SEC_SCS318
1 Channel Z-Wave
7 Day Time
Control and RF
Room Thermostat

Firmware Version : 0.0

Quick Start

A This devices are wireless Actors. SCS317: To confirm inclusion and exclusion do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Include node" or "Exclude node".
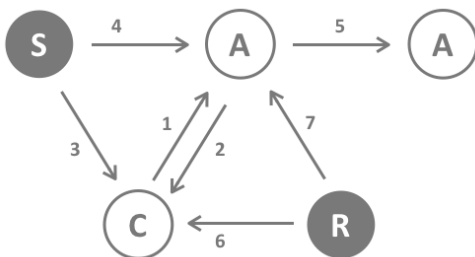
SSR303: To confirm inclusion and exclusion push and hold the network button until the 'ON' LED starts flashing.

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 SEC_SCS318 is a set which combines a programmable 7 day room thermostat with a wirelessly controlled relay switch used for controlling a central heating. Because of its TPI energy saving software the user can start to save up to 10% energy consumption.

SCS317

The SCS317 is a battery operated room thermostat capable controlling a central heating wirelessly via Z-Wave. It has a built in clock and calendar. This allows the user to adjust different time and temperature settings from the factory default settings. Up to six different time and temperature settings are available in each 24 hour period. This programmable room thermostat has a large display and intuitive user interface, making it easy to set up and use.

SSR303

The SSR303 is a wirelessly controlled Relay switch to operate loads up to 3 A / 230 V. It is used to control warm water boilers or magnet valves. The device can be operated locally using two buttons. A LED indicated the current switching status. The fashionable design of the device allows mounting it on visible positions in the home.

Batteries

The unit is operated by batteries. Use only batteries of correct type. Never mix old and new batteries in the same device. Used batteries contain hazardous substances and should not be disposed of with household waste!
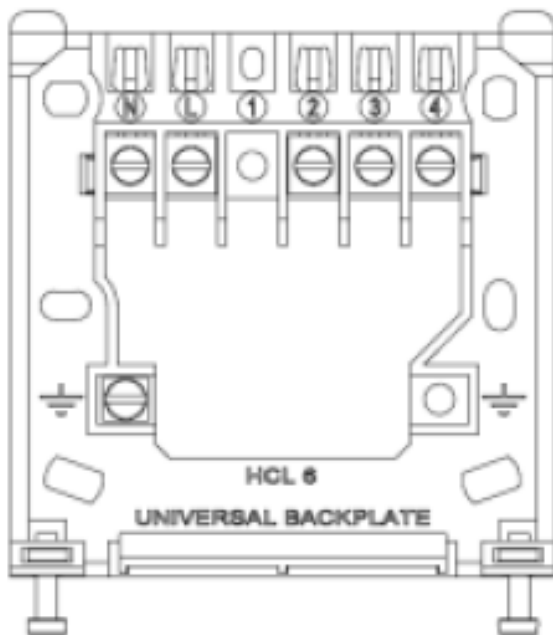
Battery Type: 2 * AA

Installation Guidelines

SCS317

Open the battery coverage located at the front and put the 2 x AA batteries according to the figure into battery compartment. Close the battery compartment.

SSR303

The SSR303 receiver should be located as near as is practical to the device to be controlled, as well as a convenient mains electricity supply. To remove the wall plate from the SSR303, undo the two retaining screws located on the underside, the wall plate should now be easily removed. Once the wall plate has been removed from the packaging please ensure the SSR303 is re-sealed to prevent damage from dust, debris etc.

The wall plate should be fitted with the retaining screws located at the bottom and in a position which allows a total clearance of at least 50mm around the SSR303 receiver.

Direct Wall Mounting

Offer the plate to the wall in the position where the SSR303 is to be mounted and mark the fixing positions through the slots in the wall plate. Drill and plug the wall, then secure the plate into position. The slots in the wall plate will compensate for any misalignment of the fixings.
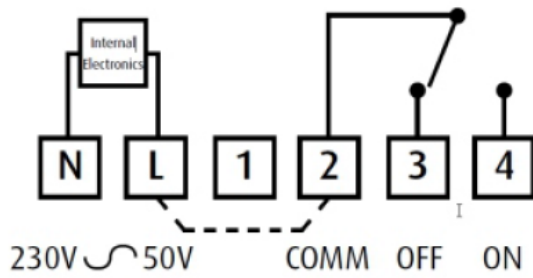
Wall Box Mounting

The wall plate may be fitted directly on to a single gang flush wiring box complying with BS4662, using two M3.5 screws. The receiver is suitable for mounting on a flat surface only; it is not suitable for mounting on an unearthed metal surface.

Electrical Connections

All necessary electrical connections should now be made. Flush wiring can enter from the rear through the aperture in the backplate. The mains supply terminals are intended to be connected to the supply by means of fixed wiring. The receiver is mains powered and requires a 3 Amp fused spur. The recommended cable size is 1.0mm2. The receiver is double insulated and does not require an earth connection, an earth connection block is provided on the backplate for terminating any cable earth conductors. Earth continuity

must be maintained and all bare earth conductors must be sleeved. Ensure that no conductors are left protruding outside the central space enclosed by the backplate.

Behavior within the Z-Wave network

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.

SCS317

For including or excluding the SCS317 as a secondary controller for an existing the Z-Wave network do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Learn".
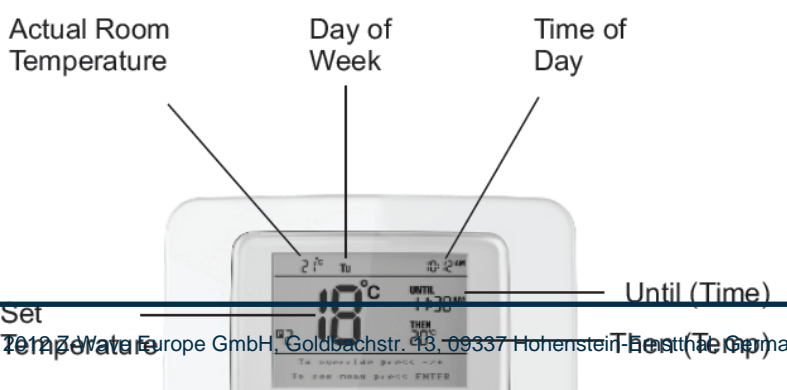
Note: Any associations will be cleared if the SCS317 have engaged in Learn mode with another controller regardless or a successful or failed outcome.

SSR303

To confirm inclusion and exclusion push and hold the network button until the 'ON' LED starts flashing.

Operating the device

SCS317

Actual Room Temperature	This is the actual room measured by the SCS317
Set Temperature	This is the temperature tha will allow the room to temperature range can be 5°C and 30°C
	When the temperature s display is achieved the switch the heating OFF.
	If the temperature in the roo the setting the SCS317 w heating ON.
Until (time)	This is the time tha temperature setting is due
Then (temp)	This is the temperature s

Normal Heating Period The SCS317 Room Thermostat can set up to 6 heating periods per day. The adjusted temperature is the maximum reachable room temperature. When this temperature is achieved the heating is switched off.

TEMPORARY OVERRIDE A temporary temperature change can be made at any time by simlpy pressing the "-" or "+" button. The temperature will revert to its normal programmed setting at the next timed temperature change.

TEMPORARY OVERRIDE WITH TIME EXTENSION It is also possible to extend how long this temperature override is in operation by pressing "Enter" after temperature change. The hours of the UNTIL (remaining) time will flash and can be adjusted by pressing "+". Confirm the time by pressing "Enter". The remaining time can be set up to 4 hours. The temperature will revert to its normal programmed setting at the next timed temperature change.

PERMANENT OVERRIDE The temperature can be overridden permanently. For this do the same steps as for temporary override and pressing the "+" repeatedly until HOLD appears in the display, press "Enter". A message will appears briefly confirming "Temperature set until manual release". In the 'HOLD' position the temperature can be overridden by pressing either the "-" or "+" buttons. This will then become the new 'HOLD' temperature. To cancel the permanent override press "Back" and "Enter".

SSR303

The SSR303 receiver unit receives the Z-Wave radio signals from the 3rd party Z-wave controllers. In the unlikely event of a communication failure it is possible to override the system and switch On and Off using the On/Off buttons on the SSR303 receiver as a local override.

If the override is used to override the system when it is functioning correctly then the override will be cancelled by the next switching operation and normal operation will be resumed. In any case, with no further intervention, normal operation will be restored within one hour of the override being operated.

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.

SCS317

To wake up the device do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Learn".

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.

To send out a Node Information Frame Press do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Send NIF".

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	This node receives unsolicited message from the following events: - Thermostat set point - Thermostat operating state - Schedule - Multilevel sensor - Battery - Binary switch (max. nodes in group: 1)
2	Central heating nodes. If thermostat mode Heat Mode is supported the control message will be sent as Thermostat Set HEAT and Thermostat mode Set Off, otherwise the device will be controlled by Basic set On and Off commands. (max. nodes in group: 4)

Set and unset associations to actuators

Associations can be assigned and remove either via Z-Wave commands or using the device itself.

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SCS317

To manually associate devices to control do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Associate node". Press the dedicated button on the target device for association.

To clear the associations select "Disassociate node". Press the dedicated button on the target device for association.

Special Functions as Z-Wave Controller

As long as this device is not included into a Z-Wave network of a different controller it is able to manage its own Z-Wave network as primary controller. As a primary controller the device can include and exclude other devices in its own network, manage associations, and reorganize the network in case of problems. The following controller functions are supported:

Include other device in own network

CI Communication between two Z-Wave devices only works if both belong to the same wireless network. Joining a network is called inclusion and is initiated by a controller. The controller needs to be turned into the inclusion mode. Once in this inclusion mode the other device needs to confirm the inclusion - typically by pressing a button.

SCS317

For Inclusion of Z-Wave devices into the thermostats network do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Include node/ receiver". Press the dedicated button on the target device to include it. You can include nodes or a secondary controller.

Note: When including a device that supports Thermostat Mode HEAT, the SCS317 will automatically associate it to Group 2 (switch association group).

If current primary controller in your network is in special SIS mode this and any other secondary controller can also include and exclude devices.

To become primary a contoller have to be resetted and then include a device.

Exclude device from network

The primary controller can exclude devices from the Z-Wave network. During exclusion the relationship between the device and the network of this controller is terminated. No communication between the device and other devices still in the network can happen after a successful exclusion. The controller needs to be turned into the exclusion mode. Once in this exclusion mode the other device needs to confirm the exclusion - typically by pressing a button.

Attention: Removing a device from the network means that it is turned back into factory default status. This process can also exclude devices from it's previous network.

SCS317

For Exclusion of Z-Wave devices from the thermostats network do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Exclude node/ receiver". Press the dedicated button on the target device to exclude it.

Note: If an associated node to SCS317 is excluded from the network, it will be removed from the Association Group it is stored in.

Shift Primary Role to a different Controller

The device can hand over its primary role to another controller and become secondary controller.

SCS317

Place the two controllers close to each other.
Bring your primary controller in the dedicated mode for primary shift (or learning mode).
2 x Enter to start menu.
Use right arrow key and open menu "Setup".
Use right arrow key and open menu "Set up Z-Wave".
Use right arrow key and select "Controller Shift".

Reset the Controller

SCS317

For reseting the SCS317 do the following steps: 2 x Enter to start menu; use right arrow key and open menu "Setup"; use right arrow key and open menu "Set up Z-Wave"; use right arrow key and select "Network Reset".

Note: Reset provides a full protocol reset and a restoration of all network parameters to their defaults, and generates a new random home ID to operate on. A network reset does not change the heating schedules stored on the device.

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.

Temperature unit selection (Parameter Number 1, Parameter Size 1)

Value	Description
129 — 0	°C value (0/-127)
1 — 127	°F value (128/-255)

Lower temperature limit (Parameter Number 2, Parameter Size 1)

Value	Description
5 — 30	(Default 5)

Upper temperature limit (Parameter Number 3, Parameter Size 1)

Value	Description
5 — 30	(Default 5)

Delta T temperature change (Parameter Number 4, Parameter Size 1) (1?C = 10) change between temperature readings to trigger an temperature report

Value	Description
1 — 50	1 or 0.1 (Default 5)

Command Classes

Supported Command Classes
Battery (version 1)
Thermostat Operating State (version 1)
Thermostat Setpoint (version 1)
Wake Up (version 1)
Association (version 1)
Version (version 1)
Configuration (version 1)
Multilevel Sensor (version 1)
Manufacturer Specific (version 1)
(version 1)
Binary Switch (version 1)

Technical Data

Battery Type	2 * AA
Explorer Frame Support	No
SDK	
Device Type	Portable controller
Generic Device Class	Thermostat
Specific Device Class	Specific Device Class not used
Routing	Yes
FLiRS	No
Firmware Version	0.0

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 contains batteries. Please remove the batteries when the device is not used.

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.