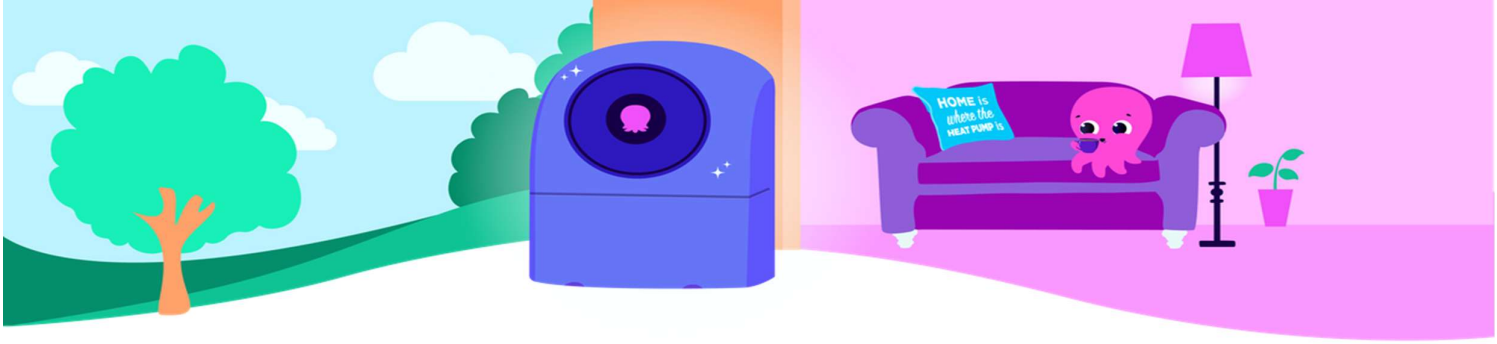


Installation and User Manual

Heat pump models:

Cosy 6



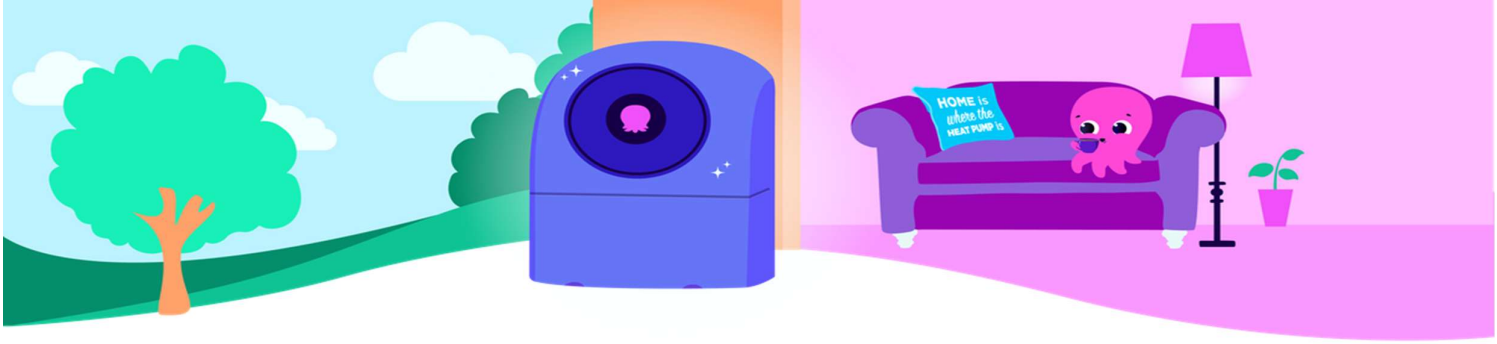
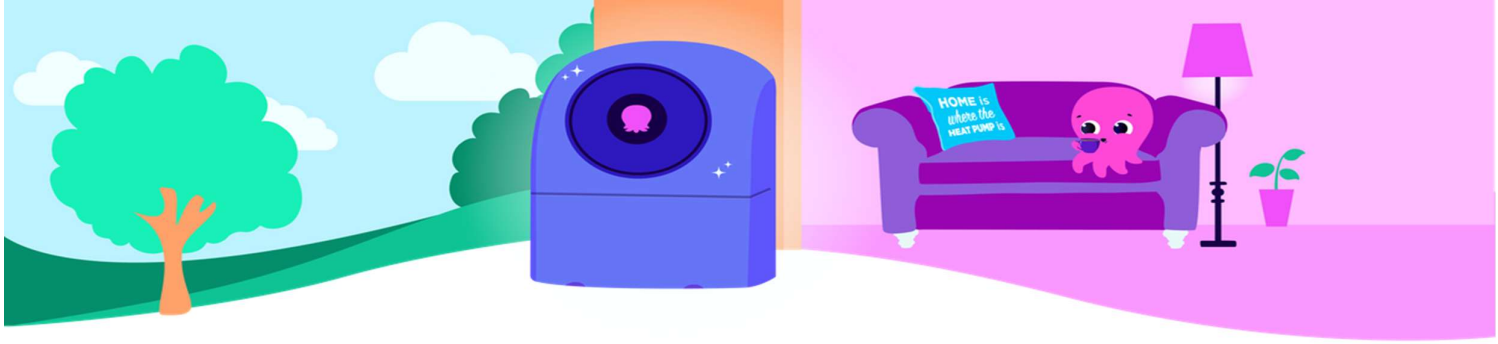


Table of Contents

Introduction 3
General Information 3
Hazards and Precautions 4
Safety Features 6
A revolution in home heating 8
Features 9
General 10
Product dimensions and clearance 11
Unpacking Product 12
Installation location of heat pump 12
Installer connections 14
Hydraulic connections 15
Condensate management 15
Electrical Connections 16
Indoor Controller 17
Commissioning 20
Filling the system 21
Cosy hub Commissioning 21
Enabling Installer Mode to access the Installer Website: 22
Commissioning and Configuration: 24
DHW Tank Mode, Setting the Manifold and Purging the System: 25
Configuring the Hot water and Heating zones: 26
Setting the Flow Temperatures: 26
Cosy Pods 27
Pairing the Cosy Pods 28
Setting up the Octopus App with the Customer 30



Safety warnings

- Carefully Read all installation instructions before installation.
- Use proper protective equipment and follow all safety and warning instructions.
- Follow national guidelines, regional regulations, and technical regulations.
- Document installation process and any issues that arise.



Warning of flammable materials. This appliance uses the flammable refrigerant R290. If refrigerant leaks and exposed to a source of ignition, there is a risk of explosion or fire.



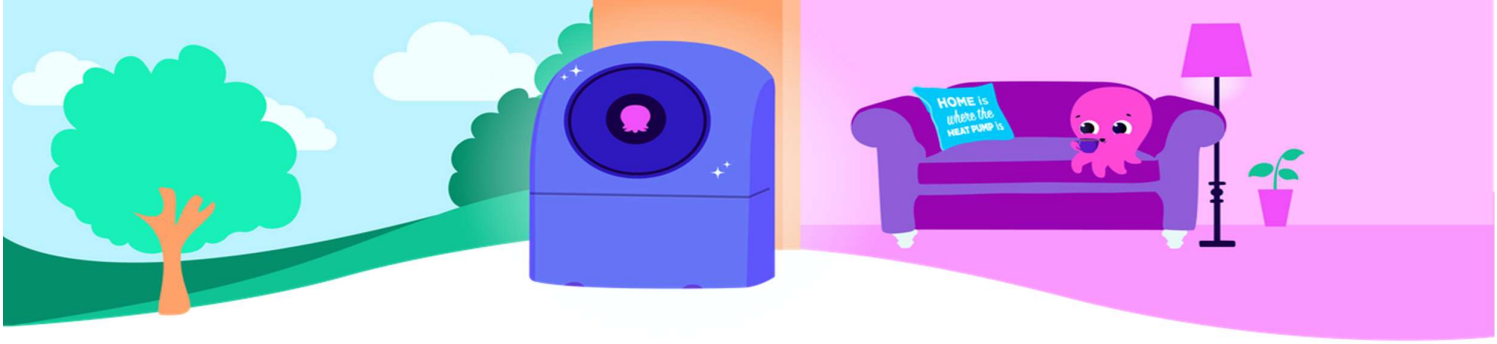
Location

- The unit is intended for closed household heating systems. All other use is considered unsuitable.
- Diagrams for minimum distance for placement of the product in relation to surrounding structures have been provided and should be consulted for product placement.
- If the outdoor unit is installed in areas exposed to steam, oils or covered by snow performance may decrease and damage may be caused.
- Install the unit away from flammable gases accumulation of such gases around the unit, may result in fire or explosion.
- The unit produced water due to the formation and melting of ice through operation and requires suitable drainage to prevent damage and potential injury.



Installation, commissioning, and service

- The heat pump may only be installed, brought into operation, and maintained by authorized personnel.
- 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.
- Two or more persons are needed to handle the unit, as it weighs over 20 Kg. Protective gloves should be worn to remove the unit from the packaging and to move, as evaporator fins can cause injury.



- Do not touch the pipework during operation as they can reach up to 75°c flow temperature, depending on the condition of the refrigerant flowing through the system.
- Use only original spare parts.
- Do not smoke during work and transportation.

Special qualifications for refrigerant R290

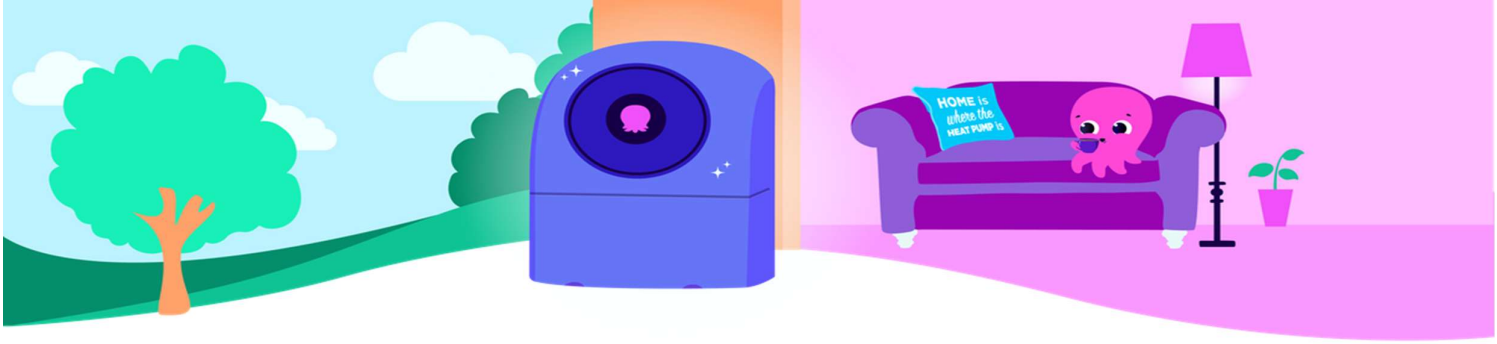
- The unit must only be opened by personnel with knowledge of the properties of and risks associated with the refrigerant R290.
- Work on the refrigerant circuit requires special training in addition to standard repair procedures due to the refrigerant being flammable.
- Follow instructions in applicable laws and regulations.

Danger of fire or explosion of flammable gases.

- Make sure that there are no sources of ignition in the vicinity of the product.
- The product contains the flammable refrigerant. If a leak occurs, the refrigerant can become a combustible gas when in contact with air.
- To ensure that there is no leakage when working on the product. A gas detector calibrated for use R290 should be used and set to ≤ 25% of the lowest flashpoint.
- If a R290 leakage is detected, contact a qualified technician.

Electrical work

- The unit must be powered via dedicated power lines with the correct voltage and circuit breakers being used.
- electrical install must be conducted by an electrician per BS 7671 to the latest edition.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons to avoid a hazard.
- Electrical work may only be performed by authorized electrical installers.
- Before beginning make sure to disconnect mains power on all poles and ensure it cannot reconnect then let leave for one minute before touching.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Unit must be properly grounded.
- Do not leave the unit unattended during installation or servicing when the door is removed.



Introduction

Thank you for choosing Octopus Energy. This manual describes the correct installation and operation of the Cosy line of R290 Air source heat pumps.

Please ensure that this manual is read, understood, and kept for reference before beginning the installation and that it is left with the end user once the installation is complete.

No liability will be accepted by OEPS if the install or operation of the heat pump is not according to the instructions within this document.

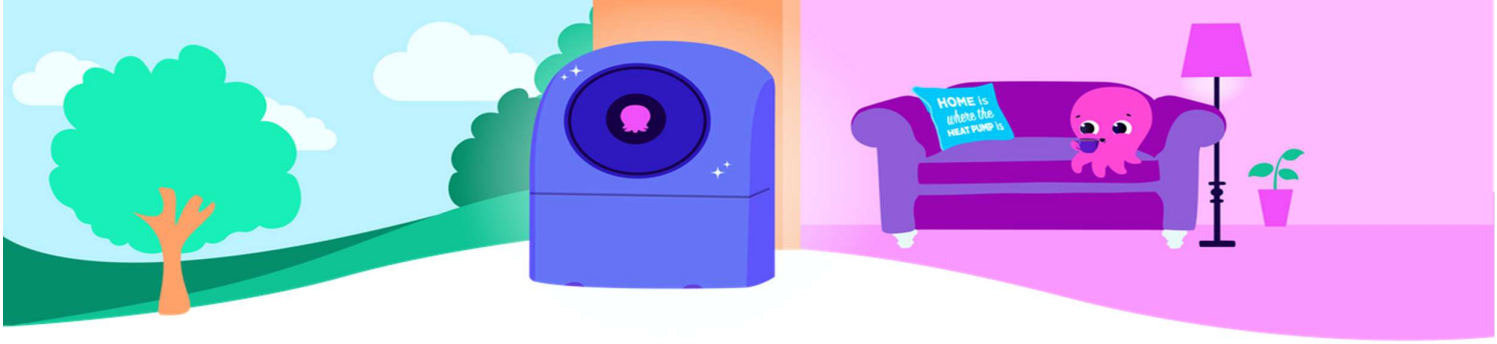
This manual describes the unpacking, safe handling, installation, fault finding and servicing of the product along with user operation and setup.

General Information

Please ensure that the full system design and heat/hot water requirements are fully understood before beginning installation of the heat pump or hot water tank. It is the responsibility of the system designed to ensure that the correct Cosy heat pump is selected for the installation and in concordance with heat loss and sizing calculations.

If there are any questions about any part of the installation of the heat pump after fully reading this installation manual, please contact technical services.

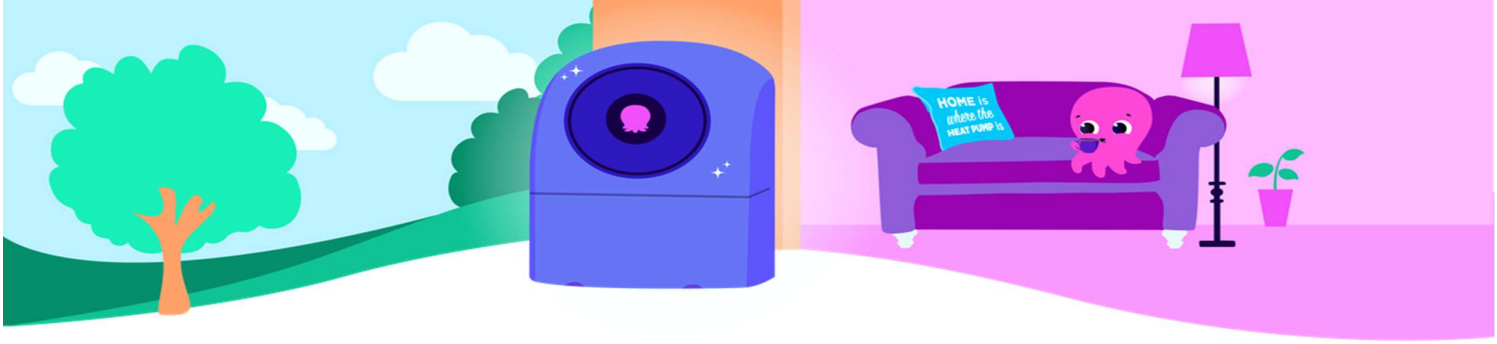
If the instructions in this manual cannot be followed, please stop the installation, and contact technical services for advice. Your warranty may be voided if the installation is not following the instructions explicitly given in this document.



Hazards and Precautions

Please pay careful attention to the following points before beginning the installation or any serving work.

- The heat pump should not be powered on or run with the front panel, fan guard, or indoor unit front cover removed.
- Please be aware that heat pump components within the enclosed casings can be hot enough to cause severe burns even after the unit has stopped operating.
- Within the heat pump the black controller splash guard does not need to be opened during install and should only be ever opened by a trained engineer. The electric drive components have capacitors which are still live even after the power is isolated to the heat pump for up to 10 mins.
- The mounted fan is powerful and could cause injury or damage if it comes in physical contact with any obstacle that penetrate through the fan guard.
- The heat pump should be transported to the installation site within the packaging and kept upright and secure in transit. The pallet should only be lifted with a pallet trolley or forklift.
- The heat pump must be lifted from the crate and positioned in the installation location using the provided lifting equipment. A minimum of two people is necessary to lift the heat pump and it should not be pushed or trailed along the ground.
- The correct PPE should be used and correct manual handling and lifting techniques should be employed to avoid risk of injury. Never try to lift or move the heat pump without the correct aid. Only a trained and competent person that fully understands the installation requirements should ever try to install the heat pump.
- Under no circumstance should the sealed refrigerant circuit be tampered with in any way. Care should be taken to avoid any cutting, burning, or grinding near refrigeration pipework. If a leak in the refrigeration pipework was to occur, never try to stop the refrigerant with your hand as it will cause severe burns and frostbite.



- The heat pump must be installed so that it can be isolated both electrically and hydraulically. The covers should never be removed.
- Ensure all pipework is correctly assembled and sealed before pressuring the system to avoid water leaks within the enclosed heat pump unit.

Safety Features

The heat pump has several safety features built in to ensure that the product will fail safe in event of unforeseen system failure or error state.

1. High pressure switch

This switch is integral to the refrigeration circuit and cuts power to the compressor when a higher than allowable pressure is reached in the circuit. This will only happen if there is an insufficient or blocked flow from or too the condenser from the home or too high a return temperature from the house. Or in the unlikely event of a component failure such as circulating pump or defrost valve.

2. Refrigerant temperature sensor

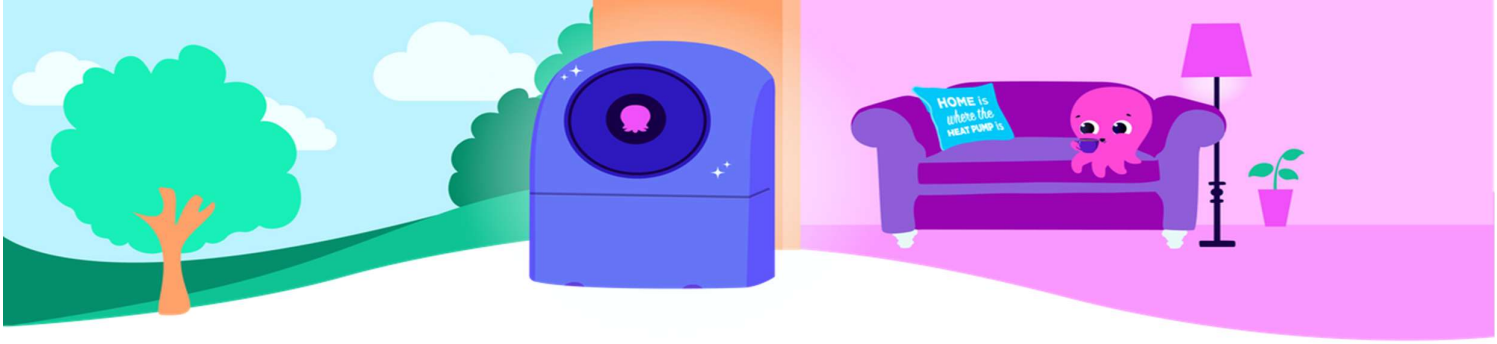
A temperature sensor on the discharge pipe of the compressor ensures that the refrigerant also stays at a safe operational temperature.

3. Blocked evaporator sensor

A differential pressure sensor is used to determine if the evaporator becomes blocked for any reason. This may be due to debris blow by or leaves.

4. Water flow sensor

A flow sensor checks constantly that there is sufficient water flow through the heat exchanger. If for any reason the flow was to become restricted or blocked from to the heat pump condenser it can cause component failure, especially during defrost, when it can cause freezing in the condenser. Air in the system pipework can cause air locking in the heat exchanger which may require bleeding.

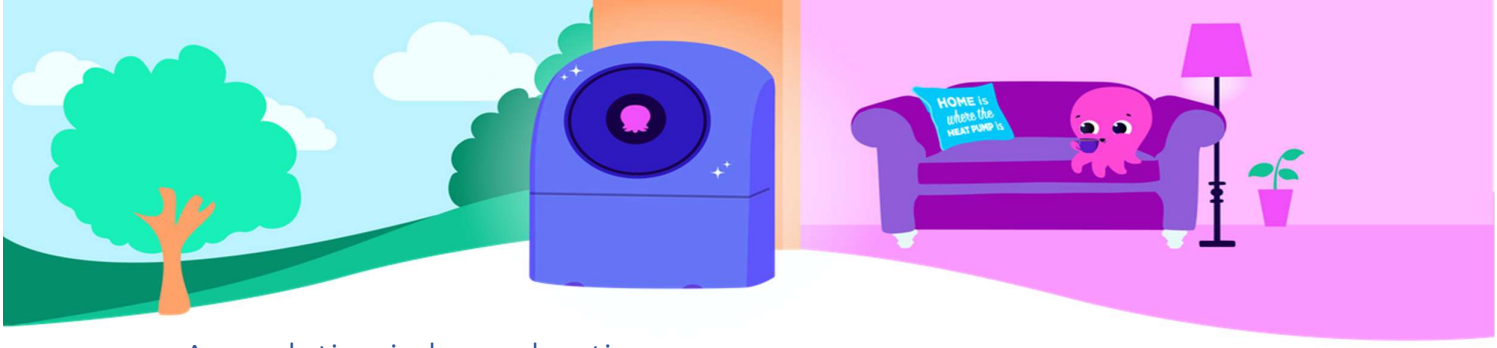


5. Fan rotation tachometer.

An intelligent fan which uses built in sensors to determine blockage and interference is employed by the heat pump. Always isolate power to the unit before removing the fan grill.

6. Sensor failure

There are several sensors within the heat pump unit and in the distribution manifold. In the unlikely event that one of them was to fail, smart algorithms within the controller can recognise this and bring the heat pump to a safe error state.



A revolution in home heating

Introducing the latest milestone in our quest to decarbonize home heating: Cosy 6 is our smart, new green heat pump integrating smart design with innovative Octo-tech for a game changing heating experience.

The Cosy 6 is our very first in-house heat pump, designed to be both run and installed incredibly efficiently, to warm your home just as well as a gas boiler would with intuitive controls, room sensors attuned to your comfort zone and a tailor-made Cosy Octopus smart tariff.

Octopus Energy Production Services is dedicated to producing state of the art Heat Pump Technology with the Cosy 6 being the beginning of a range of air source heat pumps using natural R290 (Propane) refrigerant which will run efficiently and quietly.

Why R290?

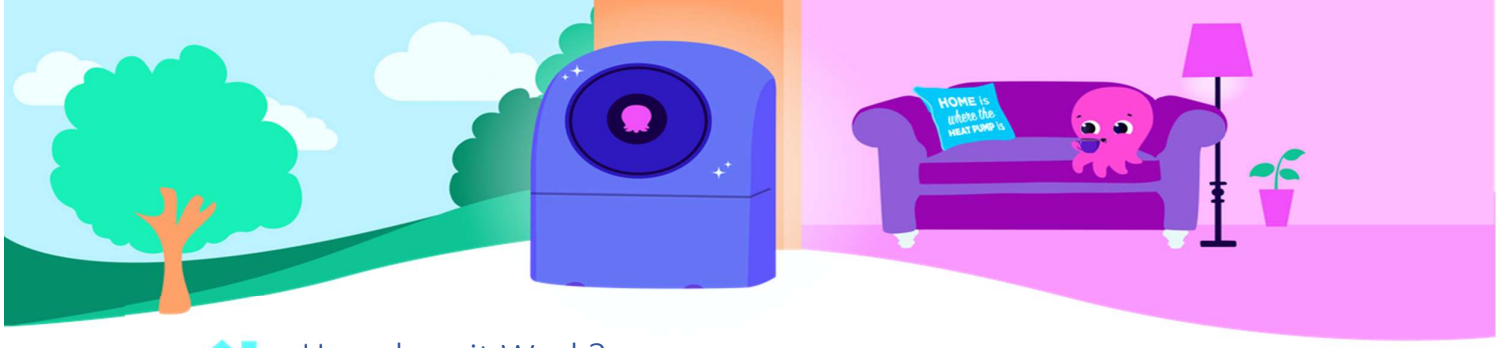
R290 has an exceptionally low Global Warming Potential (GWP) while having many advantages over refrigerants commonly used in Heat pumps, having comparable properties at a lower charge to the more commonly used R410A while achieving a higher maximum flow temperature.

Global Warming Potential (GWP) is an index to measure of how much infrared thermal radiation a greenhouse gas would absorb over a given time after it has been added to the atmosphere.

The number attributed to the gas is taken as a multiple of the radiation that would be absorbed by the same mass of carbon dioxide (CO_2). In the case of R290 its GWP is 3 meaning 1Kg of R290 in atmosphere is equivalent to approximately 3Kg of CO_2 emissions.

Comparison of Refrigerant

CO_2	1
R290	3
R32	675
R410A	2088

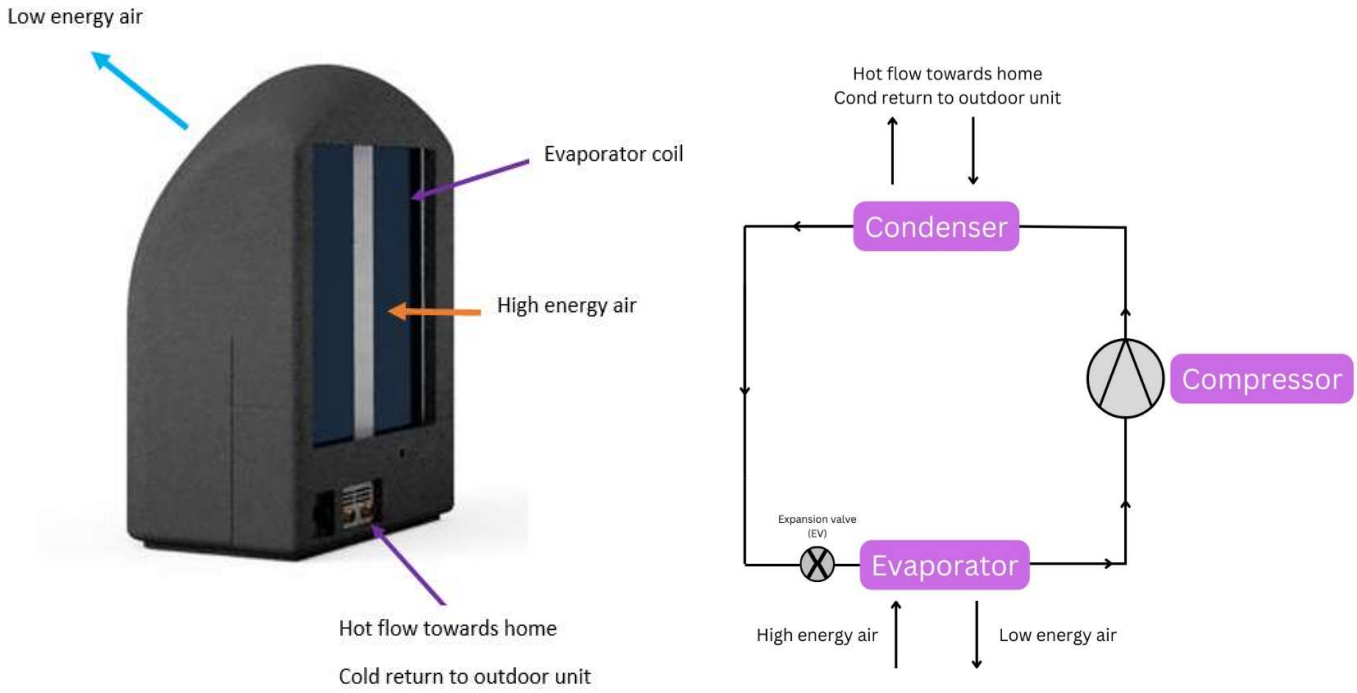


How does it Work?

The Cosy 6 captures energy from the outside air and uses this energy to heat a wet space heating system or hot water storage tank.

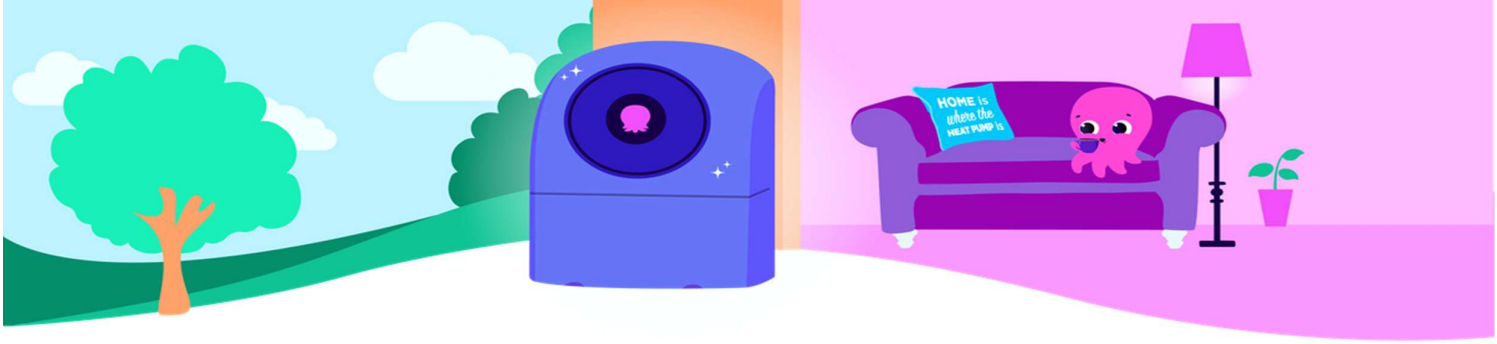
The advantage of the heat pump compared to alternative heating appliances is that it uses the free energy that surrounds us and our homes and so produces much more heat energy than what it consumes in electrical energy. This energy that is in the air and can be extracted and used by the Cosy heat pumps and is completely renewable and clean, this gives the heat pump heating efficiency greater than any other heating technology and more importantly zero emissions.

This is all achieved through a transfer of heat from the air to your home thanks to a thermodynamic cycle which utilises the latency effect of a refrigerant. We have optimised this cycle and the components within the heat pump to give maximum efficiency and capacity to bring optimal thermal comfort to your home. The basic operation in heating mode is explained below.



An electrically powered fan will blow air into the heat pump, onto an 'evaporator heat exchanger.' This way the air outside can begin to heat up the Refrigerant inside the sealed circuit.

The refrigerant (R290) travels through a pipe to a compressor, powered by electricity, where it continues to be heated by compression. In this case up to 95°C. The propane will leave the outlet as a hot, high-pressure gas.



The heated gaseous propane travels through a ‘condenser heat exchanger’ - a series of plates designed to bring this hot propane into close contact with the water in the pipes that make up your house’s central heating system. This way, your water will begin to heat up.

That warm water will then travel through your home. The propane will have cooled slightly before it reaches the condenser heat exchanger (approximately 95°C to 75°C), and this will heat the water in your home going to your tank and radiators.

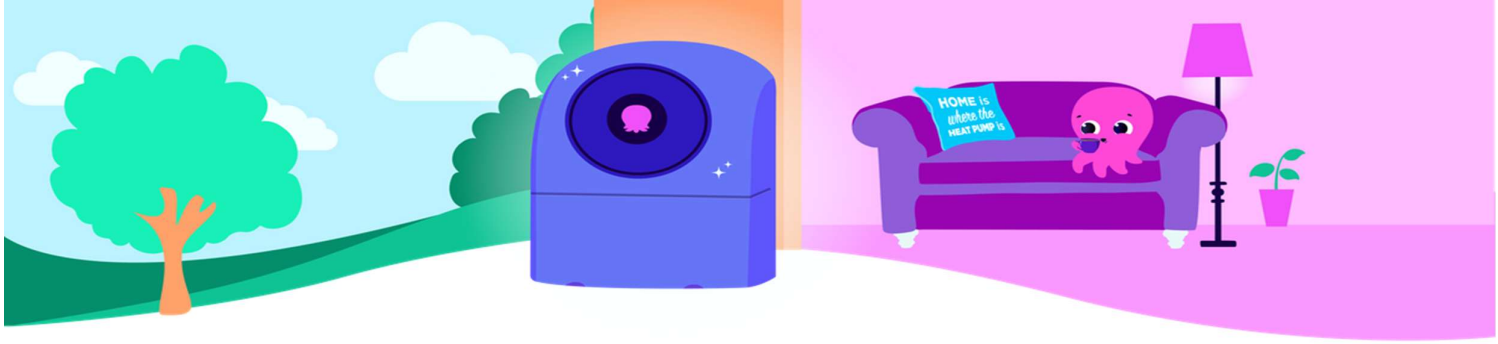
When the water has finished circulating your home, some of the heat will have been transferred to your home, so the water will return to the heat exchanger still warm but needing brought back up to the previous flow temperature, for example the water may leave at 55°C return at 45°C and then need brought to 55°C before cycling back to your home.

By the time the propane has finished travelling through the heat exchanger, warming the water in your home, it will have dropped significantly in temperature. It then travels into an expansion valve, where it is allowed to expand rapidly, dropping from its current temperature below the temperature outside (for example -5°C), and returning to a liquid state.

At this point the cycle begins again, the liquid propane returns to the first heat exchanger, where air outside begins to warm it back up. This is the moment at which a heat pump ‘takes’ energy from the atmosphere. From there, it goes back to the compressor.

Defrost

when outdoor temperature is low it is possible for ice to form in and around the unit, this is perfectly normal. Ice can be created as part of the normal function of the heatpump when outside temperatures drop and as a result the unit will defrost itself at set intervals. During this defrost cycle you may notice steam rising from the unit

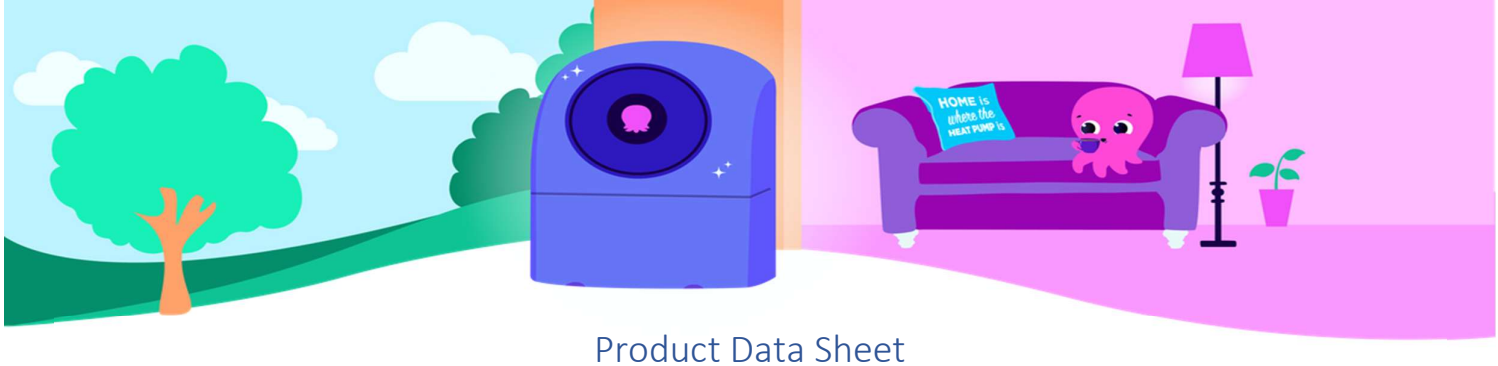


Features



Figure 1- Cosy 6 main components.

1) Fan
2) Evaporator
3) Compressor
4) Variable speed Pump
5) Plate Heat Exchanger
6) 10L Expansion vessel
7) Enclosed Electronics compartment



Product Data Sheet

Model	UNITS	COSY 6
NOMINAL CAPACITY	kW	6
COEFFICIENT OF PERFORMANCE (A7/W35) @5.63KW - EN14511	COP	4.29
COEFFICIENT OF PERFORMANCE (A7/W65) @5.23KW - EN14511	COP	2.71
Length	Mm	855
Height	Mm	1124
Depth	Mm	595
Weight	Kg	100
Connection		G1 Flat face Union
Sound power level (A7W35)	Db	53.8
Maximum flow temperature	(°c)	75
Maximum operating pressure	Bar	32
Maximum volume flow	L/h	20
Minimum volume flow	L/h	7
Minimum system volume	L	100
Refrigerant type		R290
Refrigerant charge weight	Kg	0.650
Electrical supply		230v/1ph/50hz
Maximum current	A	16
Starting technology		Inverter
Compressor type		Scroll
Compressor Oil type		HATCOL 4467
Pipe connections		G1 flat face union
Rated voltage	V	230
Rated max current	A	16
Fuse type	A	Type B
Rcd type		C
Maximum cable length (Modbus)	M	30
Ip rating		IPX5
FAN MAXIMUM INPUT POWER	W	85
FAN MAX ROTOR SPEED	Min^{-1}	760

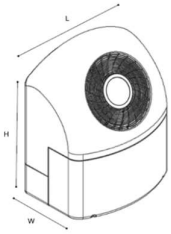
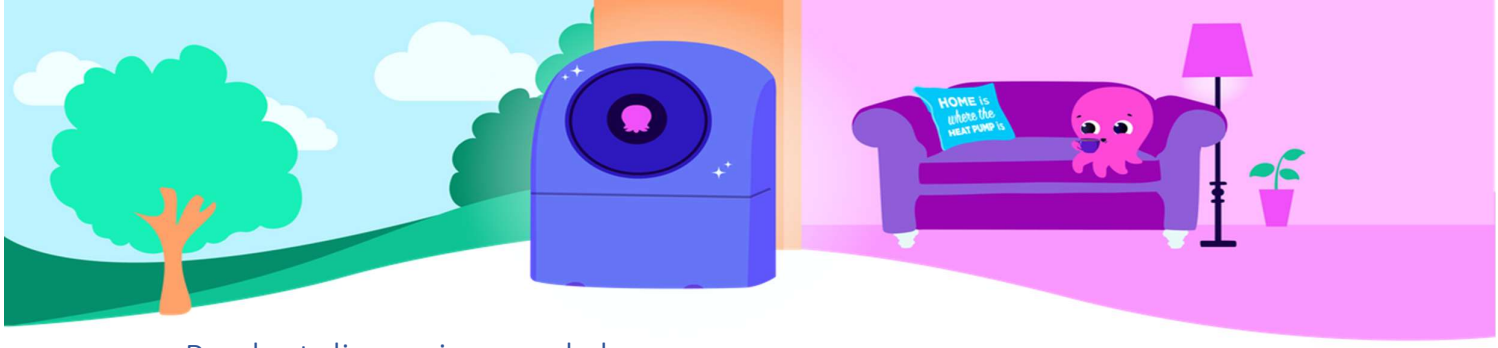
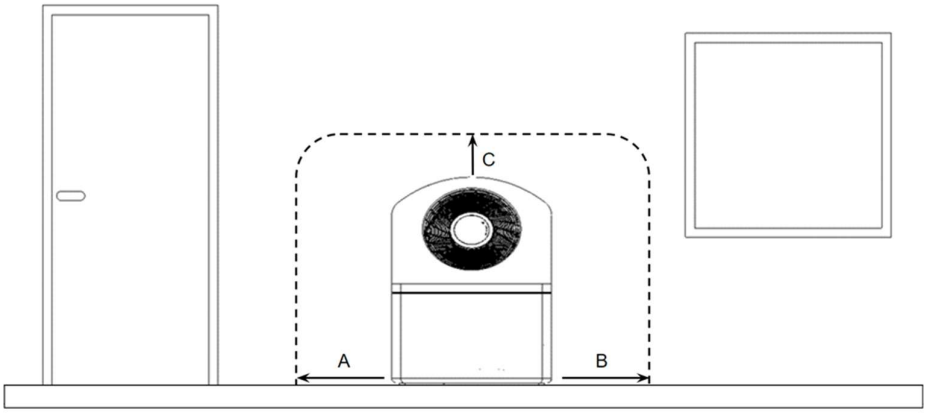


Figure 2- Product dimensions.



Product dimensions and clearance

- There must be no openings or entrances to basements, grooves or entrances into wastewater systems including windows, doors, or any other openings.
- The unit must be installed in a level location that is able to support its weight and the vibrations during operation.
- The highlighted zones must not extend into adjacent buildings or public areas.
- ignition sources such as open flames, electrical sources, sparking tools or lights must not be present in the highlighted zones at any time.



Minimum clearance	Units	distance
A	mm	1000
B	mm	1000
C	mm	250

Figure 3- Clearance from dwelling openings.

Minimum clearance	Units	Distance
A	mm	500
B	mm	1500
C	mm	2000
D	mm	1500

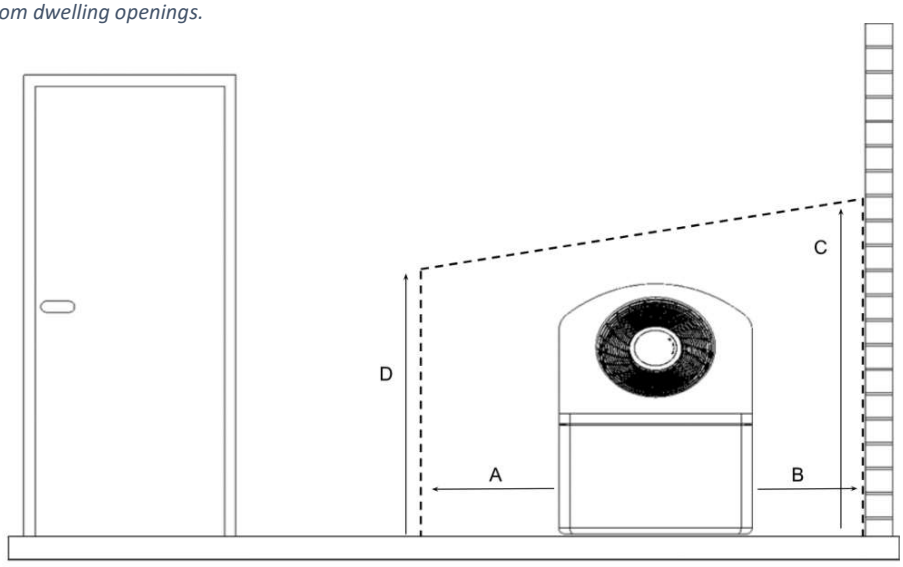
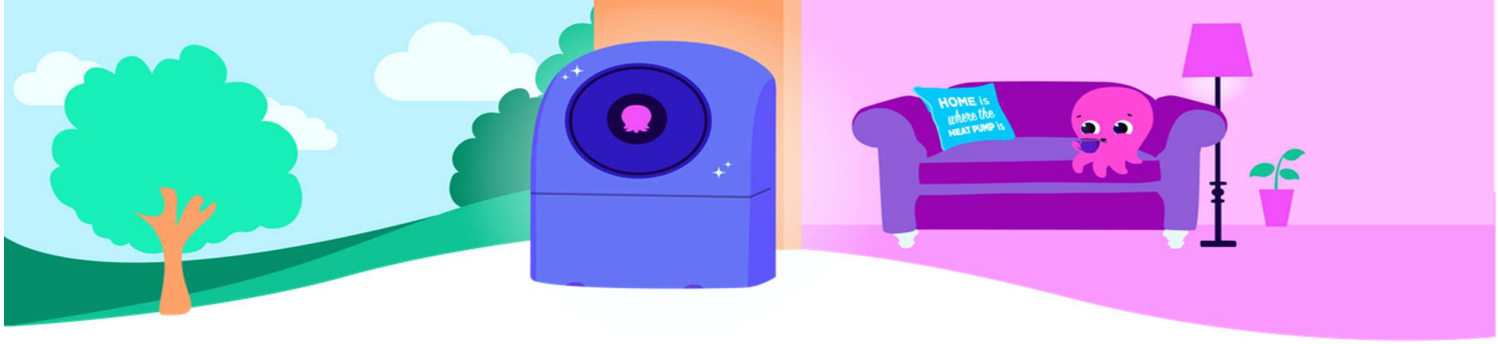


Figure 4- Clearance from wall.



Minimum clearance	Units	Distance
A	mm	500
B	mm	500
C	mm	500
D	mm	250

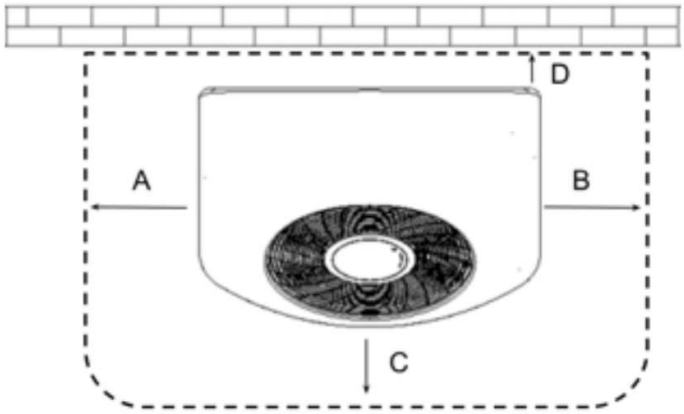


Figure 5- Clearance around unit, without dwelling openings.

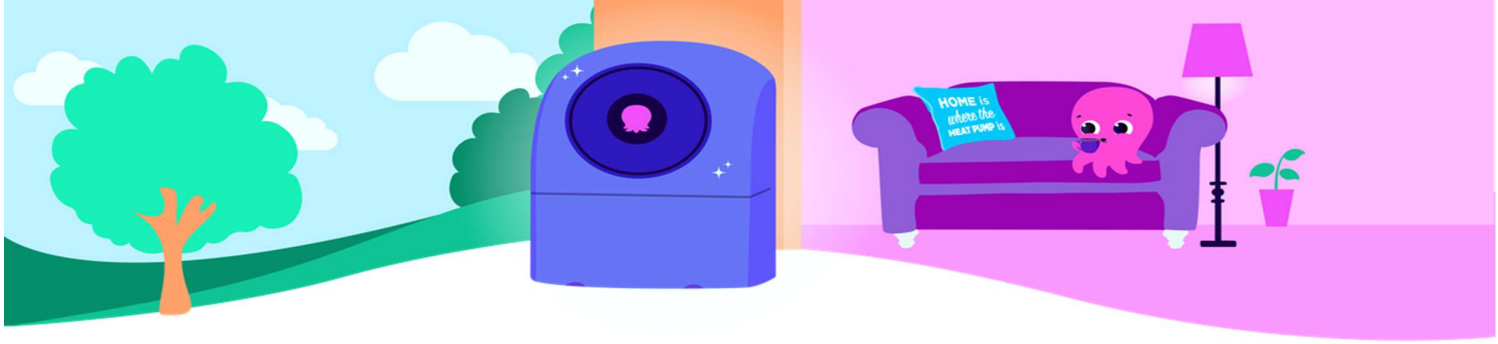
Unpacking Product

Follow instructions for unpacking and moving product detailed on outside of packaging.

Installation of heat pump

A suitable site must be determined before the commencement of any installation of the heat pump. Before choosing the site. Please consider all local planning requirements and that the correct permission, where applicable, has been granted before beginning installation. Please pay attention to the below requirements.

- Store this manual in a safe place for use as reference after installation. For maximum safety always carefully read the following warnings
- The heat pump location should be in free space outside the property.
- If possible, face the heat pump south or southeast, as this will be where it will achieve most advantage from solar gain.
- Ensure that the minimum clearances around the heat pump are as described.
- Always inspect the unit before beginning instillation. Check for any damage to electric connections, refrigerant pipes, and protections regularly.



- Ensure that there is good access for moving the product into position and that the plumbing and electrics can be routed to the installation site. The door must be accessible so it can be removed for install and servicing.
- No obstacles should be directly above the heat pump and obstructing the fan air flow for at least 1.5 meters.
- Ensure a suitable soak away or drain pit is accessible from the heat pump site.
- The heat pump should not be located beside or near to overhead trees or deciduous trees as these may cause blockage and build-up on the evaporator.
- The heat pump should not be installed beside or under bedroom or living room windows as noise given off by compressor and fan can cause disturbance. For this same reason do not install near neighbouring dwelling houses.
- The heat pump should be installed in a site where it is moderately sheltered from prevailing wind as this ensure the defrost procedure can have maximum effect.
- The heat pump should be kept away for heating or cooling sources including low level flues, extraction fans or air-conditioning units.
- The heat pump should be installed on a flat surface solid surface and secured at the two mounting locations. The heat pump should have at least 50mm between the base and edge of the slab.
- Secure the heat pump base to the installation location with an M10 masonry screw of no less than 80mm length.

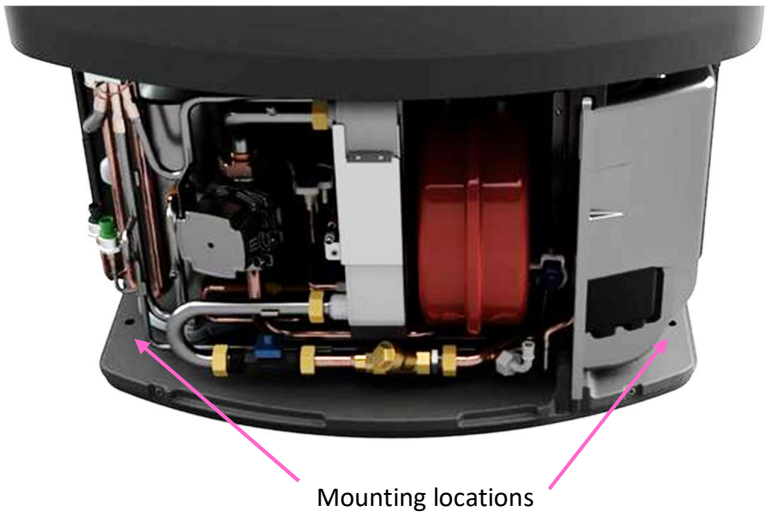
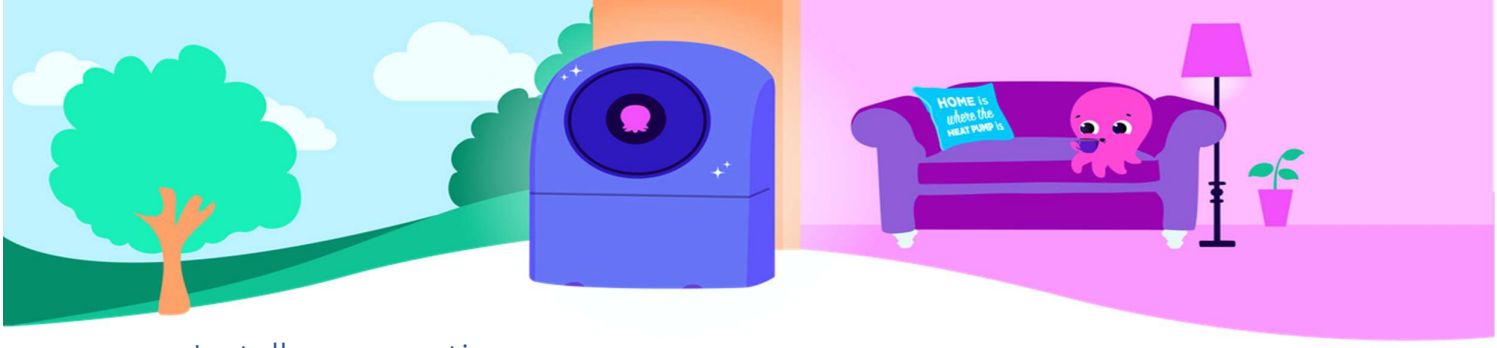


Figure 6- Mounting locations.



Installer connections

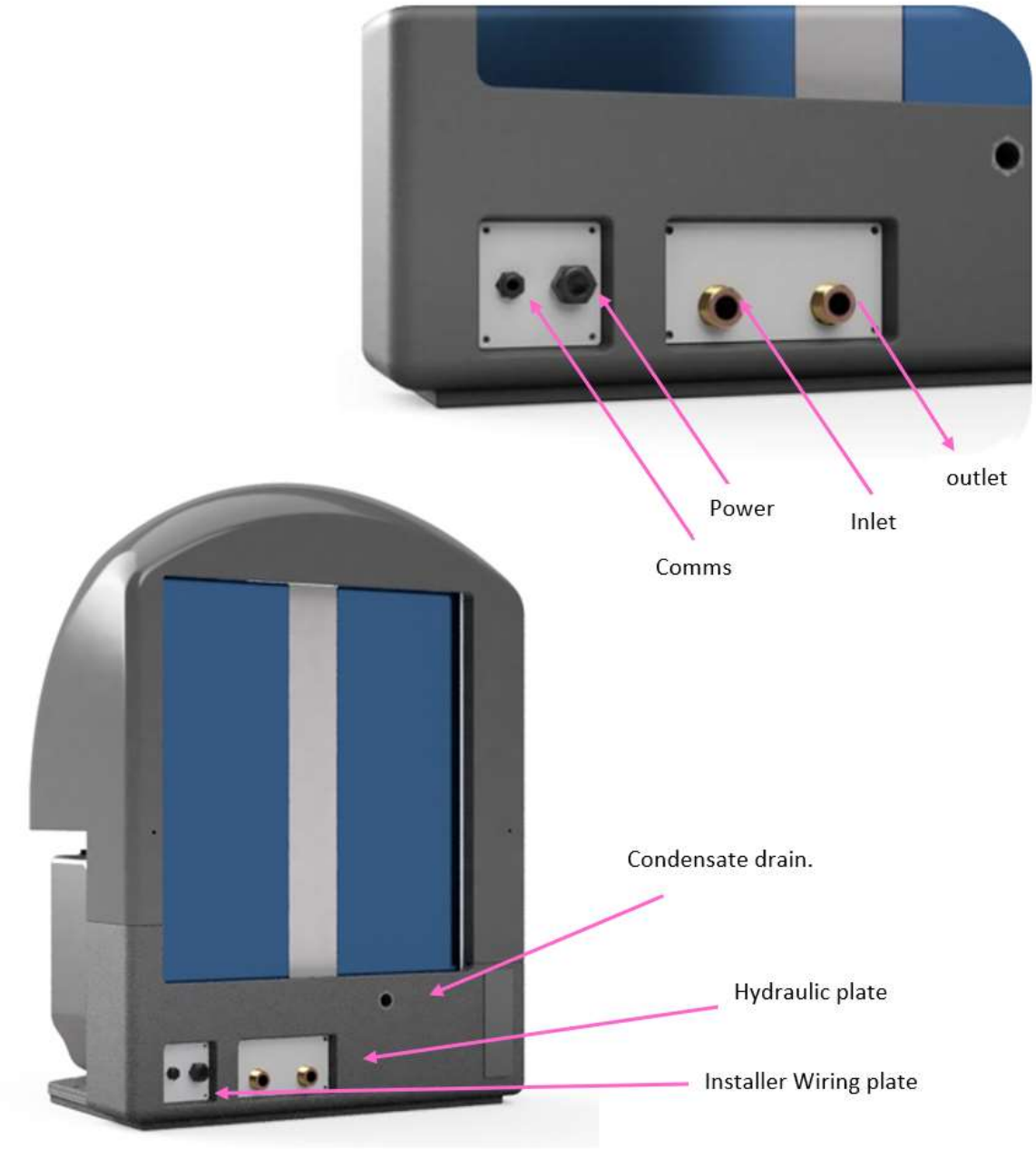
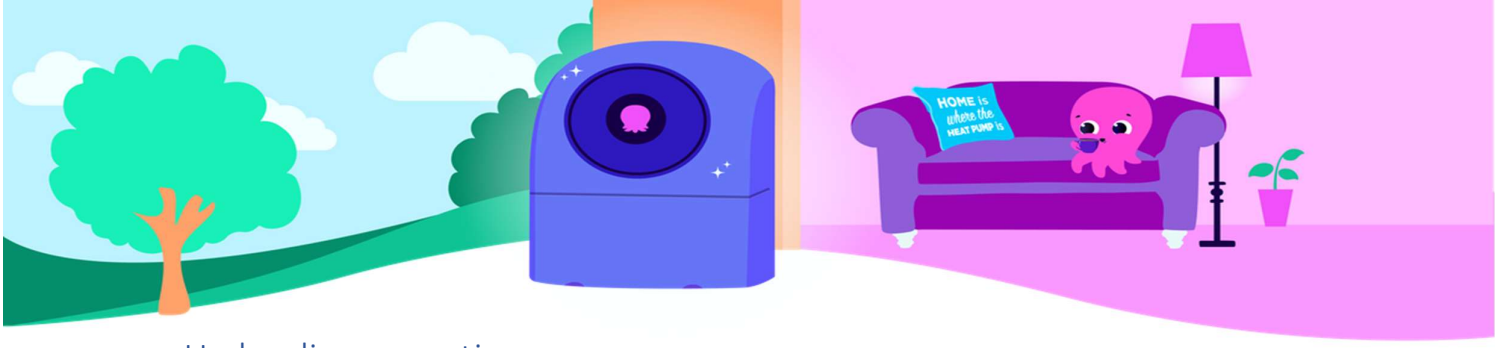


Figure 7- Installer connections.



Hydraulic connections

- Before beginning the plumbing of the heat pump ensure that the pipe tails are clean and free from debris which may have been picked up during the installation process.
- Connect water pipes to the inlet and outlet pipes as shown in figure eight.
- Inlet water pressure gauge pressure must be between ()
- Check for leaks after installation.
- As the outlet water temperature can reach up to 75°c do not touch pipes directly with bare hands.



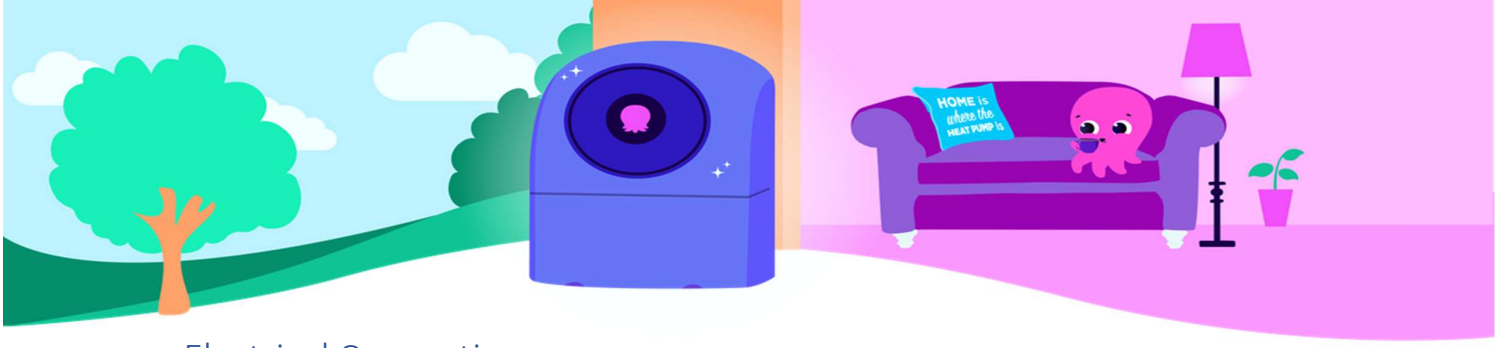
Figure 8- Hydraulic connections.

Condensate management

When the Cosy 6 is running in heating mode, ice can begin accumulating on surfaces of the Heatpump.

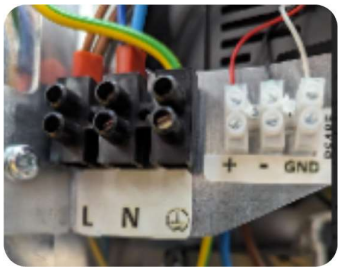
To prevent ice from growing, the Heat Pump will go into defrost mode to melt the ice. The water formed from this process will fall to the base of the heat pump where it can escape to ground through the drain holes in the base and the condensate drain. This means the product will require a drain pit or soak away to prevent water or ice from forming on the ground.

The condensate tube must be routed outside the enclosure to the soak away or drain. It must be routed away from the drip tray at the back of the unit and be protected from the elements. If the condensate drain were to freeze over it could cause irreparable damage to the heat pump.



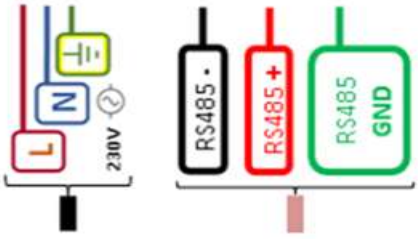
Electrical Connections

- Inspect all cables before beginning installation. If the supply cord is damaged, it must be replaced using original parts from the manufacturer to avoid a hazard.
- Power cables to be fed through M25 Cable gland in installer wiring plate and into electronics compartment.
- Communications cable to be fed through M16 Cable gland in installer wiring plate and into electronics compartment.
- Electrical install must be conducted by an electrician per BS 7671 to the latest edition and national standards and to the wiring diagram within the document.
- Indoor controller or heat pump are not wired correctly there is the possibility of causing harm, also the electrical hardware can be damaged.
- Remove terminal block cover.
- Ensure that all wiring is as per figure nine.
- Wire into provided terminal blocks on PCB Board Metalwork



Black terminal block

White terminal block



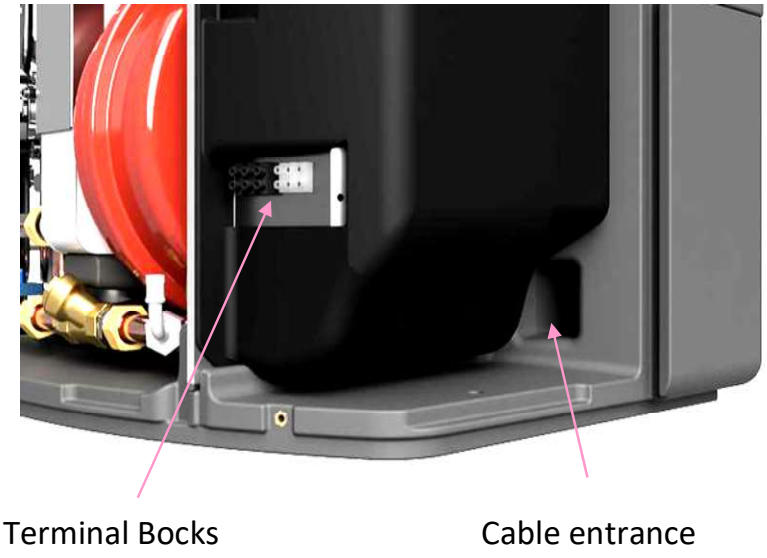
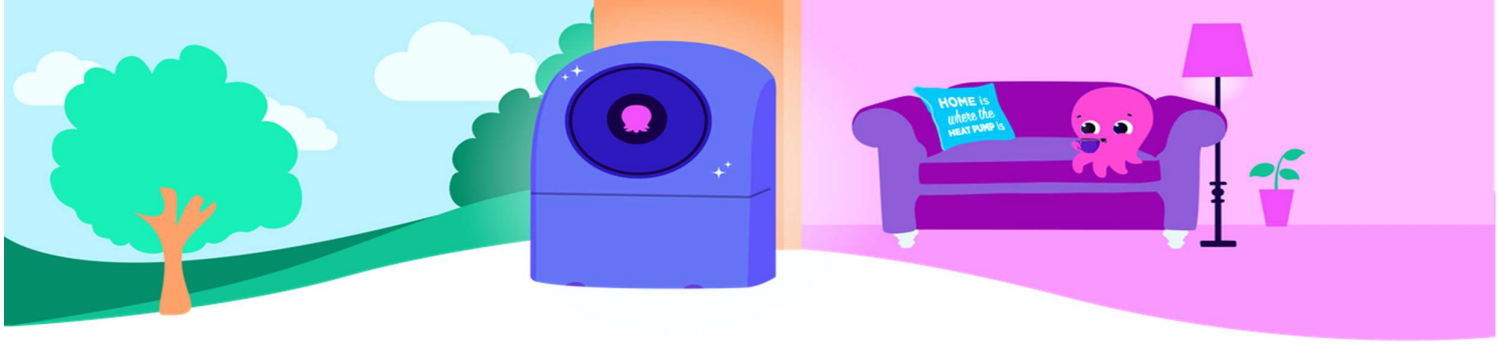


Figure 9- Installer wiring.



Electrical Schematic

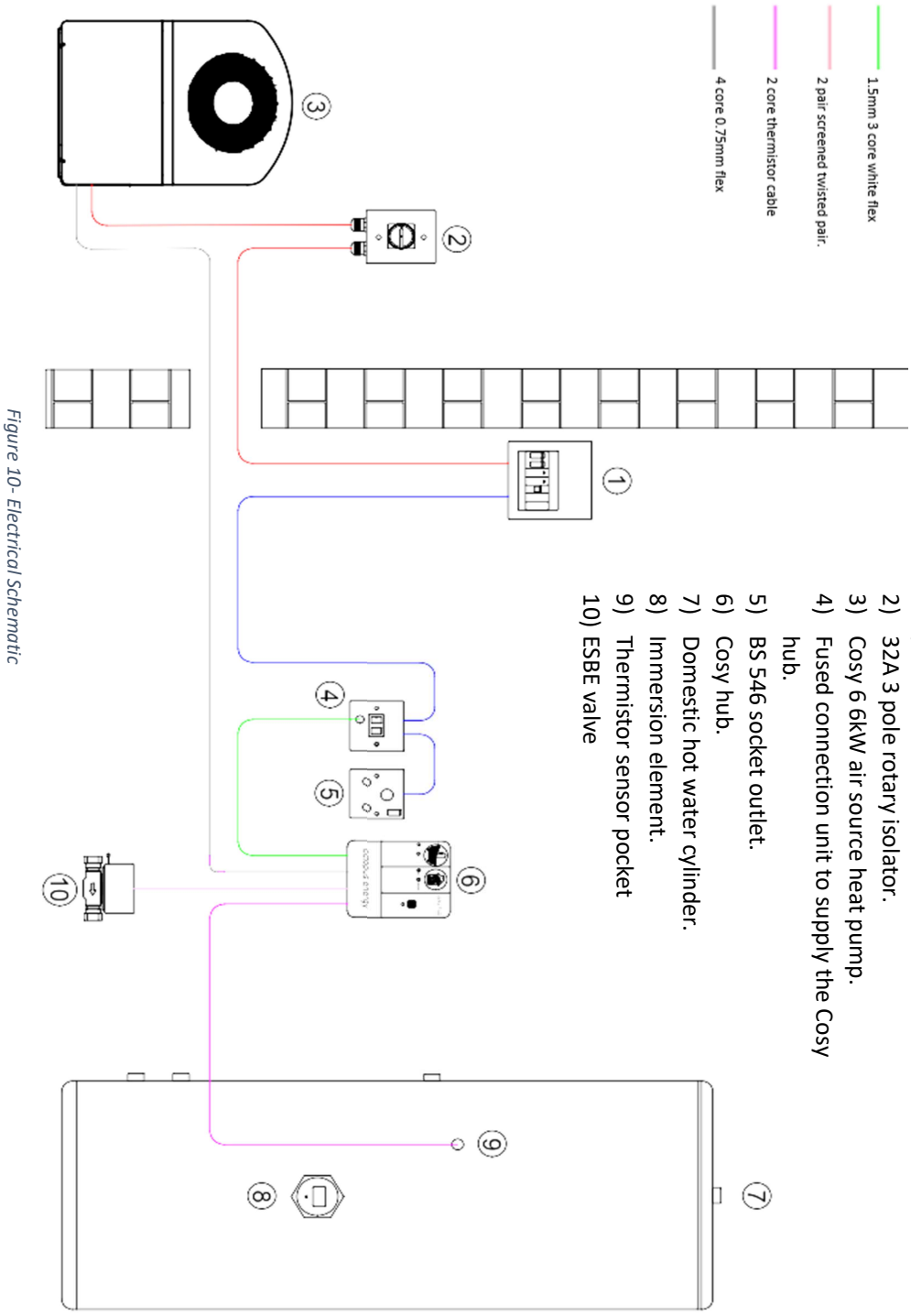
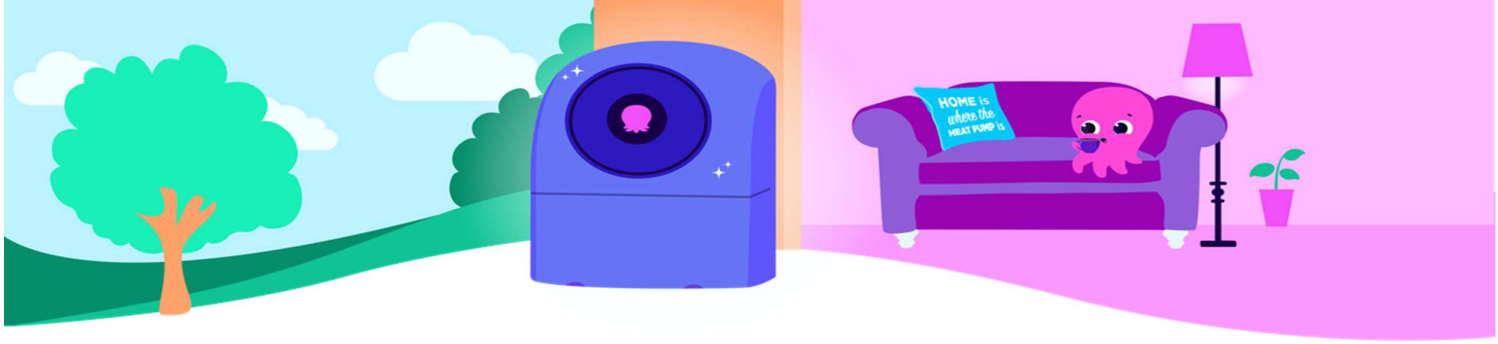


Figure 10- Electrical Schematic

1) Pre-assembled ASHP DB (internal or external depending on the intake position).
2) 32A 3 pole rotary isolator.
3) Cosy 6 6kW air source heat pump.
4) Fused connection unit to supply the Cosy hub.
5) BS 546 socket outlet.
6) Cosy hub.
7) Domestic hot water cylinder.
8) Immersion element.
9) Thermistor sensor pocket
10) ESBE valve



Hydraulic Schematic

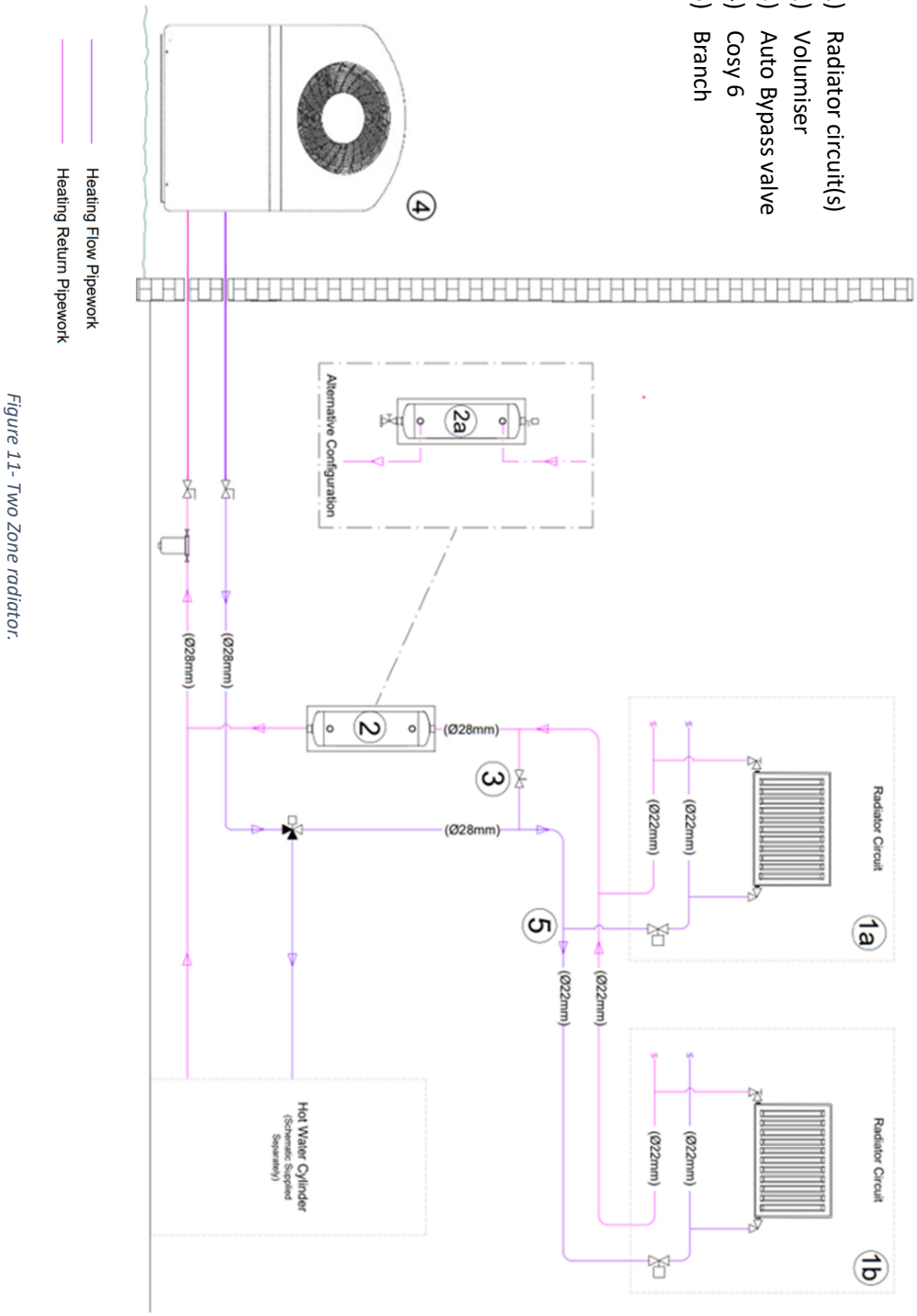
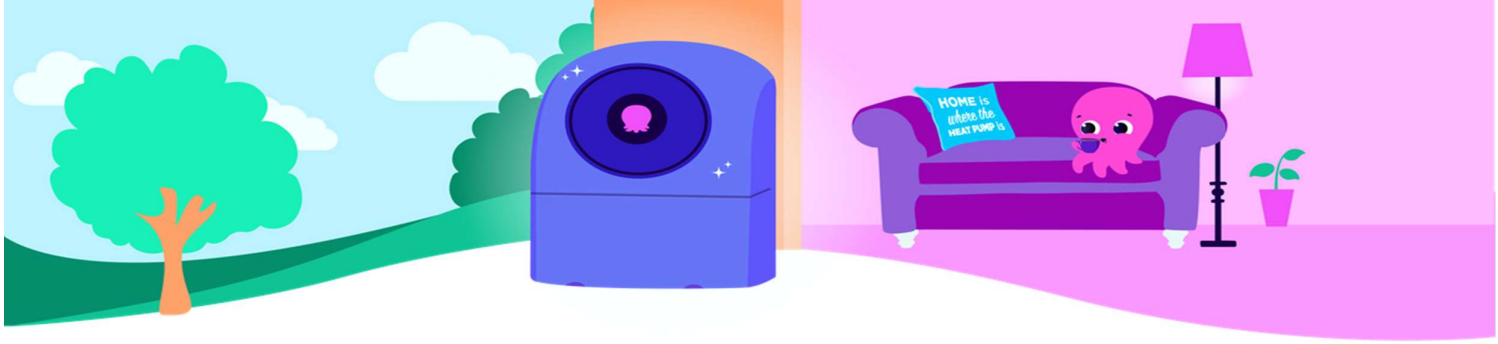


Figure 11- Two Zone radiator.



1) Underfloor heating circuit
2) Volumiser
3) Auto Bypass Valve
4) Cosy 6
5) Radiator Circuit

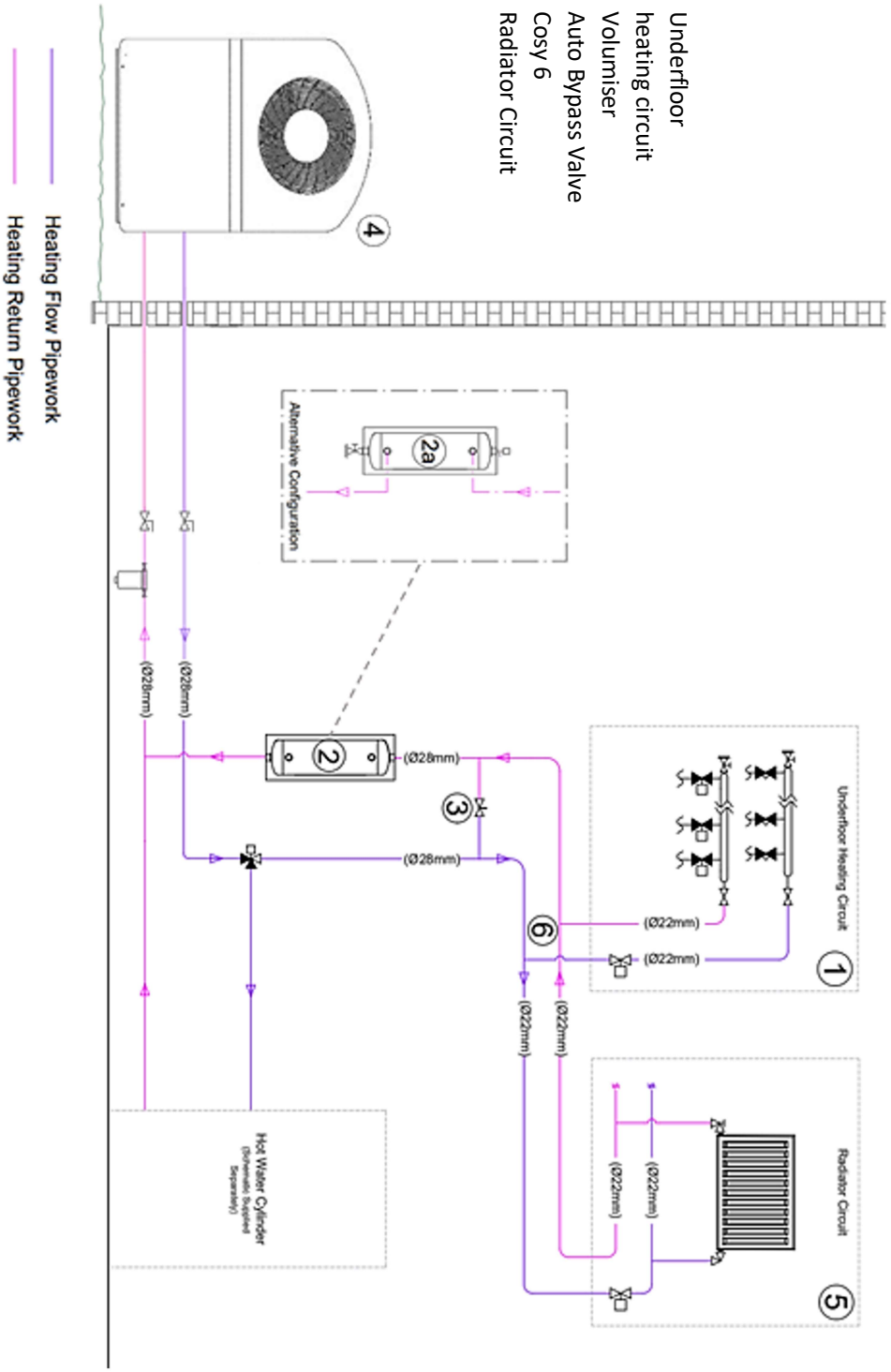
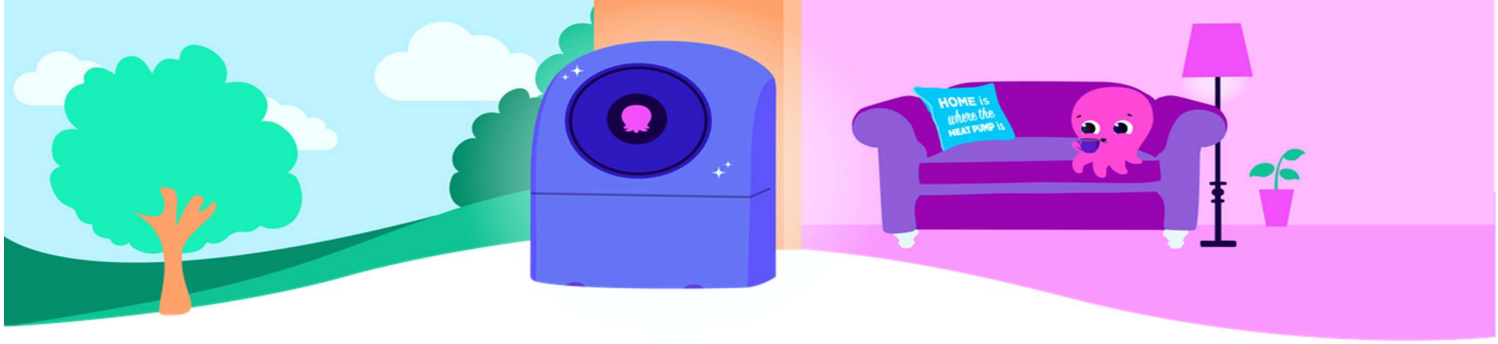


Figure 12- Single Radiator, Single Underfloor



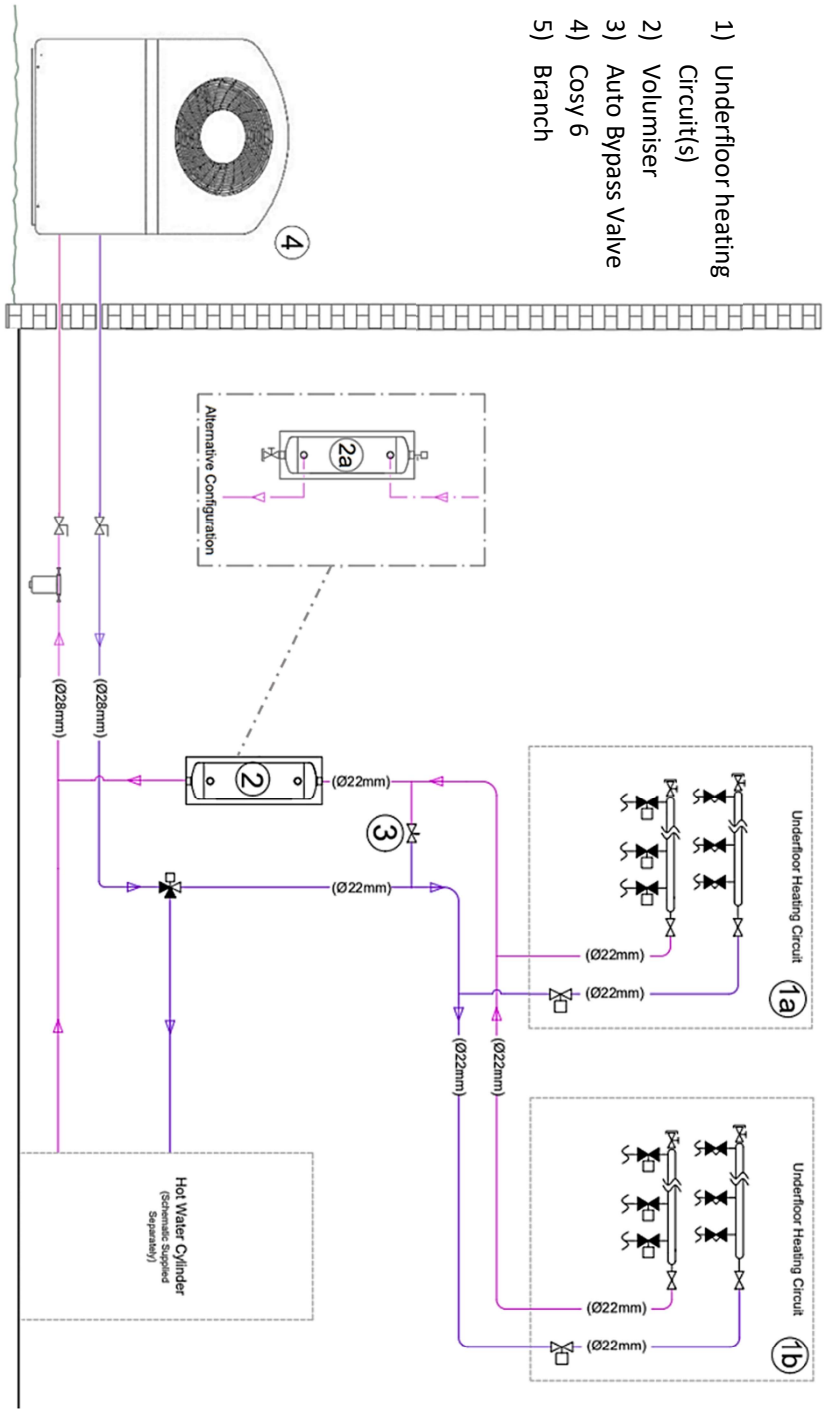
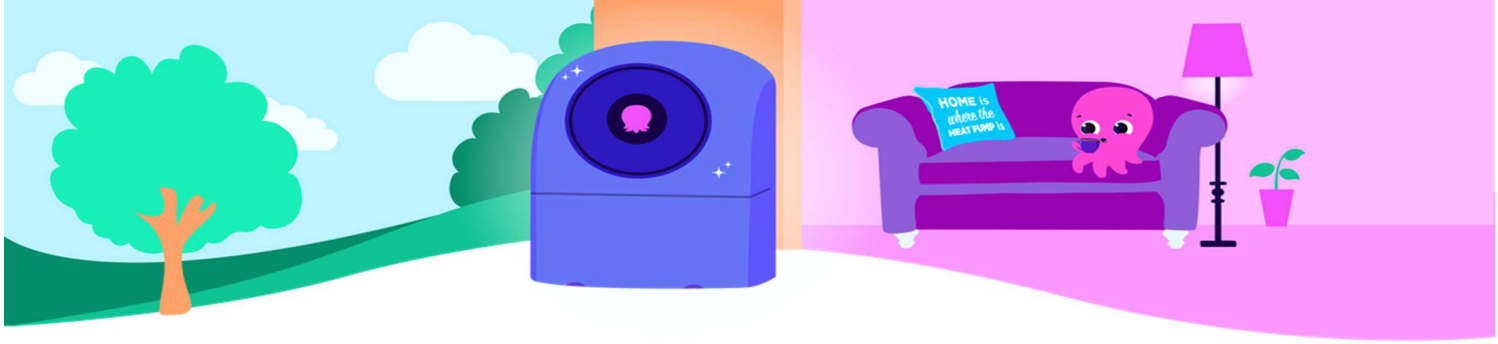


Figure 13- Two zones underfloor.



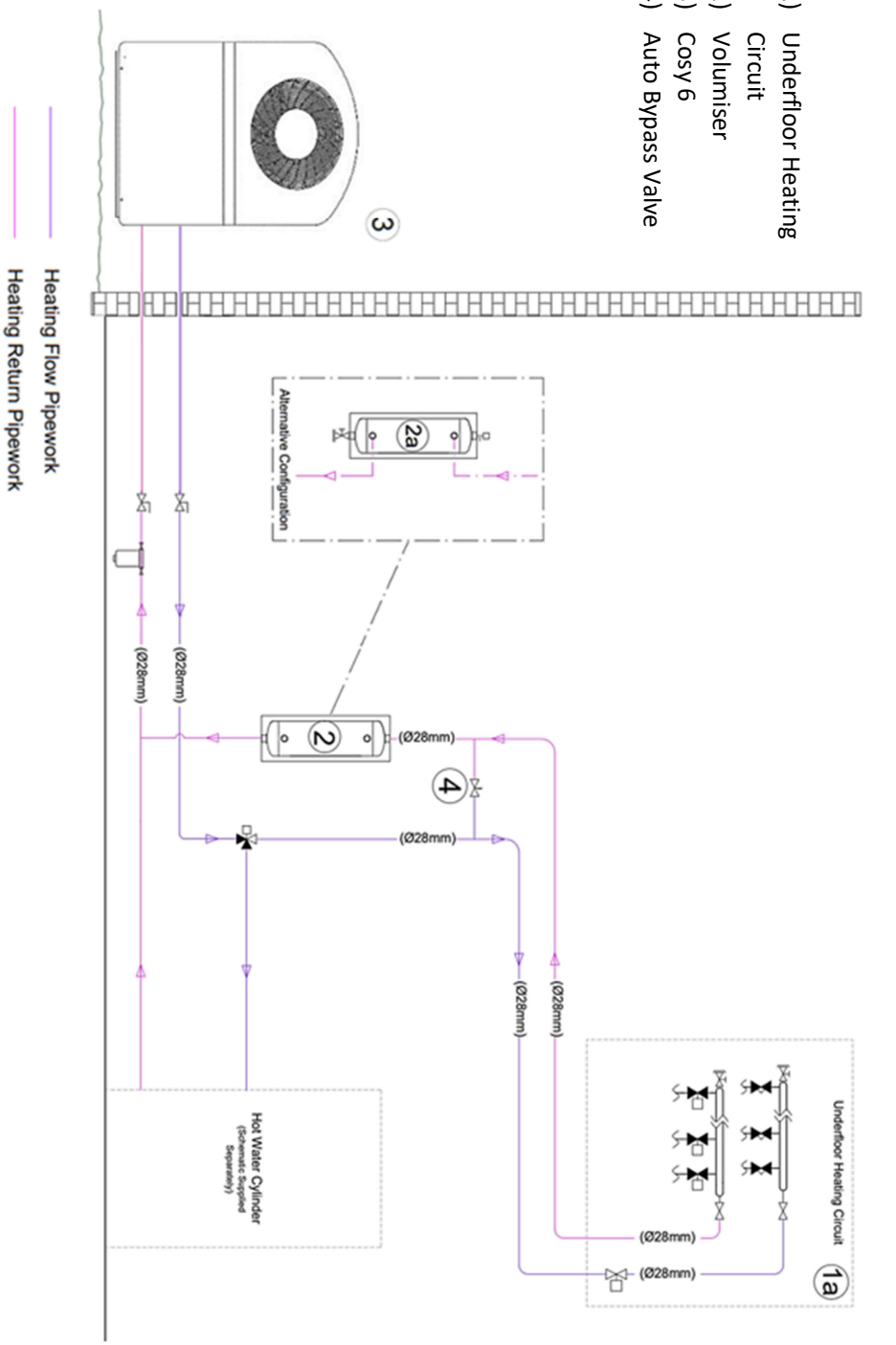
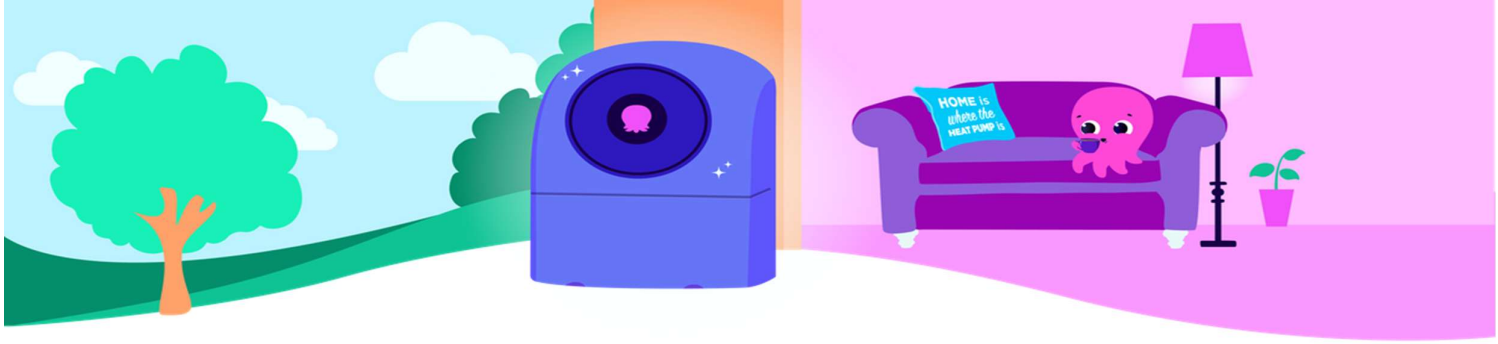


Figure 14- Single zone Radiator.



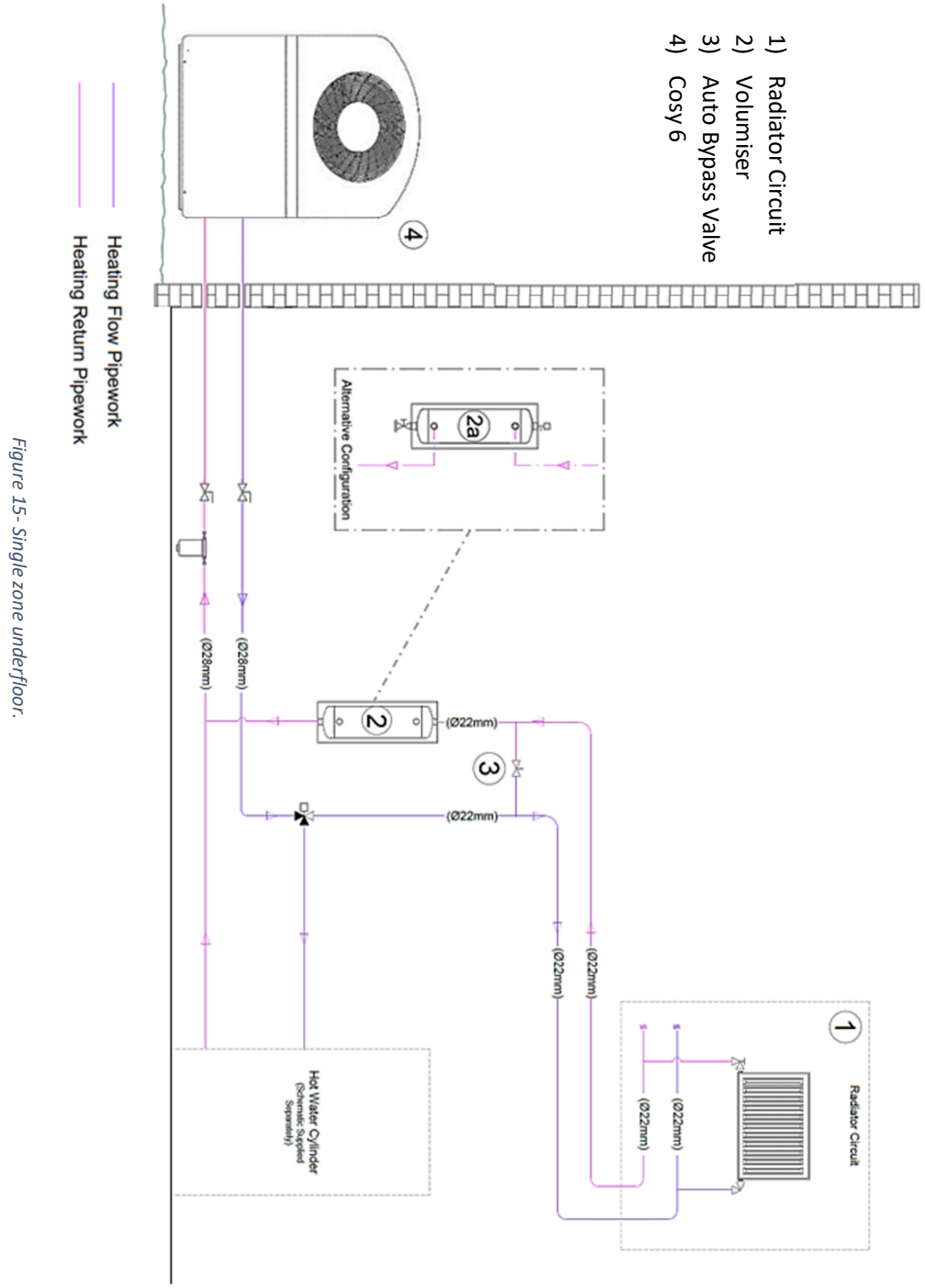
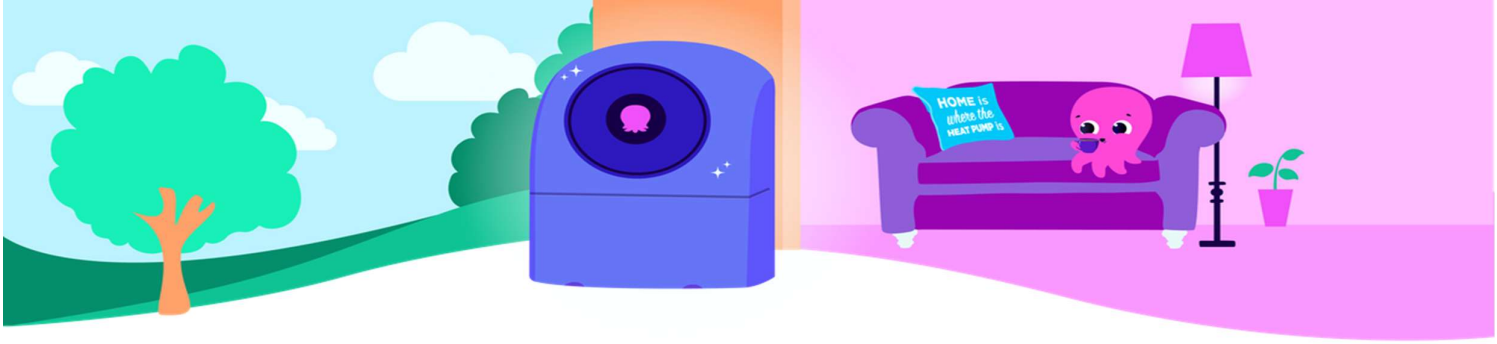


Figure 15- Single zone underfloor.



Indoor Controller

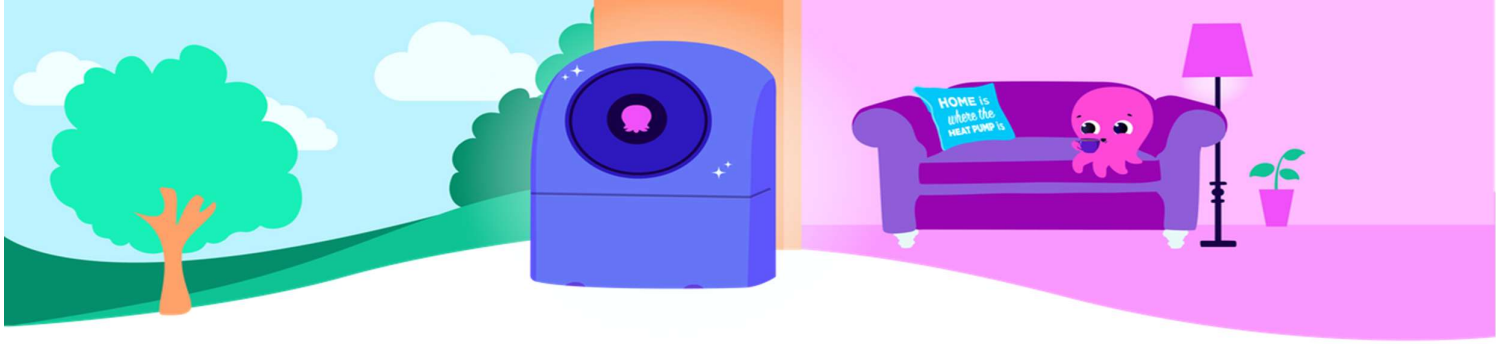
Octopus Cosy Hub is the indoor controller for the Octopus Cosy Heat Pumps. It interfaces to.

- The Cosy Heat Pump via a Modbus interface through a wired cable,
- The Cosy Pods (room temperature and humidity sensors) wirelessly through Zigbee
- The temperature sensor (NTC) for the domestic hot water (DHW) tank
- The system valves and pumps via the 4 relays integrated inside it, allowing a configuration of a single hot water and up to 3 space heating zones.
- Home router wirelessly through WIFI to enable remote smart controls via the Octopus Energy app.



Figure 16- Cosy hub.

Fit the Cosy Hub in a convenient location (this can be the hot water cylinder cupboard) and in an area where there is good Wi-Fi reception and at a distance at least 30cm from any large metal objects.



- Follow the steps below to wire the controller into the Heat Pump system.

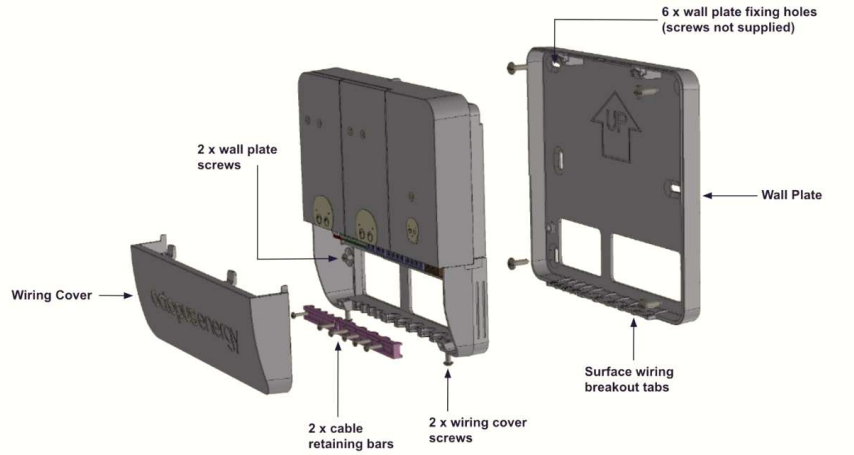


Figure 17- Exploded View

- Loosen the ‘wiring cover screws’ (they are retaining) and pull the ‘wiring cover’ away from the Cosy Hub.
- Loosen the ‘wall plate screws' (they are retaining) and pull the Cosy Hub away from the ‘wall plate.’
- Fix the ‘wall plate’ to the wall - the arrow should be pointing upwards.
- Wiring can be done either through the ‘surface wiring breakout tabs,’ or through the holes in the ‘wall plate’ as seen in Figure 11

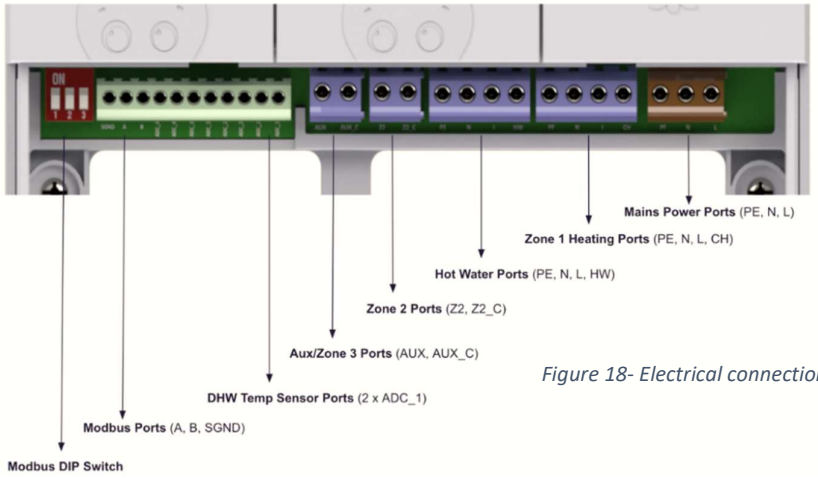
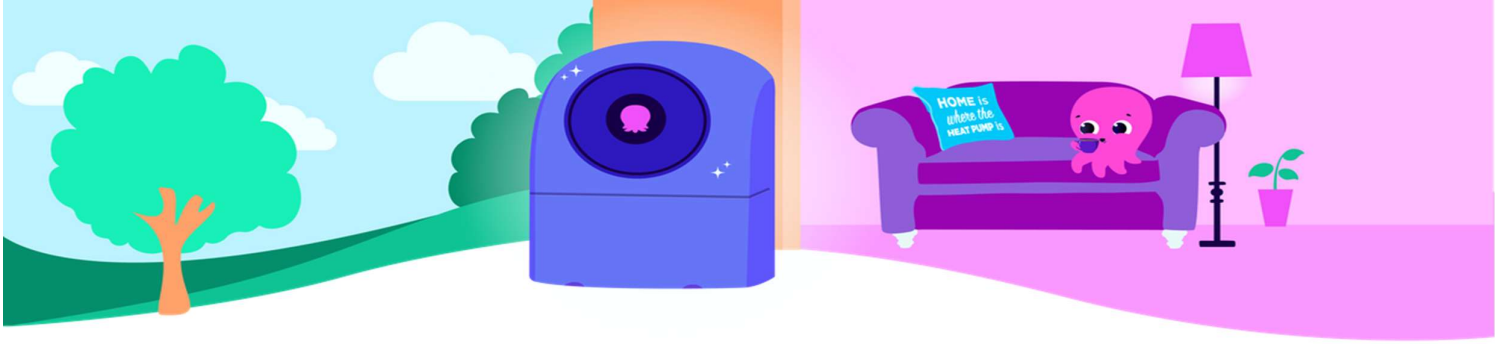


Figure 18- Electrical connections.



- Modbus DIP switch: Make sure the Modbus DIP switch is configured as follows:

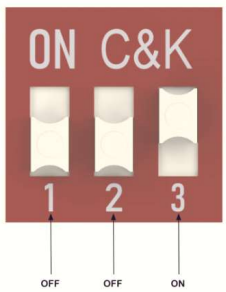
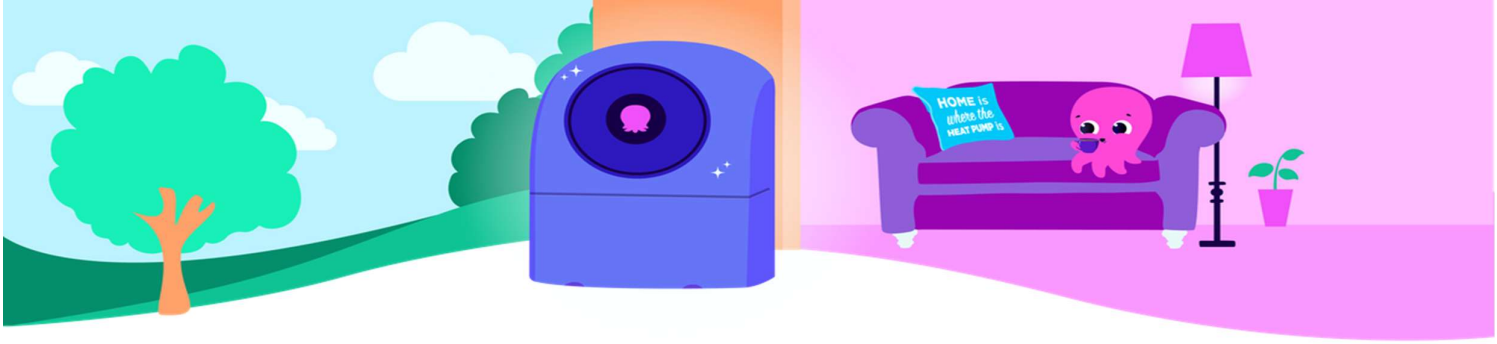


Figure 19- Modbus DIP switch configuration.

- Modbus Ports: Using the supplied Modbus cable, wire the Modbus ports to the Cosy Heat Pump as follows:
    - A: Connect one end of the red wire into port A and the other end into the correct port on the Cosy heat pump
    - B: Connect one end of the black wire into port B and the other end into the correct port on the Cosy heat pump
    - SGND: Connect one end of the green wire into port SGND and the other end into the correct port on the Cosy Heat pump (SGND is not earth and should not be connected to earth)
- DHW Temp Sensor Ports:
    - ADC_1: Connect the temperature sensor (NTC type) wires for the hot water tank into ports ADC_1 (no polarity)
    - Insert the temperature sensor into the tank.
- Hot Water Ports: Make sure the 3-port ESBE valve is plumbed into the Central Heating when powered from the permanent Live wire only. It should then be motored anti-clockwise with a Switched Live input when hot water is needed. Connect the 3-port ESBE valve to the 'Hot Water Connector Ports' as follows:



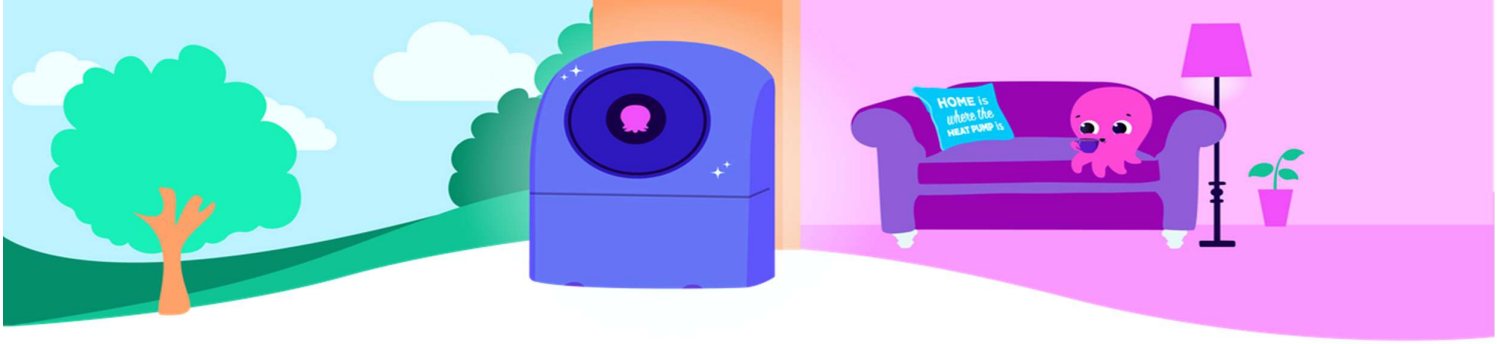
- HW: Connect the Switched Live wire of the ESBE valve into port HW.
- L: Connect the Permanent Live wire of the ESBE valve into port L.
- N: Connect the Neutral wire of the ESBE valve into port N.
- PE: The ESBE valve is double insulated and should not require earthing, optional.

- Mains Power Ports: Connect the mains power into the power port:
  - L: Connect the brown wire into port L.
  - N: Connect the blue wire into port N.
  - PE: The Cosy Hub is double insulated and does not require earthing, optional.

Commissioning

The following instructions must be read and understood prior to the commissioning of the Cosy 6. If under any circumstance, there are aspects to the installation and or system which do not comply with the specification laid down, the Heat Pump must not be put into operation until the system and or installation meets all the requirements.

- Check the following is complete before beginning the commissioning phase of the installation.
- Check that the correctly rated RCD, power cable and lockable isolator is installed.
- Check hydraulic and electrical connections are correct.
- Check that cabling has been correctly routed and clamped.
- Check the air tightness of the connections.
- Check all required valves are open including pump valves.
- Check the correctly sized heating expansion vessel has been fitted with 3 bar PRV.
- Check nothing has been left inside the heat pump.
- Inspect to ensure that all casing components have been refitted correctly.



Filling the system

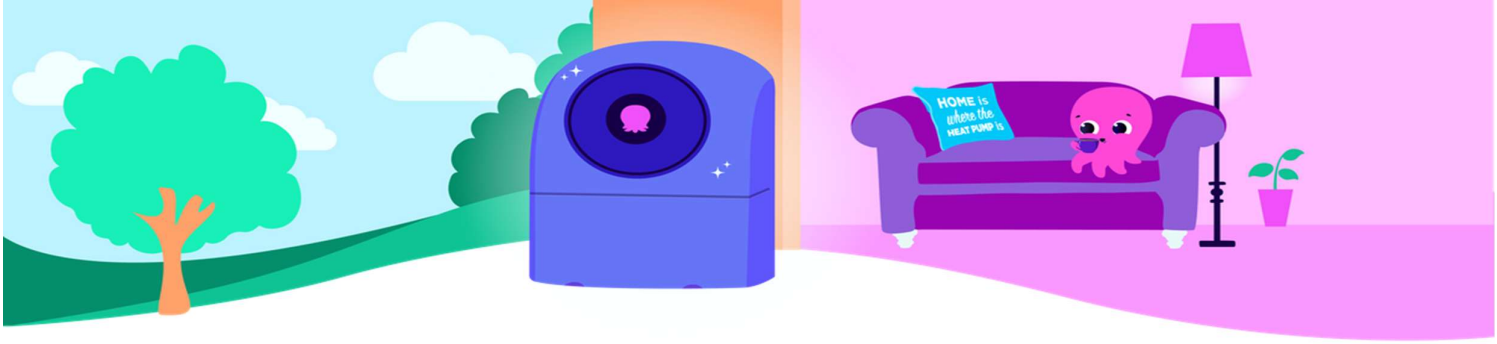
The system should have the correct corrosion inhibitor added to the correct volume before filling with water. The system should be filled cold through a fill loop via a filling loop isolation valve. Once the system pressure has reached 1 bar air should begin to dispel through the system auto air vents. Continue to fill until all air is dispelled. To bleed the heat pump of air a Schrader bleed valve is located above the circulating pump as shown in Figure 14. By surpassing the valve air can escape from the heat pump heat exchanger. However please ensure that the Schrader cap in replaced after bleeding. Once all perceived has been removed the circulating pumps can be ran manually to remove trapped air. The heat pump will require bleeding again during the running of the circulating pump.



Figure 20- Air Bleed vale location.

Cosy hub Commissioning

The Cosy Hub has five LEDs (2 x indicating hot water mode, 2 x indicating heating mode and 1 x indicating the status of the Cosy heating system), and three buttons (1 x to change the hot water mode, 1 x to change the heating mode, 1 x to enable Bluetooth or Wi-Fi).



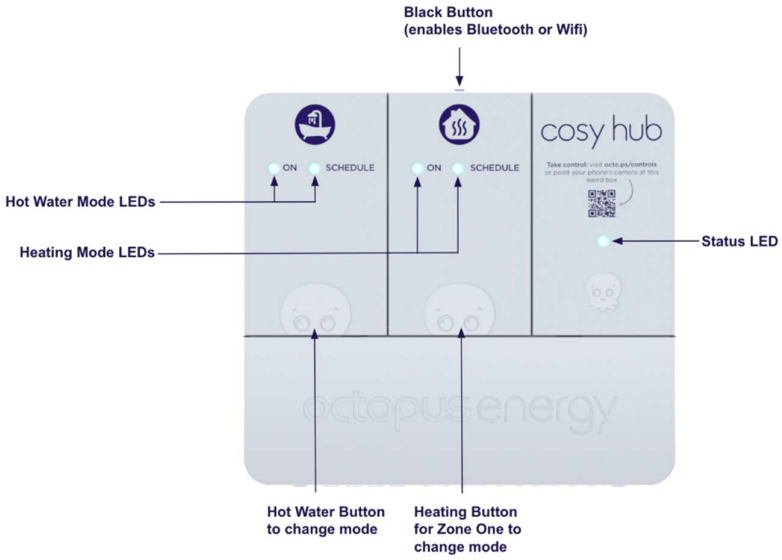
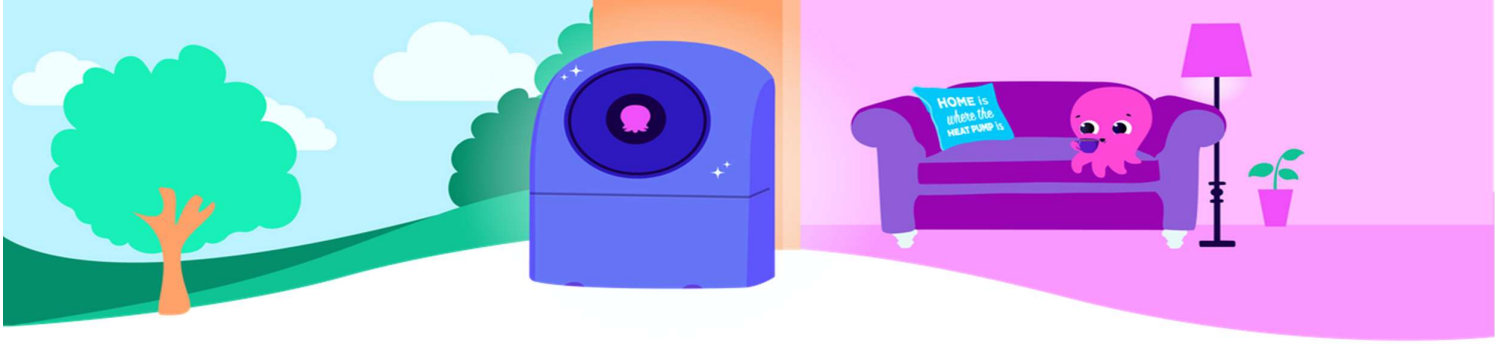


Figure 21- Status LEDs

LED Colour	Description
Flashing Purple	Booting up
Flashing Blue	Bluetooth Enabled (Ready to pair to Octopus Energy App)
Solid Blue	Wi-Fi Enabled (ready to connect to installer site)
Flashing Yellow	Zigbee Enabled (ready to connect to Cosy Pods)
Solid White	Connected/ Online
Solid Yellow	Lost Wi-Fi Connection
Solid Red	No Primary Pod
Flashing Red	Cosy Heat Pump has a fault

Enabling Installer Mode to access the Installer Website:

The Cosy Heat Pump system is configured and commissioned via the Installer Website. The Cosy Hub needs to be put into 'Installer mode' to enable access to the Installer Website. Follow the steps below:



- When the Cosy Hub is first powered up, the status LED should go from flashing purple to solid red.
- Enable Installer Mode by pressing the black button at the top for 10 seconds until the status LED goes solid blue.
- Go to your Wi-Fi settings on your tablet (or laptop or mobile), select OCTO-COSYHUB and enter the password.

Note: you can find the password on the label on either the side of the Cosy Hub or on the inside of the 'wiring cover.'



- Once you have connected to OCTO-COSYHUB, you will be able to access the Installer Website by typing 192.168.1.1 into the browser on your tablet (or laptop or phone) and you will be taken to the Home page as default:

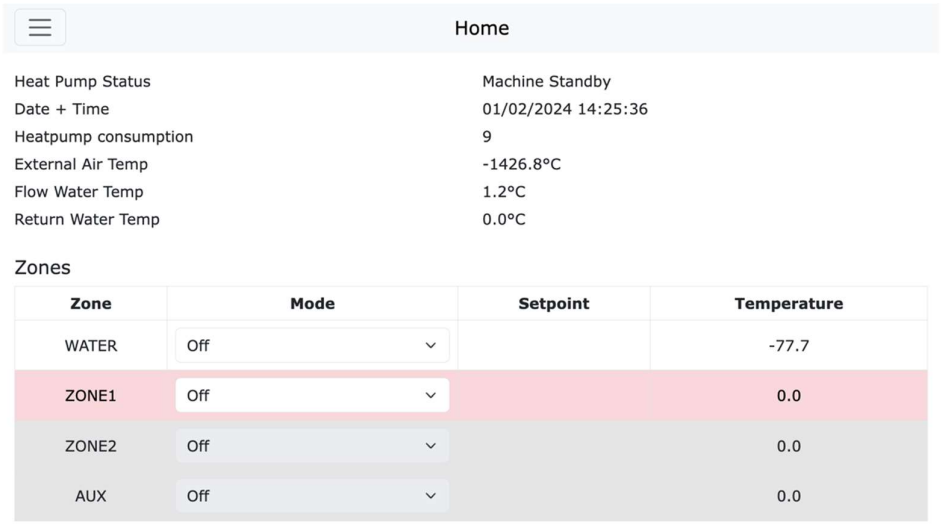
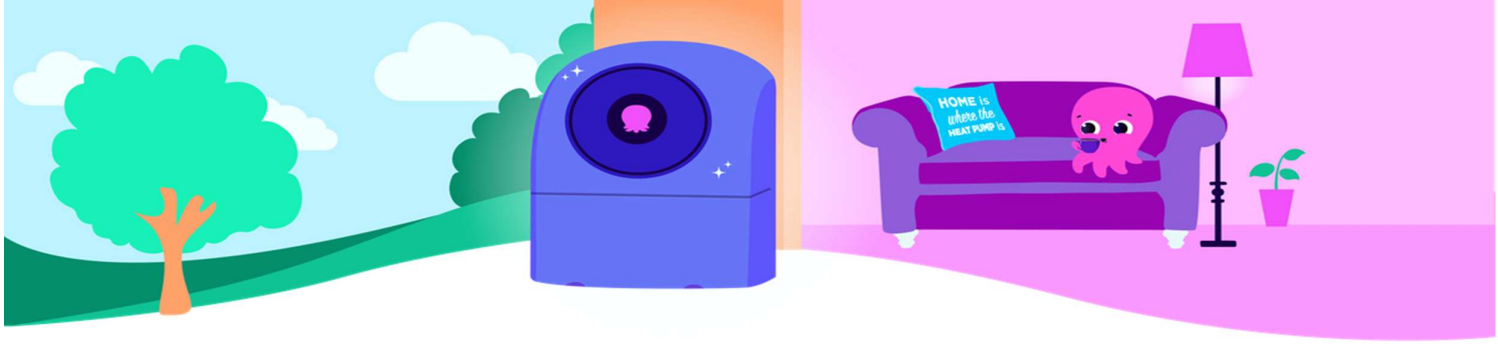


Figure 22- Installer Site page.



Commissioning and Configuration:

- Press the menu button in the top left corner and select ‘System Configuration’ and scroll down to ‘Manual Pump Control.’

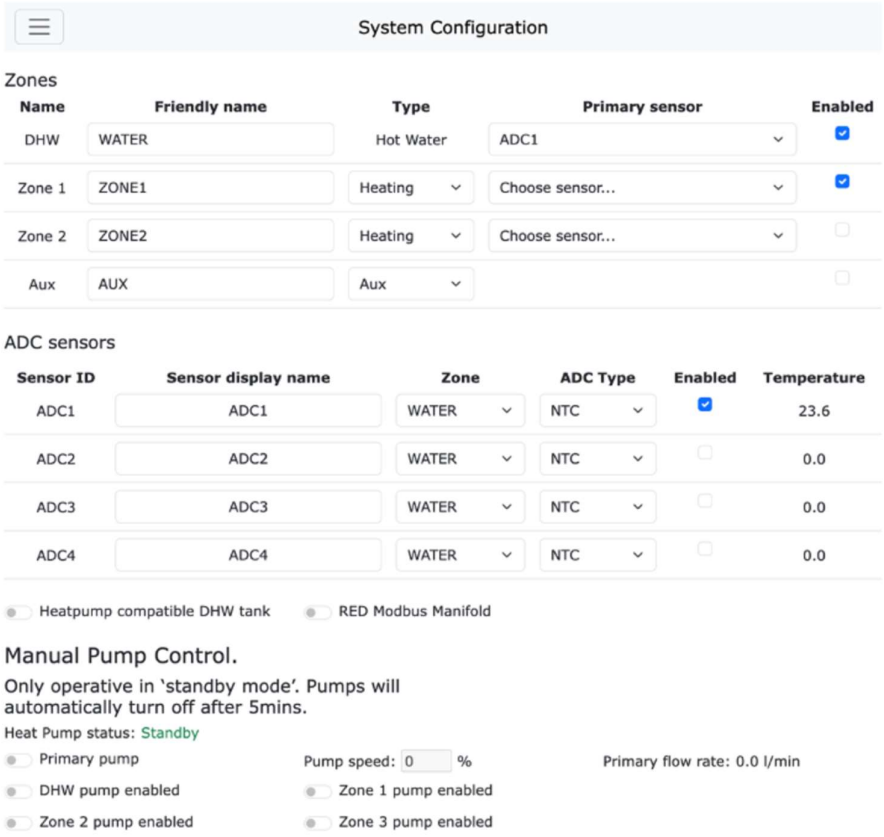
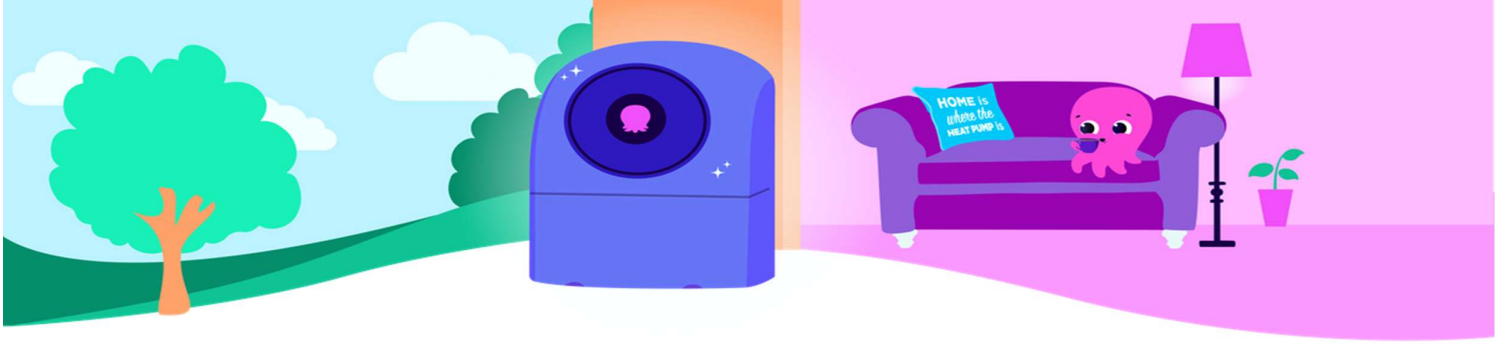


Figure 23- Manual Pump Control.



DHW Tank Mode, Setting the Manifold and Purging the System:

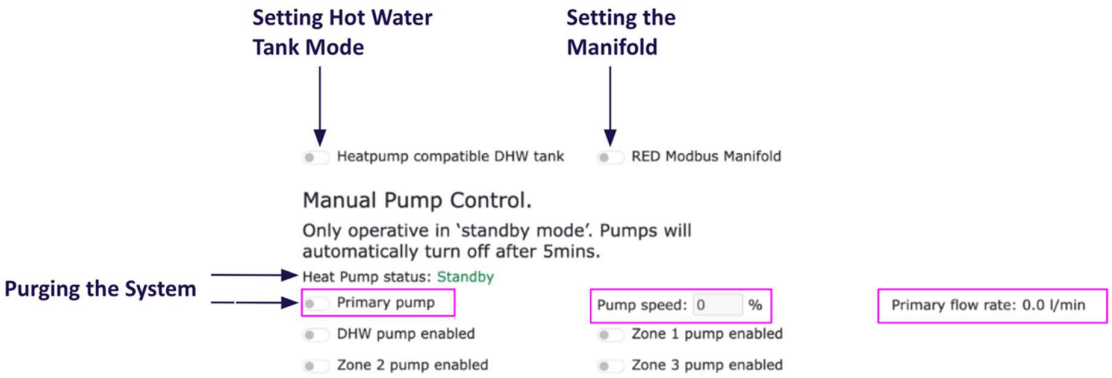


Figure 24- System Purging instructions.

Setting Hot Water Tank Mode

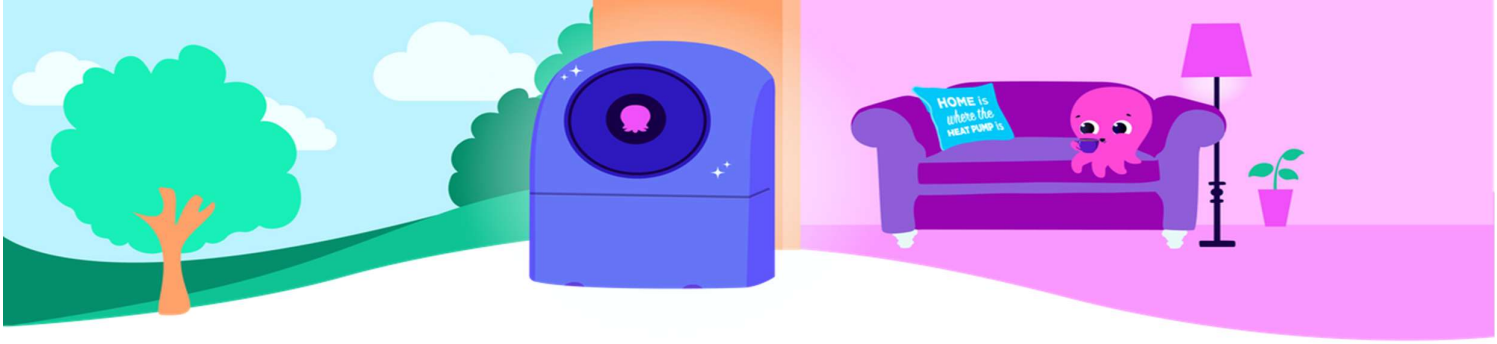
Only enable 'Heat Pump compatible DHW tank' if a heat pump compatible tank is being installed.

Setting the Manifold

Only enable 'Modbus Manifold' for systems with a manifold.

Purging the System

- Ensure 'Heat Pump status' is 'Standby' (if not, go to the 'Home' Page and turn off all zones – once you have done this, it may take a few minutes for the 'Heat Pump Status' to update to 'Standby').
- Turn the primary pump on (this will automatically set the Pump speed to 100%), purge/bleed the system as needed until a good 'Primary flow rate' is achieved.
- If the system has other pumps outside of the primary pump installed, they can be enabled through the same System Configuration page via DHW, Zone 1, Zone 2, and AUX/Zone 3 pumps.



Configuring the Hot water and Heating zones:

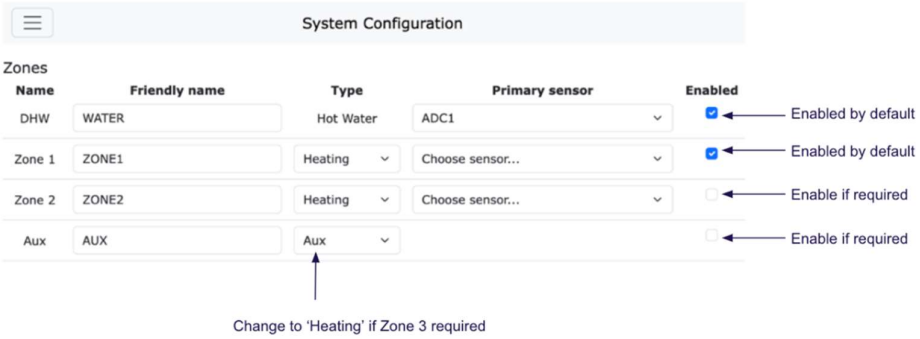


Figure 25- System Configuration

Hot Water (DHW)

Enabled by default, leave as is.

Heating for main zone (Zone 1)

Enabled by default, leave as is.

Heating for second zone (Zone 2)

Only enable if a second zone is needed.

Heating for third zone (Aux)

Set 'Type' from Aux to Heating, enable if a third zone is needed.

Setting the Flow Temperatures:

Press the menu button on the top left and go to the 'Setpoints' page.

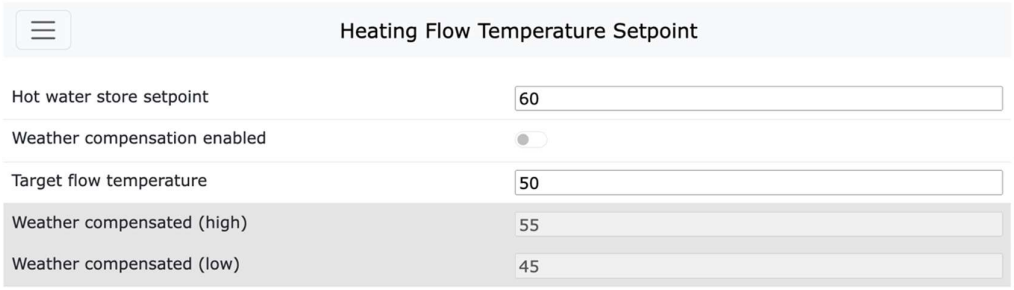
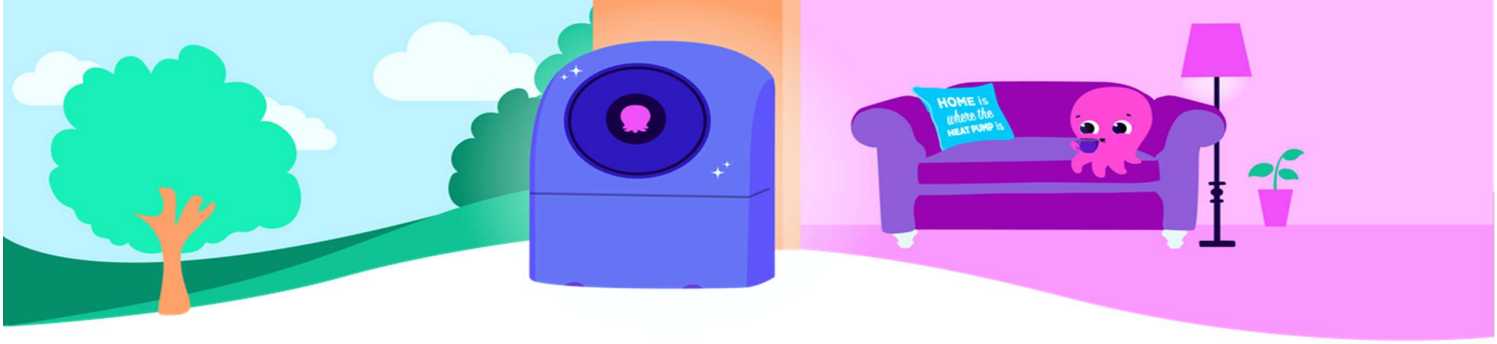


Figure 26- System settings.



Hot water

Leave ‘Hot water store setpoint’ as default at 60.

Heating

Enable the ‘Weather Compensation.’ Leave ‘Weather compensation (high)’ as default at 55 and ‘Weather compensation (low)’ as default at 45.

Cosy Pods

The Cosy Pods are room temperature and humidity sensors.

- Customers will be given a maximum of four Cosy Pods during install.
- There should be at least one Cosy Pod installed per heating zone (known as the ‘Primary Pod’).
    - The heat pump will heat the zone based on the temperature of the ‘Primary Pod,’ other pods installed in the same zone are for temperature and humidity information only.
- Cosy Pods have a button to enable or cancel boost and an LED to show the status (note: the LED will never be constantly illuminated to preserve battery life)

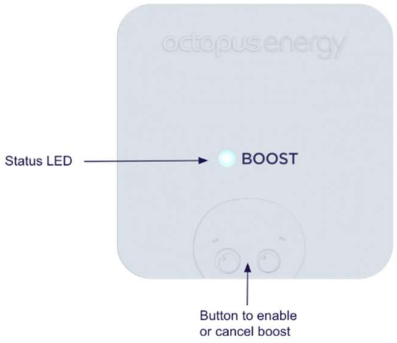
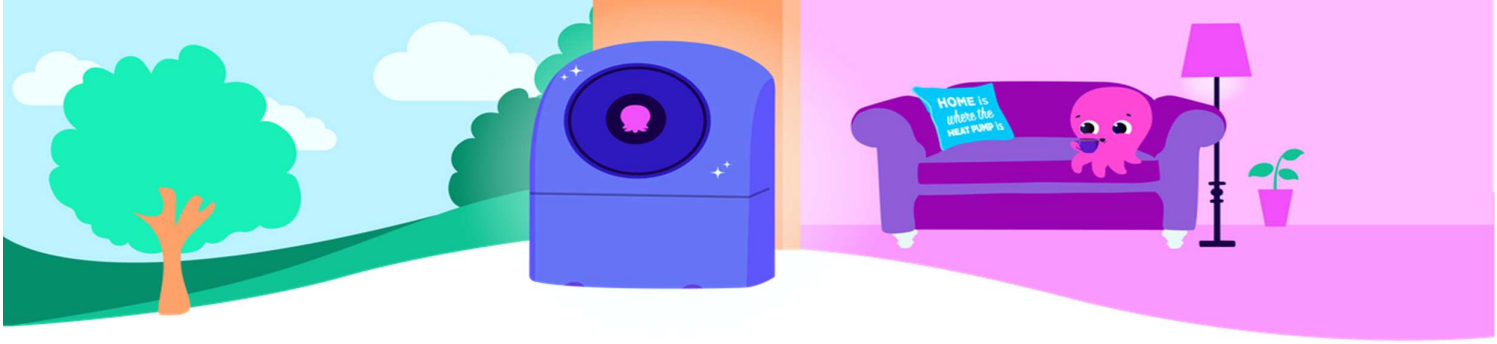


Figure 27- Boost button.



Cosy Pod Status LED

LED Colour	Description
Flashing Purple (times out after 1 hour – will need to be rebooted if this happens)	Zigbee Enabled (ready to connect to cosy Hub)
Solid White (times out after 5 seconds)	Paired to Cosy Hub
Solid Red (times out after 15 seconds)	Lost Connection to Cosy Hub
Solid Green (times out after 15 seconds)	Boost Enabled for 1 hour (Boost default = Current temp + 2)
Fading Orange (times out after 3 seconds)	Boost Cancelled
Flashing Red (Once every 30 Seconds)	Low Battery

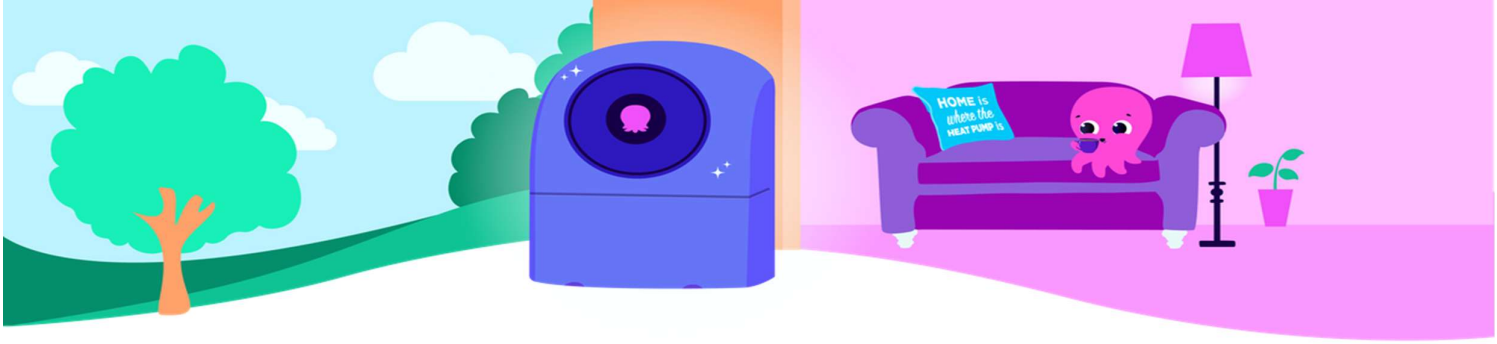
Pairing the Cosy Pods

- Remove the wall plate at the back of the Cosy Pod.



Figure 28- QR code location.

- Remove the battery tab to power the Cosy Pod and wait until the status LED flashes purple.
- Scan the QR code on the back of the Cosy Pod with your tablet (the first Cosy Pod you scan will become the Primary Pod) and this will automatically open the 'Link room sensor' page on the Installer Website:



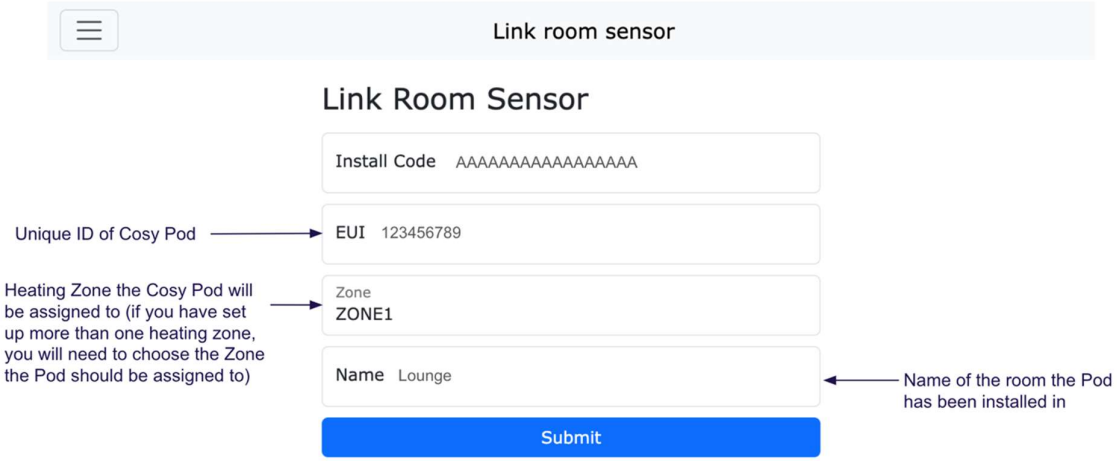


Figure 29- Link Room sensor instructions.

- If there is more than one heating zone, you will need to assign the Cosy Pod to a Zone
- Name the Cosy Pod as per the room it will be installed in (e.g. Lounge).
- Print a label with the name of the room and stick it on the top of the Cosy Pod
- Screw the Cosy Pod onto a suitable wall away from sunshine, any draughts or heat sources.
- Repeat the steps above to set up the other Cosy Pods.
- Go to the 'Room Sensors' page and ensure the Cosy Pods are listed.

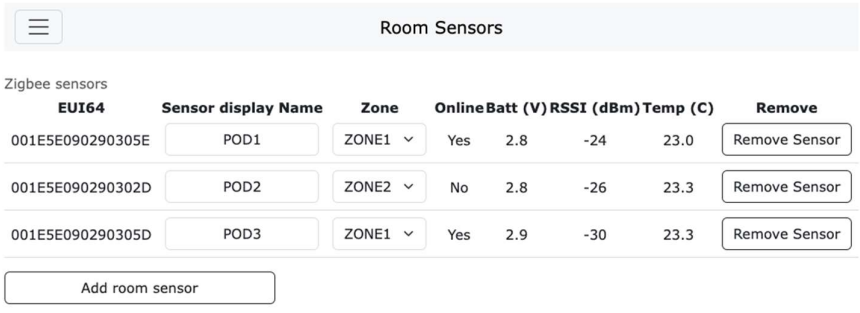
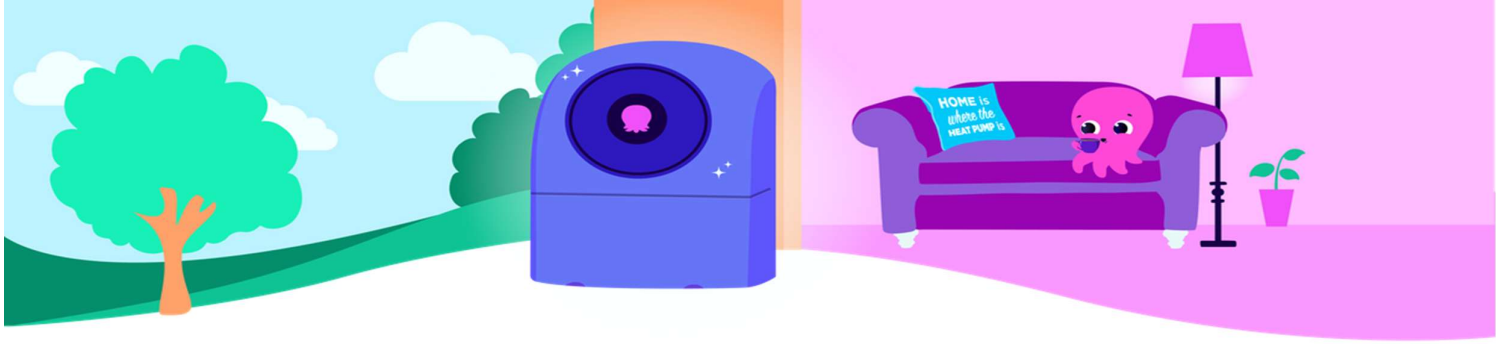


Figure 30- Room Sensor menu.



- If you need to change the Primary Pod, go to the 'System Configuration' page, and select the sensor from the drop-down Primary Sensor list.

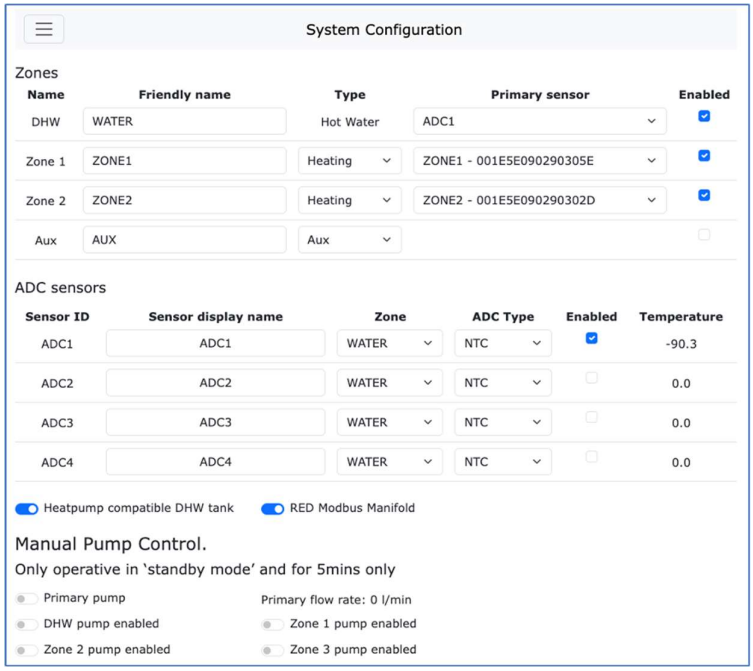
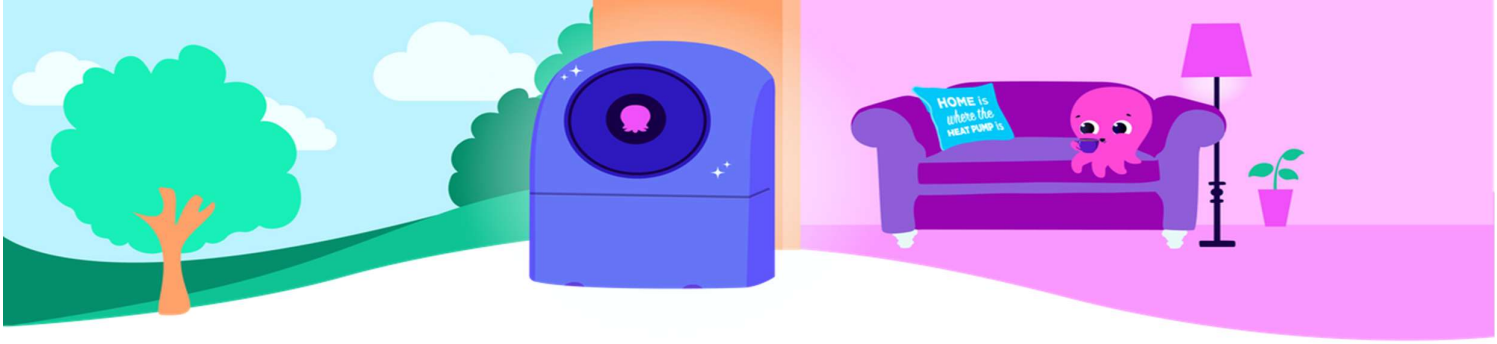


Figure 31- System Configuration

Setting up the Octopus App with the Customer

- Get the customer to scan the QR code on the Cosy Hub, the customer will then be guided through the setup journey within the Octopus Energy app.
- Once the customer has completed the journey within the app, the status LED on the Cosy Hub should turn white.



Decommissioning

Uninstalling the Unit

1. Ensure heat and hot water demand have been switched off at the Cosy hub and heat pump has entered standby mode.
2. Isolate power to the outdoor unit and make electrically safe and allow 10 minutes as some components still hold charge and will require time to discharge.
3. Isolate and Disconnect Hydraulic connections from the system with isolating valves provided, this includes the Flow, return and condensate drain. Be aware that some system water will remain within the product and will drain when disconnected from the hydraulic connections.
4. Remove the Casing door to access the Mounting bolts described in the installation section.
5. Follow safe manual handling instructions for moving the product as described in the safety warnings section and ensure there are no trailing pipes, cables, or trip hazards.
6. disposal of any waste material, substances, and liquids in accordance with local regulations

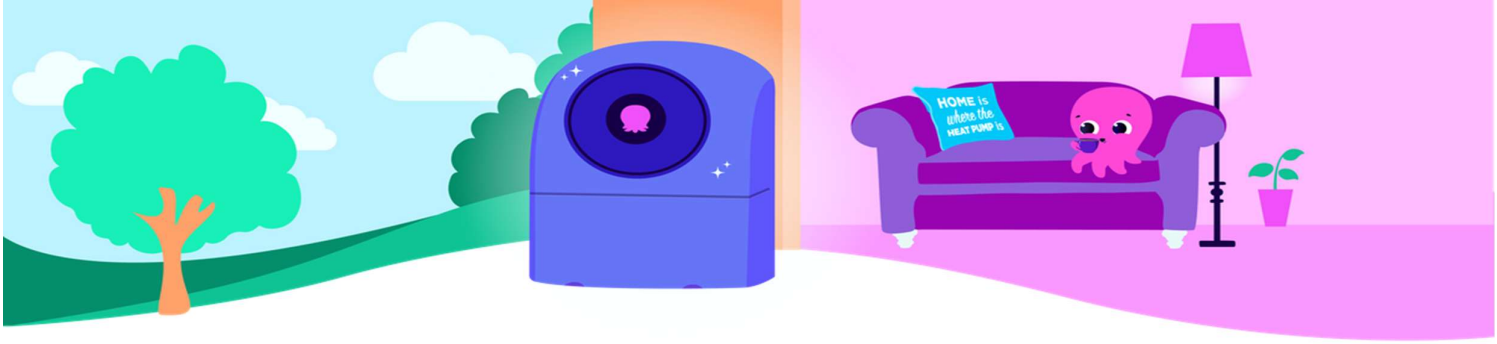
Refrigerant removal

When r290 refrigerant mixes with air the mixture is extremely flammable, ensure work is done away from all sources of ignition and product remains grounded.

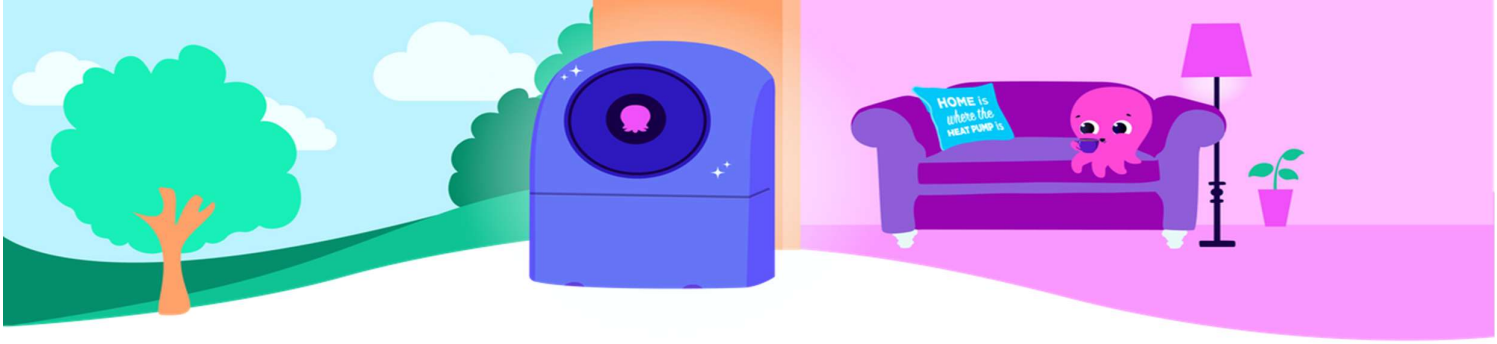
In the event of a refrigerant leak allow the refrigerant to evaporate, do not allow R290 to enter drainage systems.

If refrigerant needs to be removed from the system for any purpose such as decommissioning, service or maintenance follow the steps below:

- Only preform this operation if you are competent handling R290 refrigerant, wear all suitable protective equipment (gloves, antistatic clothing, respiratory and eye protection).
- Ensure that Heat pump is electrically isolated and that all connections except for the ground connection.
- Ensure that all refrigerant recovery equipment is A3 Approved



- To remove refrigerant requires a refrigerant recovery machine, vacuum pump, two-way refrigerant manifold with correct hoses and a correctly labelled r290 recovery cylinder.
- Connect to high- and low-pressure sides of system but before commencing refrigerant recovery ensure all lines, recovery vessel and al associated equipment has been vacuumed using vacuum pump.
- Check connections for any leaks before connecting to the system. If any leaks are found close all refrigerant connections and tighten associated connections.
- Both gauges on refrigerant recovery manifold should read and maintain a negative pressure of 0.3mbar to ensure the unit is free of refrigerant, this process may take up to an hour.
- Disconnect from heat pump ensuring all refrigerant has been recovered into the recovery vessel and that the recovery vessel is now safely isolated.
- If components from the refrigerant side need removed Ensure system have been thoroughly flushed with nitrogen.
- The recovered refrigerant requires drying and cleaning before being reused however if the refrigerant is to be disposed, disposal must follow all local regulations.



User maintenance

Air source heat pumps are relatively low maintenance they just require the user keep their airflow path clear to keep them as efficient as possible. Any other maintenance will be performed as part of a service or repair, however there are some things to look out for to keep your cosy 6 operating as efficiently as possible.

General

The fan grille will not allow big or small fingers through but other items such as sticks or toys may be able to get past, this should be avoided as hard objects may cause damage to the fan.

The casing of the cozy six is impact resistant and can survive any bumps or knocks from any normal gardening activities such as gardening and playing however the evaporator is exposed behind the unit, the evaporator fins can be easily deformed and may have sharp edges so take care during cleaning and do not store anything behind the Unit.

If any cracks do appear in the casing or if the evaporator gets damaged contact support.

Covers

The unit should only be opened by trained installers, pipework may be incredibly hot or cold depending on the stage of the cycle and live components will hold charge for a period even if the unit is disconnected.

The fan cap must also not be removed at any time as without it water or debris may enter and damage fan electronics.

Defrost

The time it takes for the cycle to complete varies and in general, the indoor heat will run to keep you comfortable until the cycle is complete. This defrost will also help to clear the unit of snow and any water created from the defrost process will drain away through the condensate drain.

If ice continues to form on and inside your heat, it could indicate a problem with the defrost function, the outdoor fan, refrigerant levels, or a lack of airflow and an engineer should be called to address the issue.

In the case of heavy snowfall or an ice storm it may be necessary to clean the unit as there may not be sufficient airflow to begin the heating cycle.



Product ingress

Leaves

It is important to keep the heat pump clear from any garden debris such as leaves, bushes, or branches within, these factors should be considered when choosing an install location however it is still possible for debris to build up around the unit especially after high winds. A soft brush can be used to remove any garden rubbish to prevent any potential blockages.

Leaves and debris may also build up behind the unit where it sits out from the wall, these can also be cleaned away with a brush although care must be taken around the flow and return pipes. While preforming this maintenance check the flow and return pipes for any leaks or damage and arrange a service if either are found.

Algae /moss

It is possible that overtime algae or moss may build up on the product, they can simply be removed with a damp cloth but avoid fan and the flow and return pipes as they can be at extreme temperatures.

Water

Rainfall will not affect the unit as rain will pass through the fan, down the airflow path and into the drip tray where it will drain off through the condensate management system.

Inspecting unit

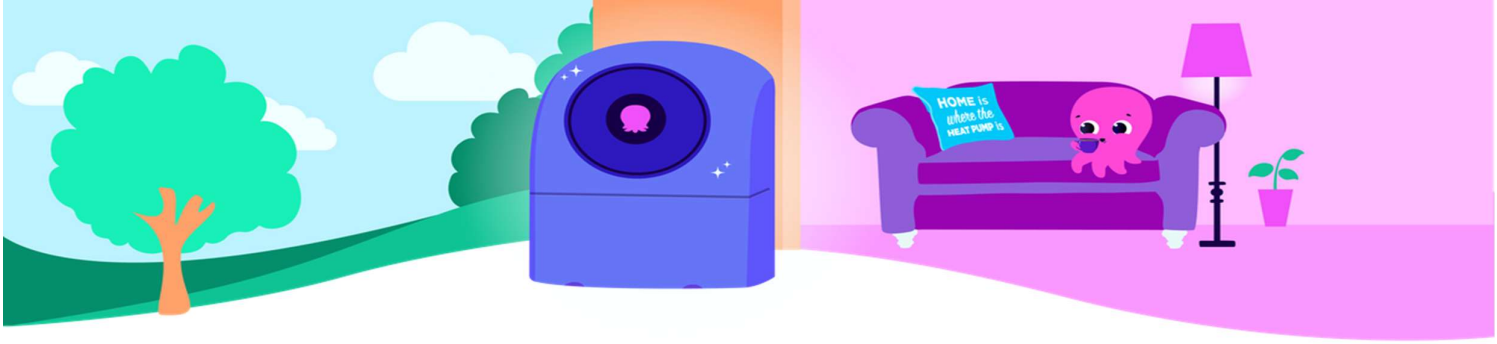
Checking for leaks

water

the unit will create water through its regular operation due to moisture in the air, but this water should drain away, it is important to check the unit for leaks, the principal areas to inspect are:

- the condensate drain.

  The condensate drain is used to drain away rain and the water created from moisture in the air due to condensation If this area becomes clogged with debris and could overflow and create a puddle around your heat pump. The user can clean this.
- The Flow and return connections.



This is where the warm water leaves the unit and the cool water returns, if these connections are loose or get damaged it can cause leaks and could result in a drop in system pressure, this will require engineer to repair.

- Door

  Some water may be present in the unit from rain and/or melting ice however if a large volume of water is leaking from the bottom of door this could be an issue with the hydraulic pipework and an engineer should be called.

Refrigerant

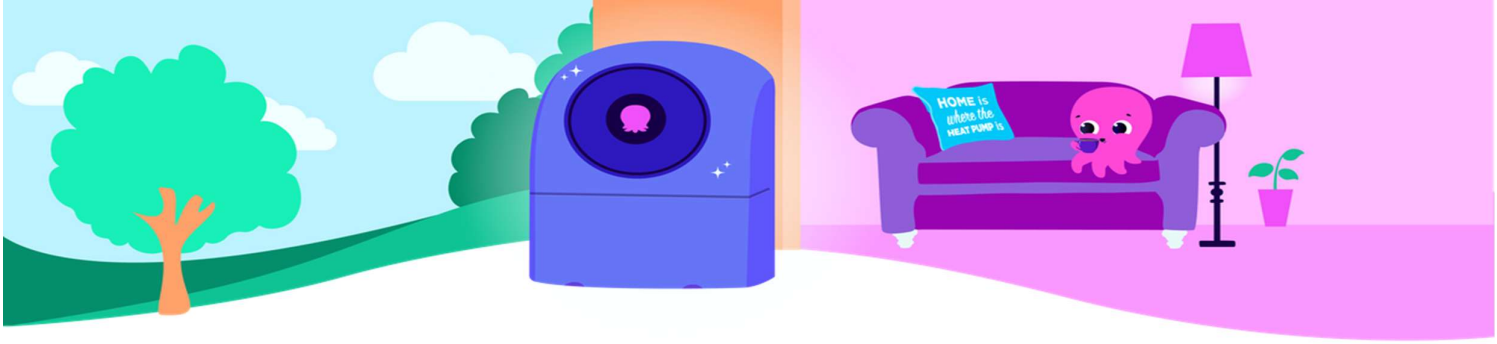
If a refrigerant leak is suspected an engineer should be called immediately and all electronics and sources of ignition should be kept clear of the unit.

A refrigerant leak will result in the unit working harder to meet the demand and if it continues the unit could stop working altogether. If there is hissing sound coming from the unit could be an indicator of a refrigerant leak.

Noise

During its regular operation, the heat pump will make some noise however some noises can indicate a problem. If any of these issues should arise contact an engineer.

- If the heatpump is louder than usual this may just be the unit working harder than normal, this could be due to cold weather, continue to monitor the unit and if the issue continues.it may be possible that the unit is struggling to meet the demand and may be the wrong capacity for your home.
- A gurgling sound may indicate a problem in the refrigerant circuit, it can be an indication low levels of refrigerant, this could also be due to a leak or an insufficient charge.
- A grinding or squealing sound may be the result of motor wear and tear, dirt build up on components requiring lubrication or a fault with the compressor.



Electrical

- If your heat pump is not heating, it could be because it is lost its electricity supply. check that both the indoor and outdoor units are switched on and check that your app is connecting to the system.

  If both are on and the issue remains check the circuit breaker for a tripped circuit. If and neither are at fault, consult an engineer.
- If the heatpump is overheating or not cycling correctly this could be due to a faulty thermostat, if possible, check that the thermostats have been correctly connected and calibrated, if they are not an engineer should be called to calibrate the system correctly.
- If the heatpump is running constantly this could be due to the thermostat being set too high for reference, heat pumps should cycle 2-3 times per hour. This could also mean that the Unit may be the wrong capacity for your home.
- If there are any exposed wired on either the indoor or outdoor unit contact an engineer
- In the case of sever electrical issues a smoky or fishy smell ay emanate from the unit; this could be a sign of components burning out.

Customer care

Phone:

(+44) 0808 175 1696

Email

aftercare@octoes.com