unitherm HEATING SYSTEMS

LG Life's Good

NEW

Therma V R32: Monobloc S

4th Series – Software.

Installation Instructions – Nov 2022.

General Information.

Model Line Up:-

Category	Capacity (kW)	Model Number
Single Phase, 220-240V, 50 Hz	5.5	HM051MR U44
	7.0	HM071MR U44
	9.0	HM091MR U44
	12.0	HM121MR U34
	14.0	HM141MR U34
	16.0	HM161MR U34

Category	Capacity (kW)	Model Number
Three Phase, 380-415V, 50 Hz	12.0	HM123MR U34
	14.0	HM143MR U34
	16.0	HM163MR U34

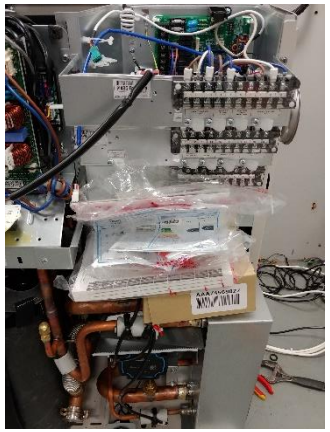
Installation.

Unpack the equipment carefully and check all components are complete.
Layout all components so each may be identified.

Please retain this installation instruction document for future reference.

Outdoor Installation – Bill of Materials.

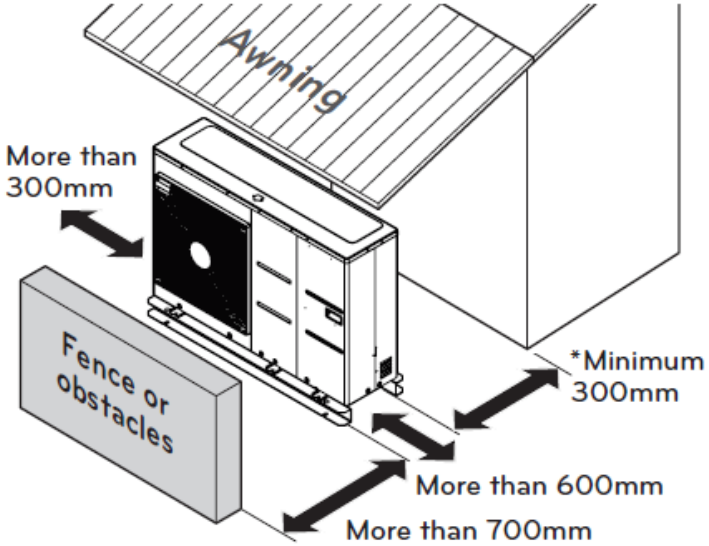
The LG controller comes packed within the Heat Pump.



Drain Bung Kit

Item	Image	Quantity
Installation Manual		1
Outdoor Unit UN4 Chassis (Product heating capacity : 5kW, 7kW, 9kW)		1
Outdoor Unit UN3 Chassis (Product heating capacity : 12kW, 14kW, 16kW)		1
Remote Controller		1
Remote Controller Cable		1
Drain Cap		2
Drain Nipple		1

Outdoor Installation.

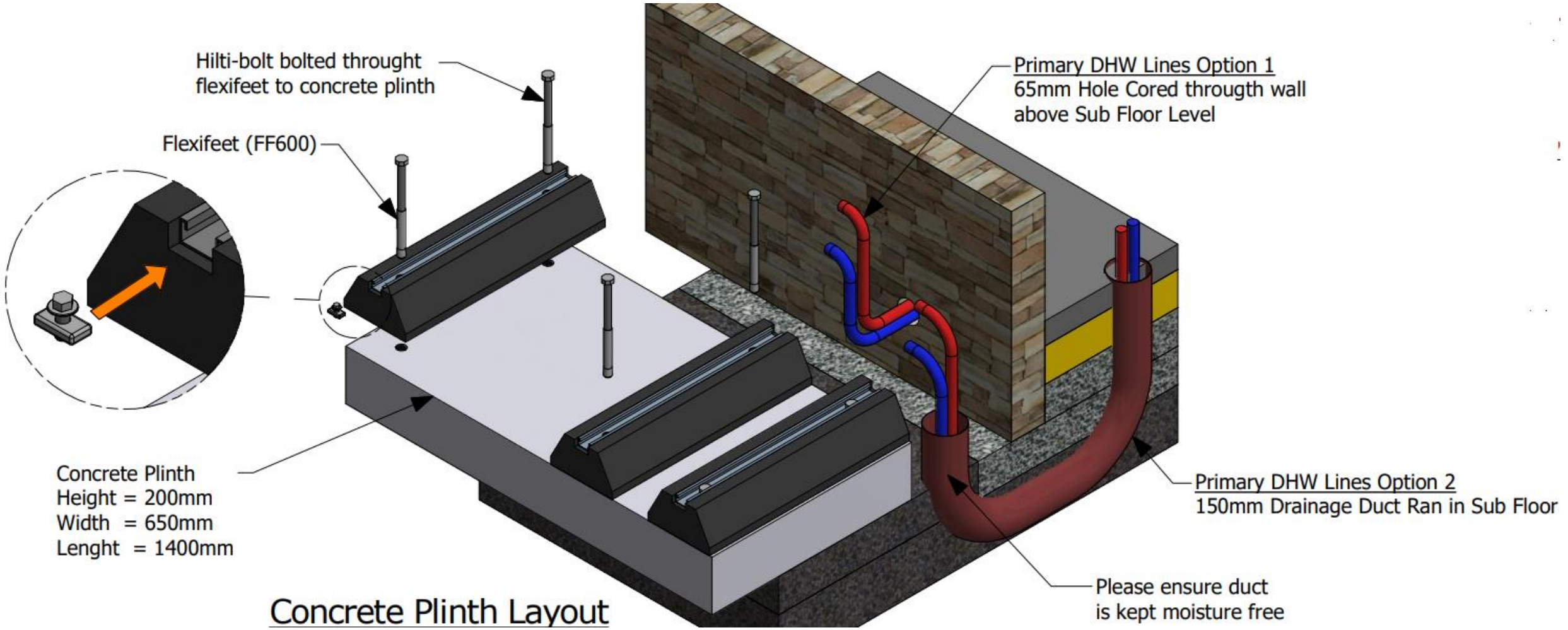


* : Please secure the space to install the shut-off valve and strainer.

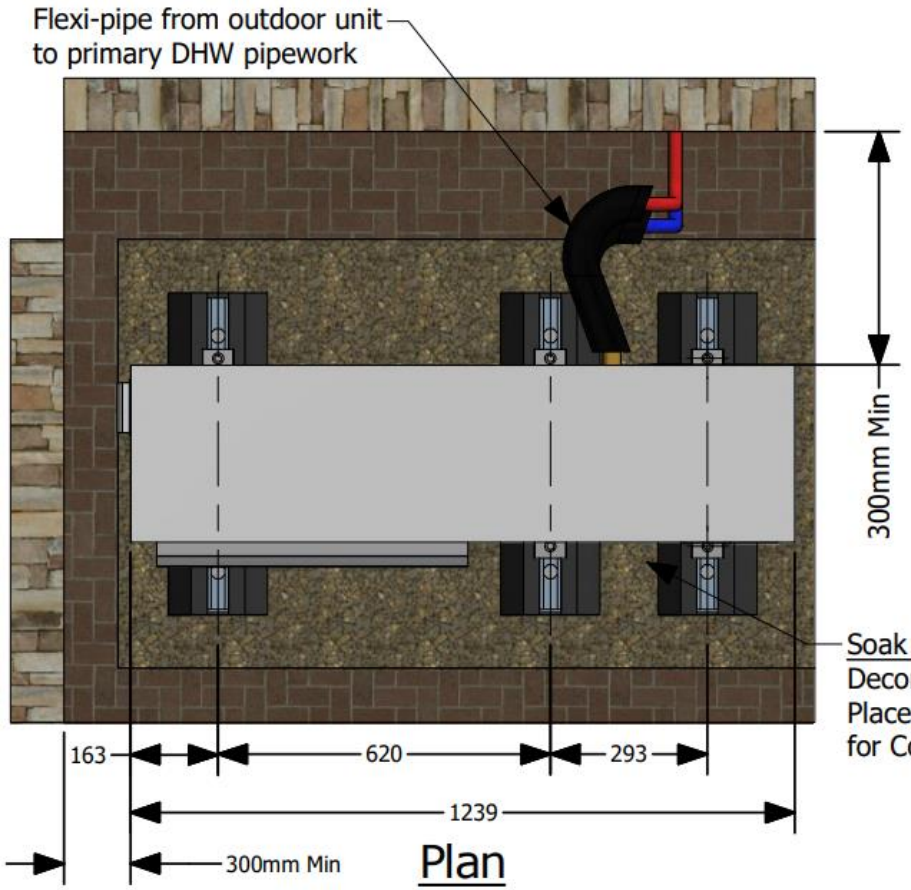
Unit : mm

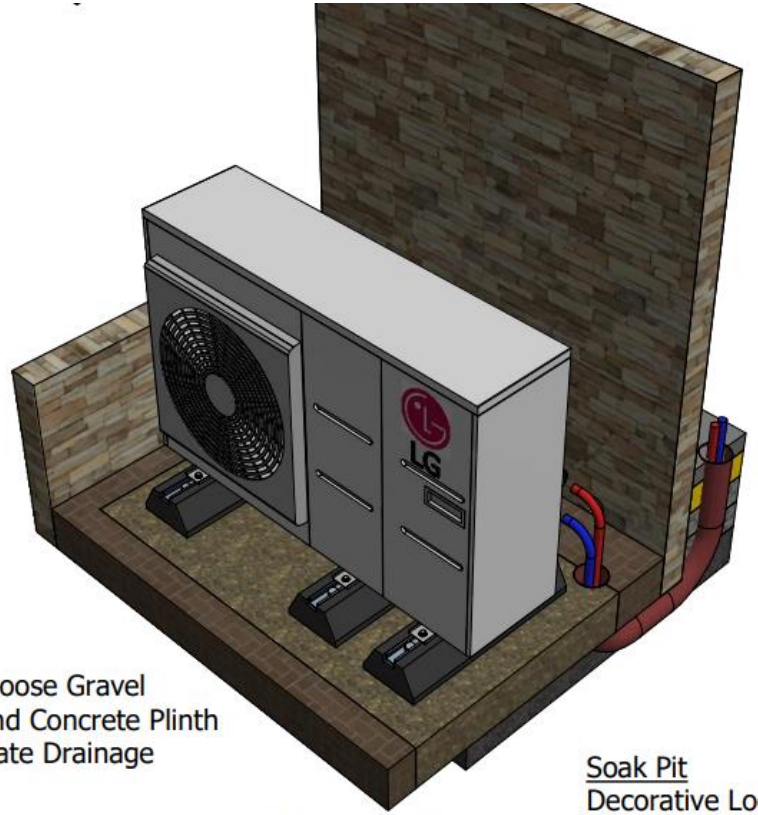
- Prepare a strong and level base concrete plinth.
- Place on 3 anti vibration feet & anchor to base.
- Ensure the unit is 300mm from the wall.
- The flow & return connections are 1” male.
- Fit flexi hoses, full bore isolation valves, on the back of the unit.
- Recommend:- Additional 400 micron “Y” strainer, external(with isolation vales on either side)
- Use a through wall insulation kit, this allows for thermal insulation within the wall.
- All pipework to be 28mm copper or 32mm multi layer composite pipe.
- Allow for condensate to feed into a soakaway, tray or soil stack.
- Recommend:- Magnetic Cleaner.
- Water volume:- 25L single fan unit, 50L double fan unit(Buffer Tank - 4 Port)

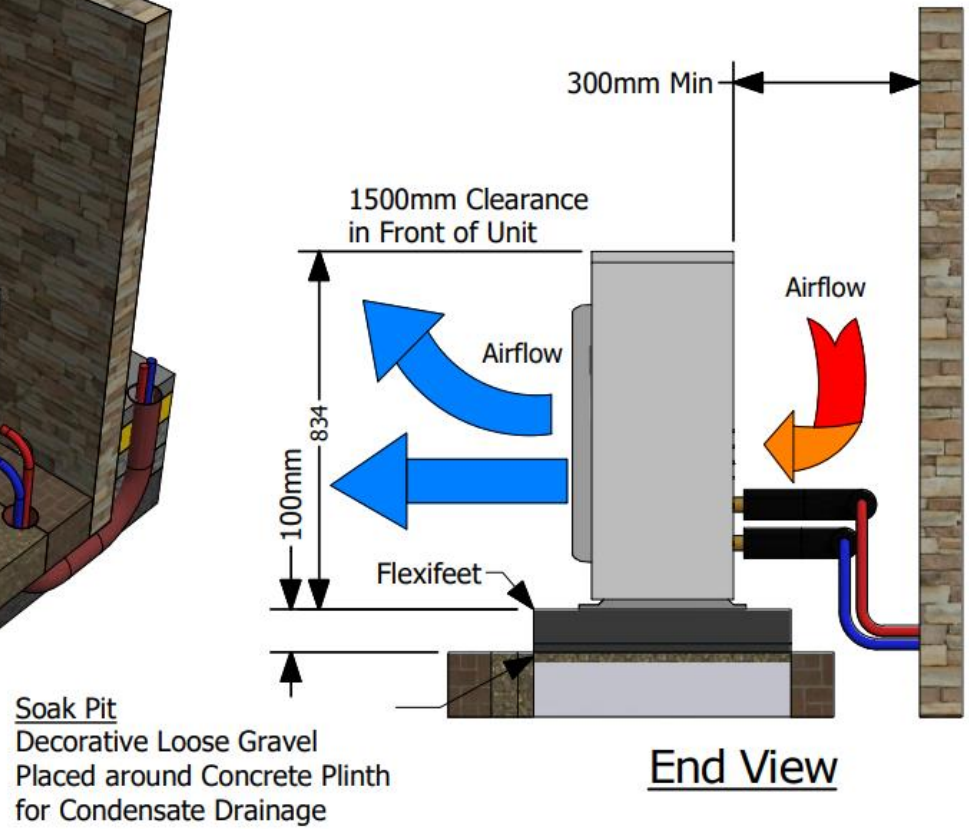
Outdoor Installation.



Outdoor Installation.



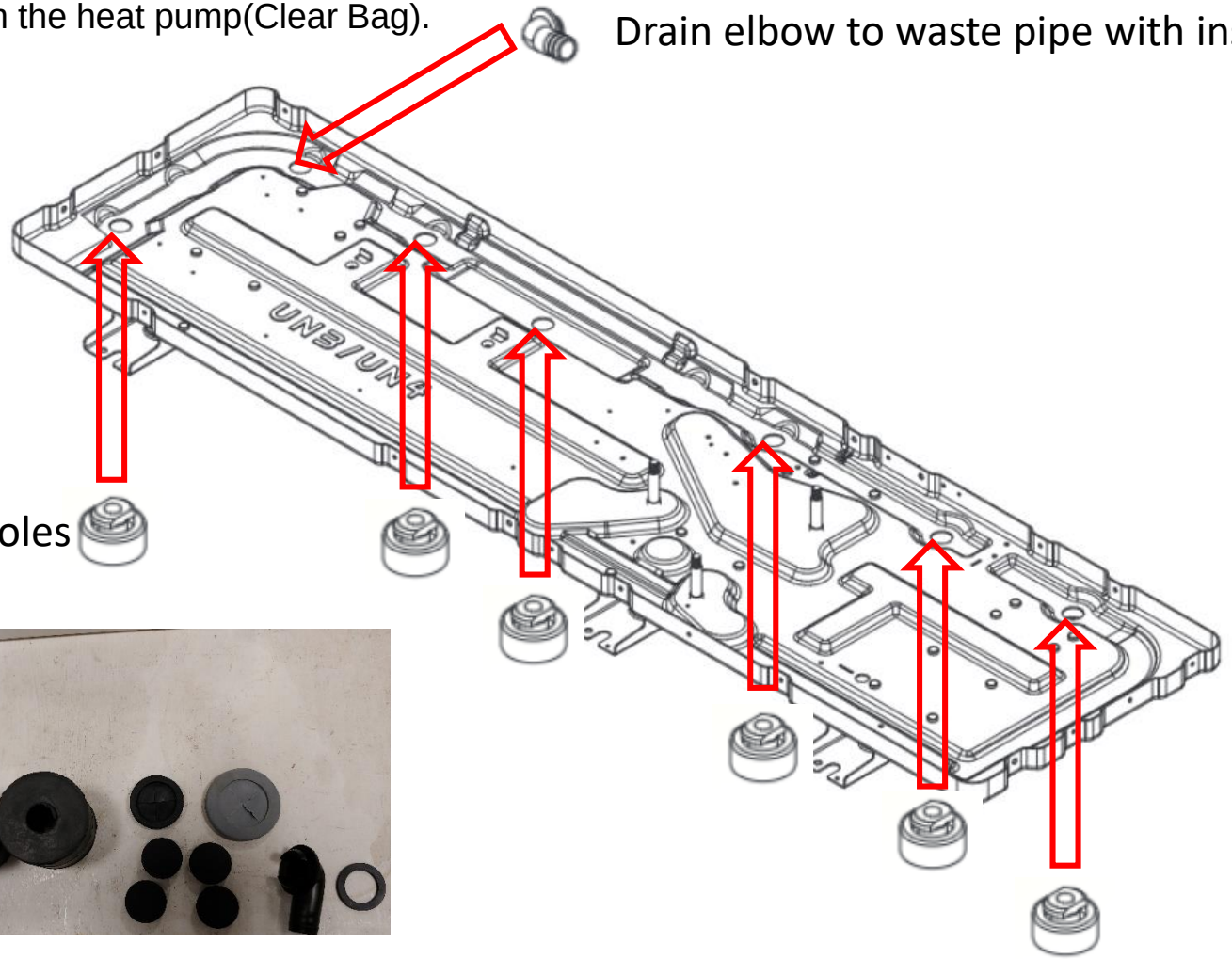




Outdoor Installation.

Drain Bung Kit, The kit is inserted within the heat pump(Clear Bag).

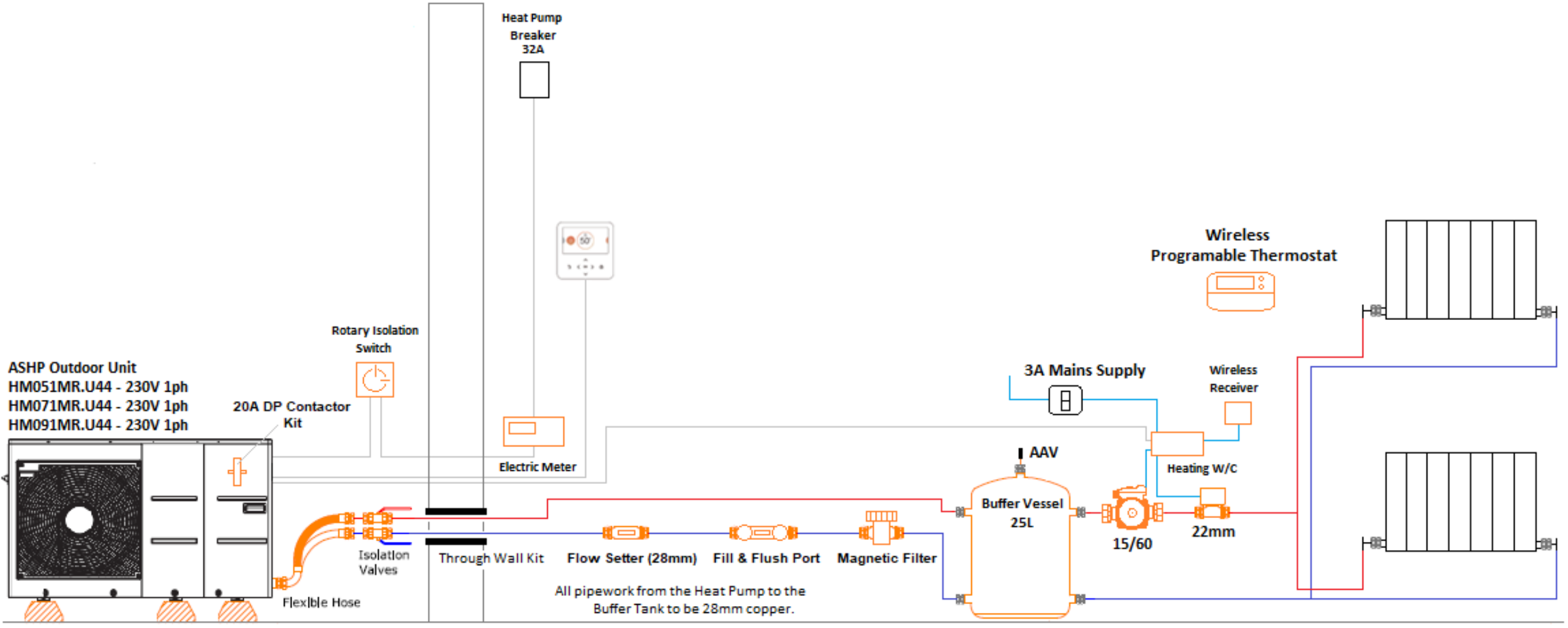
Drain elbow to waste pipe with insulation.



Insert the grommets into the holes from the bottom.

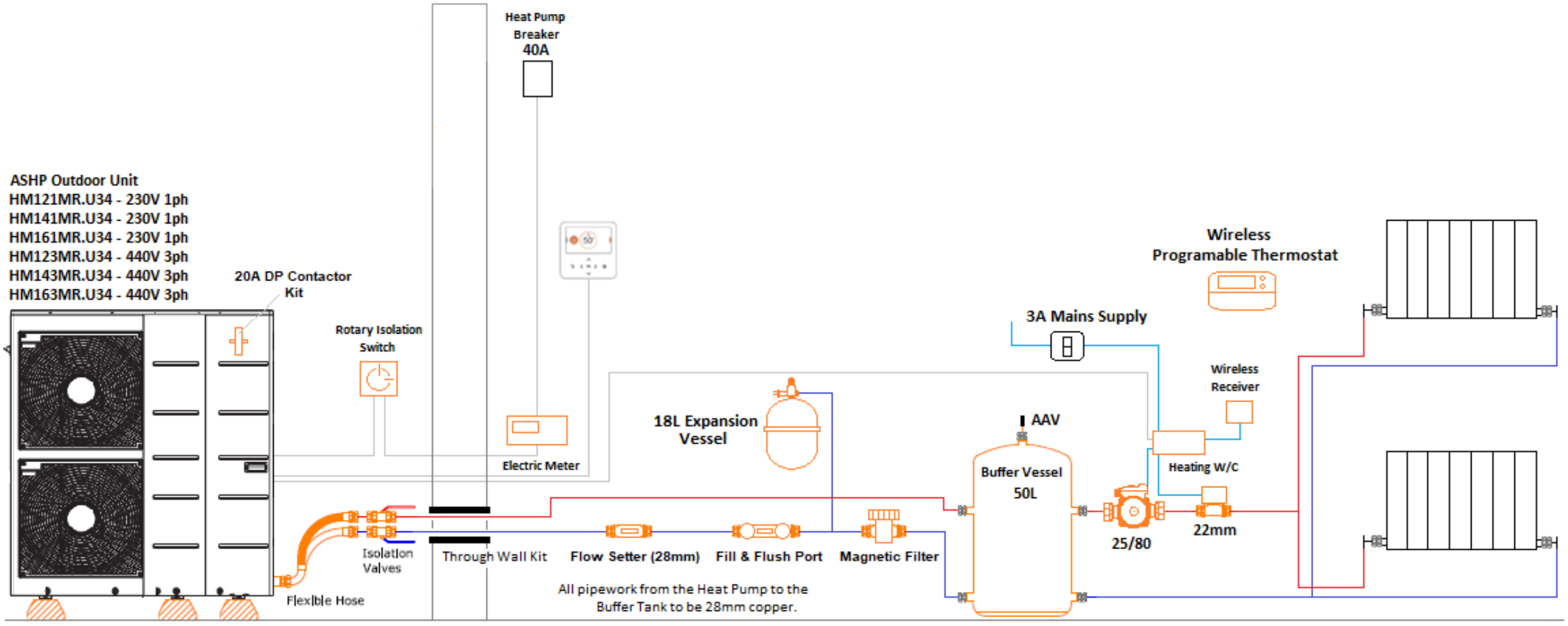
Installation Schematic.

Heating Only, 1 Zone (Rads) – 5, 7 & 9kW.



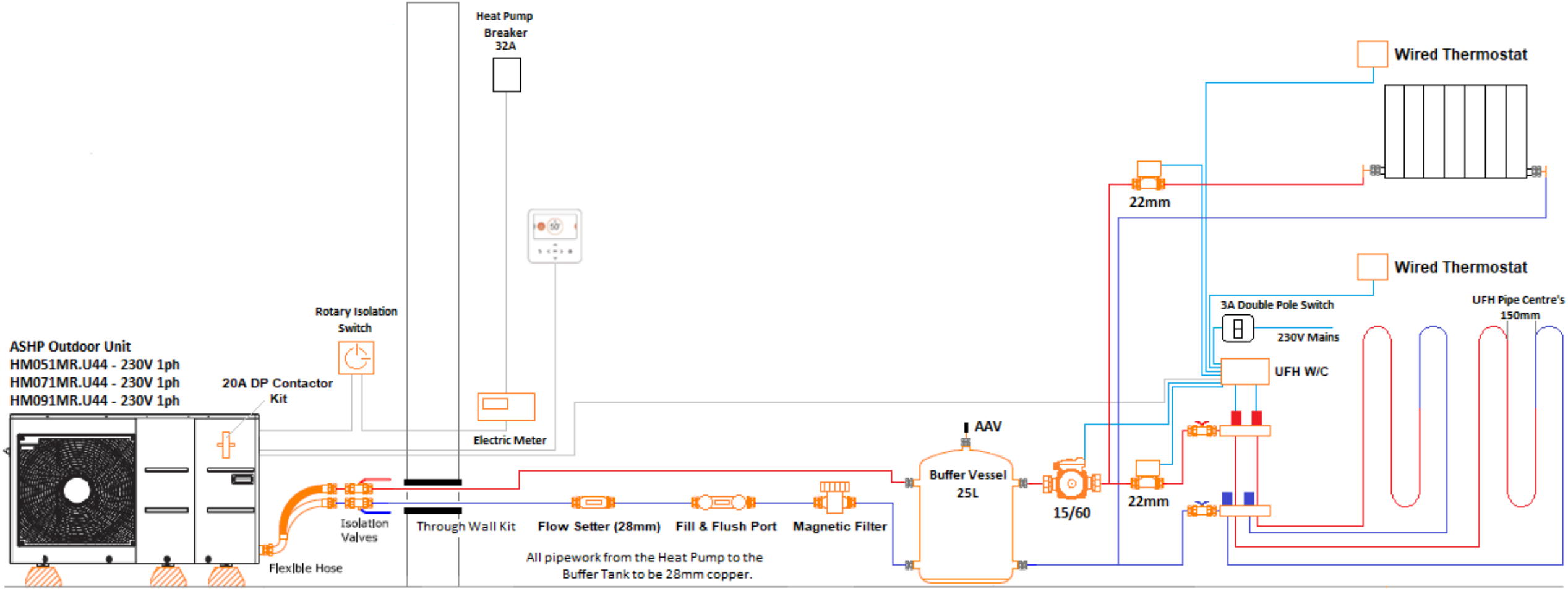
Installation Schematic.

Heating Only, 1 Zone (Rads) – 12, 14, 16kW.



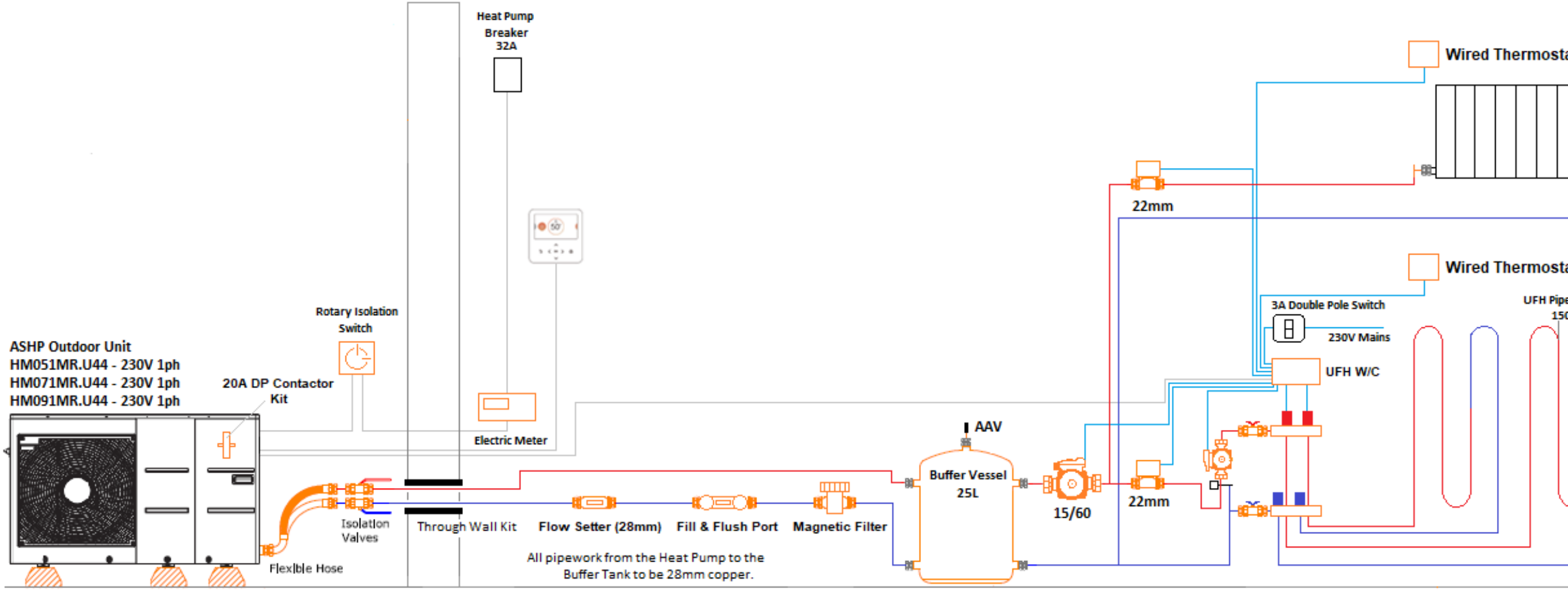
Installation Schematic.

Heating Only, Twin Zone (UFH & Rads)(Single Flow Temp) – 5, 7 & 9kW.



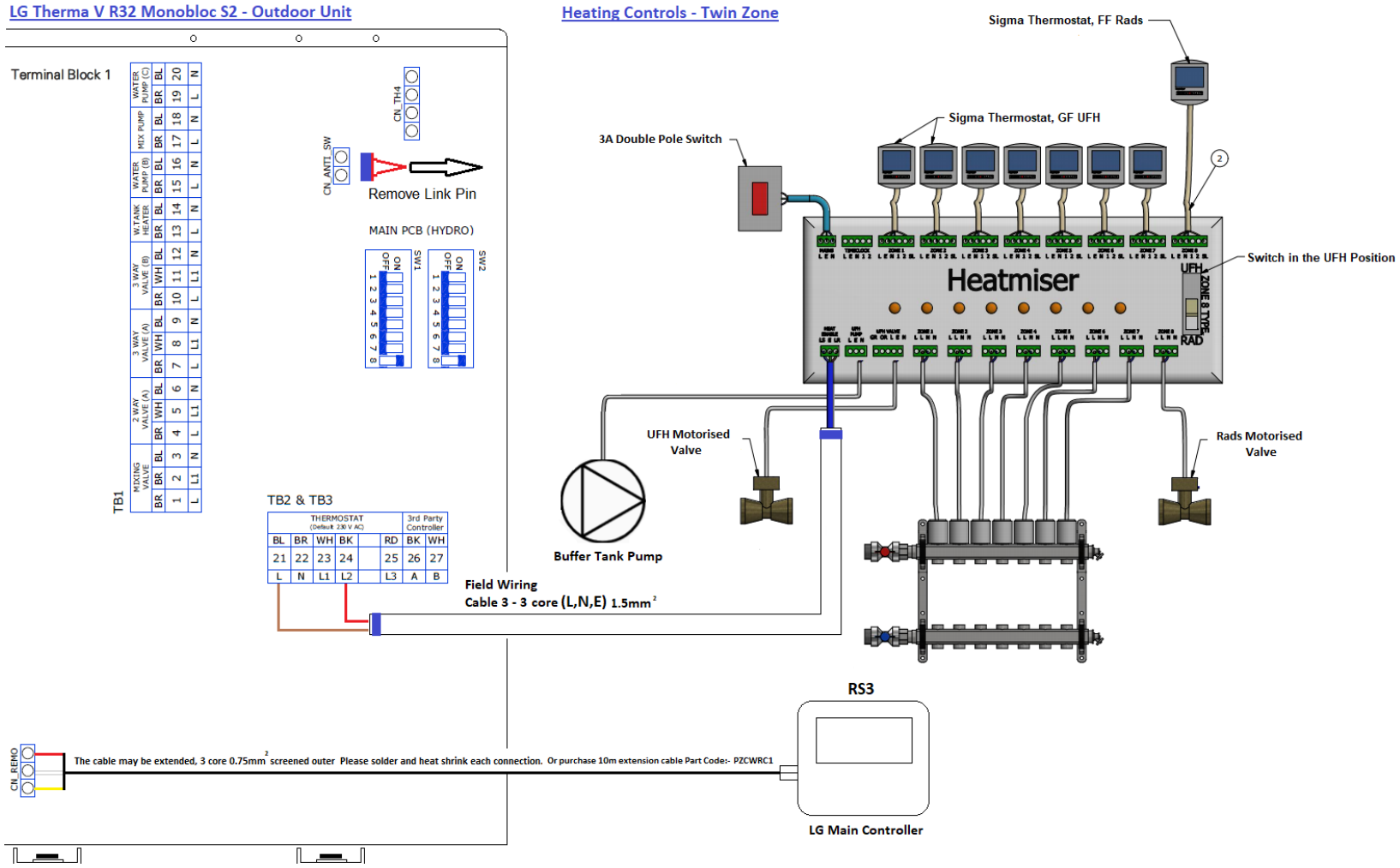
Installation Schematic.

Heating Only, Twin Zone (UFH & Rads)(Two Flow Temp Circuits) – 5, 7 & 9kW.



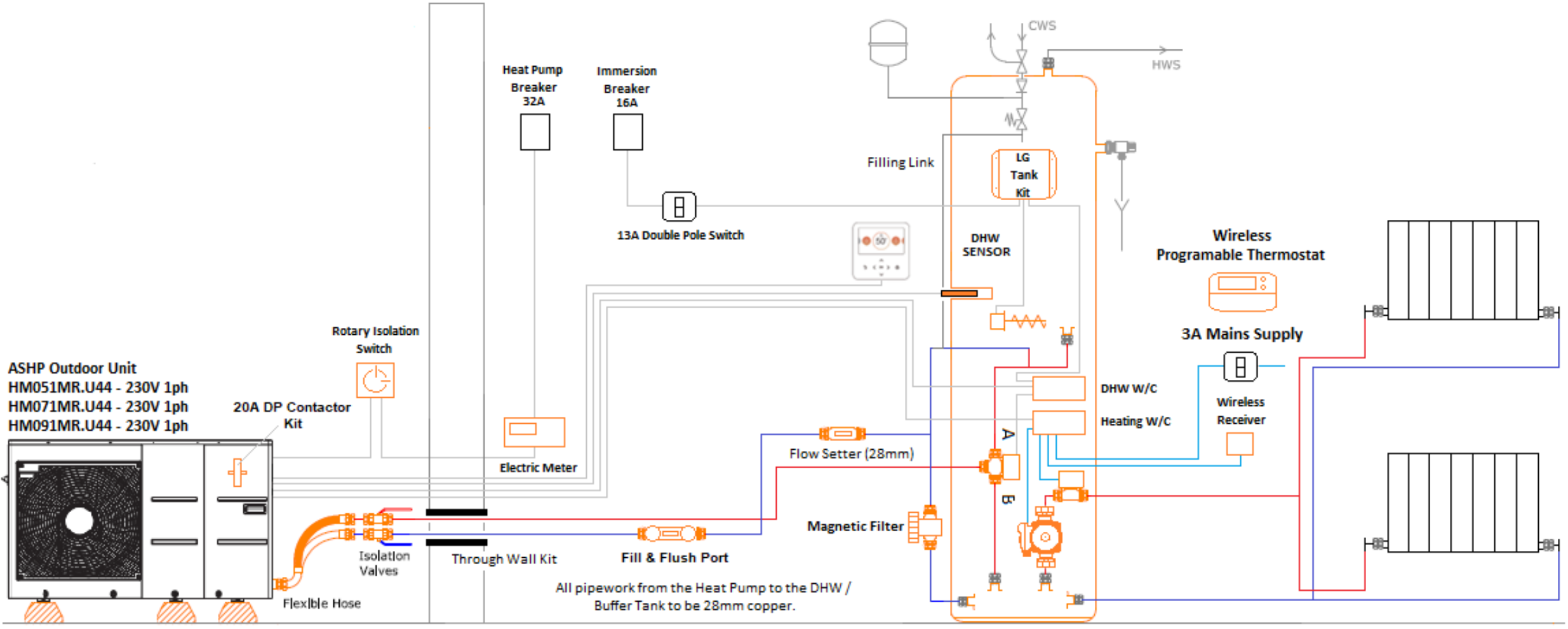
Installation Schematic.

Heating Only, Twin Zone (UFH(GF) & Rads(FF)) – 5, 7, 9, 12, 14 & 16kW.



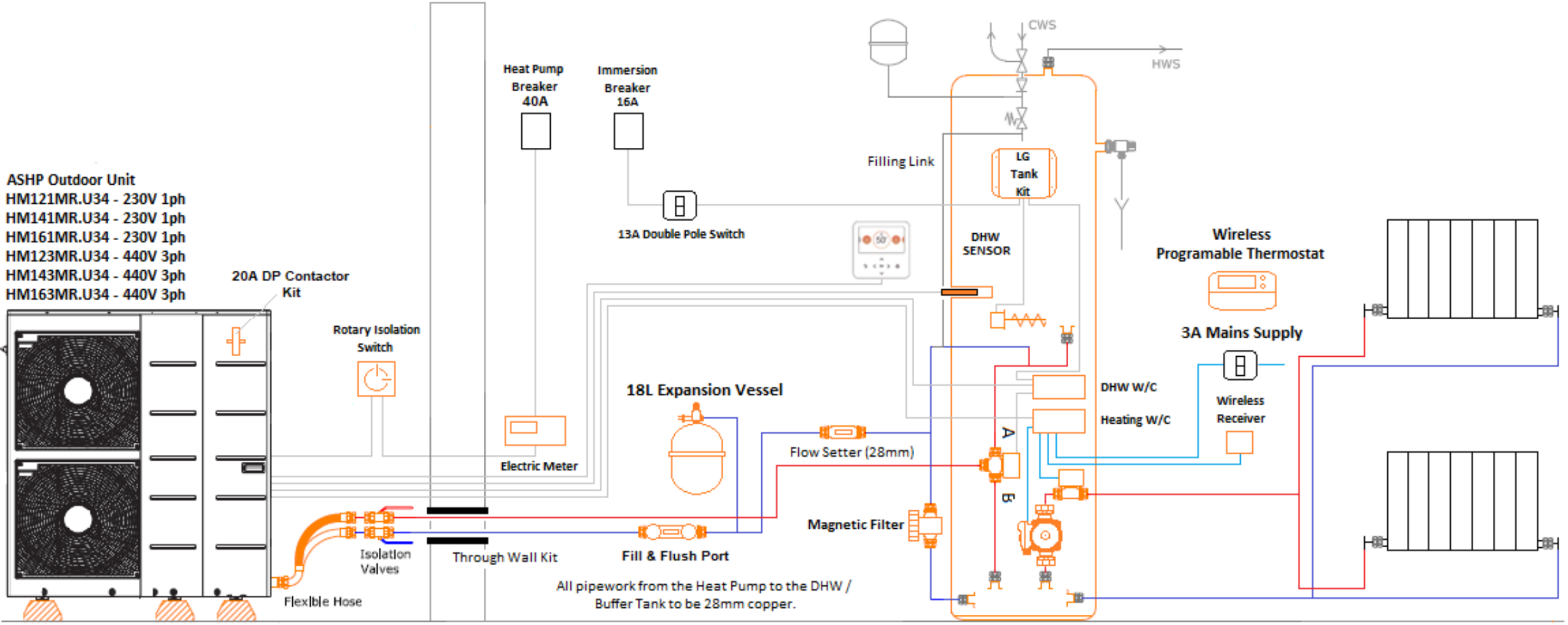
Installation Schematic.

Heating & DHW(Pre-Plumbed Unvented Cylinder), 1 Zone (Rads) – 5, 7, 9kW.



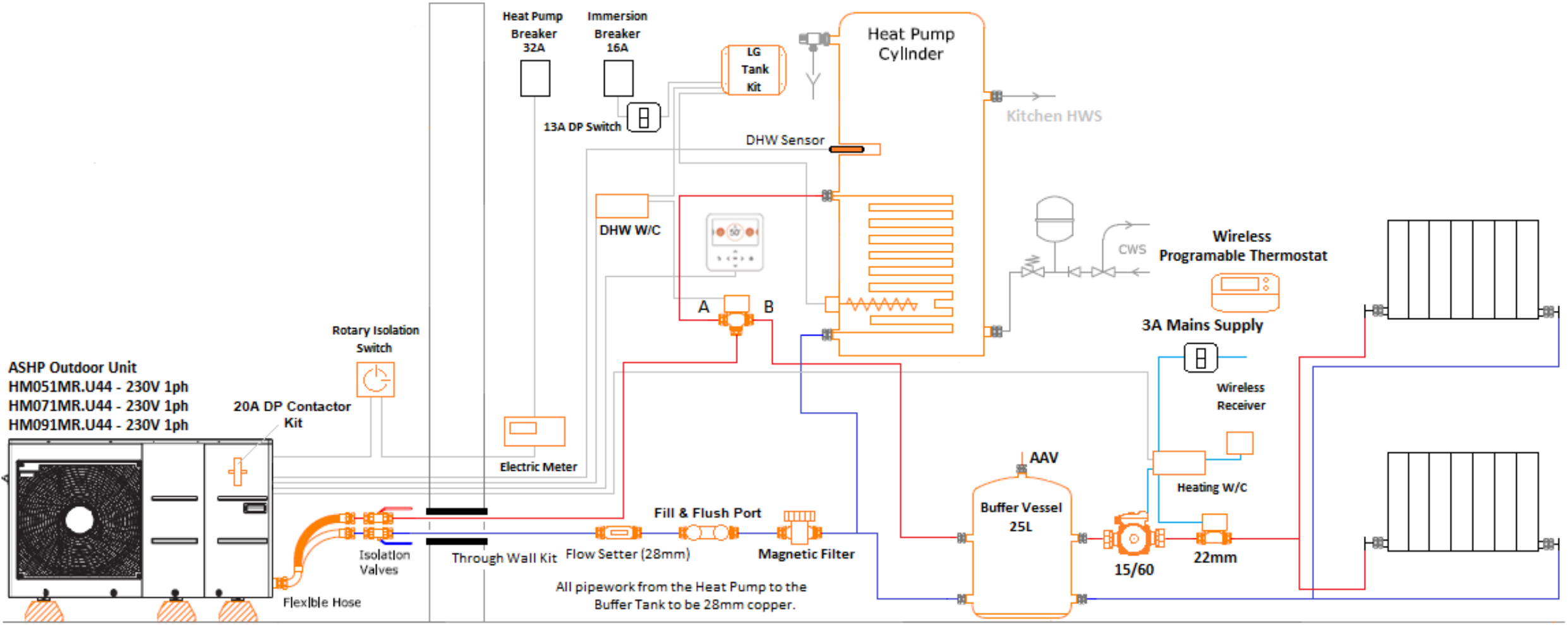
Installation Schematic.

Heating & DHW(Pre-Plumbed Unvented Cylinder), 1 Zone (Rads) – 12, 14, 16kW.



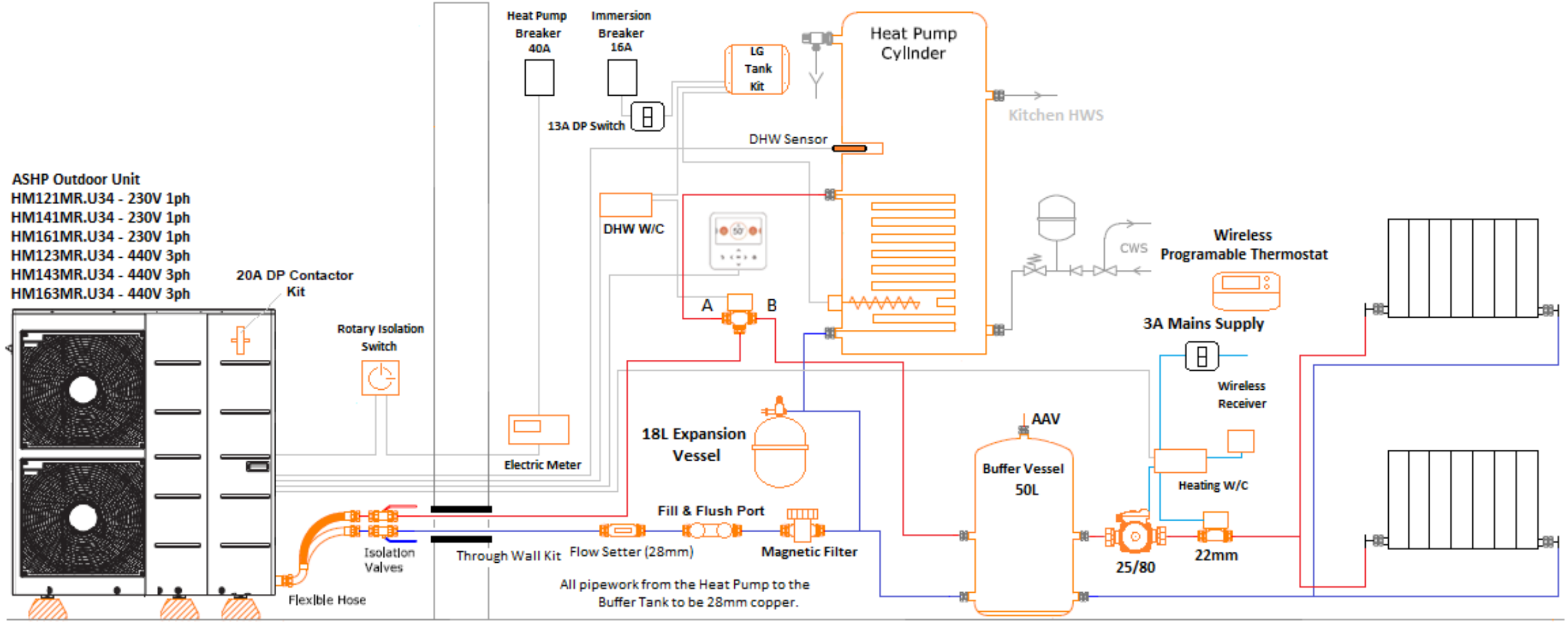
Installation Schematic.

Heating & DHW(Standalone Unvented Cylinder), 1 Zone (Rads) – 5, 7, 9kW.



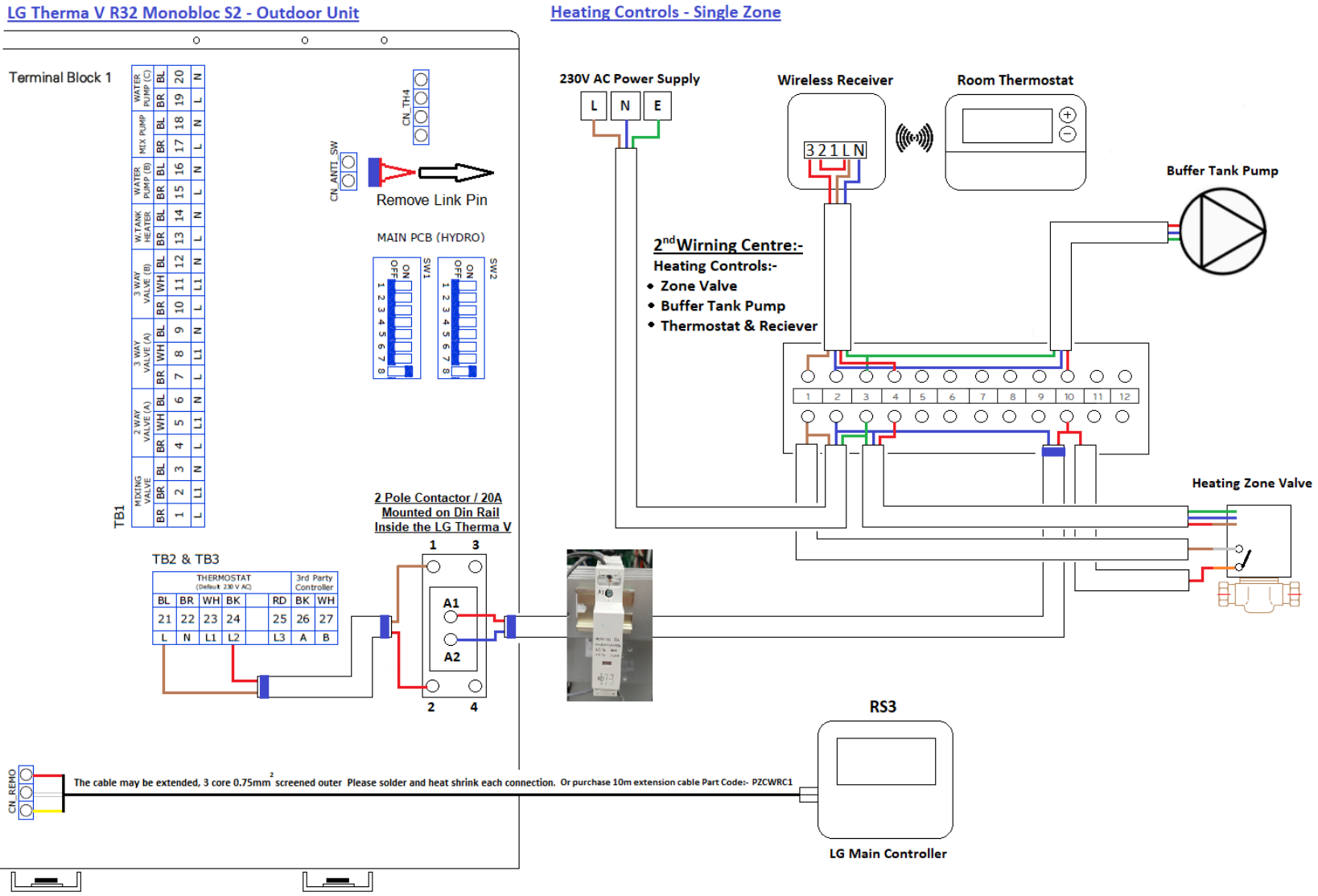
Installation Schematic.

Heating & DHW(Standalone Unvented Cylinder), 1 Zone (Rads) – 12, 14, 16kW.



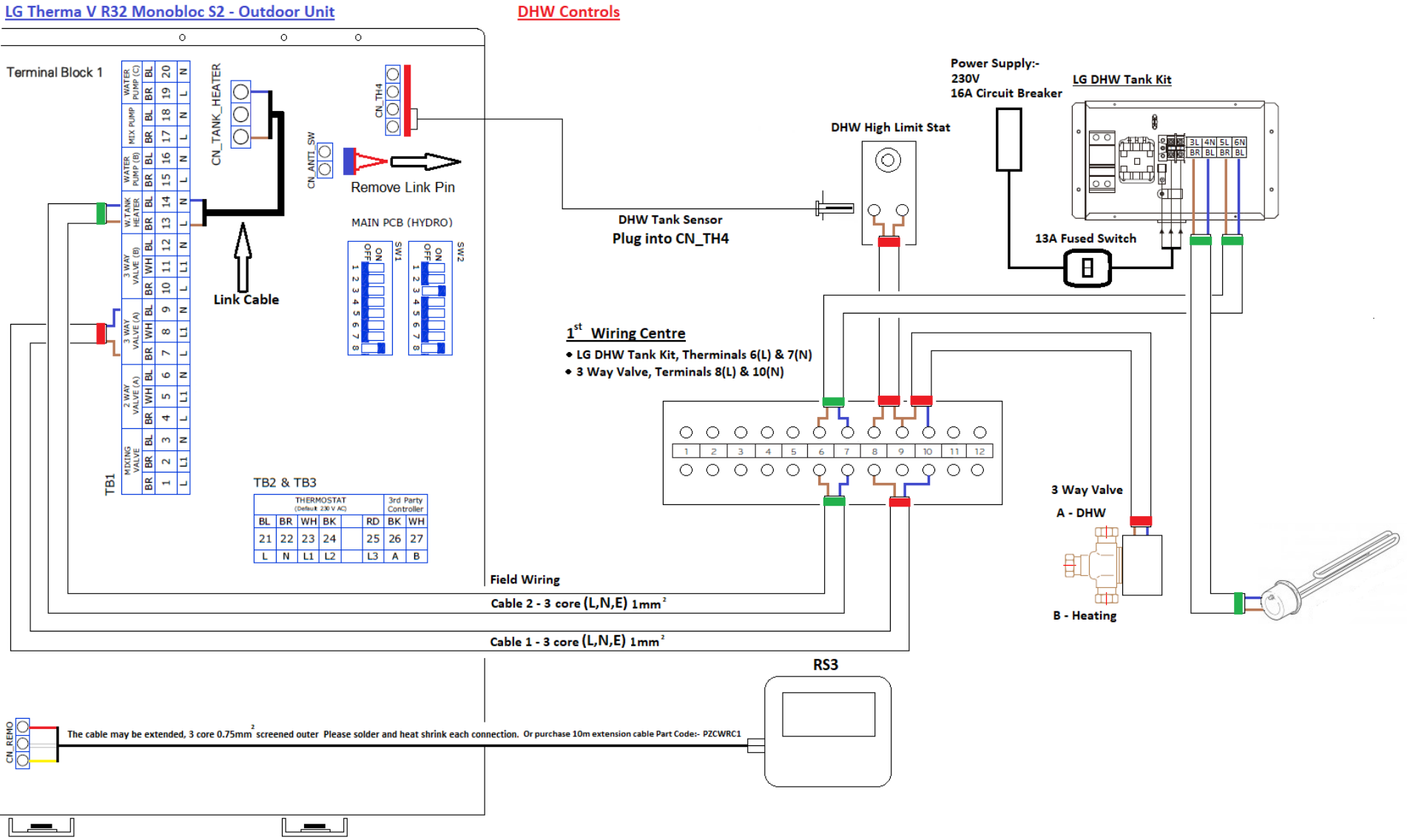
Installation Wiring.

Heating Controls – 5, 7, 9, 12, 14 & 16kW.



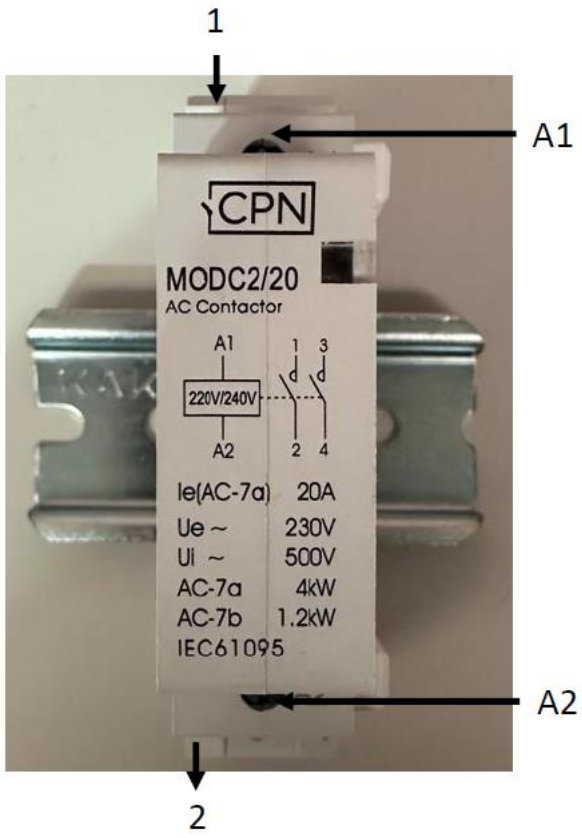
Installation Wiring.

DHW Controls – 5, 7, 9, 12, 14 & 16kW.



Installation Schematic – DP 20A Contactor.

CPN MOD2/20



Live from terminal 12(Terminal 21 on LG Heat Pump)

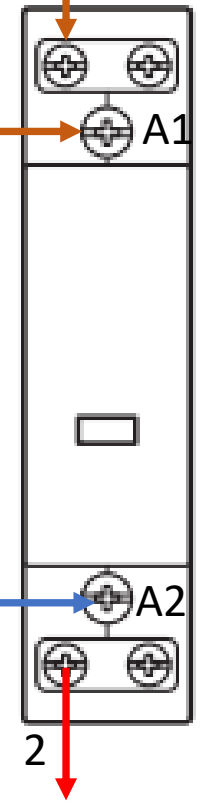
2nd Wiring Center(Heating Controls)

Live from terminal 10

2nd Wiring Center(Heating Controls)

Neutral from terminal 2

2nd Wiring Center(Heating Controls)



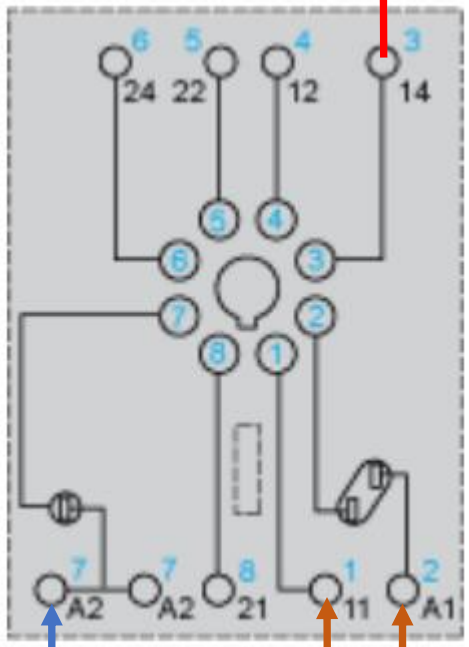
Switched Live to terminal 11(Terminal 24 on LG Heat Pump)

2nd Wiring Center(Heating Controls)

Installation Schematic – Relay Schneider RUZC2M

Schneider RUZC2M

Schneider RUZC2M



Switched Live to terminal 11(Terminal 24 on LG Heat Pump)

2nd Wiring Center(Heating Controls)

Neutral from terminal 2

2nd Wiring Center(Heating Controls)

Live from terminal 10

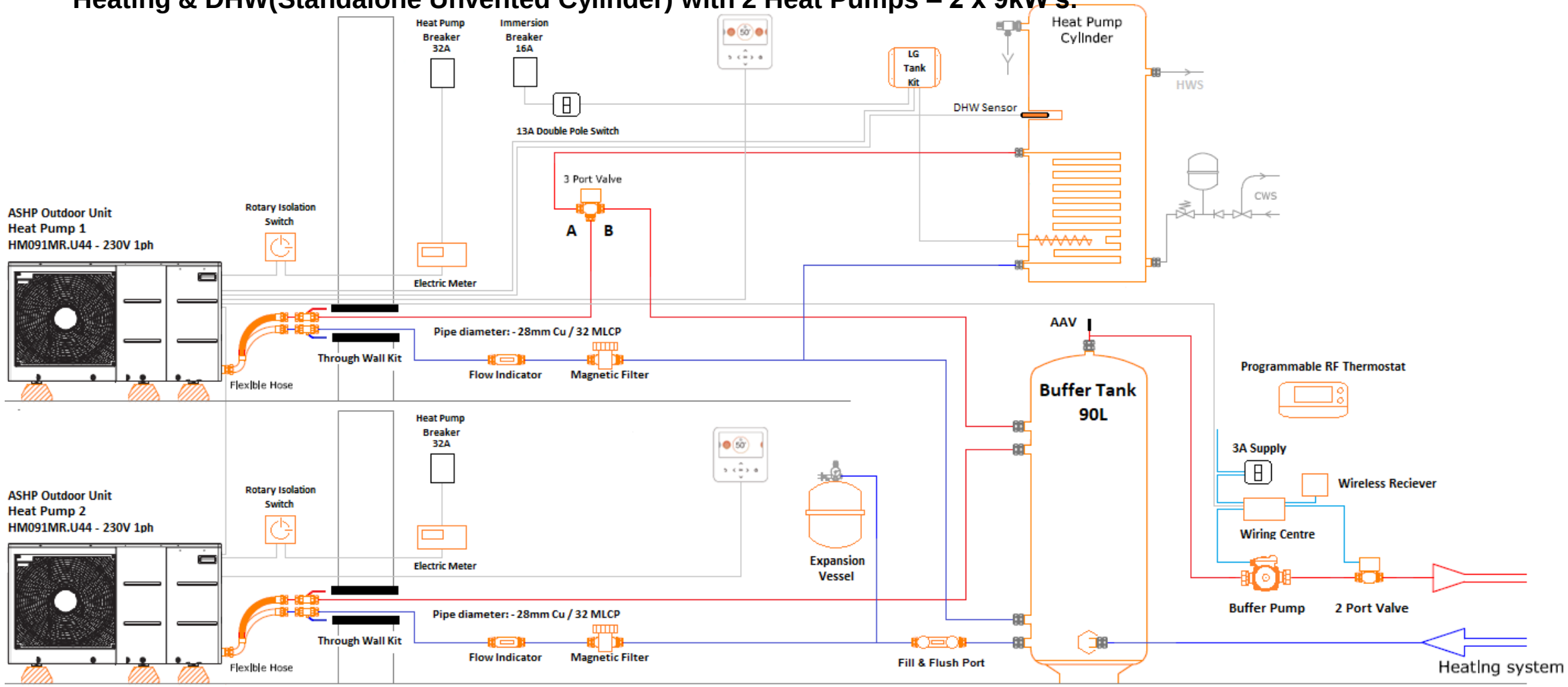
2nd Wiring Center(Heating Controls)

Live from terminal 12(Terminal 21 on LG Heat Pump)

2nd Wiring Center(Heating Controls)

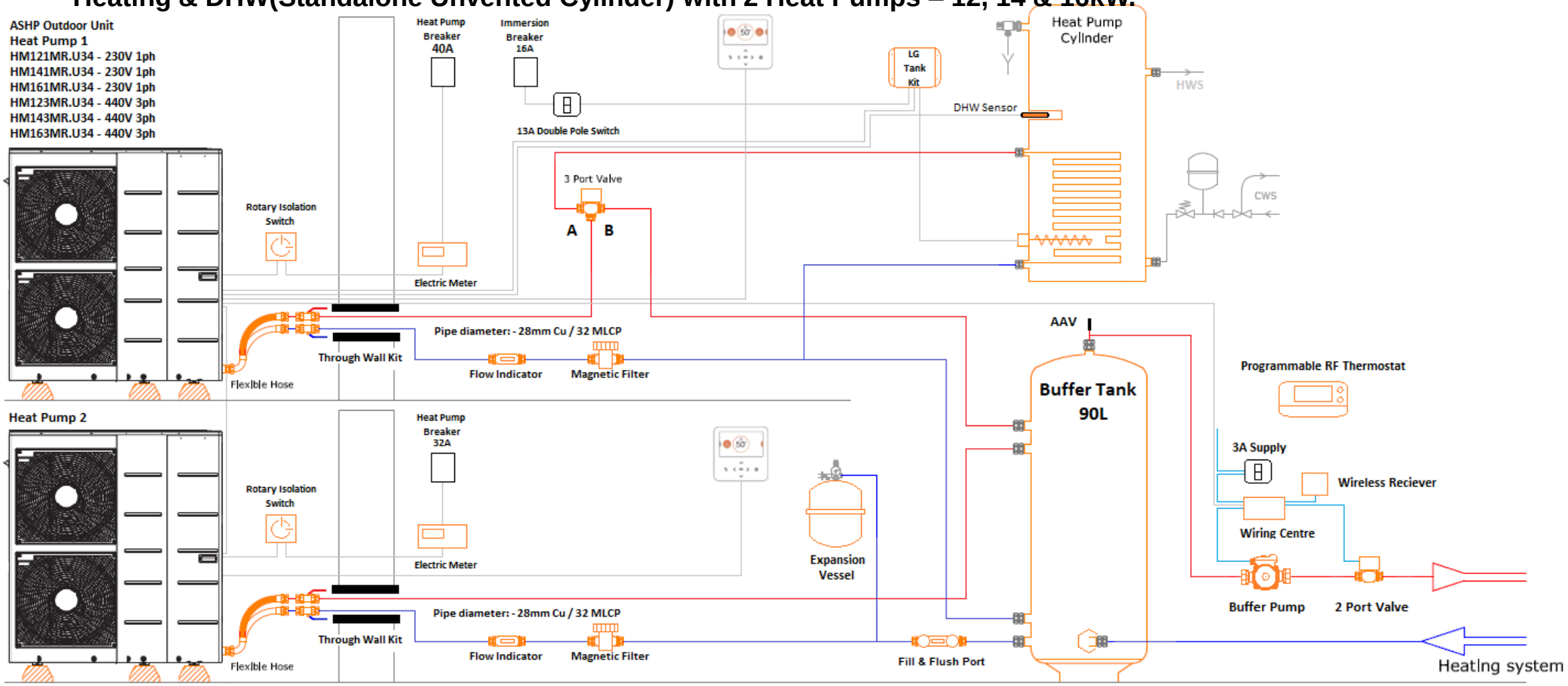
Installation Schematic.

Heating & DHW(Standalone Unvented Cylinder) with 2 Heat Pumps – 2 x 9kW's.



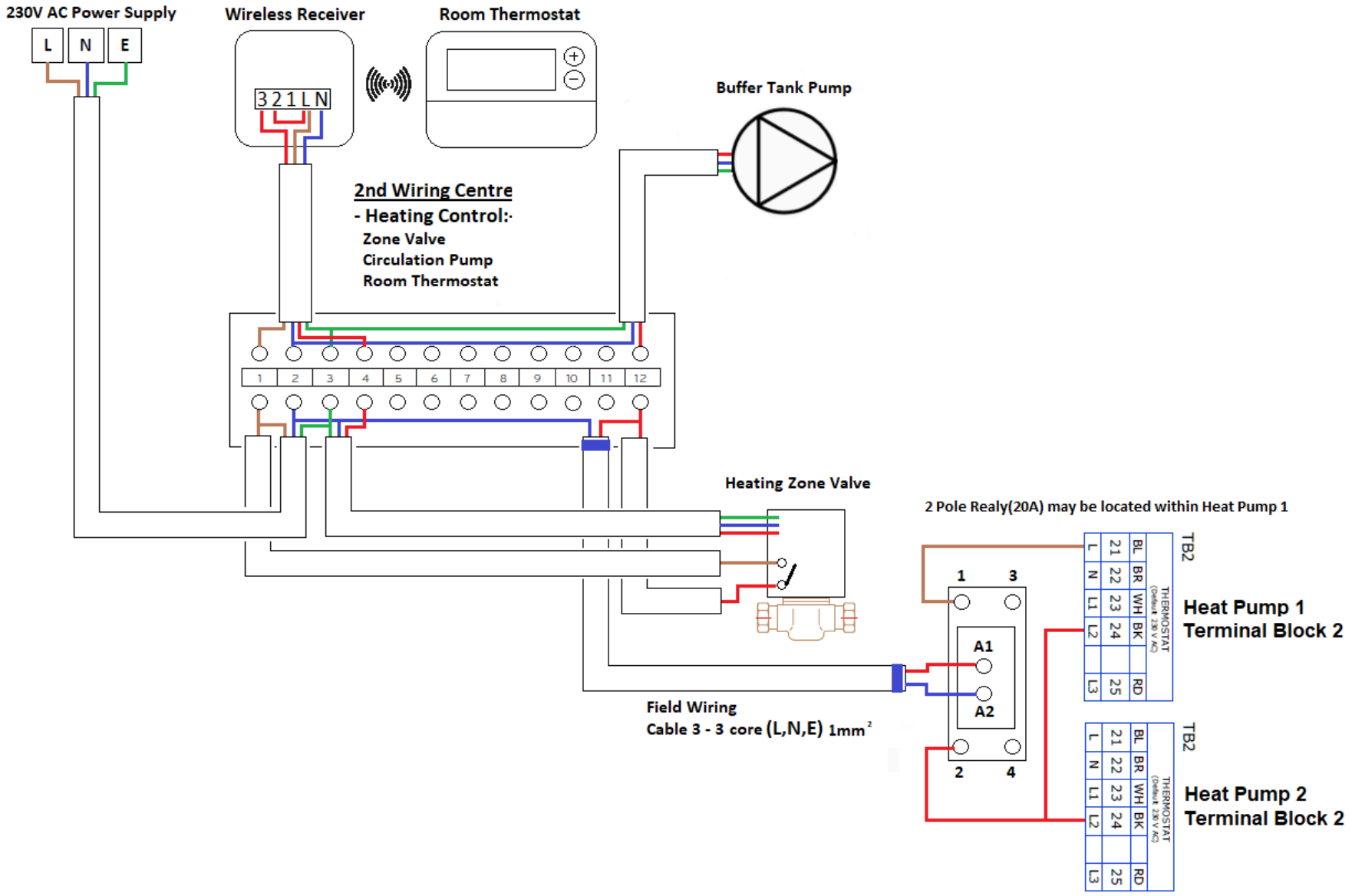
Installation Schematic.

Heating & DHW(Standalone Unvented Cylinder) with 2 Heat Pumps – 12, 14 & 16kW.



2 Heat Pumps

Heating Controls



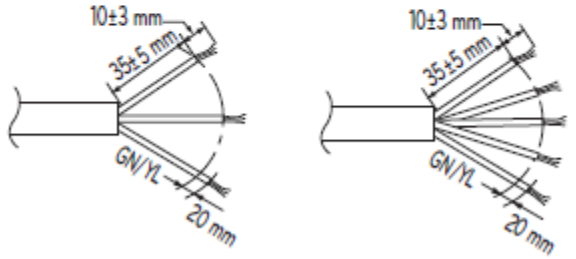
Installation – Mains Power Cable

Model Name	Phase[Ø]	Capacity [kW]	ELCB
HM051MR U44	1	5	16 A
HM071MR U44		7	20 A
HM091MR U44		9	25 A
HM121MR U34	1	12	40 A
HM141MR U34		14	40 A
HM161MR U34		16	40 A
HM123MR U34	3	12	40 A
HM143MR U34		14	40 A
HM163MR U34		16	40 A

Power cable (Type : H07RNF)	
Current [A]	Area [mm²]
[A] ≤ 0.2	Tinsel cord [a]
0.2< [A] ≤3	0.5 [a]
3< [A] ≤6	0.75
6< [A] ≤ 10	1.0 (0.75)[b]
10< [A] ≤16	1.5 (1.0)[b]
16< [A] ≤25	2.5
25< [A] ≤32	4
32< [A] ≤40	6
40< [A] ≤63	10

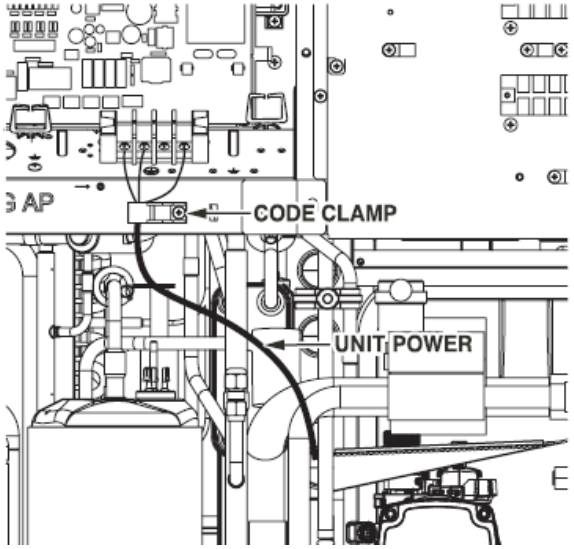
a These cords may only be used if their length does not exceed 2 m between the point where the cord or cord guard enters the appliance and the entry to the plug.

b Cords having the cross-sectional areas indicated in the parentheses may be used for portable appliances if their length does not exceed 2 m.



For the 1-Phase For the 3-Phase

- RCD Protected Circuit – MCB Type C curve.
  - RCBO may be used if there are multiple circuits.
- Rotary Enclosed Isolation switch – IP65.
- Mandatory electricity meter fitted within an enclosed box.
- Ensure power cable does not touch refrigerant pipework.



Indoor Installation – LG Tank Kit.

LG Tank Kit.

The Tank Kit allows for connection and control of the immersion heater, The Tank Kit may be pre fixed to the tank or may be wall mounted.
The LG controller has the ability to perform the sterilization process, via the Tank Kit(Relay), date, time, temperature and hold parameters may be set.

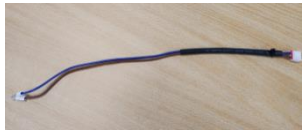
The Tank sensor has a 10m cable, this must be connected to the printed circuit board within the outdoor unit(CN_TH4)(Shown on page 29).

DHW sensor

PHRSTA0

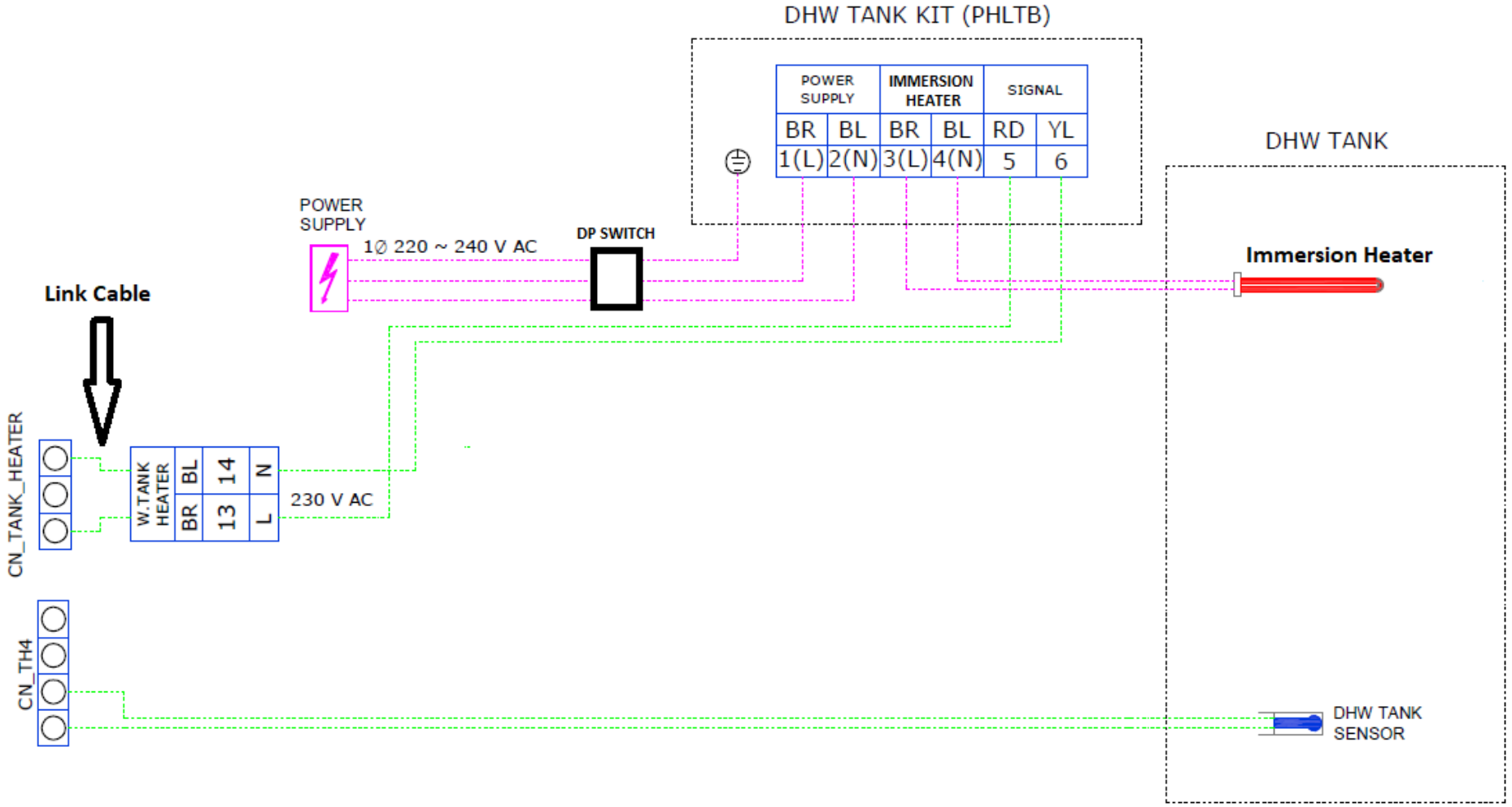
Relay Box

PHLTB



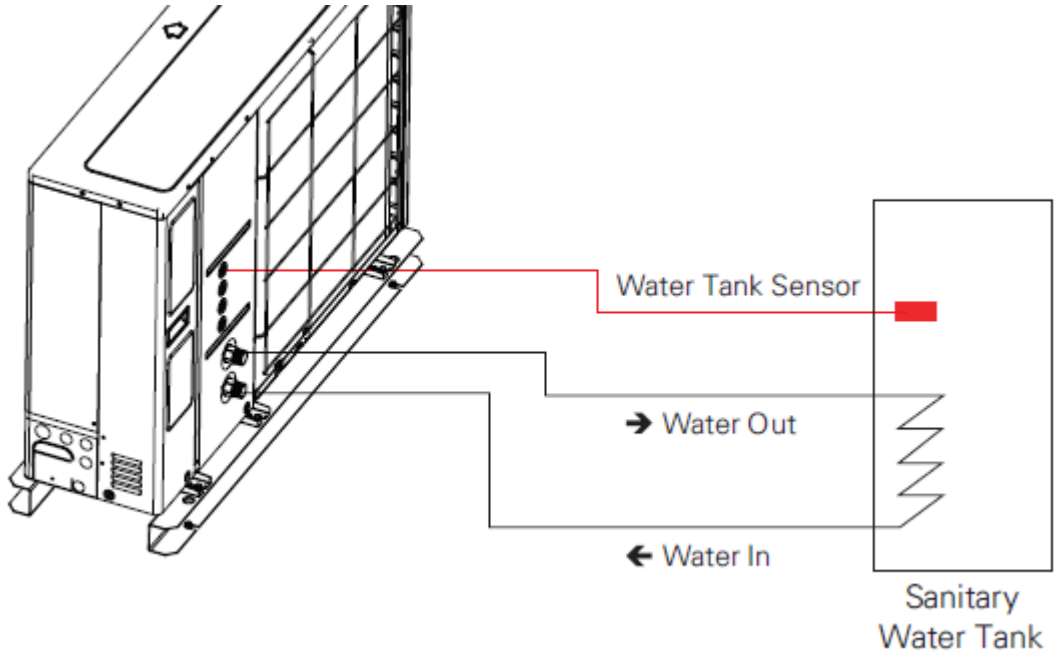
Link cable,
Approx 400mm long.
Connection:
CN_Tank_Heater(PCB) to terminals 13(L) & 14(N)

DHW Installation – DHW Tank Kit (PHLTB)



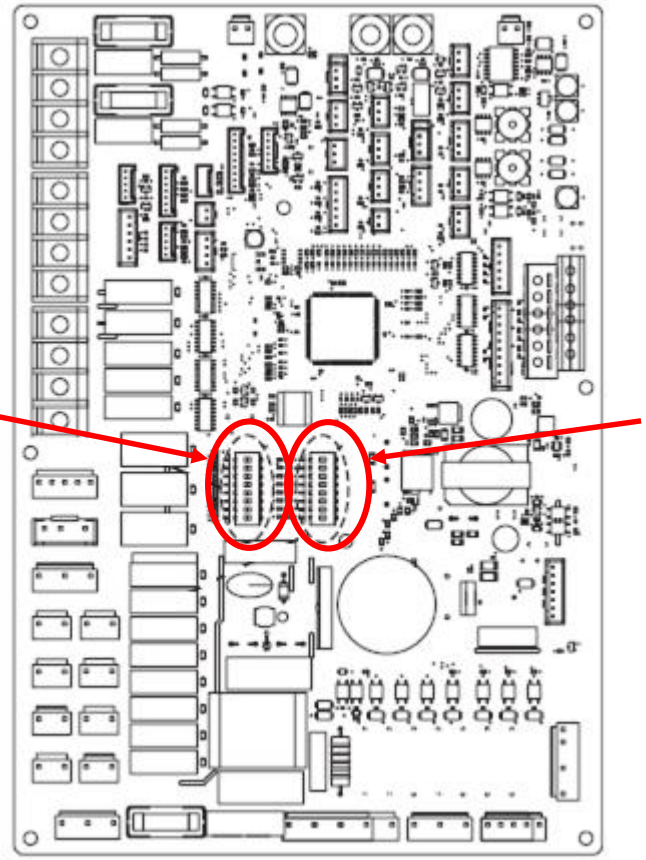
DHW Installation

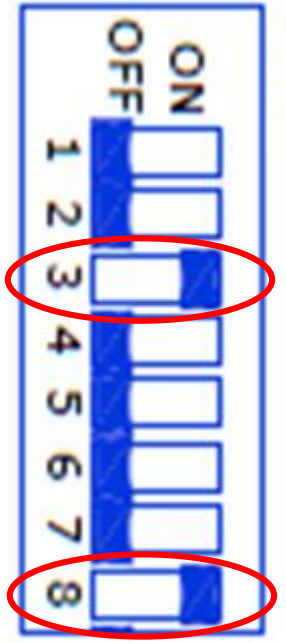
- Feed the DHW water tank sensor into the back of the unit, shown in the diagram.
- Connect the red connector to the main PCB(Top right hand side of unit)
  Terminal CN_TH4, Shown on page 29.
- Insert copper sensor into dry pocket tube of cylinder.
- The sensor can be cut and extended, cable no bigger than 0.75mm^2.



Dip Switch Configuration

Frost Protection Temp

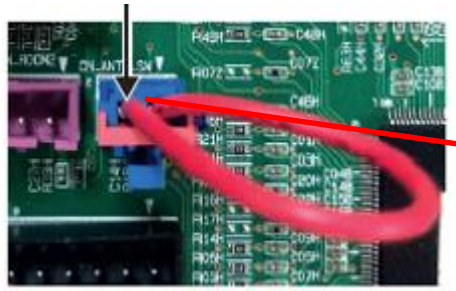


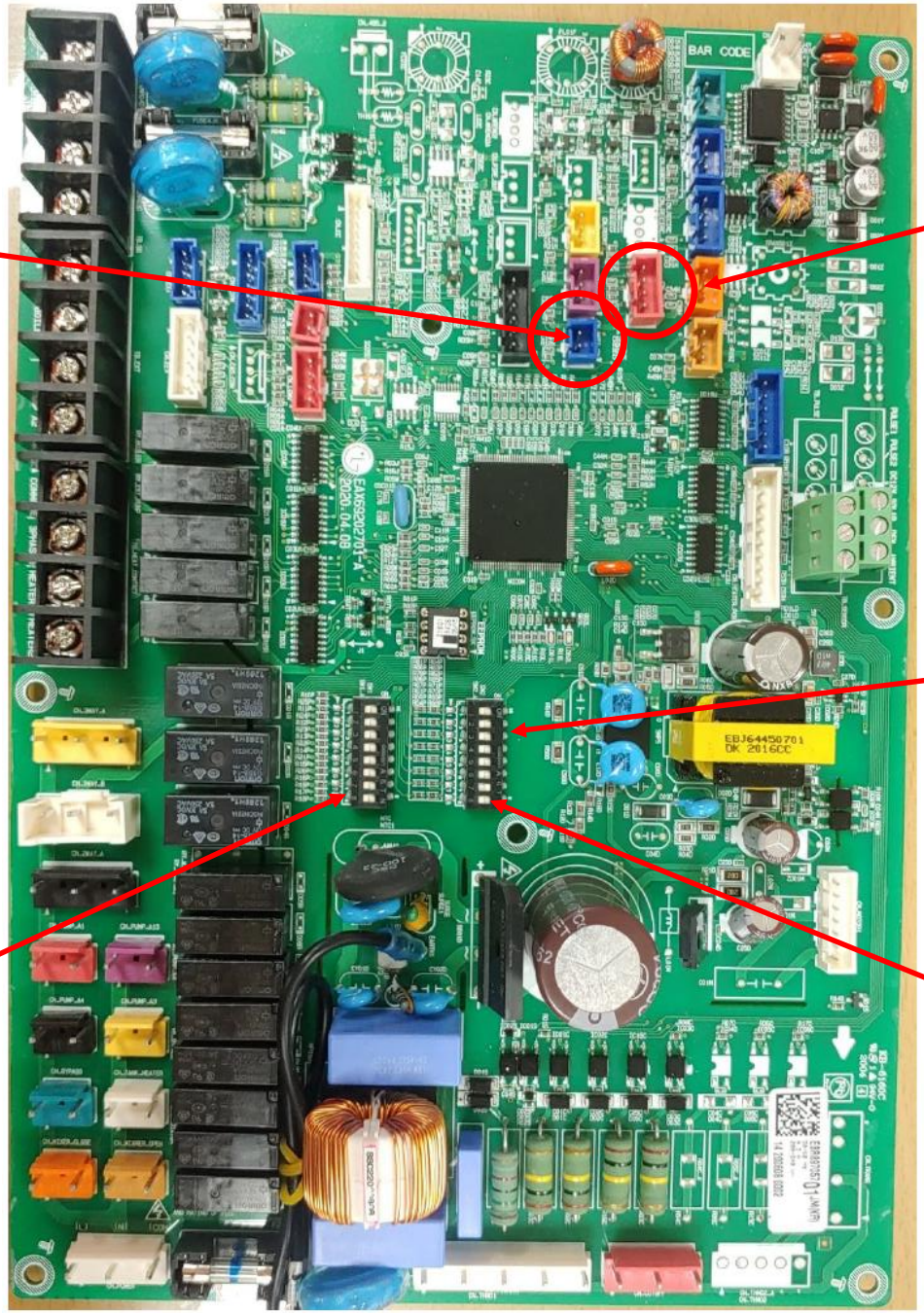


DHW

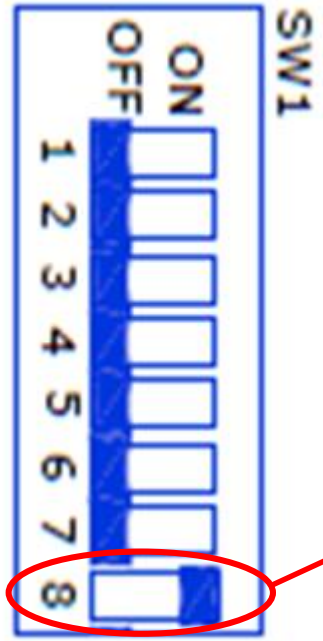
3rd Part Controls On/Off

Remove Frost Protection Short Pin

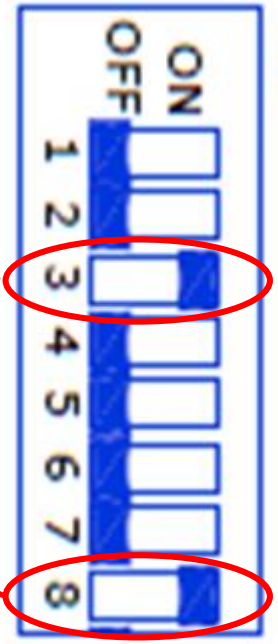




DHW Sensor connection CN_TH4



Frost Protection Temp



3rd Part Controls On/Off

Installation – Antifreeze Solution.

- **It is the responsibility of the installer to ensure the correct amount of antifreeze additive is applied to the water system to protect the product against water temperatures below 0℃. The correct volume of water contained in the system should be calculated, with six additional liters added for the AWHP product, as per the installation instructions.**

Guidance from this instruction is provided below :-

Antifreeze type	Antifreeze mixing ratio					
	0 °C	-5 °C	-10 °C	-15 °C	-20 °C	-25 °C
Ethylene glycol	0 %	12 %	20 %	30 %	-	-
Propylene glycol	0 %	17 %	25 %	33 %	-	-
Methanol	0 %	6 %	12 %	16 %	24 %	30 %

Installation – Anti-freezing Temperature Setting.

- If Antifreeze is added to the hydraulic system water then the antifreeze solution temp can be adjusted in the installer settings. (The setting is not visible normally, method is described later)

- Possible settings are displayed as below.
  - Temperature : -5 / -10 / -15 / -20 / -25℃(Default : -5℃)

- The values shown are not actual temperature setting but an offset that can be applied to the default value of 0℃, as shown in the previous slide. When the function is activated the default value is -5℃.
- Example if setting -10 is used;
  - entering water temp for judgment is reduced from 15℃to 5℃for protection starting
  - entering water for condition release is reduced from 18℃(15℃+ 3℃) to 8℃(5℃+ 3℃)

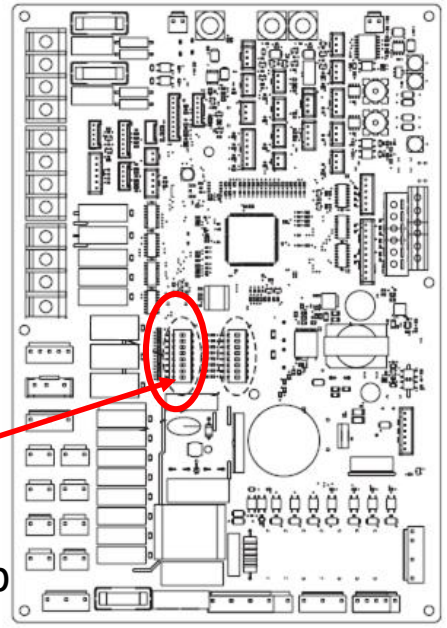
Installation – Frost Protection Temp Setting.

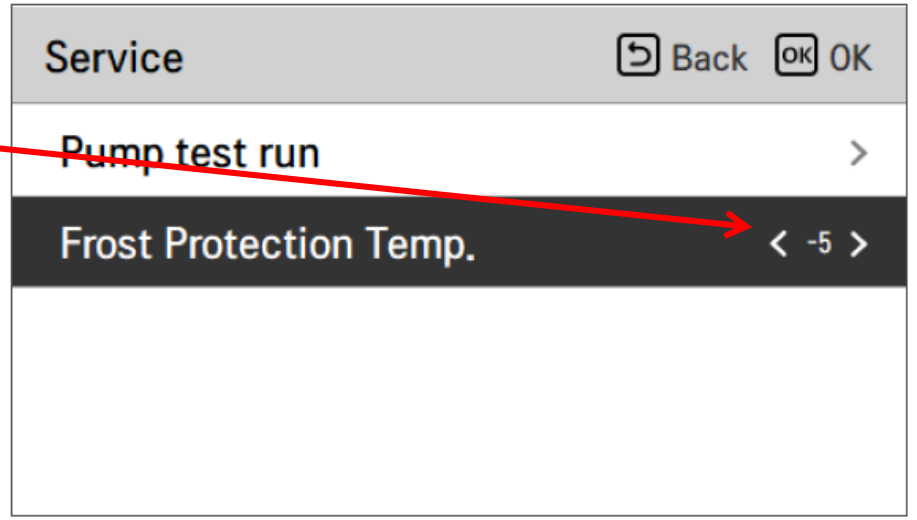
- Frost Protection Temp setting is available in installer mode, Within the Service window.
- Please adjust the SW1, Pin 8 ON, and remove the Antifreeze short pin.
- Change the value from <**-5**> to <**-10**>.

NOTE

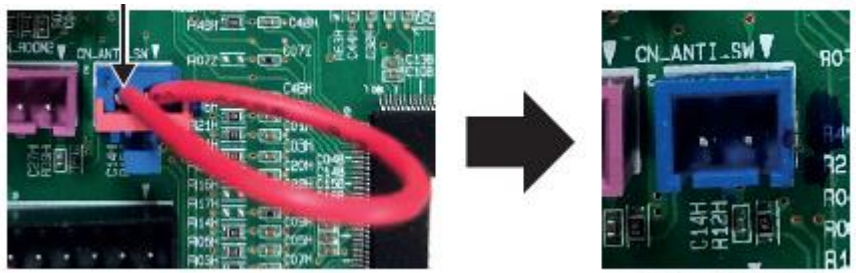
To use this function, the antifreeze short pin(CN_ANTI_SW) must be open and switch No.8 in Option SW 1 must be on.

Frost Protection Temp





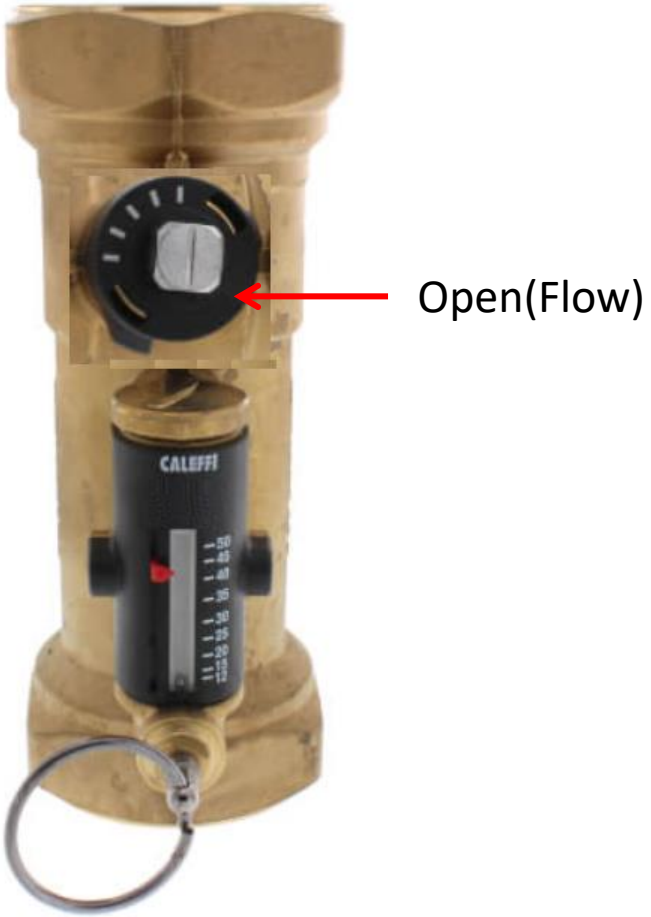
Frost Protection Short Pin



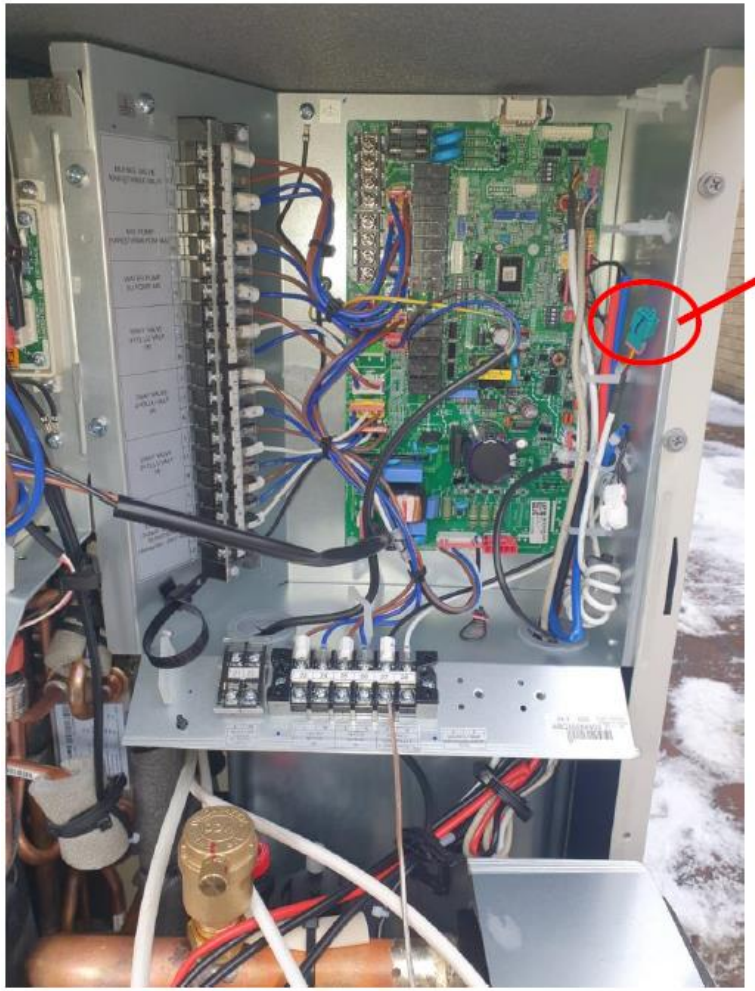
CN_ANTI_SW

Installation – Flow Meter Valve.

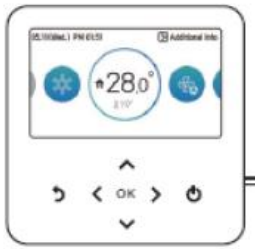
- Please remember to open the Caleffi Flow Meter Valve.

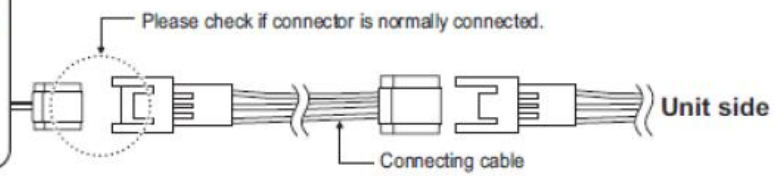


RS3 Wired Remote Controller



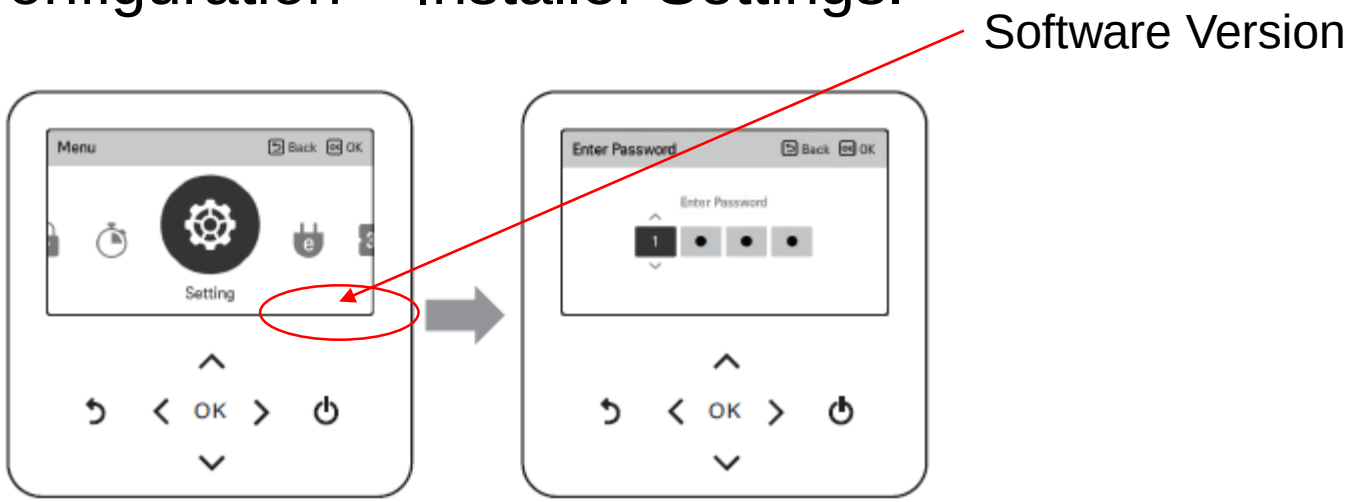
DC 12 V	Red
Signal	Yellow
GND	Black





- For detailed installation instructions, refer to the manual included in the accessories.

Configuration – Installer Settings.



Press the Right arrow to select:- Menu.
Press Ok, “Settings” is shown.
Press and Hold the UP arrow button for 3 seconds.
4 square boxed are shown
Insert the Password – Shown in the bottom right corner (Software Version)
- Example:- 3 0 3 1, 3 0 6 5…….

Error Codes.

CH14

First two weeks: Blocked filters and/or air pockets

Flow rate alarms are likely to occur during the first two weeks after commissioning; this is due to the formation of air-pockets which may occur and temporarily affect the flow-rate. In most cases, the air will migrate to the auto-air vents (AAV) and release without any requirement for intervention.

Equally, if any sediments are in the hydronic pipework, they will be caught by the internal strainer. Blockages in the strainer can cause CH14 alarms. In this case, the strainers will need to be cleaned

Recommendation: once the unit has been installed, advise the customers that it is quite likely and normal for a CH14 alarm to occur in the first two weeks. This will give the customer reassurance if and when the fault does arise!

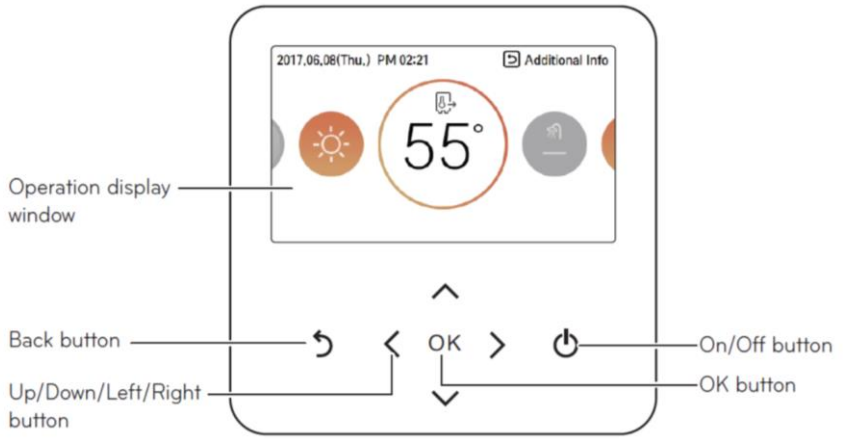
If the cause was air, then a simple power reset could allow the system to continue working as normal, once the pocket of air has made its way to the AAV

Testing each mode separately can help you to deduce where the fault lies:

Fault arises during:	TANK MODE ONLY	HEAT MODE ONLY	HEAT & TANK MODE
	1. Restriction in coil	1. Restriction in Heating Circuit 2. Excessive pressure drop	1. Low system water pressure 2. Strainers and Filters blocked 3. Water-pump fault 4. Flow Switch Abnormality 5. PCB Fault

Configuration – RS3 Controller Buttons

No	Button Image	Button Name	Functionality		
			Function on home screen	Function on menu screen	
1	⏻	Power	• Operation ON/OFF • When ON, LED(White) Display	• Operation ON/OFF • When ON, LED(White) Display	
2	↩	Back	• Push the button on home screen to access screen with monitoring information	Push	• Push the button on menu screen, to go home screen • Push the button on N depth menu screen, to go back previous depth screen
3	∧	Up	• Push the button on default screen to access temperature setup mode • Push the button while setting up a function to change corresponding value	• Move focus upwards/downwards on list • Change value on setup screen	
4	∨	Down			
5	<	Left	• Push the button to access left/right menu	• Move focus left/right on list • Push the button for close popup on list	
6	>	Right			
7	OK	Confirm	• Push the button on default screen to enable control	• Set value is confirmed	



Configuration – Installer Setting

Installer Settings:- The first window of the Installer Settings shows the following fields:-

Configuration
General
Room Heating
Room Cooling
Auto Mode
Domestic Hot Water
Solar Thermal System
Service
Connectivity
Information

Configuration – Installer Setting

Quick Set Up Guide:-

Configuration :	<Select Temperature Sensor> – <**Water**>
General :	<Water Flow Control> – Control Method - <Pump Capacity>
	<Pump Capacity> – <**100%**>
Room Heating :	<Water Heating set temp - <**20 / 50 °C**>
Room Cooling :	<**N/A**>
Auto Mode :	<Seasonal Auto Temp> <**Mode**>
	<Outdoor Temp> - <**+5°C / 19°C**>
	<Target Temp> - <**50°C / 33°C>**
Domestic Hot Water :	<DHW set Temp> – <**40°C / 50°C**>
	<Tank disinfection setting 1> – <**Use Fri 13:00**>
	<Tank disinfection setting 2> – <**Max 65 / Duration Time 10 / Forced Time 1**>
	<Tank Setting 1> – <**5 / 55**>
	<Tank Setting 2> – <**3 / DHW**>
	<Heater Priority> – <**Main+Boost heater ON**>
	<DHW Time setting> – <**70 Active time / 0 Stop Time**>

Configuration – Installer Setting

Quick Set Up Guide:-

Solar Thermal System	<**N/A**>
Service	<Frost Protection Temp - <**-10**>
Connectivity	<**N/A**>
Information	<**N/A**>

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