

ZIPABOX

NEXT GENERATION HOME AUTOMATION DEVICE



About this manual

Information from Eurotronic (manuals and product sheet) and information from Zipato support is used for this manual.

- Chapter 1 - Installing the hardware
(information from Eurotronic manual)
- Chapter 2 - Eurotronic StellaZ and the Zipabox
Based on my experience and information from Zipato.
- Chapter 3 - Behavior within the Z-Wave network
(information from Eurotronic manual)

Product description Eurotronic StellaZ

(information from Eurotronic)



StellaZ is a wireless Thermostat Valve Control capable controlling heating, air ventilation and climate control units. Sensors, control and actuator are combined in one single device allowing stand alone energy efficient room control. The device can run in four different operation modes (Off, Energy Saving, Comfort, Direct Control) to control the temperature. The room temperature can also be reported by the device.

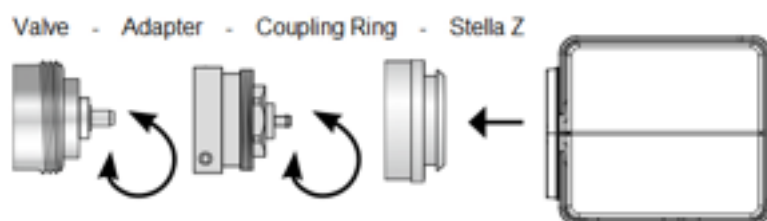


CHAPTER 1 - INSTALLATION HARDWARE

(INFORMATION FROM EUOTRONIC)

Connection to Valve: M 30 x 1,5, Adapters for other valve types available (e.g. Heimeier, Danfoss, Honeywell Braukmann, Honeywell MNG, Oventrop from 1996 on) are part of scope of delivery. Protected installation, removal only possible with special tool provided as part of scope of delivery.

On the next pages you can find the compatible adapters for the different vendors:



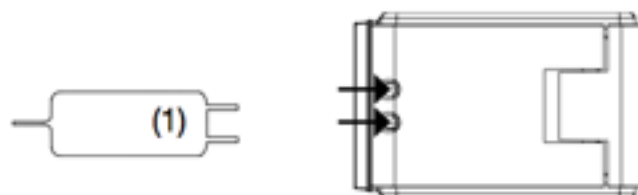
The installation of the valve control is easy with any dirt or loss of water since the heating pipe system will not be interrupted.

1. If needed select an adapter and mount this adapter to the valve.
2. Insert Batteries. Pushing the little button behind the round hole for 2.5 seconds turns the device into the install mode. In this mode the valve actuator is moved into the inner end position to simplify the installation of the device.
3. Continuous pushing of the button starts the calibration function. The both end position of the valve will be detected automatically. Without further operation of the button this calibration starts automatically after 3 minutes. The devices will go into sleep state after finishing the calibration.
4. Turn the white coupling ring onto the the valve resp. the adapter.
5. Push StellaZ to the white coupling ring until you hear it snapping in.












Attention: You must apply the device to the valve before applying any wireless setups and actions. Without the back pressure from the valve the device will turn into error mode.

Deinstallation
















1. Push both pins of the demounting tool into the two holes on the enclosure.
2. Remove Stella Z from the adapter or valve.



Adapter Übersicht

| Register | Hersteller / Typ | Anschluss | Logo | Adapter | Art.-Nr. | Anmerkungen |
|----------|----------------------|-------------------------------|---|------------------------|---------------|-------------------------------|
| A | Armal | Gewinde M 24 x 1,5 | | nicht verfügbar | | |
| B | BRV | Gewinde M30 x 1,5 |  | nicht verfügbar | | |
| C | Circo | | | | | → siehe Vaillant |
| | Comap | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Comap (Diana) | Gewinde M 28 x 1,5 |  | lieferbar | 700 100 007 | |
| D | Danfoss RA | 20 mm bzw. 23 mm mit 4 Kerben | | liegt bei (Kunststoff) | | RAW |
| | Danfoss RA | 20 mm bzw. 23 mm mit 4 Kerben | | lieferbar (Messing) | 700 100 005 | |
| | Danfoss RAV | 34 mm mit 4 Kerben | | liegt bei (Kunststoff) | | wird u.a. von Buderus verbaut |
| | Danfoss RAV | 34 mm mit 4 Kerben | | lieferbar (Messing) | 700 100 008 | |
| | Danfoss RAVL | 26 mm mit 4 Kerben | | liegt bei (Kunststoff) | | auch für Danfoss KV-Ventil |
| | Danfoss RAVL | 26 mm mit 4 Kerben | | lieferbar (Messing) | 700 100 003 | |
| | Diana | | | | | → siehe Comap |
| F | Fratelli Pettinaroli | Gewinde M 28 x 1,5 |  | nicht verfügbar | | |
| G | Gampper | 27 mm mit 12 Kerben | | nicht verfügbar | | |
| | Gampper | M 20 (6) bis 10 mm Tiefe | | lieferbar | 700 100 012-1 | |
| | Gampper | M 20 (2) über 10 mm Tiefe | | lieferbar | 700 100 012-2 | |
| | Gampper | M 22 (1) bis 10 mm Tiefe | | lieferbar | 700 100 012-3 | |
| | Giacomini | ca. 22,6 mm |  | lieferbar | 700 100 009 | |
| H | Heimeier | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Herz | Gewinde M 28 x 1,5 |  | lieferbar | 700 100 004 | |
| | Honeywell-Braukmann | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| I | Idmar | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| | Ista | Gewinde M 32 x 1,0 | | lieferbar | 700 100 013 | |
| J | Jaga | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Junkers | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| K | Kosmia | Gewinde M 28 x 1,0 | | nicht verfügbar | | |
| L | Landis&Gyr „Duodyr“ | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| M | Markaryds | Gewinde M 28 x 1,5 | MMA | lieferbar | 700 100 010 | |
| | Meges | Gewinde M 38 x 1,5 | | lieferbar | 700 100 014 | |
| | Mertik Maxitrol | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| | MNG | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | MNG-Pin | Kunststoffkappe | | lieferbar | 700 100 018 | |

Adapter Übersicht

| Register | Hersteller / Typ | Anschluss | Logo | Adapter | unsere Art.-Nr. | Anmerkungen |
|----------|------------------------|-------------------------------|---|--------------------|-----------------|------------------------------|
| O | Ondal | Gewinde M 38 x 1,5 | | lieferbar | 700 100 011 | |
| | Ondatherm | | | | | → siehe Ondal |
| | Orki | Gewinde M 28 x 1,0 |  | nicht verfügbar | | |
| | Oventrop | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Oventrop | Gewinde M 30 x 1,0 |  | lieferbar | 700 100 002 | ca. 15 Jahre alt |
| | Oventrop | Gewinde M 32 x 1,0 |  | lieferbar | | evtl. Isia Adapter verwenden |
| | Oventrop Winkeladapter | Gewinde M 30 x 1,5 | | nicht lieferbar | 700 100 017 | |
| | Oventrop „maximin“ | Gewinde M 40 x 1,5 | | nicht verfügbar | | |
| P | Pettinaroli | Gewinde M 28 x 1,5 | | lieferbar | 700 100 019 | |
| | Polytronic | Gewinde M 34 x 1,5 |  | nicht verfügbar | | |
| R | R.B.M. | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Remagg | Gewinde M 28 x 1,5 | | nicht verfügbar | | |
| | Rosswiner | Gewinde M 33 x 2,0 |  | lieferbar | 700 100 018 | |
| | Rotex | ca. 25,8 mm Kunststoff | | nicht verfügbar | | |
| | Rotex, Rieger u.a. | Kunststoff-Gewinde M 30 x 1,0 | | nicht verfügbar | | |
| S | SAM bzw. Slovarm | Gewinde M 28 x 1,5 |  | nicht verfügbar | | |
| | Schlösser | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Siemens | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| | Simplex | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| | | | | | | |
| T | TA | Gewinde M 28 x 1,5 |  | lieferbar | 700 100 006 | |
| | Tiemme | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| V | Vallant | 30,5 mm | evtl.  | lieferbar | 700 100 001 | |
| | Valf Sanayli | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Valvex | Gewinde M 30 x 1,5 |  | nicht verfügbar | | |
| | Vama | Gewinde M 28 x 1,0 | | lieferbar | 700 100 015 | |
| | VED Merik | Gewinde M 33 x 2,0 | | nicht verfügbar | | |
| | | | | | | |
| W | Watts | Gewinde M 30 x 1,5 |  | nicht erforderlich | | |
| | Wingenroth (Wiroflex) | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| Z | Zehnder (neu) | Gewinde M 30 x 1,5 | | nicht erforderlich | | |
| | Zehnder | Gewinde M 30 x 1,0 | | nicht verfügbar | | ca. 15 Jahre alt |
| | Zentra | Gewinde M 40 x 1,0 | | nicht verfügbar | | |

CHAPTER 2 - EUROTRONIC STELLAZ AND THE ZIPABOX

Adding StellaZ as Z-Wave device

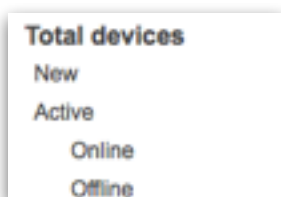
Add the StellaZ to your Zipabox as generic Z-Wave device.
(„Add device” - Zipato Control Center)

Pressing the button behind the round hole in the enclosure for 5 sec. will confirm inclusion and exclusion. Right after inserting the battery the device will stay in the auto inclusion mode for 3 minutes. In this mode a controller in inclusion mode can include the device without any further manual confirmation on the device.

After the inclusion process the StellaZ's are available under Meters and Lights & Power.

One Click on the button behind the round hole in the enclosure will wakeup the device and keeps it awake for 5 seconds.

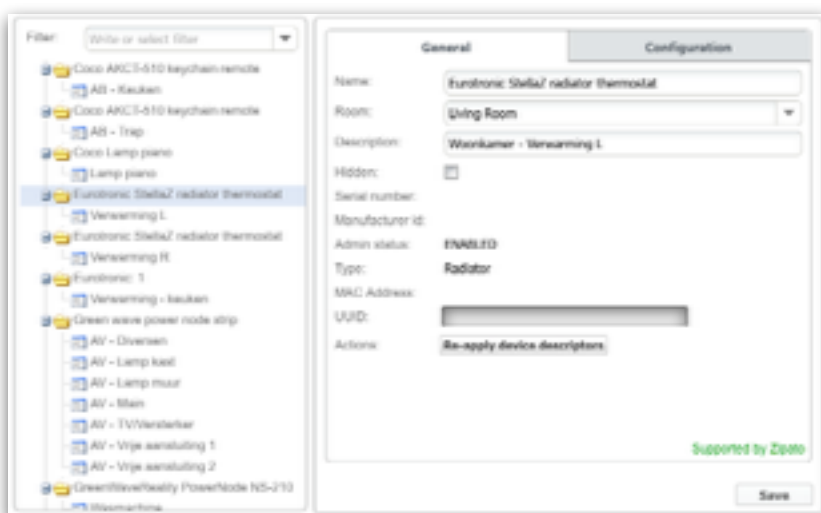
Device settings and Wakeup interval



- Click on the link „Total devices” - General widget.
- The Device manager pops up.

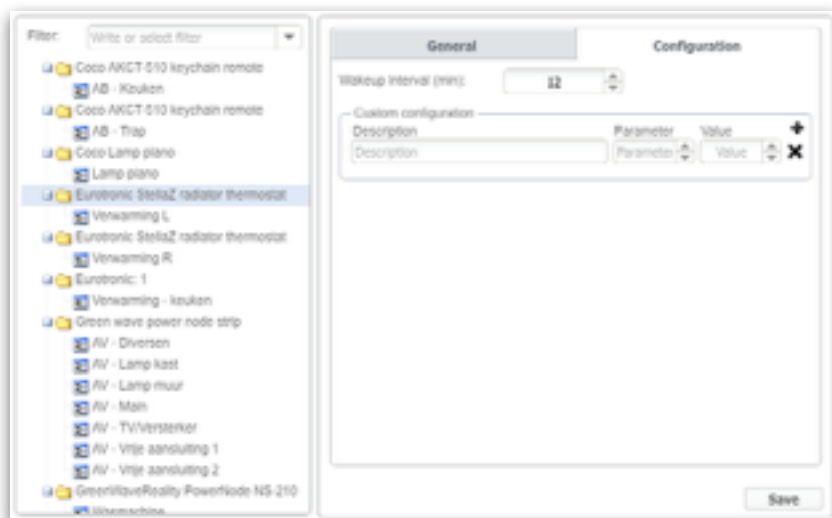
Search for the Stella-Z and click on the first line of the device.

Tab General:



Change Name, Room and Description Device information and click on Save.

Tab Configuration:

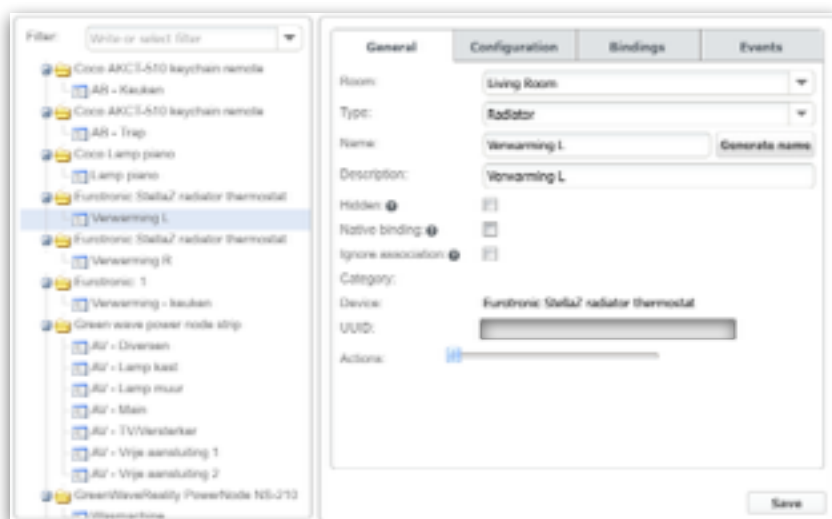


The wakeup interval can be defined between 4 minutes and 180 day in steps of 4 minutes. The factory default value is 7 days.

In my setup i set the Wakeup interval to 12 minutes.
Set your wakeup interval and click on Save.

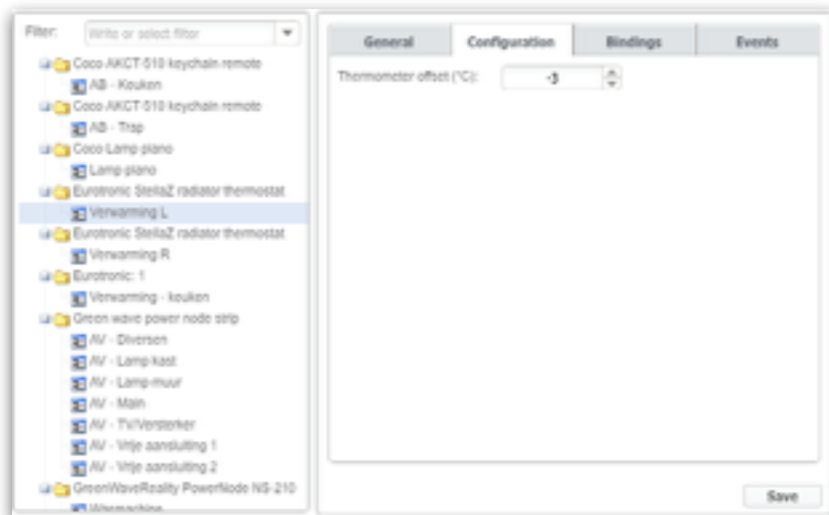
Click on the second line of the device, endpoint information.

Tab General:



Change Room, Name and Description for your setup and click on Save.

Tab Configuration:



Here you can set the Thermometer offset. In my situation i don't use the thermometer for the Climate widget.

Click on save, close de device manager and synchronize your Zipabox.

About the Stella-Z thermostat modes

The StellaZ has 4 thermostat modes. In the Z-Wave specifications there is no such thing as „Frost protection“, „Thermostat mode“ or „Comfort mode“. The Z-wave specification defines the following thermostat modes:

- OFF
- HEAT
- COOL
- AUTO
- AUX_HEAT
- RESUME
- FAN_ONLY
- FURNACE
- DRY_AIR
- MOIST_AIR
- AUTO_CHANGEOVER
- ENERGY_SAVE_HEAT
- ENERGY_SAVE_COOL
- AWAY

The stellaZ thermostat modes are just different names for the modes listed above. They are mapped as follows:

- | | |
|---------------------|--|
| 1) Frost protection | - OFF |
| 2) Comfort | - HEAT (a stand alone preset) |
| 3) Energy Saving | - ENERGY_SAVE_HEAT (a stand alone preset) |
| 4) Manual control | - mode is not specified in the Z-wave specification, in this mode we can control de valve settings within the rule creator |

In this manual we use the rule creator to set the thermostat mode. You can use:

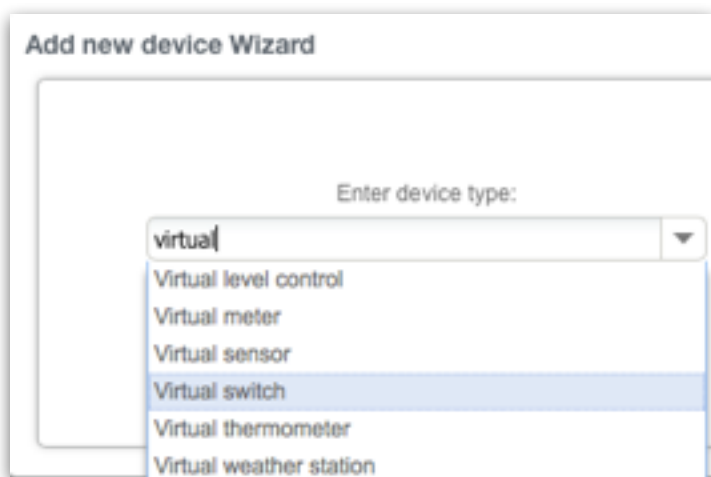
OFF, HEAT, ENERGY_SAVE_HEAT and MANUAL_CONTROL strings when setting the THERMOSTAT_MODE. Same goes for the HEATING_ENDPOINT.

The thermostat modes on the StellaZ are just set point presets. For instance, setting the mode to HEAT(Comfort on stella, default setting after inclusion) will just set the set point to 22 degrees.

Creating a virtual switch and a thermostat.

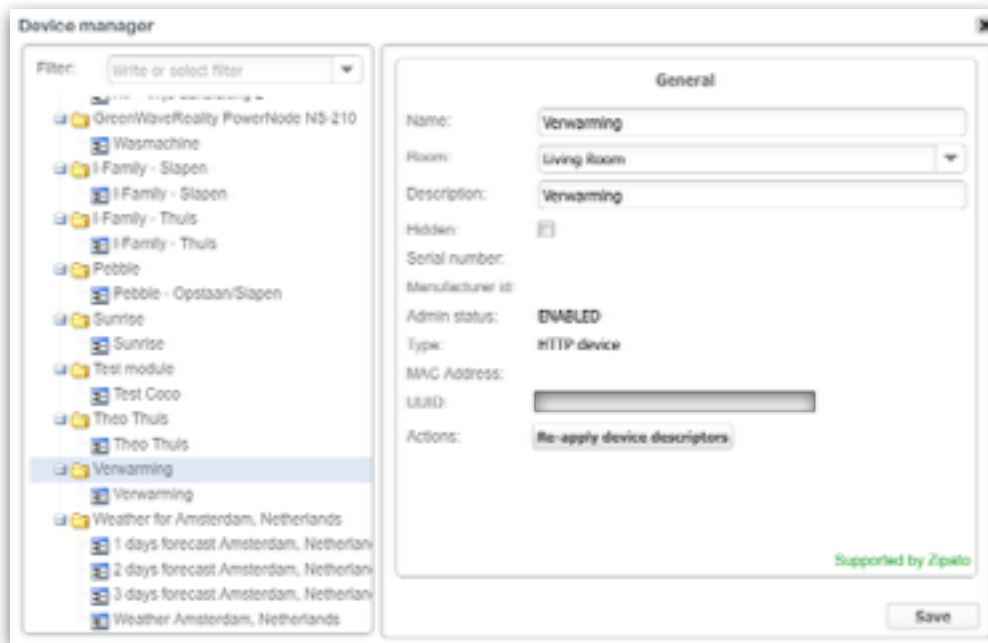
I use the rule engine to control the Stella-Z's in my network. The climate widget uses a multi sensor as Thermometer and a virtual switch is used as output. This output controls 2 rules.

First create a virtual switch.

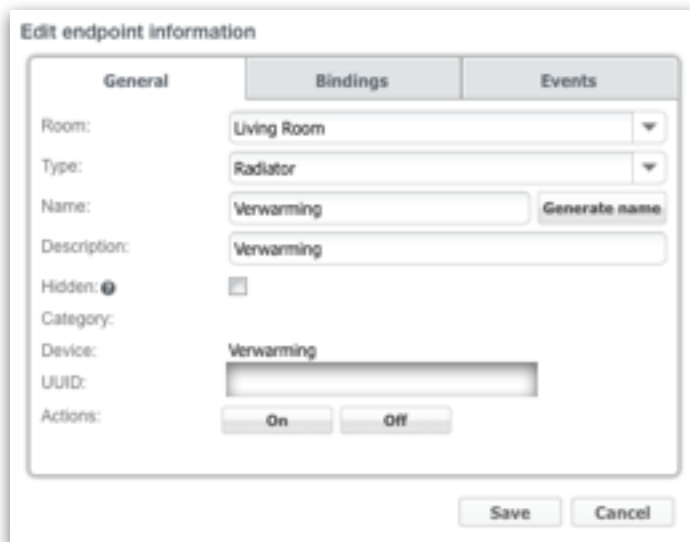


I named this switch „heating“. Click on Save en Synchronize your settings.

Virtual switch settings (device manager):



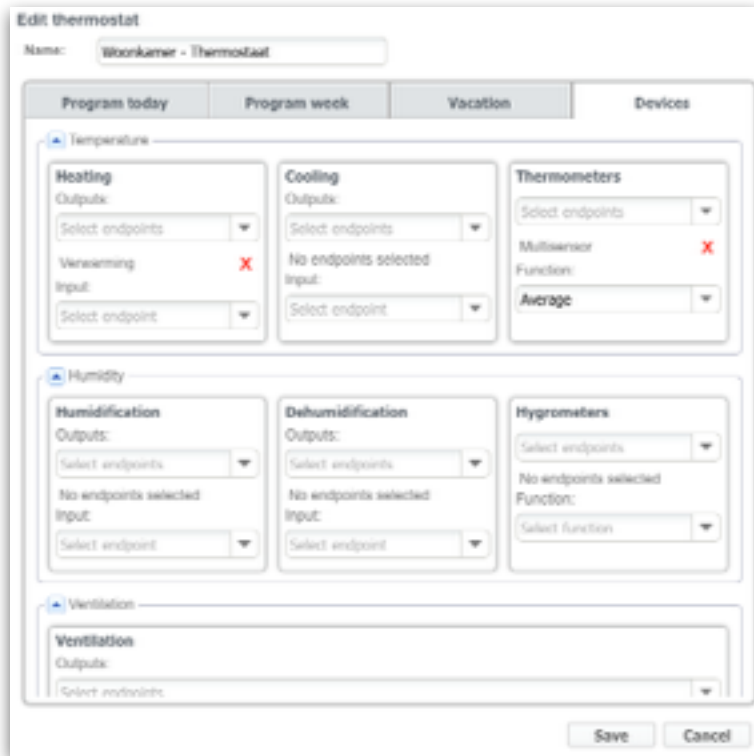
Virtual switch settings, endpoint information:



Choose Room, Type and set Name and Description.
I set type to Radiator so it gets a nice Radiator icon in the dashboard.

Click on Save en Synchronize your settings.

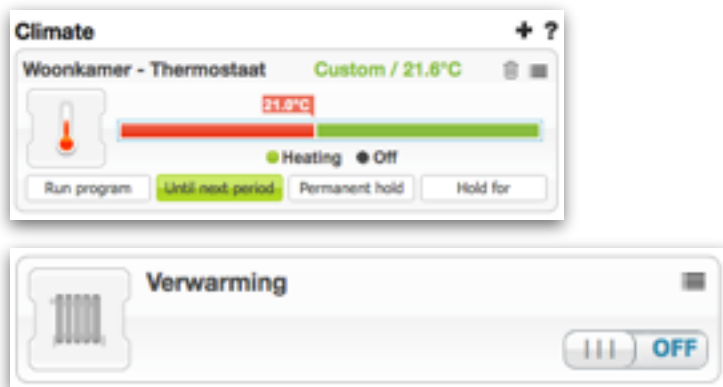
Create a new Thermostat:



Enter a name for the thermostat.
Select the virtual switch „heating” as Heating output.
Select your sensor as Thermometer.

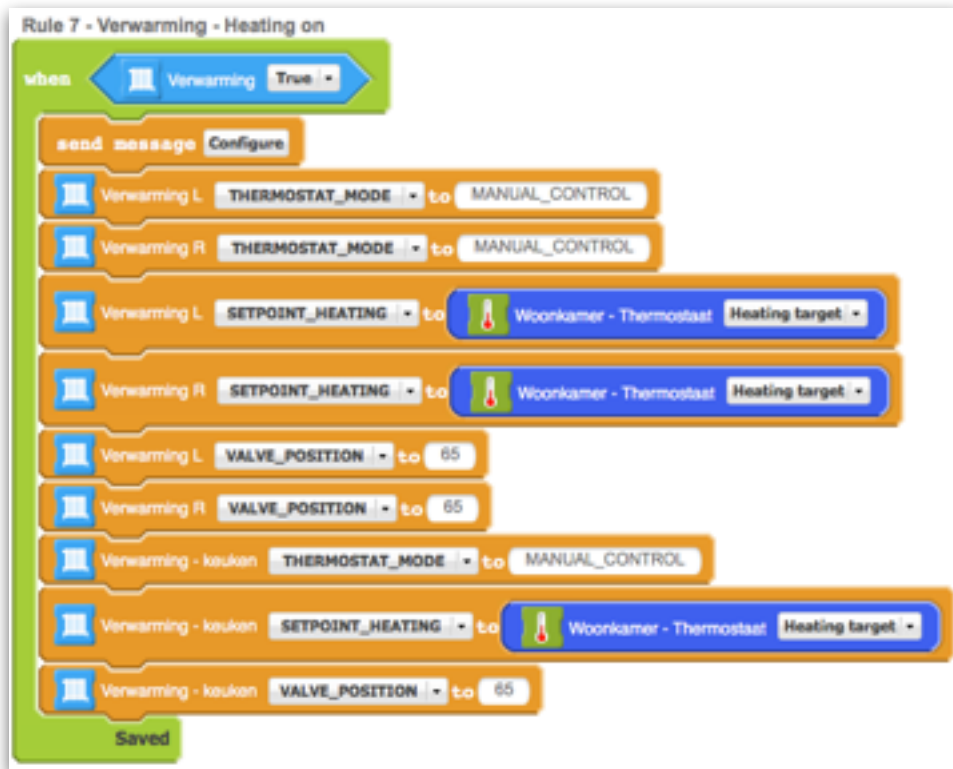
Click on Save en Synchronize your settings.

The Thermostat now controls the virtual device (Lights and Power):



You can now use this device as trigger for the rules.

Rule „heating on”



In this rule when „heating” is True:

- A mail is send (Heating is on)
- THERMOSTAT_MODE to MANUAL_CONTROL
- SETPOINT_HEATING to Thermostat Heating target
The Stella-Z's won't do anything with this value. When you lookup the device under meters is it nice to have the same setpoint heating as your thermostat.
- VALVE_POSITION is set to 65 (%)
This is the value i tested with the Stella-Z in Comfort mode.
The both end position of the valve is detected automatically.
When the Stella-Z starts heating you can see the valve position under Lights and Power.

After wakeup you can see the values „Meters” and „Lights and Power”.



Rule „heating off”

Rule 8 - Verwarming - Heating off

when **Verwarming** **False**

- Verwarming L **SETPOINT_HEATING** to **Woonkamer - Thermostaat** **Heating target**
- Verwarming R **SETPOINT_HEATING** to **Woonkamer - Thermostaat** **Heating target**
- Verwarming L **VALVE_POSITION** to **0**
- Verwarming R **VALVE_POSITION** to **0**
- Verwarming - keuken **SETPOINT_HEATING** to **Woonkamer - Thermostaat** **Heating target**
- Verwarming - keuken **VALVE_POSITION** to **0**

send message **Configure**

Saved

When „heating” is False:

- SETPOINT_HEATING is set to Heating target
- VALVE_POSITION is set to 0 (%)
- A mail is send (Heating is off)

After wakeup you can see the values „Meters” and „Lights and Power”.

Verwarming - keuken
THERMOSTAT_MODE
MANUAL_CONTROL

Verwarming - keuken
TEMPERATURE
22.50 °C

Verwarming - keuken
SETPOINT_HEATING
20.00 °C

Verwarming - keuken
VALVE_POSITION
0%

CHAPTER 3 - BEHAVIOR WITHIN THE Z-WAVE NETWORK

(INFORMATION FROM EUROTRONICS)

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.

Pressing the button behind the round hole in the enclosure for 5 sec. will confirm inclusion and exclusion. Right after inserting the battery the device will stay in the auto inclusion mode for 3 minutes. In this mode a controller in inclusion mode can include the device without any further manual confirmation on the device.

Operating the device

The device does not allow any local operation on the device itself but control via Z-Wave radio from a Z-wave controller only. The thermostat has four operating modes. They are switched wirelessly as well:

1. **Frost Protection** : The temperature in the room will be regulated to about 6 °C.
2. **Comfort** : The temperature in the room will be regulated to a comfortable level. On factory default this is 22 °C but the value can be adjusted by the respective Z-Wave command 'Thermostat Setpoint' to a value between 0 °C and 50 °C. This mode is active on factory default.
3. **Energy Saving** : The temperature in the room will be regulated to a energy saving level. On factory default this is 18 °C but the value can be adjusted by the respective Z-Wave command 'Thermostat Setpoint' to a value between 0 °C and 50 °C.
4. **Direct Valve Control** : This mode allows the direct control of the valve as percentage value of opening using the Z-Wave command class 'Switch Multilevel'. The regulation of a temperature within the device is deactivated.

Additionally to regulating the temperature the valve control is reporting the measured temperature on request (using the command class 'Sensor Multilevel' implementing communication pattern 3). It may happen that the reported temperature will remain 0 °C for some minutes due to calibration. After the first regular wakeup the temperature value will however be correct. Switching between the four modes is accomplished using the Z-Wave command classes 'Thermostat Mode' and 'Basic'. The following mappings apply:

| | |
|------------------|--|
| Frost Protection | : BASIC SET 0x01, THERMOSTAT MODE SET 0x00 |
| Energy Saving | : BASIC SET 0x00, THERMOSTAT MODE SET 0x0b |
| Comfort | : BASIC SET 0xff, THERMOSTAT MODE SET 0x01 |
| Direct Control | : BASIC SET 0xfe, THERMOSTAT MODE SET 0x1f |

Wakeup Intervals - how to communicate with the device?

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.

One Click on the button behind the round hole in the enclosure will wakeup the device and keeps it awake for 5 seconds. The wakeup interval can be defined between 4 minutes and 180 day in steps of 4 minutes. The factory default value is 7 days.

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

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.

A single click on the button behind the round hole in the enclosure sends out a Node Information Frame.

LED Control

Z-Wave OK: 2 Seconds Green

Z-Wave Error: 2 Seconds Red

Network Wide Inclusion: blinking Red-Green Installer-Mode: blinking green

Internal Error: blinking red

Technical Data

| | |
|------------------------|---------------------------------|
| IP Rating | IP 20 |
| Battery Type | 2 * AA |
| Explorer Frame Support | Yes |
| SDK | 4.54 pl1 |
| Device Type | Slave with routing capabilities |
| Generic Device Class | Thermostat |
| Specific Device Class | Thermostat General V2 |
| Routing | No |
| FLiRS | No |
| Firmware Version | 0.4 |