AEROVOLTAICS

GSE AIR'SYSTEM™ V3.0

USER MANUAL - GSE AIR'SYSTEM THERMOSTAT

Hot air recovery and redistribution system for home heating

Non-contractual photos

V 3.0

SOLAR KEYMARK
EN 12975-1&2:2006
EN ISO 9806:2013
NEW
TÜV NORD
VALIDATED WITH TÜV NORD® LABORATORY

GSE AIR'SYSTEM™

When energy savings meet optimal thermal comfort

Congratulations,

Your new photovoltaic panel heat recovery system has just been installed. The heat generated by your solar panels is now ready to work for you.

*To grasp how your **GSE AIR'SYSTEM** works, please read this manual.*
It also contains very easy instructions for using the thermostat.

*For optimal comfort, we recommend setting the thermostat at **22°c (+/- 1°c)** and leaving it permanently on this setting.*

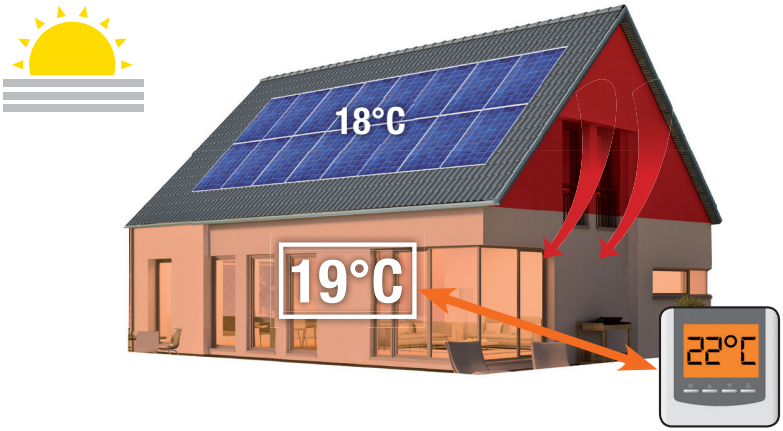
The reason for this is that the hot air under your solar panels does not cost you anything, whether it's at 22° or 40°!

This means you do not have to change the initial setting.

Contents

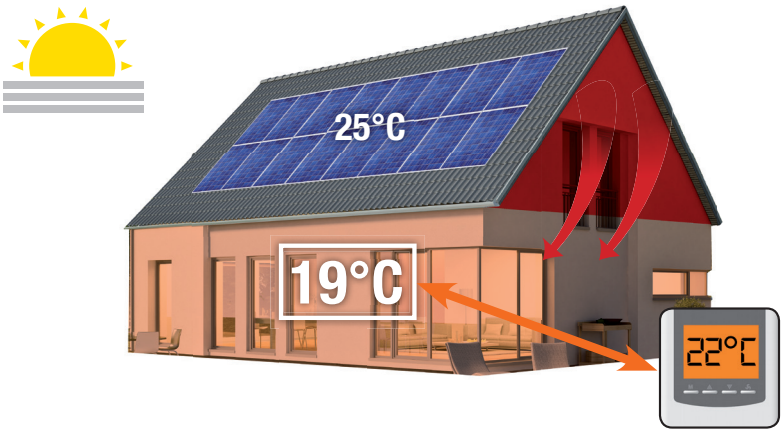
Operating principle

CASE N°1A : ***the temperature is 19° in your home and you want it to be 22° with an under-panel T° of 18°***



When your **GSE AIR'SYSTEM** detects that you have set the thermostat to 22° and it has measured a temperature of only 19° inside your home, it automatically sends the hot air drawn from below the panels into your home through the air vents.
If additional heating is needed to top up the heat available under the panels, the regulator will trigger the **SPEED HEATING** system so that air cold is not blown into your home.

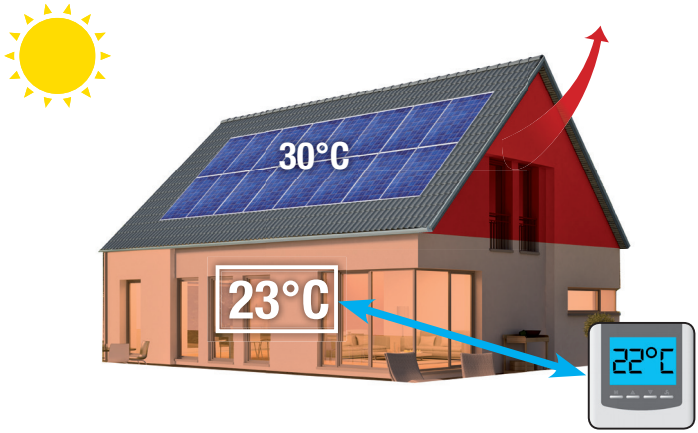
CASE N°1B : ***the temperature is 19° in your home and you want it to be 22° with an under-panel T° of 25°***



In this case, there is more than enough heat under the panels to warm your home, so your **GSE AIR'SYSTEM** does not need to trigger the **SPEED HEATING** unit.
It simply adjusts the ventilation speed so your home is warmed to the desired temperature without any "hairdryer effect".
Nice and gently!

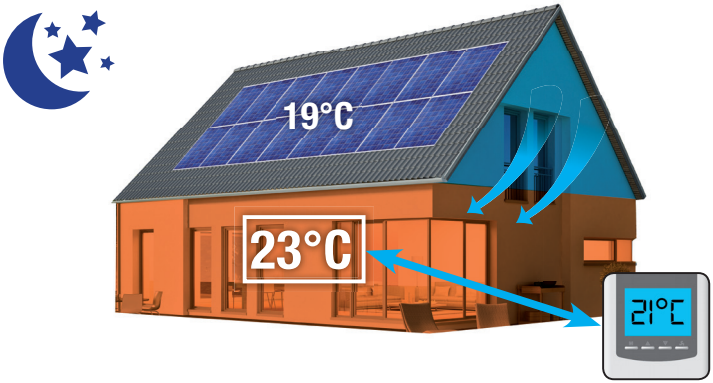
Operating principle

CASE N°2 : ***the temperature is 19° in your home and you want it to be 22° with an under-panel T° of 30°***



The **GSE AIR'SYSTEM** regulator has detected that the inside temperature matches the temperature setting on the thermostat.
When this happens, it automatically vents the hot air under the panels outwards (through the roof cap) using the smart bypass system built right into the **GSE AIR'SYSTEM** control unit. The main purpose of venting is to reduce panel temperature and improve their efficiency (up to 10% additional power performance) and their service lifespan.

CASE N°3 : ***the temperature is 23° in your home and you want it to be 21° on summer nights***



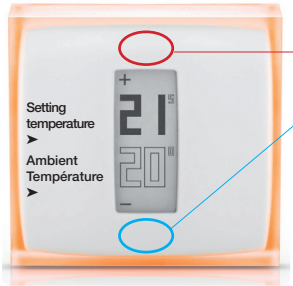
At night, the temperature under the panels is usually 3° or 4°C lower than the temperature in your home. Your **GSE AIR'SYSTEM** collects this cooler air and routes it to the air vents(*). The system automatically switches into this mode after 3 consecutive nights without a heating request (i.e. the thermostat is set to a value below the T° inside your home). The system has now switched to summer mode. It will automatically switch back to winter mode as soon as you ask for more heat from the thermostat. The system will run though another 3-nights cycle before it switches to summer mode again.

Operating principle / adjusting the system

CASE N°4 : ***Overheat mode: Under-panel temperatures above 57°***

Your system will vent the heat through the roof cap, even if you ask for more heat inside the house. In this case, the system ventilates the panels and prevents the "overheated" air from entering your home.

ADJUSTING THE SYSTEM



Increase the temperature by pressing in this area

Decrease the temperature by pressing in this area

Your technician will install the thermostat in the room of your choice. It is this device which will tell to **GSE AIR'SYSTEM** whether to send hot air into your house or not. To adjust it, nothing's easier: just press the buttons (+) and (-) to set the desired temperature.

That's all there is to it! Your GSE AIR'SYSTEM is now adjusted and ready to go. The system will automatically regulate the temperature inside your home depending on the heat available under the panels.

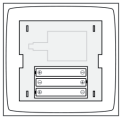
DANGER! Never use the "stand-by" mode on the thermostat as this could damage the system.

Fresh air injection in summer will not activate by asking for « cold » on the thermostat, but automatically if temperature allows it.

Thermostat user manual

Thermostat

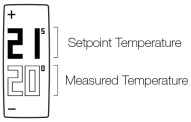
1



Insert the batteries in the **Thermostat**.

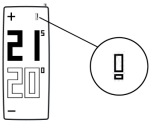
2

The **Thermostat** displays the start screen and searches for the **relay**.



If the **Thermostat** has found the **relay**, it displays the setpoint and the room temperatures.

Or

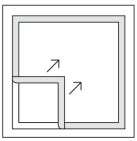


If the **Thermostat** hasn't found the **relay**, it displays the «!» symbol. In this case, move the **relay** closer to the **Thermostat** and wait until the «!» symbol disappears.

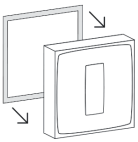
Customisation

1 You can choose to customise your **Thermostat** by using one of the **colour adhesives**.

2 Take off the outer frame of the **adhesive**.

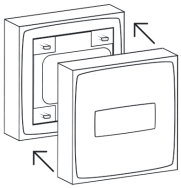


3 Stick it on the back of your **Thermostat**.



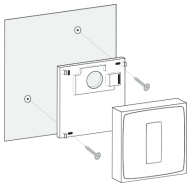
Notice du thermostat

Location

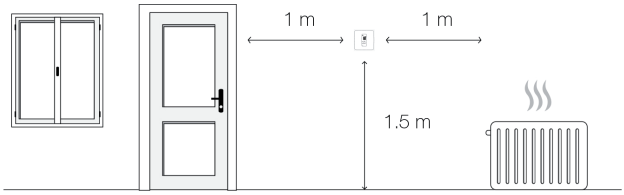


Clip the **Thermostat** on its **mobile stand** and place it on a shelf in the living room.

or



Set the **Thermostat** on the **mounting plate**.

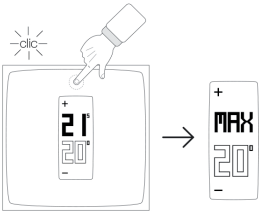


Test

①

Tap a few times the top of the **Thermostat** until the screen shows « MAX ».

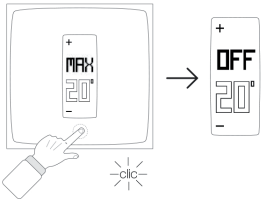
The **Thermostat** switchs on the boiler.



②

Tap the bottom of the **Thermostat** until you reach « OFF ».

The **Thermostat** switchs off the boiler.



Specifications

SIZE
Thermostat : 83x83x22 mm

DESIGN
Designed by Starck.
Translucent minimalist plexiglass cube.
5 interchangeable colors in the box.

SENSORS AND MEASUREMENTS
Température (measurement):
Ranges from 0°C to 50°C
Accuracy: +- 0.5° C
Température (setpoint):
Ranges from 7°C to 30°C
Increment: 0.5°C
Unit: °C

E-INK DISPLAY
Energy efficient, longer battery life and optimal readability.

FREE APP, LIFETIME SUPPORT
No subscription fee.
App available on the App Store and on Google Play.
Free access to your online personal dashboard.
Accessible from multiple devices.

WIRELESS SPECIFICATIONS
Wi-Fi 802.11 b/g/n compatible (2.4GHz).
Supported security: Open/WEP/WPA/WPA2-personal (TKIP and AES).
Wireless connection between thermostat and relay: radio long range 100m.

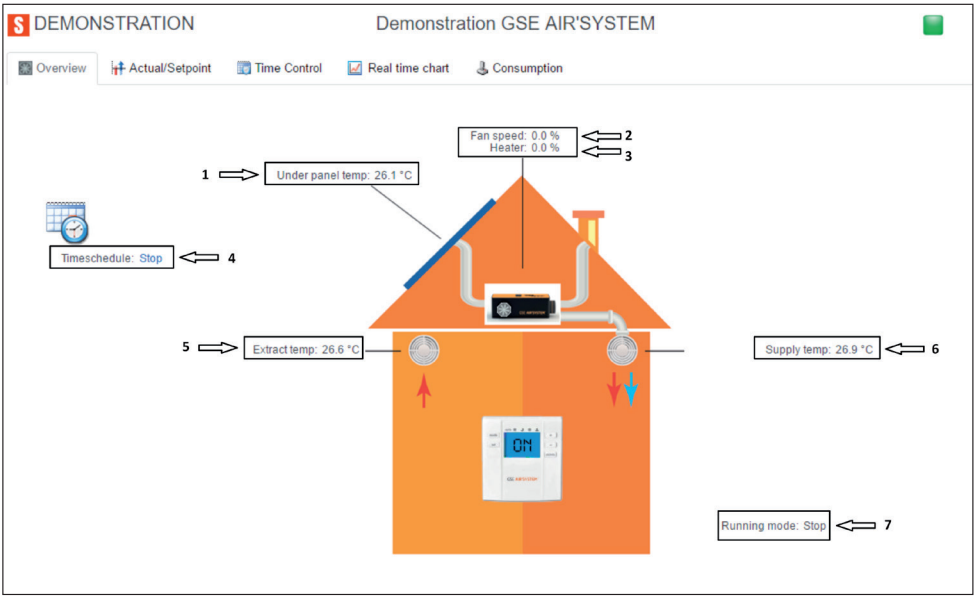
POWER AND BATTERIES
3 AAA batteries.
1 year battery life.

SETUP AND COMPATIBILITY
Compatible with gas, fuel and wood boilers.
Switching current: max 4 A
Switching voltage: max 250 VAC
Switching power: max 120 W

WebServer user manual

QUICK ACCESS TO GSE AIR'SYSTEM WEBSERVER :
Your technician has created you an online tracking page of your GSE Air'System's performances. To access it, go to the website https://cloudigo.regin.se/login provided your access codes available from your installer.

OVERVIEW



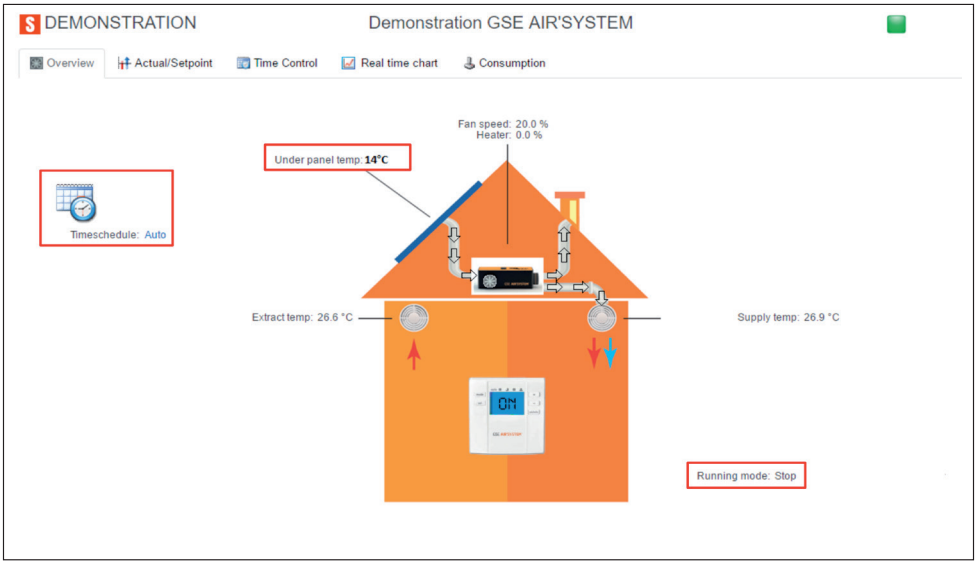
1 - Available Air temperature under the panels
2 - Fan speed
3 - Heater power use of « Speed Heating »
4 - Operating mode switch: Auto - Stop – Free Cooling
5 - Measured temperature in the house
6 - Temperature of injected air into the house
7 - Operating state: Stop – Regulation - Rotation – Exhaust – Free Cooling – Overheat
8 - Thermostat state: ON – OFF

SELECTION OF «OPERATING MODE»: AUTO – STOP – FREE COOLING

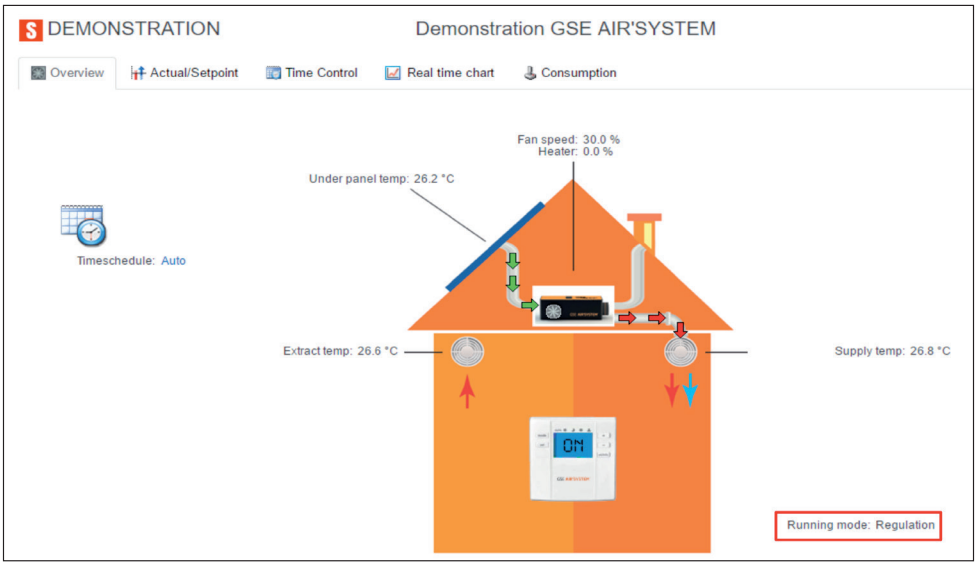
Auto Mode :
Default mode. Allows GSE AIR'SYSTEM to operate in optimal conditions.

There is 6 operating states:
Stop – Regulation – Exhaust – Rotation – Free Cooling – Overheat

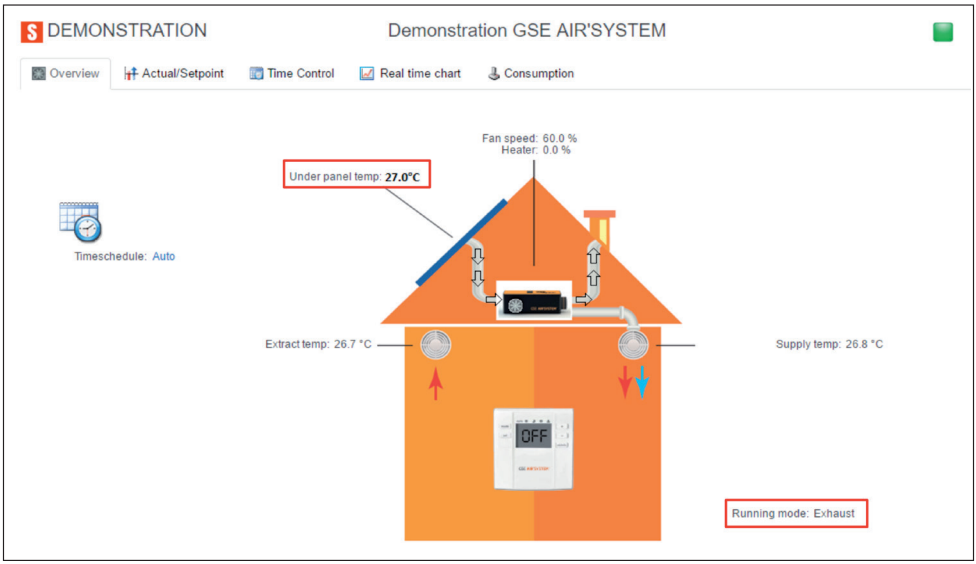
• **STOP :** This state means that under panels sensor doesn't measure a sufficient temperature to start **GSE AIR'SYSTEM.** The minimum available temperature under modules required to exit of this state is 17°C. **Even if the thermostat state is ON.**



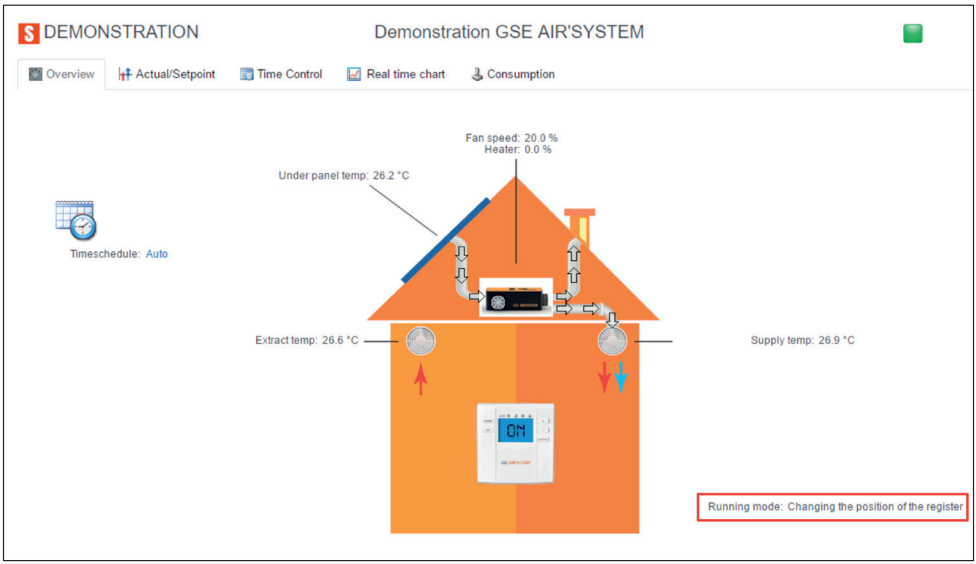
• **RÉGULATION :** this state is automatically launched when there is at least 17 °C available under the photovoltaic modules **AND** the thermostat state is ON.



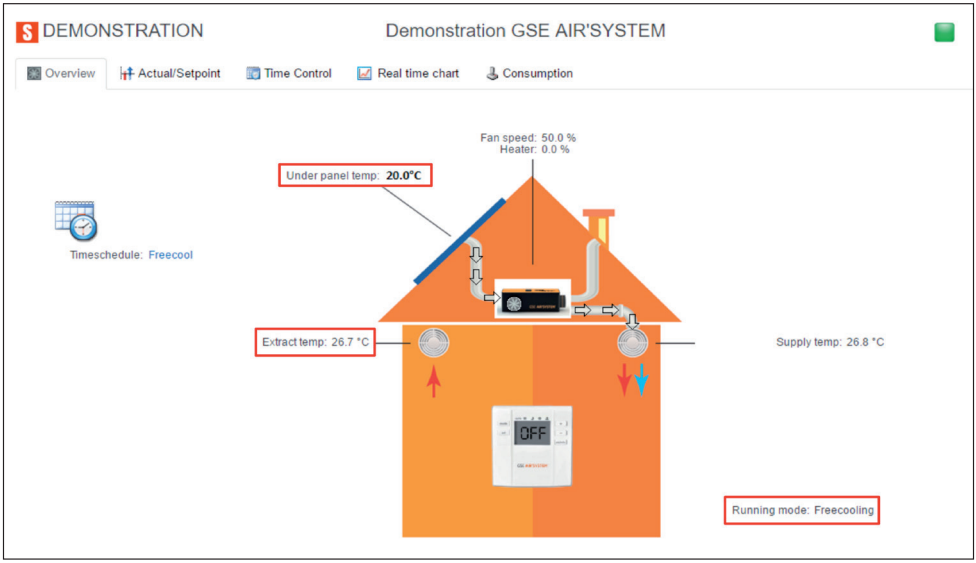
• **EXHAUST :** this state is automatically launched when under panels temperature exceeds 25°C **AND** the thermostat state is OFF.



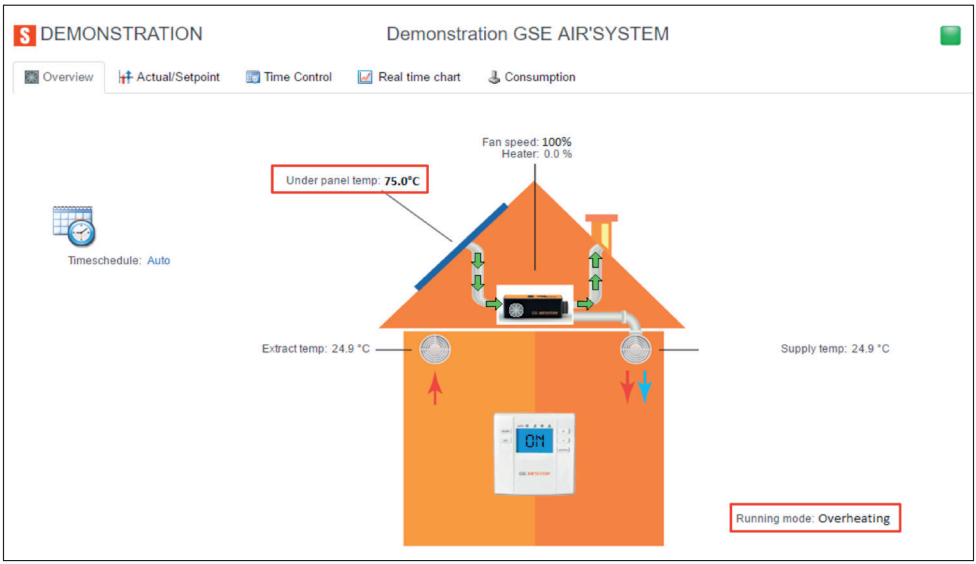
• **ROTATION :** this state means that GSE AIR'SYSTEM is changing of operating state.



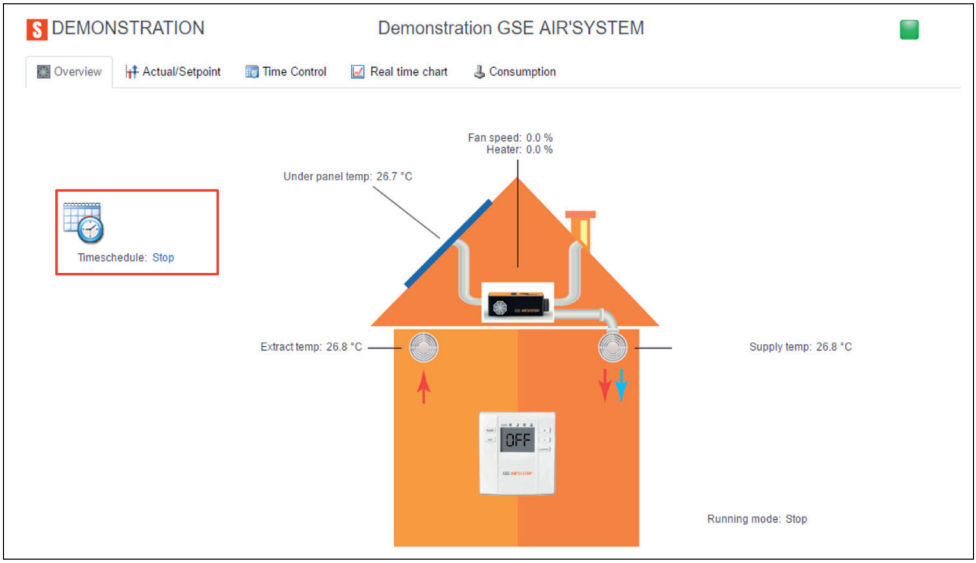
• **FREECOOLING :** this state is automatically launched on summer nights, when under panels temperature is at least in under 2°C from inside measured temperature (only after 3 days in a row without thermostat state is ON.



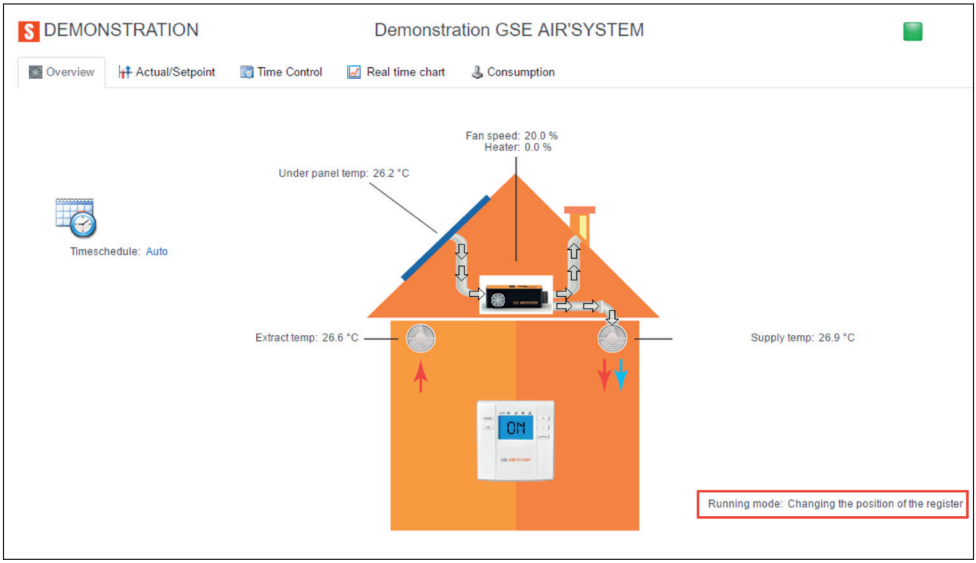
• **OVERHEAT :** this state is automatically launched when under panels temperature exceeds 57°C.



• **STOP MODE :** allows to totally stop **GSE AIR'SYSTEM.** It is advised to not use this mode, otherwise you could not benefit of expected energy savings.



• **FREECOOLING MODE :** this mode allows you to force free cooling even if all necessary conditions are not satisfied. **Only use on summer nights.**



GSE AIR'SYSTEM FAQ :

Question: Does the GSE AIR'SYSTEM work like an air conditioner?
Answer: No, the GSE Air'System only recovers the heat produced by photovoltaic panels. During hot summer nights (and only at night) the system draws off cool air from under the panels.

Question: How do you switch off the GSE AIR'SYSTEM?
Answer: You can't switch it off from the thermostat (but you can throw the trip switch in the electrical cabinet). Indeed, the only setting that prevents the system from sending warm air into the house is when the temperature on the thermostat is set to a value below the temperature of the room. All other configurations are controlled automatically by the GSE AIR'SYSTEM.

Question: Is it normal to feel cold air coming from the air vents when you put your hand against them?
Answer: You can't measure the temperature of air being blown out of a vent with your hand. To find out the real temperature of the air being blown in, you have to use an anemometer fitted with a thermometer.

Question: When do the GSE AIR'SYSTEM air filters need to be changed?
Answer: At least once a year. Your installer can provide you with maintenance services to take care of this. He'll also use the occasion to check that your installation's working properly.

Question: The thermostat screen has gone blank, what should I do?
Answer: the thermostat batteries are probably dead. They need to be replaced using the thermostat manual included.

Question: Whey isn't the GSE AIR'SYSTEM sending hot air into my home?
Answer: To operate, the GSE AIR'SYSTEM needs the temperature under the solar panels to be at least 17°. If it's not, the system shuts down automatically because there's no point sending cold air into your home.

Question: What does the heating unit do in the system? Does it use a lot of electricity?
Answer: It's used to boost the temperature of the air drawn from under the panels when it's not warm enough. For instance, if you've set the thermostat to 21° and the air under the panels is at 20°, the GSE AIR'SYSTEM heats this air to the desired temperature. Power consumption is very low because the air hardly requires heating (21° required - 20° under the panels = 1° provided by the heating unit). In addition, it doesn't have to operate for long since the temperature under the panels increases quickly.

Question: It is true that cooling photovoltaic panels improves their performance?
Answer: Proper ventilation is crucial for smooth operation over time. Plus, it also improves their energy performance. This is because the longer a solar panel works within the 20°C temperature zone, the more electricity it produces.

If you have not found the answer to your question, the **HOTLINE** dedicated to **GSE AIR'SYSTEM** is available from Monday to Thursday from 9h30 to 13h and from 14h to 18h and on Friday from 9h30 to 15h at **0826 040 021** (0.15€ ttc/min).

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