Firmware Version : 1.2

Quick Start

`S`

To include the device press the button at the plug three times within 1.5 seconds.

Please refer to the chapters below for detailed information about all aspects of the products usage.

What is Z-Wave?

This device is equipped with wireless communication complying to the Z-Wave standard. Z-Wave is the **international standard for wireless communication** in smart homes and buildings. It is using the **frequency of 868.42 MHz** to realize a very stable and secure communication. Each message is reconfirmed (**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.

Z-Wave differentiates between Controllers and Slaves. Slaves are either sensors **(S)** transmitting metered or measured data or actuators **(A)** capable to execute an action. Controllers are either static mains powered controllers **(C)** also referred to as gateways or mobile battery operated remote controls **(R)**. This results in a number of possible communication patterns within a Z-Wave network that are partly or completely supported by a specific device.

1. Controllers control actuators
2. Actuators report change of status back to controller
3. Sensors report change of status of measured values to controller
4. Sensors directly control actuators
5. Actuators control other actuators
6. Remote controls send signals to static controllers to trigger scenes or other actions
7. Remote controls control other actuators.
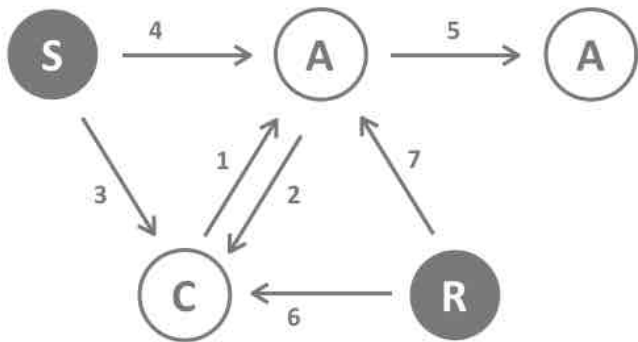
There are two different role a controller can have. There is always one single primary controller that is managing the network and including/excluding devices. The controller may have other functions - like control buttons - as well. All other controllers don't manage the network itself but can control other devices. They are called secondary controllers. The image also shows that its not possible to operate a sensor just from a remote control. Sensors only communicate with static controllers.

Product description

The device can be switched either directly via the button or via a gateway receiving Z-Wave.

The unit remembers the status of the relay when power is cut off. When power is supplied again, the unit will resume the last status of the relay automatically.

Before Device is installed

Please read carefully the enclosed user manual before installation of the radio-actuator, in order to ensure an error-free functioning.

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with 230 Volt mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

The product is permitted only for proper use as specified in the user manual. Any kind of guarantee claim has to be forfeited if changes, modifications or painting are undertaken. The product must be checked for damages immediately after unpacking. In the case of damages, the product must not be operated in any case. If a danger-free operation of the equipment cannot be assured, the voltage supply has to be interrupted immediately and the equipment has to be protected from unintended operation.

Installation Guidelines

Behavior within the Z-Wave network

$\boxed{\text{I}}$ On factory default the device does not belong to any Z-Wave network. The device needs to join an existing wireless network to communicate with the devices of this network. This process is called **Inclusion**. Devices can also leave a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller will be turned into exclusion respective inclusion mode. Please refer to your primary controllers manual on how to turn your controller into inclusion or exclusion mode. Only if the primary controller is in inclusion or exclusion mode, this device can join or leave the network. Leaving the network - i.e. being excluded - sets the device back to factory default.

If the device already belongs to a network, follow the exclusion process before including it in your network. Otherwise inclusion of this device will fail. If the controller being included was a primary controller, it has to be reset first.

- **Auto Inclusion:** If power is supplied for the first time and no node ID has stored in the module.

- **Inclusion:**
    - 1) Put the controller into inclusion mode.

    - 2) Press the button three times within 1.5 seconds to put the unit into inclusion mode.

- **Exclusion:**
    - 1) Put the controller into exclusion mode.

    - 2) Press the button three times within 1.5 seconds to put the unit into exclusion mode.

- **Reset**
    - 1) Press the button three times within 1.5 seconds to put the unit into exclusion.

    - 2) Within 1 second of step 1, press the button again and hold it until LED is off (about 5 seconds).

    - 3) The node ID is excluded. The device reverts to factory default state and will be in auto-inclusion

mode for 4 minutes.

Operating the device

Association Groups The units supports two association groups.
- Group 1: Lifeline - Lifeline: Binary Switch Report, Notification Report, Device Reset Locally Notification
- Group 2: ON/OFF Control: Basic Set - max 4 nodes

Technical Specifications

- Power Input: 220-240V/50Hz

- Maximum Load: Resistive load max. 1500W

- Working Temperature: -10°C - 40°C

Wakeup Intervals - how to communicate with the device?

| W | This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device.

It is possible to set the node ID to 255 to send wakeup notifications as broadcast. In this mode device takes more time to go to sleep and drains battery faster, but can notify all it's direct neighbors about a wakeup.

Node Information Frame

| NI | The Node Information Frame is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.

Associations

| A | 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 a common wireless command.

Association Groups:

1	Group 1: Lifeline: Binary Switch Report, Notification Report, Device Reset Locally Notification (max. nodes in group: 1)
2	Group 2: ON/OFF Control: Basic Set (max. nodes in group: 4)

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 to configure 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 two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Basic Set Command value (Parameter Number 1, Parameter Size 2)
The parameter defines the Basic Set Command value

Value	Description
0 − 99	Set the Basic Set Command value

Delay Time (Parameter Number 2, Parameter Size 1)
The parameter defines the delaying time to report to Group 1.

Value	Description
3 − 19	Define the time delay. (Default 3)

Last Status (Parameter Number 3, Parameter Size 1)
The parameter defines, if the last status is remembered or not.

Value	Description
0	The last status is not remembered.
1	The last status is remembered. (Default)

Command Classes
Supported Command Classes

- Basic (version 1)
- Binary Switch (version 1)
- All Switch (version 1)
- Association Group Information (version 1)
- Device Reset Locally (version 1)
- Z-Wave Plus Information (version 2)

- Configuration (version 1)

- Alarm (version 4)

- Manufacturer Specific (version 2)

- Powerlevel (version 1)

- Firmware Update Meta Data (version 2)

- Association (version 2)

- Version (version 2)

Technical Data

IP Rating	
Explorer Frame Support	No
SDK	
Device Type	Slave with routing capabilities
Generic Device Class	Binary Switch
Specific Device Class	Binary Power Switch
Routing	Yes
FLiRS	No
Firmware Version	1.2

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 bringing 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 annonces that is is able to communicate.

- **Node Information Frame** — is a special wireless message issued by a Z_Wave device to announce its capabilities and functions.

Disposal Guidelines

The product does not contain hazardous chemicals.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

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