



Quick start: Power Switch EU

Technical specifications

Normal operating voltage	230Vac/50Hz
Recommended max. load	 3000W  600W
Frequency range	868.42 MHz
Wireless range	Min. 150 meters in a mesh network

Basic operations

- The *Power Switch* can be remotely controlled.
- The *Power Switch* can be controlled by the push button on the front of the device.
- The *Power Switch*'s indicator light can indicate the status of the switch (ON or OFF).

How it operates

Control and monitor your lightning or any other appliance.
Easy plug and play.

Mounting

1. Place the *Power Switch* into an outlet socket.
2. Plug in the device which you want to control.

Include or exclude in Z-Wave network ¹

1. Press and hold the push button until the indicator light is blinking than release the button to start the inclusion or exclusion process.
2. When classic inclusion failed the product will start Network Wide Inclusion automatically.

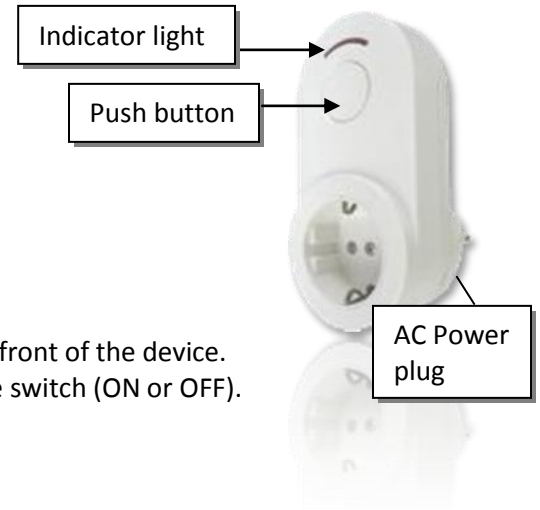
Manual control

Press and release the push button of the *Power Switch* to switch on/off the socket of the *Power Switch*.

- Manual control by the push button can be protected by a configuration parameter
- Led indicator can be inverted by a configuration parameter

Remote control

The *Power Switch* can be remote controlled by several Z-Wave devices.





¹ Make sure your Z-Wave controller is in the correct operation mode (include or exclude).

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Caution:

- This device is using a radio signal that passes through walls, windows and doors. The range is strongly influenced by local conditions such as large metal objects, house wiring, concrete, furniture, refrigerators, microwaves and similar items. On average, the indoor range is approximately 30 meters.
- Do not expose this product to excessive heat or moisture. Dry location use only.
- Prevent long term exposure to direct sunlight.
- Do not attempt to repair this product. If the product is damaged or if you are in doubt about the proper operation, take the product back to the place of purchase.
- Do not clean the product with any liquid.
- Indoor use only.
- Overload will damage this product.

Technical details

Absolute min. /max. voltage	90-260Vac 40-60Hz
Maximum resistive load	16A 
Maximum inductive load	8A 
Frequency range	868.42 MHz (EU) others on request
Wireless range	Approximately 100 meters in line of sight Min. 150 meters with a good mesh network (max 4 hops)
Storage temperature	-5 °C to +65 °C
Storage humidity	10% to 70%
Operating temperature	0 °C to 50 °C
Operating humidity	30% to 80%
Internal power consumption	Approximately 0,5 Watt (when relay and indicator light are off)

1 pole	
Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)
16 A at 250 VAC; 16 A at 30 VDC	8 A at 250 VAC; 8 A at 30 VDC
16 A	
380 VAC, 125 VDC	
16 A	
4,000 VA.	2,000 VA.

Note: When applied to FL lightning or inductive load the max current of 8A may not exceed! We recommend not using more than 15x40W.

Product dimensions (length x width x height)

Power Switch = 125 x 60 x 50 mm

Indication mode

The indicator light gives various statuses of the device as follows:

- | | |
|--------------------------------|--|
| 1. Ready for learn mode: | indicator light blinks every second |
| 2. Learn in progress (add): | indicator light 2 times every second |
| 3. Learn in progress (remove): | indicator light 3 times every 1.5 second |
| 4. Learn mode success: | indicator light is on for one second |
| 5. RF message send failed: | indicator light blinks 6 times rapidly |



Supporting command classes

Basic type: BASIC_TYPE_ROUTING_SLAVE
Generic type: GENERIC_TYPE_SWITCH_BINARY
Specific type: SPECIFIC_TYPE_POWER_SWITCH_BINARY
Listening: TRUE, Z-Wave Lib: 4.54

class: 0x25 COMMAND_CLASS_SWITCH_BINARY
class: 0x70 COMMAND_CLASS_CONFIGURATION
class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC
class: 0x73 COMMAND_CLASS_POWERLEVEL
class: 0x75 COMMAND_CLASS_PROTECTION
class: 0x85 COMMAND_CLASS_ASSOCIATION
class: 0x86 COMMAND_CLASS_VERSION
class: 0x31 COMMAND_CLASS_SENSOR_MULTILEVEL
class: 0x27 COMMAND_CLASS_SWITCH_ALL



Routing slave

This Z-Wave product will be used as slave. Slave nodes are nodes in a Z-Wave network that receive commands and perform actions based on the command. A routing slave can route Z-Wave messages to other nodes in the network. This device is always awake and does not go to sleep mode because it is an AC powered device.

This device can act as a wireless repeater to forward commands for another device in the Z-Wave network to expand the range of the network. This function works for every Z-Wave device from any manufacturer when included into the same Z-Wave network.

Unlike a normal slave a routing slave can store a number of static routes which he uses to send a routed rf frame to another node.

Include initiator

The include initiator is used when Primary and Inclusion Controllers include nodes into the network. When both the include initiator have been activated simultaneously the new node will be included to the network (if the node was not included previously).

Exclude initiator

The exclude initiator is used by Primary Controllers to exclude nodes from the network. When the exclude initiator and a slave initiator are activated simultaneously, it will result in the slave being excluded from the network (and reset to Node ID zero). Even if the slave was not part of the network it will still be reset by this action.

Z-Wave compatibility

Because this is a Z-Wave device, it means it can co-operate with other Z-Wave devices of other manufacturers. It can co-exist in a Z-Wave network existing with product from other manufacturers.

Hops & retries

The Z-Wave range has a range of up to 30 meters in line of sight. This signal is not limited to the 30 meter range due to routing the Z-Wave message to other nodes in the network. This way the range of the Z-Wave network can be expanded to 150 meters indoors (limit of 4 hops).

Class 0x20 COMMAND_CLASS_BASIC

The Basic command class only has a supporting role and is mapped to the Switch Binary command class.

class: 0x25 COMMAND_CLASS_SWITCH_BINARY

The Switch Binary command class can be used to turn the *Power Switch* on or off.

Value:

- 0x00: OFF
- 0x01 – 0xFF: ON

class: 0x86 COMMAND_CLASS_VERSION

This command class is used to obtain information about the *Power Switch*. The Z-Wave library type, the Z-Wave protocol version and the application version will be reported.

class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC

This will report information about the manufacturer. This product will contain the manufacturer ID of *BeNext*. Manufacturer ID of *BeNext* is 138, the ID of this product is 8.

class: 0x70 COMMAND_CLASS_CONFIGURATION

With this command class it is possible to change the default settings of the *Power Switch*. With CONFIGURATION_SET different configuration parameters can be set. These parameters can be changed:

0. Not used**1. Set to default**

Description:	Set all configuration values to default values (factory settings). Read more in chapter Configuration Reset.
Size:	1 byte*
Param1:	All values (0x00 – 0xFF) except for 0x55 can be used to default all the configuration params.
Param2,3,4:	Not used

2. Not used

Description:	n/a
Default:	n/a
Size:	n/a
param1,2:	n/a
param3,4:	n/a

3. Not used

Description:	n/a
Default:	n/a
Size:	n/a
param1,2:	n/a
param3,4:	n/a

4. Startup with last known socket status

Description:	The state in what the switch is when power is supplied.
Default:	0x00
Size:	1 byte*
Param1	if 0x00: When power applied socket is always off If 0x01 – 0xFF: When power applied socket is the state before power was disconnected

5. t/m 8 are not used

Description:	n/a
Default:	n/a
Size:	n/a
param1,2:	n/a
param3,4:	n/a

9. Relay delay time

Description:	When the relay is switched it can't be switched again until the (manual or Z-Wave) configured time has passed.
Default:	0x32 (500 milliseconds)
Size:	1 bytes*
param 1:	Value * 10 milliseconds
param 2, 3, 4:	Not used

10. Led Indicator

Description:	Show the led state compared to the relay state.
Default:	1
Size:	1 byte*
param 1:	If value is 0: the indicator led is never switched on If value is 1: the indicator led is switched on when relay is switched on if value is 2: the indicator led is switched on when relay is switched off
param 2, 3, 4:	Not used

* If a size is other then given size the frame is ignored totally so configuration values are **not** changed.

class: 0x85 COMMAND_CLASS_ASSOCIATION

The Association command class is used to associate other devices with the Power Switch. The devices that are associated can be controlled on application level.

Every time the push button is pressed a switch binary report is sent to the associated node.

The Power Switch can be associated into a grouping. If so, the Power Switch can be controlled by another Z-Wave device (does not have to be a controller).

Number of groupings: 1

Maximum supported nodes per group: 1

Because only one group is supported, grouping identifier is ignored in all cases.

class: 0x73 COMMAND_CLASS_POWERLEVEL

The Powerlevel command class defines the RF transmitting power. This command is used to test the connectivity of a network. The command makes it possible for supporting controllers to SET/GET the RF transmitting power level of a node and test specific links between nodes.

class: 0x75 COMMAND_CLASS_PROTECTION

The Protection command class is used to protect the device being controlled unintentional or unwanted by e.g. a child. When this is applied the push button will not work.

This can be set using the PROTECTION_SET command. The following three protection states can be used:

0x00: Unprotected – the device is not protected and can be operated normally with the push button.

0x01: Protection by sequence – the device can be used by a different way of operating. Three rapid button presses are used to switch manually.

0x02: No operation possible – it is not possible to control the device by the push button. Off course you can control the device by Z-Wave.

Note: every other state will be ignored by application.

Configuration reset

The Power Switch supports a configuration resets function. Configuration reset means:

- All configuration values are defaulted

This function can be activated by sending a configuration set frame:

CONFIGURATION_SET

Parameter: 0x00

Size: 0x01 (can't be different from 1)

Value: All values (0x00 – 0xFF) except for 0x55.

When the value of configuration value is requested 2 possible values can be returned.

CONFIGURATION_REPORT

Parameter: 0x00

Value 0x55: Device doesn't have all his factory settings anymore.
Even when a configuration parameter is changed back to the default value

Value 0xAA: Devices still has all his factory settings.

Troubleshooting

Frequently Asked Questions

Q: Why does the push button on the switch not work?

- A:**
1. Check whether the protection is enabled or not. If it is, disable the protection and try again.
For more information about disabling the protection please refer to the supporting command classes.
 2. During the NWI and the inclusion/exclusion process, the push button will not work.
 3. Check if the *Power Switch* is completely plugged into the socket.

Q: I can't have my *Power Switch* included into my Z-Wave network, what am I doing wrong?

- A:**
1. Is the controller ready to include any device into the Z-Wave network? If the controller is not in include or exclude mode, the *Power Switch* cannot be included or excluded.
 2. The *Power Switch* is already included into a Z-Wave network. Exclude the switch and try to include it again.

Q: Why does the indicator light not work?

- A:**
1. Check if the *Power Switch* is fully plugged into a socket. The indicator light will not work if there is no power supplied to the *Power Switch*.
 2. The Indicator light is only on when the *Power Switch* is on. Press the push button to turn it on.