Popp

Z-Wave Wall Plug Type E Dimmer

SKU: POP_123597

Quickstart

This is a | for .

Inclusion and Exclusion are confirmed by a tripple click

of the button.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

Product Description

This is a wall plug dimmer that can be placed between a wall outlet for Type E and electric devices, plugged in by cord. It can dim all incandescent lights, high voltage halogen lamps and transformers operated low voltage lamps without any restriction. Special optimization functions support the dimming of the majority of dimmable LED lights and Compact Fluorescent Lights (CFLs). The device is IP20 rated and can therefore only be used in dry environments. The device offers a Baby-Dim Function which dims down a lamp from a defined level

into another defined level in a longer but also definable period (e.g. 20 minutes). An automatic Light-Off function and programmable dimming and switching behavior makes the device a very flexible tool for inhouse lighting.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state.** Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Safety Warning for Mains Powered Devices
ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

Installation

The plug can be plugged into every wall outlet for Plug-Type E. It is IP20 rated and can therefore only be used in dry environments. Do not locate the device facing direct sunlight, humid or dusty place. The suitable ambient temperature for the device is 0°C ~ 40°C. Plugs must not be stacked and operated.

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion
Inclusion and Exclusion are confirmed by a tripple click of the button.

Exclusion
Inclusion and Exclusion are confirmed by a tripple click of the button.

Product Usage

The device is able to dim electric loads up to 300 W. The device can be dimmed wirelessly or using the local button.

Local Operation
The local button has the following functions:

- If light is off a short press on the button will turn it either on 100 % or to the last dimming level before turning off
- If light is on - regardless of dimming level - a short press on the button will turn the light off
- Keep the button pressed starts to change dimming level slowly. The direction of dimming (up or down) depends on the direction of the last slow dimming.

The behavior of the button can be configured.

LED Usage
The device has one blue LED used to indicate status information. The behavior of the blue LED can be configured:

- It may show the dimming state. This is the default option.
- It may serve as night light. So it"s on when the light is off.
- It"s deactivated.
- It can be controlled wirelesly and used as an indicator for other advanced functions.

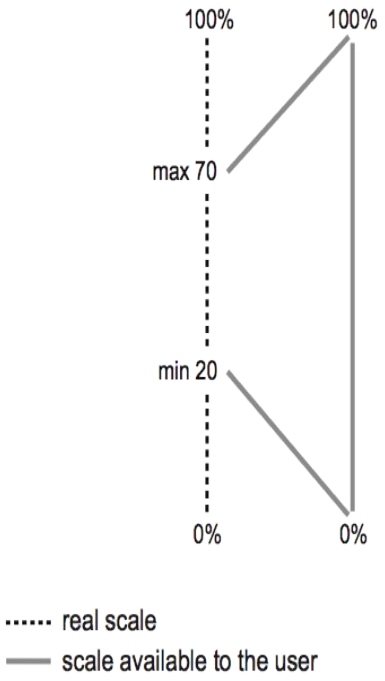
Automated Dimming Function
If activated the dimmer will turn off automatically after a defined time. This function is particularly useful if the dimmer is turned on using a motion detector of any other type of sensor. In this case it"s possible to further define the reaction of the dimmer on certain signals sent from a sensor. This allowes a very flexible application of the dimmer in the house.

Baby Sleeping Function
The device can be used to help babies and little children to find sleep. (It"s save to use the device in childrens rooms or closed to their beds due to the special shutter function that shield the high voltage from touching). When enabled a double click of the button will turn the light into a definable level and then it will gradually dim down over time. The time of dimming and the target dimming state - e.g. off - can be configured as well.

Dimming LEDs and CFLs
LEDs and Compact Flouroscent lights are complicated to dim for two reasons:

- There are a so-called reactive load. At the moment of switching on they have virtually not resistance causing a very high inrush current that may destroy the dimmer device.
- The light emission is based on an electronics that may not crease light according to the input power the dimmer is able to regulate.

There are special LEDs or CFLs that claim to be dimable however almost none of them can be dimmed in the full range of 0% to 100%. Some will flicker at very low dimming level or sometimes on 100% dimming. This flickering is not only annoying but also destroys the lighting device. This dimmer allows to set a lower (configuration parameter 17) and a higher (configuration parameter 18) border for dimming and surpress the dimming levels that are not supported by the device. On default the dimmer will dim between 0% and 100%. If you see problems at certain dimming levels, detect the dimming level at your controlling gateway (reading the dimming value) and change the configuration so that this dimming level will not reached anymore. The extreme case would be to only support 0% (off) and full diming level (on). This function is supported by all lights regardless of the technology. In this mode it is recommended to set the fast dimming speed to 0 (Instantly) using configuration parameter no. 5.



Advanced Options for LED and CFL tweakings
The configuration parameters No 51 - 54 allow to configure the dimming behavior on a very technical level. Do not touch these values unless you know what you do! A dimmer is controlled by the Zero Crossing signal and the TRIAC Fire pulse. The TRIAC fires every half sine wave max one time. A fire cycles starts with the Zero Crosssing and then lasts 156 pulse length increments. The value #51 defines the minimum time after zero crossing because the Triac can fire regardless of the dimming level. Parameter #54 defines whether the fire pulse has defines length (short) or is extended as long as allowed by the minimum start value in parameter #54 and the minimum trailing value defines by #53. This value defines the minimum time the pulse will not be active because of the next zero crossing signal.

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association - one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group Number	Maximum Nodes	Description
1	5	Send Reports on blind state change

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 ... 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 1: LED mode
Set LED indication mode
Size: 1 Byte, Default Value: 3

Setting	Description
0	Disabled
1	Show switch state
2	Night mode (inverted switch state)
3	Operated by Indicator Command Class

Parameter 2: Automatically switch off after
If not zero, automatically switch off after a user defined time
Size: 2 Byte, Default Value: 0

Setting	Description
0	Disabled
1 - 65535	sec

Parameter 3: What to do on RF off command
Defines how to interpret RF Off command. Can be used in conjunction with Auto Off function: Ignore - to switch on the light by motion detectors and switch it off after some amount of time: in case of multiple motion detectors each would try to switch the light off that would break logics; Switch on - to switch on the light on both On and Off paddle press on the remote and switch it off after some amount of time. Button off click will still work (if button operations are not disabled).
Size: 1 Byte, Default Value: 0

Setting	Description
0	Switch off
1	Ignore
2	Switch on
3	Switch on if load is off else switch off

Parameter 4: Ignore start level
Defines if the dimmer shall ignore start level in StartLevelChange command despite it is specified or not
Size: 1 Byte, Default Value: 1

Setting	Description
0	No
1	Yes

Parameter 5: Speed for fast dimming
Time to dim on button presses and Set command (if it has no duration specified). If not 0, dimming will be done smoothly to preserv bulb life.
Size: 1 Byte, Default Value: 30

Setting	Description
0	Instantly
1 -	in 10ms

255	units

Parameter 6: Speed for slow dimming
Time to dim on button holds and StartLevelChange command (if it has no duration specified).
Size: 1 Byte, Default Value: 3

Setting	Description
1 - 255	Time in s

Parameter 7: Behavior on Switch On
Defines the dim level on command ON. On default he dimmer restores last dim level. This parameter allows to configure to set maximum level on second On command (if already On) or to always switch on to maximum level
Size: 1 Byte, Default Value: 0

Setting	Description
0	last dim level
1	maximum dim level when already turned on
2	Always maximum dim level

Parameter 8: Baby Dimming time
Time to dim on double click Off button for Baby-Dim function. This function works only if the load is operated by single press and hold button action. If enabled, the device will wait for a click timeout to see if the second click would be pressed. This will introduce a small delay for single click commands
Size: 1 Byte, Default Value: 00

Setting	Description
0	Disabled
1 - 99	in minutes

Parameter 9: Target dimming level for Baby Dimming
Target level on which to stop while executing Baby Dimming. Can be 0 to completely switch off the light.
Size: 1 Byte, Default Value: 0

Setting	Description
0 - 255	Value in %

Parameter 10: Typical click timeout
Typical time used to differenciate click, hold, double and triple clicks
Size: 1 Byte, Default Value: 32

Setting	Description
1 - 100	in 10ms units

Parameter 17: Limit minimal light level
Minimal level should be greater than maximal
Size: 1 Byte, Default Value: 1

Setting	Description
1 - 95	Level limit

Parameter 18: Limit maximal light level
Maximal level should be greater than minimal
Size: 1 Byte, Default Value: 63

Setting	Description
0	Work as switch: use off and maximal level
10 - 99	Level limit

Parameter 19: Dim Level on Switch On
defines how the dimmer hall react on a simple ON Command.
Size: 1 Byte, Default Value: 0

Setting	Description
0	Use previous light level
1 - 99	Define light level in %

Parameter 51: Pause before pulse
NB: Do not touch these settings if you are not sure what they mean! For dimmable LEDs and CFL with bypass use value 10. For other bulbs use default value.
Size: 1 Byte, Default Value: 28

Setting	Description
5 - 60	Value

Parameter 52: Pause after pulse
NB: Do not touch these settings if you are not sure what they mean! For dimmable LEDs and CFL with bypass use value 40. For other bulbs use default value.
Size: 1 Byte, Default Value: 28

Setting	Description
5 - 60	Value

Parameter 53: Pulse width
NB: Do not touch these settings if you are not sure what they mean! For dimmable LEDs and CFL with bypass use value 20. For other bulbs use default value.
Size: 1 Byte, Default Value: 10

Setting	Description
3 - 20	Value

Parameter 54: Pulse type
NB: Do not touch these settings if you are not sure what they mean!
Size: 1 Byte, Default Value: 0

Setting	Description
0	Long pulse
1	Short pulse

Technical Data

Dimensions	0.0590000x0.1020000x0.0760000 mm
Weight	135 gr
EAN	696859123597

Device Type	Light Dimmer Switch
Generic Device Class	Multilevel Switch
Specific Device Class	Routing Multilevel Switch
Firmware Version	01.00
Z-Wave Version	03.2a
Certification ID	ZC08-13070025
Z-Wave Product Id	0x0154.0x0202.0x0611
Frequency	Europe - 868,4 Mhz
Maximum transmission power	5 mW

Supported Command Classes

- Basic
- Switch Multilevel
- Version
- Indicator
- Switch All
- Configuration
- Manufacturer Specific
- Protection
- Node Naming
- Association

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways,Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.

- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.