SunPower 65

www.systel-linternational.com

EN

SYSTEL®
Heating mastermind

USAGE NOTICE

Table of Contents

1 - Introduction

Thanks for buying a SunPower 65 gas heater. Our machine is of French design and manufacture, and was designed, built and rigorously controlled to bring you maximum satisfaction.
The blower conforms to the European EN 252:2009 standard.
SYSTEL develops a range of products and accessories for heat generation, lighting, and energy conservation, see our website to discover our innovative products: www.systel-international.com
Dedicated to improving our products, SYSTEL reserves the right to make all changes, without notice, that we find useful to the products described in this document.
This document has sections in French and sections that are translated. In case of dispute, the sections in French will be used.
Measurements are expressed in metric. The corresponding dimensions in other measurement systems (notably SAE) are given in brackets.
The illustrations are not contractual.

2 - General notes

The SunPower 65 is designed for heating agricultural buildings by producing warm air.
The installation and first start up of the unit should be done by a qualified professional.
The qualified professional is responsible for the correct installation and start up according to strict regula-tions.

This appliance can be used by children aged from 8 years and above and persons with reduced physical,sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

3 - Keep these documents

- Keep this manual and all accompanying documents handy in case it is necessary to consult them.

We refuse all responsibility in cases of occasional damage from not reading the instructions in this document.

4 - Safety

A gas heater can be dangerous if not correctly in stalled and used. Read this manual closely, particu larly the notes and safety rules.

- Not following the safety notes in this manual makes you responsible in case of accident.
- Pay particular attention to the following signs and their meanings:

Means a strong possibility of grave injury or death if instructions are not followed.

Means a risk of eloctric shock and damage to the unit if the instructions are not followed.

Means a risk of major damage if the instruc tions are not followed.

Useful information furnished.

Useful recycling information furnished.

The cautions and warnings contained in this manual cannot cover all of the risks in using a gas heater.

In addition to these warnings, it is important to exercise good judgment and respect basic safety rules.

4.1 - What should I do if I smell gas?

- Do not light. Do not extinguish the light.
- Do not turn on the electrical switch.
- Do not use a telephone in the risk area.
- Do not light a flame (such as a candle).
- Do not smoke.
- Close the gas valve.
- Open doors and windows.
- Warn other people in the area.
- Call the gas company or your qualified profes--
- sional.

4.2 - Warnings and Safety notes

Please strictly follow the safety notes and the following warnings:

- Do not use or put explosive or easily flammable materials (such as gasoline, paint, etc.) in or near the unit.
- Do not use the unit when cleaning in the area.
- Do not in any case put the safety devices out of order and do not attempt any manipulation of the devices under penalty of malfunction.
- Do not make any modifications:
  - to the unit,
- - to the outside of the unit
- - to the air, gas, or electrical functions.
- Never do maintenance or repair on the unit your self.
- Do not ruin or remove the seals on the components.
  Only the SYSTEL after-sale service professionals are authorized to make repairs to the sealed components.
- Do not modify the technical and architectural conditions next to the unit, as these may compromise the safety or function of the unit.
- To limit the buildup of CO in the surrounding area, make sure the unit is properly ventilated (3300m³/h).

5 - Construction warranty / Responsibility

Thank you for choosing SYSTEL.

The SunPower has a number of quality controls. This unit should be installed according to industry regulations, strictly following standards and the specific instructions shown on the installation sheet. In order for you to fully benefit from its performance, your SunPower, should be installed according to strict functional controls and regulations specific to the locality where it is in stalled.

SYSTEL offers you a parts warranty of ONE YEAR on hardware, from the installation date of your SunPower, that covers the replacement of any part recognized as defective.

This manufacturer's parts warranty is dependent upon an annual maintenance which should be done by a professional. The professional should verify, clean and adjust the unit at least once per year, more if necessary.

We will repair or replace any part recognized as defective after it is sent back to us for review.

The repair or replacement of parts during the manufacturer's warranty period will not have the effect of prolonging the warranty's initial duration.

The manufacturer's parts warranty will not be in effect due to a bad installation of the unit, inappropriate storage conditions, or in case of defective function or deterioration of your SunPower as a result of abnormal or abusive operation, or of insufficient maintenance.

The manufacturer's parts warranty does not cover deterioration that is a result of a change in electric power supply.

Before installation, check that the local distribution conditions, nature of gas and pressure, and the current state of adjustment of the appliance are compatible.
The installer shall refer to the appliance data plate for information specific for the air flow rates and gas rates for the particular appliance being installed.

6 - Intended use of the machine

The SYSTEL units are designed and made to conform to the latest technical advances and strict safety regulations.

The SunPower heater is intended for the production of warm air in livestock buildings.

All other uses are considered inadequate and forbidden.

The manufacturer will not in any case be held responsible for damages resulting from a use other than which it was intended. All risk is borne by the user.

The intended usage is equally encompasses by the usage instructions, installation manual, and all the accompanying documents that fulfill the conditions of installation and maintenance.

7 - Servicing

To extend the duration of your unit's life, it is recom--mended to check and clean it regularly.

The frequency of maintenance operations depends on the environment in which the unit.

Before beginning maintenance:

- Shut off the gas.
- Cut off the power supply.
- Open the side doors.
- Clean with compressed air:

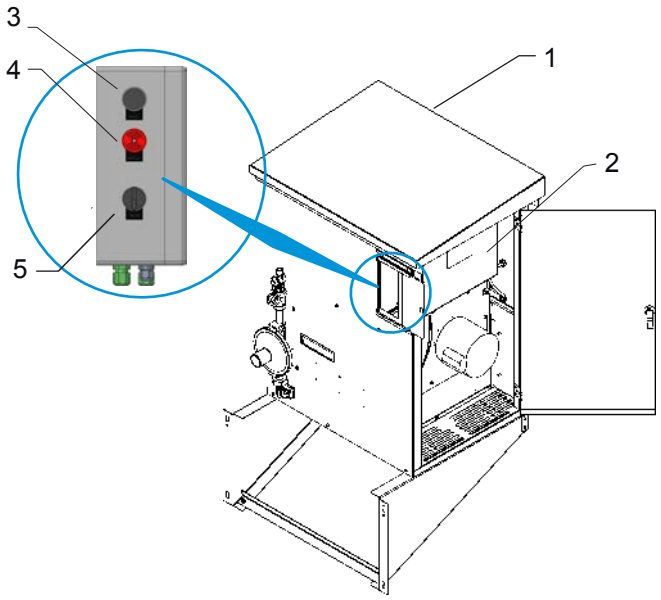
  - the air inlet grills.

  - the burner.

  - the interior of the unit to remove any foreign bodies.
- Close the side doors.
- Restore electrical power and gas.
- Start the heater (see the chapter on starting).

8 - Using the machine

8.1 - Instrument panel



Legend

1 SunPower case
2 Electrical box
3 Reset button
4 Defaultlight
5 Star&Stop button

- Open the side door to access the electrical box.

8.2 - Starting

- Access to the gas supply
- Make sure that :

  - the heater is plugged in 220Vac power supply.

  - the gas valve is open.
- Move the Start/Stop switch on the instrument panel to "ON".

The heater starts according to the following cycle:

- Fan starts.

- Burner lights

8.3 - Stopping

- Move the Start/Stop switch to “OFF”.

We recommend closing the gas inlet during prolonged storage.

9 - Maintenance / Service after the sale

Cleaned and well-maintained, your unit will consume less and last longer.

A regular maintenance on the unit by a qualified professional is critical to its good function and installation

Regular maintenance will lengthen the life of the unit,

reduce its energy consumption, and its release of pollutants.

We recommend obtaining a maintenance contract with qualified professional.

Keep in mind that insufficient maintenance can compromise the safety of the unit and cause unit and personal damage.

INSTALLATION MANUAL

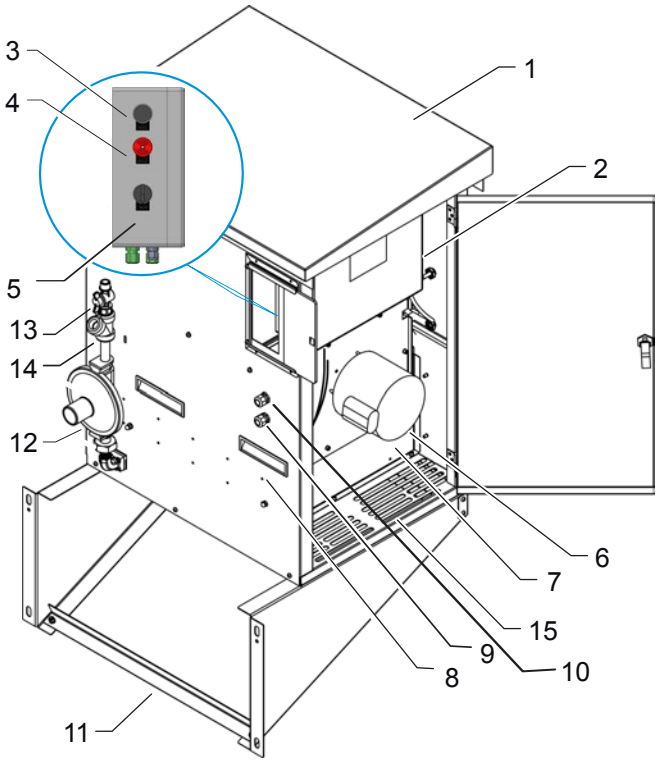
Table of Contents

1 - Remarks relative to the documentation

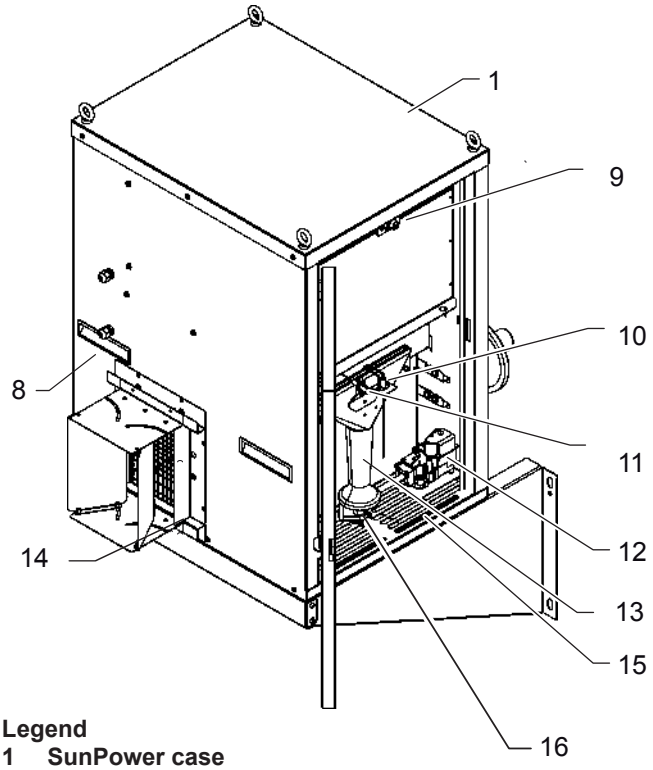
- Keep the documents for using the machine together. The user should keep the documents handy in case they need it later.

We do not take responsibility for damages caused by not reading the instructions in this manual.

2 - Machine description

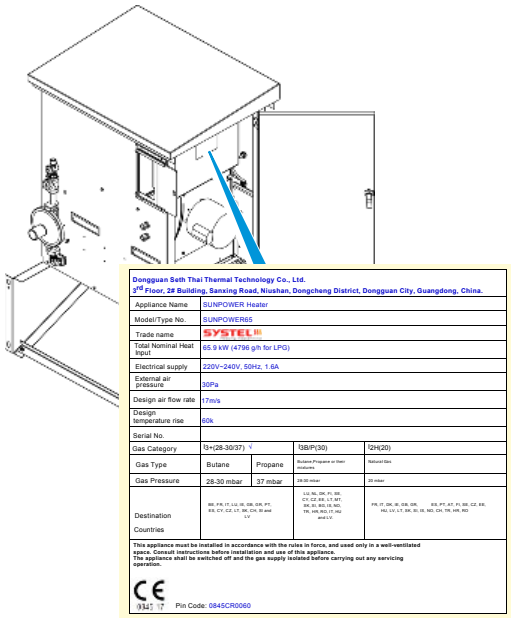


Legend
1 SunPower case
2 Electrical box
3 Reset button
4 Default Indicator
5 Start/Stop Switch
6 Fan motor
7 Fan safety switch
8 Carrying handle
9 Electrical cable gland
10 Thermostat cable gland
11 Support
12 Gas regulator
13 Gas solenold valve
14 Gas filter
15 Air inlet



Legend
1 SunPower case
8 Carrying handle
9 Overheat protector
10 Lighting electrode
11 Ionizer electrode
12 Gas solenold valve
13 Burner
14 Warm air flow orientation module
15 Air inlet
16 Fuel Injector

2.1 - Warning label



Warning! The unit should be used only with the types of gas indicated on the warning label.

- Before installing the unit, make sure that the type of gas and pressure are compatibles with the unit setting.

2.2 - CE Identification

The CE identification shows that the units described in this manual conform to the following standards:

- Directive relative to direct heat and forced air warm air generators using gas fuel for non-do mestic localized heating, with heat flow less than or equal to 300kW on low heat flow power (directive EN525:2009 of the Council of the European Community).
- Directive relative to electromagnetic compatibility (directive 2014/30/EU of the Council of the European Community).
- Directive relative to low voltage (directive 2014/35/EU of the Council of the European Community).
- Directive relative to Gas appliance directive 2009/142/EC of the Council of the European Community

3 - Safety and limitations

3.1 - Safety.

All work done in the interior of the unit should be carried out by a qualified professional or by SYSTEL's Service after the sale.

If the gas pressure at the entrance of the unit is situated outside of the specified area, the unit should not be started. If the cause of the problem cannot be identified or the problem resolved, contact the gas company.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

- Before mounting the connection, correctly position the sealing joints so as to avoid all gas leaks.

  The following safety rules should be strictly adhered to before maintenance or replacing spare parts.

- Shut off the unit (see "Shut off" in the user guide)

- Electrically isolate the unit:
  -Unplug the unit
  -Switch off the circuit breaker
- Close the gas valve
- Let the unit cool off before doing any work inside the unit.
- Only use new seals.
- Check the seals after working on any of the gas parts.
- Do a functional test on the parts and the unit after installing any replacement parts.

3.2 - Decrees, standards, directives

Before installing and operating the unit, the cautions, directives, technical data, standards and provisions should be strictly followed in their actual version.

3.3 - Recycling

The unit is largely composed of recycled materials.

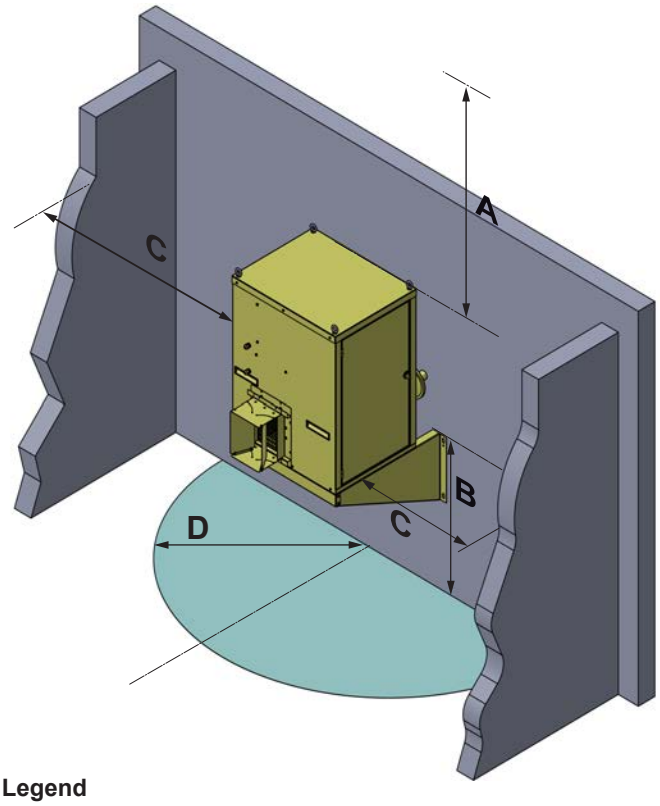
The box, unit, and packaging materials should not be thrown into household waste but disposed of in accordance with strict guidelines.

4 - Choice of Placement

Before determining the unit placement, read the safety notes and warnings in the usage notice and the installation manual.

- Consider the weight of the unit (see the “Technical Data” chapter).
- To limit the accumulation of CO in the heated area, make sure the ventilation is at least 2000 m3/h.
- Determine a placement that allows for the correct position of the gas conduit.
- To allow for periodic maintenance, keep the minimal distance on each side of the unit.
- Make sure that that the materials used for the installation are compatible with those of the unit.
- Explain these requirements to the user of the unit.

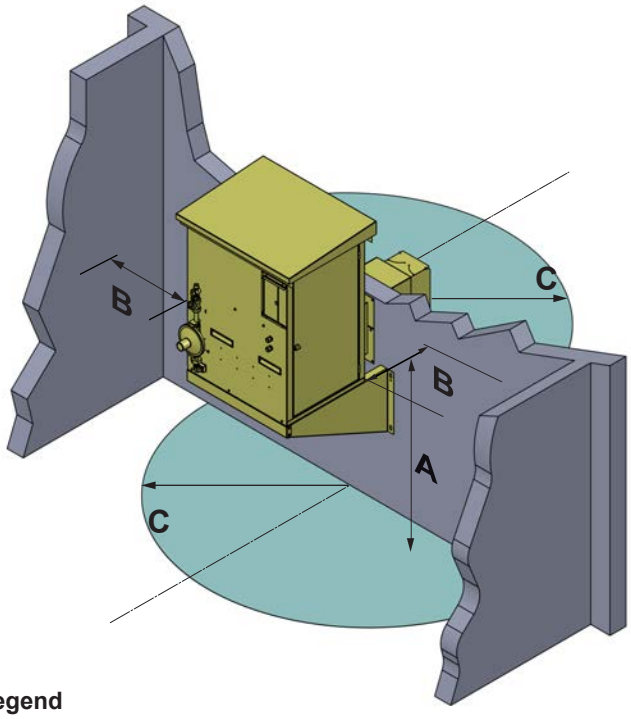
4.1 - Interior mounting



Legend
A Minimum distance of SunPower case/ceiling
B Minimum distance of SunPower case/floor
C Minimum distance of SunPower case/wall
D Safety zone

Rep.	dimension
A	300mm
B	500mm
C	300mm
D	R>3m

4.2 - Montage en extérieur



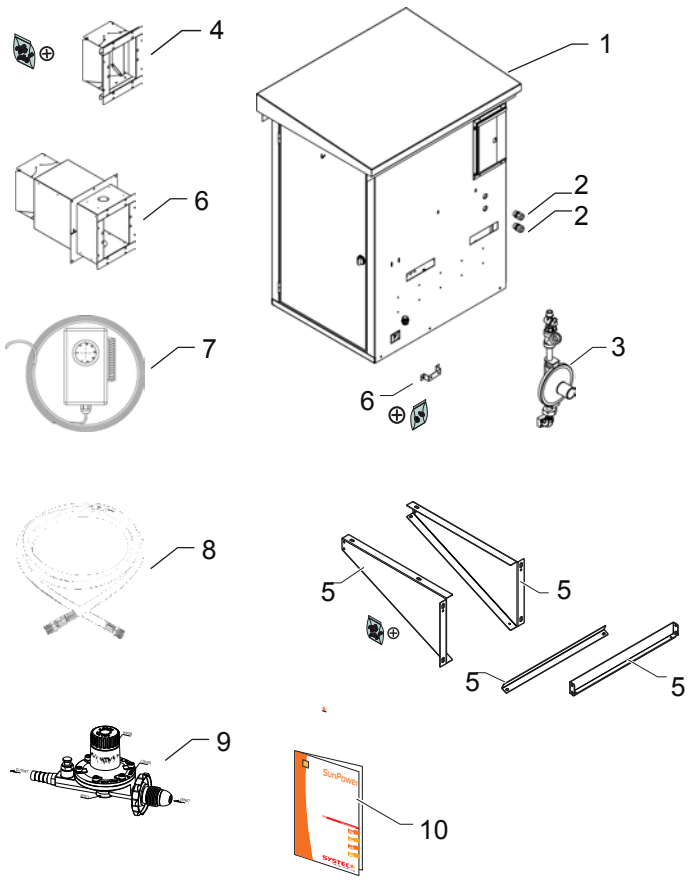
Legend
A Minimum distance SunPower case/floor
B Minimum distance SunPower/wall
C Safety zone

Rep.	dimension
A	500mm
B	300mm
C	R>3m

5 - Installation of the unit

All dimensions in this manual are expressed in mm.

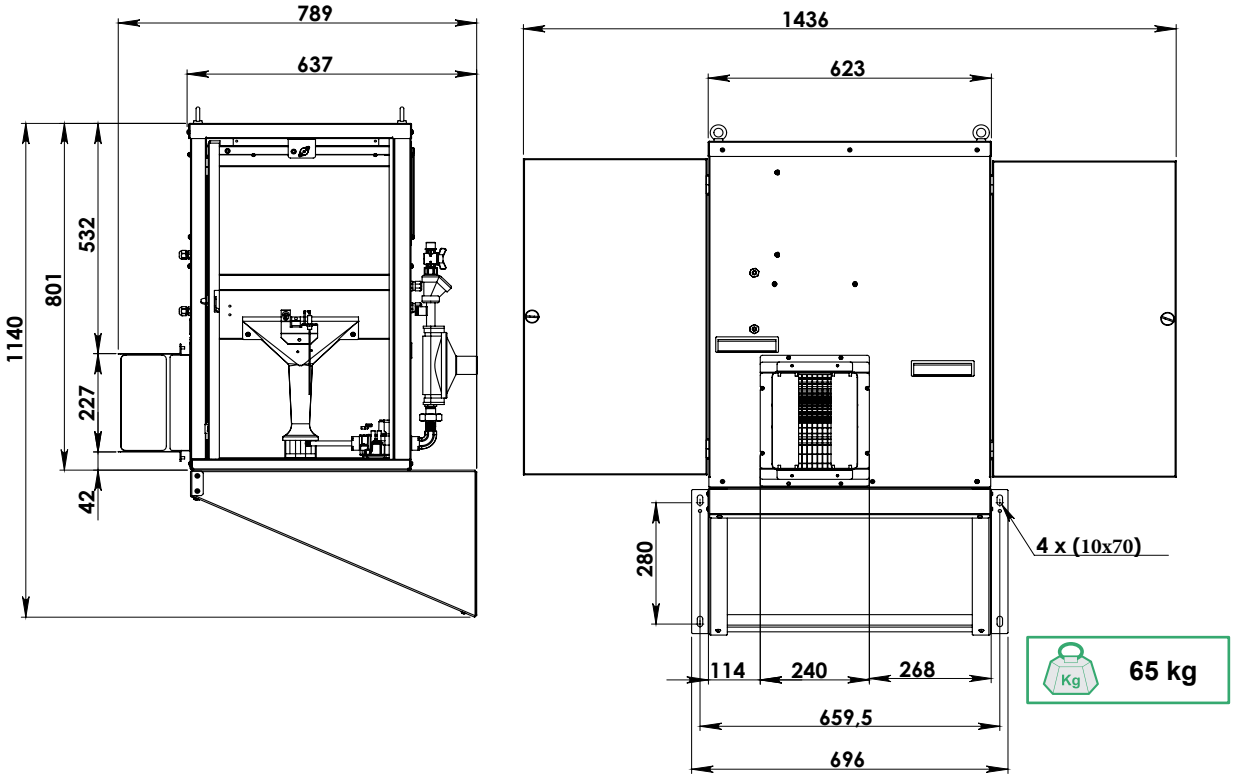
5.1 - Alternative Equipment



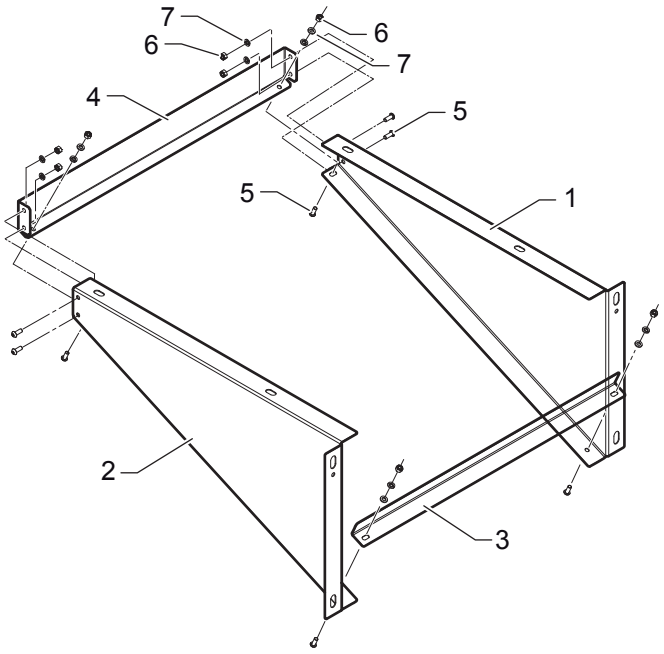
Legend:

1 SunPower case
2 PG11 cable gland (2)
3 Gas regulator + valve + filter
4 Warm air flow orientation module + screws
5 Case support + screws
6 Conduit
7 Room Thermostat
8 Gas Pipe
9 HP Regulator
10 User guide and installation manual

5.2 - Dimensions and weight



5.3 - Support assembly



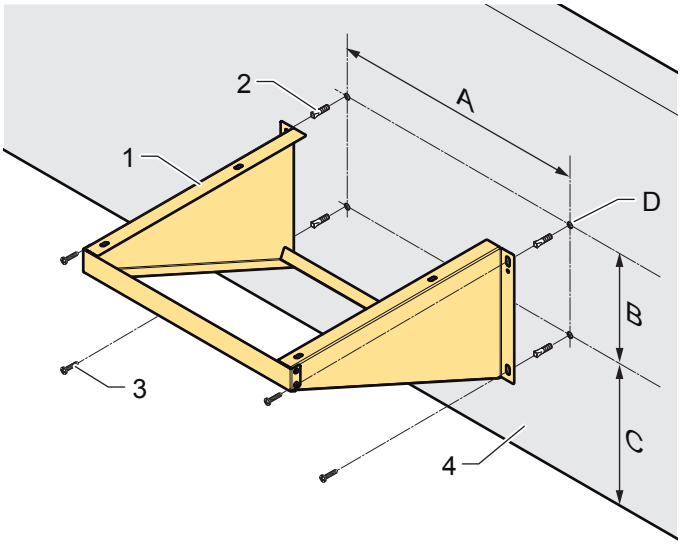
Legend:

1 **Right bracket**
2 **Left bracket**
3 **Front mount**
4 **Facing mount**
5 **Bolts (8)**
6 **Nuts (8)**
7 **Washers (12)**

- Mount the facing support (4) on the left (2) and right (2) brackets with screws (5), some nuts (6), and some washers (7).
- Mount the front support (3) on the left (2) and right (2) brackets with screws (5), nuts (6) and washers (7).

5.4 - Interior mounting

5.4.1 - Support fastening

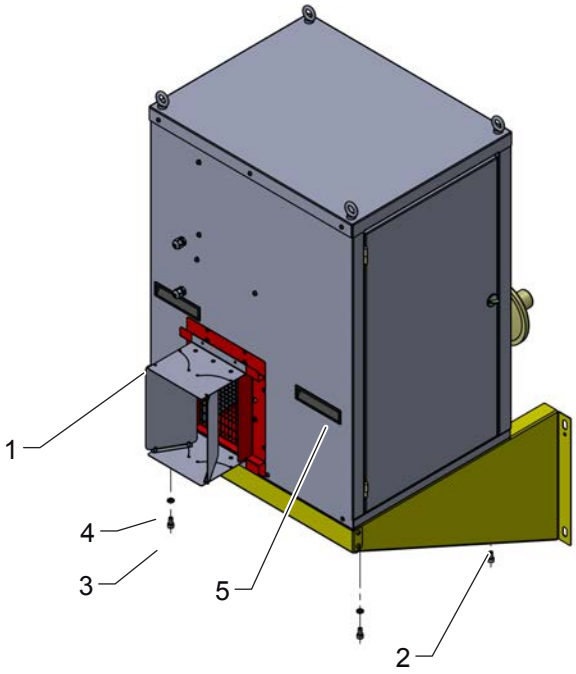


Legend:
1 Support
2 Anchor
3 Screw
4 Wall

Rep.	dimension (en mm)
A	659.5
B	280
C	500
D	Ø12

- Choose the fixation adapted for your support (stone, simple…) and to the load support (see the “Technical data” chapter).
- Drill the holes.
- Insert the anchors (2) (not furnished) in the drilled holes.
- Fasten the support (1) onto the wall (4) with screws (3) (not furnished).
- Fasten the level support.

5.4.2 - Fixation du coffret

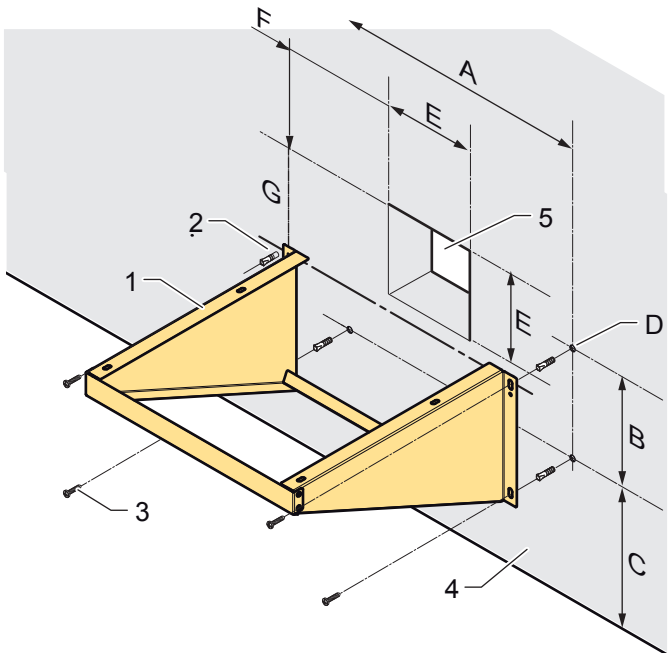


Legend:
1 SunPower case
2 Support
3 Screws
4 Washers
5 Carrying handle

- Using the carrying handles (5), place the SunPower unit (1) on the support (2).
- Fasten the case to the support with screws (3) and nuts (4).

5.5 - Exterior mounting

5.5.1 - Support fastening

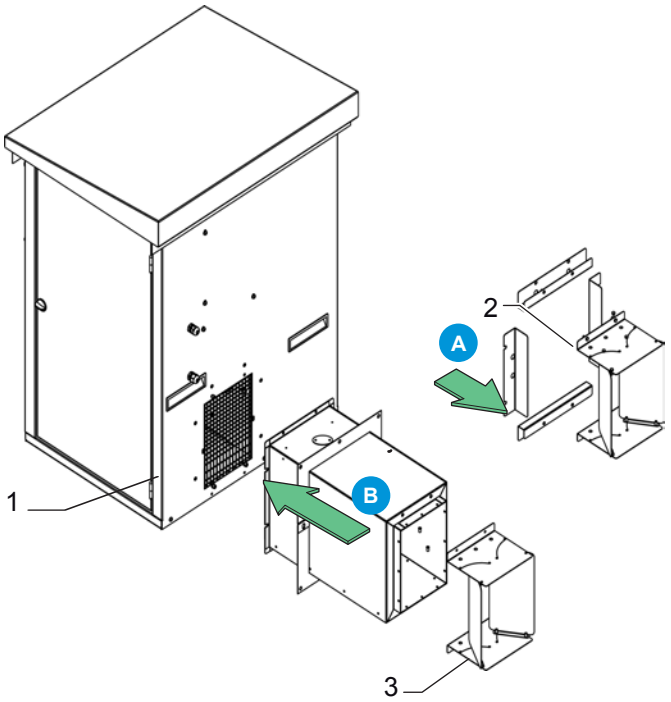


Legend
1 **Support**
2 **Anchor**
3 **Screw**
4 **Wall**
5 **Conduit passage**

Rep.	dimension (en mm)
A	659.5
B	280
C	152
D	Ø12
E	275
F	299
G	321

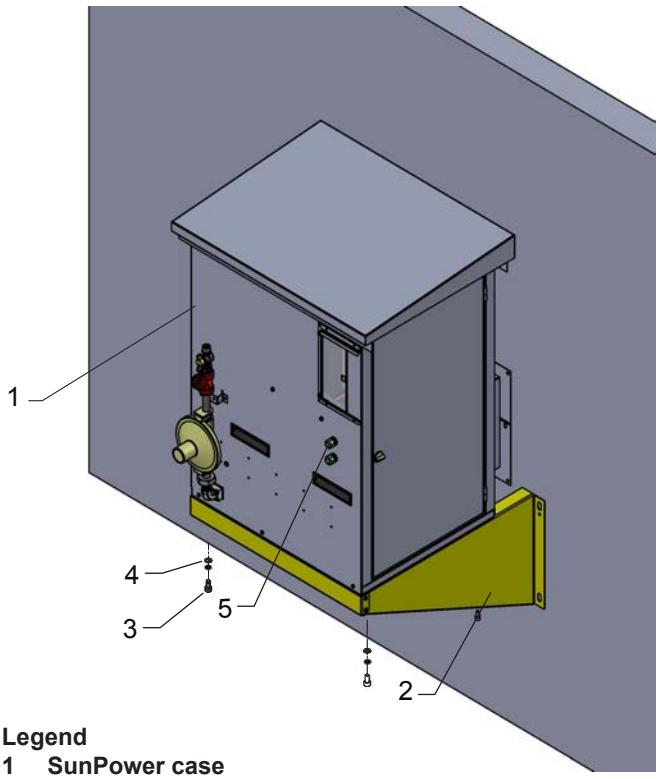
- Choose the fixation adapted for your support (stone, simple…) and to the load support (see the “Technical data” chapter).
- Drill the conduit passage.
- Drill the holes
- Insert the anchors (2) (not furnished) in the drilled holes.
- Fasten the support (1) onto the wall (4) with screws (3) (not furnished).
- Fasten the level support.

5.5.2 - Fixation du coffret



Legend:
1 **SunPower case**
2 **Warm air flow orientation module**
3 **Conduit**

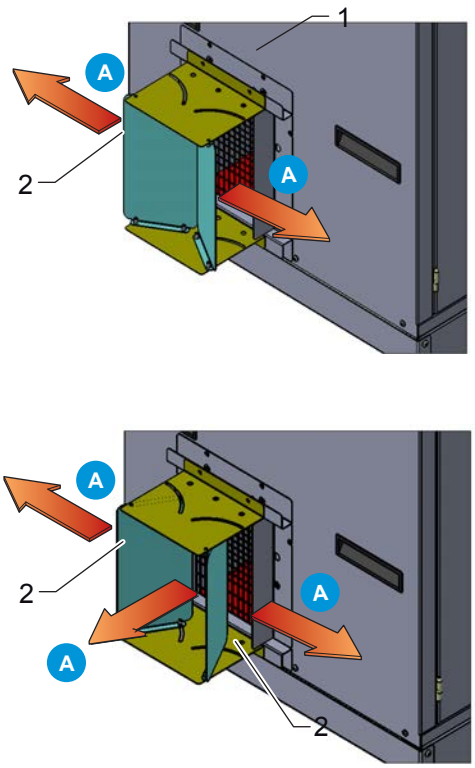
- Remove the warm air flow orientation module (2) from the SunPower case (1).
- Fasten the conduit (3) onto the SunPower case (1).



Legend
1 SunPower case
2 Support
3 Screw
4 Nut
5 Carrying handle

- Using the carrying handles (5), place the SunPowe unit (1) on the support (2).
- Pass the conduit through the passage that was drilled out earlier.
- Fasten the case (1) to the support (2) with screws (3) and nuts (4).
- Re-mount the warm air flow orientation module onto the case (1).

5.5.3 - o rientation du flux d'ai

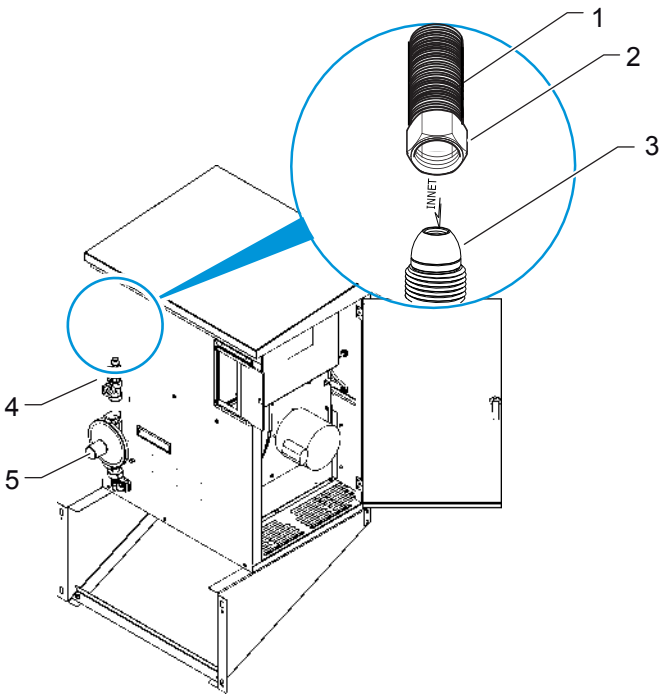


Legend:
A Warm air flow
1 Warm air flow orientation module
2 Flap

- Bend the flaps (2) to orient the warm air flow (A) in the desired direction.

6 - Gas connection

Refar to the 'Machine Description" chapter to place and identify the different connections.



Legend:
1 Gas inlet pipe
2 Nut
3 Pressure regulator seal
4 Gas valve
5 Gas pressure regulator

- Close the gas valve (4).
- Seal the gas inlet pipe (1) where it enters the pressure regulator (3), without forgetting the joint (2).
- Only use joints furnished with the unit.

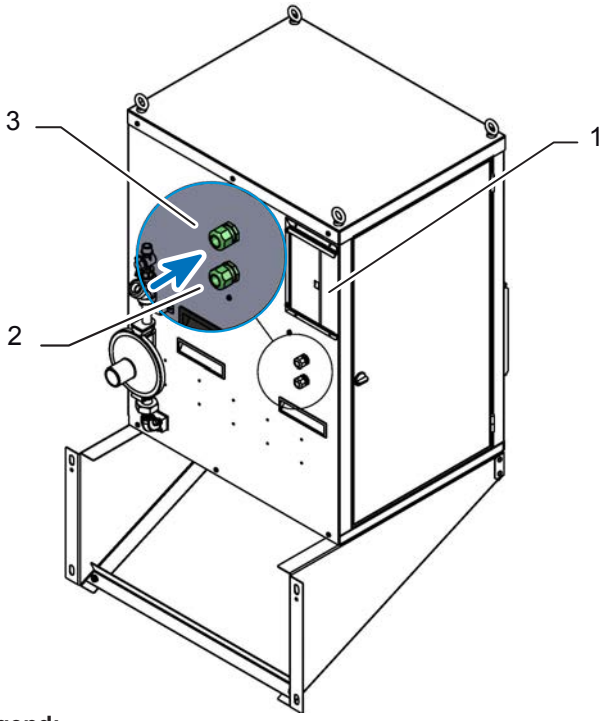
7 - Electrical sealin

Important - the machine's electrical sealing should be carried out by a qualified professional. All operations on the interior of the machine should be carried out by the Service After the Sale or a qualified professional.

Danger! In case of incorrect installatlon, there is a risk of electric shock and damage to the machine.

The sealing should be carried out by an intermediary of a pole switch or a breaker so that the unit can be disconnected from the network for cleaning and maintenance.

The power cable should consist of 3 wires of a minimum section of 2.5mm².



Legend:
1 Instrument panel
2 Alimentation cable gland
3 Thermostat cable gland

- Pass the electrical power cable through the cable gland (2).
- Seal the terminal on the heater.

Clamp the cable with the thermostat cable so that they do not touch any hot parts of the heater.

7.1 - Room thermostat

In order to control the start and stop of the heater one should connect a room thermostat, mechanical or electronic, programmable or not.

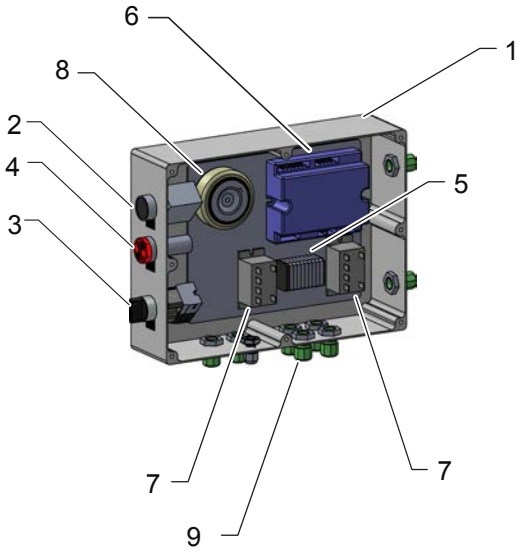
See the "Description of the machine" chapter find and identify the different connections.

A room thermostat is sensitive to temperature variations.

- Make sure that the room thermostat is not exposed to sun or air currents.
- Do not install the room thermostat near a door.Check the label on the installed unit for the electrical connection.
- Pass the cable through the cable gland.
- Connect it to the terminal on the heater.
- Clamp the cable with the other cable so they do not touch any hot parts of the heater.

Clamp the cable with the other cable so they do not touch any hot parts of the heater.

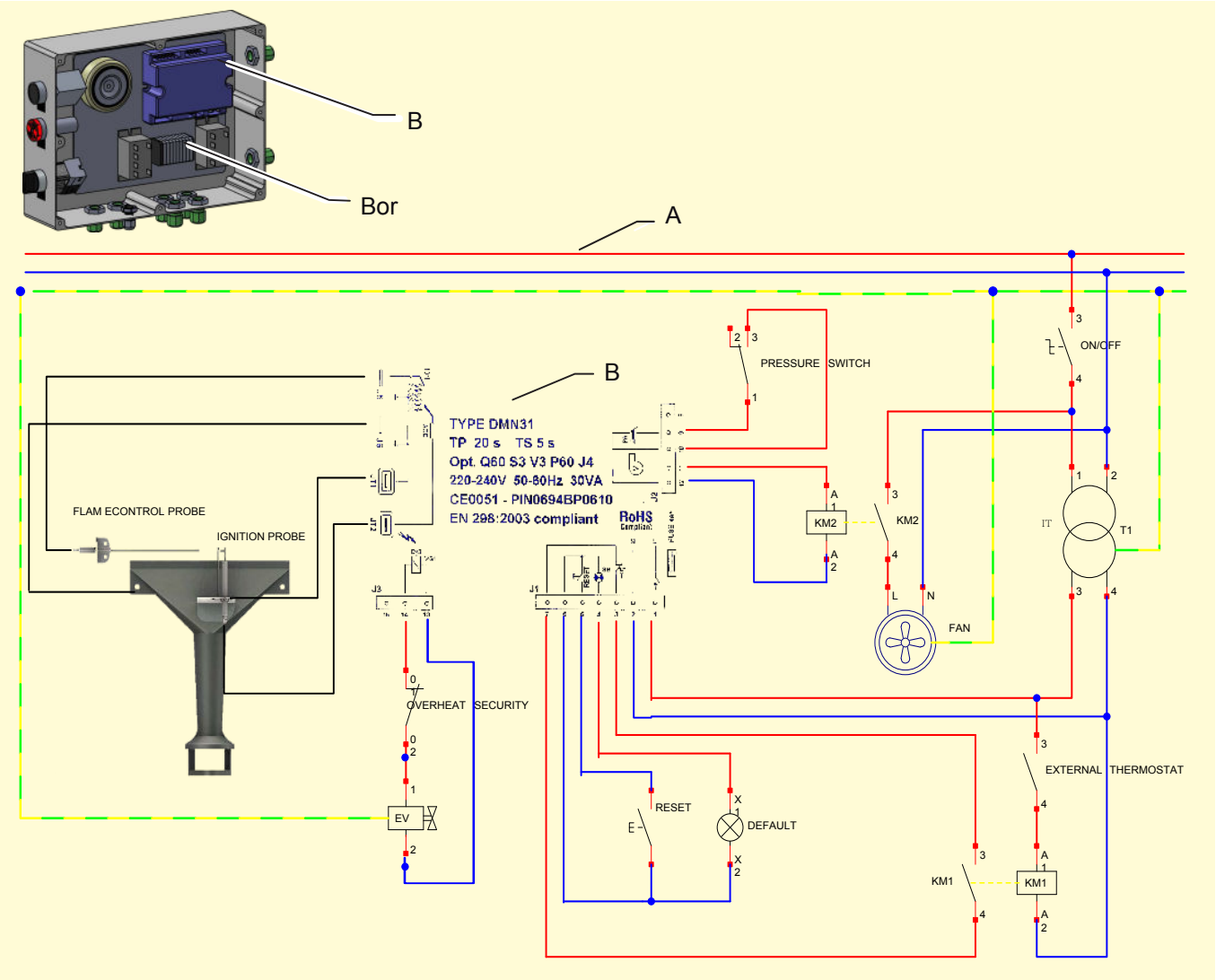
7.2 - Electrical box



Legend:

1 Electrical box
2 Reset button
3 Start/Stop Switch
4 Default indicator
5 Terminal
6 Gas controller
7 Power relay
8 Isolation transformer
9 Gland

7.3 - Electrical schematic



Legend:

A	**Electronics chart**
B	**Gas controller**
Bor	**Terminal**
IT	**Isolation transformer**
KM1	**Relay for external thermostat**
KM2	**Relay for motor**

8 - Starting

- Set the room thermostat to maximum.
- Make sure that :

  -The heater is plugged in.

  -The gas valve is open.
- Move the Start/Stop switch on the instrument panel to “I”.

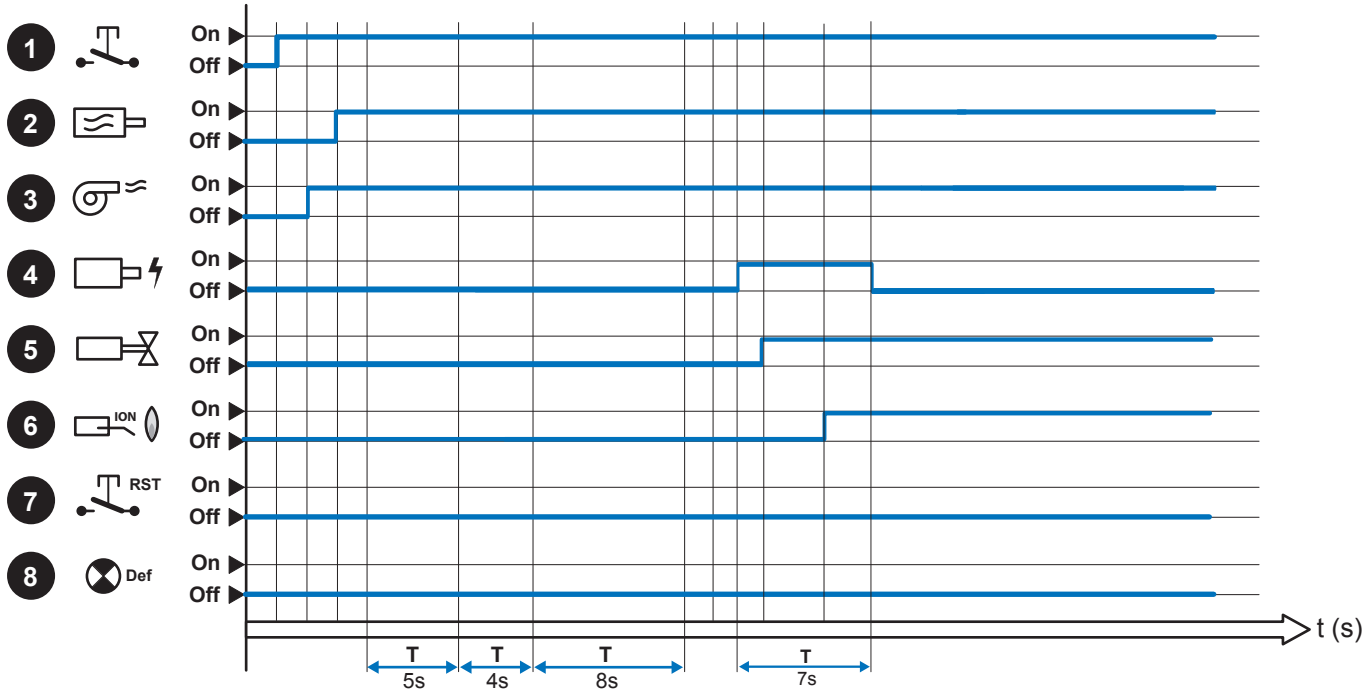
The indicator on the instrument panel lights up and the heater starts according to the following cycle:

-The fan starts

-The burner lights.

- To verify that the installation is working correctly, let the unit run for at least 15 minutes.
- If necessary, adjust the gas pressure (see the “Adjusting the gas pressure”).
- Adjust the thermostat to the desired temperature.

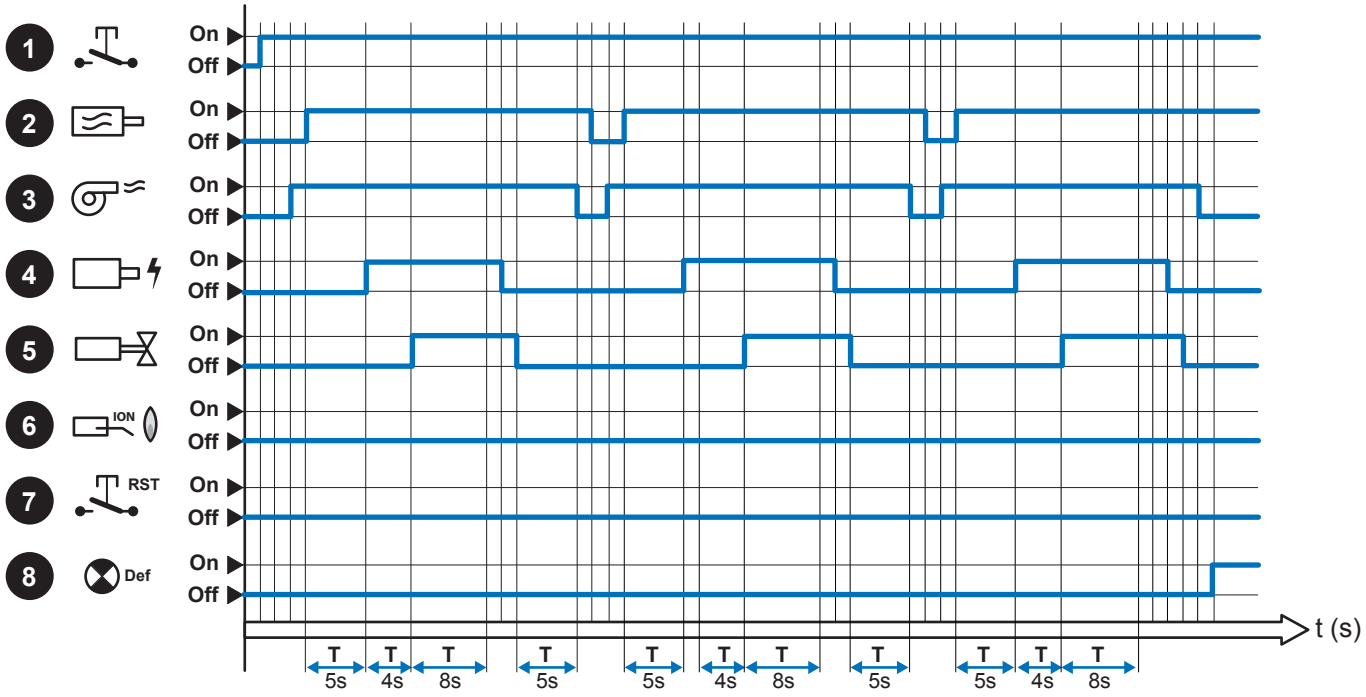
8.1 - Start cycle



Legend:

1 Start/Stop Switch
2 Flow control
3 Fan
4 Ignition
5 Gas Solenoid valve
6 ionization
7 Reset button
8 Default Indicator
t Time
t Delay

8.2 - Default start cycle

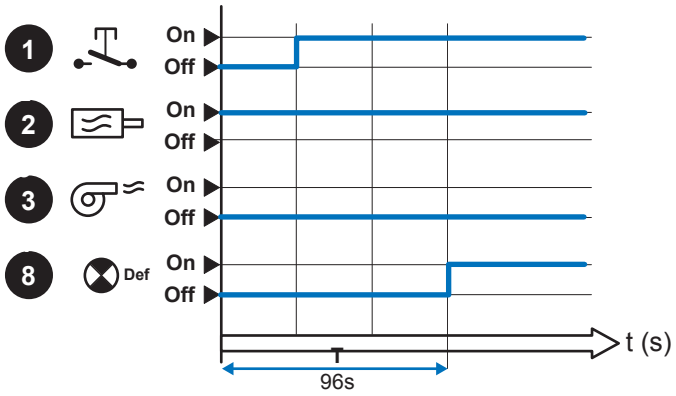


Legend:

1 Start/Stop Switch
2 Flow control
3 Fan
4 Ignition
5 Gas Solenoid
6 ionization
7 Reset button
8 Default Indicator
t Time
t Delay

In case of ignition fault, the start cycle is repeated a maximum of 2 times.

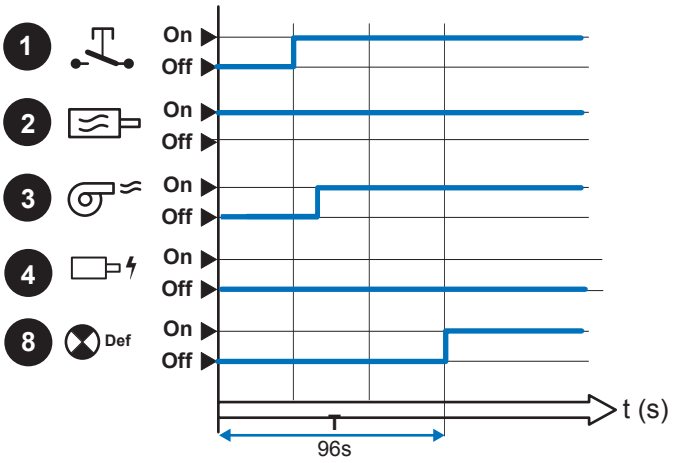
8.3 - Flow switch open before fan starts



Legend:

1 Start/Stop Switch
2 Flow control
3 Fan
8 Default Indicator
t Delay
T Time

8.4 - Flow switch stucked before fan starts

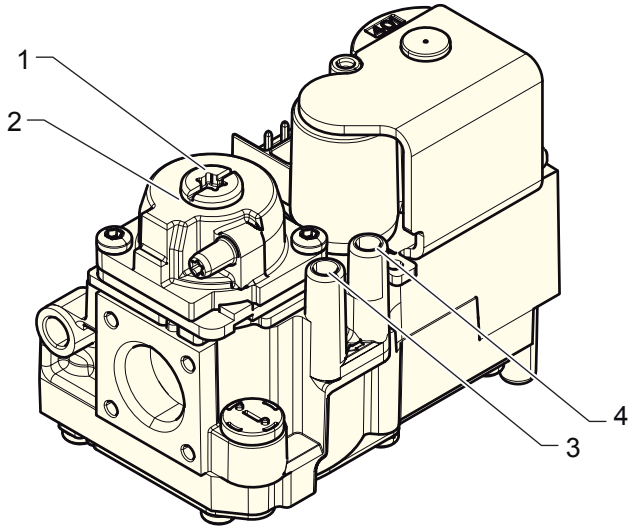


Legend:

1 Start/Stop Switch
2 Flow control
4 Ignition
8 Default Indicator
T Time
t Delay

9 - Gas pressure regulation

Warning: taking measurements should be done by a certified gas technician. The heater should be operational.



Legend:
1 Nut
2 Maximum pressure adjusting screw
3 Outlet pressure
4 Inlet pressure

- Disconnect electrical power.
- Close the gas valve.
- Loosen the inlet pressure screw (4)
- Install the manometer (pressure gage) on the inlet pressure (4).
- Open the gas valve.
- Shut off the heater and wait until the pressure stabilized.

Ensure the inlet pressure value:

- Gas butane/propane(LPG): 29 mbar.
- Gas nature(NG): 20 mbar.

If the pressure value does not correspond to this value(outlet pressure of gas bottle/tank) :
- LPG:1200 mbar
- NG:550 mbar

- Stop the heater.
- Disconnect the electrical power.
- Close the gas valve.
- Increase the pressure by adjust the the regulator
- Put the heater back in service and check that there are no gas leaks at the at the outlet pressure.

10 - Trouble shooting

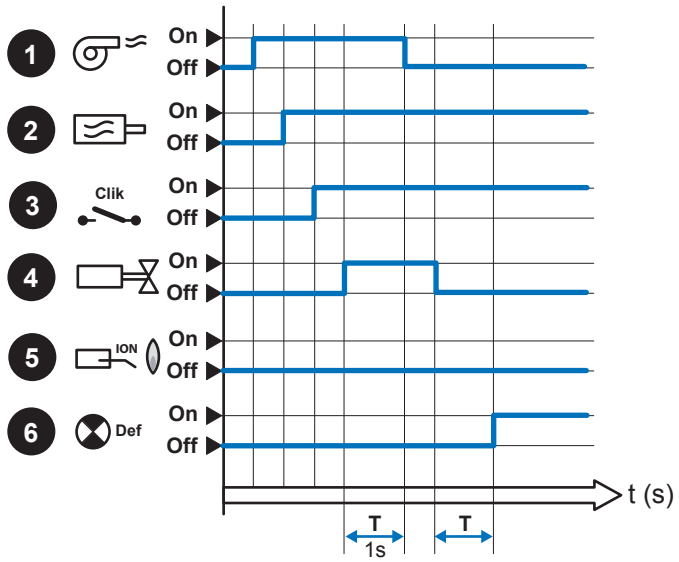
The problems described in this chapter require the skills of a qualified professional and if necessary, those skills of the SYSTEL Service after the sale.

Description	Stage	Possible causes	Solution
Fan does not start	1	220Vac not present.	Control the electrical installation.
	2	Thermostat fault.	Check the thermostat and its cable. Replace if needed.
	3	Gas control box fault.	Check the control box fuse. Replace if necessary.
	4	Fan cord fault.	Check the voltage of the cord. Replace if necessary.
	5	Fan switch fault.	Check the fan switch. Replace if necessary.
	6	Fan fault.	Replace the fan.
ignition issue	1	Fan fault.	Check the fan.
	2	Overheat protector is triggered.	Push on the overheat protector to reset it.
	3	Defective fan switch cord.	Repair or replace the cable.
	4	Default of overheat protector cable	Repair or replace the cable.
	5	Ignition feed fault.	Replace the ignition
	6	Control box feed fault.	Check the transformer. Replace if necessary. Check fuse on control box.
	7	Control box fault.	Replace the control box.
Flame issue	1	Gas entry is closed.	Open the gas valve
	2	Bad electrical feed to the gas.	Check the cable between the control box and the gas valve. Repair or replace cable.
	3	Gas pressure bad.	Gas pressure is different around 37mbar: ● Make sure you are using at least 4 bottles ● Regulating the pressure on the gas regulator. ● Clean the filter. ● Clean the filter The gas pressure should not be between 18 and 21 mbar: ● Regulate the pressure on the gas regulator. ● Change the gas valve.
	4	Ignition fouling or burner nose fouling.	Clean or replace if necessary
	5	No flame.	Try to light it with a lighter. ● If the flame doe not light, put the lighter closer to the flame. ● If the flame does not light, check the quality the gas. - Change the lighter if it does not always work.

Description	Stage	Possible causes	Solution
Flame goes out	1	The ionization electrode is dirty or too close to the flame.	Check the position of the ionization electrode and clean it.
	2	The ionization electrode cable is defective	Repair or replace the cable.
	3	Feed from the control box is bad.	Replace the control box. If the problem continues , perform the checks in “Flame Default”.
Flame is not of good quality	1	The flame is red or black in color.	The gas pressure is different around 37 mbar: • Make sure you are using at least 4 bottles. • Check the pressure on the gas regulator. • Clean the filter. • Change the gas regulator. The gas pressure is not situated between 18 and 21 mbar: • Check the pressure on the gas regulator. • Change the gas valve.
	2	Ignition fouling or burner nose fouling	Clean or replace if necessary.
	3	Problem with the type of gas	Use a gas from a different origin (different supplier).

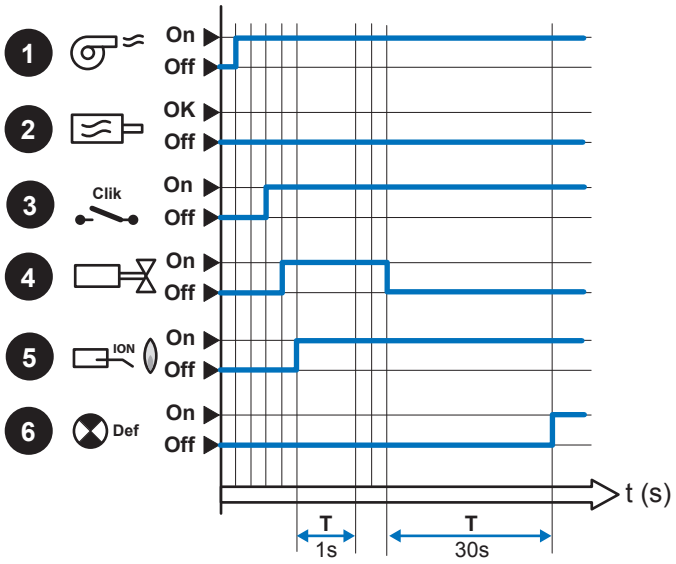
10.1 - Problem appears during operation

10.1.1 - Loss of flame detection



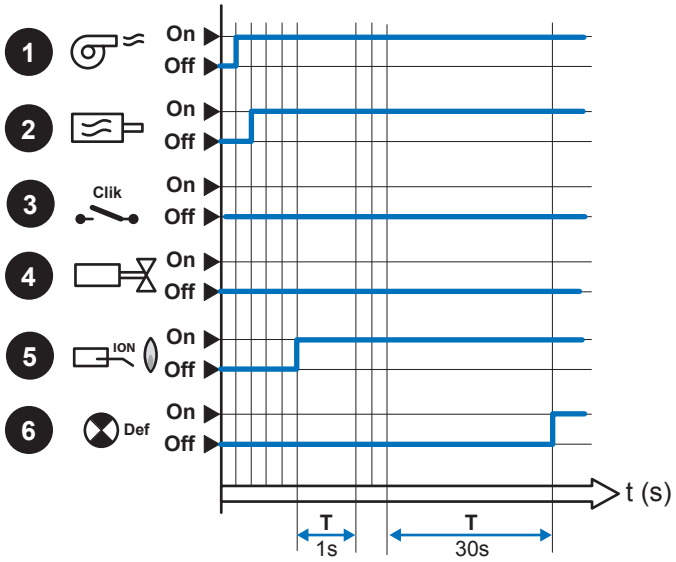
Legend:
1 Fan
2 Flow control
3 Overheat protector
4 Gas solenoid valve
5 ionization
6 Default Indicator
t Time
t Delay

10.1.2 - Loss of airflow control



Legend:
1 Fan
2 Flow control
3 Overheat protector
4 Gas solenoid valve
5 ionization
6 Default Indicator
t Time
t Delay

10.1.3 - Overheat protector opening



Legend:

1	Fan
2	Flow presence contro
3	Overheat protector
4	Gas solenoid
5	ionization
6	Default Indicator
t	Time
t	Delay

10.2 - Replacement of the fuse box control

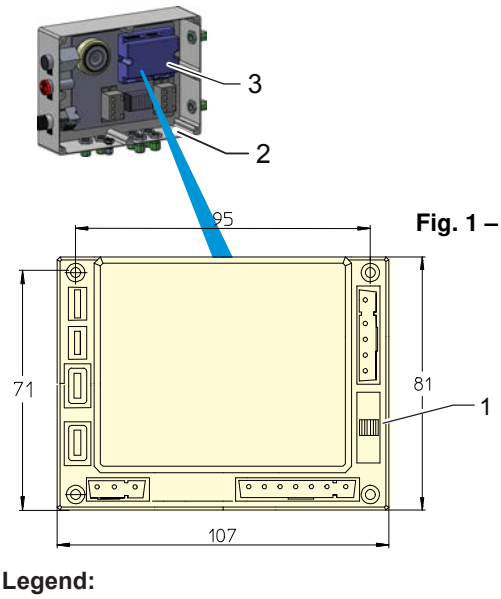


Fig. 1 – Overall dimensions

Legend:

1	Fuse (5x20 2A Fast)
2	Electrical box
3	Control box

Danger! In case of incorrect installation, there is a risk of electric shock and damage to the unit.

- Shut off electrical feed.
- Remove the cover of the electrical box.
- Locate and disconnect the wires connecting to the control box
- Loosen and remove the control box.
- Open the control box.
- Replace the fuse (5x20 2A Fast).
- Remount the assembly.

Use caution when remounting the control box.

11 - User information

The user of the unit should be informed of the handling and function of the unit.

- Explain the operation of the unit in such fashion that the user will familiarize him/herself with its use.
- Examine the use together and answer the options applicable to his/her questions.
- Give all of the manuals and documents concerning the unit to the user and ask him/her to keep them by the unit.
- Show the user everything, particularly the safety warnings that s/he should heed.
- Remind the user of the obligation of regular maintenance on the unit.
- Recommend getting a maintenance contract with a qualified professional.

12 - Replacement parts

To guarantee the durable operation of all of the functions of the unit and to keep the unit in good shape, only original SYSTEL replacement parts should be used during maintenance and repair.

- Only use original replacement parts.
- Ensure the correct mounting of these parts with respect to their position and initial place.

13 - Technical data

The data described in this chapter require the services of a qualified professional and if necessary, the SYSTEL service after the sale.

Description	Units	Sunpower
Heating		
Power used	kW	65.9
Air flow	m^3/h	1700
Butane and propane		
Maximum feed pressure	mbar	35
Minimum feed pressure	mbar	25
Burner pressure for maximum power	mbar	29
Natural gas		
Maximum feed pressure	mbar	25
Minimum feed pressure	mbar	17
Burner pressure for maximum power	mbar	20
Electrical characteristics		
Voltage	VAC	230(195 to 253)
Frequency	Hz	50
Maximum absorbed power	W	350
Intensity	A	1.5
Electrical protection		PC16A
Electrical class		1 ⏚
Dimensions and weight		
Height	mm	849
Width	mm	482
Depth	mm	619
Weight	kg	65
Orifice Size [I3+(28-30/37), I3B/P(30)]	mm	4.95
Orifice Size [I2H(20)]	mm	8.95
Use and storage temperature	°C	-20+90
CE number		0845CR0060

SYSTEL®
Heating mastermind

SYSTEL
4,ruedel'EssartRocher
44140LEBIGNON–France
Tel.:0033(0)251852555
Fax:0033(0)251852468
Email:systel@systelinternational.fr

www.systel-linternational.com

Doc_SunPower_00
01/2016