TRIANCO

BRINGING HEAT TO LIFE

High Temperature
Air Source Heat Pump
Installation Operation and Service Manual

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING AND OPERATING THIS APPLIANCE

TO BE RETAINED BY HOUSEHOLDER

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INTRODUCTION

This manual includes the necessary information about the unit. Please read this manual carefully before you install, operate, and maintain the unit. This manual is intended for the professional installer.

By Fitting this Activair High Temperature Air Source Heat Pump, you agree:

- **The unit has been received in good condition.**
- **You have carried out a heat loss calculation, consulted the heat pumps data and are sure that this heat pump is suitable.**
- **You have carried out a load and voltage test to determine the correct size of breaker to be used.**
- **You meet the requirements of the appropriate Building Regulations**

HEALTH AND SAFETY

INFORMATION FOR THE USER, INSTALLER AND SERVICE ENGINEER

Under the Consumer Protection Act 1987 and the Health and Safety at Work Act 1974, it is a requirement to provide information on substances hazardous to health (COSHH Regulations 1998).
TR Engineering takes every reasonable care to ensure that its products are designed and constructed to meet these safety requirements when the products are professionally installed and used. To fulfil the requirements, products are comprehensively tested and examined before despatch.
When working on the appliance, it is the responsibility of the user or engineer to ensure that personal protective clothing or equipment appropriate to parts that could be considered hazardous or harmful is worn.

This appliance may contain some of the items below:

Glass rope, mineral wool, insulation pads, ceramic fibre, and glass insulation.
When handling, avoid inhalation and contact with eyes. These may be harmful and cause irritation to the skin, eyes, nose, or throat. Use disposable gloves, face masks and eye protection.
After handling, wash hands and other exposed areas. When disposing of materials, limit dust and the risk of inhalation by using water spray. Ensure materials are securely wrapped.
Seek urgent medical attention if inhaled or ingested. Exposure to eyes and skin should be followed by immediate cleansing of the affected areas and medical attention if necessary.

Glues, Sealants and Paints
The glues, sealants and paints used present no known hazards when the appliance is used in the manner for which it is intended.

SAFETY PRECAUTIONS

Protective Zone

This Activair High Temperature Heat Pump uses R290 refrigerant. The refrigerant will be located in the outdoor unit only and will not require interference.
Precautions should be taken when installing and working on appliances that contain R290 refrigerant.
Please consult the separate Protective Zone booklet for more information.

SAFETY PRECAUTIONS

To Prevent Injury to the user, other people, or property damage the following instructions must be followed.

Incorrect operation due to ignoring of instructions may cause harm or damage.

Install the unit only when it complies with local regulations, by-laws, and standards. Check the main voltage and frequency. This unit is only suitable for earthed supplies.

The following safety precautions should always be considered:
- Be sure to read the following WARNING before installing the unit.
- Be sure to observe the cautions specified here as they include important items related to safety.
- After reading these instructions, be sure to keep it together with the manual in a handy place for future reference.

⚠ WARNING

Only to be installed by a professional person.
Incorrect installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or a specialized installer.

Install the unit securely in place.
When insufficiently installed, the unit could fall causing injury.

Use the specified electrical wires and attach the wires firmly to the terminal board (connection in such a way that the stress of the wires is not applied to the terminals).
Incorrect connection and fixing could cause a fire.

Be sure to use the provided or specified parts for the installation work.
The use of defective parts could cause an injury due to fire, electric shocks, the unit falling etc.

Perform the installation securely and please refer to the installation instructions.
Incorrect installation could cause an injury due to fire, electric shocks, the unit falling, leakage of water etc.

Perform electrical work according to the installation manual.
If the capacity of the power circuit is insufficient or there is an incomplete electrical circuit, it could result in a fire or an electric shock.

The unit must always have an earthed connection.
If the power supply is not earthed, you may not connect the unit.

Never use an extension cable to connect the unit to the electric power supply.
If there is no suitable, earthed supply available, have one installed by a qualified electrician.

Do not move/repair the unit yourself.
Improper movement or repair on the unit could lead to water leakage, electrical shock, injury, or fire. Have any repairs and/or maintenance only carried out by a recognized service engineer.

Do not plug or unplug the power supply during operation.
Risk of fire or an electric shock.

Do not touch/operate the unit with wet hands.
Risk of fire or an electric shock.

Do not place a heater or other appliances near the power cable.
Risk of fire or an electric shock.

Be cautious that water could not be poured into the product directly, do not allow water to run into electric parts.
Risk of fire or an electric shock.

If the supply cable is damaged, it must be replaced by qualified person to avoid a hazard.

This appliance has not been designed for use by persons (including children) with reduced physical, sensorial, or mental faculties or by persons without any experience or knowledge of heating systems, unless they act under the safety and supervision of a responsible person or have received prior training concerning the use of the appliance.

Children should be supervised to ensure that they do not play with the appliance.

⚠ IF THE PRODUCT IS NOT TO BE USED FOR AN EXTENDED PERIOD OF TIME, WE STRONGLY RECOMMEND NOT TO SWITCH 'OFF' THE POWER SUPPLY OF THE UNIT.

⚠ IF THE POWER IS NOT SUPPLIED, THE ANTI-FREEZE FUNCTION WILL NOT BE PERFORMED.

⚠ CAUTION

Do not install the unit in a place where there is a chance of flammable gas leaks.
If there is a gas leak and gas accumulates in the area surrounding the unit, it could cause an explosion.

Perform the drainage/piping work according to the installation instruction.

Do not clean the unit when the power is 'on.'
Always shut 'off' the power when cleaning or servicing the unit. If not, it could cause an injury due to the high-speed running fan or an electrical shock.

Do not continue to run the unit when there is a suspected fault.
The power supply needs to be shut 'off' to stop the unit; otherwise, this may cause an electrical shock or fire.

Be cautious when unpacking and installing the product.
Sharp edges could cause injury. Especially watch the edges and the fins on the heat exchanger of the product.

Always check for gas (refrigerant) leakage after installation or repair of product.
Low refrigerant levels may cause failure of the product.

Keep level even when installing the product.
This is to avoid vibration or water leakage.

Do not place hands or fingers into the fan, or evaporator.
The ventilator runs at high speed, this could cause significant injury.

Keep the unit upright, even when transporting and installing the product.

TR ENGINEERING LTD CUSTOMER AFTER SALES SERVICE INFORMATION

The Heat Pump comes with a 5 Year warranty, providing the Heat Pump is registered within 30 days from the date of installation. 3 Years Parts and Labour, Years 4 and 5, Parts only. Register online at:
www.trianco.co.uk/product-registration
Terms and Conditions apply, please see Trianco web site for details.
The Heat Pump must be serviced annually by a suitably qualified Heat Pump Engineer to qualify for warranty after the first year.

Please note you will require the full Heat Pump serial number to be able to register the unit. The serial number is located on the right-hand side of the Heat Pump and can also be found on the box the Heat Pump came in.

A step-by-step guide to reporting a fault with your appliance.

A qualified field SERVICE ENGINEER is available to attend a breakdown or manufacturing fault occurring whilst the appliance is under warranty.
The appliance must be made available for service during normal working hours, Monday to Friday (no weekend work or bank holidays accepted).

A charge will be made where:

- Our Field Service Engineer finds no fault with the appliance.
- The cause of a breakdown is due to other parts of the plumbing/heating system or with equipment not supplied by TR Engineering Ltd.
- Where the appliance falls outside the warranty period.
- The appliance has not been correctly installed, as recommended (see installation, operating and servicing instructions.)

NOTE: Over 50% of all service calls made are found to have no appliance fault.

What to do in the event of an appliance fault or breakdown:

Step 1: Always contact your installer in the first instance, who must thoroughly check all their work PRIOR to requesting a service visit from TR Engineering LTD.

Step 2: If your appliance has developed an in-warranty fault your installer should contact TR Engineering LTD for assistance from site.

What happens if my Installer/engineer is unavailable?

Step 3: Contact TR Engineering LTD. We will provide you with the name and telephone number of our Service Agent. However, a charge may apply if the fault is not covered by the appliance warranty (payment will be requested on site by our independent Service Agent).

PLEASE NOTE: UNAUTHORISED INVOICES FOR ATTENDANCE AND REPAIR WORK CARRIED OUT ON THIS APPLIANCE BY ANY THIRD PARTY WILL NOT BE ACCEPTED BY TR ENGINEERING LTD

SERVICE CENTRE AND TECHNICAL SUPPORT
Tel: 0114 257 2300 Fax: 0114 257 1419
Hours of Business
Monday to Thursday 8.30am - 5pm
Friday 8.30am - 2.30pm

Choosing the correct size unit.

Sizing the heat pump is extremely important. Match the correct heat pump for the heat requirement. Pay attention to the heat pump output at lower ambient temperatures. Pay attention to the heat pump output at Higher flow temperature settings. Please see the Tables below for further information.

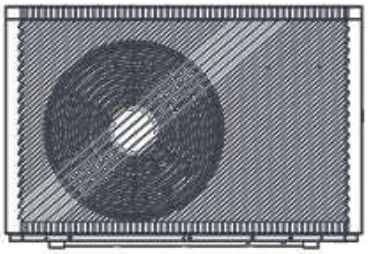
Activair High Temp 9kW											
Max. Heating Capacity (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	4.67	5.19	5.70	5.80	6.00	6.98	7.20	7.80	8.19	8.56	9.58
45	4.17	4.64	5.10	5.35	5.54	6.79	7.00	6.60	6.93	7.24	8.19
50	3.98	4.42	4.86	5.10	5.28	6.60	6.80	6.06	6.36	6.65	7.52
55	3.82	4.25	4.67	4.90	5.07	6.26	6.45	5.90	6.20	6.47	7.32
60	3.47	3.86	4.24	4.45	4.61	5.67	5.85	5.01	5.45	5.77	6.44
65	3.11	3.46	3.80	3.96	4.10	5.18	5.34	4.65	4.93	5.03	5.55
75	/	/	/	3.41	3.52	4.45	4.59	4.00	4.24	4.33	4.77
Power Input (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	2.15	2.22	2.29	2.31	2.34	2.35	2.36	1.91	1.94	1.79	1.83
45	2.41	2.48	2.56	2.58	2.65	2.69	2.70	2.05	2.08	1.92	1.96
50	2.54	2.62	2.70	2.71	2.77	2.87	2.88	2.08	2.11	1.95	1.99
55	2.66	2.75	2.83	2.85	2.92	3.04	3.06	2.18	2.21	2.05	2.09
60	2.68	2.76	2.85	2.89	2.94	3.08	3.10	2.19	2.22	2.03	2.10
65	2.63	2.72	2.80	2.85	2.90	3.06	3.08	2.51	2.44	2.23	2.30
75	/	/	/	2.92	2.97	3.14	3.15	2.57	2.49	2.28	2.35
COP (kW/kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	2.17	2.34	2.49	2.51	2.57	2.97	3.05	4.08	4.22	4.78	5.24
45	1.73	1.87	1.99	2.07	2.09	2.53	2.59	3.22	3.33	3.77	4.18
50	1.57	1.69	1.80	1.88	1.91	2.30	2.36	2.91	3.01	3.41	3.78
55	1.44	1.55	1.65	1.72	1.74	2.05	2.11	2.71	2.80	3.16	3.51
60	1.29	1.40	1.49	1.54	1.57	1.84	1.89	2.29	2.45	2.84	3.07
65	1.18	1.27	1.36	1.39	1.41	1.69	1.73	1.85	2.02	2.26	2.42
75	/	/	/	1.17	1.19	1.42	1.46	1.55	1.70	1.90	2.03

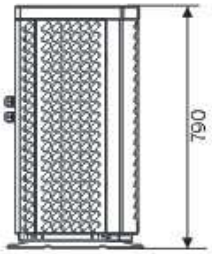
Activair High Temp 15kW											
Max. Heating Capacity (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	8.36	9.19	10.10	10.80	11.18	11.74	12.10	14.00	14.40	15.50	16.90
45	8.12	8.93	9.81	10.40	10.76	11.30	11.65	13.10	12.60	14.30	15.75
50	7.57	8.41	9.25	9.80	10.14	11.06	11.40	12.95	11.27	12.00	13.30
55	7.29	8.1	8.90	9.40	9.73	10.86	11.20	12.60	11.10	11.60	12.80
60	6.30	7.04	7.77	8.23	8.53	9.57	9.88	11.16	9.45	10.00	11.00
65	5.95	6.69	7.42	7.88	8.18	8.39	8.67	9.84	8.80	9.30	10.10
75	/	/	/	7.25	7.53	7.72	7.98	9.05	8.10	8.56	9.29
Power Input (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	3.67	3.78	3.90	4.06	4.08	3.82	3.84	3.85	3.60	3.30	3.38
45	4.09	4.22	4.35	4.56	4.60	4.40	4.44	4.46	3.85	3.55	3.60
50	4.14	4.27	4.40	4.58	4.64	4.68	4.75	4.80	3.80	3.51	3.54
55	4.47	4.61	4.75	4.85	4.90	5.06	5.10	5.20	4.01	3.72	3.75
60	4.59	4.72	4.85	4.95	5.00	5.15	5.18	5.28	3.85	3.50	3.55
65	4.94	5.07	5.20	5.30	5.35	5.16	5.19	5.28	4.08	3.70	3.76
75	/	/	/	5.69	5.74	5.53	5.57	5.67	4.48	3.97	4.04
COP (kW/kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	2.28	2.43	2.59	2.66	2.74	3.07	3.15	3.64	4.00	4.70	5.00
45	1.99	2.12	2.26	2.28	2.34	2.57	2.62	2.94	3.27	4.03	4.38
50	1.83	1.97	2.10	2.14	2.19	2.36	2.40	2.70	2.97	3.42	3.76
55	1.63	1.76	1.87	1.94	1.99	2.15	2.20	2.42	2.77	3.12	3.41
60	1.37	1.49	1.60	1.66	1.71	1.86	1.91	2.11	2.45	2.86	3.10
65	1.20	1.32	1.43	1.49	1.53	1.63	1.67	1.86	2.16	2.51	2.69
75	/	/	/	1.27	1.31	1.39	1.43	1.60	1.85	2.15	2.03

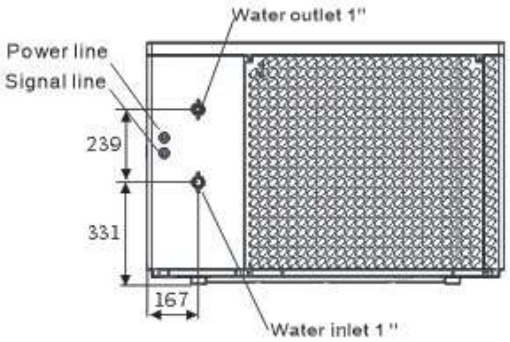
Activair High Temp 22kW											
Max. Heating Capacity (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	12.00	13.60	14.90	16.13	17.09	18.42	19.51	22.22	23.80	23.36	24.63
45	11.50	12.06	13.97	15.83	16.53	17.13	18.30	21.69	23.55	21.04	21.94
50	9.78	11.35	13.52	14.65	15.30	16.92	17.93	21.41	23.23	19.07	20.13
55	9.56	11.12	13.34	14.47	15.13	16.75	17.68	20.60	22.36	18.71	19.72
60	8.72	10.04	11.56	12.76	13.53	15.46	16.87	18.71	20.45	16.67	17.57
65	8.21	9.58	11.16	12.21	12.94	14.14	15.19	17.52	18.59	14.58	15.66
75	/	/	/	10.68	11.32	12.37	13.29	15.33	16.27	12.76	13.71
Power Input (kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	5.57	5.51	5.28	5.28	5.36	5.24	5.28	5.35	5.38	4.54	4.55
45	6.11	5.77	6.02	6.42	6.43	6.04	6.27	6.29	6.33	5.01	5.03
50	5.82	5.87	6.09	6.43	6.51	6.58	6.74	6.87	6.93	5.39	5.40
55	6.13	6.15	6.18	6.52	6.58	6.75	6.96	7.01	7.17	5.68	5.69
60	6.22	6.23	6.24	6.68	6.73	6.84	7.18	7.33	7.45	5.75	5.76
65	6.84	6.94	7.04	7.09	7.21	6.43	6.45	6.47	6.48	4.67	4.71
75	/	/	/	7.85	7.99	7.12	7.14	7.16	7.17	5.17	5.21
COP (kW/kW)											
	Ambient Temperature (℃)										
Water outlet (℃)	-20	-15	-10	-7	-5	0	2	7	10	15	20
35	2.16	2.47	2.82	3.06	3.19	3.52	3.70	4.11	4.42	5.15	5.41
45	1.88	2.09	2.32	2.47	2.57	2.84	2.92	3.45	3.72	4.20	4.36
50	1.68	1.93	2.22	2.28	2.35	2.57	2.66	3.12	3.35	3.54	3.73
55	1.56	1.81	2.16	2.22	2.30	2.48	2.54	2.94	3.12	3.29	3.47
60	1.40	1.61	1.85	1.91	2.01	2.26	2.35	2.55	2.74	2.90	3.05
65	1.20	1.38	1.59	1.72	1.79	2.20	2.36	2.71	2.87	3.12	3.33
75	/	/	/	1.36	1.42	1.74	1.86	2.14	2.27	2.47	2.63

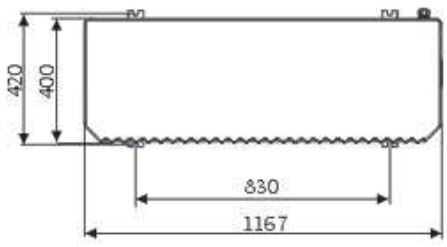
Unit Dimensions

Activair 9kW

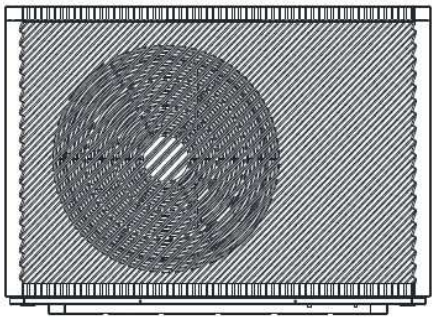


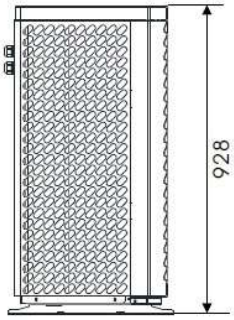


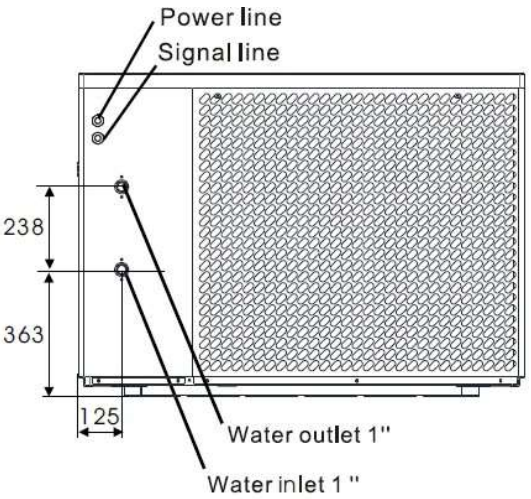


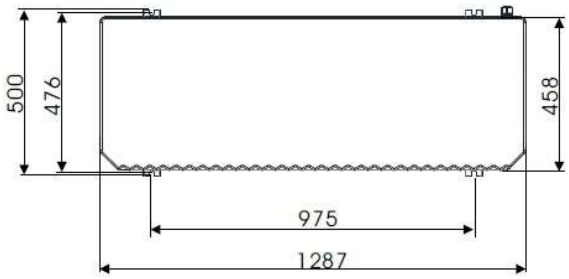


Activair 15kW

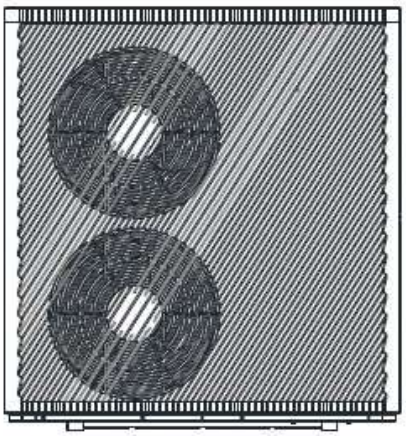


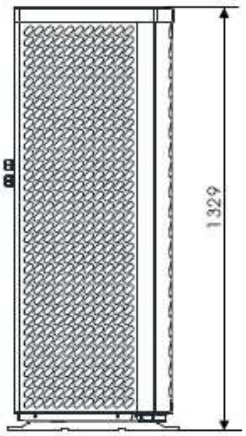


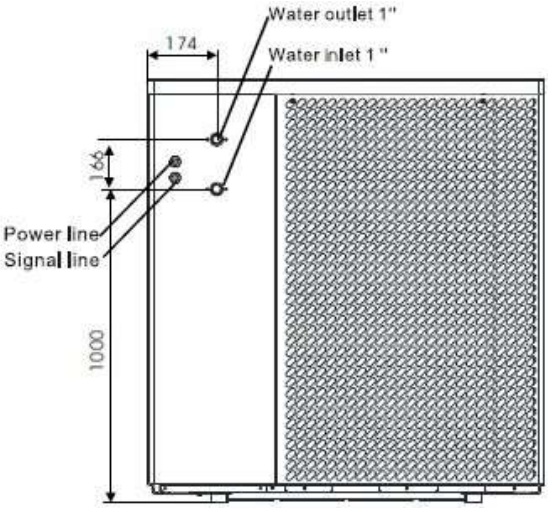


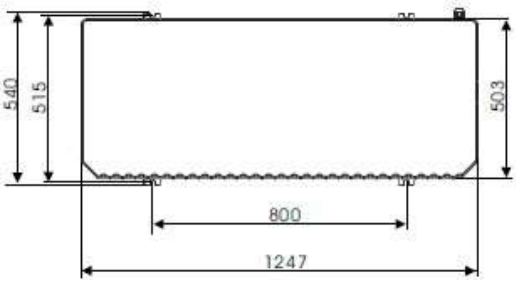


Activair 22kW

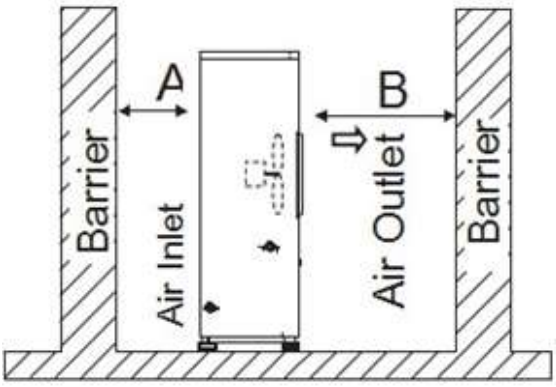


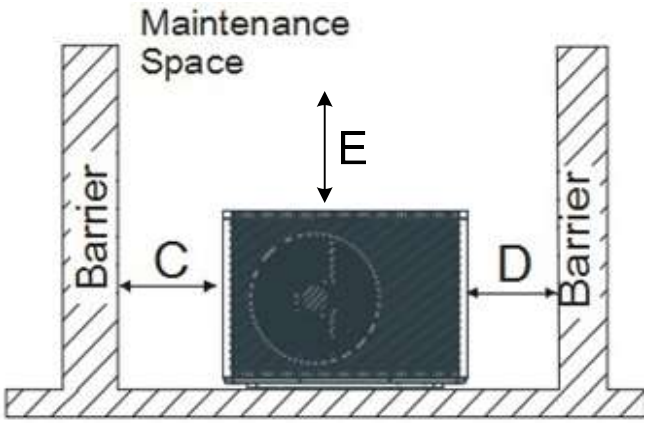






Installation Space and Clearances





A>300mm
B>1500mm
C>1000mm
D>500mm
E>500mm

Siting The Unit

When installing the outdoor unit, please refer to MCS Installation guidelines to select the appropriate Location.
The heat pump must not be sited inside the property.

Please also see Protective Zone information supplied separately.

Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installation.

1. Mount the Unit on the supplied Anti Vibration Pads using suitable fixings for the Ground Type. Alternatively, the unit can be mounted on purpose made heat pump support feet available separately.
2. The location must have good ventilation. Avoid recirculating the outlet air.
3. Install the unit with the suction side (Rear) facing the wall.
4. There must be enough space around the unit for maintenance.
5. Protect the unit from possible overhanging snowfall.
6. Avoid siting in areas subject to strong winds.
7. There must be sufficient space to carry the unit in and out of the site.
8. Operation noise is minimal, however, try to avoid areas close to bedroom windows.
9. Coastal areas have a higher risk of salt corrosion. Consider having the unit professionally treated to alleviate future corrosion issues.

Supplied Unit Components

1 x User Display
1 x 4 core signal cable
1 X NTC Sensor
4 x Antivibration pads
2 x Condensate Base pipe Adaptors

Typical Installation Examples

The following basic examples are for guidance only. All systems should have the relevant system components, e.g., Isolation valves, system filter, strainer, drain cock, Pump, expansion vessel, air vents and comply with the following British Standards.
It is the installers responsibility to ensure the installation complies with the relevant standards.

BS EN 12828 – Heating systems in buildings: Design for water-based heating systems.
BS EN 12831 – Heating systems in buildings: Method for calculation of the design heat load.
BS EN 14336 – Heating systems in buildings: Installation and commissioning of water-based heating systems.
BS7671 – Requirements for electrical installations. IEE wiring Regulations. Seventeenth Edition.
BS EN 7593 – Code of practice for treatment of water in heating systems.

The Building Regulations: Part 'L' (Northern Ireland)
Current I.E.E. Regulations
Local water undertaking By-laws.

Relevant Heating and Hot water controls will be required to complete the system dependant on system type.

All Pipe work should be flushed before connecting the heat pump.

The system should be treated with a suitable antifreeze, or an antifreeze type valve should be fitted on the flow and return pipe work.

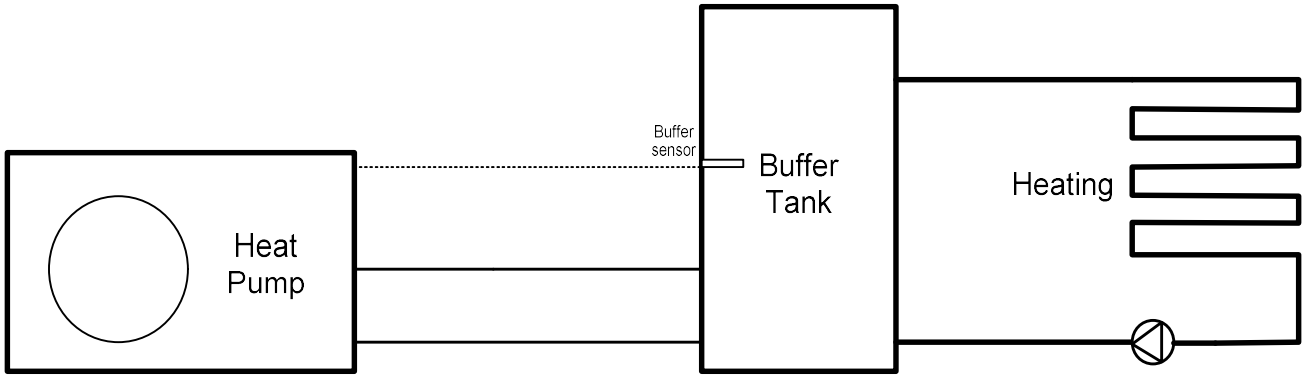
All air should be removed from the system. Air vents should be installed at all high points in the system.

All pipework must be insulated to MCS standards.

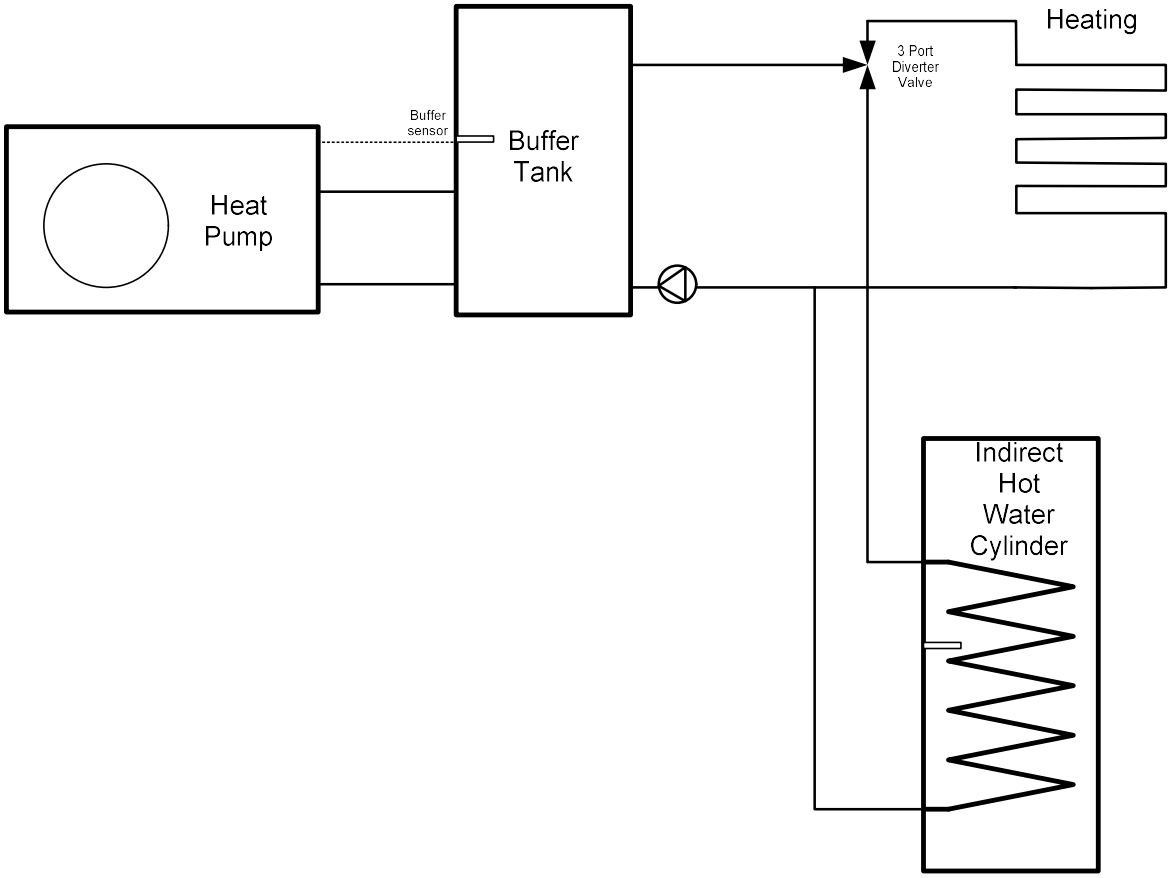
The heat pump includes a manual air vent under the top cover, to the right-hand side rear of the unit.
To remove the top cover, remove the two screws on the back edge of the cover, lift the cover up at the back and pull forwards.

Typical Installation Examples

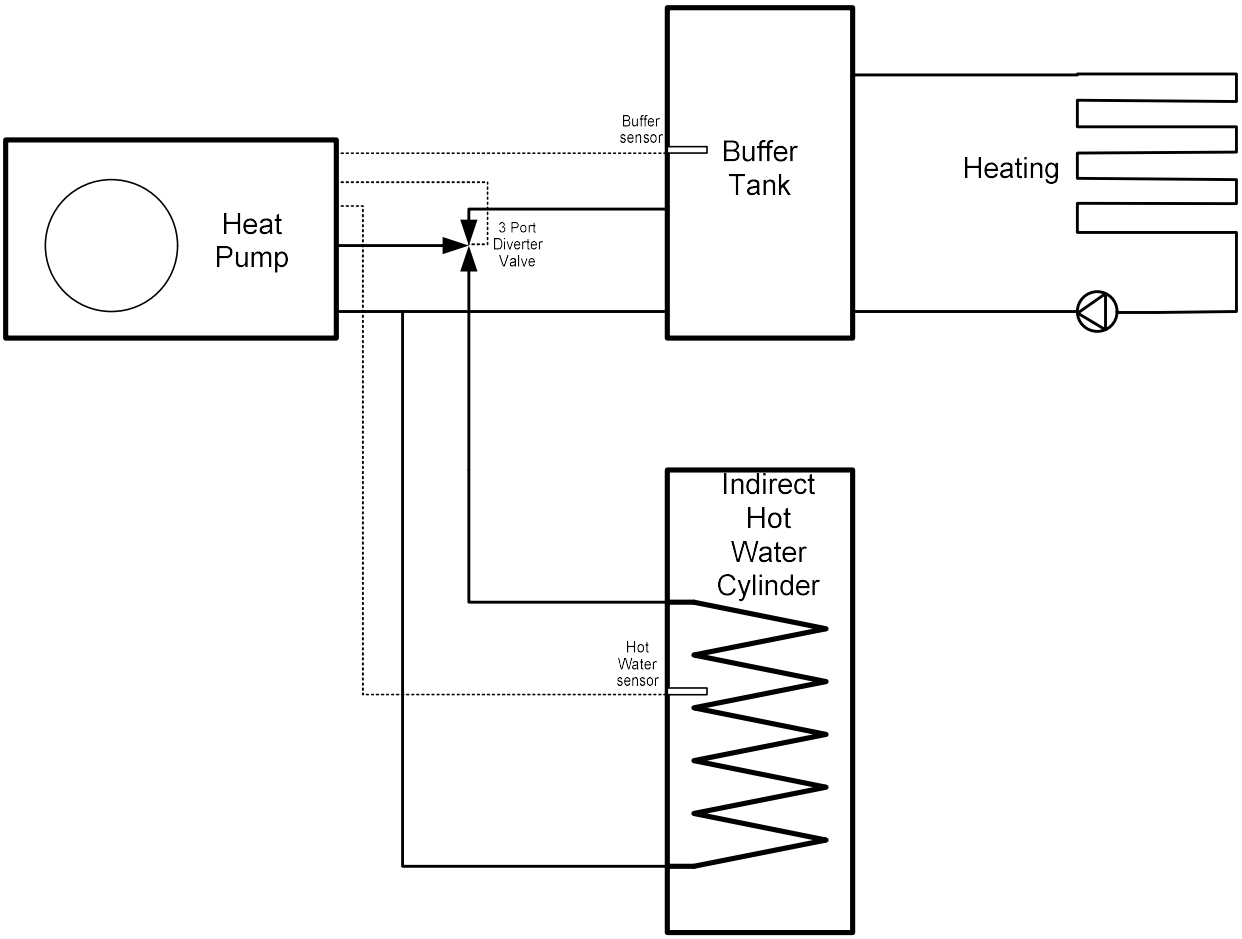
Buffer, Heat Only



Buffer, Heating and Hot Water



Buffer, Heating Plus ASHP Controlled Hot Water



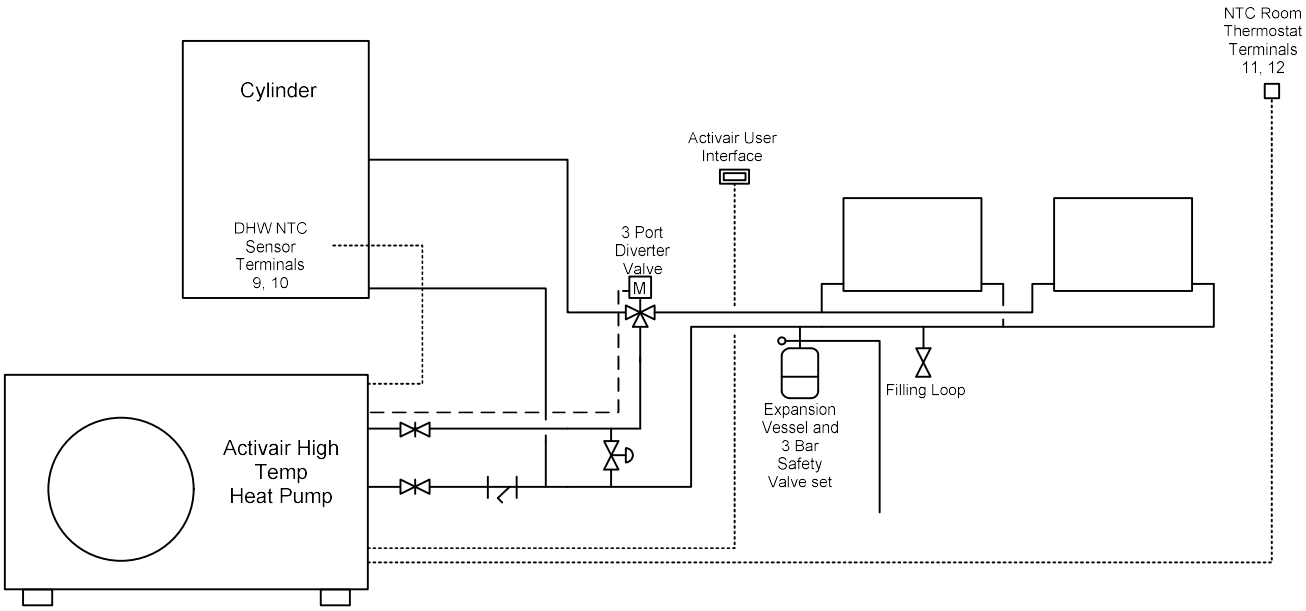
Direct Connection

The Trianco Activair High Temperature Heat Pump can be connected direct to the system.
The ASHP can control a single Heating Zone and a Cylinder.

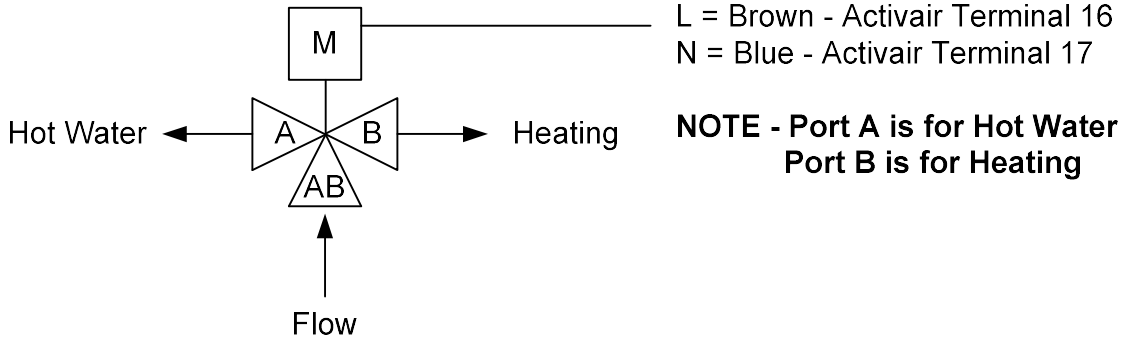
Minimum Flow rates through the heat pump must be maintained, good system design is critical.
It is the installers responsibility to always achieve minimum flow rates.
Insufficient flow rate will cause system issues, poor performance and poor efficiency.

Full bore isolation valves and full-bore radiator valves must be fitted.
The system must have an auto-by-pass capable of achieving the minimum flow rate and a strainer must be installed on the return pipework close to the heat pump.

NOTE: Hot water takes Priority, the heating circuit would remain off until the hot water cylinder is satisfied.



The system must have a 3-port diverter valve fitted. Mid position valves and 2-port zone valves cannot be used.



The DHW NTC sensor (supplied) must be located in a dry pocket approximately a third of the way up from the bottom of the cylinder.

Electrical Connections

DHW NTC sensor connects to Activair Terminals 9 & 10 (TT)

Room Thermostat NTC connects to Activair terminals 11 & 12.
Note: A standard Room thermostat cannot be used, the sensor must be a Negative temperature coefficient 10k (NTC) type.
User interface settings

Diverter Valve polarity.

On the User interface Swipe left, select Parameters, Input password 022 and confirm.
Select Client Parameters – System – H20
Select either:
0 = Hot Water ON (Terminal 16 powered for Hot Water
1 = Hot Water OFF (Terminal 16 powered for Heating.
Press **<** twice and swipe right to return to main screen.

Mode.

On the left-hand side of the Main screen. Press Mode, Select DHW + Heating.

Temperature Control Selection.

On the User interface Swipe left, select Parameters, Input password 022 and confirm.
Select Client Parameters – System – H25 – Room Temp
Press **<** twice and swipe right to return to main screen.

Pump.

On the User interface Swipe left, select Parameters, Input password 022 and confirm.
Select Client Parameters – Pump
Select:
P01 Operation Mode Interval
P02 Interval Time 30 Minutes
P03 Operation Time 1 Minute
Press **<** twice and swipe right to return to main screen.
Note: P02 and P03 can be altered to suit the system.

Temperature Control.

This can be set either using the Warm Link App or from the user interface.

On the user interface:

To select DHW target temperature, Press Target, Move the scale clockwise or anticlockwise to adjust up or down. Press the Tick to confirm.

To Select Heating Flow temperature, Press Target, Move the scale clockwise or anticlockwise to adjust up or down. Press the Tick to confirm.

To Select Room temperature, Press the centre dial, The user interface will show the current setting. Move the scale clockwise or anticlockwise to adjust up or down. Press the Tick to confirm.

Expansions Vessel Capacity

A diaphragm type expansion vessel, conforming to the current issue of BS 4814. The expansion vessel must be connected to the systems at a point close to the inlet side of the circulating pump. The expansion vessel volume depends on the total water system volume and the initial system design pressure. For any system an accurate calculation of vessel size is given in the current issue of BS 5449 and BS 7074 Part 1.
Note: A higher initial design pressure requires a larger Volume expansion vessel.

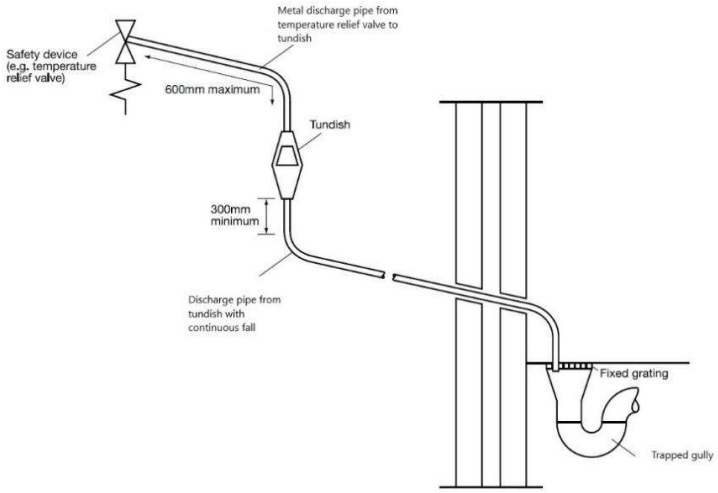
The charge pressure must not be less than the static head of the system that is the highest point of the system above the expansion vessel.
The maximum running temperature of the system is 70°C. It is recommended that this figure be used in the calculations of vessel size.

Where design information is not complete the following chart can be used for selecting the size of the vessel.

Safety valve setting (bar gauge)	3 bar		
Vessel charge and initial system pressure (bar gauge)	0.5	1.0	1.5
Total water content of system	Vessel volume		
Litre	Litre	Litre	Litre
25	2.3	3.3	5.9
50	4.4	6.7	11.8
75	7.0	10.0	17.7
100	9.4	13.4	23.7
125	11.7	16.7	29.6
150	14.1	20.1	35.5
175	16.4	23.4	41.4
200	18.8	26.8	47.4

Safety Valve

A safety valve set at 3 bar must be fitted with the drain routed to the outside of the building. The drain must not discharge above an entrance or a window or any public access area, be clear of any electrical fittings and positioned so that any discharge can be seen.



System

Flexible Hoses

Flexible Hoses can be used for connection between the heat pump and fixed pipework.

Isolation Valves

Full bore Isolation valves must be fitted on both the flow and return pipe work. Either connected to the unit or directly after the flexible hoses. **Warranty work will not be undertaken if not fitted.**

Pressure Gauge

A pressure gauge must be permanently fitted in the system covering a range from 0 to 4 bar. Position where it can be seen when filling the system.

System Makeup

Provision can be made by pre-pressurisation of the system via a temporary hose connection and through a double

check valve (non-return) and stop valve.
There must be no permanent connection to the mains water valve supply even through a non-return valve.

Drain Tapping

A drain tapping must be provided at the lowest point of the system, which will allow the entire system to be drained.

In-Line Filter/Strainer

An in-line strainer and Magnetic type system filter must be fitted on the return pipework close to the heat pump.

Condensate Base Pipe Adapters

These are pushed into the corresponding holes in the base and allow connection to discharge pipework. The condensate can be routed to a sewer, soakaway, or pump sump. Any discharge should not be allowed to freeze. Care should be taken when utilising a soakaway, condensate should discharge onto a gravel bed at least 900mm below the ground level to avoid freezing. The condensate pipe work should run vertically, directly below the heat pump, sleeved with 100mm pipe.
Any condensate pipework that runs either vertically or horizontally should be protected from freezing. This might include the use of electrical trace heating.

App Control

The unit is supplied with a pre-installed Data Transfer Unit (DTU) to allow control of the High Temperature Heat pump via the Warm Link App.

Available to download from the Google Play store for Android devices or Apple App Store for iOS devices.
The sim card will allow access for 5 years. After this time, you will need to provide your own sim card with a suitable 4G data plan.

Please see the separate User Instructions for guidance on Downloading the App, set up and operation.

Note: Data connection and DTU set up may take up to 15 minutes.
Once connection has been made, Trianco will be able to see the unit on-line via the iOT platform.
Trianco will be able to monitor and adjust settings if requested. This may become useful at the commissioning stage of the install or if the unit experiences any issues.
Unless the location has a data coverage issue the DTU must be connected as part of the warranty conditions.

Electrical

Access the installer electrical connections by removing the right-hand side panel.
Unscrew the two lower panel fixing screws and ease the panel down slightly and away from the unit.

Main Power Supply

A suitable main external Rotary isolator must be installed close to the appliance having a contact separation on all poles.

The mains supply cable should be routed through the rear panel using the holes provided.
Route the supply cable through the cable clamp and terminate at the main electrical supply terminal marked L, N, E.
Do not drill the casing in any other place. This could cause internal damage to the unit and will invalidate the warranty.

MCB Rating and Cable Size

Heat Pump	MCB Rating	Minimum Cable Size
9kW	16A	2.5mm
15kW	32A	4mm
22kW	40A	6mm

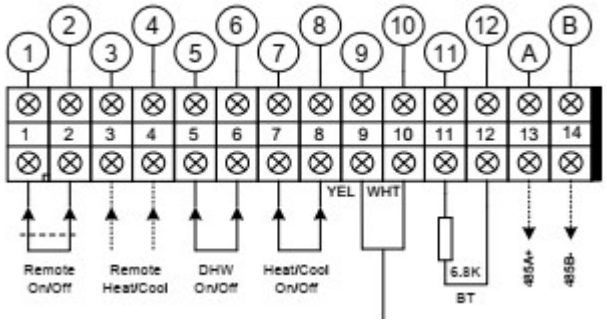
This Appliance Must Be Earthed

User Interface Connection

The user interface cable connection can be located next to the terminal strip numbered 1 to 14.
The user interface is supplied with 5m of 5 core cable terminated at each end with a 5-pin black plug.
Site the user interface in such a position that allows the end user easy access to be able to operate the controls.
Route the user interface cable through the rear of the unit and plug in to the 5-pin black plug.

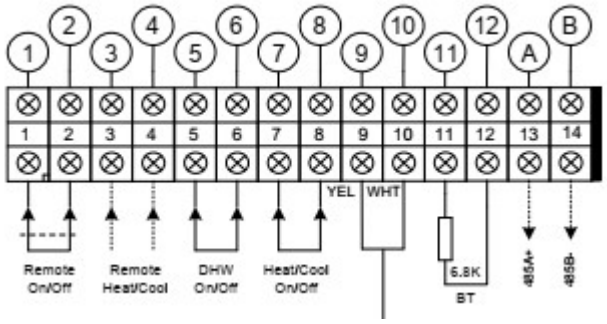
Buffer Sensor (NTC)

The buffer sensor should be sited in a dry pocket approximately a third of the way up from the bottom of the buffer. Use a small amount of heat paste to allow for better heat transfer. Route the cable through the rear of the unit and connect to terminals 11 and 12, remove the 6.8k resistor.



Optional Domestic Hot water NTC sensor

Depending on the system configuration, the Heat pump can control a 3-way valve to allow the heat pump to heat a Domestic Hot Water Cylinder. The cylinder temperature is monitored by the optional Domestic Hot Water NTC sensor. The hot water temperature can be set separately on the user interface. **Note – Hot water will take priority over the heating circuit. The heating circuit will only operate when the Domestic Hot water cylinder has been heated to the target temperature set on the user interface.**
Place the NTC sensor in a dry pocket approximately a third of the way up from the bottom of the cylinder. Use a small amount of heat paste to allow for better heat transfer. Route the cable through the rear of the unit and connect to terminals 9 and 10, remove the yellow and white wires that connect to the 6.8k resistor.
The sensor used should be a NTC (Negative Temperature Coefficient) 10K



Sensor and user interface cables should be run in suitable trunking/conduit to protect the cables from damage.

3 Port Diverter valve

Depending on the system configuration the Heat pump can control a 3 Port Diverter valve to allow the heat pump to heat a Domestic Hot Water Cylinder.
Remove the red multi-plug and associated wiring.
Connect the valve cable to terminal 16 (Switched Live) and 17 (Neutral)
If the valve type used requires a permanent live, connect the corresponding valve cable to terminal 15.

Note: The units system parameters would need to be configured correctly to allow control of the hot water circuit.
Select Heating + Hot Water on the User Interface.
Parameter H20 will need changing via the engineer's menu depending on valve type used.

Electric Heater Back Up

The heat pump can control up to 2 electric heaters.
The heat pump cannot supply power to the electric heaters, the installer should make provision in the way of a contactor (not supplied) to allow the heat pump to switch the electric heater.
Remove the red multi-plug and associated wiring.
Stage 1 switching – Connect the contactor switch wires to Terminals 27 (Live) and 28 (Neutral)
Stage 2 switching - Connect the contactor switch wires to Terminals 30 (Live) and 29 (Neutral)
Parameters H18 and R35 will need setting depending on electric heater configuration and location.

Inspection Before Operation

Check all pipework and Electrical connections are correct.
Make sure the system is full of water, all relevant valves are open, and the system shows no signs of leaks.
Ensure all air has been vented from the system and the system pressure is correct.
Check the supply voltage is correct and the unit is earthed.
Review the control interface and see if there are any fault codes indicated. Reference the Fault Code list for information regarding any code shown on the display.
Make sure the sensor(s) are located in the Buffer Tank and Hot Water Cylinder depending on system configuration.

Commissioning the Heat Pump

Select the operation mode by pressing the Mode key on the control interface.

Heating – (Most Common) Select for controlling the temperature of the buffer. Third party controls (S-Plan) control the heating and hot water.
Hot Water + Heating – Select this mode only if the system is installed to allow the heat pump to control the DHW and 3 port diverter valve.

Set the target temperature. Depending on the system configuration, you can select separate target temperatures for the Hot Water and Heating.

Start the heat pump by pressing the power symbol on the Control interface.
The fan will start.
The internal water pump will run for approximately 1 minute and the Fan will run, the compressor will then start.
Observe the unit running, check the outlet pipework for temperature increase.
Allow the heat pump to fully heat the buffer tank or system (if connected direct) to the set temperature.

Important

While the heat pump is charging the buffer or system (if connected direct) make sure the flow rate is correct.

From the State Menu check the flow rate against the Technical Details for the unit installed.
Insufficient flow rate will cause system issues, poor performance and poor efficiency.
Minimum stated flow rates must be observed.

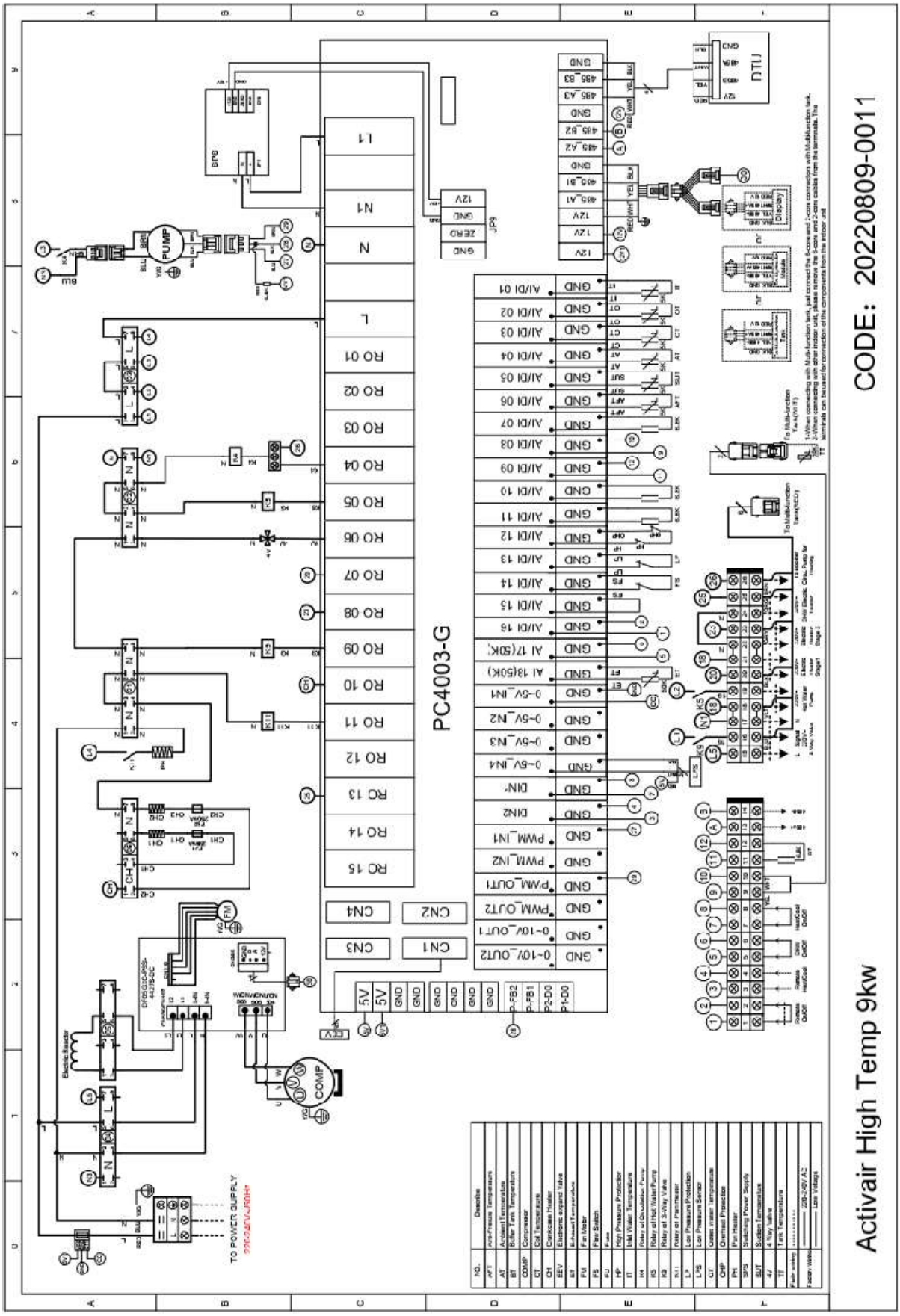
The heat pump will shut off once target temperature has been achieved.
Turn on the heating and/or hot water circuits and observe the decrease in temperature at the buffer tank.
The heat pump will start once the buffer temperature starts to drop below the set temperature.

Check the heat pump and the system for correct operation. Once satisfied, the system can be drained of water and re-filled with a suitable antifreeze.

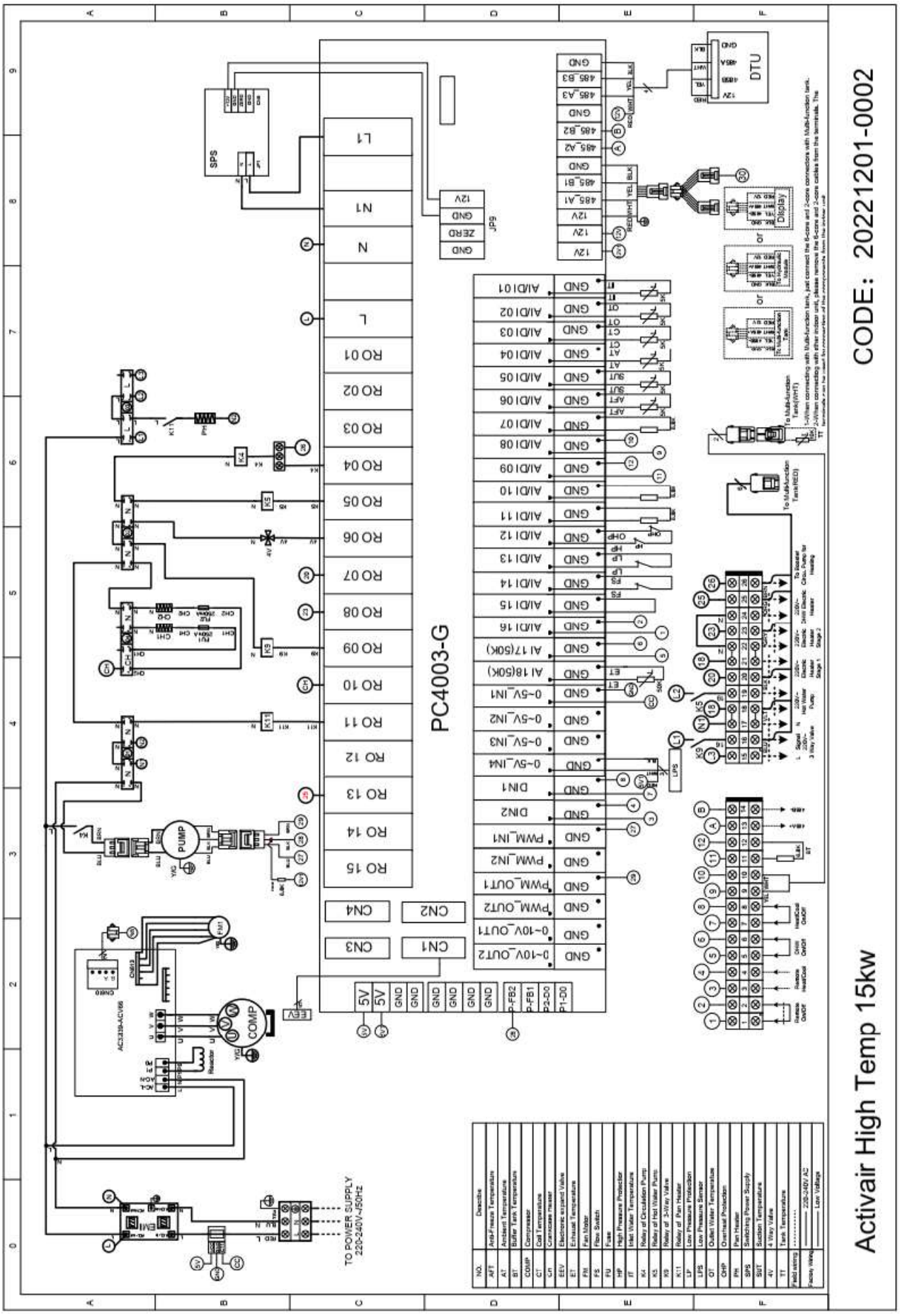
The control interface can now be set up, setting the time, date, and any timer requirements.

Internal Wiring Diagram

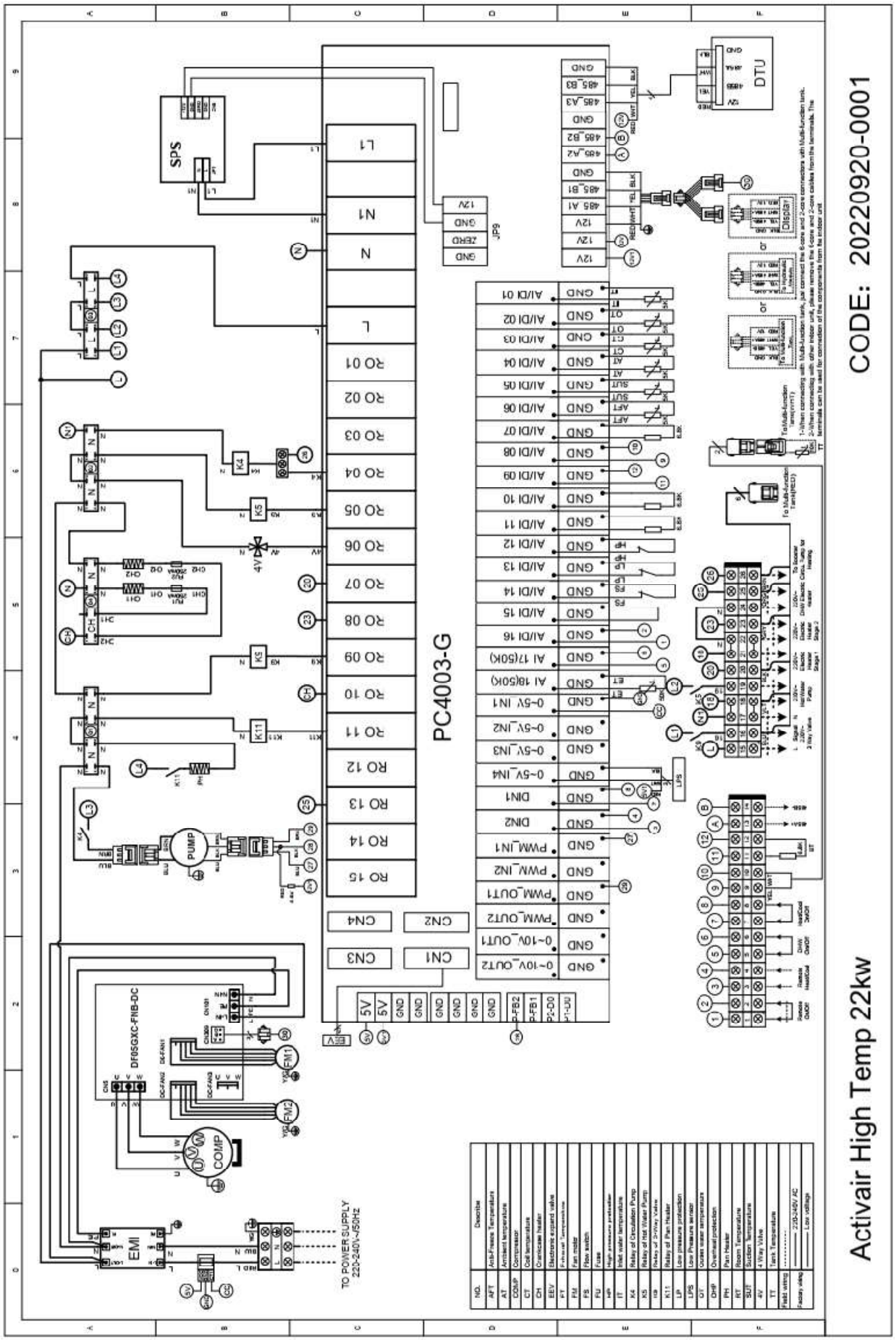
Activair High Temp 9kW



Activair High Temp 15kW



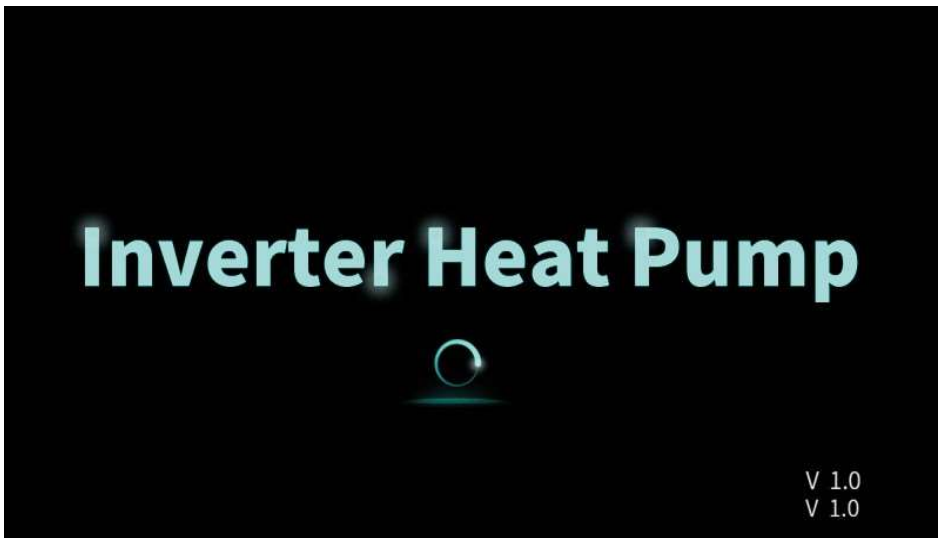
Activair High Temp 22kW



User Interface Operation Guide

Main Interface Display and Function

Power on Interface.



Starting Up Interface

Main Key Functions

1. Lock Screen Click this to lock the screen.
4. On/Off Click this key to switch ON or OFF.
5. Temperature Use this key to set the Target Temperature.
15. Mode Key Used to select the operation modes. Heating. Heating + Hot Water

Other Key Functions

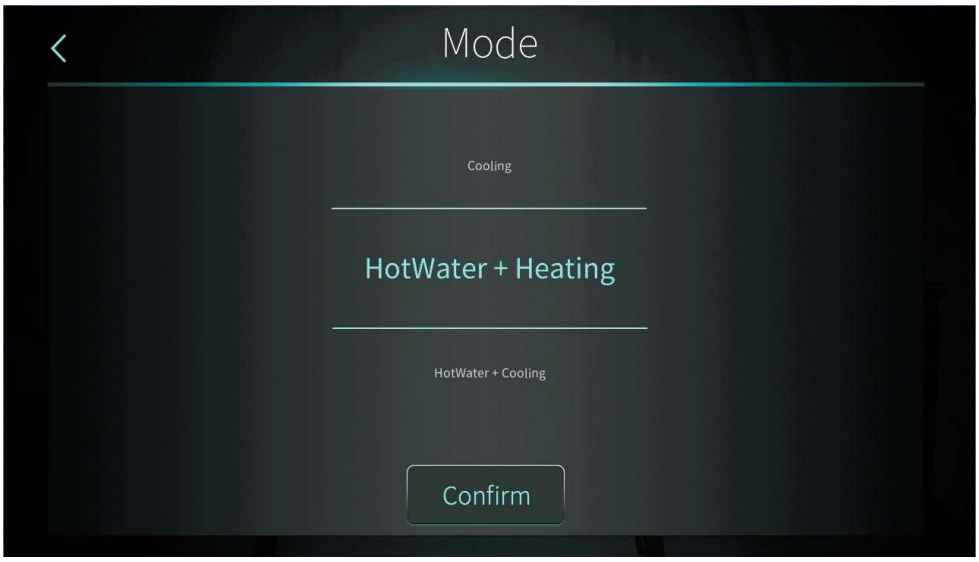
2. Home Icon — Slide left or right for other options.
3. DHW Tank Temperature — Only shown when in Hot Water Mode
6. Outlet water temperature or room temperature depending on system configuration.
7. Target Temperature
8. Fault Icon — Flashes when an error has occurred.
9. Defrost — Only visible when the unit is in defrost mode.
10. Disable Timing
11. Timer activated
12. Ambient Air Temperature
13. Time and Date
14. Current Mode

ON/OFF

Pressing the power symbol will turn the unit On or OFF

Mode

Five modes can be selected. Please consult your installer before changing the Mode.



The mode will be set depending on the system configuration.

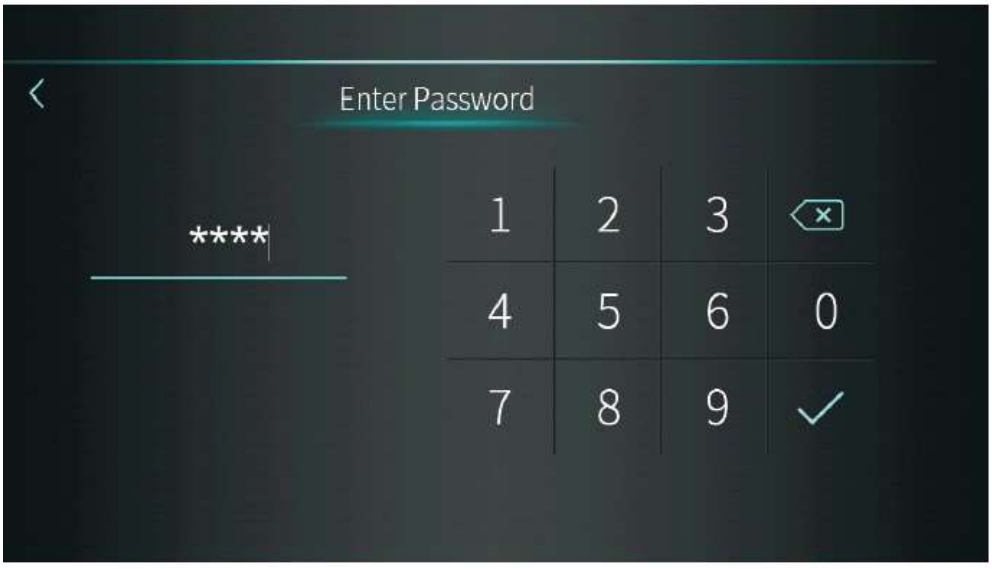
Setting Target Temperature

1 Returns the display to the Home Screen
2 Temperature can be adjusted in a clockwise or counter clockwise direction.
3 Pressing Confirm will save the set temperature.

Engineer System Settings

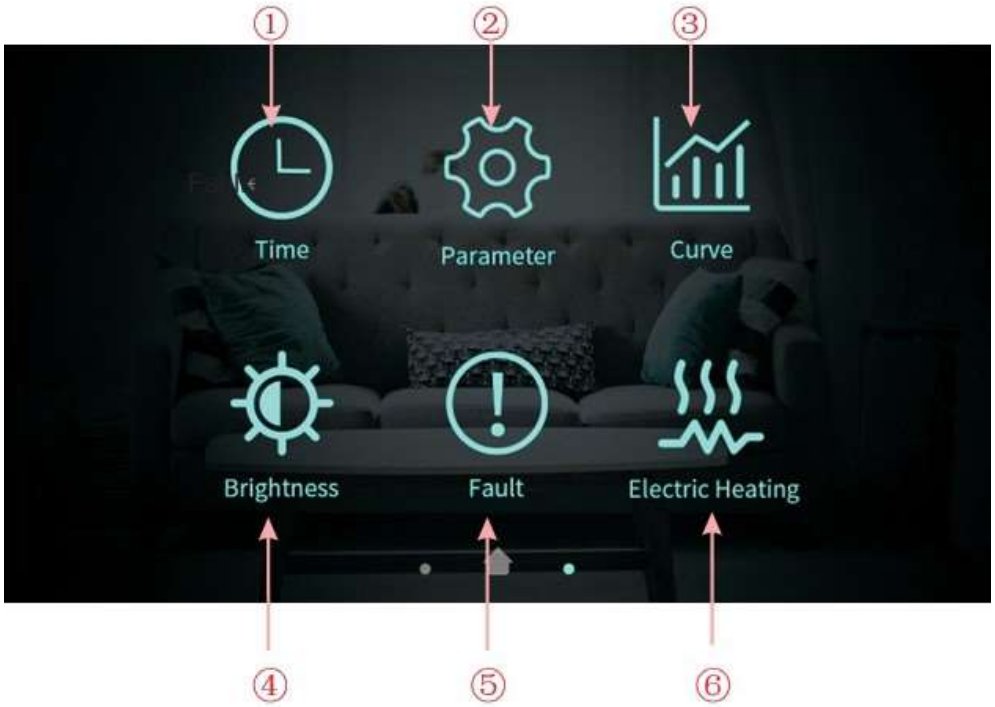
Unlocking the System Settings Menu

Press the locked padlock symbol and input the Password 022. Press the tick to unlock the Menu.
Only to be accessed by a qualified engineer in conjunction with the engineer's guide.



Changing settings within this menu can adversely affect the operation of the heat pump.

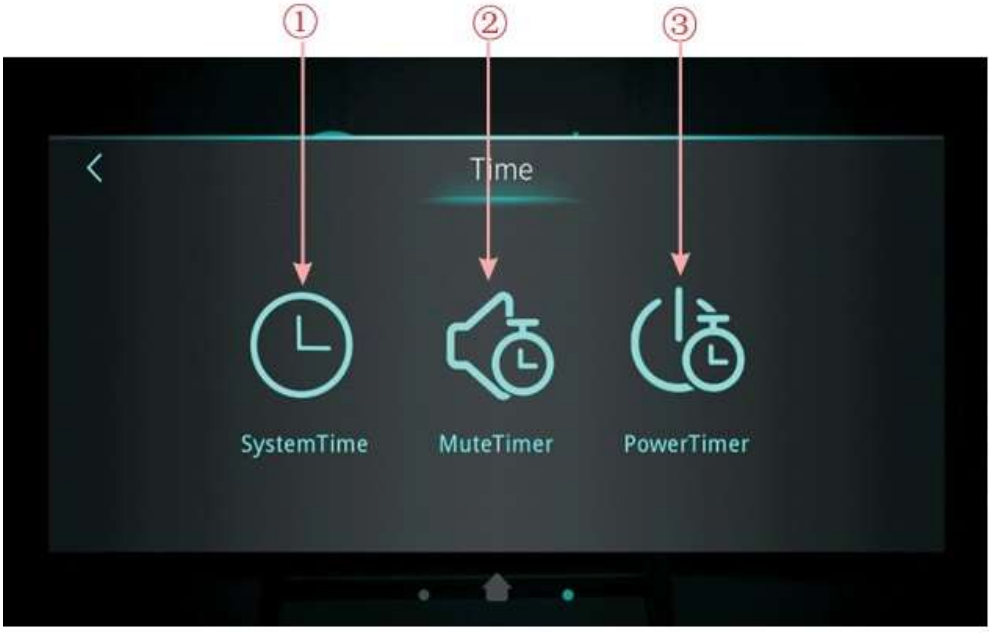
System Settings Menu



1 Time Setting
2 Factory Parameters
3 Temperature Graph
4 Screen Brightness
5 Fault History
6 One touch Electric Heating activation. (If available)

Setting the Time

Press the Time Button to enter the time setting interface. Adjust the various options by sliding up and down. Press confirm to store.



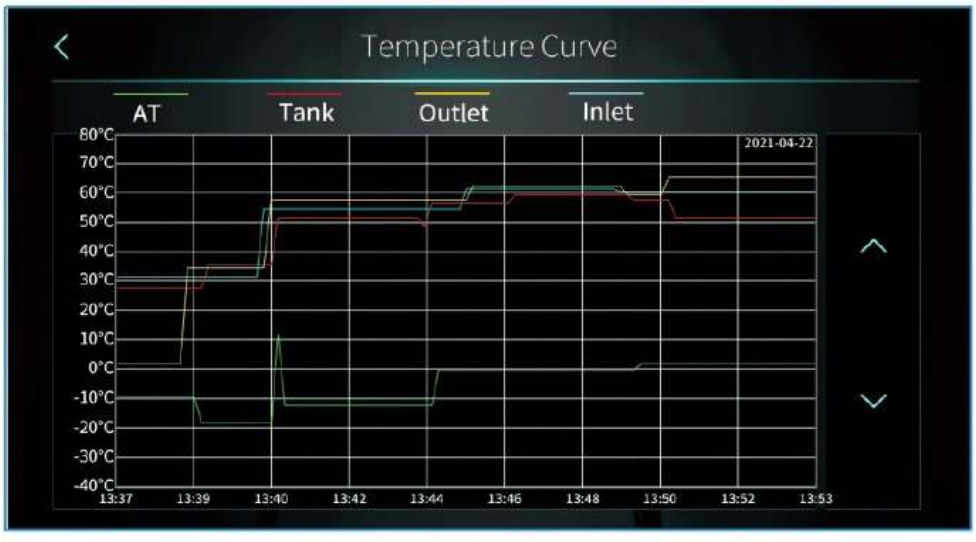
Setting the Timer

Press the Power Timer button to enter the Timer Interface.

Turn the Timer on by sliding the toggle (1)
Select the days of the week you wish this timer to work on (2)
Set the On/Off time (3)
Move to the next Timer (4)
A total of 6 time periods can be set.

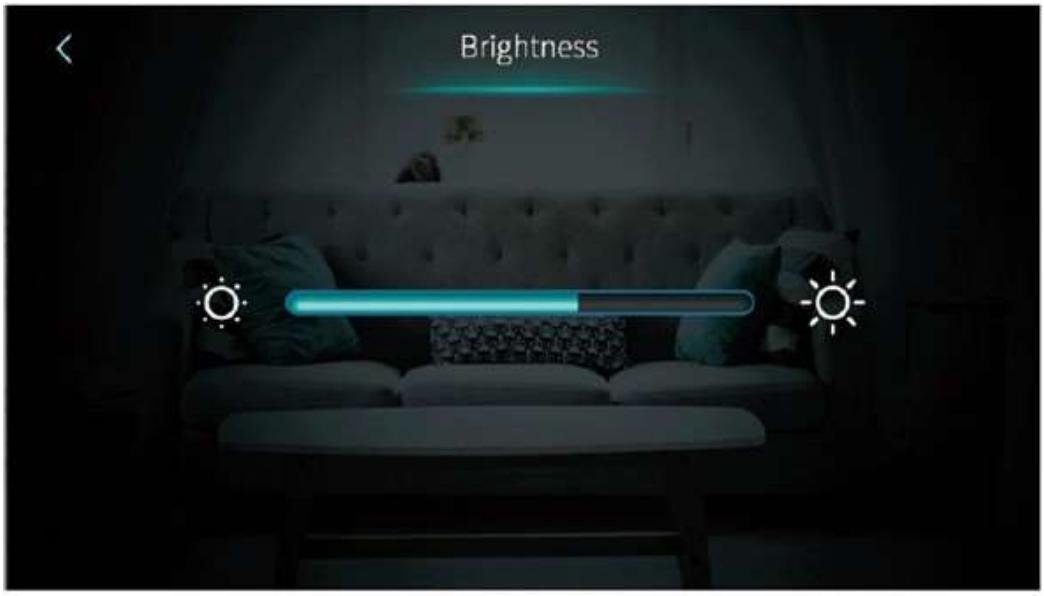
Temperature Graph

In the system Setting Menu pressing the Curve button (3) will display the Water inlet temperature, Water outlet temperature, Buffer tank temperature and Ambient temperature.
Data is collected in 5-minute intervals. Only Power on Status data is collected. If the power supply is disrupted between the 5-minute interval the data will not be saved.



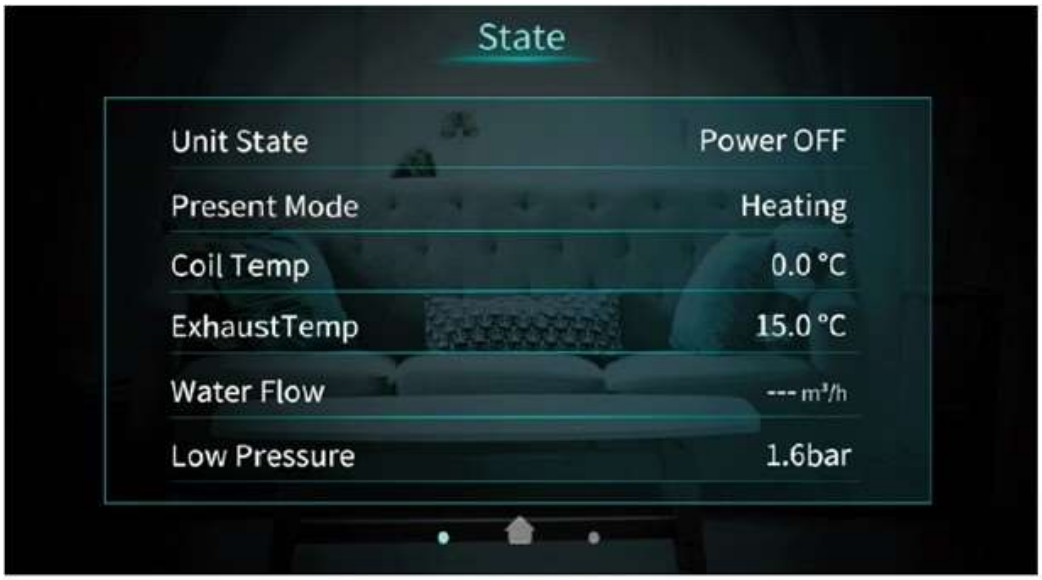
Screen Brightness

Press the Brightness button (4) in the System settings Menu.
Use the slide bar to adjust the screen brightness.
Press the back key to return to the System setting Menu.



Unit Status

From the main screen swipe from left to right to enter the status screen. Swipe from right to left to return to the main screen.

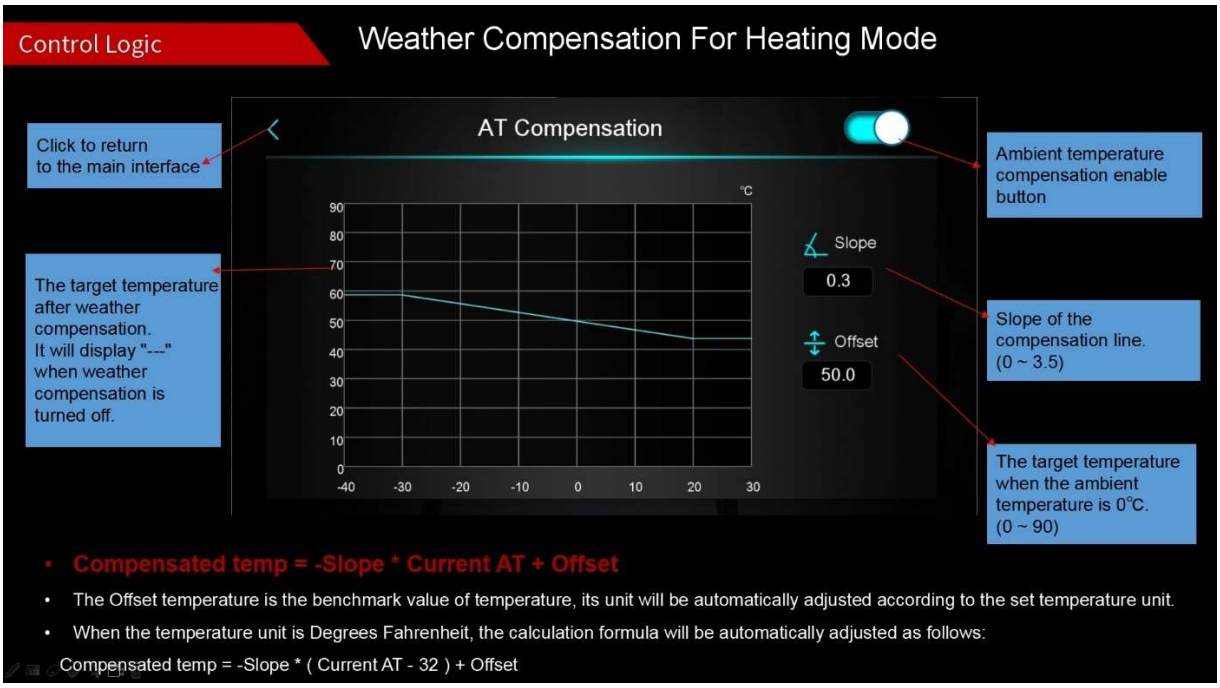


Fault Record

Press the Fault Button in the System settings Menu.
1 – Indicates the Fault Code
2 – Fault Description
3 – Fault Code Deletion

Weather Compensation

From the Home screen swipe Left to the Settings Screen.
Press the Parameter Icon.
Input the engineer Password 022 and press the tick Icon.
Press AT Compensation Icon.
Use the Toggle button to turn On/OFF weather compensation.
Adjust the Offset and Slope to your desired parameters.
To Return to the Home screen press the back button twice and then swipe Right.



Maintenance

Before starting the unit for the first time or after long periods of being shut down please ensure.

The unit is inspected externally and cleaned.
The system is at the correct water pressure.
No air is present in the system.
The fins on the heat exchanger are in good condition and are clean with no blockages.

Cleaning

Make sure the unit has been powered OFF before any maintenance or cleaning is carried out.

Do Not clean the product with a high-pressure cleaner or a direct jet of water.
Clean using a sponge and hot water with a mild detergent.
Do not use abrasive cleaners. Do Not use solvents. Do not use any cleaning agents that contain chlorine or ammonia.
Clean the fins using a soft brush, avoid bending the fins.
Check that condensate can drain freely from the base tray.

Periodic Maintenance

The Unit must be serviced annually.

Only to be carried out by a competent person.

Check the main heat exchanger, clean the fins and comb if required.
To remove the back cover, unscrew the two bottom screws on the back panel and ease the panel downwards approximately 20mm. Pull the panel away from the unit.

Check the base tray is clear of debris and the condensate can drain freely, inspect and clean any associated condensate pipework.

Check all electrical connections for tightness, inspect and check any plug connectors.

Check unit operates correctly.

Danger!
Risk of death caused by fire or explosion if there is a refrigerant leakage!

Only carry out the work if you are competent and have knowledge about the special features and risks of R290 refrigerant.

The product contains combustible refrigerant R290. In the event of a leak, escaping refrigerant may mix with air to form a flammable atmosphere.
There is a risk of fire and explosion.

Ensure that space is sufficiently aerated around the product.

TEST SPECIFICATION

EN IEC 55014-1:2021
EN 55014-1:2017/A11:2020
EN 55014-2:2015
EN IEC 55014 -2:2021
EN IEC 61000-3-2:2019
EN IEC 61000-3-2:2019/A1:2021
EN 61000-3-3:2013/A1:2019
EN 61000-3-3:2013/A2:2021
EN IEC 61000-3-11:2019
EN 61000-3-12:2011

Fault Diagnosis

Issue	Possible Cause	Related Components	Solution
Unit trips MCB when powered on	Short circuit	Terminals Relays Contactors cables	Check all the component connections. Check relays and contactors. Disconnect the electronic components one by one and power on to find the problem
No Power to Display	Cables have disconnected. The power input cable is Damaged	Display cable Power input cable	Check the display Cable. Check The Power Cable.
Unit will Not start	Errors on display Disconnected Cables	Display Cables	Check the display for error codes. Check the cables.
Display will Not Work	The Display has been locked. The Display is damaged	Display	Unlock the Display Check Display cable.
Poor Heat	Compressor Issue Fan not running or speed is too low. Refrigerant leak	Compressor Fan Refrigerant System	Check correct operation of Compressor. Check fan speed. Check exhaust temperature and refrigerant pressure.
Unit shuts off before reaching Temperature	Weather Compensation	Control Logic	Check Parameters
Excessive Frost	Fan Blade or motor issue. EEV step is not suitable. Refrigerant amount incorrect Parameter Issue	Fan EEV Refrigerant System Parameters	Check fan speed. Check defrosting parameters. Check the compressor frequency. Check exhaust temperature and refrigerant pressure.
Abnormal Noise	Loose screws Fan blade or motor issue Compressor Issue Touching components	Screw Fan Compressor Other components	Check all screws are tight. Check fan blade and motor. Check compressor. Check other components.

Error Codes

Error code	Error name	Relevant parts information	Review and resolve
E01	High Pressure Protection	High Pressure switch Heat Exchanger Refrigerant System	1. High pressure switch is damaged or false connected. 2. Scaling of casing or plate heat exchanger; (Heating) 3. The fins are dirty and blocked, and the ventilation is poor; (Cooling) 4. Abnormal throttling. 5. System blocking. 5. The outlet water temperature is on the high side. 6. Excessive refrigerant charge.
E02	Low Pressure Protection	Low Pressure Switch Heat Exchanger Fins Refrigerant System	1. Fluorine leakage in the system. 2. False connection or damage of low-pressure switch. 3. Poor defrosting. 4. The fins are dirty and blocked, and the ventilation is poor. 5. Abnormal throttling. 6. System blocking;
E03	Water Flow switch Protection	Flow Switch Water Pump	1. Water pump failure. 2. The water system is not completely emptied and still contains gas. 3. The resistance of the water system is too large. 4. The valves of the water system are not fully opened. 5. The water circuit filter is dirty and blocked. 6. The water flow switch is false connected or damaged;
E04	Electric heater overheat Protection		1. Check if the Electrical heating Overheat protector is open or not. 2. Check the Electrical heater.
E05	Water Circuit Frost Protection		1. Insufficient water flow. 2. The outlet water temperature is too low;
E06	Inlet and outlet water over temperature protection		1. Insufficient water flow.
E08	Communication failure between PCB and display	Communication error between PCB and DISPLAY	1. Check cable connection of PCB and DISPLAY. 2. Check the software version of PCB and DISPLAY.
E11	HP Protection	HP switch is open	1. Check whether showing the error after unit shutdown. 2. Measure the discharge pressure when the unit is running. 3. Detect EEV step, suction pressure, inlet/outlet water discharge and suction temp. 4. Release all the gas of the system and refill refrigerant according to the nameplate.
E12	LP Protection	LP switch is open	1. Check whether showing the error after unit shutdown. 2. Measure the suction pressure when the unit is running. 3. Detect EEV step, discharge pressure, inlet/outlet water discharge and suction temp. 4. Release all the gas of the system and refill refrigerant according to the nameplate.
E19	Primary Anti-freezing Protection	Ambient temp.≤0℃, A04-2℃ ≤ water inlet≤A04℃	Frost protection in winter. Once the water temperature rises to A04+4°C or the ambient temp is higher than 1, the error code disappears.
E29	Secondary Anti-freezing Protection	Ambient temp.≤0℃, water inlet≤A04-2℃	Frost protection in winter. Once the water temperature up to A04+11 °C or the ambient temp is higher than 1, the error code disappears.
E19	Primary Anti-freezing Protection	Ambient temp.≤0℃, 2℃ ≤ water inlet≤4℃	Frost protection in winter. Once the water temperature rises to 8 °C or the ambient temp is higher than 1 °C, the error code disappears.
E29	Secondary Anti-freezing Protection	Ambient temp.≤0℃, water inlet≤2℃	Frost protection in winter. Once the water temperature up to 15 °C or the ambient temp is higher than 1 °C, the error code disappears.

Error Code	Error Name	Relevant parts information	Review and resolve
E032	Flow Switch Protection	Flow switch is open	1. Detect the connection of cables. 2. Detect the flow switch. 3. Detect the water valve is opened or opened fully. 4. Detect the water pump and the filter. 5. Maybe there is some air in the water route.
E051	Compressor Over current Shutdown Fault	Compressor Over current	1. Check ambient temp. and inlet/outlet water temp. 2. Turn on the unit. Record and analyze the changing process of high/low pressure, discharge/suction temp., EEV step, compressor frequency and running current. 3. If they are OK, replace a new compressor driver board.
E065	High water outlet temp. protection		Check if the water flow is too low and the outlet water whether too high
E081	Communication failure between PCB and fan drive board	Communication error between PCB and fan drive board	1. Check the connection between PCB and fan board. All 12V-12V, GND-GND, A-A, B-B should be closed. 2. If they are closed, turn on the power, then measure the voltage between 12V and GND on fan board, if higher than 15V or lower than 7V, replace a new fan board.
E103	Fan motor overload protection		1. Check if the fan motor is running. 2. Detect the current of fan motor. 3. If the current is more than 1A, it means the motor has a problem and needs to be replaced. 4. If the current is less than 1A, it means the motor control module has a problem and needs to be replaced.
E171	Anti-freezing Protection	inlet water ≤A04℃ and the antifreeze temp ≤ A04-A05 ℃	1. Check the water flow. 2. Check the outlet water temp sensor. 3. Measure the ambient temp. 4. Detect the connection of cables. 5. Check the record of defrosting, whether the defrosting time is too long or too often.
F01	Compressor activation failure		Restart the unit. 1. Check the changing process of EEV step, high pressure, low pressure, inlet/outlet water temp. 2. Check the connection of U/V/W between compressor and compressor driver board. 3. Check the compressor resistance. 4. Check compressor driver board.
F03	PFC Fault		Restart the unit. 1. Check if the power supply connection and voltage supply is stable or not. 2. Replace a new compressor driver board.
F05	DC Bus Over voltage		1. Check the voltage between DCP-IN and DCN-IN, if lower than 300V, the unit will get this protection. 2. Check the input voltage of R/S/T on compressor driver board, if lower than 210V, the unit will get this protection. 3. If they are OK, please replace a new compressor driver board.
F06	DC Bus Under voltage		1. Check the voltage between DCP-IN and DCN-IN, if lower than 300V, it will get this protection. 2. Check the input voltage of R/S/T on compressor driver board, if lower than 210V, it will get this protection. 3. If they are OK, please replace a new compressor driver board
F07	AC Input Under voltage		1. Measure the input voltage of R/S/T of driver board, if lower than 300V, it will get this protection. 2. If it's OK, replace a new compressor driver board.
F08	AC Input Over current		Only in single phase unit. Restart the unit. Check if there is electric leakage. If not, replace a new drive board.
F09	Input voltage sampling fault		1. Make sure the power supply is not lower than 300V or higher than 500V. 2. If it's OK, please replace a new compressor driver board.

Error Code	Error Name	Relevant parts information	Review and resolve
F10	Communication Failure between DSP and PFC		Only in single phase unit. 1. Check the inverter board connection. 2. If no problem, replace a new compressor driver board.
F11	Communication Fault between DSP and Communication board		1. Please check the inverter board connection. 2. If no problem, please replace a new compressor driver board
F12	Communication failure between PCB and driver board		1. Check the connection between main control board and compressor driver board. All of 12V-12V, GND-GND, A-A, B-B should be closed. 2. If they are closed, turn on the power, then measure the voltage between 12V and GND on compressor driver board, if higher than 15V or lower than 7V, please replace a new one compressor driver board.
F13	IPM Overheat Stop		1. Check if the fans are running or not. 2. Check the installation distance and space. 3. Leave enough distance and space to make heat pump have a good transfer heating condition. 4. Clean the heat exchanger fins. 5. If they are OK, replace a new compressor driver board.
F15	Input voltage Lacking Phase		1. Check the phase of power supply R/S/T to compressor driver board. 2. If it's OK, replace a new compressor driver board.
F16	Compressor weak magnetic protection alarm		1. Check the refrigeration system. 2. If it's OK, replace a new compressor driver board.
F17	Temperature fault of drive board		1. Check the connection of heat sink temp. sensor. 2. Check the resistance of heat sink temp. sensor. 3. If they are OK, please replace a new heat sink and heat sink temp. sensor.
F18	IPM Current Sampling Fault		1. Check ambient temp. and inlet/outlet water temp. 2. Check high/low pressure and discharge temp. and suction temp. 3. Check EEV step. 4. Check the compressor frequency and current. 5. If they are OK, replace a new compressor driver board.
F20	IGBT Power Device Overheat Alarm		1. Check if the fans are running or not. 2. Check the installation distance and space. 3. If they are OK, please replace it with a new compressor driver board. 4. Leave enough distance and space to make heat pump have a good transfer heating condition. 5. Clean air to fin heat exchanger.
F22	AC input over current protection alarm		Only in single phase unit. Restart the unit. 1. Check if there is electric leakage. 2. If still have the failure, replace a new drive board.
F23	EEPROM Fault Alarm		1. Check the connection. 2. Replace a new driver board;
F24	Destroyed EEPROM Activation Ban Alarm		
F25	LP 15V Under load Fault		1. Check if the power supply is stable or not, and restart unit. 2. If the problem still on, please replace a new drive board.

Error Code	Error Name	Relevant Parts Information	Review and Resolve
F26	IGBT Power Device Overheat Fault		1. Check if the fans are running or not. 2. Check the installation distance and space. 3. Leave enough distance and space to make heat pump have a good transfer heating condition. 4. Clean the heat exchanger fins. 5. If they are OK, please replace a new driver board;
F031	DC Fan Motor 1 Failure		1. Turn off the unit and check the connection. 2. Restart and check if the motor is running normally or the error happens again. 3. Replace a new fan motor.
F032	DC Fan Motor 2 Failure		
Pp1	Exhaust Pressure Sensor Fault		1. Check the exhaust pressure sensor connection. 2. If the connection is OK, please replace sensor.
Pp2	Suction Pressure Sensor Fault		1. Check the suction pressure sensor connection. 2. If the connection is OK, please replace sensor.
TP	Low Ambient Temp. Protection	Ambient temp ≤-30	1 Check the ambient temp. 2. When ambient temp ≥-28℃, the fault will disappear.
P01	Water Inlet Temp. Sensor Fault		1. Check the connection. 2. Measure the resistance of sensor, if lower than 100Ω or higher than 500kΩ, please replace a new one.
P02	Water Outlet Temp. Sensor Fault		
P04	Ambient Temp. Sensor Fault		
P17	Water Outlet Temp. Sensor Fault		
P032	Hot Water Tank Temp. Sensor Fault		
P42	Room Temp. Sensor Fault		
P101	EVI Inlet Temp. Sensor Fault		
P102	EVI Outlet Temp. Sensor Fault		
P153	Coil Temp. Sensor Fault		
P181	Exhaust Temp. Sensor Fault		
P182	Exhaust Over Temp.	(Exhaust temp.) ⩾C05 default 110	1. Measure the resistance of sensor, if lower than 100Ω or higher than 500kΩ, please replace it with a new one. 2. Check the unit find if it has refrigerant leakage.
P191	Antifreeze Temp. Sensor Fault		1. Check the connection. 2. Measure the resistance of sensor, if lower than 100Ω or higher than 500kΩ, please replace a new one.

Technical Details

Model		Activair HT 9kW	Activair HT 15kW	Activair HT 22kW
Power Supply	/	230V~/50Hz	230V~/50Hz	230V~/50Hz
Moisture Resistance	IPX	IPX4	IPX4	IPX4
Electrical Shockproof	I	I	I	I
Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 30/35°C				
Heating Capacity Range	kW	3.10~8.90	5.40~14.95	8.00~22.00
Heating Power Input Range	kW	0.65~2.10	1.05~3.85	1.60~6.90
Heating Current Input Range	A	2.9~9.2	4.6~16.9	7.0~30.3
Cooling Condition - Ambient Temp. (DB/WB): 35/24°C, Water Temp. (In/Out): 12/7°C				
Cooling Capacity Range	kW	1.20~5.72	3.60~10.50	4.20~15.00
Cooling Power Input Range	kW	0.65~2.40	1.12~4.47	1.80~7.30
Heating Current Input Range	A	2.9~10.5	4.9~19.6	7.9~32.1
Hot Water Condition - Ambient Temp. (DB/WB): 20/15°C, Water Temp. (In/Out): 15/55°C				
Hot Water Capacity Range	kW	3.92~10.68	6.50~18.50	10.00~27.00
Hot Water Power Input Range	kW	0.78~2.47	1.27~4.65	1.90~7.10
Hot Water Current Input Range	A	3.4~10.8	5.6~20.4	8.3~31.2
Max. Power Input	kW	3.0	5.3	9
Max. Current Input	A	13.5	24.5	39
Water Flow	m^3/h	1.0	1.7	2.9
Refrigerant / Proper Input	kg	R290 /0.50kg	R290 / 0.85kg	R290 / 1.30kg
CO_2 Equivalent	Ton	0.0015	0.0026	0.0039
Sound Pressure (1m)	dB(A)	42	43	47
Sound Power Level (EN12102)	dB	57	57	62
Net Weight	kg	80	160	202
Operation Pressure (Low Side)	MPa	0.8	0.8	0.8
Operation Pressure (High Side)	MPa	3.0	3.0	3.0
Unit Dimension(L/W/H)	mm	1167×407×795	1287×458×928	1250×540×1330
Shipping	mm	1300×485×940	1420×540×1080	1380×570×1480
Dimension(L/W/H)				
Compressor	Brand	HIGHLY	HIGHLY	HIGHLY
Circulation Pump	Y/N	Y	Y	Y
Operating Ambient Temperature	℃	-25~43	-25~43	-25~43
Fan Quantity	/	1	1	2
Fan Motor Type	/	DC motor	DC motor	DC motor
Fan Motor Power Input (min~max)	W	55~105	60~120	60~160
Fan Speed (RPM)	RPM	300~600	220~600	300~750
Water Connection (inch)	inch	1	1	1
Water Pressure Drop (max)	kPa	40	20	65
Circulation Pump Head	m	7.5	7.5	12.5
Cabinet Type		Galvanized sheet+ ASA	Galvanized sheet+ ASA	Galvanized sheet+ ASA

Installation Check List

This form must be completed by the Installer/Commissioning Engineer

Heat Pump Serial Number……

Heating system fill Pressure.	Bar	
Expansion vessel charge pressure.	Bar	
The system has been flushed and treated with a suitable inhibitor/Antifreeze	Yes	No
Has the system been installed in accordance with the manufacturer's instructions?	Yes	No
Isolation valves fitted to heating flow and return.	Yes	No
System filter fitted on return.	Yes	No
22mm Auto-By-Pass valve fitted between Heating Flow and Return.	Yes	No
Main Electrical Isolator meets heat pump requirements.	Yes	No
Adequate access available for operation and maintenance.	Yes	No
Correct clearances have been observed.	Yes	No
The customer has been instructed on how to use the appliance.	Yes	No

Engineer Print……Sign…….. Date……

Customer Print……Sign…….. Date……

This form must be presented to Trianco when requesting a warranty call.

TRIANCO

BRINGING HEAT TO LIFE

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