Aeotec Radiator Thermostat

(Z-Wave Thermostat)

Aeotec Radiator Thermostat
Engineering Specifications and Advanced Functions

With the Aeotec Radiator Thermostat you get many functions. It regulates the room temperature to your comfort. For the best use it is equipped with FLiRS (Frequently Listening Receiver Slave) and reacts immediately to incoming commands of the Z-Wave controller. Furthermore the device is able to be connected to an external Z-Wave temperature sensor. Because of that the thermostat refers to the temperature of the external sensor, which can be placed in the middle of the room.

The display of the thermostat has a background light and has a big LCD screen. Besides you can also lock the local buttons as a child protection.

The multicolor LED of the central button allows a intuitive usability because the User is invited to follow the instruction based on the blinking LED of the middle butto.

The TRV can either be used as heating thermostat or as a actuator depending on the configuration of the device. The measured temperature or the position of the actuator of the thermostat are transfered to the Z-Wave gateway.

1. Library and Command Classes
1.1 SDK: 6.71.01
1.2 Library

- **Product ID** = 0x0015
- **Product Type** = 0x0002
- **Hardware** = ZM5202
- **Library Type** = Enhanced 232 Slave
- **Z-WAve Device Type / Role** = Thermostat - HVAC / Listening Sleeping Slave
- Security supported
  - S0 Security
  - S2 Security Unauthenticated

2. Supported Command Classes
Command Class Association Group Info
Command Class Association V2
Command Class Basic
Command Class Battery
Command Class Configuration
Command Class Device Reset Locally
Command Class Firmware Update Md V3
Command Class Manufacturer Specific
Command Class Notification V8
Command Class Powerlevel
Command Class Protection
Command Class Security
Command Class Security 2
Command Class Sensor Multilevel V5
Command Class Supervision
Command Class Switch Multilevel
Command Class Thermostat Mode V3
Command Class Thermostat Setpoint V3
Command Class Transport Service V2
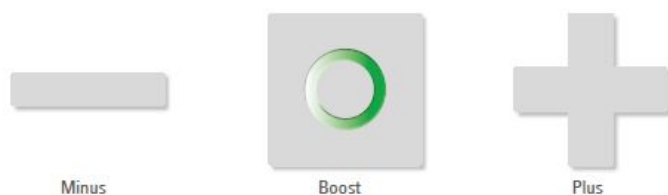Command Class Version V2
Command Class Z-Wave+ Info V2

3 Association Group Information

Aeotec TRV supports only 1 Association Group used to report lifeline to the Z-Wave Controller.

Group 1 - Lifeline
Supported Nodes 1

4. Supported Button Triggers.

Button	Interaction	Result/Behavior
—	Press once	Decrease room temperature by 0,5°C
—	Press and hold	Decrease room temperature by 0,5°C lower 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 every 0,5 seconds or until the highest temperature is set
○	Push once	- Confirm action which is displayed in the LED - Switch in the Boost mode (Quick Heat) - Quit Boost mode, if currently active
○	Hold for 3 seconds	The LCD shows Z-Wave Node ID
○	Hold for 5 seconds	Exclusion Mode
○	Hold while unpowered and insert batteries	Factory Reset
+/−	Hold both simultaneously for 3 seconds	Sets or clear child protection

5. Boost LED Indicator

Boost – green   Boost – red

Color	State	Meaning
	Blinking	OTA Update is in process
	Lights constantly for 5 seconds	A task has failed
	Permanently on	An error occurred
	Blinking	User conformation is required to start a task
	Lights constantly for 5 seconds	A task was completed successfully

6. LCD Icons
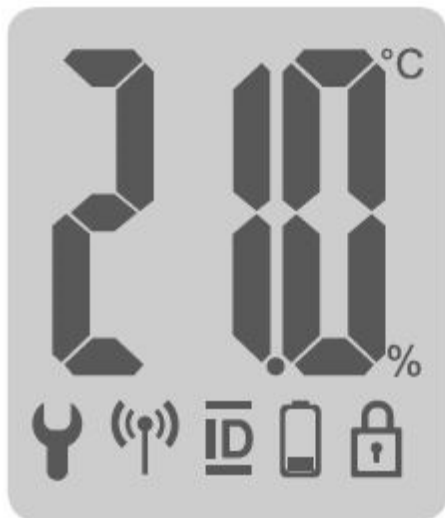
Wrench: Lights up if mechanical tasks are ongoing

Antenna:
Displays the Radiator Thermostat network state.
Segment visible: rf-link established
Segment turnoff: 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: Light up if child protection is set

Degree Celsius: Displayed if the LCD shows a setpoint temperature

7. Child protection.

If you have children who may press the buttons of Radiator Thermostat, you can enable child protection which will disable manual control of Radiator Thermostat.

Press and hold plus (+) and minus (-) button simultaneously for 3 seconds to toggle enable/disable child protection.

Note: If child lock is enabled, this icon will appear:

If the Radiator Thermostat is set into the highest protection level it is no longer possible to operate the device locally.

8. Altering the operating states.

You can manually control some of Radiator Thermostats functions using its buttons.

1. Off-Mode
   - Press and hold the minus (-) button until OFF is displayed.

2. Boost-Mode
   - Push the boost button.
   - Alternatively, press and hold the plus (+) button until ON is displayed.

3. Heating-Mode
   - If the operating state is not heating mode.
   - Press the plus (+) or minus (-) button will bring the device in heating mode.

9. Display NodeID.

If you forget what Node ID your Radiator Thermostat is, and your Z-Wave controller does not provide a good method to locate it, you can display the NodeID by:

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

10. Manually Reset your device.

If you find that your Z-Wave controller is no longer functional or working, you can manually reset Radiator Thermostat using these steps:

1. Remove batteries.
2. Press and hold the Boost button.
3. While still holding Boost button insert batteries.
4. The LCD will show "RES" icon.
5. Release the Boost button.
6. Now press the Boost Button to initiate a manual factory reset.

11. Manually Reset your Radiator Thermostat.
If you find that your Z-Wave controller is no longer functional or working, you can manually reset Radiator Thermostat using these steps:

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12. Configuration Command Class

Parameter 1: LCD invert
Inverts the LCD orientation.
Size: 1 Byte, Default Value: 0

Setting	Description
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 room temperature 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.
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 externally
206 - 255	Offset in 1/10 Celcius (-5°C - 0,1°C)