

Modul-Air

Green Comfort

Installation and
commissioning manual



Preface

Dear installer,

You are about to install and commission a Joule Modul-AIR GreenComfort module. Before you start installing the Joule Modul-AIR GreenComfort (hereafter referred to as GreenComfort), make sure that you have completely read and understood this manual.

To successfully install the GreenComfort, it must be installed in combination with the Joule Modul-AIR. Please refer to the supplied installation manual. In addition, both an installation and a ventilation indicator of the Modul-AIR and GreenComfort are available. These hands contain the most important information of the installation process and the design of a ventilation system respectively.

The GreenComfort complies with European directives and additional national regulations, which are indicated in a CE marking. The corresponding declaration of conformity can be requested from Joule.

The GreenComfort complies with protection class IPX2.

Based on the experience of the installers, we want to further improve the GreenComfort. Your feedback on the product, installation and this manual is appreciated.

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1. Introduction

1.1 WHO IS THIS MANUAL FOR?

This manual is intended for the professional installer. The installer must be certified by Joule and have successfully completed the Modul-AIR training. The installer does not need to be in possession of a STEK or F-gas certification.

The purpose of the manual is to support you in installing the GreenComfort safely and correctly.



Warning!

Specific knowledge is required to install the GreenComfort correctly. If you are not certified by Joule you may not install the GreenComfort.

1.2 INTENDED AND UNINTENDED USE

The GreenComfort is only used in combination with the Modul-AIR to provide a home with balanced ventilation. The GreenComfort may only be installed according to the instructions in this manual.

Any other use is considered unintended use and can lead to damage to the GreenComfort and/or personal injury. Always follow the instructions in the accompanying manual(s) and if in doubt, contact Joule.

1.3 SYMBOLS USED IN THIS MANUAL

Various symbols are used in this manual:



Warning!

This symbol indicates that the installer runs the risk of injuring himself or others (seriously) or seriously damaging the product.



Carefully!

This symbol indicates that damage to the product may occur.



Look out!

This symbol indicates a note with additional information for the installer.



Tip!

This symbol indicates suggestions and advice for the installer to make certain tasks easier or more convenient.

1.4 NAMEPLATE AND SYMBOLS ON THE PRODUCT

Important information about the GreenComfort can be found on two type plates and on symbols on the product.

1.4.1 THE RATING PLATE

The type plate provides information about the GreenComfort (figure 1). The type plate is mounted on the underside and on the front under the front plate, as shown in figure 2. The front plate is magnetically attached and is easy to remove.

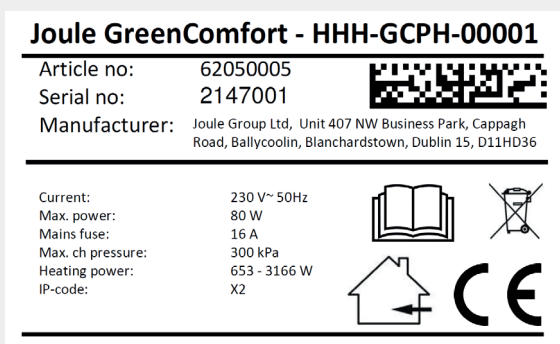


Figure 1 The type plate of the GreenComfort.

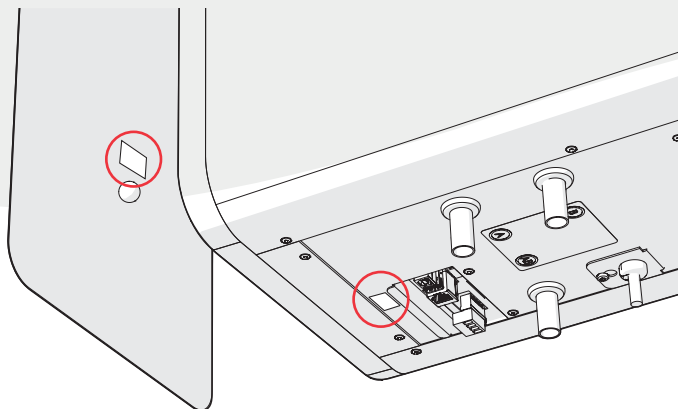


Figure 2 The location of the rating plate.

Serial Number

On the type plate you will find, among other things, the article number and the serial number (figure1). These two numbers form a unique combination that is used to identify the GreenComfort during installation or maintenance.

1.4.2 SYMBOLS USED

The symbols on the type plate and on the GreenComfort mean the following:



CE MARKING

This is the CE logo with which Joule indicates that the product meets the legal requirements.



FOR INDOOR USE ONLY

This symbol indicates that the product may only be used indoors.



READ THE MANUAL

This symbol indicates to the user that the manual should be consulted.



WEEE MARKING

This symbol indicates that the product must not be disposed of with household waste. The product must be collected separately.



LOGO MATERIAL CODE PP

This logo is applied to the housing and indicates the use of polypropylene.



LOGO MATERIAL CODE ABS

This logo is applied to the housing and indicates the use of ABS.

2. Safety

The safety instructions in this chapter must be followed to install and maintain the GreenComfort safely. Please read this chapter carefully. Some instructions are repeated throughout this guide to remind you at the right time.

2.1 GENERAL

**Warning!**

Handle electrical appliances with care:

- Never touch the device with wet hands.
- Never touch the device when you are barefoot.

**Warning!**

The product must not be modified.

2.2 INSTALLATION

**Warning!**

Risk of electric shock. Always disconnect the GreenComfort from the power supply before installing, opening or performing maintenance on the product. Secure the product against unintentional restart.

**Warning!**

Risk of electric shock and/or burns. Disconnect the other heat-producing devices within the central heating system before connecting the GreenComfort to the central heating pipe. Think of the central heating boiler, electric instantaneous heater and the Modul-AIR. Always adhere to the specific conditions that apply to the other heat-generating appliances. If in doubt, contact the device supplier.

**Warning!**

Make sure that the GreenComfort remains voltage-free during installation, until it is explicitly stated that voltage is allowed on the device. Make sure that the plug is accessible in case of calamities.

**Warning!**

The appliance is only suitable for a power supply of 230 VAC / 50 Hz and may only be connected to an earthed socket with a 16A fuse.

**Warning!**

The electrical system to which the product is connected must meet the conditions as stated in the electrical connection diagram (§4.3.4).

**Warning!**

Do not install the GreenComfort higher than 2000 meters above sea level.

**Carefully!**

Risk of damage to the product. Install the GreenComfort in a room that is frost-free.

**Carefully!**

Only hang the GreenComfort with the supplied fasteners.

2.3 MAINTENANCE

**Warning!**

Only service technicians specially trained by Joule are allowed to carry out maintenance work on the GreenComfort and other Joule products.

**Warning!**

Always replace parts of the GreenComfort (for example the cord) with original parts from Joule. Using other parts may cause the product to malfunction or pose a hazard.

2.4 CHILDREN AND OTHER VULNERABLE USERS



Warning!

This product may 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 this product in a safe way and are aware of the the hazards of the product and/or system.

2.5 TRANSPORT & STORAGE



Warning!

Always move the GreenComfort with at least two people.



Carefully!

Risk of damage to the product. Always transport the GreenComfort in the box. Only remove the device from the box at the place where the installation will take place. Secure the device against falling.



Look out!

The temperature in the storage room should be between -10°C and 40°C. The humidity may not exceed 80%.

3. GreenComfort

3.1 GENERAL PRODUCT DESCRIPTION

By adding the GreenComfort to the Modul-AIR, a house can be ventilated on the basis of balanced ventilation (ventilation type D). The GreenComfort draws in fresh outside air, which is first filtered and then heated. The air is then conveyed to the respective occupied areas via separate ventilation ducts. Conversely, used and polluted indoor air is discharged by the Modul-AIR. The heat from the exhaust air is then returned to the form of hot central heating and tap water and via the GreenComfort in the form of warm supply air.

3.2 MAIN PARTS

The main components of The GreenComfort are shown in figure 3:

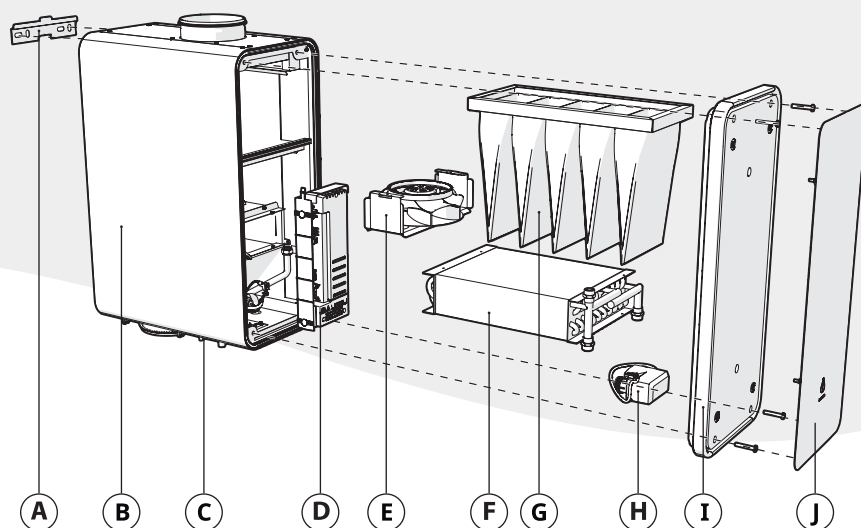


Figure 3 Main components of the GreenComfort

A	wall bracket	E	Fan	I	Front
B	Housing	F	Heat exchanger	J	Front plate
C	Connections (see §4.3.1)	G	Air filter		
D	Control unit	H	three-way valve		

3.3 REPLACEMENT PARTS AND ACCESSORIES

The following replacement parts and accessories are available for the Green Comfort:

Part	Article number
Replacement filter	S1011771
Motor three-way valve	S1013012
Valve body three-way valve	S1013011
Fan	S1012729
Control unit	S1013483
Temperature sensors	S1013412
I/O print	S1012733

3.4 TECHNICAL SPECIFICATIONS

The dimensions of the GreenComfort are shown in figure 4. A full list of technical specifications can be found in the appendices of this manual.

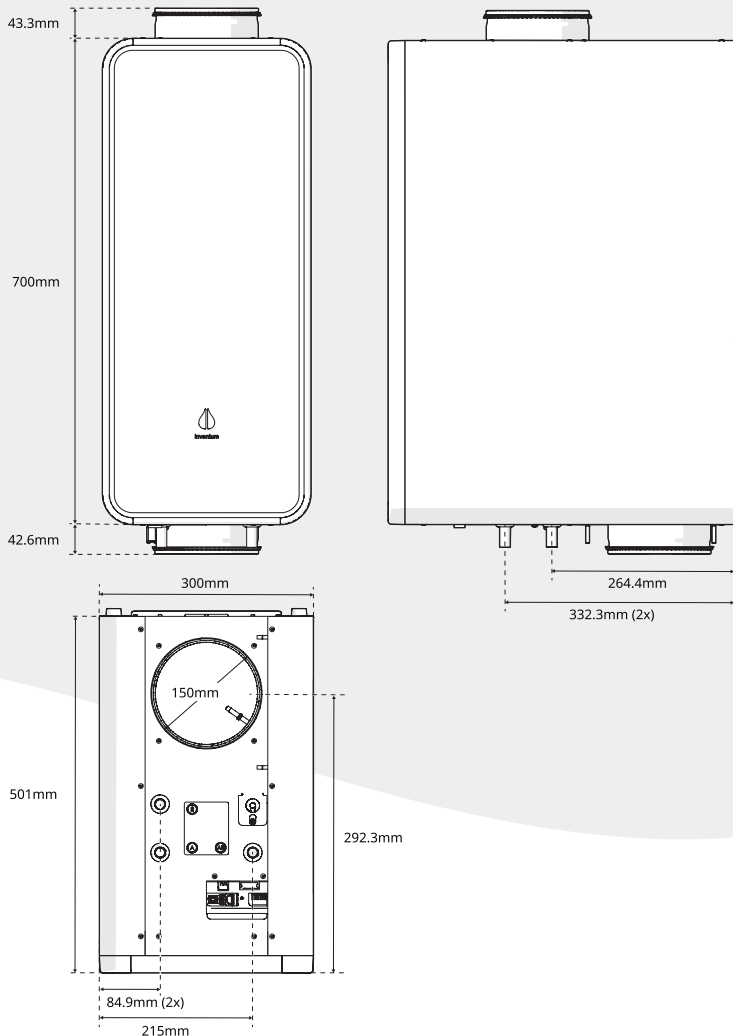


Figure 4 The dimensions of the GreenComfort.

4. Install GreenComfort



Look out!

A separate installation and commissioning manual is available for the Modul-AIR.

4.1 TO PREPARE

4.1.1 CHECK CONTENTS OF THE BOX

Unpack the GreenComfort and check whether all parts are present (figure 5).

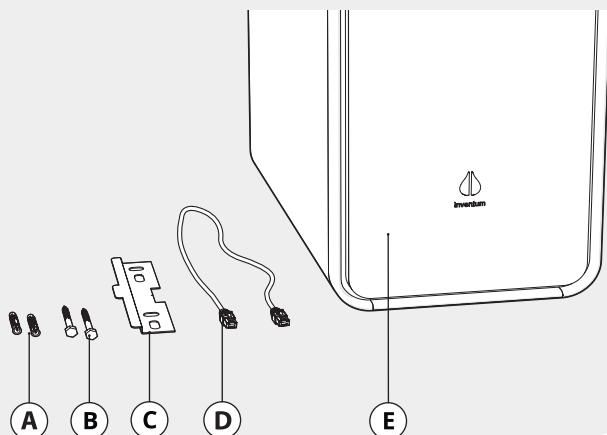


Figure 5 All necessary parts for installing the GreenComfort.

A	Plugs (2x 12 mm)	D	UTP cable (3 meters)
B	Woodturning bolts (2x)	E	GreenComfort
C	wall bracket		

4.1.2 CHECKING THE ROOM

The GreenComfort must be hung next to the Modul-AIR, within reach of the UTP cable (approx. 2.5 meters). Check if there is enough space. Figure 6 shows the minimum space required in front of, below, above, next to and between the GreenComfort and Modul-AIR again.

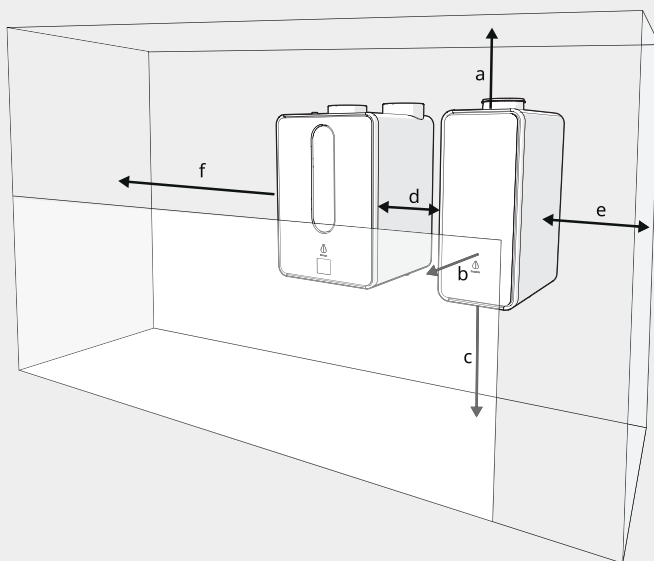


Figure 6 Required space around the Green Comfort.

a	Minimum 300mm	d	Maximum 2.5 m
b	Minimum 500mm	e	Minimum 10 mm
c	Minimum 300mm		
f	Minimum 10 mm (when using the top connection for incoming ventilation air)	Minimum 300mm (when using the side connection for incoming ventilation air)	



Look out!

When installing the GreenComfort and Modul-AIR, make sure that you place the ventilation air supply and exhaust of the appliance as close as possible to the existing ventilation supply and exhaust ducts in the home.

4.1.3 CHOOSING THE PLACEMENT WAY

The GreenComfort can be installed in two ways:

1. Hang on the wall;
2. Place in the mounting frame.

Hanging on the wall is preferred. The mounting frame must be ordered separately. Please contact **Joule** for this.

4.1.4 CHECK THE WALL

The GreenComfort can be hung on the wall using the supplied wall bracket. Check the wall on which you want to hang the GreenComfort on the following points:

- a. Does the wall have a mass of at least 200 kg/m²;
- b. Is the wall flat?



Look out!

If the wall does not meet the above requirements, the use of the mounting frame is recommended (see §4.2.1).

4.2 INSTALLING GREEN COMFORT

After the preparatory work, it is now time to install the GreenComfort.

1. Measure where you want to attach the wall bracket. Figure 7 shows the recommended dimensions.

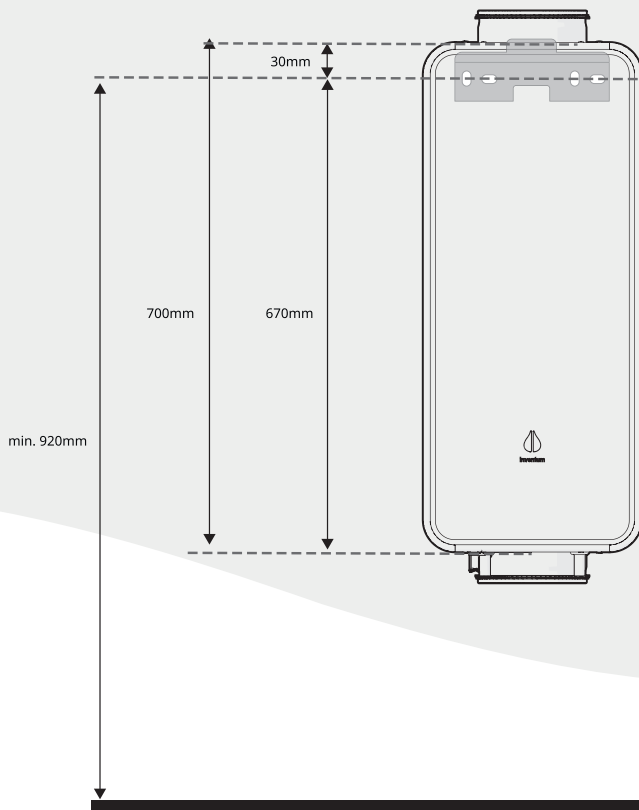


Figure 7 The recommended sizes for hanging the GreenComfort on a wall.

2. Mark the drill holes.
3. Drill the holes (Figure 8). Use a drill diameter of 12 mm and drill at least 80 mm deep.

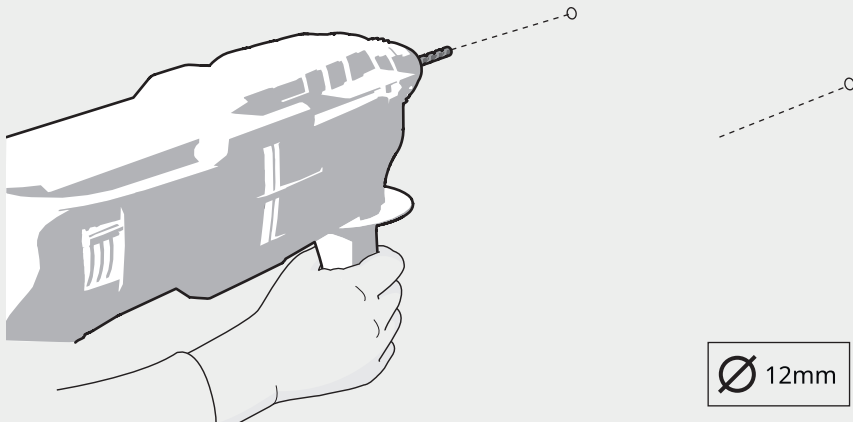


Figure 8 Drilling the screw holes.

4. Place the plugs in the drilled holes.
5. Fasten the wall bracket with two studs as shown in figure 9. Use a spirit level to make the installation horizontal.

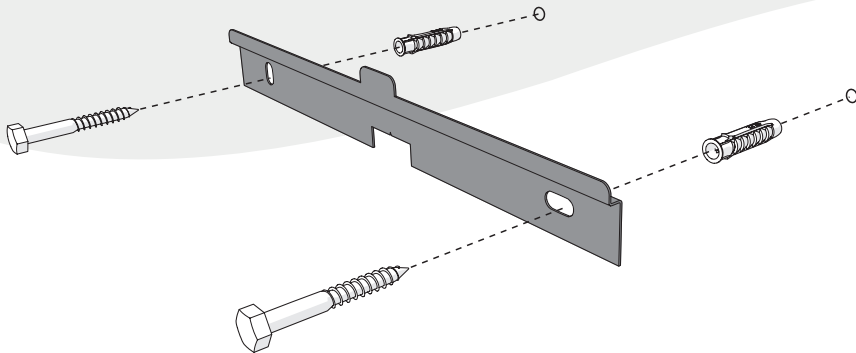


Figure 9 Fixing the wall bracket

6. Hang the GreenComfort on the bracket (figure 10).

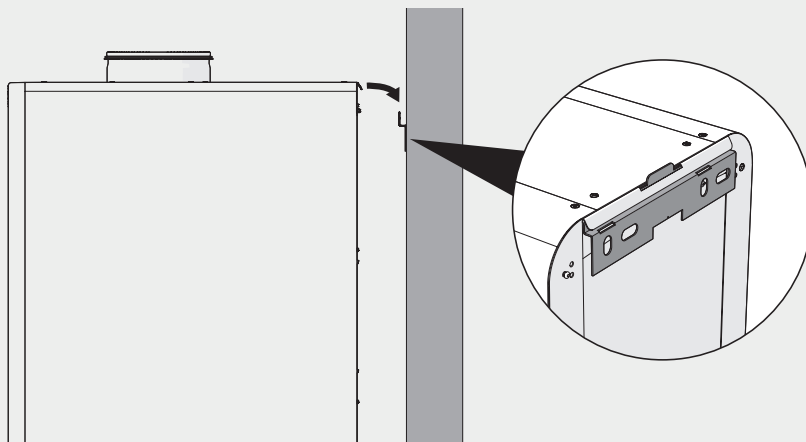


Figure 10 Hanging the GreenComfort.

4.2.1 PLACING GREENCOMFORT INTO A MOUNTING FRAME

If there is no wall with the required properties, the GreenComfort can be placed in a mounting frame (figure 11).

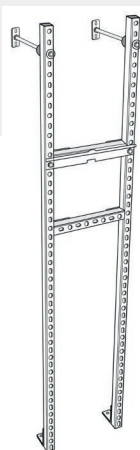


Figure 11 The mounting frame for the GreenComfort



Look out!

The mounting frame is not a standard part of the delivery.

1. Follow the instructions in the manual supplied with the mounting frame.
2. Check whether the GreenComfort is stable and level.

4.3 CONNECTING GREEN COMFORT

Now that the GreenComfort has been installed, it can be connected. You connect the GreenComfort in the following ways:

- On the supply and discharge of the ventilation duct;
- On the central heating system;
- On the electricity grid.

4.3.1 CONNECTION DIAGRAM

The connections of the GreenComfort to the air supply duct, air inlet duct and the central heating system are shown in Figures 12 and 13 .

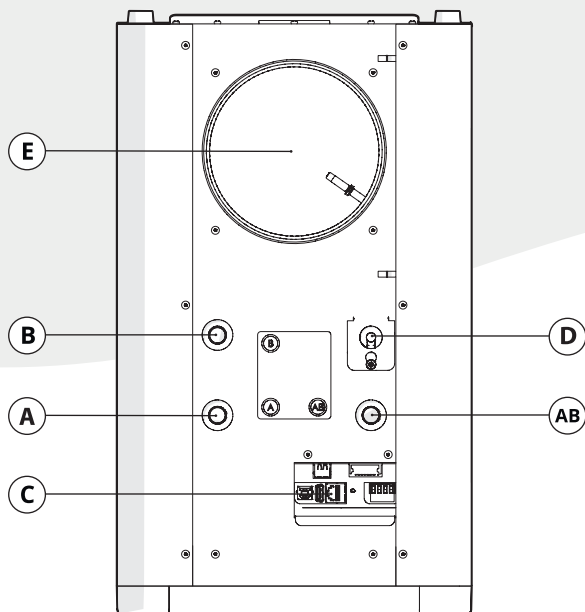


Figure 12

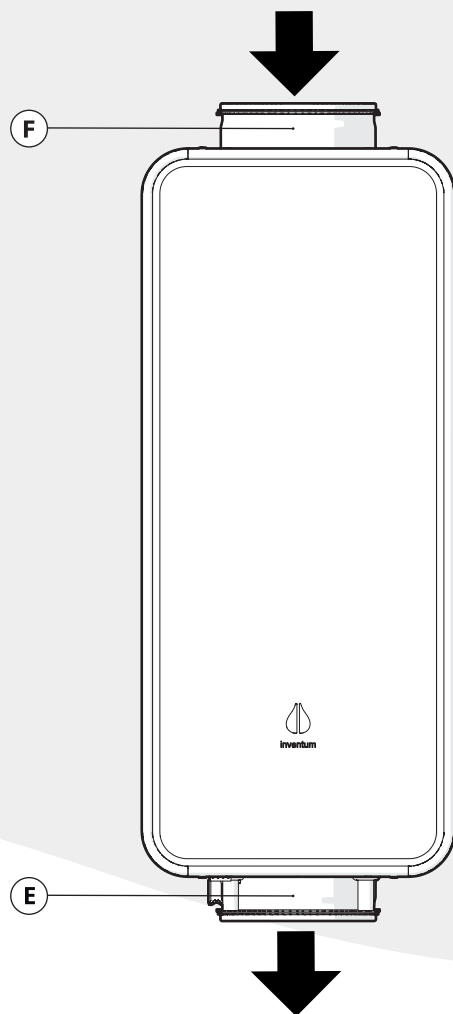


Figure 13 Connection points and directions of the GreenComfort.

A	CV return	C	UTP connector	E	Air outlet
B	CV supply from the Modul-AIR	D	mains connection (F plug)	F	air supply (from roof terminal)
AB	Return to the Modul-AIR				

4.3.2 CONNECTING TO THE VENTILATION DUCT

The GreenComfort is connected to the ventilation duct with the openings on the top and bottom of the product. View the information sheets to see if you have to install ventilation ducts yourself. Is this the case? Then follow the instructions below:



Look out!

The roof terminal and the air supply duct to the GreenComfort must be rigidly connected with an external thermal insulated pipe with an internal diameter of 150 mm. This is necessary to meet sound specifications and to prevent condensation.

1. Connect the ventilation air supply duct to the opening for outgoing air from the GreenComfort (Figure 13 – E).
 - a. Make sure the connection is airtight.
2. Connect the roof terminal to the opening for incoming outside air to the GreenComfort (figure 13 – F).
 - a. Make sure the connection is airtight;
 - b. Use an externally thermally insulated pipe with an internal diameter of 150 mm.

Follow the guidelines below to lay the ventilation ducts correctly. This ensures that there is as little resistance as possible in the channels, so that the GreenComfort consumes less power and makes less noise:

- Avoid sharp transitions or sharp turns.
- Use two 45° bends instead of one 90° bend.
- Use round and smooth curves.
- Do not use flexible connection hoses.
- Use exhaust valves with a pressure drop between 10 and 20 Pa.
- Use a straight muffler in the air supply.

4.3.3 CONNECTING TO THE MODUL AIR

The GreenComfort must be connected to the Modul-AIR with the supplied UTP cable. This is how you do this:

1. Connect the UTP cable to the UTP connector on the bottom of the GreenComfort (figure 14).

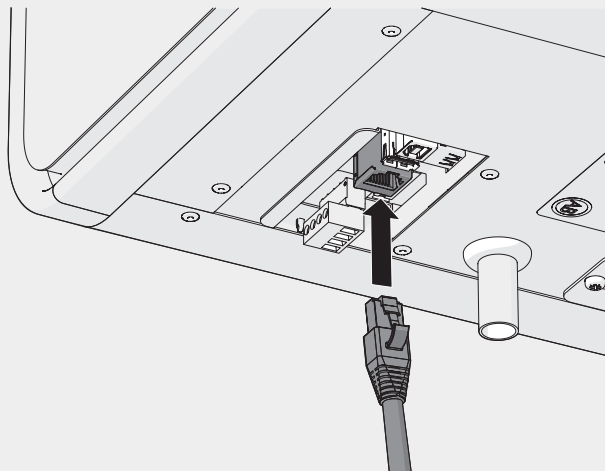


Figure 14 Connecting the UTP cable to the GreenComfort.

2. Open the Modul-AIR.
3. Pass the UTP cable through the grommet at the bottom of the Modul-AIR.
4. Connect the cable to the COM port Peripherals (see figure 15).

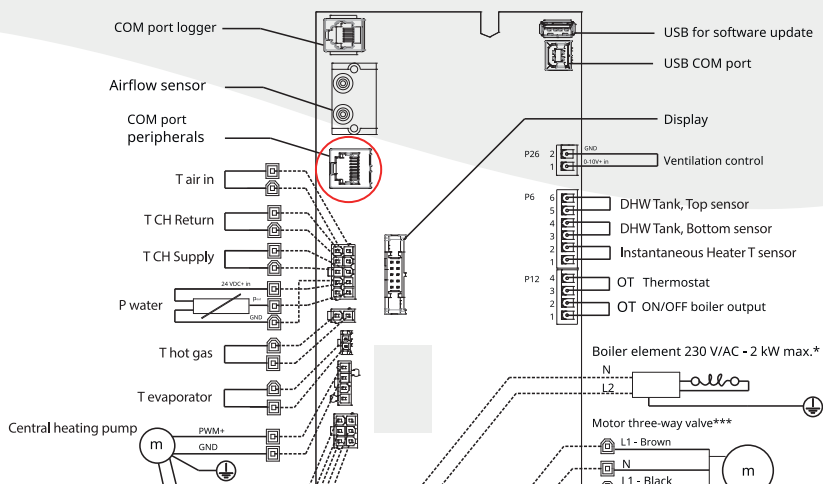


Figure 15 COM port Peripherals in the electrical diagram of the Modul-AIR.

4.3.4 ELECTRICAL CONNECTION DIAGRAM

The electrical circuit of the GreenComfort is schematically shown in figure 16:

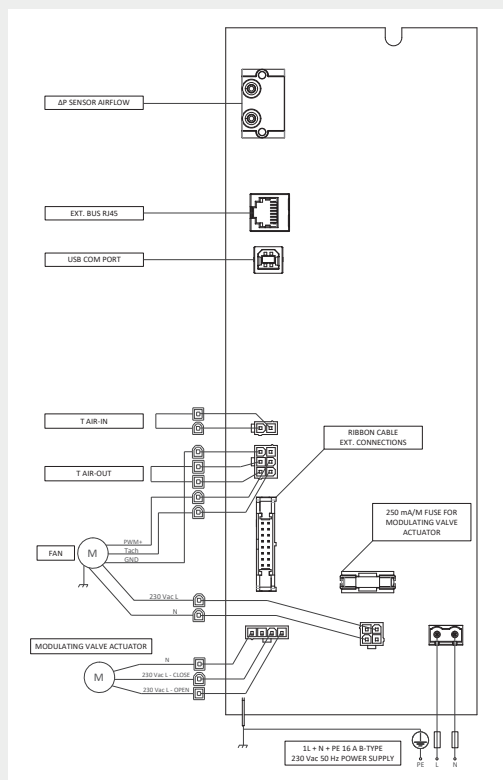


Figure 16 The electrical connection diagram of the GreenComfort.

4.3.5 CONNECTING TO THE POWER GRID

You can now connect the GreenComfort to the electricity grid:

- Plug the GreenComfort into the mains socket (Figure 13 – **D**).
After about 30 seconds, communication between the GreenComfort and Modul-AIR will start.

4.3.6 WATER SIDE CONNECTION

Finally, the GreenComfort must be connected on the water side to the Modul-AIR and the central heating system (figure 17). This is how you do this:

1. Connect the central heating return pipe to the GreenComfort (figure 12 – **A**).
2. Connect the central heating supply line from the Modul-AIR to the GreenComfort (figure 12 – **b**).

3. Connect the return line to the Modul-AIR to the GreenComfort (Figure 12 – **AB**).

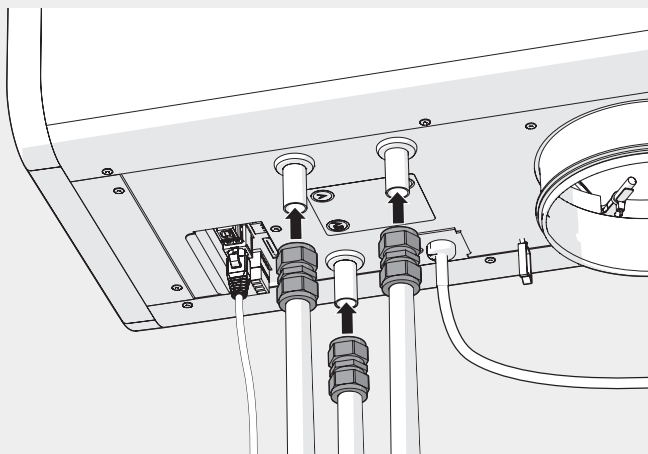


Figure 17 *The water-side connection of the GreenComfort.*

4. Connect the central heating supply pipe and the return pipe to the Modul-AIR (figure 18).

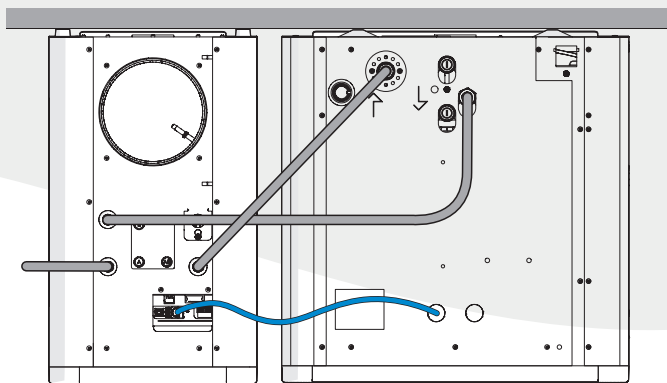


Figure 18 *The water-side connection of the GreenComfort.*

5. Commissioning GreenComfort



Look out!

This chapter only contains instructions for commissioning the GreenComfort. For information on commissioning the Modul-AIR and other components, refer to the Modul-AIR installation manual.

5.1 USING THE DISPLAY

To commission the GreenComfort, you have to perform a number of tasks in a fixed sequence on the display of the Modul-AIR. Below you will find some tips to properly operate the display.



Look out!

To access the installer menu, you must enter a drawing pattern on the screen. Receive this drawing pattern if you have successfully completed the Joule training (figure 19).



Tip!

Use the arrows left and right on the display to switch screens (figure 20). Use the arrow at the top left to return to a higher menu.



Tip!

If you have changed a setting and want to exit the screen, a dialog box will appear that reads “**adopt changes?**”(Figure 21):

- Press **Yes** to save the setting.
 - Press **No** not to save the setting.
-

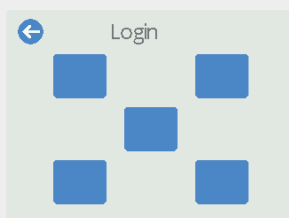


Figure 19
The installer menu access screen.

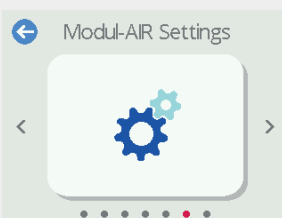


Figure 20
The navigation buttons.

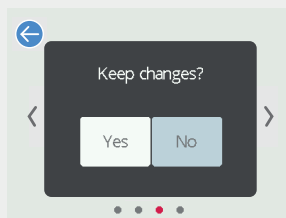


Figure 21
Confirming a new setting.

5.1.1 THE MAIN MENUS

After switching on the display, you arrive at the start screen. On this start screen you can choose from four main menus:

- Operating hours;
- Filter control;
- Information;
- Settings.

A flowchart of the contents of the four main menus can be found in the Modul-AIR installation manual. This flowchart also highlights the contents of the installer menu.

5.2 SETTING THE GREEN COMFORT

Various settings of the GreenComfort can be adjusted in the installer menu:

5.2.1 AIR FLOW OFFSET

With this setting you can set an imbalance between the air volume that is sucked out of the home by the Modul-AIR and the air volume that is blown into the home by the GreenComfort.

It is possible to make the air volume of the GreenComfort smaller (up to -50%), equal to or greater (up to +50%) than that of the Modul-AIR.

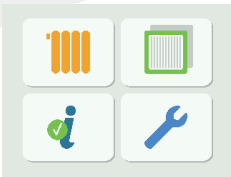
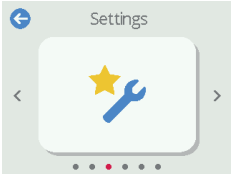
5.2.2 L-OUT OFFSET

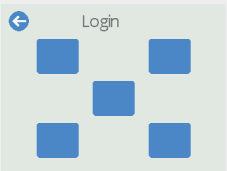


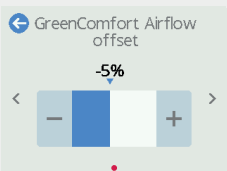
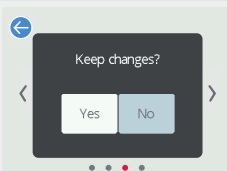

The GreenComfort preheats the incoming air to the temperature set on the room thermostat. With this setting you can increase the temperature of the preheating (up to +5°C) or lower (to -5°C) to increase comfort in the home.

Example: If the room thermostat is set to 20°C and the L-out offset at -3°C , then the air is preheated to 17°C by the GreenComfort.

5.2.3 CUSTOMIZE SETTINGS

How to set the airflow and L-out offset:

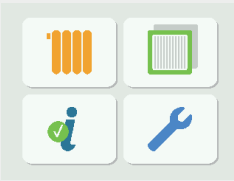
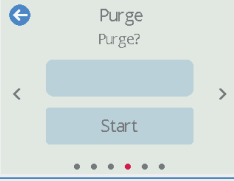
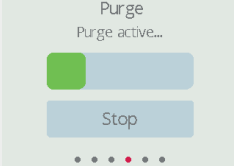
1. Tap the Settings icon in the main menu.	
2. Navigate to the Settings menu and tap the icon.	

<p>3. Enter the correct combination on the drawing pattern to access the installer menu.</p>	
<p>4. Navigate to the selection menu and select the GreenComfort.</p>	
<p>5. Navigate to GreenComfort Settings and press the icon. In this menu the GreenComfort is set or you can view the status.</p>	
<p>6. Set the GreenComfort Airflow Offset. Use the minus and plus buttons for this.</p>	
<p>7. Press the right arrow. The confirmation screen appears. 8. Press Yes to save the value.</p>	
<p>9. Enter the GreenCommort L-out offset in the same way. 10. Press the arrow at the top left to exit the menu. 11. Press Yes to save the setting.</p>	

5.3 FILLING AND VENTING

After you have set up the GreenComfort, you must fill and vent the central heating system. This is how you do this:

1. Fill and vent the central heating system in accordance with the operating instructions for the central heating boiler.
2. Turn on the Modul-AIR.
3. On the display, do the following:

i. Tap the Settings icon in the main menu.	
ii. Navigate to Bleed and press Start.	
iii. Wait a few minutes until the bar in the screen is completely green.	

4. Vent the central heating system with the manual air vent in the GreenComfort and on top of the Modul-AIR and, if present, on the integrated instantaneous water heater and the hot water tank coil.
5. Check the central heating system.
6. If necessary, top up the heating system again to the prescribed pressure.



Warning!

Always adhere to the specific regulations of the central heating boiler. If in doubt, contact the boiler supplier.

5.4 COMMISSIONING THE GREEN COMFORT

To commission the GreenComfort, do the following:

1. Set the thermostat higher than the measured room temperature;
2. Please check the following:
 - a. Will the Modul-AIR start up?;
 - b. Does the instantaneous heater or central heating boiler operate?;
 - c. Does the central heating system heat up and do the radiators or underfloor heating give off heat?;
 - d. Is the incoming outside air preheated by the GreenComfort?

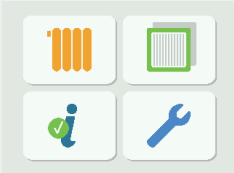
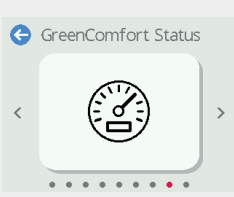

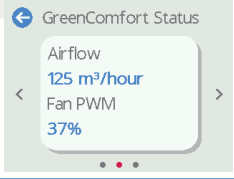



Look out!

At high outdoor temperatures, it may be necessary for this test to increase the setpoint on the room thermostat. The GreenComfort determines whether there is a heat demand by comparing the temperature of the outside air with the set point on the room thermostat.

6. Checking the Green Comfort Status

Information about the status of the GreenComfort can be found in the installer menu:

1. Tap the Settings icon in the main menu.	
2. Navigate to GreenComfort Status and press the icon.	
3. Check the current sensor temperatures.	
4. Check the actual air flow rate and the fan control signal.	
5. Check the position of the three-way valve and the status of the heat demand. If there is a heat demand, the GreenComfort will also preheat the incoming air.	

7. Replacing the GreenComfort filter

The filter should be replaced every 12 months.



Look out!

In the case of new construction, the filter must be replaced 6 months after delivery. After that, the standard frequency of 12 months applies.



Tip!

Check the filter menu on the display to see when the filter needs to be replaced.

How to replace a filter:

1. De-energise the GreenComfort;
2. Remove the front plate (Figure 22). The plate is attached with magnets, so you don't have to unscrew;
3. Loosen the four screws;
4. Remove the front (Figure 23).

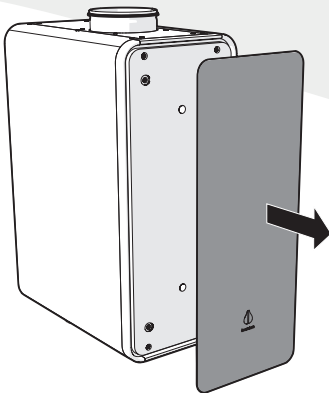


Figure 22 Removing the front plate

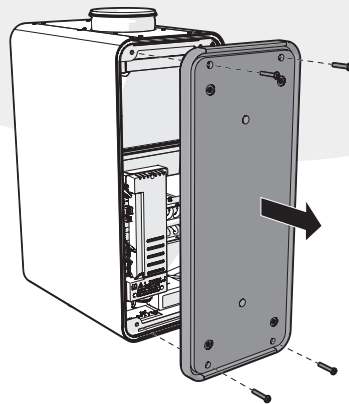


Figure 23 Removing the front

5. Pull the filter out of the housing (Figure 24).

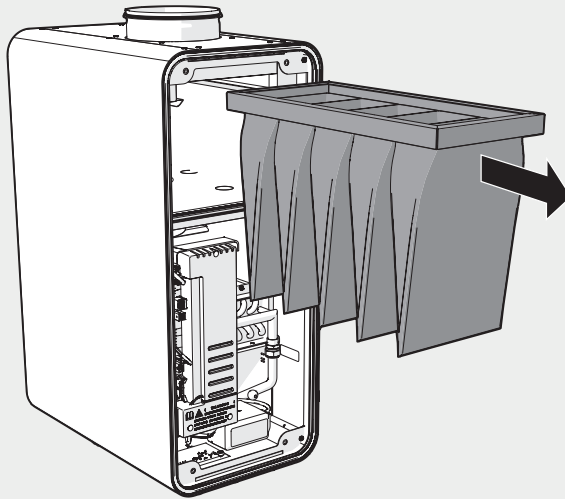


Figure 24 Removing the filter.

6. Insert a new filter.

8. Transport and storage

8.1 MOVING GREEN COMFORT

Always follow the following safety instructions when transporting or moving the GreenComfort:



Warning!

Always move the GreenComfort with at least two people.



Look out!

Always transport the GreenComfort in the box, otherwise the product will be damaged. Only remove the device from the box at the place where the installation will take place. Secure the device against falling.

8.2 STORING GREEN COMFORT

When storing the GreenComfort for a long time, always follow the following safety instructions:



Look out!

The temperature in the storage room should be between -10°C and 40°C. The humidity may not exceed 80%.

9. Error messages on the display

Error messages from the GreenComfort are shown on the display of the Modul-AIR. These error messages can be found in the Info menu (figure 25).

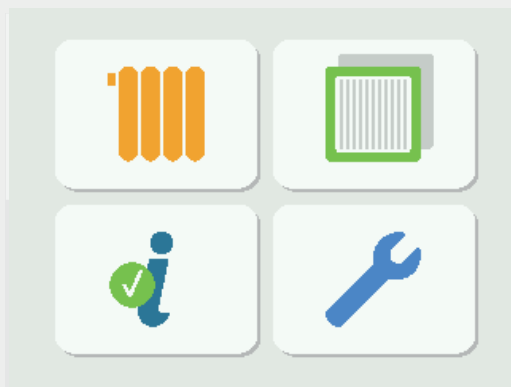
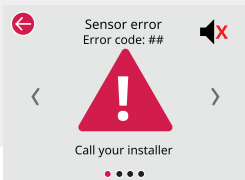


Figure 25 The information menu.

SCREEN	REF.NO.	MEANING
	33	Air In Temperature Sensor Error
	34	Air Out Temperature Sensor Error
	35	Air Flow Sensor Error
	36	Frost protection active
	37	Disconnected from Modul-AIR

10. Guarantee

The GreenComfort is manufactured with great care. When using parts that do not originate from Joule equipment, the warranty will be void. Also, proper functioning of the GreenComfort cannot be guaranteed in this case.

10.1 WARRANTY PROVISION

The care for the implementation of the guarantee rests in the first instance with the installer or supplier where the GreenComfort was purchased. Always consult the installer or supplier first.

10.2 WARRANTY PERIOD

- 2 year* full warranty on parts and labour;

**calculated from the date on the proof of purchase*

10.3 WARRANTY CONDITIONS

- In the event of a warranty claim, the type and serial number of the GreenComfort must be stated. This information can be found on the type plate of the GreenComfort;
- The purchase invoice stating the purchase date must be submitted.

The warranty only applies if:

- There are material and construction errors (this is at the discretion of the manufacturer);
- The GreenComfort has been installed, used and maintained in accordance with the installation and operating manual;
- The filter of the GreenComfort is replaced annually;
- The GreenComfort has been installed by a recognized installation company;
- The GreenComfort has been commissioned by Joule or an installation company recognized by Joule
- The first diagnosis has been carried out by a recognized installer;
- The GreenComfort has not undergone any structural changes or adjustments;
- The defect is not the result of drinking water that is too hard or too aggressive, aggressive (liquid) substances, vapors or gases and internal or external corrosion or limescale;
- The defect is not the result of your own fault, negligence or injudicious use.

10.4 WARRANTY EXCLUSION

- Call-out costs;
- Shipping costs;
- Transport damage;
- Administration costs;
- Secondary damage such as fire damage, business damage, water damage or personal injury.

10.5 SERVICE

Always report to the local installer or point of sale if there are any problems with the installation and/or operation of the GreenComfort. You can also go there to order parts.

NB

The defect of one or more parts in no way justifies the replacement or return of the entire device. All relevant parts are available at short notice.

10.6 LIABILITY

Joule the installer or the supplier accept no liability for damage or physical injury of any kind, caused by:

- not following the (safety) instructions in this manual;
- carelessness during the installation, use, maintenance and repair of this heat pump;
- unintended use of the GreenComfort;
- the use of parts not supplied by the manufacturer;
- consequential damage due to leakage.

For more information, see:

Joule UK:

e: info@jouleuk.co.uk
t: 0330 808 8488
f: 0 1513 568 336

Joule IE:

e: info@joule.ie
t: 353 (1) 6237080
f: 353 (1) 626 9337

11. Technical specifications

Parameter	Where the	Unit
Supply voltage	230 (+10% -6%)	V
Max. electrical power consumption	80	W
Frequency	50	Hz
Voltage category	II	
IEC protection class	I	
Max. delivered thermal power (A-5/ W30@ 350m3/h)	3500	W
Height x Width x Depth	700×298×493	mm
Weight	20	kg
IP protection class	IPX2	-
Hydraulic connections (Ø)	15	mm
Air inlet (Ø)	150	mm
Air outlet (Ø)	150	mm
Permissible acidity of central heating water	7,5 - 8,0	pH
Permissible humidity installation room	30% - 95%	rH
Permissible temperature installation room	5 – 35	°C
Max. supply temperature	65	°C
Ventilation volume adjustable	50 - 350	m ³ /h
Max. ventilation capacity	350 @ 100	m ³ /h @ Pa
Noise level	33,5	dB(A)
Max. water pressure	300	kPa

