HomePro
RF Home Automation

ZDM230

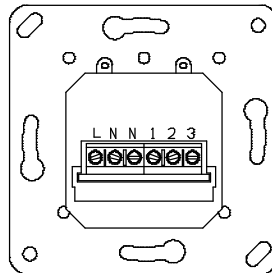*Radio Frequency Controlled, 500W, 230 VAC, European Wall Mounted 3-Way Dimmer Receiver, Dual Switch, Release 1.1*

ZDM230 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

ZDM230

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, then in-

ZDM230 WALL MOUNTED DIMMER

The ZDM230 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 ZDM230 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 paddles. Using small screw driver, push out the paddles 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 paddles.

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. Reinstall 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 paddles to the face of the product. These simply press into place. Make sure the LED windows are also toward the stamped word "Bottom" on the retaining ring.

INCLUDING ZDM230 TO THE NETWORK

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 left 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 left switch once.

BASIC OPERATION

Local Control

From the left switch, the ZDM230 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 left switch turns the load attached ON.
• Tapping bottom of the left switch turns the load attached OFF.
• Pressing and holding the top of the left 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 ZDM230 returns to previous known state.

LED indication

The LED on the ZDM230 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 ZDM230 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 ZDM230 (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 ZDM230 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

All On/All Off

The ZDM230 supports the ALL ON/ ALL OFF commands.

The ZDM230 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 ZDM230 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 ZDM230 can be setup to respond to ALL ON and ALL OFF commands are:

• ZDM230 will not respond to ALL ON or the ALL OFF command.
• ZDM230 will respond to ALL OFF command but will not respond to ALL ON command.

- ZDM230 will respond to ALL ON command but will not respond to ALL OFF command.
- ZDM230 will respond to ALL ON and the ALL OFF command (default).

Association

The ZDM230 supports the Association command.

The ZDM230 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 ZDM230.

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 left switch _once_. The load attached to the ZDM230 will also turn on or off.

You can brighten the controlled device by pushing and holding the top of the left switch, dim by pushing and holding the bottom of the left 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 right switch. You can brighten or dim devices by pushing and holding the top or bottom of the right switch. The load attached to the ZDM230 is not affected. Group 2 will be polled at a specific interval and the LED on the right button will indicate the status of Group 2. The poling interval can be configured.

Associating nodes into group 3 will cause a very slight delay before the command is transmitted to group 2 nodes.

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 right switch _twice_. You can brighten or dim devices by tapping the right switch **once** then push and hold the top or bottom of the right switch. The load attached to the ZDM230 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 ZDM230 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 st to ensure that the dimming operates correctly.

Configuration

The ZDM230 supports the Configuration command.

The ZDM230 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:

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 ZDM230 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 "disassociating" those devices from the group. Setting parameter 2 to the value of 1 will stop the ZDM230 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 130**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 0)**

After the ZDM230 is commanded to stop dimming, it will then command the Z-Wave devices in Group 4 to the ZDM230's new level. To prevent the ZDM230 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 ZDM230 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. Note: If you invert the switches and also install the product upside down, remember the load will now be controlled by the right, not the left switch.

Ignore Start Level When Receiving Dim Commands
- **Parameter No: 5**
- **Length: 1 Byte**
- **Valid Values = 0 or 1 (default value is 1)**

The ZDM230 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 ZDM230 to ignore the start level and to dim or brighten from its current level. Setting the value to 0 will cause the ZDM230 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 ZDM230 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 ZDM230 will command devices in that group to go to the same level of the ZDM230. 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 ZDM230

Adjusting Dim Rate
- **Parameter 7-12**
- **Length: 1 Byte**
- **Valid Values:** (See below)

There are 3 sets of parameters that can adjust the dimming rate of the ZDM230.

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 maximum to minimum or minimum to maximum at various speeds between 10 millisecond and 252.45 seconds (over 4 minutes).

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

Parameter 7 **Dim step Parameter   (default value is 1)**
Valid Values: 1-99

Parameter 8 **Dim timer Parameter (default value is 3)**
Valid Values: 1-255
Local Control dim rate

Parameter 9 **Dim step Parameter   (default value is 1)**
Valid Values: 1-99

Parameter 10 **Dim timer Parameter (default value is 3)**
Valid Values: 1-255
ALL ON/ALL OFF dim rate

Parameter 11 **Dim step Parameter (default value is 1)**
Valid Values: 1-99

Parameter 12 **Dim timer Parameter (default value is 3)**
Valid Values: 1-255

Enable Shade Control Group 2
- **Parameter 14**
- **Length: 1 Byte**
- **Valid Values: 0 or 1 (default value is 0)**

The ZDM230 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 ZDM230 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 ZDM230 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 ZDM230 is set to flicker for only 1 second.

Poll Group 2 Interval (minutes)
- **Configuration Parameter 20.**
- **One Byte**
- **Valid Values are 1 through 255 (Default value is 2)**

Poll Group 2
- **Configuration Parameter 22 (Default value is 1)**
- **One Byte**
- **If value is 0, the ZDM230 will not poll group 2.**
- **If value is 1, the ZDM230 will poll group 2 at the interval set in Configuration Parameter 20.**

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 ZDM230 is reset from the Z-Wave system.

Powerlevel

The ZDM230 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 ZDM230. Refer to your Controller's instructions on how to do this (if it supports it). Assigning an SUC Route to the ZDM230 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 ZDM230 will only request an update when a transmission fails.

SPECIFICATION

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

A Z-Wave™ network can integrate devices of various classes, and these devices can be made by different manufacturers. The ZDM230 can be incorporated into existing Z-Wave™ networks.

The top or bottom of the switch on the face of the ZDM230 can be used to carry out inclusion, association, or exclusion.

WARRANTY

For warranty and general product information visit our web site at www.act-solutions.com