

# DOMEO 210 RD DOMEO 210 RD SC









# **CONTENTS**

- 1. General information
- 2. Technical information
- 3. Installation
- 4. Characteristics and electrical connections
- 5. Commissioning the DOMEO
- 6. Operating the DOMEO
- 7. Maintenance
- 8. Putting out of service and recycling

# The following items are included:

- 1. 1 x DOMEO 210 RD
- 2. 1 x remote control
- 3. 1 x console programming (Excepting Domeo 210 RD SC model)
- 4. 1 x wall bracket
- 5. 2 x drain ducts
- 6. 1 x drain connection for air-conditioned houses
- 7. 1 x cable gland M16
- 8. 1 x 3 connections tab
- 9. 1 x Instruction manual



# 1. GENERAL INFORMATION

# 1.1 - Introduction

This manual is intended for the use of the central balanced-flow high efficiency DOMEO and its peripherals (ductwork, vents, controllers).

It is designed to provide clear and safe guidance for the design, installation and use of the product.

The products are constantly evolving and so, Soler & Palau reserves the right to modify this manual without prior notice.

# 1.2.- Warranty and Liability

# Warranty

The DOMEO heat recovery system has three years warranty from the date of purchase. This warranty includes free delivery of necessary spare parts.

# The warranty does not cover:

Installation and removal costs

Defects that, in the opinion of Soler & Palau, are due to improper installation, handling, neglect or accidental damage.

Those defects that arise as a result from operations or repair performed by a third party without permission from Soler & Palau.

To return a defective part, the user should contact their installer.

# Liability

DOMEO is designed for ventilation systems in individual dwellings.

Soler & Palau is not responsible for damage caused by:

- Improper use,
- Normal wear of components,
- Failure to follow the instructions in this manual concerning safety, use and installation.
- The use of parts not supplied by Soler & Palau.

# 1.3.- **Safety**

# **General health and safety standards**

The heat exchanger DOMEO has been designed to be incorporated into a ventilation system.

Following installation, there should be no risk to safety, health and the environment according to EC directives. This also applies to other products used in the installation.

The following general guidelines are important:

Follow the safety instructions to prevent injuries and damage to the motorised fans.

The technical characteristics described in this manual may not be changed.

The motorised fans must not be modified.

The motorised fans must be supplied with a single phase AC supply of 230 V / 50 Hz.

So that the installation complies with **EC** directives, the DOMEO must be connected to the electricity grid according to current national standards.

The device must be installed so that under normal operating conditions, there is no risk of contact with moving parts and power.

The DOMEO meets legal requirements for electrical equipment.

Before working on the machine, always turn the power off.

Use appropriate tools.

Use the machine only for the purpose for which it is intended.



# 2. TECHNICAL INFORMATION

# 2.1.- General information

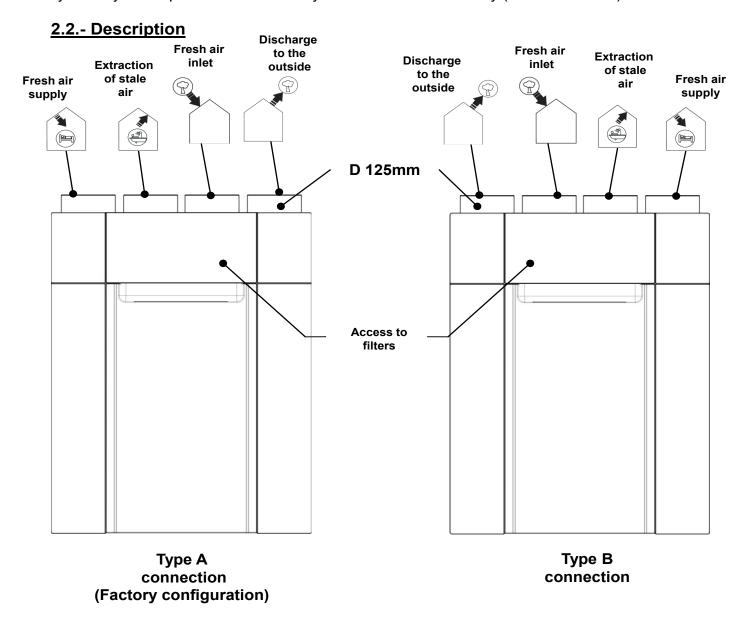
The DOMEO ensures optimum ventilation of a house with a maximum energy recovery. It draws air from the rooms (bathroom(s), toilet, kitchen and wash room(s)) and supplies fresh air through the main rooms (living room, bedroom (s), office, etc.)

The fresh and extract airflows are separated and filtered. Only heat energy is transferred to the fresh filtered air that is introduced. Due to the high-efficiency heat exchanger used in the DOMEO performance can reach 92%.

Condensation forms during the heat exchange process and is recovered in the condensate tray, which must be connected to a waste water drain.

The DOMEO is equipped with a double condensate drain system that allows use in winter and summer for heated homes.

The DOMEO has a 100% heat exchanger bypass system and this allows the introduction of fresh air at night without it being heated by contact with warm air accumulated in the house during the day. The system operates automatically or can be used manually (see section 5-2).



With the DOMEO you have the possibility to choice the connecting ductwork side.





# Fresh air inlet:

This spigot is to connect the supply duct of fresh air from outside. Install the fresh air intake (wall or roof) a sufficient distance from any area of high pollution (trees, exhaust fumes, road, etc).

This duct must be sealed and insulated to prevent condensation on the outside and inside.





# Fresh air supply:

Connect the supply air duct from living room and bedrooms

To avoid thermal losses, it is recommended to use insulated ducts for the warm air.



# Extract air:

Connect the extract duct from the toilets, bathrooms and the kitchen.

To avoid thermal losses and optimise the performance of the installation, it is recommended to use insulated ducts for the warm air.

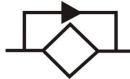


# Discharge of extract air:

Connect the discharge duct to the outside.

This duct must be well sealed and thermally insulated to avoid condensation both on the inside and outside.

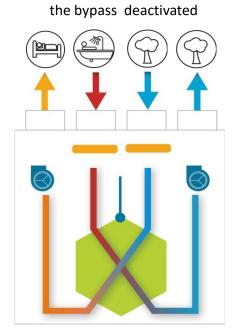




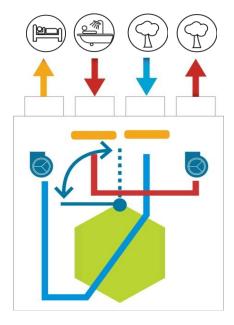
# By-pass:

Having avoided the heat exchanger, the 100% by-pass system of the IDEO allows the introduction of cooler fresh air in the night without it being warmed by the warm air accumulated into the house during the day.



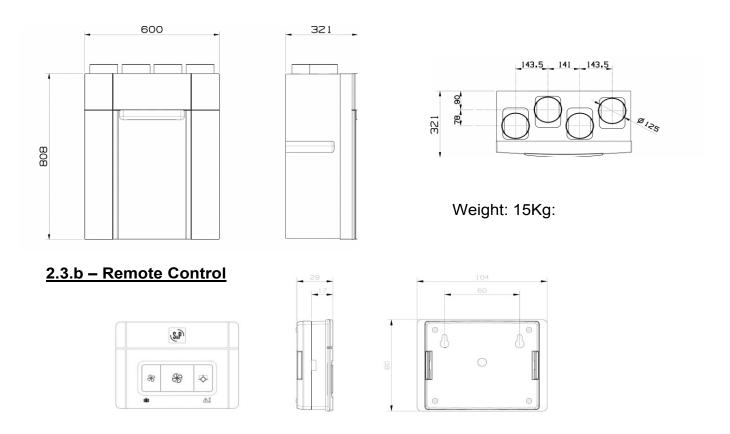


Operation with the bypass activated



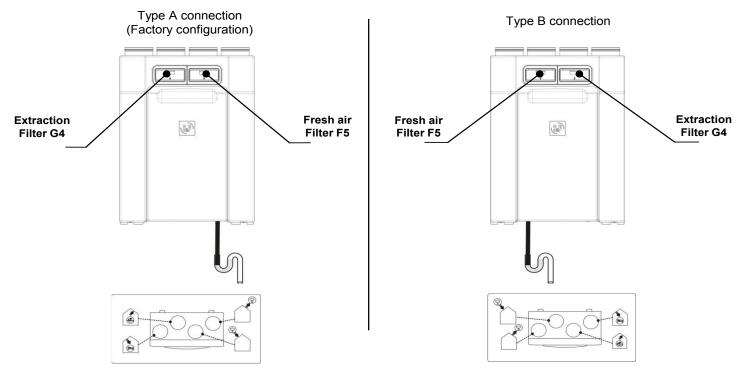


# 2.3 - Dimensional characteristics 2.3.a - Central:

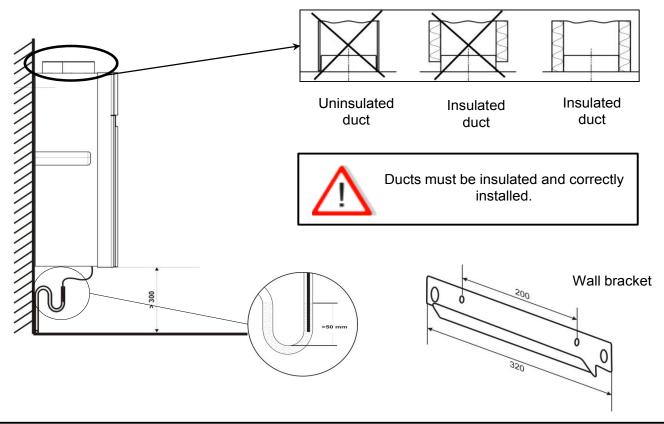


# 3 - INSTALLATION

Depending on the ductwork configuration, you have the possibility to modify the connecting side, Type A (Connection of the condensation drain on the right) or Type B (Connection of the condensation drain on the left). In case of Type B, you must <u>invert the filters</u>.









It is advisable to install the DOMEO in the heated area of the house. If not, it is mandatory to isolate the condensation drain.



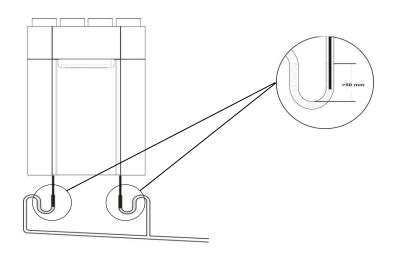
In areas where temperatures are regularly negative or can drop below -10°C, it is advisable to install a preheating battery.



The Domeo can be installed far away of the bedrooms and inside a room with acoustic treatment (technical room, cupboard, ...).

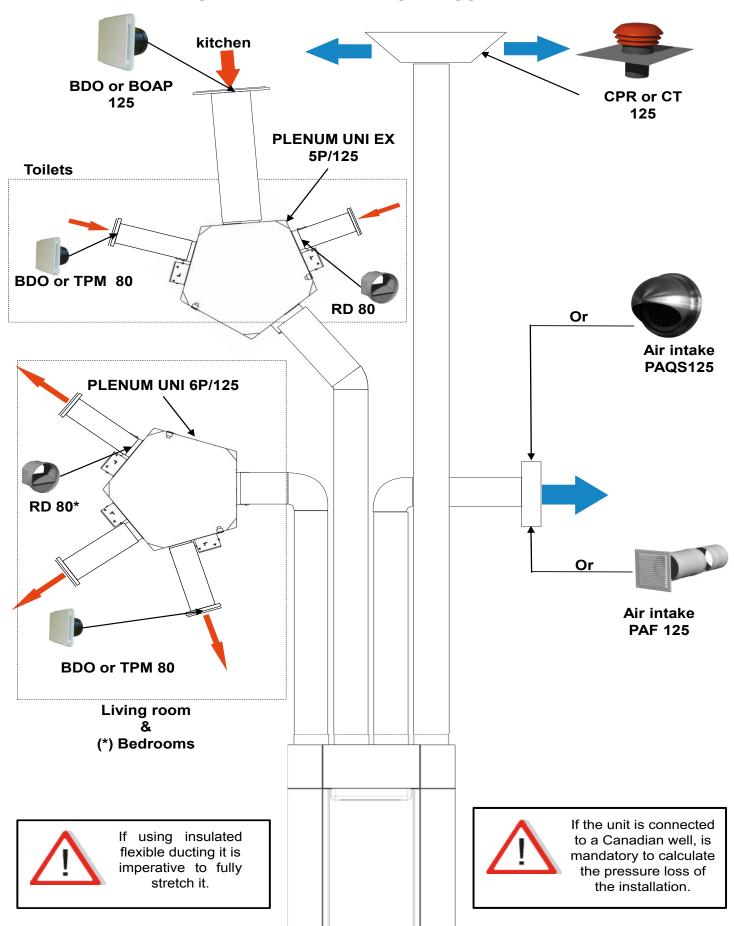
# Air-conditioned house

In summer, in this configuration, the condensation is generated on the other side of the heat exchanger. So, DOMEO is equipped with a dual condensate drain system.



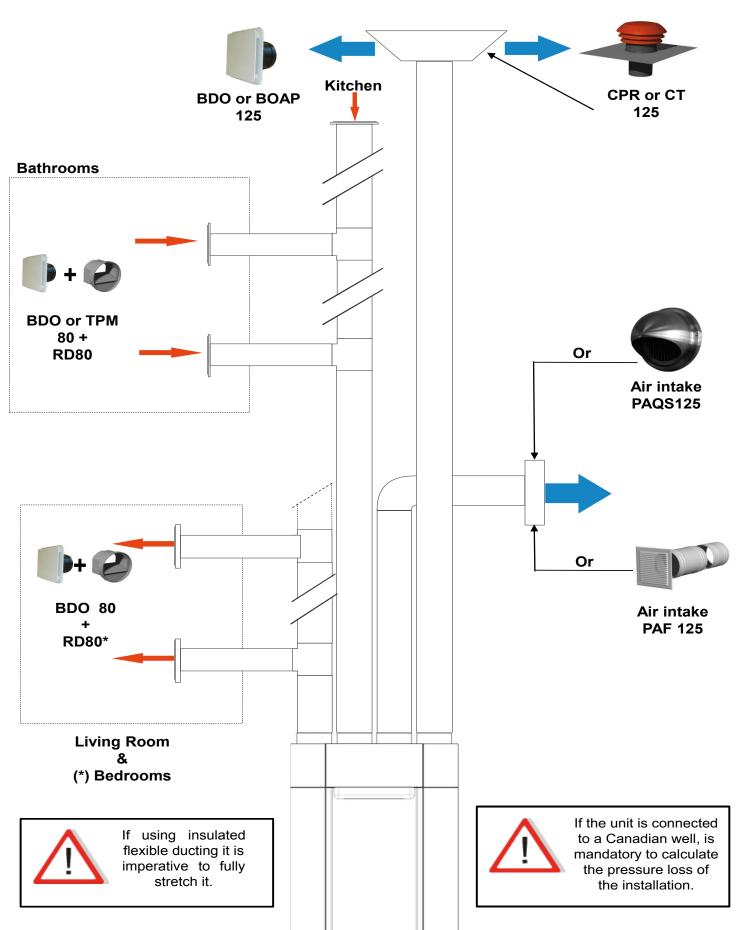


# SAMPLE "REPARTITION" ASSEMBLY





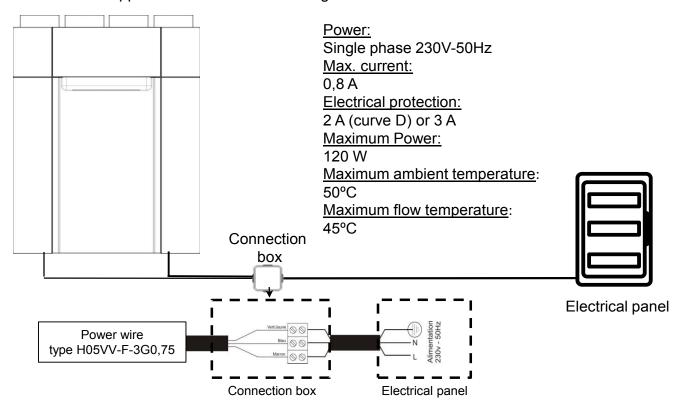
# **SAMPLE "DISTRIBUTION" ASSEMBLY**





# 4 - CHARACTERISTICS AND ELECTRICAL CONNECTIONS

Connect the supplied cable to the mains using a sealed connection box.



# MODBUS network

Use shielded cable and twisted-pair type PAR-POS 2x2x0,34.

# Free voltage contact connection

Pass the cable through the interior of ferrite type WE 742 727 33 MnZn twice.



# Installation of cable glands











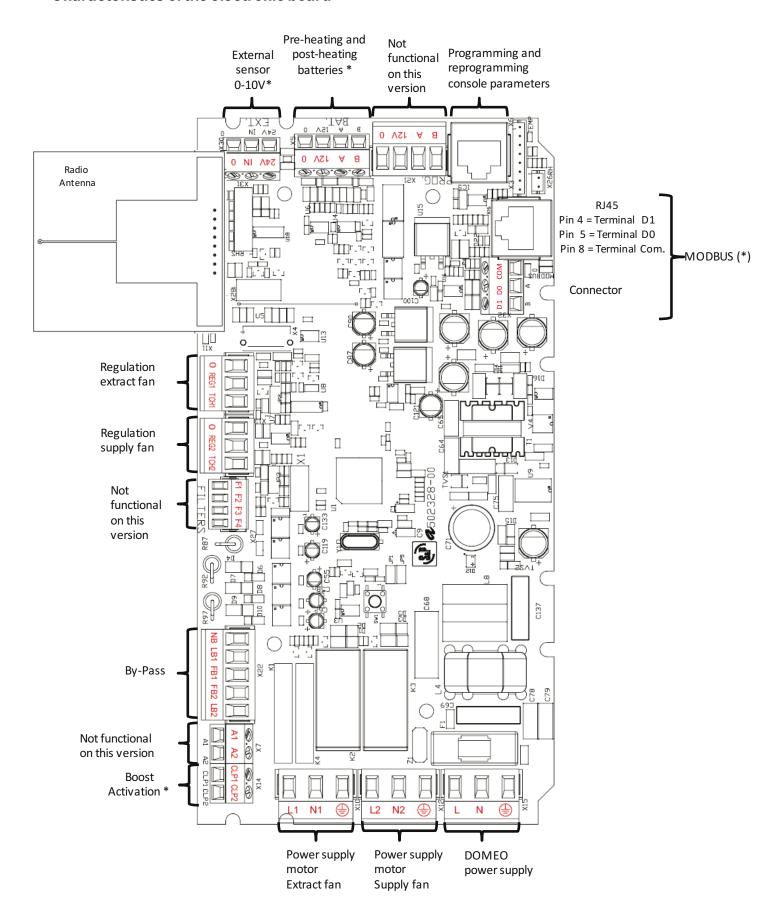




In areas where temperatures are regularly negative or can drop below -10°C, it is advisable to install a preheating battery.



# - Characteristics of the electronic board



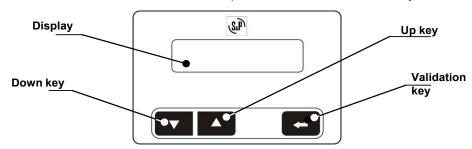
<sup>\*</sup> Not provided



# **5 – MANAGING OF THE DOMEO**

<u>5.1 – During the installation:</u>
The programming console allows adjust the commissioning settings and see the different parameters of the installation.

For Domeo 210 RD SC model the console must be purchased as an accessory.



MENU	OPTIONS	VALUES	FACTORY SETTING
	Language	English, Francais, Español, Deutsch, Italiano, Nederlands	English
		D	<b>V</b>
SET UP	synchronisation mode	Remote control 1, 2,3,4	[1
INSTALLATION	Volt free contact	NO/NC	NO
	Preheating battery	Yes/No	No
	Post-heating battery	Yes/No	No
	Air Interior Quality sensor (AIQ))	Yes/No	No
	Connection type	A / B	A
	Airflow units	m³/h / l/s	m <sup>3</sup> /h
	Unbalancing Airflow	-15%,+15%	0
	Airflow setting:		
	- Low Airflow	60,210 m <sup>3</sup> /h	60 m <sup>3</sup> /h
	- High/Boost Airflow 30 minutes	60,210 m <sup>3</sup> /h	120 m <sup>3</sup> /h
	- Free cooling 8H	60,210 m <sup>3</sup> /h	210 m <sup>3</sup> /h
	AIQ sensor setting parameters		
	Value QMini 0-10V	60,210 m <sup>3</sup> /h	60 m <sup>3</sup> /h
	Value QMaxi 0-10V	60,210 m <sup>3</sup> /h	120 m <sup>3</sup> /h
	Value VMini 0-10V	0-10V	0
	Value VMaxi 0-10V	0-10V	10
	Automatic Bypass	On/Off	ON
	Toext conditon > Auto Bypass	11,20°C	+ 12°C
	Taint condition > Auto Bypass	21,30°C	+ 24°C
	Manual Bypass timer	1,24 Hours	8 H
	Defrost type	Intake air diminution / Stop	
	Preheating battery :		
	- Temperature ON	-15,5°C	0°C
	- Temperature OFF	-5,10°C	+ 5°C
	- Constante temperature	+1,10°C	+ 4°C
	Post-heating battery:		
	Constante comfort temperature	12,30°C	+ 18°C
	Factory parameters reset	Yes/No	No

READING	Couverture Radio	0,25,50,75,100%	
PARAMETERS	Current airflow	60,210	
	Defrost mode	On, Off	
	Batteries	Préheating: On/Off - Post-heating: On, Off	
	Sofware version	V0.0	
	Extract motor	Error, Ok	
	Supply motor	Error, Ok	
	Bypass	Error, Ok	
	Communication	Error, Ok	
	Sensors	Error, Ok To Extract, Discharge, Fresh air, Supply	
		T <sup>a</sup> Extract	
		Tº Discharge	
		T <sup>a</sup> Fresh Air	
		Tº Supply	
	Installation test	Very good, Good, Acceptable, Bad	Off



# 5.1.a - Adjust setting:

1. To connect the programming console, unscrew the both screws located on the lower part of the DOMEO, remove the filters cover and then the front cover.







2. Connect the programming console with RJ45 plug located on the right of the electronic board.



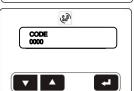
3. Setting of the installation parameters.



# Choice of the language:

Enter with the key

Move with the keys and confirm the language with the key and move to the next step with the key.



# Code: 33

Enter the code with the key and confirm with the key , then move to the next step with the key .

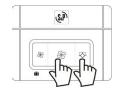


# **Synchronization:**

The DOMEO could be piloted by a maximum of 4 remote controls. For only 1 remote control always use the no1.

To bind each remote control follow the next:

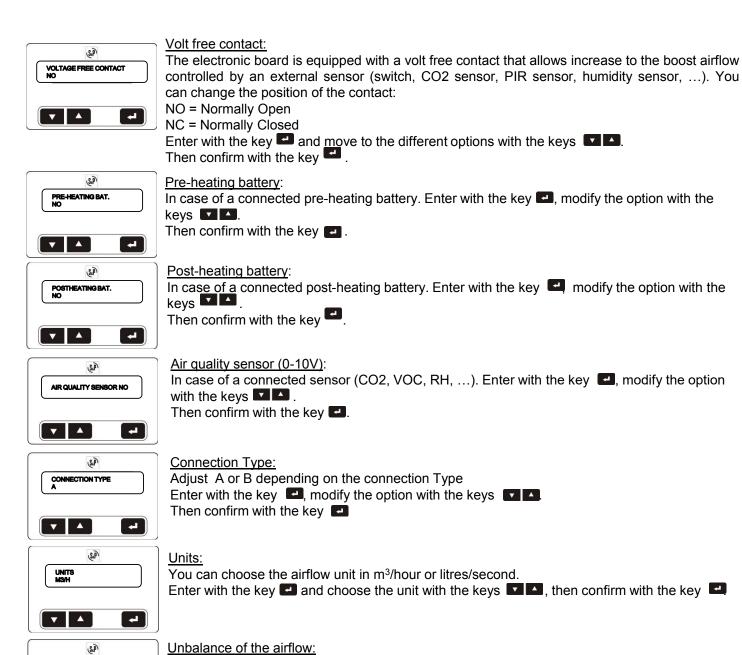
On the remote control 1 push on the both keys as indicated in the attached image:



Then, in the control panel place on the screen "remote control 1' with the keys and push the key . The "remote control 1' will be deleted, it will start flashing ----- and will begin the bonding process. Then, the code of the remote control will appear when the remote control and the DOMEO are bound. For the other remote controls (2, 3 et 4) repeat the action by assigning a specific number with the keys.

Enter with the key and move to the different options with the keys .





<u>Unbalance of the airflow:</u>

# This setting could be necessary in case of: 1 – Case of an open chimney:

UNBALANCE AIRFLOWS

4

▼ ▲

In this case, it's necessary to make an airflow aportation equivalent at the stack effect airflow. In this case there are two possibilities:

- a. Make a specific air inlet. In this case ensure that it's sealable.
- b. Add an additional intake airflow using the DOMEO corresponding at the stack effect airflow

# Follow these recommendations:

- . Watch that all doors, windows, ... are securely closed,
- . Light the chimney fire,
- . Adjust the unbalance airflow up to reach the good chimney performance

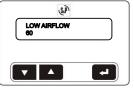
# 2. Case of unbalance between the intake and extract airflows:

It could be possible when one of the both ductworks is advantaged or disadvantaged.

Enter with the key and modify the unbalance value with the keys . then confirm with 

This setting is done by the intake airflow compared to the extract airflow.





# Low airflow:

Setting of the low airflow/low speed.

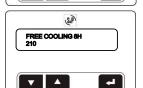
Enter with the key choose the airflow value with the keys , then confirm with the key .



# Boost/High airflow:

Setting of the high/boost ½ hour temporized airflow.

Enter with the key choose the airflow value with the keys , then confirm with the key .



# Free cooling airflow:

Having avoided the heat exchanger, the 100% by-pass system of the IDEO allows the introduction of cooler fresh air in the night without it being warmed by the warm air accumulated in the house during the day.

This system works automatically with this conditions:

- To inner >1+ To outer and To inner > 24°C and To outer> 12°C,

The specific airflow can be adjusted to optimize the cooling nigh time or free cooling (see paragraph 5-1-a)

If you want, you can manually switch on the by-pass mode for a period of 8 hours, by pressing the by-pass button. During this operation it is possible to cancel this function by pressing the by-pass key once more.

Enter with the key choose the airflow value with the keys , then confirm with the key .



# Low airflow air quality sensor\*:

Setting of the minimum airflow.

Enter with the key choose the airflow value with the keys ...

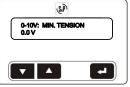


# High airflow air quality sensor\*:

Setting of the maximum airflow.

Enter with the key choose the airflow value with the keys ,

then confirm with the key .



# Minimum voltage of the air quality sensor\*:

Setting of the minimum voltage.

Enter with the key choose the voltage value with the keys ,

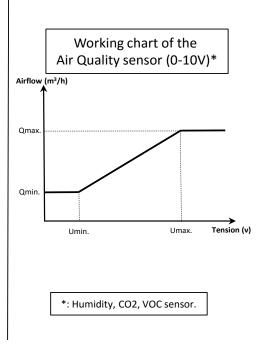
then confirm with the key .

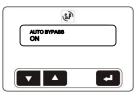


# Maximum voltage of the air quality sensor\*:

Setting of the maximum voltage.

Enter with the key choose the voltage value with the **L** 





# Automatic By-pass:

You can activate or deactivate the automatic function for the by-pass.

Enter with the key , choose activate (ON) or deactivate (OFF) with the keys then confirm with the key.

If it is deactivated, you can always switch on the bypass with the remote control.



# Text Automatic By-pass:

You can modify the outdoor bypass activation temperature.

Factory setting: +12°C

Setting range: +11 - +20°C

Enter with the key , modify the temperature with the keys ...,





# Tint automatic bypass:

You can modify the internal bypass activation temperature.

Factory setting: +24°C Setting range: +21 - +30°C

Enter with the key , modify the temperature value with the keys . then confirm with the

key 🔼.

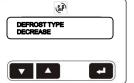


# Manual bypass delay:

You can modify the bypass delay when is manually activated.

Factory setting: 8H Setting range: 1 – 24H

Enter with the key , modify the delay with the keys , then confirm with the key ...



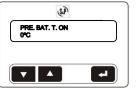
# Type of defrost:

You can choose two types of defrost control:

1 – By reduction of the intake airflow (very tight home or temperate climate)

2 – By shutdown of the intake airflow (not very tight home or cold climate)

Enter with the key and choose the type of defrost with the keys then confirm with the key 🔼.



# Start-up of the preheating temperature:

Allows adjust the start-up temperature of the preheating temperature.

Factory setting: 0°C

Setting range: -15°C - +5°C

Enter with the key and choose the temperature with the keys then confirm with the key .



▼ ▲

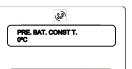
# Shutdown of the preheating temperature:

Allows adjust the shutdown temperature of the preheating temperature.

Factory setting: +5°C

Setting range: -5°C - +10°C

Enter with the key and choose the temperature with the keys . then confirm with the key 🔼 .



# Constant temperature of the preheating battery:

Allows adjust the constant temperature downstream the preheating battery.

Factory setting:= +4°C

Setting range: +1°C - +10°C

Enter with the key and choose the temperature with the keys . then confirm with the kev <a>E</a>.



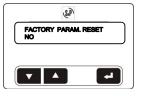
# Constant temperature of the post-heating battery:

Allows adjust the constant temperature downstream the post-heating battery.

Factory setting: +18°C

Setting range: +12°C - +30°C

Enter with the key and choose the temperature with the keys then confirm with the kev 🔼 .



# Factory parameters reset:

Allows to reset the DOMEO.

Enter with the key and choose YES or NO with the keys ., then confirm with the key **2**.



# View of the operating states.



# View of the operating states:

Allows viewing the operating DOMEO states.

Enter with the keys

To move, use the keys

# Coverage radio signal:

Allows viewing the radio range of all remote controls appeared with DOMEO.

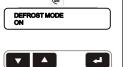
Push on one key of the remote controls.

1 - 000%2 - 000%3 - 000%4 - 000%Value > 50 % : Good coverage

Value < 50%: Possible communication troubles

# Current airflow:

Allows viewing the working airflow.



# Defrost:

Allows viewing if the Domeo is in defrost mode.

ON = Defrost in operation

OFF = Defrost stopped



# **Battery status:**

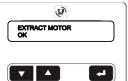
Allows viewing if the preheating (PRE) and post-heating (POST) batteries are running.

PRE OFF = Stopped PRE ON = Working POST OFF = Stopped POST ON = Working



# Software version:

Allows viewing the installed software version.



# Extract fan motor:

Allows viewing operating extract fan motor state.

OK: Working

**ERROR**: Dysfunction

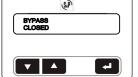


# Intake fan motor:

Allows viewing operating intake fan motor state.

OK: Working

ERROR : Dysfunction



# Bypass:

Allows viewing the operating bypass state.

CLOSED: On hold **OPEN**: Working

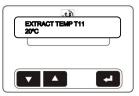


# Temperature sensors:

Allows viewing the operating temperature sensors state (OK or ERROR).

T11: Extract sensor T12: Discharge sensor T21: Fresh air sensor T22: Supply air sensor





# Extract temperature sensor:

Allows viewing the temperature on the extract ductwork upstream of the core.

Temperature range: -30°C - +50°C



# Discharge temperature sensor:

Allows viewing the temperature on the discharge ductwork downstream of the core .

Temperature range: -30°C - +50°C



# Fresh Air temperature sensor:

Allows viewing the temperature on the fresh air ductwork downstream of the core . Temperature range: -30°C - +50°C



# Supply air temperature sensor:

Allows viewing the temperature on the supply air ductwork downstream of the core . Temperature range: -30°C - +50°C



INSTALLATION TEST

**V** A

Installation test:

Allows testing the pressure loss of the installation.

Enter with the key and modify the value « OFF » to « ON » with the key . then confirm with the key ..., « TESTING » appears and after few seconds the installation level appears:

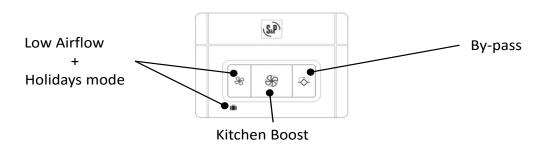
- Very good
- Good
- Acceptable
- Bad



# 5.2 - During use

The remote control allows the user to:

- Activate the boost for ½ hour.
- Return manually to the minimum airflow
- Put DOMEO in holidays mode
- · Manually switch on the by-pass mode
- Reset filters alarm



The remote control put on the "energy saving" mode after 10 seconds, switching off all LEDS.

Pushing on one of the keys the function LED activated lights.



# Minimum airflow (Trickle): (Flashing green LED)

When the DOMEO is in Boost mode, it is possible, by pressing the left button, to return to the minimum airflow before  $\frac{1}{2}$  hour has elapsed



# Boost: (Flashing green LED)

A button that enables the boost airflow for 30 minutes to be selected in ½-hour steps.



# By-pass: (Flashing green LED)

On having avoided the heat exchanger, the 100% by-pass system of the

DOMEO allows the introduction of fresh air in the night without being warmed by the warm air accumulated in the house during the day.

This system works automatically with this conditions:

- To inner >1+ To outer and To inner > 24°C and To outer> 12°C,

The specific airflow can be adjusted to optimize the cooling night ime or free cooling (see paragraph 5.1.a 3)

If you want , you can manually switch to by-pass mode by pressing the by-pass button. During this operation it is possible to cancel this function by pressing the by-pass key once more.



# Holidays mode: (Flashing red LED)

Press the left key for 3 seconds to activate Holidays mode (50% of minimum airflow). It is possible to return to normal mode by pressing the same key once more.



# Filters alarm: (red LED):

DOMEO alerts when the filter timer has arrived to the limit lightning a red LED on the right hand key. The factory setting is 9 months after commissioning or changing the filters. You must change the filters.

If the 9 month interval is not ideal for the configuration or use of your installation (filters too dirty or clean) it is possible to adjust this setting from 6 to 15 months (in 3 monthly steps – see paragraph 5-1-b)

Once changes have been made push the button 3 seconds to deactivate the alarm and reset the timer.

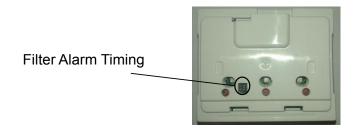


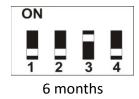
# Filter timer settings:

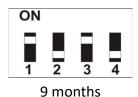
It is possible to set the timing to 6, 9, 12 or 15 months (9 months factory setting). Fouling is linked to the external environment (pollution, pollen,..) and the use of housing (dust, cooking fats..). It is advisable to modify this parameter after the second alarm. Of course, after the installation, the extract air is dusty and not representative of a normal conditions. During the second filter check, if you notice that the filters are clean you can increase the time (12 or 15 months). However, if you notice that the filters are very dirty, you should decrease the time (6 months).

To modify the filter alarm timing:

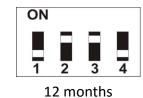
- 1. Open the remote control box.
- 2. Set the micro contacts 1 and 2 by the number of months to suit your installation.

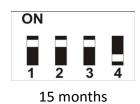






(Factory settings)

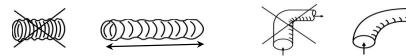




# 6 - SWITCHING ON THE DOMEO

To start your DOMEO unit use the following process:

- 1. Verify that all system components are correctly installed and connected:
  - Fresh air intake duct insulated and connected correctly (Do not use a fresh air intake equipped with insect screen)
  - Fresh air and exhaust ducts insulated and connected correctly
  - Fresh air and exhaust vents connected
  - Flow regulators mounted in the right direction (if installed)
  - Air outlet using insulated duct and connected to the outside (Using a roof cowl or outlet without an insect screen)
  - Insulated flexible ducts taut and large radius bends (if installed)



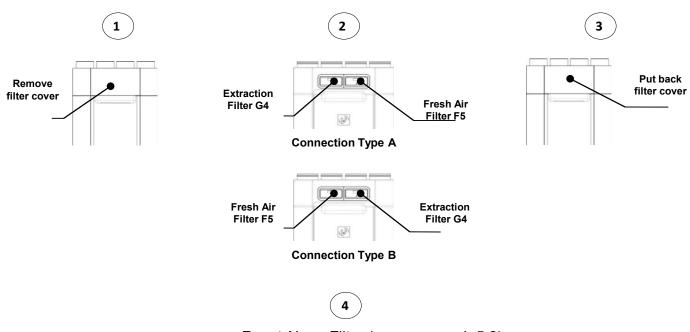
- Check that the unused spigots on plenums are sealed (if installed)
- Condensation drain well connected (siphon)
- Check that all connections are sealed (on the DOMEO, on plenums and valves)
- · Check the setting of the power circuit breaker
- 2. Turn on the DOMEO
- 3. Adjust the parameters as shown in paragraph 5.1 a.



# 7 - MAINTENANCE

Looking for a durable ventilation system, it is mandatory to carry out the maintenance correctly.

Filter change according with the filter alarm settings



Reset Alarm Filter (see paragraph 5.2)

Every 5 years: Remove the dust from the core with a vacuum cleaner.









Remove the core hardly with the help from the strip

• Every 6 months:

Clean the bathroom and kitchen exhaust vents with warm water and soap. Remove dust from the air output vents in the main rooms.

# 8 — PUTTING OUT OF SERVICE AND RECYCLING



EEC legislation and our consideration of future generations mean that we should always recycle materials where possible; please do not forget to deposit all packaging in the appropriate recycling bins. If your device is also labeled with this symbol, please take it to the nearest Waste Management Plant at the end of its servicable life.



# **S&P SISTEMAS DE VENTILACIÓN, S.L.U.**

C. Llevant, 4 Polígono Industrial Llevant 08150 Parets del Vallès Barcelona - España

Tel. +34 93 571 93 00 www.solerpalau.com



