



EVR\_AN1582

Z-Wave Power Meter plus Switch - Schuko

Firmware Version : 1.1

## Quick Start

Plug this module into a wall outlet near the load to be controlled. Plug the load into the module and switch the load to the ON position. To turn ON the module and the load plugged into it, press and release the ON/OFF button of the module.

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

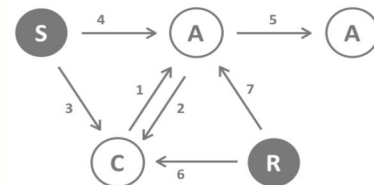
Please refer to the chapters below for detailed information about all aspects of the products usage.

## 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 AN1582 is a pluggable switch that controls electrical loads connected to mains power using standard Schuko wall outlets. It can switch all electrical loads up to 3500 W and additionally measure the electrical power taken by this load (in Wh) and meters the electrical energy consumed (in kWh). The device is IP 20 rated and therefore, it only can be used in dry environments. The device is operated either wirelessly using Z-Wave or with a button on the device. A red LED indicates the switching status.

## 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

The device can be plugged into every standard Schuko outlet (plug type E). Do not locate the Module facing direct sunlight, humid or dusty place. The suitable ambient temperature for the module is 0°C ~ 40°C.

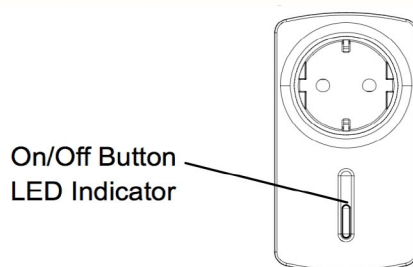
## Behavior within the Z-Wave network

**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.

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

## Operating the device



The device is able to switch and measure any electric load up to 3500 W. Any load above 3500 W is considered as overloading. When overloading is detected the device will turn off the load, lock the local button and indicate the status by flashing the LED for 30 sec. Unplugging and replugging the module will reset the module to normal state. The electrical load can be switching using wireless commands and operating the local button. The LED inside the local button will indicate the switching status.

To access the metered and measure electric values a gateway with appropriate visualization is required.

## 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	Send Alarm, Switch Report and Meter Report (max. nodes in group: 1)
2	Pressing button to switch other devices (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.

### True Period (Parameter Number 1, Parameter Size 1)

This is the time the switching status needs to remain unchanged after a change to cause the device to send out a status message

Value	Description
0	Disable
1 — 120	10 * 100 ms = 1 sec (Default 10)

### Send Out Basic Command (Parameter Number 2, Parameter Size 1)

Enable or Disable the status message function when the local button press changes the switching state

Value	Description
0	Disable (Default)

### Meter Report Period (Parameter Number 3, Parameter Size 2)

The device will report its meter value within the interval set. Set to 0 will disable the autoreporting function.

Value	Description
0	Disabled
1 — 3240	Interval = Wert * 10 sec (Default 3)

## Command Classes

### Supported Command Classes

- Basic (version 1)
- Association (version 2)
- Version (version 1)
- All Switch (version 1)
- Manufacturer Specific (version 1)
- Configuration (version 1)
- Meter (version 2)
- Binary Switch (version 1)

## Technical Data

Power Supply	230V ~50-60 Hz
Attachable Loads	16A (3500 W), overcurrent is detected above 3000W
IP Rating	20
Explorer Frame Support	No
SDK	5.02 pl2
Device Type	Slave with routing capabilities
Generic Device Class	Binary Switch
Specific Device Class	Binary Power Switch
Routing	Yes
FLiRS	No
Firmware Version	1.1

## 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.
- **Wake up Notification** — is a special wireless message issued by a Z-Wave device to announces 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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