USER MANUAL **EN**

QUBINO FLUSH ON/OFF THERMOSTAT 2

The Qubino Flush On/Off Thermostat 2 is ideal for remotely controlling electric or water-based underfloor heating systems, electric water heaters, hot water pumps, electric radiators and similar.

EN

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About Qubino

Qubino is a family of innovative Z-Wave devices, many of them the smallest of their kind. Numerous breakthrough innovations, 100% quality control, and responsive customer service make Qubino the number one choice for making your life more comfortable.

Qubino enables you to transform – inexpensively and invisibly – any traditional electric device into a smart, connected one that you can control with your smart phone. Qubino devices are simple to install and use, but also extremely versatile - they offer a wealth of additional features and parameters for you to play with.

We love helping people who enjoy creating new ideas for their home and then using their hard work and skill to turn those ideas into reality. We admire their passion and resourcefulness. We do our best to supply you with products that will enable you to create a unique and special home for yourself. We innovate so that you can be free to make the smartest home possible. With just a touch of magic.

"Simple is smart." We believe it is smart to make complex things simple. But only when this means simple for our customers, not for ourselves. We think a lot so that you won't have to when it comes to installing or using our devices.

For more information visit: www.qubino.com

About Z-Wave:

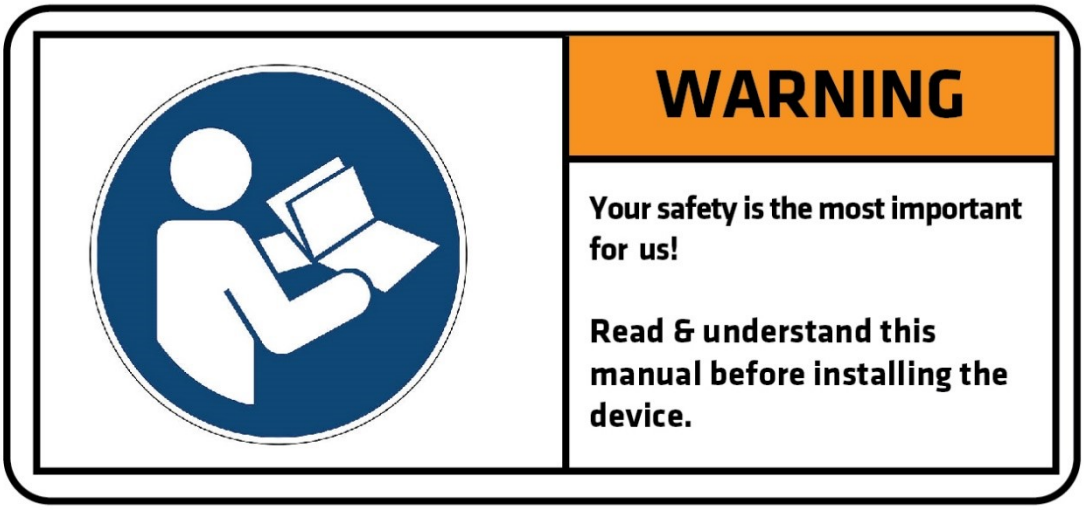
The Z-Wave protocol is an interoperable, wireless, RF-based communications technology designed specifically for control, monitoring, and status reading applications in residential and light commercial environments. Mature, proven, and broadly deployed (with over 50 million products sold worldwide), Z-Wave is by far the world market leader in wireless control, bringing affordable, reliable, and easy-to-use 'smart' products to millions of people in every aspect of daily life.

Source: www.z-wavealliance.org

Safety Information

For Qubino, safety is first, so we have prepared lots of safety tips and information that can be found throughout this manual.

To ensure your safety, please read this manual carefully before installing the device; follow the instructions exactly. The manufacturer (GOAP d.o.o. Nova Gorica) shall not be legally responsible for any equipment damage or personal injury caused by incorrect installation or operation other than that covered in this manual.



ⓘ Please check the Technical Specifications and Electrical Diagram chapters, as well as fuse requirements in the Installation chapter before installing the device.

Flush On/Off Thermostat 2 - Available Frequencies

ORDERING CODE (MODEL NUMBER)	POWER SUPPLY FREQUENCY	Z-WAVE FREQUENCY*
ZMNKID1	50/60 Hz	868,4 MHz
ZMNKID2	50/60 Hz	921,4 MHz
ZMNKID3	50/60 Hz	908,4 MHz
ZMNKID4	50/60 Hz	869,0 MHz
ZMNKID5	50/60 Hz	916,0 MHz
ZMNKID6	50/60 Hz	868,4 MHz
ZMNKID7	50/60 Hz	919,8 MHz
ZMNKID8	50/60 Hz	865,2 MHz
ZMNKID9	50/60 Hz	922,5 MHz
ZMNKIDA	50/60 Hz	920,90 MHz
ZMNKIDE	50/60 Hz	920,9 MHz
ZMNKIDF	50/60 Hz	908,4 MHz

*You can check the Z-Wave frequency in your country here:

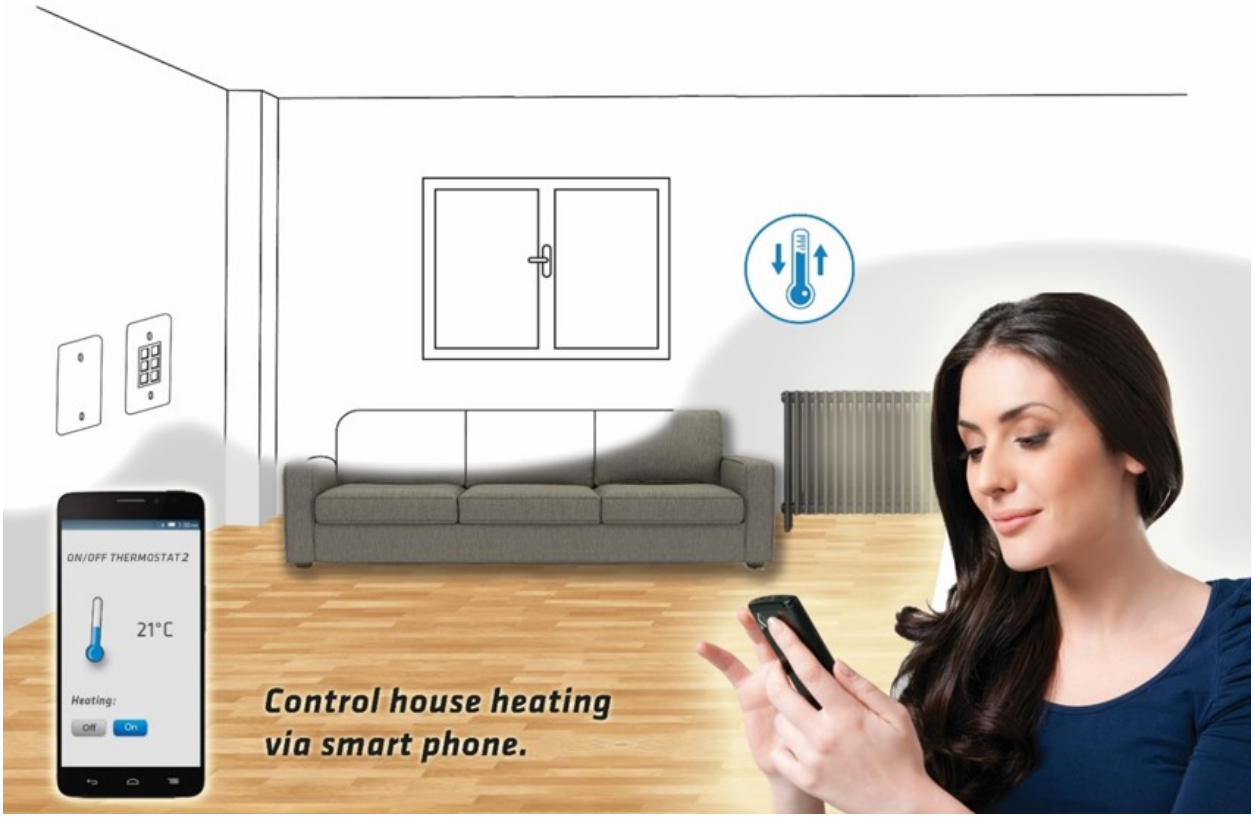
https://www.silabs.com/products/wireless/mesh-networking/z-wave/benefits/technology/global-regions?cid=nat-acq-zwv-041818

Where To Buy

To find your nearest Qubino dealer visit: https://qubino.com/where-to-buy/

1. Introduction

The Qubino Flush On/Off Thermostat 2 is ideal for directly controlling electric or water-based underfloor heating systems, electric water heaters, hot water pumps, electric radiators and similar.



The Qubino Flush On/Off Thermostat 2 can measure the power consumption of the connected electrical device and itself has an extremely low power consumption of just 0.4 W.

The Qubino Flush On/Off Thermostat 2 can operate across a wide temperature range, from a chilly -10˚C to a scorching 40˚C (14˚–104˚F). This applies to the module as such, but a temperature probe can be measured on a larger extent. It supports the connection of a digital temperature sensor, which means you can create complex scenes and switch any device relative to a set temperature range. The Qubino Flush On/Off Thermostat 2 also acts as a Z-Wave repeater in order to improve the range and stability of the Z-Wave network.

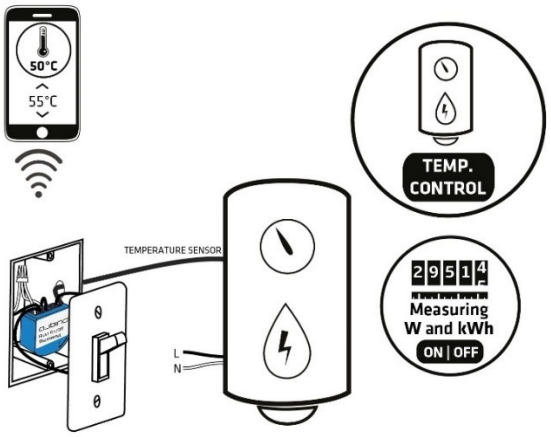
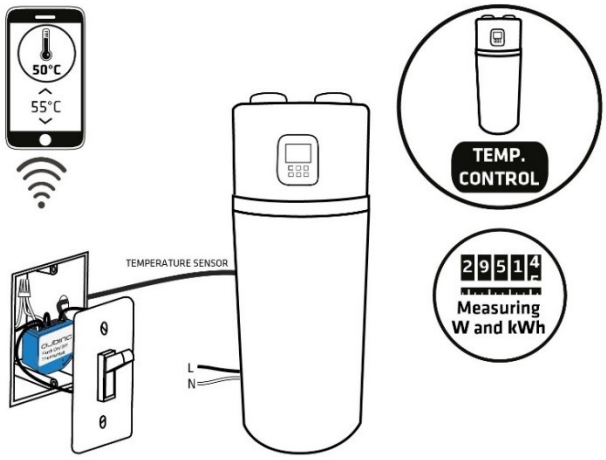
Flush On/Off Thermostat 2 supported functions:

Turn ON/OFF	W Measurement	kWh Measurement	Temperature Sensor	Associations	Z-Wave Repeater	SmartStart	Security 2
✓	✓	✓	✓	✓	✓	✓	✓

2. Use Cases

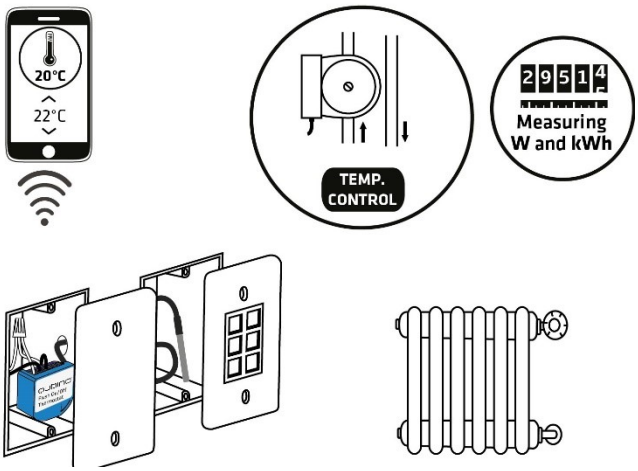
The Flush On/Off Thermostat 2 can be used in many different scenes, which can help make your life more comfortable. We have prepared a few of them for you-so you can get an idea for your next smart home project. Of course, there are countless of other options for how to use Qubino Flush On/Off Thermostat 2 to remotely control devices via your smartphone.

2.1. Installation examples where Flush On/Off Thermostat 2 is installed behind a wall switch

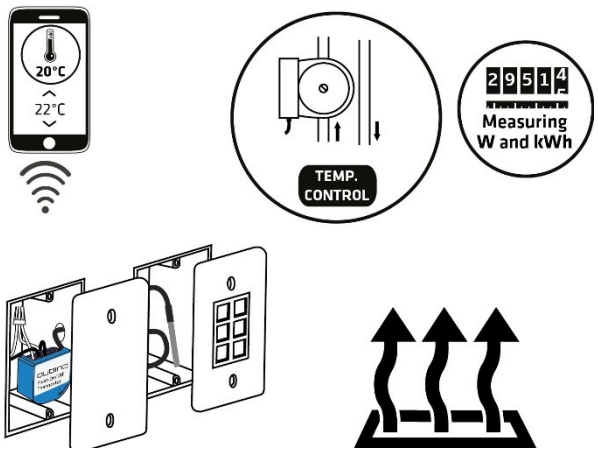
Remotely control water temperature by controlling electrical water heater	Remotely control water temperature by controlling heat pump
	

2.2. Installation examples where Flush On/Off Thermostat 2 is installed in the switch box

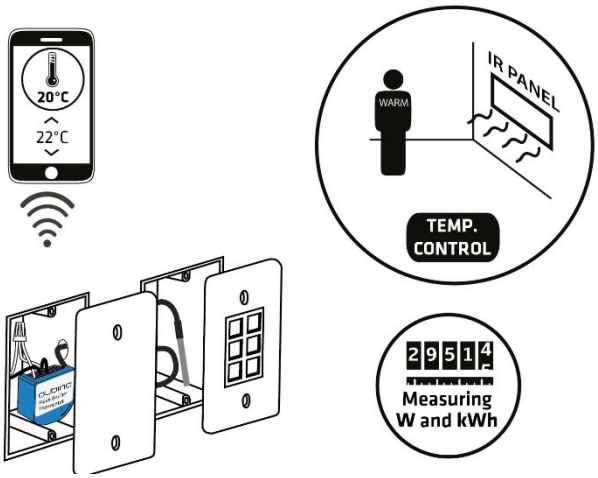
- Remotely control room temperature by controlling circulation pumps for heating radiators



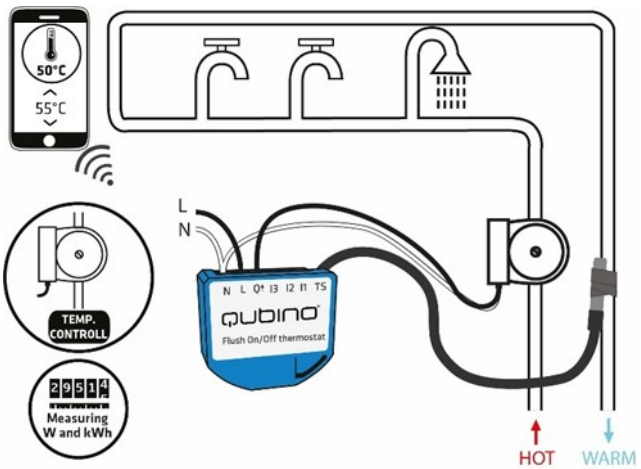
- Remotely control room temperature by controlling circulation pumps for underfloor heating systems



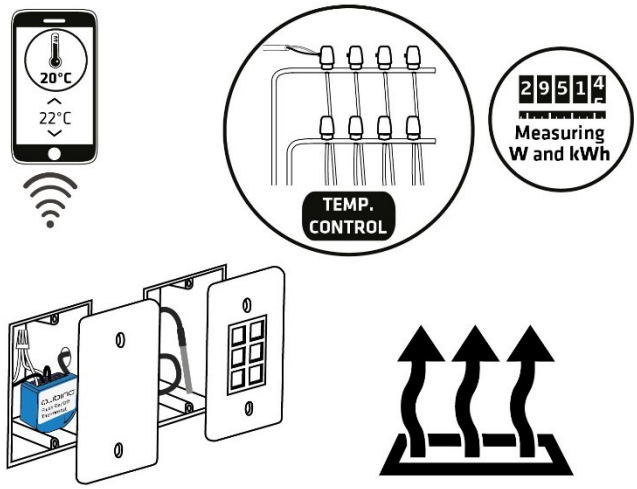
- Remotely control room temperature by controlling wall mounted infrared heating panel



- Remotely control water temperature by controlling sanitary hot water recirculation pump



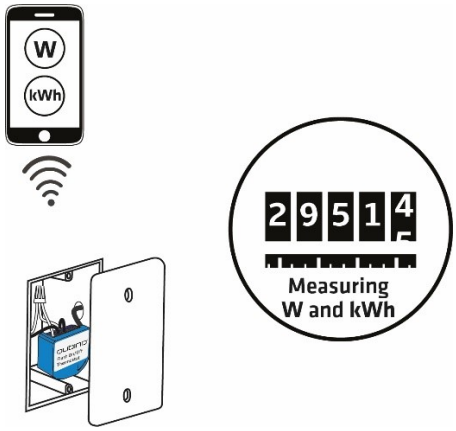
- Remotely control room temperature by controlling valves for underfloor heating systems



2.3. Additional features of Flush On/Off Thermostat 2 which can make your life easier

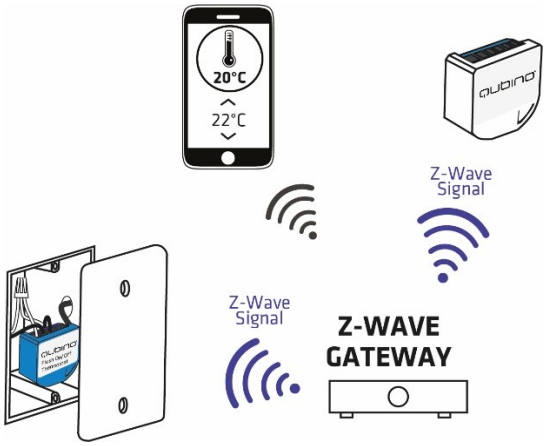
- **Do you know how much energy you consume?**

- The Flush On/Off Thermostat 2 monitors and reports energy consumption of connected devices in real time to your smart home app (your gateway (hub) needs to support this feature). Know how much power your heating system is using.



- **Want to control other devices in your Z-Wave network with the Flush On/Off Thermostat 2?**

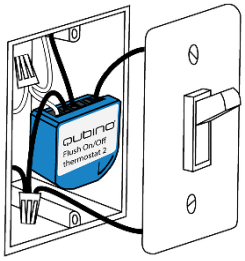
- Connect the Flush On/Off Thermostat 2 with other devices in your network to remotely and automatically trigger another Z-Wave device. And have other Z-Wave devices trigger your Qubino Flush On/Off Thermostat 2.

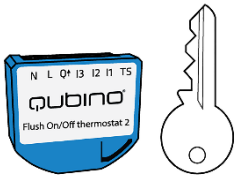


3. Qubino Flush On/Off Thermostat 2 Advantages and Highlights

3.1. Advantages

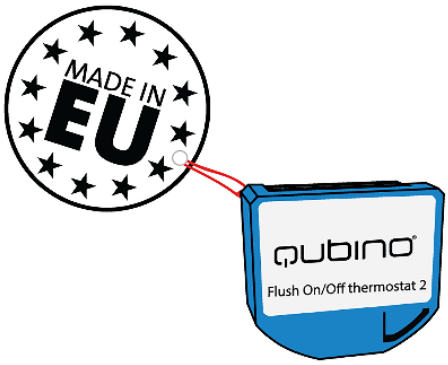
- Smart Thermostat **measures power consumption of the connected heating system** - current consumption in W and cumulated consumption in kWh.
- Fast & Trouble-free set up with **Z-Wave SmartStart -** The setup of Smart Thermostat is user-friendly for everyone. Simply scan the QR code on the device, install it and provide with power. Your SmartStart gateway recognizes the device and the inclusion is done automatically.
- Easy to setup and virtually un-hackable, with the **highest level of security for smart home devices** on the market – **Security 2**.
- The Qubino Flush On/Off Thermostat 2 allows the **easiest and quickest installation possible**. Because of its small size, it fits smoothly in even the smallest, most shallow and most crowded flush mounting boxes, which are stuffed with lots of electrical cables and where **every millimetre counts**. All this is possible because the Qubino Flush On/Off Thermostat 2 is **the smallest Z-Wave thermostat in the world**.



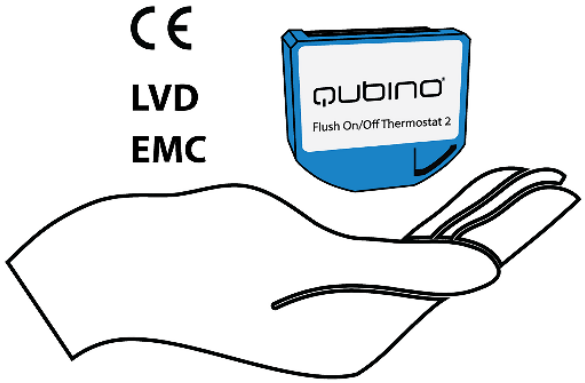


- Qubino guarantees **100% device quality**. Such high quality can be delivered because every Qubino goes through rigorous quality control standards throughout the production process. Every device has a unique serial number and part number, which are assigned to the device only after it goes through a strict testing procedure.

- The Qubino Flush On/Off Thermostat 2 is **engineered and manufactured in the EU** and contains only the highest quality components.



- The Qubino Flush On/Off Thermostat 2 is certified by an independent European Institute and has CE, FCC, LVD and EMC certificates to ensure the highest safety standards.



3.2. Highlights

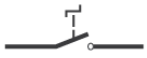
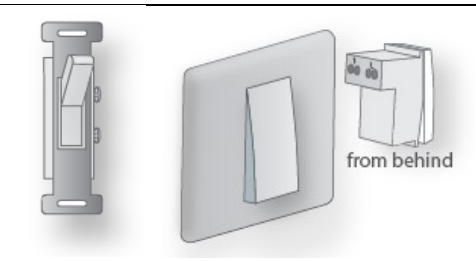
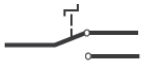
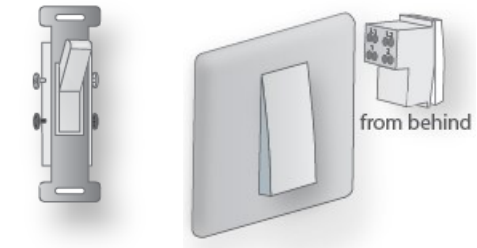
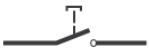
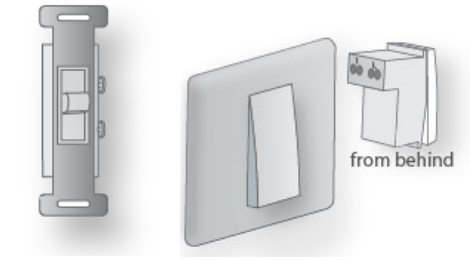
- Remote (via smartphone or PC) and local on/off control of valves for electric or water-based underfloor heating systems, electric water heaters, hot water pumps, electric radiators and similar
- Works with push-button (momentary switch) and toggle switch
- Capable of measuring the power consumption of the connected device in real time via smartphone
- Works on 110-240 VAC or 24-30 VDC
- Features one of the easiest and quickest installations of devices of this kind; fits in even the smallest flush mounting boxes
- Saves and restores the last status after a power failure
- Digital temperature sensor range is -25 ~ + 80°C (-13~176°F)
- Supports SmartStart inclusion for quick set up
- Automatically turn the device on/off based on Hysteresis.
- Automatically turn the device on if temperature is too low (antifreeze).
- Supports additional parameters for expert users, which allows for advanced configuration*
- Acts as a signal repeater which improves the range and stability of your Z-Wave network
- Can be used to remotely control and trigger other devices in your Z-Wave network

*Your gateway (hub) needs to support advanced configuration and parameter input if you wish to use this feature

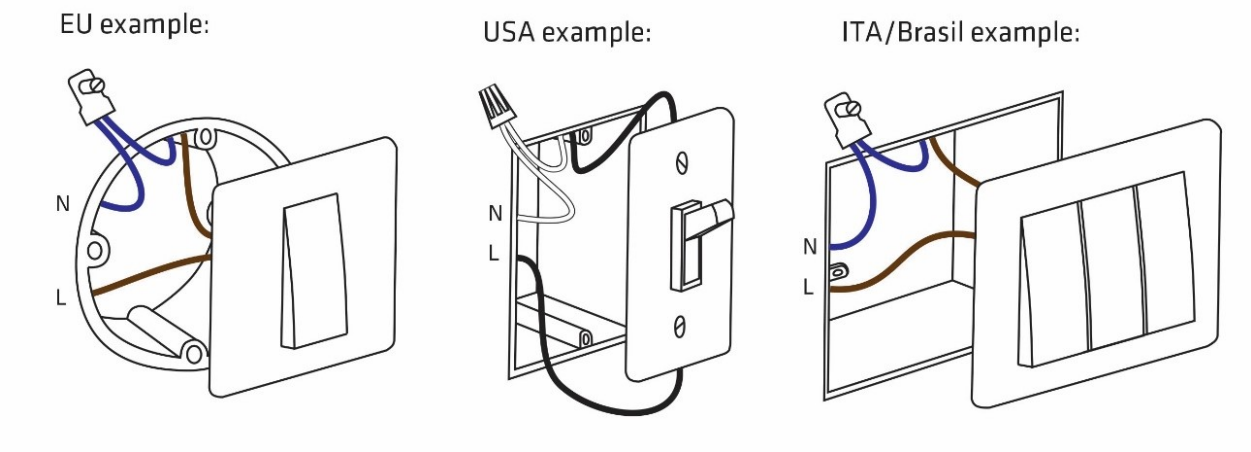
4. Package Contents

- Flush On/Off Thermostat 2 Device
- Temperature Sensor
- Installation Manual
- SmartStart & S2 packaging label

5. Technical Terms for Switches

Symbol	Switch example images	Definition	EU	USA	Qubino	Other names
		Single pole, single throw (SPST) - One switch controlling one light / circuit of lights	One-way switch	Two-way switch (regular switch)	Toggle switch	Switch; Bi-stable switch
		Single pole, double throw (SPDT) - Two switches controlling the same light / circuit of lights	Two-way switch	Three-way switch	Two-way switch	
		Used when you have three or more switches controlling the same light	Intermedi-ate switch	Four-way switch	Intermedi-ate switch	Crossover switch; Cross connection
		After being released, it goes back to its original state	Momentary switch		Momentary switch	Monostable switch; Push button

Qubino devices are installed into the flush mounting box behind the switch. You can see some examples of different installation boxes worldwide.



For more information on how to install your device, please refer to the Installation chapter.

6. Compatibility with Z-Wave Gateways (hubs)

Please check compatibility with your Z-Wave gateway (hub) before you purchase this device. The compatibility table is available online.

https://qubino.com/manuals/Compatibility_with_gateways/Compatibility_manual_Flush_ON_OFF_Thermostat_2_12092019.pdf

7. Installation

Before installing the device, please read the following carefully and follow the instructions exactly:

ⓘ **Danger of electrocution!**

Installation of this device requires a great degree of skill and may be performed only by a licensed and qualified electrician. Please keep in mind that even when the device is turned off, voltage may still be present in the device's terminals.

ⓘ **Note!**

Do not connect the device to loads exceeding the recommended values. Connect the device exactly as shown in the provided diagrams. Improper wiring may be dangerous and result in equipment damage.

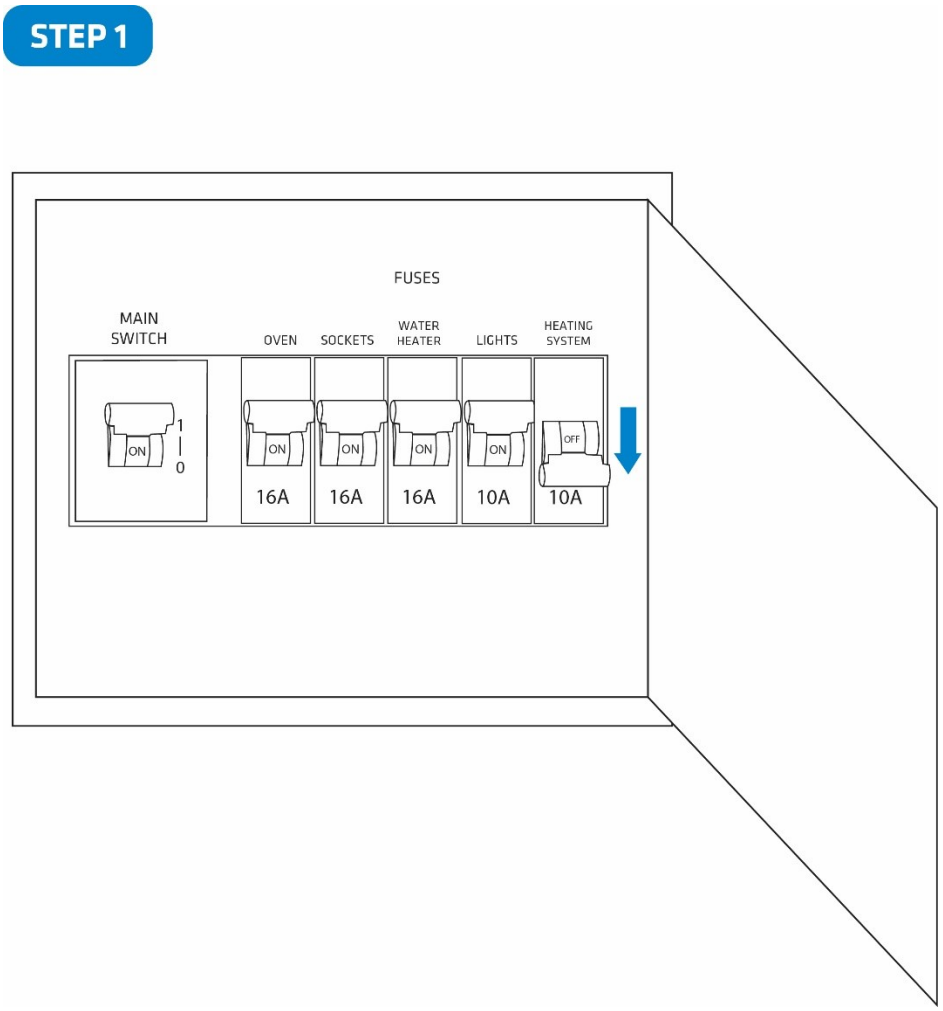
Electrical installation must be protected by directly associated overcurrent protection fuse 10A, gG or Time lag T, rated breaking capacity 1500A (ESKA 522.727) must be used according to wiring diagram to achieve appropriate overload protection of the device. The fuse must be installed in fuse holder type: Adele contact 503Si/1 DS according to the standard IEC60669-2-1.

7.1. Installing the device in the switch box

The installation process, tested and approved by professional electricians, consists of the following simple steps:

<u>Step 1 – Turn OFF the fuse:</u>

- To prevent electrical shock and/or equipment damage, disconnect electrical power at the main fuse or circuit breaker before installation and maintenance.
- Be aware that even if the circuit breaker is off, some voltage may remain in the wires — before proceeding with the installation, be sure no voltage is present in the wiring.
- Take extra precautions to avoid accidentally turning the device on during installation.



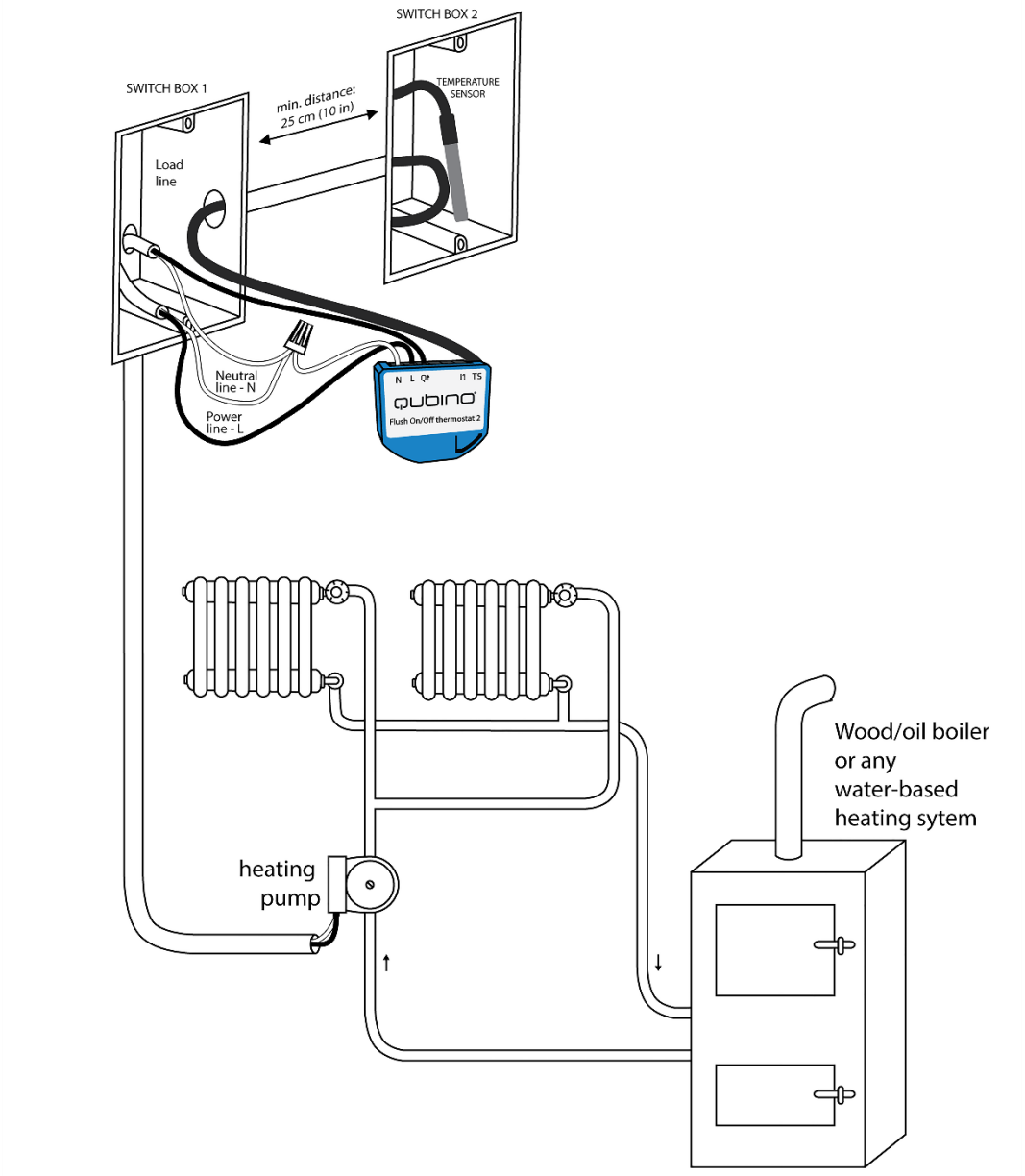
Step 2 – Installing the device:

- Connect the device exactly according to the diagrams shown below

STEP 2

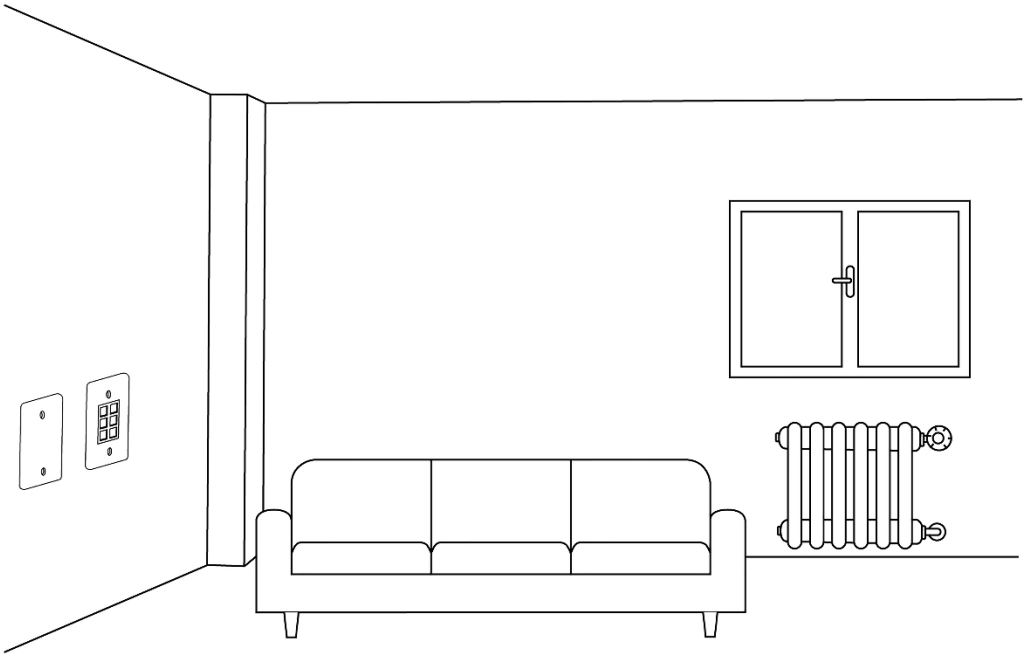
Qubino installation

Installation example for circulation pump for radiators:

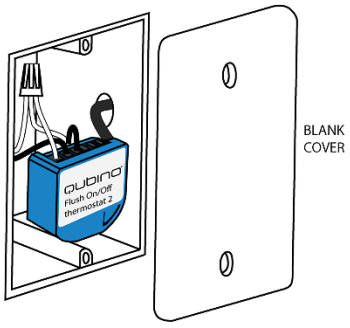


Installation and wire connections are the same in USA and EU.

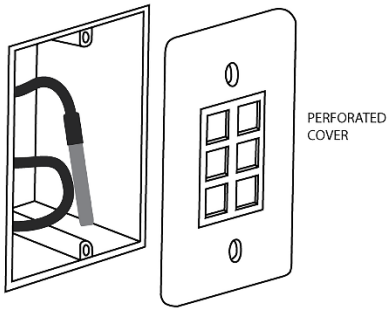
After Qubino installation:



Installation in the switch box:



SWITCH BOX 1

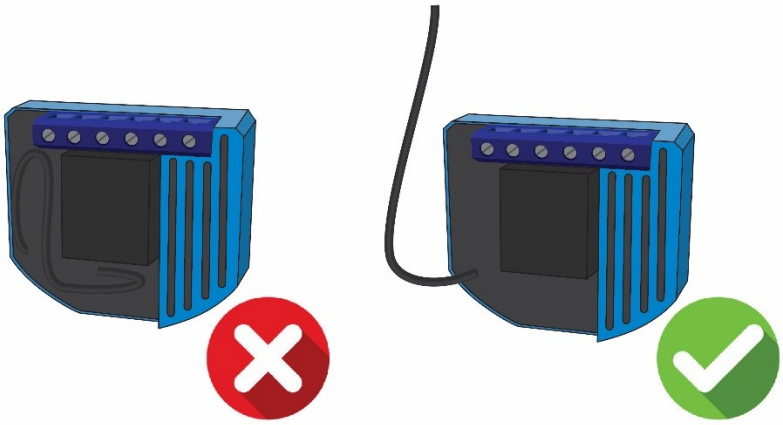


SWITCH BOX 2

ⓘ **Note!**

- Place the antenna as far as possible from metal elements as they may cause signal interference.
- Do not shorten the antenna.

The device's antenna should be as upright as possible. This ensures the device's operational range is maximized (up to 131 feet (40 m) line of sight).

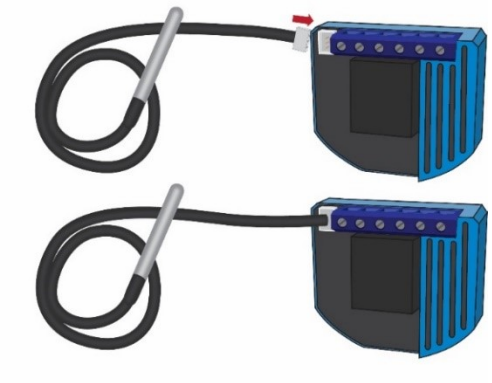


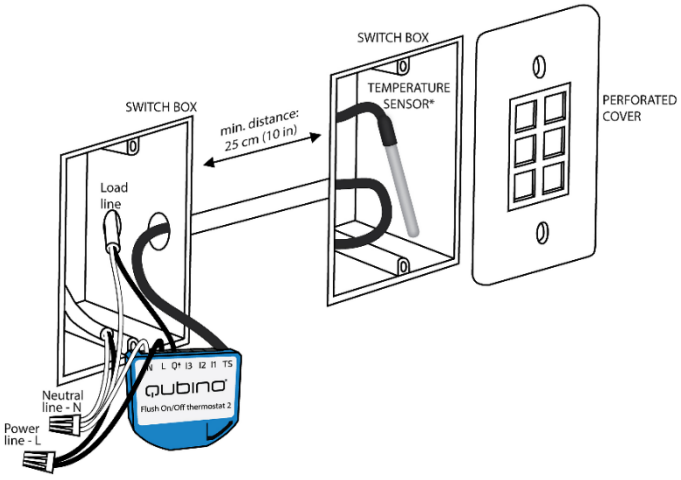
Connection of the temperature sensor:

The digital temperature sensor comes with a 1 m (3.3 ft) cord and a connector to attach it directly to a Qubino device.

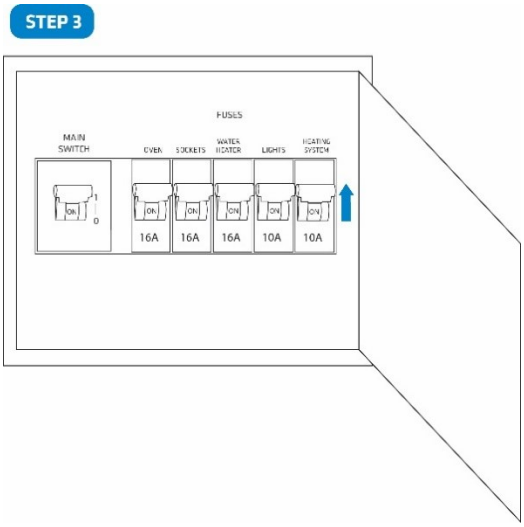
1. To prevent electrical shock, make sure that no voltage is present on the temperature sensor cable.
2. When connected to Qubino device, the temperature sensor is under high voltage, which is very dangerous.
3. Goap d.o.o. does not take responsibility for any damage or electrical shock due to incorrect sensor assembly.
4. The above instructions and description apply to a temperature sensor compatible with Qubino products only.
5. The temperature sensor's range is between -25 ~ +80°C (-13~ 176°F).

NOTE: When Qubino is wired to 110-240VAC (high voltage) the temperature sensor must not be in direct contact with water.
For more details about the temperature range, see the manual for the temperature sensor below.
Qubino Temperature Sensor manual:
https://qubino.com/manuals/Installation/Temperature_Sensor_manual.pdf





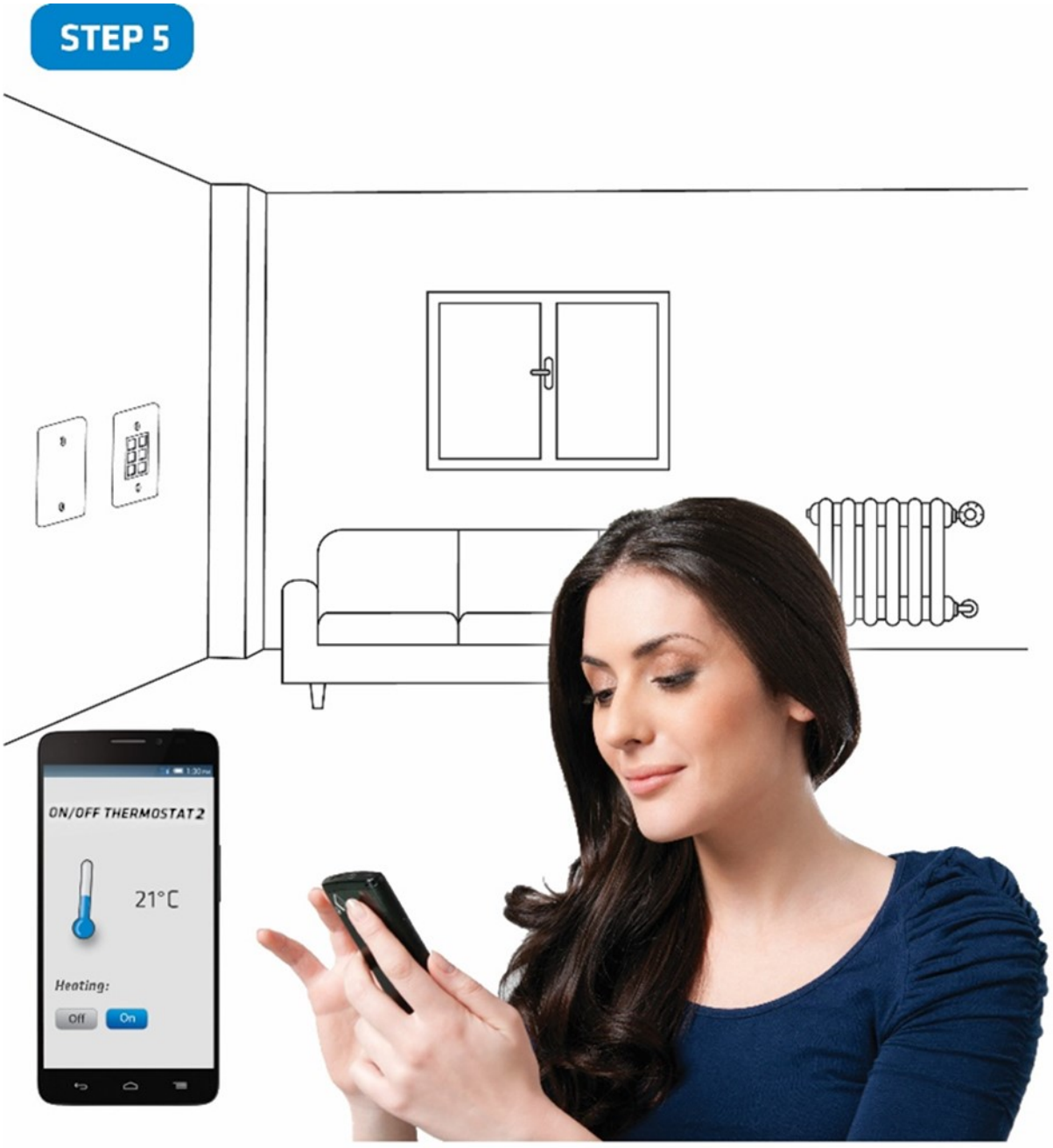
Step 3 – Turn ON the fuse:



Step 4 – Add the device to your Z-Wave network:

- For more details on how to include the device, please refer to the Z-Wave Inclusion chapter.

Step 5 – The Installation is now complete. It's time to make your life more comfortable with the help of the Qubino Flush On/Off Thermostat 2



8. Device Information and Support

Did you know that Qubino offers Z-Wave devices with 100% quality control guaranteed throughout the production process? Every single unit is tested and examined before being approved for sale – a truly unique pledge in the industry.

Why is this important?

Every device has a dedicated serial number and part number, which is assigned to the device only after it goes through a strict testing procedure.

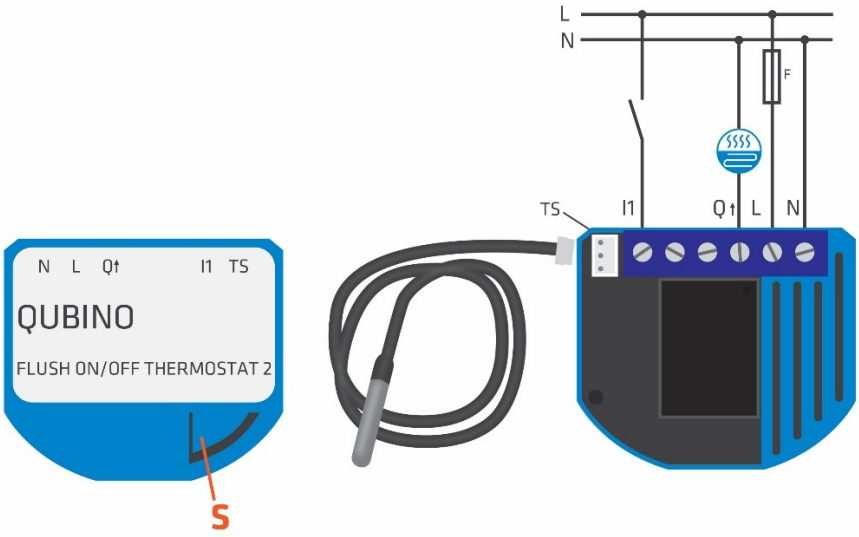
Our support policy advises that every customer receives an answer within 24 hours.

Go to our support website https://support.qubino.com/support/home and open a new support ticket. By telling us the product's unique serial number and part number, we will automatically review the production log file containing device parameters and information. This allows us to immediately identify and address issues, giving you the best customer support.

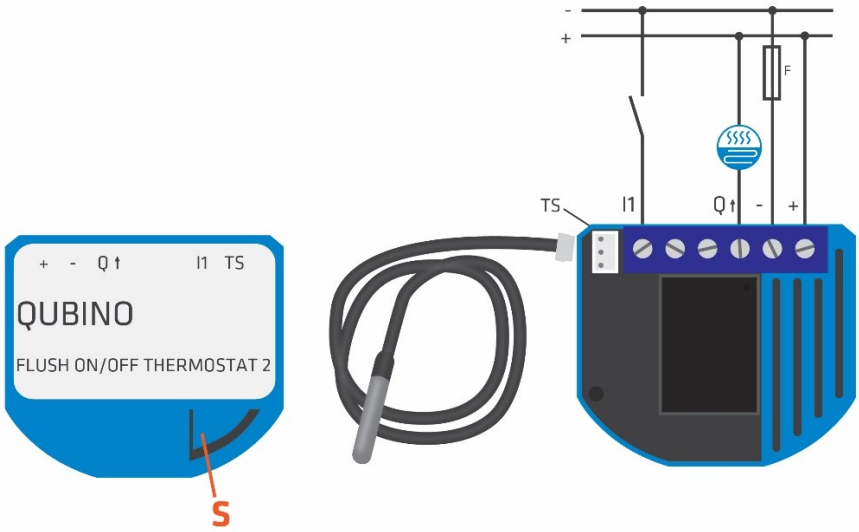
Based on customer and business partner feedback, we're proud to boast Qubino's support team as the best and fastest on the market. If you don't find the answers to your questions in this document, please contact us. We will try to help you as soon as possible.

9. Electrical Diagram (110 - 240VAC, 24VDC)

For 110-240 VAC



For 24 VDC



Notes for diagram:

N	Neutral wire (+VDC)
L	Live (line) wire (-VDC)
Q↑	Output for electrical device
I1	Input for switch /push button
TS	Temperature sensor terminal
*****	Wago 221-413 splicing connectors for L and N connection must be used only when connected to 240 VAC.
S	Service button

WARNING:

The service (S) button **must NOT be used** when the device is connected to a 110-240V power supply.

The durability of the device depends on the applied load. For resistive loads (light bulbs, etc.) and 10A current consumption of an electrical device, the product's lifespan exceeds 100,000 toggles.

ⓘ The temperature sensor should not be exposed to direct contact with water.

10. Adding the device to a Z-Wave network (Inclusion)

AUTOMATICALLY ADDING THE DEVICE TO A Z-WAVE NETWORK (SMARTSTART INCLUSION)

1. Scan QR code on device label and add S2 DSK to Provisioning List in gateway (hub)

2. Connect the device to the power supply (with the temperature sensor already connected).

3. Inclusion will be initiated automatically within few seconds of connection to the power supply and the device will automatically enrol in your network (when the device is excluded and connected to the power supply it automatically enters the LEARN MODE state).

NOTE: LEARN MODE state allows the device to receive network information from the controller.

ⓘ SmartStart inclusion is a part of S2 security level, so if you want to use SmartStart, you need to include it as S2 Authenticated.

MANUALLY ADDING THE DEVICE TO A Z-WAVE NETWORK (MANUAL INCLUSION)

1. Enable add/remove mode on your Z-Wave gateway (hub)

2. Connect the device to the power supply (with the temperature sensor already connected*)

3. Toggle the switch connected to the I1 terminal 3 times within 3 seconds (The device has to get On/Off signal 3 times, meaning 3 times click on the push button or with the normal button 3 times On/Off.) (this procedure puts the device in LEARN MODE) in the first minute after power cycle.

OR

If the device is powered by 24 V SELV supply, press and hold the S (Service) button between 3 and 6 seconds (this procedure puts the device in LEARN MODE)

4. A new device will appear on your dashboard

5. Inclusion with the switch connected to I1 terminal is not limited by time

*If connecting the temperature sensor, switch off the power supply.

NOTE1: LEARN MODE state allows the device to receive network information from the controller.

11. Removing the device from a Z-Wave network (Exclusion)

REMOVAL FROM A ZWAVE NETWORK (Z-WAVE EXCLUSION)

1. Connect the device to the power supply

2. Make sure the device is within direct range of your Z-Wave gateway (hub) or use a hand-held Z-Wave remote to perform exclusion

3. Enable add/remove mode on your Z-Wave gateway (hub)

4. Toggle the switch connected to the I1 terminal 3 times within 3 seconds in the first minute after power cycle (The device has to get On/Off signal 3 times, meaning 3 times click on the push button or with the normal button 3 times On/Off).
OR
If the device is powered by 24 V SELV supply, press and hold the S (Service) button between 3 and 6 seconds

5. Exclusion with the switch connected to I1 terminal is not limited by time

6. The device will be removed from your network, but any custom configuration parameters will not be erased

NOTE1: LEARN MODE state allows the device to receive network information from the controller.

NOTE2: After device is excluded you should wait 30 seconds before performing re-inclusion.

FACTORY RESET

1. Connect the device to the power supply
2. Within the first minute (60 seconds) the device is connected to the power supply, toggle the switch connected to the I1 terminal 5 times within 3 seconds (The device has to get On/Off signal 5 times, meaning 5 times click on the push button or with the normal button 5 times On/Off).
OR
If the device is powered by 24 V SELV supply, press and hold the S (Service) button for more than 6 seconds

ⓘBy resetting the device, all custom parameters previously set on the device will return to their default values, and the node ID will be deleted. Use this reset procedure only when the main gateway (hub) is missing or otherwise inoperable. If an end device is factory reset, it is reverted to the Z-Wave SmartStart inclusion state.

12. Associations

Use associations for direct communication between the Flush On/Off Thermostat 2 and other devices within your Z-Wave network without the need of your primary gateway (hub).

Association Groups:

Root device:

Group ID	Name	Allowed nodes	Description
1	Lifeline	5	Supports the following commands: • Device Reset Locally: triggered upon request, • Sensor multilevel report: triggered upon temperature change, • Meter report: triggered upon energy consumption change according to configuration parameters 40, 42, • Notification report: triggered upon current overload detection, • Thermostat mode: triggered upon thermostat mode change • Thermostat operating state: triggered upon thermostat operating state (Idle, Heating, Cooling)
2	Change of output Q	5	Supports the following command: • Basic set: triggered by change of output Q
3	Basic on/off too high too low T	5	Supports the following command: • Basic set: triggered when actual temperature reaches Too High or Too Low temperature limit; Heat mode: when temperature reaches Too High Temperature Limit reports OFF (0x00), when temperature reaches Too Low Temperature Limit reports ON (0xFF). Cool mode: when temperature reaches Too High Temperature Limit reports ON (0xFF), when temperature reaches Too Low Temperature Limit reports OFF (0x00). Thermostat off mode reports OFF (0x00) on both limits reached. Hysteresis is 1°C.
4	Sensor multilevel report	5	Supports the following command: • Sensor multilevel report: triggered by change of temperature for threshold defined in configuration parameter 120

13. Notification Command Class

The device supports the following notifications:

- In case the current exceeds 10 A for 6 seconds or more the output is turned off automatically and overload notification is sent.

Notification Type	Notification Event
Power Management (0x08)	Over-load detected (0x08)

14. Configuration Parameters

Parameter no. 1 – Input I1 switch type

With this parameter, you can select between push-button (momentary) and on/off toggle switch types.

Values (size is 1 byte dec):

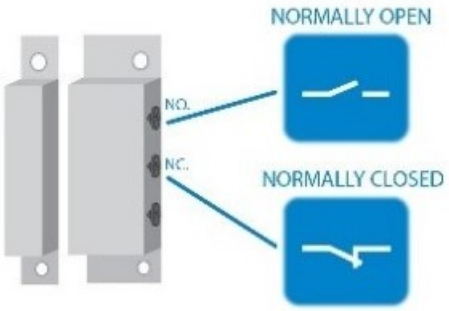
- default value 1
- 0 - push-button (momentary)
- 1 - on/off toggle switch

Parameter no. 4 – Input 1 contact type

This parameter determines how the switch or push-button is connected.

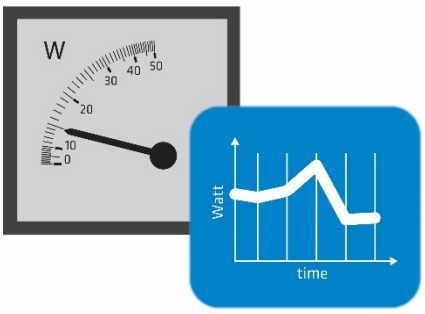
Values (size is 1 byte dec):

- default value 0
- 0 - NO (normally open) input type
- 1 - NC (normally close) input type



Parameter no. 40 – Watt Power Consumption Reporting Threshold for Q↑ Load

Choose by how much power consumption needs to increase or decrease to be reported. Values correspond to percentages so if 10 is set, for example, the device will report any power consumption changes of 10% or more compared to the last reading.



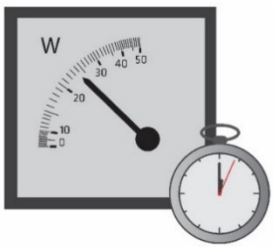
Values (size is 1 byte dec):

- default value 10
- 0 - Power consumption reporting disabled
- 1 - 100 = 1% - 100% Power consumption reporting enabled. New value is reported only when Wattage in real time changes by more than the percentage value set in this parameter compared to the previous Wattage reading, starting at 1% (the lowest value possible).

NOTE: Power consumption needs to increase or decrease by at least 1 Watt to be reported, REGARDLESS of percentage set in this parameter.

Parameter no. 42 – Watt Power Consumption Reporting Time Threshold for Q↑

Set value refers to the time interval with which power consumption in Watts is reported (30 – 32767 seconds) starting from time of last Watts reported. If for example 300 is entered, energy consumption reports will be sent to the gateway (hub) every 300 seconds (or 5 minutes).



Values (size is 2 byte dec):

- default value 600 (600 seconds = 10 minutes)
- 0 - Power consumption reporting disabled
- 30 - 32767 = 30 - 32767 seconds. Power consumption reporting enabled. Report is sent according to time interval (value) set here.

EXAMPLE: If we set value to 30 seconds and the device reports Watts because of percent change of power (parameter 40 - Watt Power Consumption Reporting Threshold) at time = 5 seconds, then the device will send next meter report at time = 35 seconds (assuming the device has not sent report within interval 5 to 35 seconds).

Parameter no. 43 – Hysteresis Upper temperature offset

This parameter defines minimum temperature difference between real measured temperature and set-point temperature to turn device on in heat mode or turn device off in cool mode.

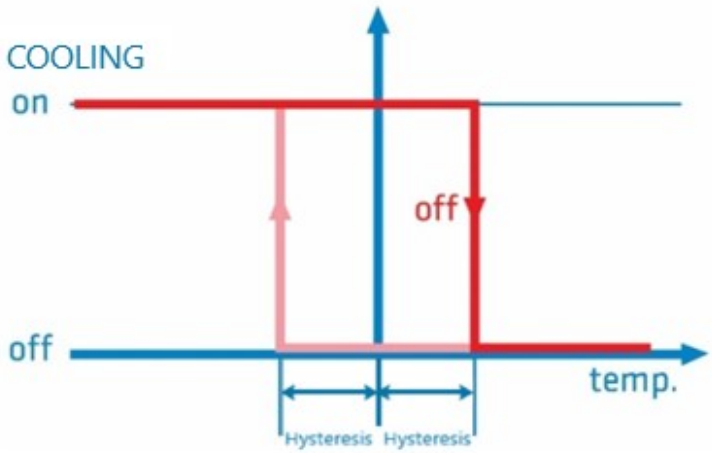
Values (size is 2 byte dec):

- default value 5 (0.5 °C)
- 0 – 450

NOTE1: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is 0 – 250 (0.0 °C – 25.0 °C, resolution 0.1 °C)

NOTE2: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 0 – 450 (0.0 °F – 45.0 °F, resolution 0.1 °F)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.



Parameter no. 44 – Hysteresis Lower temperature offset

This parameter defines minimum temperature difference between real measured temperature and set-point temperature to turn device off in heat mode or turn device on in cool mode.

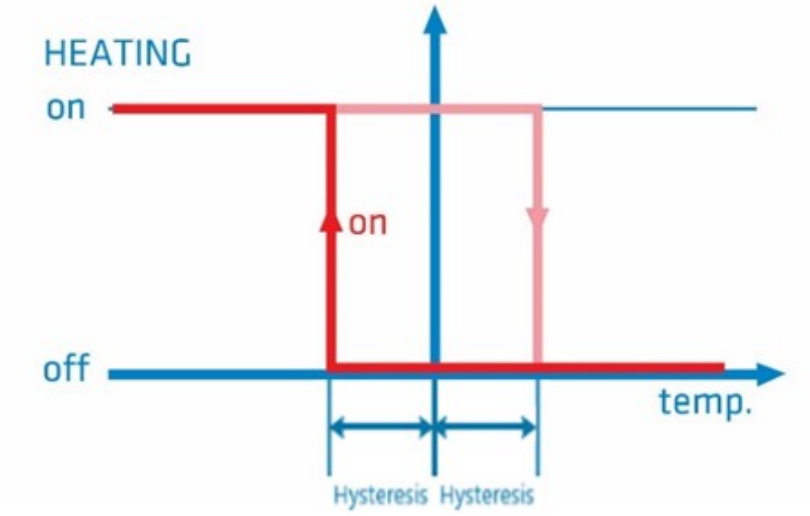
Values (size is 2 byte dec):

- default value 5 (0.5 °C)
- 0 - 450

NOTE1: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is 0 – 250 (0.0 °C – 25.0 °C, resolution 0.1 °C)

NOTE2: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 0 – 450 (0.0 °F – 45.0 °F, resolution 0.1 °F)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.



Parameter no. 45 – Antifreeze

Set value determines at which temperature the device will be turned on even (if the thermostat was manually set to off).

Values (size is 2 byte dec):

- default value 50 (5.0 °C)
- -125 - 545
- 1000 - Antifreeze functionality disabled

NOTE1: Antifreeze is activated only in heating mode and it uses hysteresis of ±0.5°C.

NOTE2: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is -125 – 125 (-12.5 °C – 12.5 °C, resolution 0.1 °C)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 95 – 545 (9.5 °F – 54.5 °F, resolution 0.1 °F)

NOTE4: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.

Parameter no. 59 - Thermostat mode

This parameter determines how the device will operate if it will operate in the heating mode or in the cooling mode. The range of the hysteresis will remain the same, only operation will change from heating to cooling and vice versa

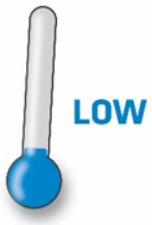
Values (size is 1 byte dec):

- default value 0
- 0 - Heat mode
- 1 - Cool mode

NOTE1: After parameter change, first exclude device (without setting parameters to default value) and then re include the device!

Parameter no. 60 – Too low temperature limit

This parameter determines the temperature at which the device sends a command to the associated device - to turn ON device or to turn OFF device.



Values (size is 2 byte dec):

- Default value 50 (Too low temperature limit is 5.0 °C)
- -150 - 2120

NOTE1: Too low temperature limit is used with Association Group 3.

NOTE2: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is -150 – 1000 (-15.0 °C – 100.0 °C, resolution 0.1 °C)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 50 – 2120 (5.0 °F – 212.0 °F, resolution 0.1 °F)

NOTE4: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.

Parameter no. 61 – Too high temperature limit

This parameter determines the temperature at which the device sends a command to the associated device, to turn ON device or to turn OFF device.

Values (size is 2 byte dec):

- default value 700 (too high temperature limit is 70.0 °C)
- 1 - 2120

NOTE1: Too high temperature limit is used with Association Group 3.

NOTE2: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is 1 – 1000 (0.1 °C – 100.0 °C, resolution 0.1 °C)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 322 – 2120 (32.2 °F – 212.0 °F, resolution 0.1 °F)

NOTE4: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.

Parameter no. 63 – Output switch selection

Set value determines the type of the device connected to the on/off output. The output type can be normally open (NO) or normally closed (NC).

Values (size is 1 byte dec):

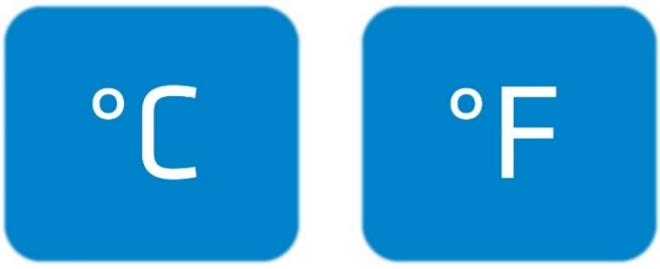
- default value 0
- 0 - When switch/device is off the output is 0V (NC).
- 1 - When switch/device is off the output is 240V or 24V (NO).

Parameter no. 78 – Scale Selection

This parameter determines in which measurement unit the device will report temperature (Fahrenheit or Celsius) and determines the scale the configuration parameters (43, 44, 44, 45, 60, 61, 110, 120) are interpreted as.

Values (size is 1 byte dec):

- Default value 0 = degrees Celsius
- 0 = degrees Celsius
- 1 = degrees Fahrenheit



NOTE1: This scale has influence on Temperature reporting. The device is capable of receiving a Set point in all supported scales.

NOTE2: This configuration parameter has impact on configuration parameters 43, 44, 44, 45, 60, 61, 110, 120. If scale is set to degrees Fahrenheit configuration values at parameters 43, 44, 44, 45, 60, 61, 110, 120 will be converted to degrees Celsius. Please note that converted values could drift when converting values back and forth.

Parameter no. 110 – Temperature Sensor Offset Settings

Set value is added to or subtracted from the actually measured value to adjust the temperature report sent by an external sensor.

Values (size is 2 byte dec):

- default value 0
- -270 - 270

NOTE1: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is -150 – 150 (-15.0 °C – 15.0 °C, resolution 0.1 °C)

NOTE2: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is -270 - 270 (-27.0 °F – 27.0 °F, resolution 0.1 °F)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.

Parameter no. 120 – Temperature Sensor Reporting Threshold

This configuration parameters sets reporting threshold between reported temperature and actual temperature for reporting temperature at association group 4.

Values (size is 2 byte dec):

- Default value 5 = 0.5°C
- 0 – Reporting disabled
- 0 - 270

NOTE1: If configuration parameter 78 (Scale selection) is set to Celsius, then valid interval is 0 – 150 (0 °C – 15.0 °C, resolution 0.1 °C)

NOTE2: If configuration parameter 78 (Scale selection) is set to Fahrenheit, then valid interval is 0 - 270 (0 °F – 27.0 °F, resolution 0.1 °F)

NOTE3: If configuration parameter 78 (Scale selection) is set to Fahrenheit, note that Fahrenheit values will be converted to Celsius degrees. Due to conversion algorithm please be advised that configuration value could drift when converting values back and forth.

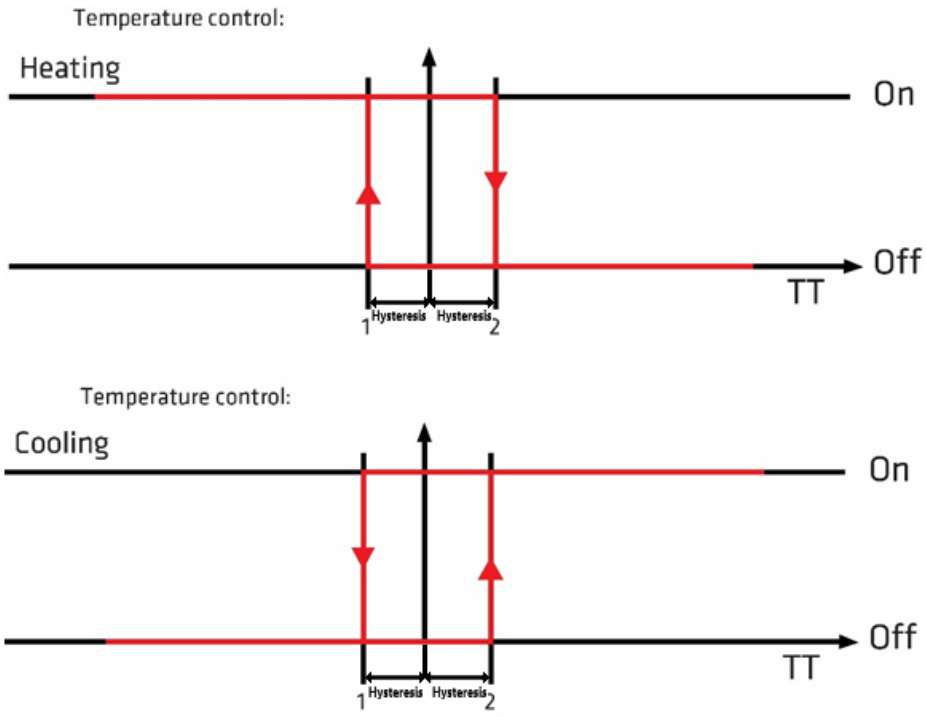
15. Technical Specifications

Power supply	110 - 240 VAC ±10% 50/60Hz, (24-30VDC)
Rated load current of AC/DC output (resistive load)*	1 X 10A (230VAC) / 1 X 10A / 30VDC
Output circuit power of AC/DC output (resistive load)	2300W (230VAC) / 240W (24VDC)
Power measurement accuracy	P=5-50W, +/-3W P>50W, +/-3%
Operation temperature	-10 ~ +40°C (14 ~ 104°F)
Z-Wave operation range	up to 40 m indoors (131 ft)
Dimensions (WxHxD) (package)	41,8x36,8x16,9 mm (86x74x43 mm) / 1,65x1,45x0,66 in (3,38x2,91x1,69 in)
Weight (with package)	48 g (64 g) / 1,69oz (2.26oz)
Electricity consumption	0.4W
For installation in boxes	Ø ≥ 60 mm (2,36 in) or 2M
Switching	Relay
Digital temperature sensor cable length	1000 mm (39,37 in)
Digital temperature sensor range	-25 ~ +80°C (-13~ 176°F), resolution 0.1°C
Z-Wave Repeater	Yes

* In case of loads other than resistive loads, please pay attention to the value of cos ϕ. If necessary, connect loads less powerful than what they're rated for – this applies to all motor loads. Max current for cos ϕ=0,4 is 3A at 250VAC, 3A at 24VDC L/R=7ms.

Functionality:

Thermostat has 2 working modes, Off or Heat/Cool. Selection between Off and Heat/Cool is possible with I1 push button or with gateway (hub). When the thermostat is turned on it automatically regulates the temperature based on Hysteresis parameters settings.



When the temperature is decreasing and reaches point 1 (defined by parameter 43), heating device is turned on and remains active until the temperature in the room is not increased to reach point 2 (defined by parameter 44). In this moment heating device is turned off.

When heating device is turned off, then it is working in antifreeze regime. The antifreeze regime turns on heating device when the temperature is lower or equal to the temperature set by parameter 45.

16. Z-Wave Command Classes

ROOT DEVICE:

GENERIC_TYPE_THERMOSTAT,
SPECIFIC_TYPE_THERMOSTAT_GENERAL_V2

Supported Z-Wave Command Classes
COMMAND_CLASS_ZWAVEPLUS_INFO_V2,
COMMAND_CLASS_SUPERVISION_V1,
COMMAND_CLASS_TRANSPORT_SERVICE_V2,
COMMAND_CLASS_SECURITY_V1,
COMMAND_CLASS_SECURITY_2_V1

COMMAND_CLASS_VERSION_V2 [S0]* [S2]*,
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 [S0]* [S2]*,
COMMAND_CLASS_POWERLEVEL_V1 [S0]* [S2]*,
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 [S0]* [S2]*,
COMMAND_CLASS_THERMOSTAT_MODE_V3 [S0]* [S2]*,
COMMAND_CLASS_THERMOSTAT_SETPOINT_V3 [S0]* [S2]*,
COMMAND_CLASS_THERMOSTAT_OPERATING_STATE_V1 [S0]* [S2]*,
COMMAND_CLASS_NOTIFICATION_V8 [S0]* [S2]*,
COMMAND_CLASS_METER_V4 [S0]* [S2]*,
COMMAND_CLASS_SENSOR_MULTILEVEL_V7 [S0]* [S2]*,
COMMAND_CLASS_ASSOCIATION_V2 [S0]* [S2]*,
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3 [S0]* [S2]*,
COMMAND_CLASS_CONFIGURATION_V1 [S0]* [S2]*

*[S0] Security Command Class

*[S2] Security S2 Command Class

The basic command class supports the commands BASIC_SET and BASIC_GET. Through the command BASIC_SET it is possible to set the mode of the device. Basic SET can send the values 0xFF, which means Heat/Cool (Comfort mode), and 0x00 (Energy saving mode), which means Off. Through the command BASIC_GET it is possible to read the mode of the device. The device returns 0xFF which means Heat/Cool or 0x00 which means Off.

COMMAND_CLASS_SENSOR_MULTILEVEL
Flush On/Off Thermostat supports reading of actual temperature which is 2 bytes long, scale is °C and its precision is 1 (it means 0.1°C).

COMMAND_CLASS_THERMOSTAT_MODE
Flush On/Off Thermostat supports the following modes:

- Mode Off
- Mode Heat/Cool (see parameter 59.)

COMMAND_CLASS_THERMOSTAT_SETPOINT
Flush On/Off Thermostat supports temperature set point, which is 2 bytes long, scale is °C and its precision is 1 (it means 0.1°C).

COMMAND_CLASS_METER

- Default values:
    - Rate Type = 1 (Import)
    - Scale = 0 (kWh)

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers. All constantly powered nodes in the same network will act as repeaters regardless of the vendor in order to increase reliability of the network.

This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all implemented functions.

This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products.

DSK access via UI

Gateways, which implement the S2 and Smart Start security feature, display an input dialog box, with a full or partial DSK key. The majority of them display a partial DSK (they don't show the PIN code), when the device is included with the S2-Authenticated security scheme. When included with the S2-Unauthenticated, some gateways show the complete DSK while others perform the complete inclusion process without prompting the user with the dialogue.

17. Z-Wave Security

Qubino Flush On/Off Thermostat 2 supports the latest Security 2 feature. Security S2 is handled by the Strong AES 128 Encryption protocol, which means that the S2 makes Z-Wave the most secure IoT (Internet of Things) security platform out there. In order to fully utilize the product and its SECURITY 2 feature, a Security Enabled Z-Wave gateway (hub) must be used.

Authenticated Control

- Out-Of-Band Device Specific Key for inclusion
- May be used by most implementations

Also supports: Security S2 Unauthenticated, Security S0 and Unsecure inclusion.

IMPORTANT: When adding the Flush On/Off Thermostat 2 to a Z-Wave network with a controller supporting Security 2 (S2), the PIN code of the Z-Wave Device Specific Key (DSK) is required. The unique DSK code is printed on the product label and a copy is inserted in the packaging, which must not be lost. Do not remove the DSK from the product. As a backup measure, use the label in the packaging.

The first five digits of the key are highlighted or underlined to help the user identify the PIN code portion of the DSK text.

The DSK is additionally represented with a QR Code as shown here.

DSK label and QR code (example)

A joining node requesting to join the S2 Access Control Class or the S2 Authenticated Class will obfuscate its Public Key by setting the bytes 1..2 to zeros (0x00) before transferring its key via RF.

A joining node requesting to join only the S2 Unauthenticated Class will send the its full Public Key when transferring the key via RF as the including node has no access to the DSK.

The DSK may be used for out-of-band (OOB) authentication.

- The including gateway (hub) may use QR code scanning device to read the entire DSK off the joining device and match it with the obfuscated public key received via RF from the joining device.

SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity.

18. Important Disclaimer

Z-Wave wireless communication is not always 100% reliable. This device should not be used in situations in which life and/or valuables are solely dependent on its functioning. If the device is not recognized by your gateway (hub) or shows up incorrectly, you may need to change the device type manually and make sure your gateway (hub) supports multi-channel devices. Contact us for help before returning the device: https://qubino.com/support/

19. Warning

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. When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposal free of charge.

20. Regulations

FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: —Reorient or relocate the receiving antenna. —Increase the separation between the equipment and receiver. —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. —Consult the dealer or an experienced radio/ TV technician for help.

Legal Notice

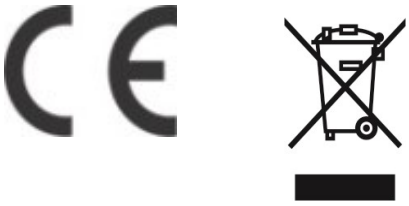
This user manual is subject to change and improvement without notice. GOAP d.o.o. Nova Gorica reserves all rights to revise and update all documentation without any obligation to notify any individual or entity.

Declaration of Conformity

Qubino Flush On/Off Thermostat 2 device is in compliance with the essential requirements and other relevant provisions of the Low voltage (LVD) Directive (2014/35/EU), Electromagnetic Compatibility (EMC) Directive (2014/30/EU), Radio Equipment Directive (2014/53/EU), Directive RoHS 2 (2011/65/EU) and Directive ErP (2009/125/EC).

WEEE

According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.



NOTE: User manual is valid for device with SW version S1 (SW version is part of P/N)! Example:P/N: ZMNKIDx HXS1PX

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