch once. The load attached to the ZDW230 will also turn on or off. Associating nodes into group 2 or 3 will cause a very slight delay before the command is transmitted to group 1 nodes.

You can brighten the controlled device by pushing and holding the top of the switch, dim by pushing and holding the bottom of the switch.

**Group 2 Control:** If you **associate** a Z-Wave device into Group 2, you can turn that device ON and OFF by tapping the top or bottom of the switch twice. You can brighten or dim devices by tapping the switch **once** then push and hold the top or bottom. The load attached to the ZDW230 is not affected.

**Group 3 Control:** If you **associate** a Z-Wave device into Group 3, you can turn that device ON or OFF by tapping the top or bottom of the switch three times. You can brighten or dim devices by tapping the switch **twice** then push and hold the top or bottom. The load attached to the ZDW230 is not affected.

**Group 4 Control:** Only **associate** transmitters or controllers into Group 4. Group 4 should be used only to update a transmitter or controller on the status of the ZDW230 which might have been controlled from another device.

You can **associate** up to **5** Z-Wave devices into each of these four groups. For instructions on how to “**associate**” a Z-Wave device into one of these groups, refer to your wireless controller instructions. (If you are using the ZTH200 controller, refer to the Setup Menu, Association section).

*A note about dimming, if you combine Z-Wave enabled dimmers and other types of Z-Wave devices in a group, place a Z-Wave enabled dimmer into the empty group 1<sup>st</sup> to ensure that the dimming operates correctly.*

## Configuration

### ***The ZDW230 supports the Configuration command.***

The ZDW230 can be configured to operate slightly differently than how it works when you first install it. Using the Configuration command you can configure the following:

- Set Ignore Start Level Bit When Transmitting Dim Commands
- Suspend Group 4
- Disable Group 4 During a Dim Command
- Night Light
- Invert Switch
- Ignore Start Level When Receiving Dim Commands
- Ignore Start Level When Receiving Dim Commands
- Don't Send Level Command After Transmitting Dim Commands
- Adjusting Dim Rate
- On/Off Command dim rate (excluding ALL ON/ALL OFF commands)
- Enable Shade Control Group 2
- Enable Shade Control Group 3
- LED Transmission Indication

You can use a ZTH200 to send Configuration commands. (Refer to the Setup Menu, Configuration section)

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

- **Parameter No: 1**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 1)**

The ZDW230 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. However, the command also has a

bit that indicates whether the dimmer should ignore the start level. If the bit is set to 1, the dimmer will ignore the start level and instead start dimming from its current level. If this bit is set to 0, the dimmer will not ignore the start level.

#### **Suspend Group 4**

- **Parameter No: 2**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 0)**

You may wish to disable transmitting commands to Z-Wave devices that are in Group 4 without “un-associating” those devices from the group. Setting parameter 2 to the value of 1 will stop the ZDW230 from transmitting to devices that are “associated” into Group 4.

It is possible that you may only want the units in Group 4 to track when the dimmer is being turned ON and OFF and not when dimming.

#### **Disable Group 4 During a Dim Command**

- **Parameter 13**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 0)**

After the ZDW230 is commanded to stop dimming, it will then command the Z-Wave devices in Group 4 to the ZDW230's new level. To prevent the ZDW230 from commanding the Z-Wave devices in Group 4 during this particular occurrence, set Parameter 13 to the value of 1.

#### **Night Light**

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

The LED on the ZDW230 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 instead, set parameter 3 to a value of 1.

#### **Invert Switch**

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

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

#### **Ignore Start Level When Receiving Dim Commands**

- **Parameter No: 5**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 1)**

The ZDW230 can be set to ignore the start level that is part of the dim command, regardless of whether the command is telling the dimmer to ignore the start level or not ignore the start level embedded in the command (see Parameter 1). Setting parameter 5 to a value of 1 (factory default) will cause the ZDW230 to ignore the start level and to dim or brighten from its current level. Setting the value to 0 will cause the ZDW230 to dim or brighten from the level in the command.

#### **Don't Send Level Command After Transmitting Dim Commands**

- **Parameter 6**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 1)**

When you press and hold the bottom of the ZDW230 switch once, the Z-Wave devices that are **associated** into Group 1 are sent the Dim command. If parameter 6 is set to 0, after you release the switch, the ZDW230 will command devices in that group to go to the same level of the ZDW230. If parameter 6 is set to a value of 1 (factory default) the devices in Group 1 will not go to the same level of the ZDW230

#### **Adjusting Dim Rate**

- **Parameter 7-12**

- **Length: 1 Byte**
- **Valid Values:** (See next page)

There are 3 sets of parameters that can adjust the dimming rate of the ZDW230.

1. One set to control how fast the dim rate is when the dimmer receives a Z-Wave command excluding ALL ON or ALL OFF command (Parameter 7 and 8).
2. One set to control how fast the dim rate is when the dimmer is locally controlled (Parameter 9 and 10).
3. One set to control how fast the dim rate is when the dimmer receives an ALL ON or ALL OFF command (Parameter 11 and 12).

These values can be changed instantly to allow various scenes and effects.

The first of these parameters is the “dim step” (dim rate) parameter. It can be set to a value of 1 to 99. This value indicates how many levels the dimmer will change when the timer (discussed below) expires.

The second parameter is the timing (how fast the dim rate) parameter. It can be set to a value of 1 to 255.

This value indicates in 10 millisecond resolution, how often the dim level will change. For example, if you set this parameter to 1, then every 10mS the dim level will change. If you set it to 255, then every 2.55 seconds the dim level will change.

With the combination of the two parameters that can control the dim rate, the dimmer can be adjusted to dim from max to min or min to max at various speeds between 10 millisecond and 252.45 seconds (over 4 minutes).

#### **On/Off Command dim rate (excluding ALL ON/ALL OFF commands)**

- |                     |   |
|---------------------|---|
| <b>Parameter 7</b>  | <b>Dim step Parameter (default value is 1)</b><br><b>Valid Values: 1-99</b>                                     |
| <b>Parameter 8</b>  | <b>Dim timer Parameter (default value is 3)</b><br><b>Valid Values: 1-255</b><br><b>Local Control dim rate</b>  |
| <b>Parameter 9</b>  | <b>Dim step Parameter (default value is 1)</b><br><b>Valid Values: 1-99</b>                                     |
| <b>Parameter 10</b> | <b>Dim timer Parameter (default value is 3)</b><br><b>Valid Values: 1-255</b><br><b>ALL ON/ALL OFF dim rate</b> |
| <b>Parameter 11</b> | <b>Dim step Parameter (default value is 1)</b><br><b>Valid Values: 1-99</b>                                     |
| <b>Parameter 12</b> | <b>Dim timer Parameter (default value is 3)</b><br><b>Valid Values: 1-255</b>                                   |

#### **Enable Shade Control Group 2**

- **Parameter 14**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default value is 0)**

The ZDW230 can operate shade control devices via its group 2 if this configuration parameter is set to 1.

#### **Enable Shade Control Group 3**

- **Parameter 15**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default value is 0)**

The ZDW230 can operate shade control devices via its group 3 if this configuration parameter is set to 1.

#### **LED Transmission Indication**

- **Parameter 19**
- **Length: 1 Byte**
- **Valid Values = 0 , 1, 2 (default value is 2)**

The ZDW230 will flicker its LED when it is transmitting to any of its 4 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 ZDW230 is set to flicker for only 1 second.

*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 ZDW230 is reset from the Z-Wave system.*

### **Powerlevel**

**The ZDW230 supports the Powerlevel command.**

The Powerlevel 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, if it supports this command, for more information. This command is typically used by professional installers.

### **SUC Support**

There must be a Static Update Controller 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 Controller can act as a gateway in the system, since other nodes always know its position. The "always listening" advantage of the Static Controller is that other nodes can transmit information frames to it whenever needed.

You can assign an "SUC Route" to the ZDW230. Refer to your Controller's instructions on how to do this (if it supports it). Assigning an SUC Route to the ZDW230 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 ZDW230 will only request an update when a transmission fails.

## **SPECIFICATION**

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Maximum Load: 500W, for incandescent lamps only (Indoor use).  
Signal Range: Up to 30 meters line of sight  
Power: 230 VAC, 50 Hz.  
Signal (Frequency): 868.42 MHz.

## **INTEROPERABILITY WITH Z-WAVE™ DEVICES**

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A Z-Wave™ network can integrate devices of various classes, and these devices can be made by different manufacturers. The ZDW230 can be incorporated into existing Z-Wave™ networks.

The top or bottom of the switch on the face of the ZDW230 can be used to carry out inclusion, association, or exclusion.

## **WARRANTY**

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**For warranty and general product information visit our web site at [www.act-solutions.com](http://www.act-solutions.com)**