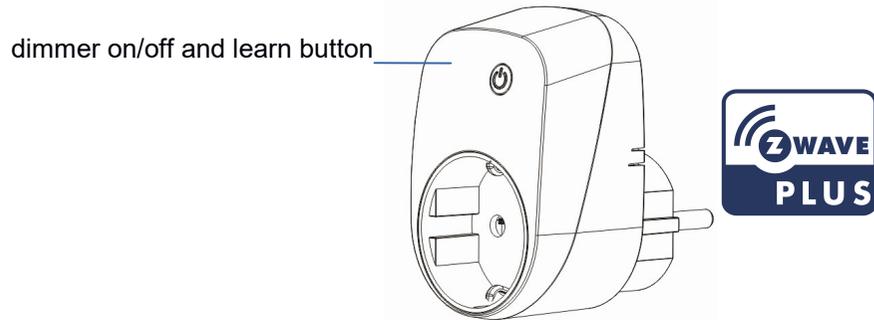


# PAD9

## Smart Dimmer plug in switch



### Introduction

The Dimmer Plug is a Z-Wave™ enabled device which is fully compatible with any Z-Wave™ enabled network. This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products. Z-Wave™ enabled devices displaying the Z-Wave™ logo can also be used with it regardless of the manufacturer, and ours can also be used in other manufacturer's Z-Wave™ enabled networks. This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all implemented functions. Inclusion of this unit on other manufacturer's Wireless Controller menu allows remote operation of the unit and the connected load. The Dimmer Plug is designed to control the on/off status of lighting in your house. The unit also provides dimmer function which is only applicable to light bulbs. At 220-240V voltage, this Dimmer Plug can support connected load of Max. 200W. The product supports Over The Air(OTA) feature for the products firmware upgrade.

### WARNING:

For safety concerns:

- Do not connect any appliances other than luminary products.
- Do not connect any appliances to this remote controlled socket-outlet which are radiating heat and may cause ignition or burning of surrounding materials (for example radiation heaters, portable heaters, portable floodlights, desk lamps, etc).
- 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.
- The connection/installation of this product should be in a suitable area with the

remote controlled socket-outlet easily readable and accessible for disconnection actions.

### Adding to Z-Wave™ Network

In the front casing, there is an on/off button (also an include button) with LED indicator below which is used to dim on and off or carries out inclusion, exclusion, reset or association. When first power applied, its LED flashes on and off alternately and repeatedly at 2 second intervals. It implies that it has not been assigned a node ID and start auto inclusion.

This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

The table below lists an operation summary of basic Z-Wave functions. Please refer to the instructions for your Z-Wave™ 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 ID 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 controller manufacturer.	
	2. Pressing Include button of PAD09 three times within 2 seconds will enter inclusion mode.	
Remove (Exclusion)	1. Put your Z-Wave controller into exclusion mode by following the instructions provided by the controller manufacturer.	
	2. Pressing Include button of PAD09 three times within 2 seconds will enter exclusion mode.	
	3. Node ID has been excluded.	
Reset	1. Pressing Include button of PAD09 three times within 2 seconds will enter inclusion mode.	Use this procedure only in the event that the primary controller is lost or otherwise inoperable.
	2. Within 1 second, press Include button of PAD09 again for 5 seconds.	

	3. IDs are excluded.	
SmartStart	<p>1.Product has a DSK string, you can key in first five digit to increment smart start process, or you can scan QR code.</p> <p>Ex:dimmer 65286-19008-32952-20593-44872-18102-41266-46651</p> <p>2.SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity.</p> <p>*notice1:The QR Code is printed on a material that resists being removed.</p> <p>*notice2:The QR code can be found on the device PAD09 or in the box.</p>	 
Association	<p>1. The PAD09 is an always listening Z-Wave device, so associations may be added or removed by a controller at any time.</p> <p>Or If your controller requires to have the PAD09 send a 'node information frame' or NIF for associations, then pressing the On/Off button three times within 2 seconds will cause the PAD09 to send its NIF.</p> <p>2. There are two groups for the dimmer.</p>	

✘Adding a node ID allocated by Z-Wave Controller means inclusion. Removing a node ID allocated by Z-Wave Controller means exclusion.  
✘Failed 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 PAD09 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 Switch 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 PAD09 is in learning mode, LED flashes on and off alternately and repeatedly at 2 second intervals.

### Manual dim level control:

To manually switch on the light, press and release the On/Off dimmer button 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 dimmer will respond to BASIC and MULTILEVEL SWITCH commands that are part of the Z-Wave system. If PAD09 is included as a secured node, it will only response to the security encapsulation command of BASIC and MULTILEVEL SWITCH.

1-1 BASIC\_GET / MULTILEVEL\_SWITCH\_GET  
Upon receipt of the following commands from a Z-Wave Controller, the Switch will report its dimmer state to the node inquired.

Basic Get Command: [Command Class Basic, Basic Get]
Basic Report Command: Report OFF: [Command Class Basic, Basic Report, Value = 0] Report ON:[Command Class Basic, Basic Report, Value = 1~99]

Multilevel Switch Get Command:[Command Class Multilevel Switch, Multilevel Switch Get]
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Multilevel Switch Report Command:  
 Report OFF:[Command Class Multilevel Switch, Multilevel Switch Report, Value=0]  
 Report ON:[Command Class Multilevel Switch, Multilevel Switch Report, Value =1~99]

1-2 BASIC\_SET / MULTILEVEL\_SWITCH\_SET

Upon receipt of the following commands from a Z-Wave Controller, the load attached to the dimmer will turn on or off.

[Command Class Basic, Basic Set, Value = 0] : the load attached to the dimmer turns off.

[Command Class Basic, Basic Set, Value = 1~99] : the attached load dim on as the level.

[Command Class Multilevel Switch, Multilevel Switch Set, Value=0, Duration = 0~255] : the load attached to the dimmer turns off.

[Command Class Multilevel Switch, Multilevel Switch Set, Value =1~99, Duration = 0~255] : the attached load dim on as the level.

1. Z-Wave's Groups

The Switch can be set to send reports to associated Z-Wave devices. It supports one association group with five nodes support for grouping 1. For group 1, the dimmer will report MULTILEVEL\_SWITCH\_REPORT, ALARM\_REPORT and DEVICE\_RESET\_LOCALLY\_NOTIFICATION.

2-1 Grouping 1 Lifeline(Maximum 5 nodes)

2-1-1 Device reset locally notification :

When PAD09 is reset manually, it will send a DEVICE\_RESET\_LOCALLY\_NOTIFICATION to the nodes of group 1.

2-1-2 On/Off Event Report

When "on" or "off" state has been changed, it will send Multilevel Switch Report to the nodes of Grouping 1.

Multilevel Switch Report

ON:[Command Class Multilevel Switch, Multilevel Switch Report, Value =1~99]

OFF:[Command Class Multilevel Switch, Multilevel Switch Report, Value =0(0x00)]

2-1-3 Overload Notification report

When PAD09 detects the Overload, it will send Notification Report to Group 1 nodes. After detecting overload state and sending this Notification report, PAD09 will turn off the dimmer automatically and lockout the On/Off button. The only thing to do is unplug PAD09 and reduce the load. Then re-power on PAD09 and it will work again. The content of Notification Report

Notification report command: [Command\_Class\_Notification, Notification\_Report, Notification\_Status= 0xFF, Notification\_Type = 0x08, Event = 0x08]

2-2 Grouping 2 Control\_Key1 : (Maximum 5 nodes)

When the On/Off status changes or the dim level is achieved manually, it will send

BASIC\_SET command to group 2 nodes to make them unanimous.

Dimmer Off : [Command Class Basic, Basic Set, Value = 0]

Dimmer On : [Command Class Basic, Basic Set, Value = 1~99]

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

3-1 Dimmer level report mode :

Whenever dimmer on/off state changes, it will send MULTILEVEL\_SWITCH\_REPORT to the nodes of group1. The default setting is Enable the function.

3-2 LED indication mode:

3-2-1 Show dimmer State : When dimmer is on, LED is on. When dimmer is off, LED is off. The default setting is Show dimmer State.

3-2-2 Show Night mode : When dimmer is on, LED is off. When dimmer is off, LED is on.

3-2-3 One flash mode : When dimmer on/off state changes, LED will light on one second and then off.

3-3 restore dimmer state:

Whenever the AC power return from lost, PAD09 will restore the switch state which could be Dimmer off \ Last dimmer state \ Dimmer on. The default setting is Last dimmer state.

4. Firmware update over the air (OTA)

PAD09 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.

## 1. Command Classes

The Switch supports Command Classes including...

Command Class	Version	Required Security Class
Z-Wave Plus Info	2	None
Version	3	Highest granted Security Class
Manufacturer Specific	2	Highest granted Security Class
Security 2	2	None
Device Reset Locally	1	Highest granted Security Class
Association	2	Highest granted Security Class
Association Group Information	1	Highest granted Security Class
Powerlevel	1	Highest granted Security Class
Basic	1	Highest granted Security Class
Multilevel Switch	2	Highest granted Security Class
Configuration	1	Highest granted Security Class
Notification	8	Highest granted Security Class
Firmware Update Meta Data	4	Highest granted Security Class
Scene Activation	1	Highest granted Security Class
Scene Actuator Configuration	1	Highest granted Security Class
Supervision	1	None
Transport Service	2	None

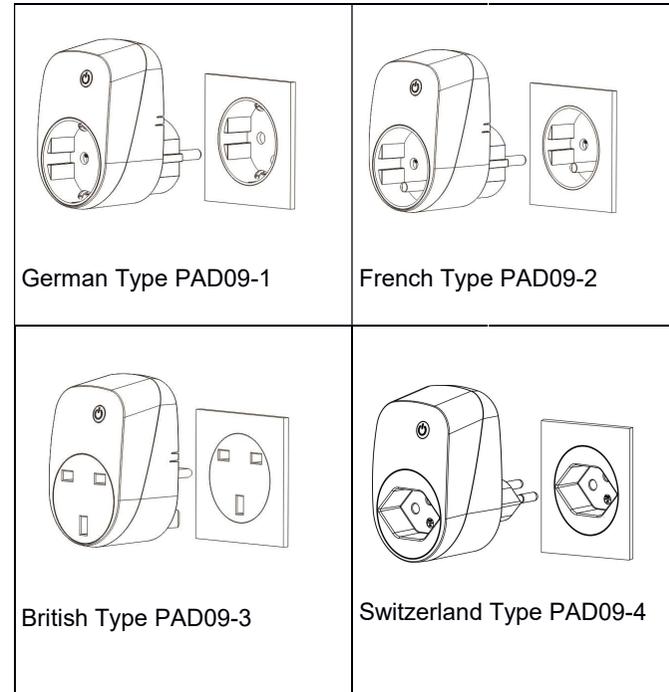
## Troubleshooting

Symptom	Cause of Failure	Recommendation
The dimmer does not	1.The dimmer does not	1. Check power connections

work and LED off	connect the electrical wire properly 2.The dimmer break down	2. Don't open up the dimmer and send it for repair.
The dimmer LED illuminating, but cannot control the ON/OFF state of the load attached	Check if the load connected to the dimmer has its own ON/OFF switch	Set the ON/OFF switch of the load attached to ON
The dimmer LED illuminating, but the Detector cannot control the Switch	1. Not carry out association 2. Same frequency interference	1. Carry out association 2. Wait for a while to re-try

## Socket Type

considering different country use different socket type, we provide various kinds of sockets type as following:



## Specification

Operating Voltage	100-240Vac 50Hz/60Hz 0.9A
Rated Voltage	220-240Vac 50Hz 0.9A (EU) 120Vac 60Hz 0.9A(US) 100Vac 50/60Hz(JP)
Maximum Load (watts)(230V)	200W (13W x 15 pieces) (Dimmable LED bulbs) (230Vac)
Maximum Load (watts)(120V)	100W (13W x 15 pieces) (Dimmable LED bulbs) (120Vac)
Plug and Socket type	German: PAD09-1 France: PAD09-2 UK: PAD09-3
Operating Temperature	0°C ~ 40°C
Location	In door used
Frequency Range	868.40MHz & 869.85MHz/ EU (PAD09-EU); 908.4MHz & 916.0MHz/ USA (PAD09-US);
RF Maximum Power	+5dBm
Transmission Range	Minimum 40 m in door and 100m in outdoor line of sight
FCC ID	RHHPAD09
Modulation Type	FSK (Frequency-Shift Keying)

\*\* Specifications are subject to change and improvement without notice.



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#### Warning:

- 1.Plug out to disconnect from power supply; Do not plug in line.
2. Do not exceed the max rating

#### Warnung:

- 1.Trennen Sie das Gerät von der Stromzuführung. Verwenden Sie das Gerät nicht mit einem DIP Schalter.
2. Achten Sie darauf, dass die maximale Spannung niemals überschritten wird.

#### Warnung:

**für zwischenstecker:**

**nicht hintereinander stecken**

#### 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.

