



ECONOPLATE H1- HEAT ONLY HEAT INTERFACE UNIT

Installation, Commissioning and Servicing Instructions

**Note: THESE INSTRUCTIONS MUST BE READ AND UNDERSTOOD BEFORE
INSTALLING, COMMISSIONING, OPERATING OR SERVICING EQUIPMENT.**

**THE ECONOPLATE H1 UNIT IS INTENDED FOR USE IN LOW TEMPERATURE
'DISTRICT HEATING' SCHEMES.**

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THIS HEAT INTERFACE UNIT COMPLIES WITH THE ESSENTIAL REQUIREMENTS OF THE LOW VOLTAGE DIRECTIVE 2006/95/EC AND THE ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC.

1. WARNINGS



Inside the Unit there is 230V, so Unit MUST be isolated before being worked on and must only be serviced by a competent and authorised person.

Water within the Unit can reach temperatures of up to 85°C so great care must be taken when changing, adjusting or servicing Components within.

2. GENERAL REQUIREMENTS

Related Documents

The Pressure Systems Safety Regulations 2000.

It is the law that pressure system appliances are installed, maintained and serviced by competent persons in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution. It is in your own interest and that of safety, to ensure that this law is complied with.

The installation of this Unit should be in accordance with the relevant requirements of the Pressure System Regulations, Building Regulations and IEE Regulations.

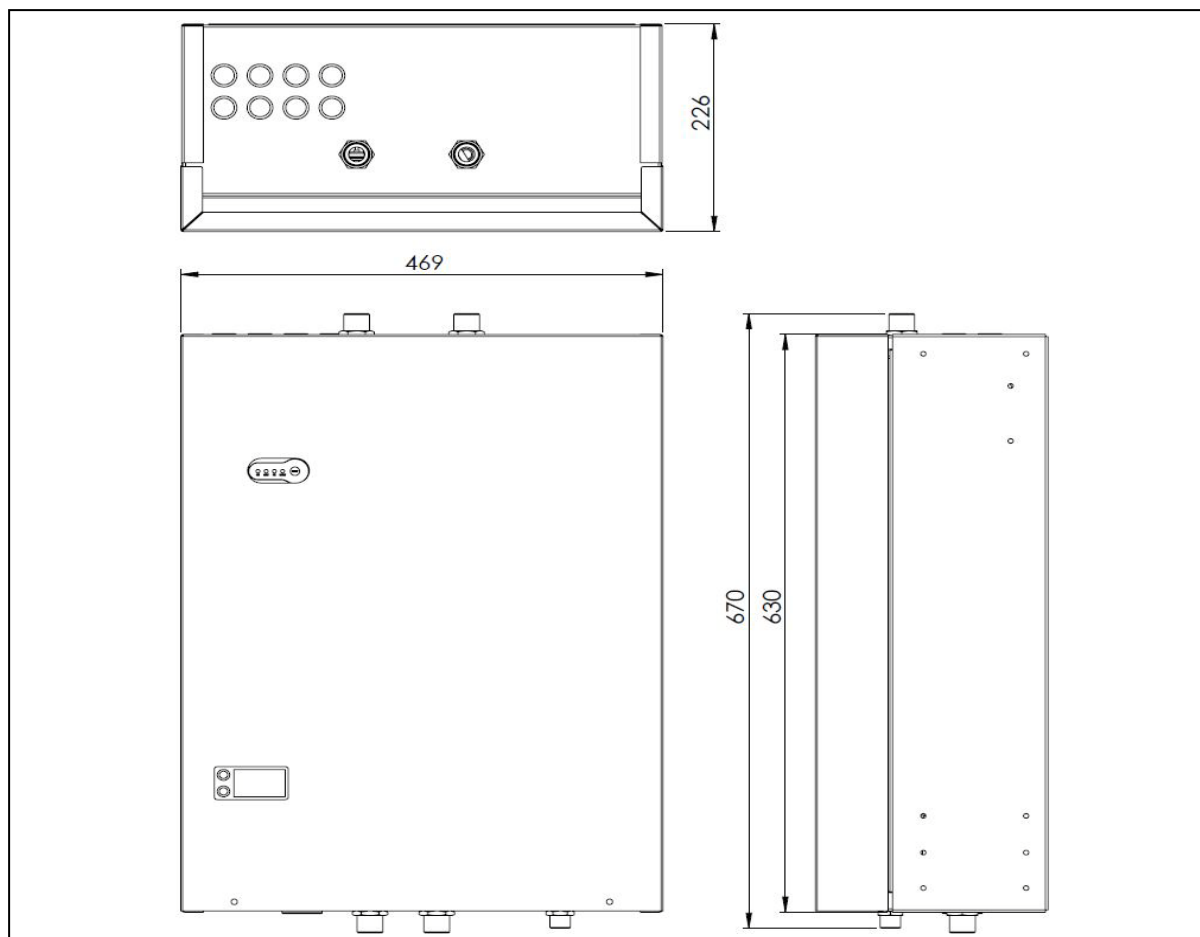
3. UNIT DESCRIPTION

This Heat Interface Unit is designed to be used on low temperature hot water supply of up to 85°C. The Unit is configured to provide indirect heating to a heating system, via a heat exchanger. The indirect heating can be fed to a hot water cylinder to heat up cold water.

The Unit is housed within a powder coated steel cabinet with a removable front cover. Inside there is manufactured pipework assembled together with an electronic valve that is controlled by an electronic controller which takes care of the heating demand.

4. TECHNICAL DATA

Figure 1 – Basic Overall Dimensions of the unit.



Technical Data

General Data

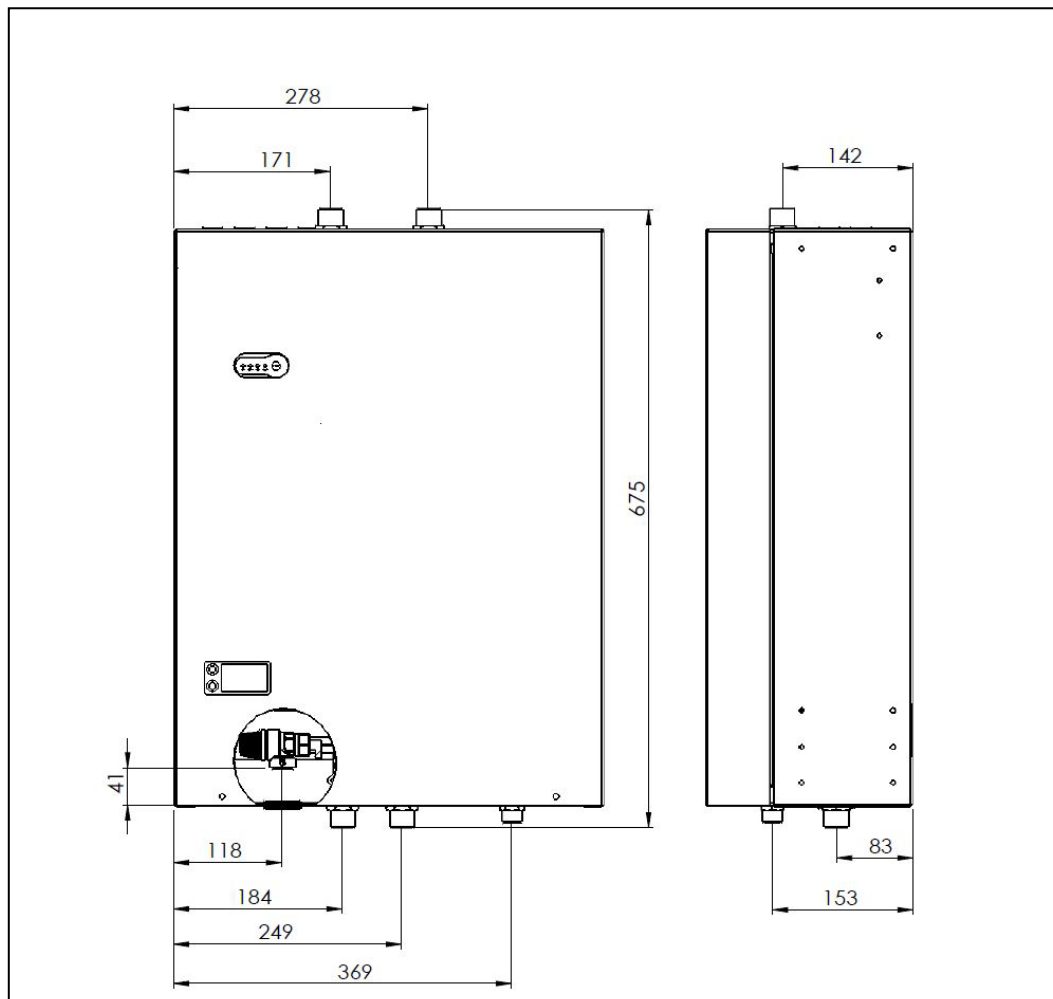
Maximum Pressure – District	6 bar
Maximum Pressure – Heating	2.5 bar
Maximum District Temperature	85°C
Maximum District Flow Rate	18 l/min
Weight Empty	20 kgs
Dimensions	469 x 630 x 226
Electrical Supply	230V – 3 Amp
Power Consumption	105W
Temperature Range	
Heating Water Temperature Range	30°C to 80°C
Water Connections	
District Inlet/Outlet	3/4" BSP Male
Heating Inlet/Outlet	3/4" BSP Male
Domestic Cold Water Inlet	1/2" BSP Male

System Features

- Heating Ramp-Up Time of 3 Minutes.
- Pump Anti-Lock Feature – Runs Pump for 5 Seconds every 24 Hours.

5. INSTALLATION

Figure 2 – Connection Locations



Note – when working with the unit, supply services when connected could reach 85°C, and once electrically connected the unit has 230V present within.

Refer to Figure 2 for connection dimensions. You will need access from above and below the unit to run the relevant pipework to and from the unit. Find a suitable space to mount the unit. Using the mounting bracket provided [see Figure 3], secure the bracket to the wall and mount station on to the bracket hanging from the unit back panel as shown below. Once mounted,

mark two 6mm holes on wall at the base of the station. There are four pre-drilled holes depending on the model provided there will be access to two of them. Take station back off the bracket, drill the two holes, insert wall plugs, re-hang the station and then secure the unit to the wall.

Figure 3 – Mounting Bracket

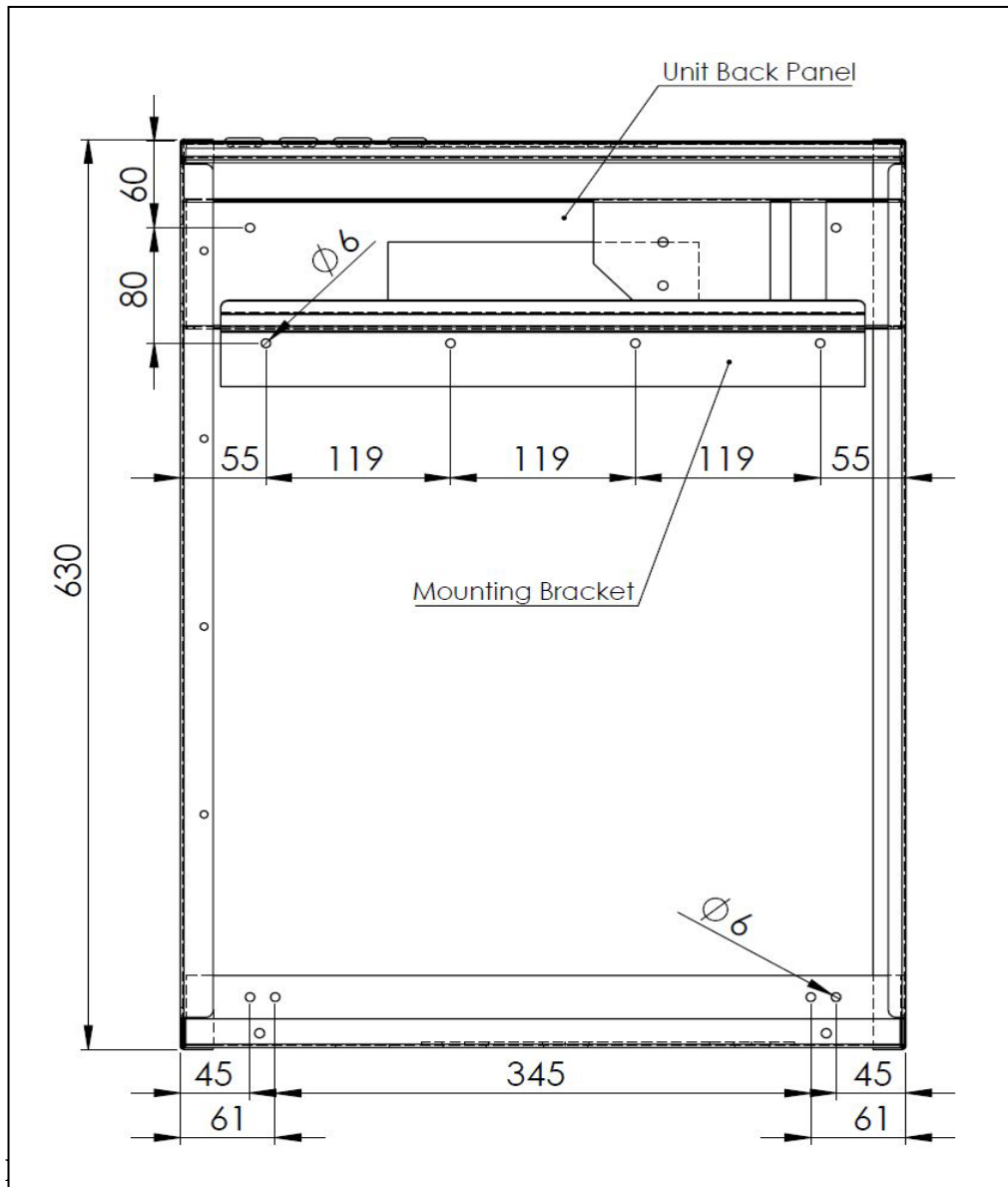
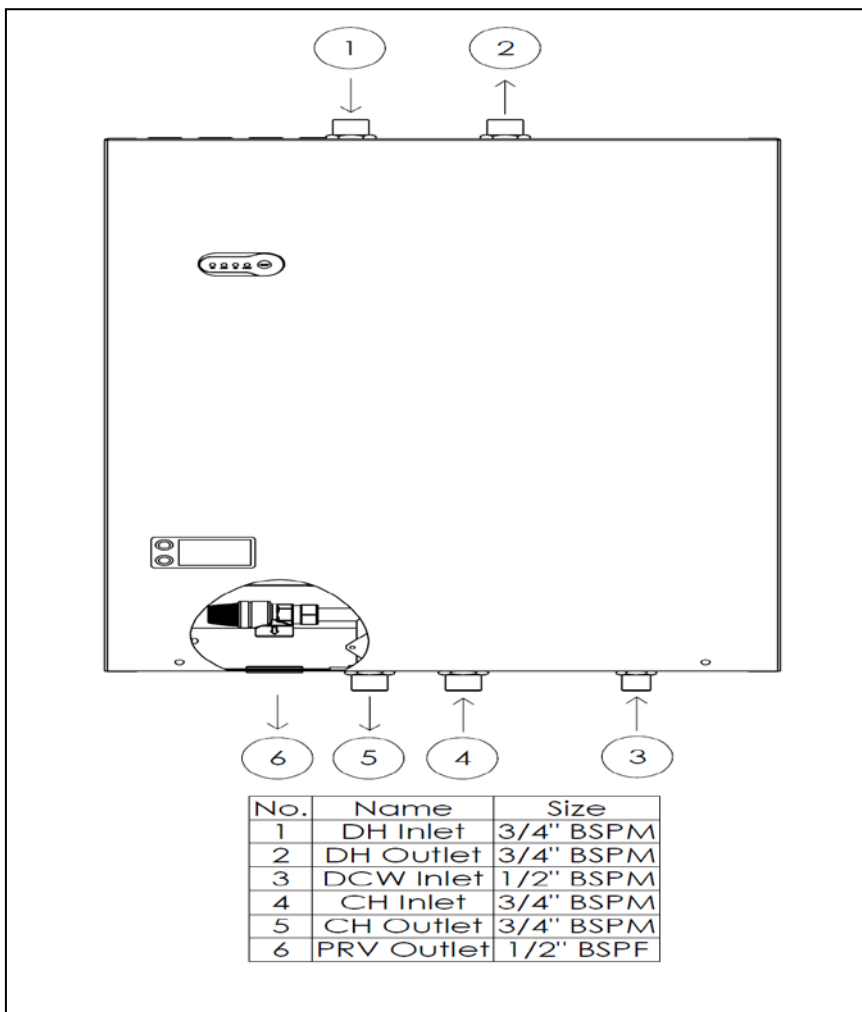


Figure 4 – Pipework Connections



The 'District' and heating pipework must be connected to the appropriate points labelled on the figure 4. **You need to ensure that both sides of the systems you are connecting to are clean and have been properly flushed out.**

District Inlet and Outlet – 3/4" Male BSP

These are situated at the top of the unit with inlet on the left [Connection 1, Figure 4] and outlet on the right [Connection 2, Figure 4]. When connecting the district supply to and from the unit, ensure to provide air eliminator at upper most point of pipework.

Heating Inlet and Outlet – 3/4" Male BSP

These are situated at the bottom of the unit with heating flow on the left [Connection 5, Figure 4] and heating return on the right [Connection 4, Figure 4]. Connect these to your heating distribution system ensuring it has been appropriately flushed beforehand.

Safety Relief Discharge – 1/2" Female BSP

This is provided on the heating circuit [Connection 6, Figure 4], and **MUST** still be safely piped away via a suitable tundish according to local bylaws. A hole is provided in the casing to allow pipework to leave the unit.

Water Inlet – ½” Male BSP

This is situated at the bottom right of the unit [Connection 3, Figure 4]. Connect mains water supply to this connection. This is then connected to the heating circuit via a filling loop within the station. You may use this point for filling of your heating circuit, and you need to ensure that your circuit is above 0.8 bar for the unit to operate. **Once filled you must disconnect the hose from the filling loop**, but leave on bottom tray for use when required.

Electrical Connection

All wiring to the Unit must be in accordance with the I.E.E. regulations, and any local regulations which apply.

Note: If in any doubt, a qualified Electrician should be consulted.

6. UNIT OPERATION

Whenever power is applied to the Unit, the Stepper Motor resets itself in order to return to its starting setting. Once it is in the correct position the Unit is ready for its operation.

When a volt free signal is received from the room thermostat, the Unit will activate Heating mode after approx 5 seconds. The system Pump will be switched on, and the Control Valve will start to operate via the Stepper Motor and will gradually increase the temperature of the Heating water to the pre-set temperature over a period of up to 3 Minutes. The Unit will continue to provide heating water at the set temperature, until the volt free signal from the room thermostat stops and the Unit will go into standby mode.

7. COMMISSIONING



Note – when working with the unit, supply services when connected could reach 85°C, and once electrically connected the unit has 230V present within.

The Unit set point has been set to 77°C ±0.5°C, and will provide heating water to ±1.0°C of the set point. If the set point needs to be changed then you need to access Poti P2 at the top

of the electronic box. The set point can be adjusted by rotating the Poti. The Unit can provide the heating water between 30°C and 80° over the range of the adjustment [assuming there is sufficient district primary]. Anti-clockwise reduces the temperature and clockwise to increase the temperature.

Heat Meter

This is an optional extra component. If fitted a booklet will be supplied separately.

System Safety Relief Valve

A 3-Bar system Safety Pressure Relief Valve is provided within the Unit which **MUST** be piped away via a Tundish according to local Guidelines.

Filling Loop

Once you have filled the heating system above 0.8 bar, then you **MUST** disconnect the hose between the two valves. This can be stored on the bottom tray of the unit for use if the system needs topping up at any stage.

8. FAULT FINDING

Firstly check the electronic box to check it is not in fault mode indicated by red light [see Appendices – Table 3].

If the Unit still does not operate, then the next step is to check all wiring is correctly connected to the right component, especially if Connectors have been taken off at any stage [see Appendices – Table 1].

If the above does not rectify the problem and the Unit still does not operate satisfactorily, then below are some suggestions of potential issues. Alternatively consult Supplier for assistance.

Guide

Fault	Possible Causes	Action
'District' water not entering the Unit.	Blocked Strainer.	Unscrew the Strainer Cap Bolt and take the Strainer Screen out, ensuring you have isolated Unit and waited for water to cool down. Clean or replace accordingly.

No Heating.	<p>Heating light not coming on controller</p> <p>Control Valve not operating.</p> <p>Pump not operating.</p> <p>‘District’ water temperature too low.</p>	<p>Check a volt free signal is coming from the room thermostat.</p> <p>Check that 24V is being supplied to DC Coil.</p> <p>If above does not resolve issue, replace Stepper Motor.</p> <p>Check that Impeller has not seized.</p> <p>Check you have 240V going to Pump.</p> <p>If above does not resolve issue, replace Pump.</p> <p>Check ‘District’ supply conditions.</p> <p>Heat Exchanger potentially fouled</p>
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9. SERVICING SCHEDULE



Note – when working with the unit, supply services when connected could reach 85°C, and once electrically connected the unit has 230V present within.

It is recommended that this Unit is serviced once every 12 months.

Servicing the Strainer

Isolate the Unit from District supply. Open the screw cap from the Strainer and take the Filter Cartridge out.

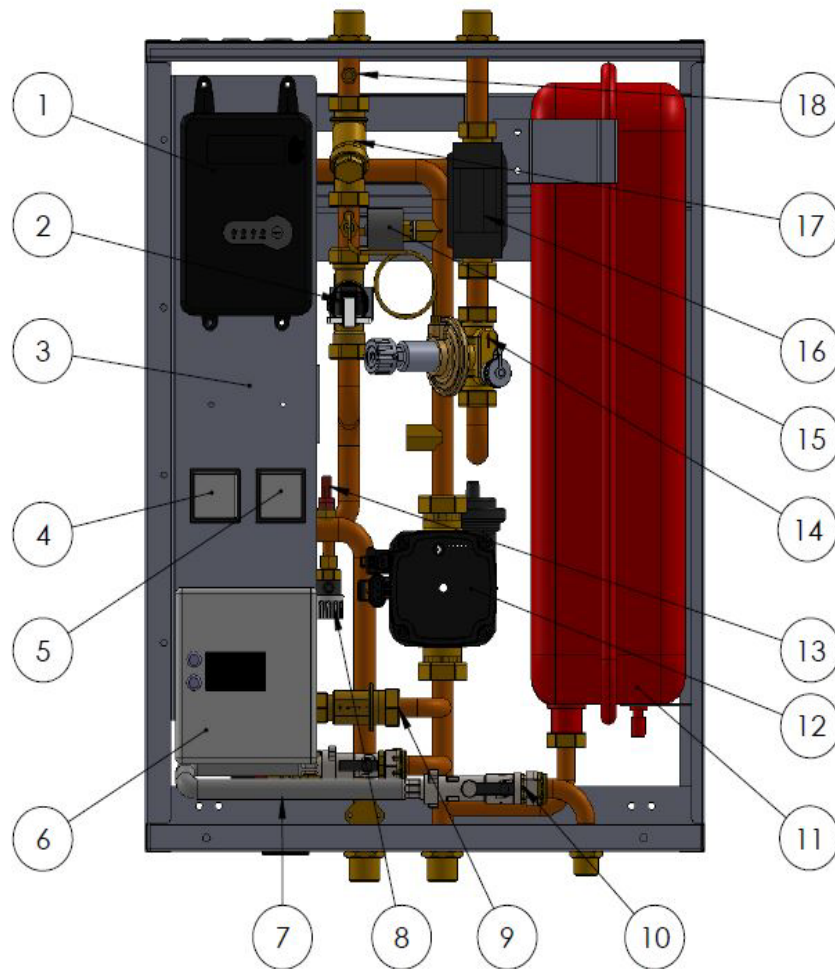
Note: The water in the Strainer could be anything up to 85°C.

Servicing the Expansion Vessel

Drain the pressure from the heating system via the pressure relief valve. Check the charge of the pressure vessel according to system setting. (Original pre-charge, as supplied is 1.5bar). Refill the system back to required pressure using the filling loop, **but ensuring that you disconnect the hose both ends again after use.**

10. INTERNAL COMPONENTS

Figure 5 – Internal Components



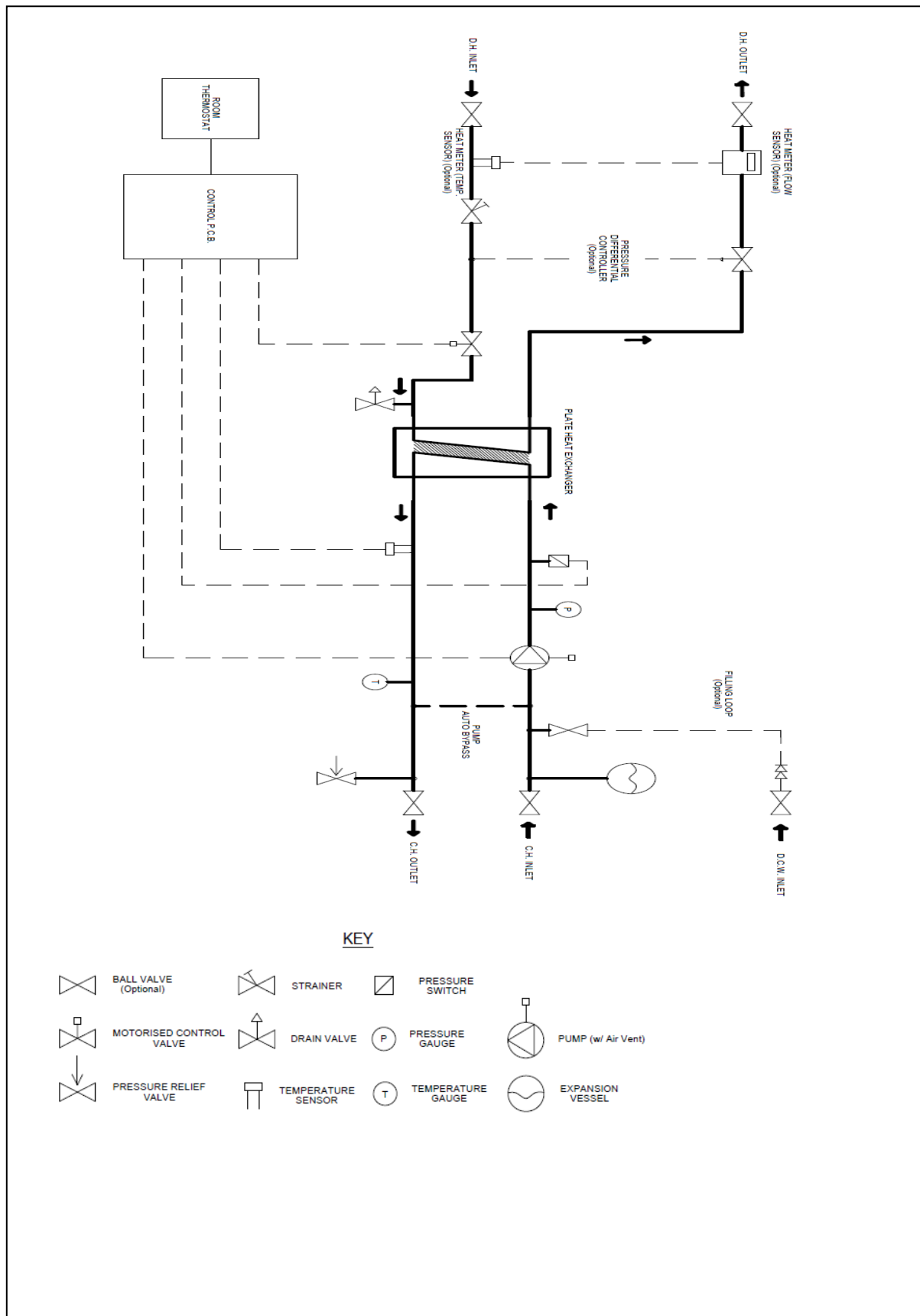
No.	Part.
1	Electronic Control Box
2	Motorised Control Valve
3	Heat Exchanger (Behind Removable Panel)
4	Temperature Gauge
5	Pressure Gauge
6	Heat Meter*
7	Pressure Relief Valve (Behind Hose)
8	Drain Valve

*Optional

No.	Part.
9	Pump Auto Bypass
10	Filling Loop
11	Expansion Vessel
12	Pump
13	Temperature Sensor
14	Differential Pressure Valve*
15	Pressure Switch
16	Heat Meter Flow Sensor*
17	Strainer
18	Heat Meter Temperature Sensor*

11. UNIT SCHEMATIC

Figure 6 – Pipe Schematic



12. APPENDICES

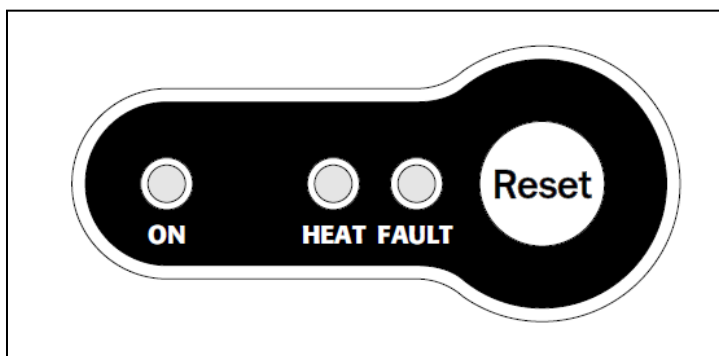
Table 1 – Electronic Box Wiring Denotation

DESCRIPTION	INDIVIDUAL WIRING	CONNECTOR
Room Thermostat	2 Black	2m Flying Lead
Mixing Valve Stepper Motor	Blue, Black, Brown and Green	White Connector
Mains Cable	Blue, Brown and Green/Yellow	2m Flying Lead
Earth Cable	Green/Yellow	Non insulated Crimp Ring
Pump	Blue, Brown and Green/Yellow	White Connector
CH Temperature Sensor	2 Red	Black Connector
CH Pressure Switch	2 Black	White Connectors

Table 2 – Electronic Box Dip Switches

SWITCH	FUNCTION	ON	OFF
1	High temp / Low temp central heating	Low temp	High temp
2	N/A	Correct	N/A
3	N/A	N/A	Correct
4	N/A	Correct	N/A
5	N/A	N/A	Correct
6	N/A	N/A	Correct

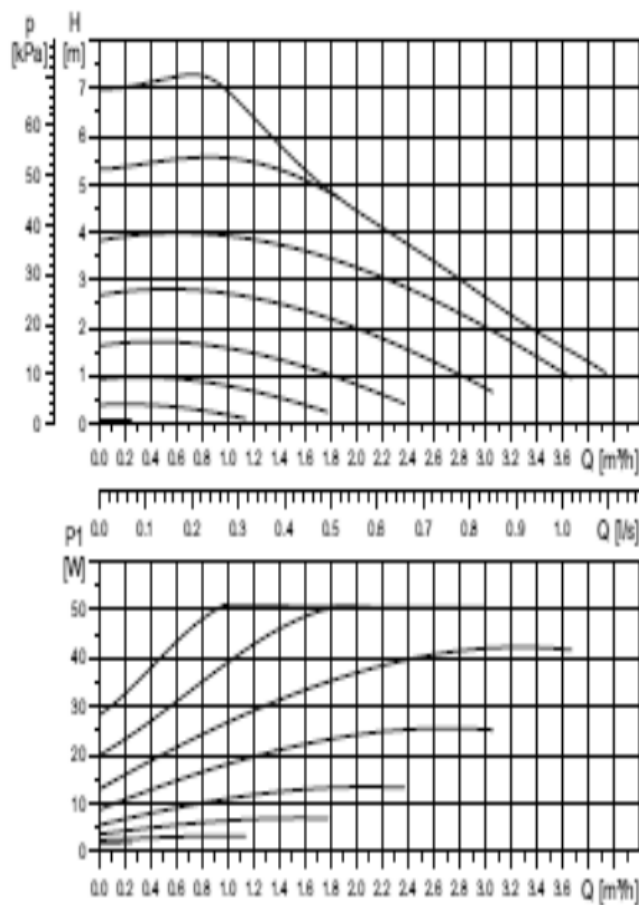
Table 3 – Matrix LED



ANNOTATION	COLOUR	LIGHT OFF	LIGHT ON	LIGHT FLASHING
ON	Green	Power Off	Power On	N / A
HEAT	Yellow	No Heat Demand	In Heat Mode	N / A
FAULT	Red	No Fault	Pressure in Heating Circuit too low- Top up and reset	Sensor fault – replace failed NTC temperature sensor.

Table 4 – Pump Data

UPM3 15-70 130, 25-70 130, 25-70 180



High efficiency

Ready for Ecodesign
2015

$EEL \leq 0.20$ Part 3

$P_{L,avg} \leq 24$ W

TM06 0579 0814

Performance curve

Electrical data, 1 x 230 V, 50 Hz

Speed	P_1 [W]	$I_{1/1}$ [A]
Min.	2	0.04
Max.	52	0.51