seitron
Innovation Technology

COMPLETE INSTRUCTION MANUAL

hygge home

Wireless programmable thermostat kit

INDEX

hygge home SYSTEM COMPOSITION

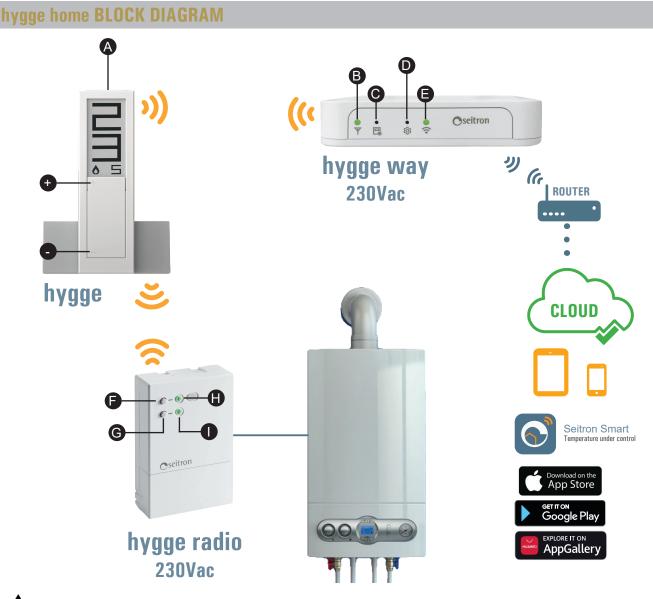**The Hygge home domestic thermoregulation system consists of the following components:**
- **Gateway hygge way**
- **Battery powered programmable thermostat hygge**
- **Hygge radio relay receiver**
- **APP Seitron Smart for mobile devices**

SYSTEM RELIABILITY

Hygge home kit has been designed with special care for the system reliability.
Especially, the **hygge** programmable thermostat is able to grant the correct thermoregulation of the environment even if the internet connection is not available and/or the **hygge way gateway** is malfunctioning.
The basic functions available on the **hygge** programmable thermostat, allows to control the thermoregulation of the environment even if one of the device in the group is faulty: mobile device – server – connectivity – Internet – router Wi-Fi – Gateway.

hygge home BLOCK DIAGRAM

hygge

hygge way
230Vac

ROUTER

CLOUD

Seitron Smart
Temperature under control

Download on the App Store

GET IT ON Google Play

EXPLORE IT ON AppGallery

hygge radio
230Vac

⚠️ **WARNING**

THE **DEVICES IN THIS KIT** ARE FACTORY PRE-MATCHED: ONCE THE MECHANICAL INSTALLATION IS DONE, THEY ARE READY TO USE.

EACH hygge way GATEWAY CAN MANAGE UP TO A MAXIMUM OF 12 hygge PROGRAMMABLE THERMOSTATS.

EACH hygge PROGRAMMABLE THERMOSTAT CAN MANAGE UP TO A MAXIMUM OF 6 DEVICES (hygge radio AND hygge way).

EACH hygge radio RELAY RECEIVER CAN BE MANAGED BY ONE OR TWO hygge PROGRAMMABLE THERMOSTATS.

KTY0010001SE 036570 010321

hygge radio RELAY RECEIVER CONNECTION DIAGRAMS

The only electrical connections to be made are those related to the relay receiver **hygge radio**.

The relay receiver can be powered at 230V∼ 50Hz or at 24V⎓. The **L** and **N** terminals power the receiver at 230V∼ and are to be connected to the mains voltage with the neutral on the terminal **N**. Alternatively connect the power to the terminals **a** and **N** to power the receiver at 24V⎓.

Terminals 1, 2 and 3 are the contacts, voltage free, type SPDT of the channel 1 output relay. Terminals 4, 5 and 6 are the contacts, voltage free, type SPDT of the channel 2 output relay.
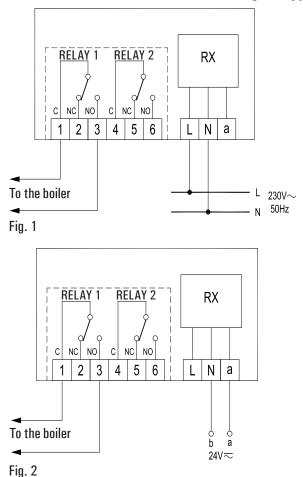
Figure 1 and 2 illustrate how to connect the receiver to a boiler. The boiler will be turned on when the programmable thermostat associated with output 1 asks for heat (heating mode). Figure 3 and 4 illustrate how to connect a valve that will be powered when the output is activated and this is when the programmable thermostat asks for heat (heating mode) using the NA contact of the relay. It is possible to connect, to the two relay outputs, two different **hygge**, every **hygge** controls the related valve, this way it is possible to manage two areas, e.g.: living floor and bedrooms. Sometimes it may be required to pilot one boiler by two different **hygge** (e.g.: two areas, living floor and bedrooms): in this case it is possible to connect the two outputs of the receiver in parallel, so the boiler is turned on, when at least one of the two **hygge** asks for heat. Refer to the diagram of Fig. 1 or 2 and add a connection between the terminals 1 and 4 and a connection between terminals 3 and 6.
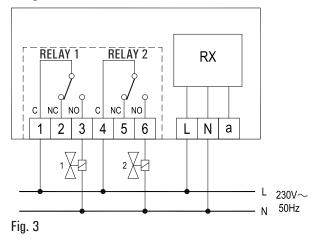
The outputs, terminals from 1 to 6, are voltage free and isolated with double insulation compared to the rest of the receiver. It is therefore possible to power the receiver at low voltage SELV (24V⎓) and simultaneously control a high voltage load (230V∼), as on Fig. 2 or 4. In this case it is necessary to maintain a separation between the cables SELV 24V⎓ and 230V∼ in compliance with current regulations. In particular it is necessary to fix the cable assemblies with cable ties separating the SELV wires from the others in order to avoid the case where, even if a cable is accidentally disconnected, this can't reduce the isolation towards SELV.

⚠ WARNING

- **Before proceeding with the installation of the hygge radio relay receiver make sure that the radio signals transmitted by the hygge programmable thermostats are correctly received by the relay receiver.**
- **If the load driven by the hygge radio relay receiver works with mains voltage, the connections must be made via an omnipolar switch complying with current standards and with contact opening of at least 3 mm in each pole.**
- **The power supply at 24V⎓ shall be provided with overload protection.**
- **Installation and electrical wirings of this appliance must be made by qualified technicians and in compliance with the current standards.**
- **Before wiring the appliance be sure to turn the mains power off.**

Make the electrical connections following the appropriate diagram.

Fig. 1

Fig. 3

Fig. 2

Fig. 4

hygge way CONNECTION TO THE WI-FI NETWORK WITH SEITRON SMART APP

All components of **hygge home** kit **are already factory pre-matched**, thus ready to operate. **The only operation the user has to perform is pairing hygge way Gateway to the Wi-Fi network using the Seitron Smart App.**
This operation is very simple to perform, just follow all the directions from the App itself.
After completing the steps described in the chapter 'INSTALLATION' of the quick guide, it is possible to proceed with the connection of **hygge way** to the Wi-Fi network.

WARNING
Before proceeding with the association of hygge way to the Wi-Fi network, described below, is advised to power on all the devices hygge, hygge radio and hygge way; this sequence buys time for the system to synchronize all components.

1 Download and start the Seitron Smart App on your mobile device (Smartphone and/or tablet).

2 If you already have a registered Email and Password, fill out the indicated fields.

If you are not registered, push the button 'Sign in'.

3 Pair a new device with the dedicated App.

Press
' + '

Select
' Hygge Way '

Follow the instructions and press
' **Start** '

WARNING!
In this phase, make sure that the gateway **hygge way** is on Wi-Fi configuration mode, so the Led "📶" is blinking green and red.
If the **hygge way** is not on Wi-Fi configuration mode, press briefly with a sharp instrument the Wi-Fi configuration button "⚙".

④ When the device has been detected, the MAC address will appear on the screen shown below.

Choose the **MAC address** corresponding to the **hygge way** you want to pair to the App.
The **MAC address** is visible on the back of the **hygge way**.

WARNING
- **Multiple hygge way kits may appear in the "device searching" screen, if there are more than one hygge way turned on and in Wi-Fi configuration mode inside the same area.**
- **It is possible to pair more than one hygge way to the mobile app; in such case it is necessary to repeat the procedure for each hygge way.**

⑤ Fill in all fields as suggested within the sample boxes.
Select your Wi-Fi network from the list of available ones and enter the corresponding password.
The field "Group" allows to give a name to the App Management screen, which may coincide with the name of the house or area.
The field "Device name" allows to give a name to the **hygge way** gateway.

Press the button 'Pair'.
The **hygge way** gateway finishes the configuration and it connects to the Wi-Fi network.

WARNING
Check the correct connection to the Wi-Fi network:
- **the ' 🛜 ' LED on the hygge way front cover says lit with green color in order to signal that the device is connected to the Wi-Fi network.**

After a few moments the programmable thermostat(s) **hygge** appears on the App home screen.
It can be necessary to wait for a few minutes for the programmable thermostat(s) to appear.

PAIRING OF ADDITIONAL DEVICES (PAIRING)

Devices included the **hygge home** kit are already pre paired by factory default, thus ready to operate.

In case it is necessary to add or change a device on the base system **hygge home**, it is necessary to pair all the different devices one to the other so that all the devices are recognized on the same system.

More specifically, the pairings that need to be performed are the following:

- **Pairing Gateway hygge way < > Programmable thermostat hygge**
- **Pairing Programmable thermostat hygge < > Hygge relay radio receiver**

The **hygge way** gateway is designed to manage more programmable thermostats and it can store each new paired **hygge** programmable thermostat.

It is important to make sure that the **hygge** programmable thermostats are paired with the desired **hygge way** gateway. In order to verify, proceed to activate the test mode of one **hygge** at a time, pressing simultaneously and for 5 seconds the keys "**A**" and "**+**" until the TEST screen appears.

At this point the LED "Y" of the paired **hygge way** gateway will flash.

If some pairing errors occur, it is advised to erase all the pairings on the hygge way gateway memory and then proceed to re-match the desired couplings.

On the contrary, each **hygge radio** relay receiver can be managed by one or two **hygge** programmable thermostats (one for each relay): a new pairing overwrites any existing pairing.

ADDING A SECOND PROGRAMMABLE THERMOSTAT hygge TO THE hygge home KIT

To associate a second **hygge** programmable thermostat to the **hygge home** kit, proceed as follows:
- Perform the procedure "**hygge way** gateway < > Programmable thermostat **hygge** pairing"
- Perform the procedure "**hygge** Programmable thermostat < > **hygge radio** relay receiver pairing" and once selected NEW DEVICE 2 on the **hygge** programmable thermostat, press the button "**G**" (related to relay n°2) on the receiver for about one second, in this way the second programmable thermostat **hygge** will drive output 2 of the **hygge radio** relay receiver.
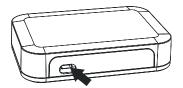
Gateway hygge way $<>$ Programmable thermostat hygge PAIRING
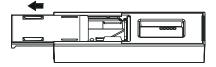
⚠ **WARNING**

A SINGLE hygge PROGRAMMABLE THERMOSTAT, CAN BE PAIRED TO ONLY ONE hygge way GATEWAY.

1 Power on the **hygge way** Gateway using the power plug adapter (insert the connector well to the bottom until you feel the click).

2 Insert the batteries into the **hygge** programmable thermostat.
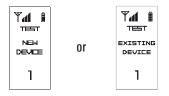
3 The **hygge** programmable thermostat will alternate the black and white screen several times.

4 Start the "Test" mode on the **hygge** programmable thermostat holding down simultaneously for 5 seconds the keys 'A' and '+'; on the programmable thermostat screen the following appears:

The number that appears on the bottom display identifies the **hygge** pairing channel. Press the keys "+" or "-" to switch channel.
The channel marked "NEW DEVICE" means that it is a free channel (not paired to any device). On the contrary, the channel is busy (already paired to another device such as the gateway **hygge way**) if the word "EXISTING DEVICE" appears.

ATTENTION!
If an "EXISTING DEVICE" channel is selected and you proceed with the pairing of another device, the **hygge** programmable thermostat overwrites the data, losing the pairing with the previous paired device.

5 From this moment the **hygge** programmable thermostat starts to transmit radio signals every 2 seconds. With a sharp object, on the **hygge way**, push briefly (<3 seconds) the button "⊡⊕" in order to start the pairing between the gateway and the programmable thermostat.

6 Once the pairing is started, the led "Y" of the **hygge way** performs some yellow blinks and then it remains yellow with still light for 7 seconds. Next, it performs a red-green-red-green sequence indicating that it has learned the address of the programmable thermostat **hygge**.

7 On the **hygge**, the writing LEARNED DEVICE appears and after a few moments becomes EXISTING DEVICE.
Check that the icon "Y" turns on and off every 2 seconds, this indicates that the **hygge** is receiving response from the gateway **hygge way**.

8 Check on the **hygge way** gateway that the LED "Y" flash green every 2 seconds, this indicates that **hygge way** is receiving the **hygge** programmable thermostat commands.

9 On the **hygge** programmable thermostat, push the button "**A**"; the display goes back to the main screen.
The **hygge** $<>$ **hygge way** pairing is over.

hygge Programmable thermostat < > hygge radio relay receiver PAIRING

The **hygge radio** relay receiver features two relays, to which it is possible to associate up to two **hygge** programmable thermostats (one for each relay).

The **hygge home** kit has by default the relay n°1 of the **hygge radio** relay receiver paired with the **hygge** programmable thermostat. The radio receiver relay n°2 is free and can be used by another **hygge** programmable thermostat.

As a general rule, when the LED 1 or 2 are on (of any color) indicates that its relay has been coupled to a programmable thermostats **hygge**.
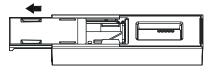
On the contrary, if one or both LEDs are off it means that the relay is free (it has not been paired).

TO hygge radio RELAY 1

TO hygge radio RELAY 2

The following describes how to associate a **hygge** programmable thermostat to the **hygge radio** relay receiver free relay.

1   Powering the relay **hygge radio** receiver.

2   Insert the batteries into the **hygge** programmable thermostat.

3   The **hygge** programmable thermostat will alternate the black and white screen several times.

4   Start the "Test" mode on the **hygge** programmable thermostat holding down simultaneously for 5 seconds the keys '**A**' and '**+**'; the following screen appears:

TEST
NEW DEVICE
1

or

TEST
EXISTING DEVICE
1

The number that appears on the bottom display identifies the **hygge** pairing channel. Press the keys "+" or "-" to switch channel.

The channel marked "NEW DEVICE" means that it is a free channel (not paired to any device). On the contrary, the channel is busy (already paired to another device such as the gateway **hygge way**) if the word "EXISTING DEVICE" appears.

ATTENTION!

If an "EXISTING DEVICE" channel is selected and you proceed with the pairing of another device, the **hygge** programmable thermostat overwrites the data, losing the pairing with the previous paired device.

A

+

-

5   Select with the keys "+" or "-" of the **hygge** programmable thermostat the first free channel (marked by the writing "NEW DEVICE" - for example n°2).

6 On the relay receiver, press for one second the key related to the channel on which pair the **hygge** programmable thermostat: the "**F**" key, related to relay 1 or the "**G**" key, related to relay 2. **Press the button related to the free relay (according to the the off LED).**

7 The LED related to the key pressed (1 or 2), makes some yellow flashes and then remains still yellow for 7 seconds.
Next, it performs a red-green-red green sequence indicating that the **hygge radio** learned the programmable thermostat address.

8 On the **hygge** programmable thermostat, the writing LEARNED DEVICE appears and after a few moments becomes EXISTING DEVICE.
Check that the icon "Ψ" turns on and off every 2 seconds, this indicates that the **hygge** programmable thermostat is receiving response from the **hygge radio** receiver.

9 At this point the selected relay will start to turn on and off every 2 seconds and the its LED will light from green intense to weak green.
This sequence indicates that the **hygge radio** relay receiver is receiving "Test" mode commands from the **hygge** programmable thermostat and that the pairing was successful.
WARNING: In case the LED flashes red during this step, it means that pairing has failed; we recommend repeating the procedure from step 6.

10 On the **hygge** programmable thermostat, push the button "**A**"; the display goes back to the main screen.
The **hygge** $<>$ **hygge radio** pairing phase is over.
It is possible to repeat the pairing procedure several times, the new address will overwrite the one previously stored.

ERASING DEVICE

ERASING all the pairings from the hygge way Gateway

In case of pairing errors, it is recommended to delete all possible pairings on the **hygge way** gateway memory and then proceed to repeat the necessary pairings.

1 With a sharp tool, press and hold the "🖳" button for more than 10 seconds on the **hygge way**.

2 Once the memory is erased, the "Ⴤ" LED quickly blinks yellow.

WARNING

Once all the pairings with the **hygge** programmable thermostats are cancelled from the memory, it will not be possible to control them via APP. It will therefore be necessary to re-pair all the **hygge** programmable thermostats on the **hygge way** gateway.

ERASING individual pairings from the relay receiver hygge radio

If you want to erase from the memory of the **hygge radio** relay receiver the **hygge** programmable thermostats paired to one of the two relays, proceed as follows:

1 Press and hold the related button: "**F**" (Relay 1) or "**G**" (Relay 2).

2 The LED corresponding to the selected relay flashes quickly in yellow.

3 Release the button. The related LED will turn off to indicate that the relay is deleted from the memory.

ERASING the individual pairings from the hygge programmable thermostat

To erase from the **hygge** programmable thermostat memory a device previously paired, proceed as follows:

1 On the **hygge** programmable thermostat press at the same time for 5 seconds the keys "**A**" and "**+**" until the TEST screen appears:

2 Using the "**+**" and "**-**" keys, select the device to be deleted from the programmable thermostat memory.
The LED of the selected device will flash:
- **hygge radio**: the LED related to the relay to which the **hygge** has been paired will flash and the relay starts to make come on/off cycles.
- **hygge way**: The "Ⴤ" LED flashes.

3 Hold down the 'A' button for a few moments; the selected device is erased form the memory of the **hygge** programmable thermostat and the display shows the "NEW DEVICE" screen. At this point you will no longer be able to use the connected functions (e.g., if the **hygge radio** is cancelled the relay receiver will not be controlled anymore).

OPERATION hygge

INSTALLATION

The **hygge** programmable thermostat does not need any electrical connection and it can be placed on any flat horizontal surface or on a wall with the special hook.

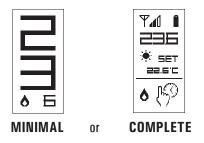#### USING THE PROGRAMMABLE THERMOSTAT WITH THE TABLE STAND

The **hygge** programmable thermostat can be placed on any horizontal surface thanks to the special magnetic table support. For this purpose it is sufficient to bring the support closer to the lower back of the **hygge** programmable thermostat taking care that the orientation guides coincide and that the batteries are inserted (See the quick guide on the paragraph 'INSTALLATION').

INSTALLING THE PROGRAMMABLE THERMOSTAT ON THE WALL MOUNT

The **hygge** programmable thermostat can also be placed on the wall attaching it to the appropriate accessory provided with the package. This tool can be easily mounted to the wall using a pair of screws (See the quick guide on the paragraph 'INSTALLATION').

DISPLAY VISUALIZATION

Hygge has two display modes:

MINIMAL   or   **COMPLETE**

To switch from one display mode to the other, simply hold down the '**A**' key (for 8 seconds) until the new display screen appears.

MINIMAL VISUALIZATION

The screen 'basic visualization mode' of **hygge** shows the following parameters:
- Detected ambient temperatures.
- The symbols "🜁" or "❄" when the **hygge** asks for heat or cooling to the **hygge radio** relay.
- The symbol "📶" in case there is no radio communication with its relay receiver or gateway.
- The low battery level symbol, "🔋" or "🔋", if the batteries are to be replaced.

By pressing one time the '**A**' button it is possible to visualize the current operating mode of the programmable thermostat; if you wait 3 seconds, the programmable thermostat goes back to visualize the detected environment temperature.

COMPLETE VISUALIZATION

The screen 'complete visualization mode' of the **hygge** shows the following parameters:
- Intensity of radio field "📶".
- Battery level "🔋".
- Ambient temperature detected.
- Set setpoint temperature (SET).
- The symbols "🜁" or "❄" when the **hygge** asks for heat or cooling to the **hygge radio** relay.
- Operating mode: Manual permanent "✋", Manual temporary "✋", **OFF** or Antifreeze "❄" and Program "📅".

STARTUP

- If the **hygge** programmable thermostat has not been paired with other devices of the system, proceed with the pairing of the **hygge** programmable thermostat to the **hygge radio** relay receiver and to the gateway **hygge way**, as described on the chapter "PAIRING OF ADDITIONAL DEVICES".
- Set the operation mode of the programmable thermostat on Heating (factory set) or Cooling.

OPERATION LOGIC

On 'Heating' mode, when the ambient temperature detected through the internal sensor is lower to the set one (manually or by program), the **hygge** programmable thermostat sends out a request of activation of the **hygge radio** receiver (which shall be connected to a heating boiler) and the display will show the icon "△".

On 'Cooling' mode, when the ambient temperature detected through the internal sensor is higher to the set one (manually or by program), the **hygge** programmable thermostat sends out a request of activation of the **hygge radio** receiver (which must be connected to a cooling system such as an air conditioner) and the display will show the icon "❄".

SETTING HEATING/COOLING MODE

To change the regulation mode from heating to cooling and vice versa, proceed as follows:

1. From the main screen, hold down the buttons '+' and '-' at the same time until on the display appears the writing 'COOL' or 'HEAT'.
2. At this point release the keys; the programmable thermostat sets the mode of operation in accordance with the text appearing on the display (COOL = Cooling, HEAT = Heating).

AMBIENT TEMPERATURE REGULATION MODE

Press the '**A**' button once, the **hygge** programmable thermostat shows the current operation mode active on that moment (this function is only available on the "minimal" display mode).

By pressing the '**A**' button further, it is possible to modify the operation mode of the **hygge** programmable thermostat choosing among the 4 different modes:

=> "👆🕒" (Manual Temporary) => "👆" (Manual Permanent) => **OFF** or "❄" (Antifreeze) => "📅" (Program) =>

Selected one of the modes, after a wait of 3 seconds, the **hygge** programmable thermostat takes the new operation mode and returns to the main screen.

Only in case the **OFF** or "❄" mode has been selected, after waiting for 3 seconds the programmable thermostat does not go back to the main screen, instead shows the off (OFF) or antifreeze ("❄") screen with the related set antifreeze temperature.

The **Antifreeze** mode "❄" is available only if the programmable thermostat has been set on heating mode; on the contrary the display shows the OFF writing.

Program

The **hygge** programmable thermostat regulates the room temperature according to the weekly program set exclusively through the Seitron Smart APP.

Detail:

- The programmable thermostat regulates the room temperature according to the set hourly program.
  The possible regulation modes are the following:
  On heating mode: Off/Antifreeze, Comfort or Economy (reduction).
  On cooling mode: Off, Comfort or Economy (reduction).
- Normally on 'Heating' mode, to have a night set-back, the economy temperature shall be lower than the comfort temperature. On the contrary, in 'Cooling' mode, the economy temperature must have a higher value than that of comfort.

Temporary manual mode "👆🕒"

The **hygge** programmable thermostat regulates the room temperature according with the manually set temperature setpoint, until midnight of the current day, and then go back to the 'Program' mode.

The setpoint temperature can be changed by acting on the '+' and '-' keys of the **hygge** programmable thermostat as well as on the Seitron Smart APP.

Manual mode "👆"

The **hygge** programmable thermostat regulates the room temperature according with the manually set temperature setpoint, permanently or until you change the adjustment mode directly on the **hygge** programmable thermostat or using the Seitron Smart APP. The setpoint temperature can be changed by acting on the '+' and '-' keys of the **hygge** programmable thermostat as well as on the Seitron Smart APP.

OFF

The display show the writing ' OFF '. The **hygge** programmable thermostat is off.

Antifreeze "❄"

The **hygge** programmable thermostat regulates the room temperature according with the antifreeze temperature, set on the advanced parameters of the **hygge** programmable thermostat on menu "P04: ANTI FROST". The antifreeze function is selectable if the **hygge** programmable thermostat is set in heating mode and if the set antifreeze temperature is greater than zero degrees.

SETPOINT TEMPERATURE SETTING FOR MANUAL MODES

From the main screen, pressing the "+" and "-" keys the **hygge** programmable thermostat switches to temporary manual mode setpoint temperature set for manual modes (Manual Permanent "✋" and Manual Temporary "✋"). Pressing the "+" and "-" keys again will set the setpoint temperature for manual mode only.

BOOST

This mode is only activable using the Seitron Smart APP.
By activating this mode, the **hygge** programmable thermostat forces the cooling or heating system ON (depending on the active setting) for a time selectable between 30, 60 or 90 minutes regardless of the setpoint temperature. This function is useful if you have to heat or cool a particularly cold or hot environment.

ADVANCED CONFIGURATION

To enter the advanced user parameter configuration of the **hygge** programmable thermostat, proceed as follows:

1. Hold down at the same time for 5 seconds the keys '**A**' and '-'; the dispaly shows the symbol " 🔧 " and the first available parameter.
2. Repeatedly press the key '**A**' for scroll the user parameters:
   • P04 ANTI FROST
   • P05 UPD RATE
   • P06 ROOM T OFFSET
3. Found the parameter to edit, using the keys '+' and '-' you can change its value.
4. Set the data related to each single parameter, as shown below.
5. To exit the programming of the user parameters wait 15 seconds without pressing any key.

P04: ANTI FROST (Antifreeze)

The Antifreeze function allows to set a minimum temperature which is maintained when the **hygge** is set on heating mode and on the current time slot no comfort or reduction temperature is specified or on the programmable thermostat the antifreeze mode has been activated ("❄"); this function allows to preserve the anvironment and the system is the temperature drops below the set limit.
The device exits the factory with the antifreeze set to 6.0 C.
The antifreeze temperature can be set between 0.5°C and 25.0 °C. Below 0.5°C the antifreeze is deactivated and the **hygge** programmable thermostat, when this mode is selected, will be completely off (OFF).

P05: UPD RATE (Re-transmission Interval)

This parameter defines every how many seconds the **hygge** programmable thermostat communicate via radio with the **hygge way**. The parameter can be set in the range 10 seconds .. 10 minutes. A shorter time ensures greater reactivity of the programmable thermostat, but causes a reduction in battery life, while a higher time maximizes battery life but makes the programmable thermostat less responsive to variations coming from the Seitron Smart APP.
Indicatively with a retransmission rate of 30 seconds the battery life is 2 years.
The device is set to 10 seconds for default.
WARNING: the indicated battery life depends on the capacity of the batteries themselves.

P06 ROOM T OFFSET (Room temperature Offset)

Using this parameter it is possible to correct the temperature detected by the internal temperature sensor inside the **hygge** programmable thermostat, from -10.0°C to +10.0°C in order to correct any systematic reading errors due to positioning of the **hygge** programmable thermostat in areas not suitable to detect the room temperature.
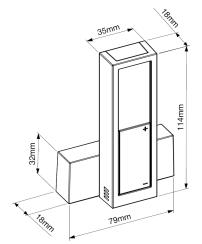The device leaves the factory with the Offset set to 0.0 C.

hygge TECHNICAL FEATURES

Power Supply:	Batteries 2x1.5V --- size AAA
Frequency:	868,450 MHz
Modulation:	GFSK
Max. RF power transmitted:	1 mW
Antenna type:	Internal
Max. distance from the receiver:	>300 m in free field
	>50 m inside buildings (depending on the building and the environment)
Temp. regulation range:	5,0 .. 35,0°C
Internal sensor type:	NTC 10kohm ±1% @ 25°C B(25/85)=3977
Resolution:	0,1°C
Range:	0,0°C .. +50,0°C
Precision:	±1,0°C
Hysteresis	0,2°C
Antifreeze:	settable OFF|0.5 .. 25.0°C - (Default 6.0°C)
Offset:	± 10.0°C. (Default 0.0°C)
Protection grade:	IP30
Type of action:	1
Overvoltage category:	II
Pollution degree:	2
Tracking Index (PTI):	175
Class of protection against electric shock:	III
Rated impulse voltage:	2500V
Number of manual cycles:	50000
Number of automatic cycles:	no limit
Software class:	A
EMC test voltage:	3V
EMC test current:	35mA
Distances tolerances fault mode 'short' exclusion:	±0,15mm
Ball pressure test temperature:	75° C
Operating temperature:	0°C .. +40°C
Storage temperature:	-10°C .. +50°C
Humidity limits:	20% .. 80% RH non condensing
Case:	Material:	ABS+PC V0 self-extinguishing
	Color:	Signal white (RAL 9003)

CLASSIFICATION UNDER REG. 2013.811.CE

Class:	I
Contribution to energy efficiency:	1%

SIZE

OPERATION hygge radio

This device is a radio receiver with two relays designed for the activation of loads (precisely solenoid valves or circulators or boilers) in radio heating/cooling systems for home or office environments. To the two relay outputs it is possible to associate two different **hygge** programmable thermostats. This system offers an optimal solution in buildings where it is not possible to lay wires between the programmable thermostats and the environment to be controlled. Working on 868,450 MHz (LPD) frequency it provides the user all the advantages of this radio band like less interferences and a higher efficiency in signal propagation. Sometimes it can be necessary to control one boiler with two different **hygge** (e.g.: two areas, living room and bedrooms): in this case it is possible to connect the two outputs of the receiver in parallel, in this way the boiler will be switched on when at least one of the two **hygge** asks for heat.

FUNCTIONING LOGIC

Every **hygge** programmable thermostats transmitter sends out special radio commands to the receiving unit depending on the necessity of heating or cooling in the environment where it is located. These radio commands are then received and decoded by the receiving unit, which is normally installed in the same room as the boiler or air conditioner. Output relay on or off in the receiving unit, associated with the **hygge** programmable thermostats, depending on the needs; the outputs can be connected to a valve that controls the flow of hot/cold water in the corresponding heating/cooling device in the room.

When it is running, the receiver continuously checks the status of the two channels in order to detect any malfunction of the respective programmable thermostats **hygge**.

MECHANICAL DESCRIPTION

LED (**H** and **I**)

On the front panel of the device there are two multicolored Leds (1 and 2) which gives information about the correct power supply, the status of the output relays and the signal strength:

Power supply

When the relay receiver **hygge radio** is powered on, the Leds they light up and run a sequence of "green-red-green-green-red" flashes to signal the correct operation of the device.

Then the Leds become active according to their normal function and the receiver begins to perform its normal activity by decoding the signals emitted by the associated **hygge** programmable thermostats.

Actuator outputs condition

During normal operation each of the two Leds can light green, yellow or red.

The Led provides several information about the output and on the **hygge** programmable thermostat.

In general, the following rule should be minded:

- The Led switched on, whatever the color is, indicates that its actuator output is activated.
- The Led switched off or dimly switched on indicates that its actuator output is off.
- The color of the Led gives information about the quality of radio communication. See paragraph "Check signal strength".
- The continuously flashing Led indicates the presence of a system anomaly that requires user intervention.

SELF LEARNIG BUTTONS (**F** and **G**)

The relay receiver **hygge radio** is equipped with two buttons for self-learning address at the **hygge** programmable thermostat, one for channel 1 indicated with **F** and one for channel 2 indicated with **G**.

CHECK SIGNAL STRENGTH

The device continuously displays the intensity of the radio signal received for each of the two channels. This simplifies the installation and setup of the entire system and also allows you to make an instant verification of each channel radio communication quality.

The indication of the signal strength is displayed by each of the two Leds: they can light green, yellow or red depending on the quality of the radio signal received:

Green: The received signal is good or excellent: reliable radio communication.
Yellow: The received signal is sufficient.

Red: The received signal is weak: unreliable communication.

When the actuator status is off, it is shown by the corresponding Led dimly lit instead of completely off. So it is always possible to check the radio signal strength.

Normally the Led shows the "long term" signal quality analysis, which is an assessment of the amount of correct commands received within the last 30 minutes of operation. In the event that no command has been received from the **hygge** programmable thermostat during the last half hour, the LED will stop indicating the analysis "long term" and display the anomaly "radio communication absent" by flashing red. If the signal strength is not acceptable try to change the position of the **hygge radio** relay receiver or of the **hygge** programmable thermostat. Remember that both the **hygge** programmable thermostat and the **hygge radio** relay receiver must be installed far away from metallic objects or metal reinforced walls which might weaken the radio signals.

SYSTEM CONFIGURATION

In order to install multiple **hygge** programmable thermostats in the same area and to use different multi-channel systems, every **hygge** programmable thermostat is provided with a unique "address" of its own. Different **hygge** programmable thermostats with different addresses can operate at the same time without intergering and so controlling different areas. Aiming to memorize the address of the **hygge** programmable thermostat of which it is needed to receive and transmit signals from, it is necessary to perform the self-learning procedure described in the chapter "**hygge** programmable thermostat<> **hygge radio** relay receiver PAIRING". The two outputs of the relay receiver can be associated with two different **hygge** programmable thermostats. On the contrary, it is not possible to associate the same **hygge** programmable thermostat to both of the **hygge radio** relay receiver outputs.
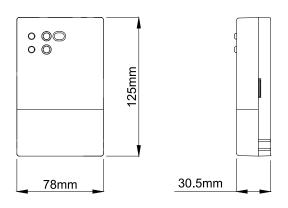
OUTPUT REGULATION MODE

The **hygge radio** relay receiver is set by default to perform ON/OFF regulation mode through the output relays with settable hysteresis.

hygge radio TECHNICAL FEATURES

Power Supply:	230V∼ 50Hz or 24V∼
Absorption:	11VA
Relay contact ratings:	2x6(4)A 250V∼ (voltage free)
Frequency:	868,450 MHz
Sensitivity:	-105 dBm
Modulation:	GFSK
Band width (-3 dB):	100 KHz
Antenna type:	Internal stylus
Max. distance from the receiver:	>300 m in free field
	>50 m inside buildings (depending on the building and the environment)
Protection grade:	IP 3X
Type of action:	1.C
Overvoltage category:	II
Pollution degree:	2
Tracking Index (PTI):	175
Class of protection against electric shocks:	II
Rated impulse voltage:	2500V
Number of manual cycles:	100000 (diagrams Fig. 1, 2, 3, 4 page 6)
Software class:	A
EMC test voltage:	230V∼ 50Hz
EMC test current:	45 mA
Distances tolerances fault mode 'short' exclusion:	±0,15 mm
Ball pressure test temperature:	75 °C
Operating temperature:	0°C .. 40 °C
Storage temperature:	-10°C .. +50 °C
Humidity limits:	20% .. 80 % RH non condensing
Case: Material:	ABS V0 self-extinguishing
Color:	Signal white (RAL 9003)
Installation:	Wall mounted

SIZE

125mm

78mm

30.5mm

TROUBLE SHOOTING

SYMPTOM: The receiver shows no signs of life.
PROBABLE CAUSE: There is no supply voltage.
REMEDY: Check the connection to the mains voltage. Normally Leds can stay off, but when the device is switched on, they perform a sequence of flashes "green-red-green-green-red" to signal the good operation.

SYMPTOM: One of the receiver Led continuously flashes red.
PROBABLE CAUSE: The channel is in "state of alarm" because radio communication is absent.
REMEDY: Recheck radio communication with "test" function on the **hygge** programmable thermostat. Evaluate the possibility of moving devices away from metal screens.

SYMPTOM: When the **hygge** programmable thermostat is operating in "Test" mode, the receiver does not turn on the relay.
PROBABLE CAUSE: The transmitter address does not match the address stored in the receiver.
REMEDY: Run the self-learning as explained in the section "**hygge** programmable thermostat<> **hygge radio** relay receiver PAIRING".

SYMPTOM: By starting the pairing procedure, the **hygge radio** relay receiver do not switch on the flashing yellow Led.
PROBABLE CAUSE: The button has been pushed too quickly.
REMEDY: Start the pairing procedure by holding down the appropriate button for one second.

SYMPTOM: The **hygge** programmable thermostat is on "test" mode but the **hygge radio** relay receiver does not activate any relay, the Leds do not indicate any radio command reception.
PROBABLE CAUSE: The received signals are too weak for proper decoding of commands.
REMEDY: Consider moving devices away from metal screens, or approaching them.

SYMPTOM: One of the receiver's Leds remains on red despite the communication with **hygge** programmable thermostat has been restored.
PROBABLE CAUSE: The indication of long-term signal quality is reminiscent of the history of the last half hour of channel operation.
REMEDY: Check with the "test" mode that the commands are correctly received and wait up to 30 minutes for the long-term signal to turn green.
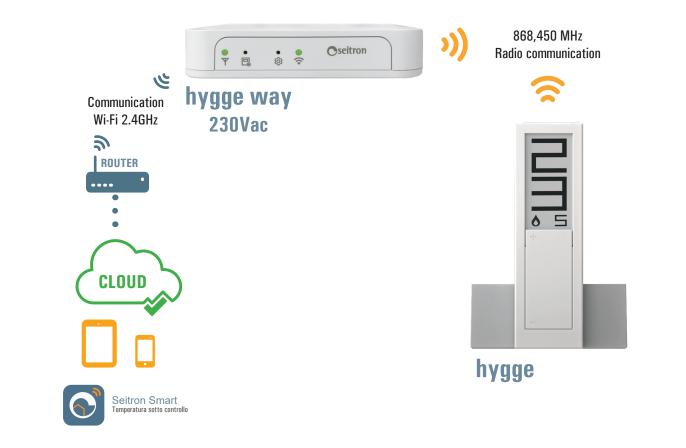
OPERATION hygge way

The **hygge way** gateway is a centralizer and IOT gateway, which is the heart of the home thermoregulation system based on the **hygge** programmable thermostat.

Its function is to collect the bidirectional data stream from the **hygge** programmable thermostat, via 868,450 Mhz wireless communication and to convey this information to the Seitron Wi-Fi 2.4GHz Cloud, to allow remote control of he **hygge** programmable thermostat through Seitron Smart App.

FUNCTIONING LOGIC

MECHANICAL DESCRIPTION

LED (B and E)

On the front panel of the device there are two multicolored Leds (" 📶 " and " ⅄ ") that give information about the intensity of the radio signal and Wi-Fi:

868,450MHz Radio communication " ⅄ "
The Led provides information about the radio communication quality between the paired **hygge** programmable thermostats:

Fixed Green: Excellent signal quality
Fixed Yellow: Medium Signal Quality
Fixed Red: Poor signal quality
Red Flashing: Radio communication absent with one or more **hygge** programmable thermostats.

WARNING

The quality of the radio signal that is shown via the Led " ⅄ " is the worst detected of all the hygge programmable thermostat paired to the hygge way gateway.

To locate the hygge programmable thermostat that does not communicate correctly with the hygge way gateway, check on the display of the hygge programmable thermostat the detected signal quality.

Wi-Fi " 📶 "

The LED provides information about Wi-Fi connection and communication

Fixed Red:	Wi-Fi router connection problems
Blinking red:	Problems connecting to server
Fixed Green:	Wi-Fi working
Alternating Green/Red:	Wi-Fi configuration mode

BUTTONS "⊡⊕" and "⚙"(C and D)

On the front panel of the device there are two buttons:

Button "⊡⊕"

| Short press | (<3 sec.) | Start the association procedure (Pairing) with the **hygge** programmable thermostat |
| Long press | (> 10 sec.) | Erasing of all the **hygge** programmable thermostats kept in memory |

Button "⚙"

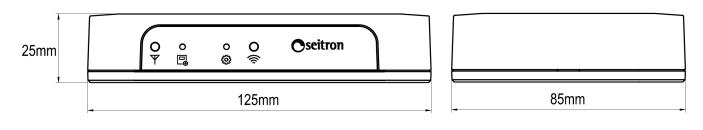| Short press | (<3 sec.) | Wi-Fi network reconfiguration |
| Long press | (>10 sec.) | Automatic updates monitoring |

SYSTEM CONFIGURATION

To the **hygge way** gateway it is possible to piar up to a maximum of 12 **hygge** programmable thermostats.
Each **hygge** programmable thermostat has its own "address" code. The different **hygge** programmable thermostats with different addresses can work simultaneously without interfering and thus control different areas. For the purpose of storing the address of the **hygge** programmable thermostat of which you want to receive and transmit the signals, it is necessary to perform the mating procedure described in chapter "**hygge way** Gateway < > **hygge** programmable thermostat Pairing".

hygge way TECHNICAL FEATURES

Power Supply:	5V⎓ via network adapter
Frequency:	2.4 .. 2.5 GHz
Modulation:	DSSS / OFDM / MIMO-OFDM
Max. RF power transmitted:	<100 mW
Antenna type:	Internal
Software class:	A

SIZE

25mm

125mm

85mm

WARRANTY

In the view of a constant development of their products, the manufacturer reserves the right for changing technical data and features without prior notice.
The consumer is guaranteed against any lack of conformity according to the European Directive 1999/44/EC as well as to the manufacturer's document about the warranty policy.
The full text of warranty is available on request from the seller.