Pilio PAD02 Z-Wave Smart Dimmer Socket User Manual

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Pilio PAD02 Z-Wave Smart Dimmer Socket

Introduction

PAD02 is an E27(EU)/ E26(US) Edison screw based lamp socket, which provides electrical connection to the E14(EU)/ E12(US) Edison screw based lamps and support it in the lighting fixture. The use of socket allows lamps to be safely and conveniently replaced. You can On/Off the light by pressing the button briefly, or a long pressing to control the brightness of dimmable lighbulb.
This dimmer is a transceiver which is a security enabled device which based on Z-Wave Plus technology. Z-Wave PlusTM enabled devices displaying the Z-Wave PlusTM logo can also be used with it regardless of the manufacturer, and can also be used in other manufacturer's Z- WaveTM enabled networks. Remote dim level control of the connected light is possible with other manufacturer's wireless Controller. Since PAD02 supports Security Command Class, it can learn with a Secured enabled controller to fully utilize the device. Its functionality and supported command classes is identical when included as a secure and non-secure device.

Warning:

1. Plug out to disconnect from power supply; Do not plug in line.
2. For continued protection against risk of electric, replace only with same type and rating of fuse.
3. Do not connect any appliances other than luminary products.
4. Do not connect any appliances to this remote controlled lampholder which are radiating heat and may cause ignition or burning of surrounding materials (for example radiation heaters, portable heaters, portable floodlights, desk lamps, etc).
5. Take into consideration that connected appliances might be moved by pets, cleaning staff or other persons who are not aware of the remote control functions.
6. The connection/installation of this product should be in a suitable area with the remote controlled lampholder easily readable and accessible for disconnection actions.

Specification

Operating Voltage	220/ 230/ 240VAC 50/60Hz for EU 120VAC 60Hz for US
Maximum Load (Wattage)	Max. 15 W Type B (for incandescent lamps)
	Max.9W Type Dimmable SBLED
Fuse information	Built-in High Breaking Capacity Current Fuse Protection. Rated: 1.25A; 250 V Built-in Thermal Cut-off Fuses Protection. Rated Temperature: 125°C; Rate d: 2A 250V
Screw lampholder Type:	EU type: E27 to E14; **PAD02-1**
	US type: E26 to E12; **PAD02-2**
Range	Minimum 40m indoor 100m outdoor line of sight
Location	Indoor used
Operating Temperature	0°C to 40°C
Frequency Range	868.40MHz & 869.85MHz/ EU (PAD02-1); 908.4MHz & 916.0MHz/ USA (PAD02-2);
RF Maximum Power	+5dBm
FCCID	RHHPAD02

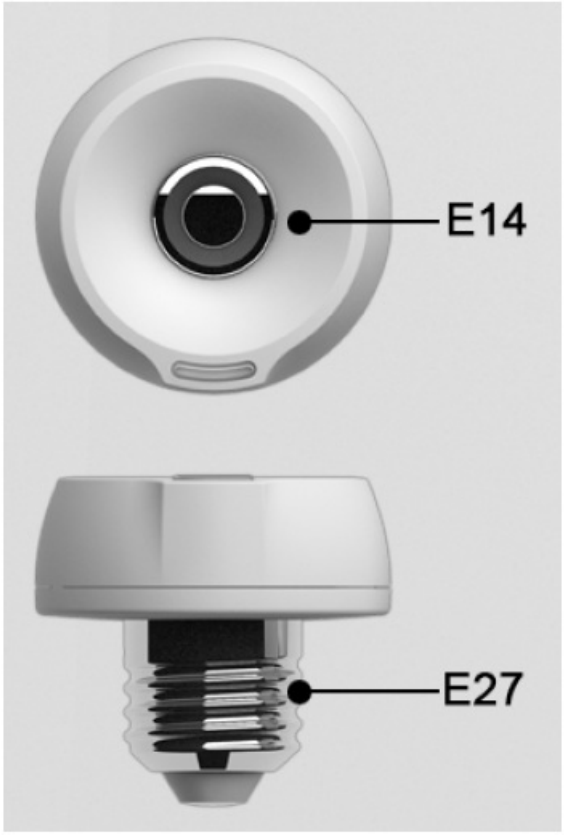
Specifications are subject to change and improvement without notice.

Troubleshooting

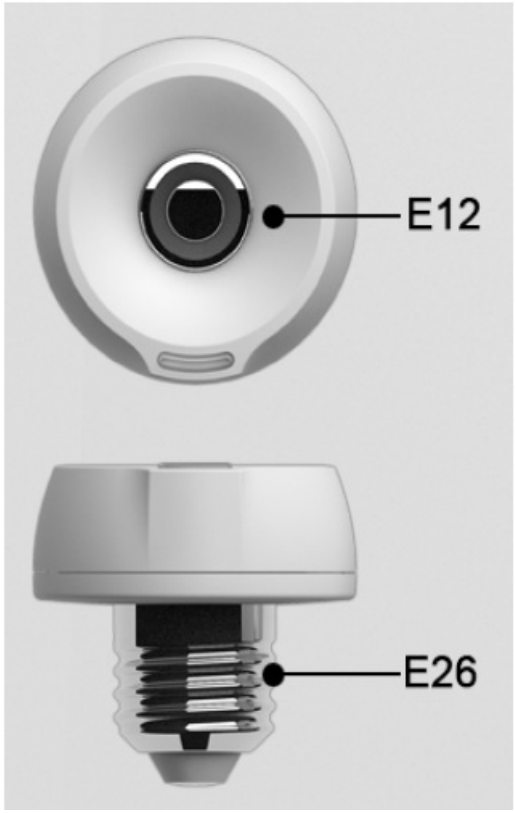
Symptom	Cause of Failure	Recommendation
The dimmer does not work and LED off	1.The dimmer is not plugged into the electrical outlet properly 2.The dimmer break down	1. Check power connections 2. Don’t open up the dimmer and send it for repair.
The dimmer LED illuminating, but cannot control the ON/OFF dimmer of the attached load	Check if the load plugged into the dimmer has its own ON/OFF switch	Set the ON/OFF switch of the attached load to ON.
The dimmer LED illuminating, but the detector can not control the dimmer	1. Not carry out association 2. Same frequency interference	1. Carry out association 2. Wait for a while to re-try

Screw lampholder Type:
Since the socket type for each country in Europe varies, refer to the outline for each socket suited for each country as follows:

EU TYPE: PAD02-1

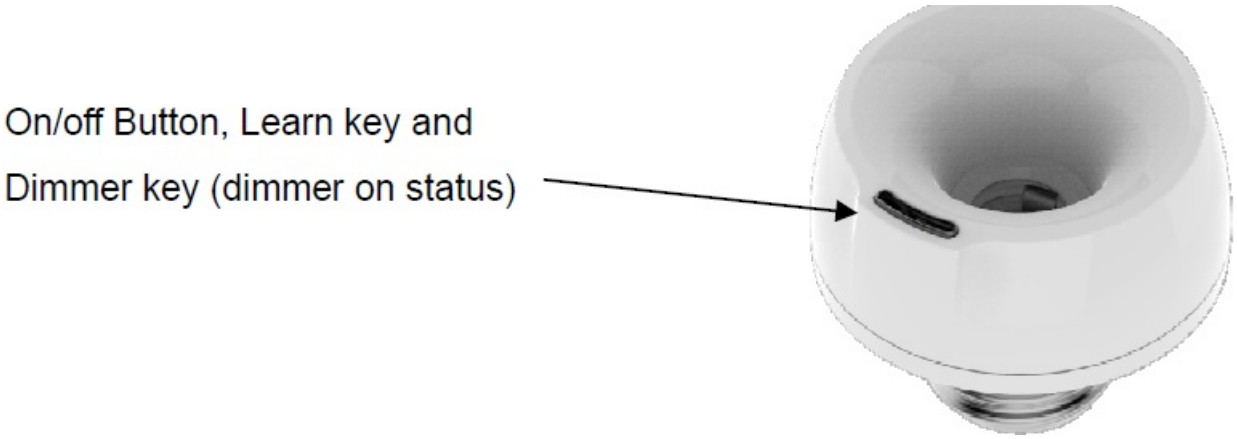


US TYPE: PAD02-2



Note: Please make sure that the intensity of the screw lampholder of the electrical device must be Maximum Load (Watt) and have same head as the enclosed screw lampholder before inserting to the socket.

Product Overview



For Instruction to **http://www.philio-tech.com**

Adding to Z- WaveTM Network
In the front casing, there is an on/off button with LED indicator below which is used to switch on and off, dim level, or carries out add, remove, reset or association.
When first power is applied, its LED flashes on and off alternately and repeatedly at 0.5 second intervals. It implies that it has not been assigned a node ID and start auto inclusion.

Auto Inclusion
The function of auto inclusion will be executed as long as the dimmer does not have Node ID and just connect the dimmer to main power.
Note: Auto inclusion timeout is 2 minute during which the node information of explorer frame will be emitted once

every several seconds. Unlike “inclusion” function as shown in the table below, the execution of auto inclusion is free from pressing the On/Off button on the dimmer.
The table below lists an operation summary of basic Z-Wave functions. Please refer to the instructions for your Z-WaveTM certificated primary controller to access the setup function, and to Add/Remove/Associate devices

Function	**Description**	**Annotation**
No node ID	The Z-Wave Controller does not allocate a node I D to the Switch.	LED 2-second on, 2-second off
Add (Inclusion)	1. Put your Z-Wave controller into inclusion mode by following the instructions provided by the cont roller manufacturer.	
	2. Pressing Include button of PAD02 three times within 2 seconds will enter inclusion mode.	
Remove (Exclusion)	1. Put your Z-Wave controller into exclusion mod e by following the instructions provided by the controller manufacturer.	

	2.	Pressing Include button of PAD02 three tim es within 2 seconds will enter exclusion mo de.	
	3.	Node ID has been excluded.	0.5s On, 0.5s Off (Enter auto inclusion)
Reset	1. Pressing Include button of PAD02 three times within 2 seconds will enter inclusion mode.		Use this procedure only in the even t that the primary controller is lost o r otherwise inoperable.
	2. Within 1 second, press Include button of PAD 02 again for 5 seconds.		
	3. Node IDs are excluded.		0.5s On, 0.5s Off (Enter auto inclusion)
Association	1. The PAD02 is an always listening Z-Wave device, so associations may be added or removed by a controller at any time. Or If your controller requires to have the PAD0 2 send a 'node information frame' or NIF for asso ciations, then pressing the On/Off button three ti mes within 2 seconds will cause the PAD02 to se nd its NIF.		
	2.	There are only two groups for the switch.	
XAdding a node ID allocated by Z-Wave Controller means inclusion. Removing a node ID allocated by Z-Wave Controller means exclusion. XFailed or success in including/excluding the node ID can be viewed from the Z-Wave Controller.			

LED Indication

To distinguish what mode the switch is in, view from the LED for identification.

State Type	LED Indication
Normal	Whenever we switch On and off of the PAD02 by On/Off button or RF command, the LED will lights up when switch on; whereas LED off when switch off.
No node ID	Under normal operation, when the dimmer has not been allocated a node ID, the LED flashes on and off alternately at 2-second intervals. By pressing On/Off button, it will stop flashing temporarily.
Learning	When PAD02 is in learning mode, LED flashes on and off alternately

Manual dim level control:
To manually switch on the light, press and release the On/Off button shortly when the light is off. The light will dim from off to the level which was set before switch off. To manually switch off the light, press and release the On/Off button shortly when the light is on. To adjust the dim level, press and hold the On/Off button until the desired dim level is achieved, then release.

Programming :

1. Basic Command Class / Multilevel Switch Command Class
   The dim level can be set by BASIC and MULTILEVEL SWITCH commands.
   1-1 BASIC_GET
   Upon receipt of the following commands from a Z-Wave Controller, the dimmer will report its dim level to the node inquired.
2. Z-Wave's Group
   2-1 Group1 Lifeline: (Maximum 5 nodes)
   The dimmer can be set to send reports to associated Z-Wave devices. It supports one association group with one node support for Grouping 1. For group 1, the dimmer will report ALARM_REPORT DEVICE_RESET_LOCALLY_NOTIFICATION and MULTILEVEL_SWITCH_REPORT.
3. Z-Wave's Configuration

Configuration Parameter	Function	Size (Byte)	Value	Unit	Default	Description
1	Dimmer Level Report mode	1	0-1		1	0 : Disable 1 : Enable
2	LED indication mode	1	1-3		1	1 : Show dimmer state 2 : Show night mode 3 : One flash mode
4	Restore dimmer state	1	0-2		1	0 : Dimmer off 1 : Last dimmer state 2 : Dimmer on

4. Firmware update over the air (OTA)

   PAD02 is based on 500 series SoC and supports Firmware Update Command Class, it can receives the updated firmware image sent by controller via the Z-wave RF media. It is a helpful and convenient way to improve some function if needed.
5. Command Classes

   The Switch supports Command Classes including…
   - COMMAND_CLASS_ZWAVEPLUS_INFO
   - COMMAND_CLASS_VERSION_V2
   - COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
   - COMMAND_CLASS_SECURITY
   - COMMAND_CLASS_DEVICE_RESET_LOCALLY
   - COMMAND_CLASS_ASSOCIATION_V2
   - COMMAND_CLASS_ASSOCIATION_GRP_INFO
   - COMMAND_CLASS_POWERLEVEL
   - COMMAND_CLASS_BASIC
   - COMMAND_CLASS_SWITCH_MULTILEVEL_V2
   - COMMAND_CLASS_CONFIGURATION
   - COMMAND_CLASS_ALARM
   - COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2
   - COMMAND_CLASS_SCENE_ACTIVATION
   - COMMAND_CLASS_SCENE_ACTUATOR_CONF

Choosing a Suitable Location

1. Do not locate the dimmer facing direct sunlight, humid or dusty place.
2. The suitable ambient temperature for the dimmer is 0°C~40°C.
3. Do not locate the dimmer where exists combustible substances or any source of heat, e.g. fires, radiators, boiler etc.
4. After putting it into use, the body of dimmer will become a little bit hot of which phenomenon is normal.

Disposal

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

FCC Interference Statement

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 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.

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.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Documents / Resources

	Pilio PAD02 Z-Wave Smart Dimmer Socket [pdf] User Manual PAD02, Z-Wave Smart Dimmer Socket