

# Spirit Z-Wave Plus

SKU: EURESPIRIT



## Quickstart

This is a **secure HVAC-Thermostat** for **Europe**. To run this device please insert fresh **2 \* AA 1,5V** batteries. Please make sure the internal battery is fully charged.

- Start Inclusion mode of your primary Z-Wave Controller.
- Press the Boost-Button.
- Spirit Z-Wave Plus will show the assigned NodeID.

## Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law. The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material. Use this equipment only for its intended purpose. Follow the disposal instructions. Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

## 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](http://www.z-wave.info).



## Product Description

Spirit Z-Wave Plus is a Z-Wave radio standard compatible energy-saving radiator thermostat.

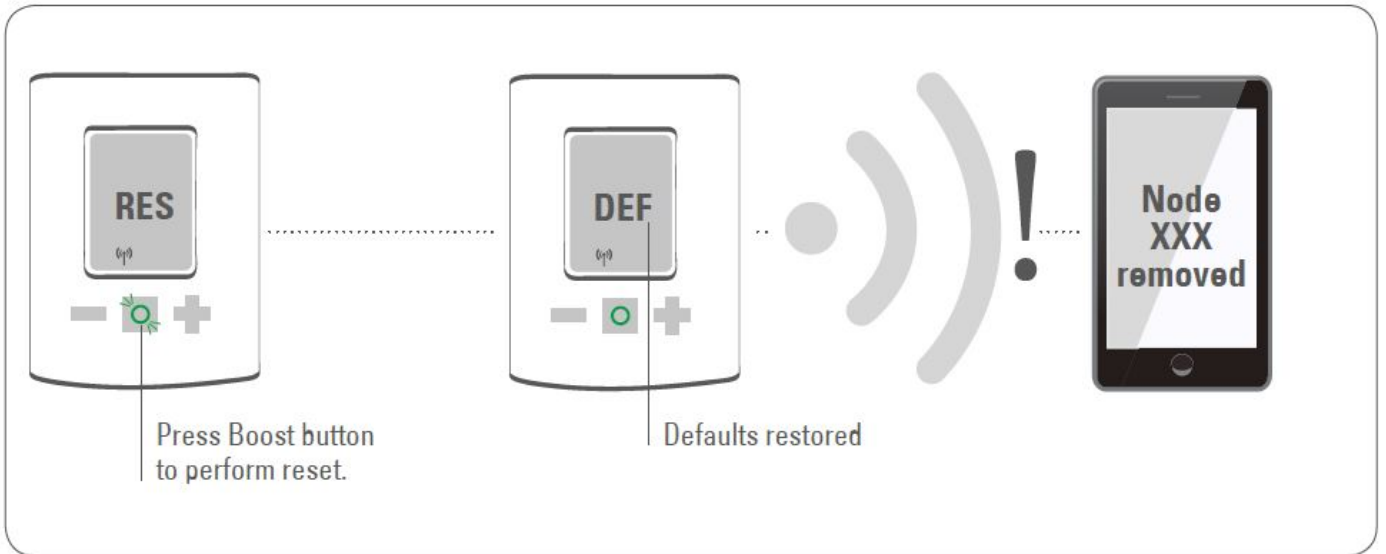
## Prepare for Installation / Reset

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.

## Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.



## Safety Warning for Batteries

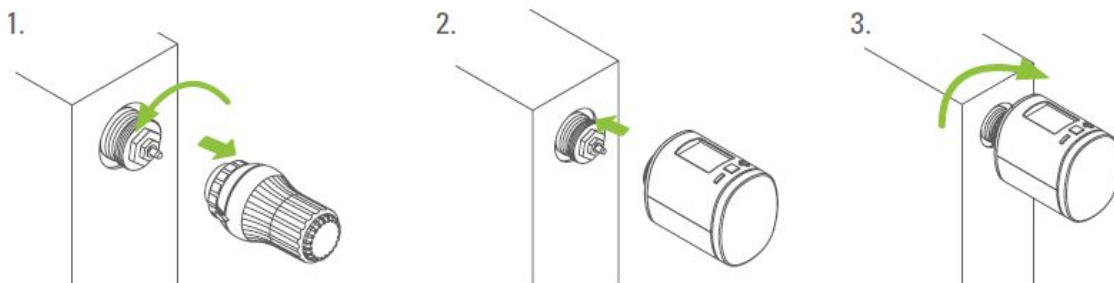
The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

## Installation

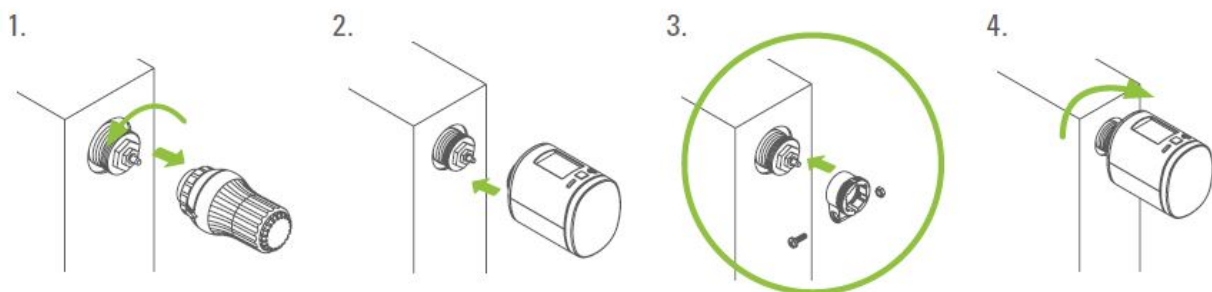
### Mounting the Spirit Z-Wave Plus

After adding the Spirit Z-Wave Plus to a network it is ready to be installed on the radiator. The LCD shows INS. Do not press the boost button yet.

Installation at the radiator without Adapter



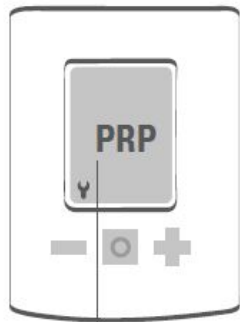
Installation at the radiator with Adapter



### Mechanical Installation

Press the boost button to start mechanical installation.

## Installation



Mounting position is prepared.

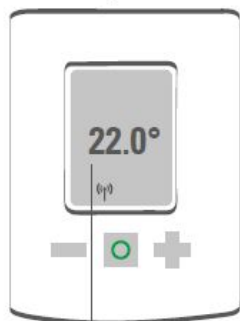


Press Boost button to start installation



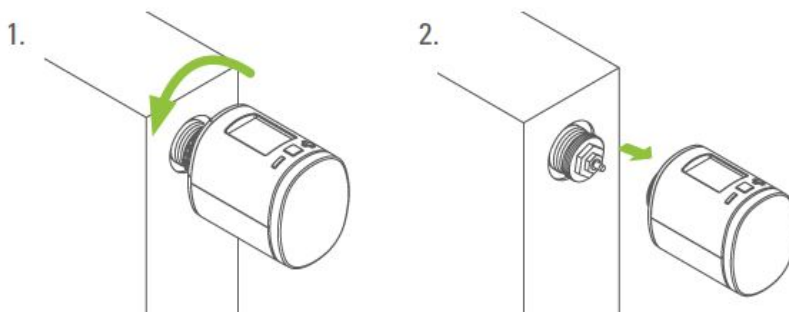
Installation in progress.

Installation successful



Main screen with setpoint temperature.

## Unmounting the Spirit Z-Wave Plus

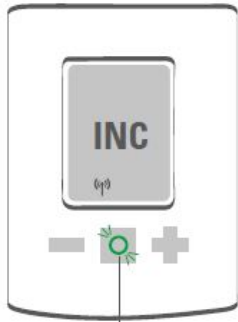


## Inclusion/Exclusion

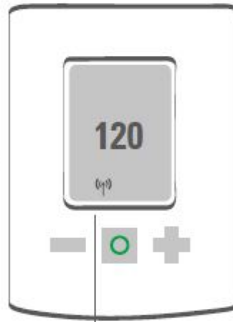
On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

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.

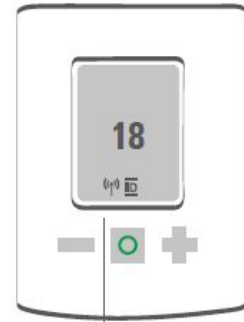
## Inclusion Success



Press blinking  
Boost button

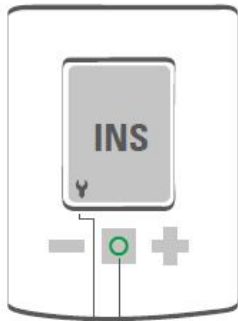


Joining in progress



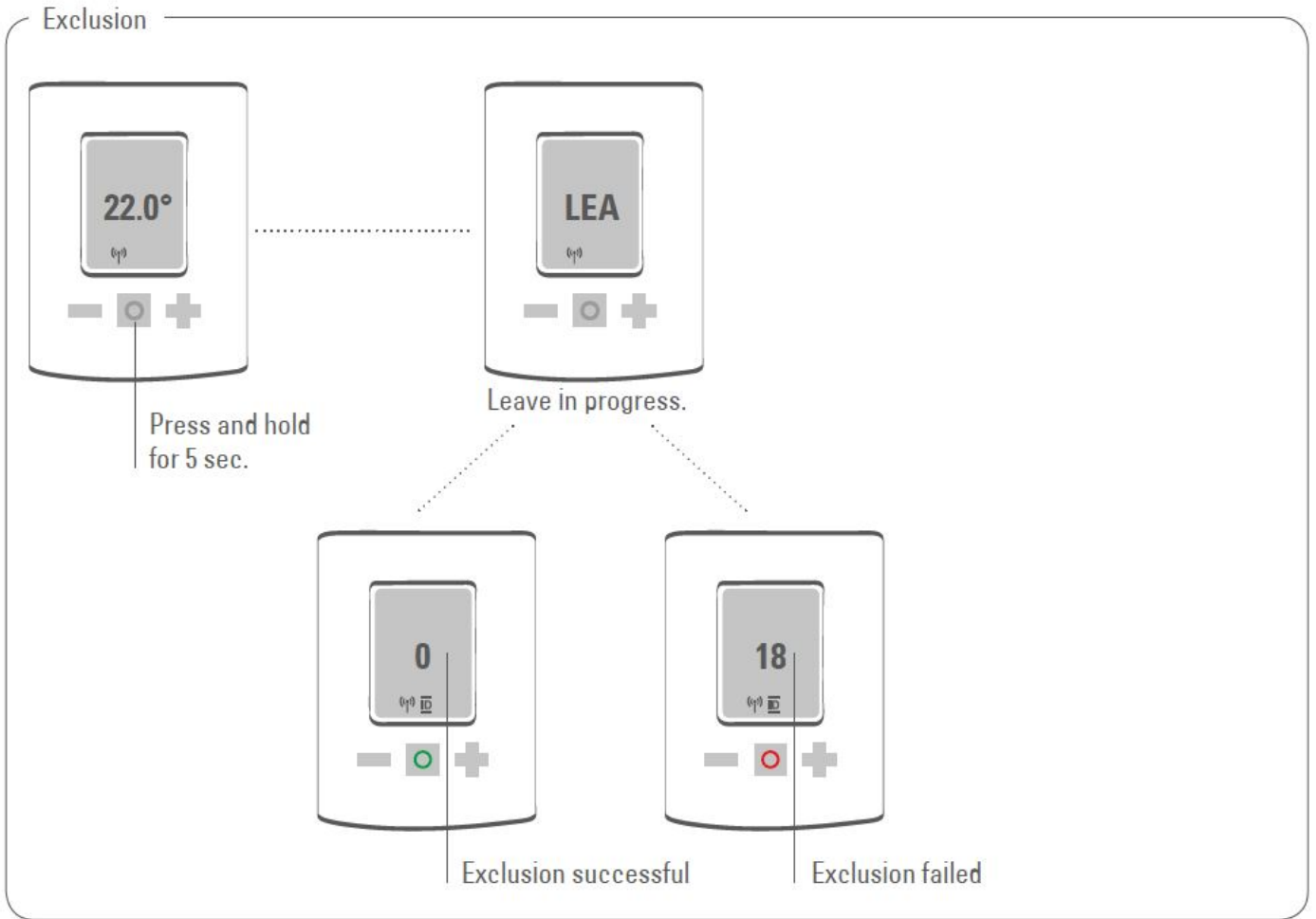
Joining successful.  
Received Node ID  
is display.

after 5 sec.



Mechanical installation required.  
See next page.

## Exclusion



## Product Usage

### Buttons:



Button	Interaction	Result/Behavior
	Press once	Decrease room temperature by 0.5°C.
	Press and hold	Decrease Room temperature by 0.5°C and lower the Room temperature by 0.5°C every 0.5 seconds or until the lowest temperature is set.
	Press once	Increase room temperature by 0.5°C.
	Press and hold	Increase Room temperature by 0.5°C and raise the Room temperature by 0.5°C every 0.5 seconds or until the highest temperature is set.
	Push once	<ul style="list-style-type: none"> <li>• Confirm action which is displayed in the LCD.</li> <li>• Switch into Boost-Mode(Quick Heat).</li> <li>• Quit Boost-mode(Quick Heat) if currently active.</li> </ul>
	Hold for 3 seconds	The LCD shows the Z-Wave Node ID.
	Hold for 5 seconds	The Spirit Z-Wave Plus will react to Exclusion Commands.
	Hold while unpowered and insert batteries	Allows factory reset of the Spirit Z-Wave Plus.
	Hold both simultaneously for 3 seconds	Sets or clears the child protection.



Boost – green



Boost – red

Color	State	Meaning
	Blinking	Over the Air update of the actuator software in progress. Temperature regulation is not possible during this process.
	Lights constantly for 5 seconds	A task has failed.
	Permanently on	An error occurred. Consult manual for error code description.
	Blinking	User conformation is required to start a task.
	Lights constantly for 5 seconds	A task was completed successfully.

## LCD



### Wrench:

Lights up if mechanical tasks are ongoing.



### Antenna:

Displays the Spirit Z-Wave Plus network state.

Segment visible: rf-link established

Segment turned off: rf-link lost



ID: Lights up if the Display shows the Z-Wave NodeID.



Battery: Lights up if less than 15% battery is remaining



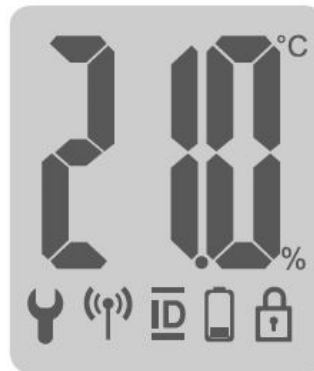
Lock: Lights up if child protection is set.



Celsius: Displayed if the LCD shows a setpoint temperature



Percent: Displayed instead of °C Icon if the Comet Z Plus is set to direct. control mode.



## Inserting batteries

Remove the battery cover by simply pulling it off. Now insert the batteries. Pay attention to the correct polarity! At a later battery change, the configuration of your Spirit Z-Wave Plus is maintained.



## Setpoint adjustment

The setpoint is adjusted via plus and minus button.

Altering the setpoint locally will set the Spirit Z-Wave Plus in heating mode.

The energy saving setpoint can only be adjusted via Z-Wave.

The configurable setpoint range is 8°C to 28°C.

If the setpoint is increased/decreased above/below the set point limits the Spirit Z-Wave Plus will change into boost / off mode.

Press and hold plus and minus button simultaneously for 3 seconds to enable/disable the child protection.  
If the Spirit Z-Wave Plus is set into the highest protection level it is no longer possible to operate the device locally.

Altering the operating states

#### **Off-Mode**

Press minus button until OFF is displayed.

#### **Boost-Mode**

Push the boost button.

Alternatively press the plus button until ON is displayed.

#### **Heating-Mode**

If the operating state is not heating mode, pressing the plus or minus button will bring the device in heating mode.

#### **Window open detection**

If the roomtemperature drops the window open detection will trigger.

Spirit Z-Wave Plus will change temporarily in off mode for 15 minutes.

Window open detection will end automatically after 15 minutes and the previously active operating mode will be restored.

Window open detection can also be canceled by a button press.

The window open detection is disabled during manufacturer specific mode.

The sensitivity of the window open detection can be configured

#### **Display NodeID**

Press and hold the boost button for 3 seconds to display the NodeID.

## Quick trouble shooting

Here are a few hints for network installation if things don't 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. Don't poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

## Association - one device controls another 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, typically a 'Basic Set' Command.

### Association Groups:

<b>Group Number</b>	<b>Maximum Nodes</b>	<b>Description</b>
1	1	Z-Wave Plus Lifeline

## 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 be needed to be given as negative values too.

### Parameter 1: LCD invert

*Inverts the LCD orientation*

Size: 1 Byte, Default Value: 0

<b>Setting</b>	<b>Description</b>
0	Normal orientation
1	LCD content inverted

### Parameter 2: LCD Timeout

*Configures the timeout of the LCD.*

Size: 1 Byte, Default Value: 0

Setting	Description
0	LCD always on
5 - 30	LCD timeout in seconds

### Parameter 3: Backlight

*Enables or disables the LCD-Backlight.*

Size: 1 Byte, Default Value: 1

Setting	Description
0	Backlight disabled
1	Backlight enabled

### Parameter 4: Battery report

*Enables or disables unsolicited battery reporting once a day.*

Size: 1 Byte, Default Value: 1

Setting	Description
0	Battery reporting disabled
1	Battery reporting enabled

### Parameter 5: Measured temperature report

*Reports the measured roomtemperature on change.*

Size: 1 Byte, Default Value: 5

Setting	Description
0	Reporting disabled
1 - 50	Reporting Delta in 1/10 Celcius

### Parameter 6: Valve percentage report

*Reports the valve percentage on change.*

Size: 1 Byte, Default Value: 0

Setting	Description
0	Reporting disabled
1 - 100	Reporting Delta in percent

### Parameter 7: Window open detection

*Configures the sensitivity of the window open detection. Sensitivity level: 1 low 2 medium 3 high*

Size: 1 Byte, Default Value: 2

Setting	Description
0	Detection disabled
1 - 3	Sensitivity level

### Parameter 8: Measured temperature offset

*Configures an offset for the measured temperature. Set the offset to -128 (0x80) if measured temperature is provided externally.*

Size: 1 Byte, Default Value: 0

Setting	Description
0 - 50	Offset in 1/10 Celcius (0°C - 5°C)
128	Temperature is supplied externaly
206 - 255	Offset in 1/10 Celcius (-5°C - 0,1°C)

## Technical Data



<b>Dimensions</b>	56x68x89 mm
<b>Weight</b>	127.64 gr
<b>Hardware Platform</b>	ZM5202
<b>EAN</b>	4260012711301
<b>IP Class</b>	IP 20
<b>Voltage</b>	3V
<b>Battery Type</b>	2 * AA 1,5V
<b>Device Type</b>	Thermostat - HVAC
<b>Network Operation</b>	Listening Sleeping Slave
<b>Z-Wave Version</b>	6.71.01
<b>Certification ID</b>	ZC10-17095777
<b>Z-Wave Product Id</b>	0x0148.0x0003.0x0001
<b>Supported Notification Types</b>	Power ManagementSystem
<b>Thermostat HVAC Systems Supported</b>	Heat Only
<b>Firmware Updatable</b>	Updatable by Consumer by RF
<b>Thermostat Modes</b>	Energy Save HeatHeat
<b>Sensors</b>	Air Temperature
<b>Frequency</b>	Europe - 868,4 Mhz
<b>Maximum transmission power</b>	5 mW

## Supported Command Classes

- Association Grp Info
- Association V2
- Basic
- Battery
- Configuration
- Device Reset Locally
- Firmware Update Md V3
- Manufacturer Specific
- Notification V8
- Powerlevel
- Protection
- Security
- Security 2
- Sensor Multilevel V5
- Supervision
- Switch Multilevel
- Thermostat Mode V3
- Thermostat Setpoint V3
- Transport Service V2
- Version V2

## 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 announce that it is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.