

HEAT BANK INSTALLATION AND USER INSTRUCTIONS

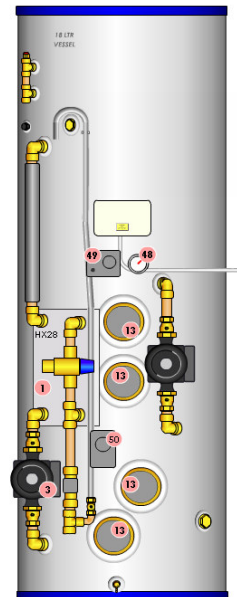
Pandora Heat Bank, mains fed thermal store, unpressurised and manually filled, without discharge requirements. 160kW Plate Heat Exchanger with 22mm Thermostatic Mixing Valve. Max mains (hot and cold) pressure 9 bar. Danfoss TS715 Programmer (Hot Water)

- **Manually Filled store - NO discharge pipe or overflow.**
- **160kW Plate Heat Exchanger can heat 45 ltr/min of mains hot water, up to 6 bar pressure.**

250 litres, 535mm x 2000mm high

General Technical Specifications:

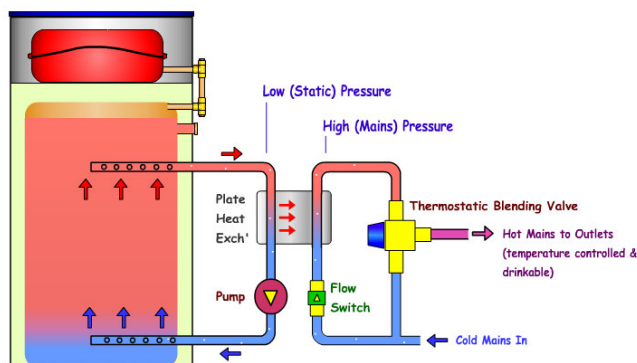
System Classification	Mains Fed Unpressurised Thermal Store
Maximum Mains Supply Pressure	6 Bar Continuous, 8 Bar Peak
Minimum Mains Pressure	0.5 Bar
Hot Water Supply Temperature	35-65°C User Set, Lockable
HW Heat Exchanger Max. Output	160 kW (100 kW & 320 kW available)
HW Heat Exchanger Material	Stainless Steel Plates & Connections, Copper Brazed
HW Heat Exchanger Test Pressure	76 Bar
Operating Store Pressure	Atmospheric, No Pressure
Storage Temperature	70 to 85°C
Store Construction Material	Unspecified (Copper or Stainless Steel)
Casing Material	Plastic Coated Steel
Insulation	Injected CFC Free Polyurethane.
Discharge Pipe	No Discharge from Store.
Power Supplies	3A Fused Spur for Controls 16A for each Immersion Heater to be fired simultaneously.
Servicing Requirements	1 litre Corrosion Inhibitor added every 3 years. Initial quantity is factory added into store before dispatch.
Guarantees	25 years on Stainless Steel Stores, 10 years on Copper. 2 years on Components. 1 year On-Site Backup (9am-5pm weekdays).



Not to Scale

A Heat Bank is an Advanced Thermal Store providing very high flow rates of Mains Pressure (drinkable) Hot Water. The Heat Bank stores Heat Energy which can be utilised to provide domestic hot water. This heat energy is retained within the Heat Bank by the use of 'HCFC free' foam insulation. The unit is further protected by steel casing with an attractive white finish.

A plate heat exchanger separates the pressurised mains water from the stored water, while allowing rapid transfer of heat. While the mains water pressure can be anything from 0.5 to 6 bar, the stored water is not pressurised. The mains hot water is not stored and is therefore drinkable, and removes the need for a cold water storage tank. The stored water does not change. The build up of scale within the cylinder is therefore eliminated and extra system protection is achieved by the factory addition of inhibitor.



When a hot water tap is opened, the Flow Switch detects this and switches the Pump on. This in turn circulates the hot store water through the Heat Exchanger.

The Exchanger uses the heat in the stored water to heat up the mains water. A Thermostatic Blending Valve controls the final hot water temperature by mixing hot and cold mains water to obtain the correct output temperature.

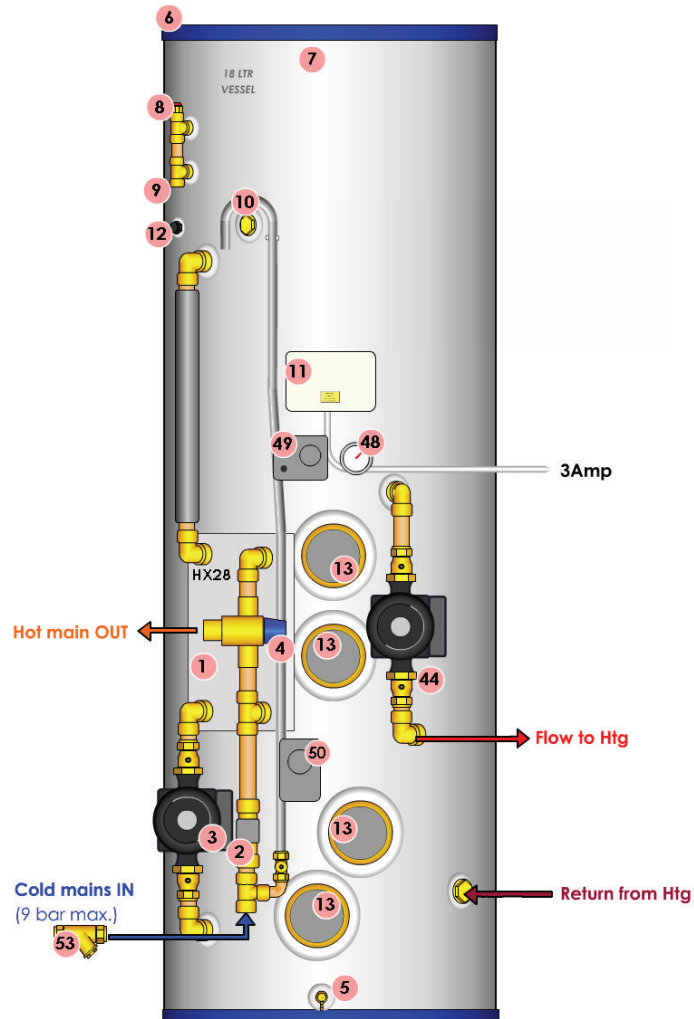
INSTALLATION INSTRUCTIONS

COMPONENTS & CONNECTIONS

The following diagram details the components that are supplied with the Pandora Heat Bank, as well as the connections (mechanical and electrical) to the unit.

KEY:

- 1 Plate Heat Exchanger, L18-28 (160kW)
- 2 Flow switch
- 3 Heat Exchanger Pump
- 4 Thermostatic mixing valve, RWC Heatguard 22mm
- 5 Drain off cock
- 6 Removable lid
- 7 White plastic coated steel casing
- 8 Anti-vacuum valve
- 9 Vent, with evaporation protection
- 10 Filling Point, with hose
- 11 Wiring Centre
- 12 Water Level Sensor
- 13 Immersion Heater 3kW
- 44 Heating Pump 5m
- 48 Temperature Gauge
- 49 Heater Control Stat + Overheat Stat
- 50 Lower Heater Control Stat
- 53 Y-Pattern Strainer



Not to Scale

Connections onto the unit are compression or Tectite push-fit. When connecting into a push-fit fitting, ensure that a wheel-type pipe cutter is used and that there are no burrs that may damage the o-rings. A disconnecting tool is supplied to enable release of pipes from push-fit connections.

Please ensure that the lowest point on the cold mains supply (after isolating valve) is fitted with a drain cock to both assist in servicing.

INSTALLATION INSTRUCTIONS

WIRING

The Heat Bank, and all connected equipment, must be installed by a competent person. Correct function and operation must be checked. It is important that the incoming mains power supply has sufficient current and voltage, taking into account the supply requirements of the rest of the property.

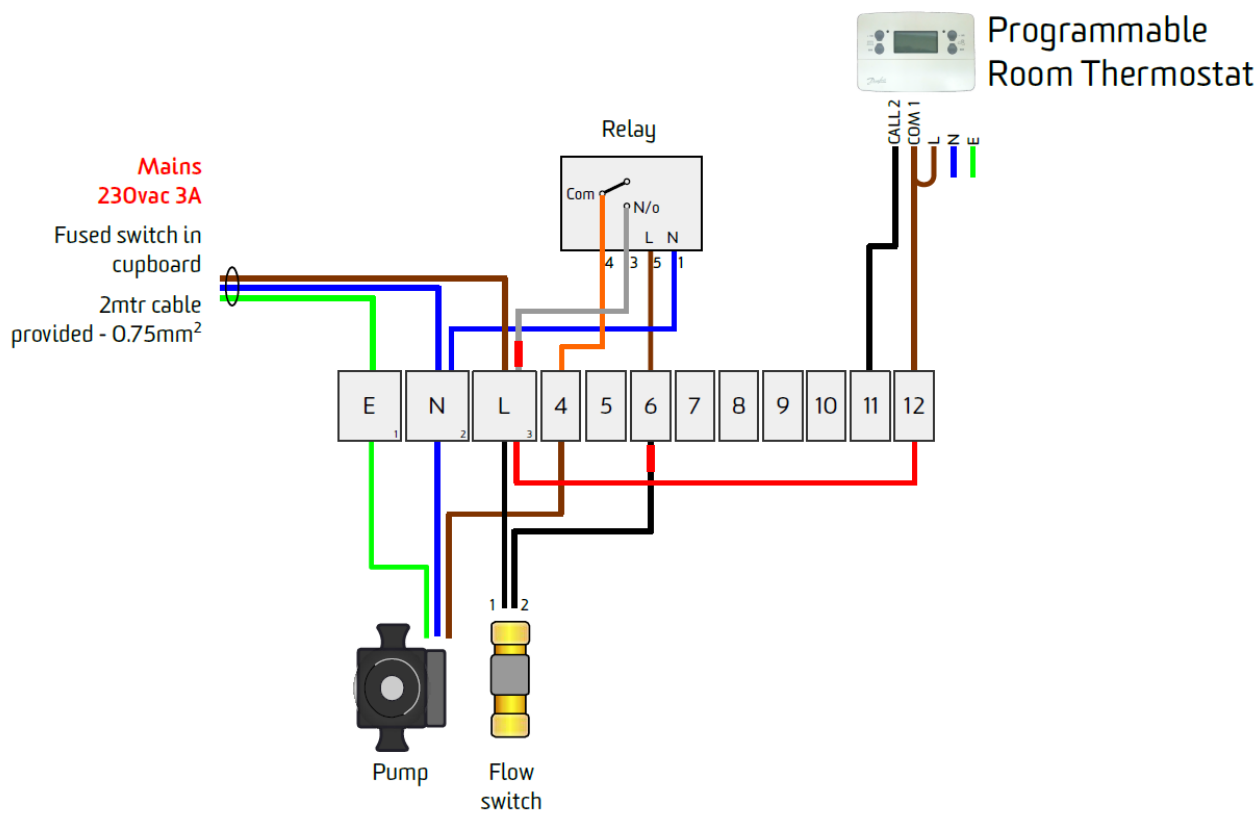
All power supplies must be fitted with double pole isolation within the cylinder cupboard, as well as suitably rated MCB protection at distribution box.

Ensure earth continuity throughout. In wiring diagrams, earth and neutral wires may be abbreviated for clarity.

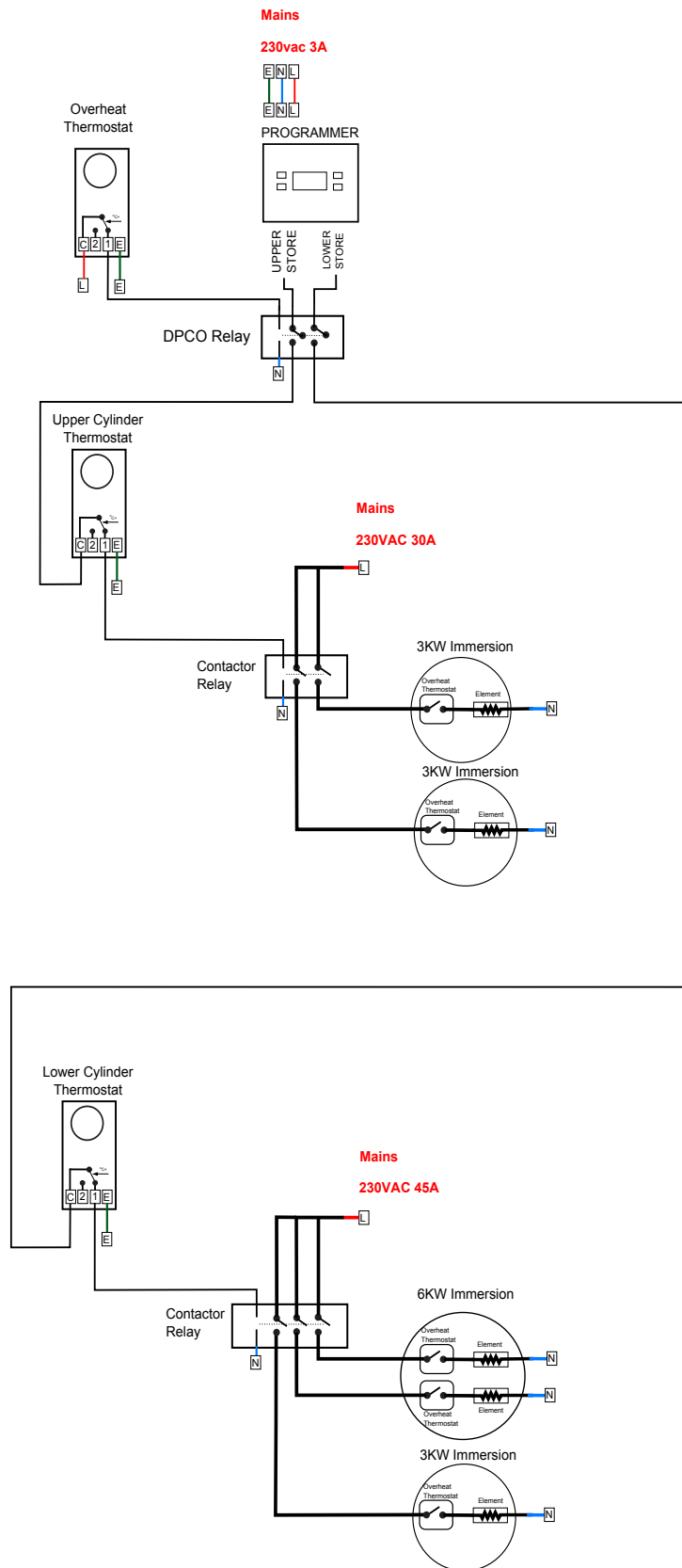
Wiring Diagram:

CPC-250-BQ66AAD-AAJD

Ensure Earth continuity throughout.

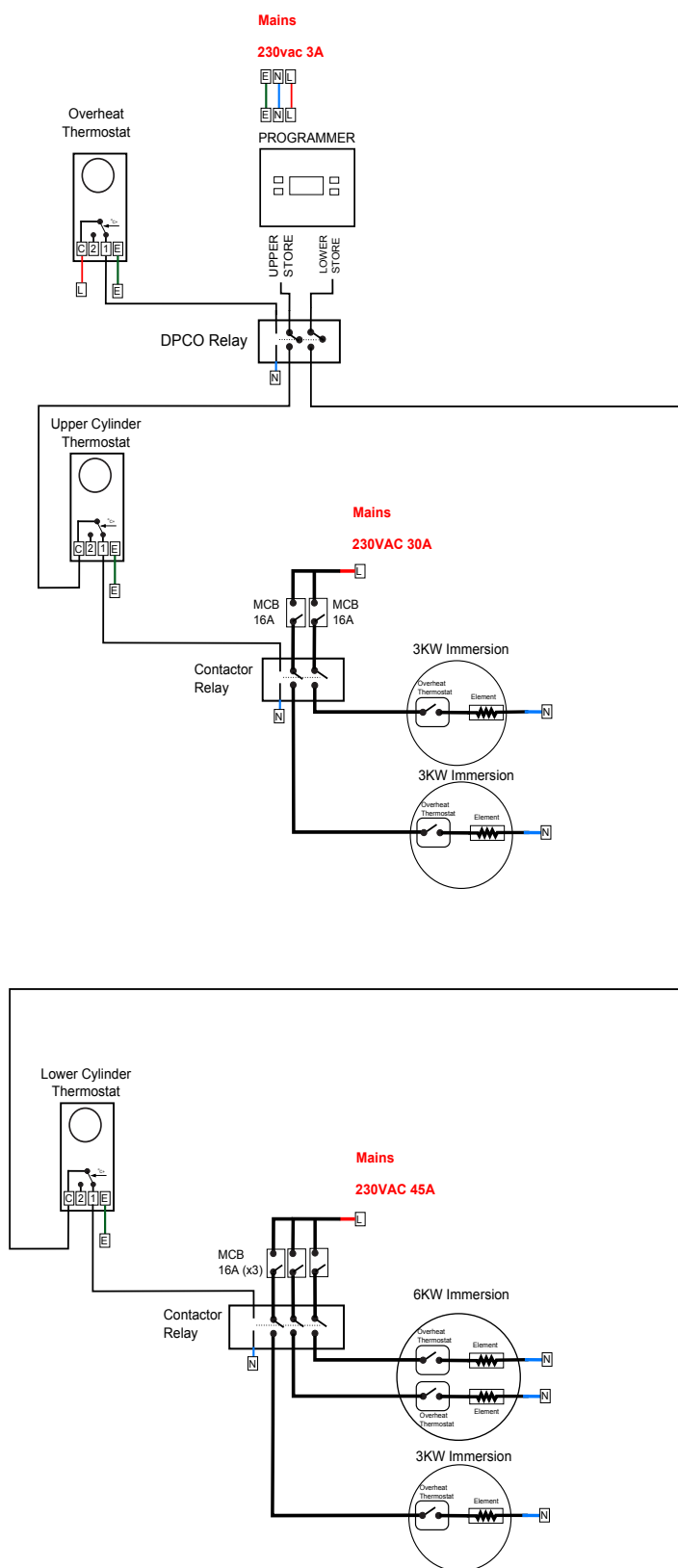


Possible wiring solution for timer control of immersions V.1



NOTE: The above mentioned supply / MCB ratings are indicative only! Always refer to appropriate regulations / Approved Document for correct specifications. These schematics are for guidance only and do not constitute a formal system design by Thermal Integration or Specflue.

Possible wiring solution for timer control of immersions V.2



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INSTALLATION INSTRUCTIONS

COMMISSIONING

CPC-250-BQ66AAD-AAJD

Connections onto the unit are compression or Tectite push-fit. When connecting into a push-fit fitting, ensure that a wheel-type pipe cutter is used and that there are no burrs that may damage the o-rings. A disconnecting tool is supplied to enable release of pipes from push-fit connections.

Filling the Pandora:

The unit is filled by the use of a hose pipe connected to the mains water supply, and will only need to be filled up once in this way. Note that inhibitor is factory added to the store already, and so is only required if the unit is drained after initial filling.

1. Remove the filling cap [No.10, page 2] to reveal the filling hole.
2. Feed hose pipe into store through the filling hole, and start to fill. It may help to tie the hose to pipework to stop it slipping out.
3. Fill the unit until up to the water level marker (within 1cm of hole), then stop.
4. Remove the hose, and replace the filling cap securely.

Filling the Primary System:

Please ensure that all air is properly vented from primary pipework and radiators prior to turning on the boiler.

Recovery of Store using Immersion Heaters:

1. Check to see if overheat cut-out(s) needs re-setting (see below).
2. Turn on all power supplies.
3. Turn on any heater controllers to ON.
4. Check that the Pandora fully heats up (to 75°C), that the heaters switch off, and that the overheat does not need re-setting (see below). Immersion Heater Overheat and Dry-Fire protection is provided centrally. There is a chance that the thermostat will need re-setting during commissioning. Simply unscrew cap covering the reset button on the side of the wiring centre, and push in the button as far as it goes - if it clicks it has reset.

Testing of Hot Water Services:

Once the store has fully heated up, it is important to check that hot water is available at all hot water outlets, and with the required flow rates and temperatures.

The hot water supply temperature should be checked, and if required adjusted using the fitted thermostatic blending valve. Once set, the blending valve can be locked in position (see valve instruction sheet).

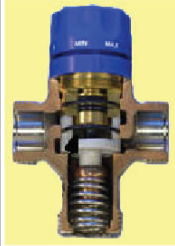
If not locked in position, set the thermostatic mixing valve to maximum.

INSTALLATION INSTRUCTIONS

USER NOTES & FAULT FINDING

CPC-250-BQ66AAD-AAJD

Thermostatic Mixing Valve(s)



Controls hot water temperature. Its setting can be locked by removing and replacing the cap with grooves aligned. Factory set at 55°C.

Similar valves used for hot water on UFH.

Store hot, but no hot water (or hot water for up to 30 seconds only).

- 'Store Hot' means the store is heated to the required 70°C. To check, carefully touch a brass elbow connecting into the store near the top - it should be too hot to keep in contact long. If the store is cold then refer to section 'Store not heating up'. If the problem is the store is not quite hot enough, then you should obtain hotter water at a low flow rate.
- Check the mixing valve is set high enough. If increasing setting on valve does not improve hot water temperatures then check that the hot inlet to the mixing valve (with red cable tie) is hotter than the outlet. If it is hotter then the valve needs servicing or replacing. If the hot inlet is cold or luke warm then look elsewhere for a fault.
- Check power is turned on to controls. Set heat exchanger pump temporarily to speed III and check that the pump turns on and off as a hot tap is opened. If not, then try to 'kick' start the pump manually, by removing the bleed cap on the pump and using a screw driver to turn the spindle. If the pump spindle moves freely, then check that the flow switch has a live supply, and it is passing a live to the pump when a hot tap is opened. If it doesn't pass the live when a hot tap is opened it requires replacement (very rare - more common for hot and cold pipes to be cross-connected).
- Check that the unit is full. This **MUST** only be done once the filling point is cool to the touch. If not then top up with hose pipe (provided). **ALWAYS** re-cap filling connection to hose after use, and tighten filling cap properly.

Store not heating up - completely cold to touch.

- Check power supplies are turned on at wall switches. Also check house distribution box to see if any have tripped.
- Check any immersion heater timers are set to be on for 1 hour per 50 litres of storage. If a 'White Meter' is used, where a separate cheap-rate supply is connected, no timing need be set by the user as it is controlled by electricity supplier.
- Check heater overheat thermostats have not tripped - the small black button on the red thermostat will click when pressed if the stat has tripped. If so, then check settings of stats are 75°C on the blue control stat and 94°C on the red overheat stat. The unit should now heat up, but if it trips again there is a fault with one of the thermostats.
- You can heat up the store temporarily by using the backup immersion heater.

General Plumbing Requirements

NEW COMPLETE SYSTEM INSTALLATIONS When carrying out a completely new heating system installation in a new build property or a first time installation in an existing property, then the heating system must conform to current building regulations Part L1a. All new domestic heating systems must have a minimum of two heating zones. Each of these zones should be controlled by a thermostat and zone valve. Alternatively individual electronically controlled Thermostatic Radiator Valves may be fitted. If domestic hot water is provided by a storage system then the storage system or cylinder will require separate time and temperature control.

All radiators must have TRV's fitted in all rooms except bathrooms and any rooms where a thermostat is located. The exception to this are single storey, open plan dwellings where the living area is more than 70% of the total usable floor area. Then this type of dwelling can be controlled as one zone.

EXISTING INSTALLATIONS: When carrying out boiler replacements on an existing system, the regulations do not require separate zoning of the upstairs and downstairs and compliance with the regulations can be achieved by a single room thermostat or programmable room thermostat. It is however recommended that [TRV's](#) are fitted to all rooms except the bathrooms and the room where a thermostat is located.

The appliance must be installed in accordance with, and comply to, the current: IEE Regulations, Building Regulations, Building Standards (Scotland) (Consolidation), Building Regulations (Northern Ireland), local water by-laws, Health & Safety Document 635 (The Electricity at Work Regulations 1989) and any other local requirements.

BRITISH & IRISH STANDARDS Where no specific instruction is given, reference should be made to the relevant British and/or Irish Standard codes of Practice.

- BS7074:1 Code of practice for domestic and hot water supply
- EN12828 Central heating for domestic premises
- BS7593 Treatment of water in domestic hot water central heating systems
- ECTI National rules for electrical installations

Potable water: All seals, joints and compounds (including flux and solder) and components used as part of the secondary domestic water system must be approved by WRAS.

FITTING AND MODIFICATIONS: Fitting the appliance and any controls to the appliance may only be carried out by a competent engineer. Any misuse or unauthorised modifications to the appliance or associated components and systems could invalidate the guarantee and may lead to serious injury or even death. The manufacturer accepts no liability arising from any such actions, excluding statutory rights.

SERVICING: The end user should be advised to have the system serviced annually by a competent engineer. Contact [Thermal Integration Ltd](#) for a list of approved engineers. Approved spares must be used to help maintain the economy, safety and reliability of the appliance. The service engineer must complete the Service Record after each service.

General Wiring Requirements

These instructions apply in the UK and Ireland only and must be followed except for any statutory obligations. Component specific electrical information may also be supplied in support of these instructions, however if there is any doubt please contact [Thermal Integration Ltd](#). (Tel: 0845 2411441)

FAILURE TO INSTALL APPLIANCES CORRECTLY COULD LEAD TO PROSECUTION.

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CAUTION: ISOLATE THE MAINS SUPPLIES BEFORE STARTING ANY WORK AND OBSERVE ALL RELEVANT SAFETY PRECAUTIONS.

Danger of short circuit: When connecting the cables ensure that no cable pieces fall inside the control panel.

The Mains supply to the appliance must be through a fused double pole isolator situated next to the appliance. The isolator must have a contact separation of 3mm minimum in all poles and should isolate the appliance and all associated controls.

Unless otherwise stated, all Heat Interface Units should be connected to a mains 230V 50Hz Supply fused at 3 Amps.

All electrical connections with the Heat Interface Unit control panel are clearly marked as follows:

- L = Live 230V
- N = Neutral
- E = Earth 

Any additional mains cable should comply fully with the current I.E.E. wiring regulations. It must have a minimum section of 0.75mm² and be capable of withstanding a minimum of 85C.

Commissioning Checklist

Please return this form to: Thermal Integration Ltd., 8 Curzon Road, Sudbury, Suffolk, CO10 2XW. Tel: 0845 241 1441
The Installer should fill out the following section before leaving this form with the end user.

Installer Details	Please tick to confirm the following requirements have been completed.
Name: Address: Telephone: Mobile: Email: Commissioning Date: IMPORTANT – Unit Serial Number as shown on label:	☐ System has been protected with a suitable corrosion inhibitor to the appropriate level, and label left on store to indicate the date, type and amount added <u>and</u> the date it needs refreshing by. ☐ The sections in these instructions that apply to final installation have been ticked as completed and commissioned as per instructions. ☐ These instructions have been left with the end user.

The End User should fill out the following section before returning this form to Thermal Integration Ltd.

End User / Owner Details	Please tick the following that apply.
Name: Address: Telephone: Mobile: Email: Date of Occupancy:	☐ You are satisfied with the installation of your Xcel Heat Bank. <i>(If not then please attach your reasons).</i> ☐ The system is functioning correctly. ☐ You would recommend an Xcel Heat Bank to your friends.

Failure to return this form may jeopardise the warranty on this system.

Warranty Information

Stainless Steel Cylinders carry the following guarantees as standard:

FACTORY WARRANTY

1. The warranty begins on the date of delivery. A dated delivery note will be issued to the customer and a copy will be stored by Thermal Integration.

2. **1 Year Parts and labour** - Parts or labour proven to be defective will be replaced / repaired free of charge for a period of 12 months from date of delivery, provided the cylinder is installed by a qualified engineer within 6 months of date of delivery.

2 Years Parts Only - Parts proven to be defective will be supplied free of charge (for fitting by others) for a period of 24 months from date of delivery.

25 Years on the base unit against leaks - Stainless Steel cylinder bodies are guaranteed against perforation / leakage for a period of 25 years from date of delivery. (Cylinder bosses and welds are excluded from this guarantee)

3. Replacement of parts under warranty does not extend the duration of the warranty

4. Any other costs are not covered by this warranty. All other damages of any nature whatsoever and howsoever arising, are expressly excluded from this guarantee.

5. The warranty conditions above only apply:

- a. In the UK only on items provided exclusively by Thermal Integration.
- b. If the product is installed by a qualified engineer in compliance with the installation instructions.
- c. The installer must complete the commissioning checklist in full at the time the cylinder is installed. The end user must also complete the relevant sections of this checklist and it must be returned to Thermal Integration within 30 days of commissioning. Checklists are enclosed in the installation instructions.
- d. If the installation complies with all current and relevant building regulations and codes of practice (including the requirement to clean the primary and secondary heating systems and add corrosion inhibitor in line with BS7593:2006)
- e. If the product is used and maintained exclusively according to the manufacturer's instructions with proof that the system has been protected with a suitable corrosion inhibitor, and all additions of inhibitor are clearly recorded (date and quantity) on the system, using labels supplied with the inhibitor.
- f. If the returned item is accompanied by a fully completed Thermal Integration Warranty Return Form.

6. Excluded are defects caused by:

- a. Failure to maintain in accordance with manufacturers instructions.
- b. Improper use.
- c. Any attempt at repairs / maintenance by un-qualified persons.
- d. where parts other than Thermal Integration Genuine Parts have been used in any service or repair.
- e. Lightning, fire or natural disasters.
- f. Deterioration and / or pollution from the heating system or water network, either domestic hot water or heating side.
- g. Harmful additives to the heating water.
- h. Consumables as specified by us, including but not limited to: hoses, gaskets and batteries.
- i. Damage arising from faulty site installation or wiring.

7. Report any faults to your installer, service engineer or Thermal Integration directly. Faulty parts must be accompanied by a fully completed Thermal Integration Warranty Return form, to be returned to Thermal Integration. Returned items remain the property of Thermal Integration Ltd.

The Thermal Integration Warranty Return Form can be requested by phone or email. Returns are not accepted unless expressly agreed in writing.

Transport risk of returned items lies with the sender. The shipping of replacement parts are the responsibility of the supplier.

8. If the cylinder or any component thereof breaks down, we may ask you to pay us a deposit before we repair or replace it. We will return the deposit in full if we find a fault that is covered by this warranty. We may keep the deposit if we cannot access your property at the time we had arranged with you to visit or we find other conditions of this warranty have not been met. A responsible adult must be at the property to give our engineer this access to the cylinder.