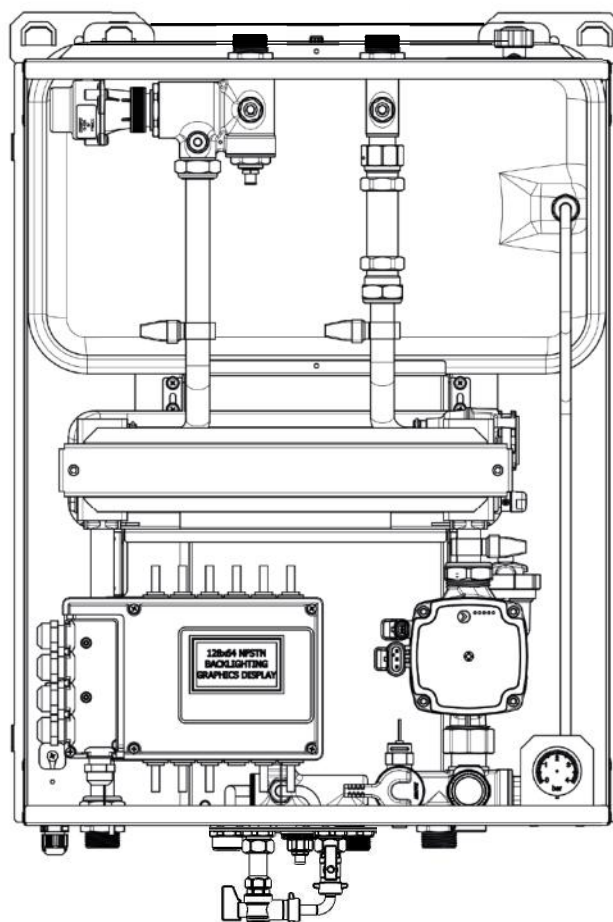


Installation and Operating Manual



Hiper II V1 Heating only single plate HIU

In this document Inta have endeavoured to make all the information and procedures accurate. Inta cannot accept responsibility should it be found that in any respect the information is inaccurate or incomplete as a result of future developments.



Required Hiper HIU documents.

1. Installation and Operating Manual (this document)
2. Operation and Maintenance Manual (included with the HIU)
3. Commissioning report (included with the HIU)
4. Programming Manual (available on request, contact Inta before commissioning)



Annual servicing is required to ensure that the conditions of the warranty are met.

SECTION 1 - Important information and introduction

These instructions describe the installation and operation and fault finding diagnostics of the Hiper II V1 Heat Interface Unit (HIU). For operation of the entire plant, the technical documentation of all the components used such as, boiler, tank, pumps, pipework and valves must be complied with. Inta does not accept any responsibility for the design and performance of the heat network or components outside of the HIU, demarcation being the HIU isolation valves at the connection to the HIU. Installation should only be carried out by a qualified and competent plumbing installer and a qualified and competent electrical installer in accordance with the current Building, Water and Electrical Regulations, Legislation and Standards.

Do not start installation until you have thoroughly read and understood all the Installation and Operating Instructions as listed above, and have complied with all safety provisions required.

Symbols used in these documents



DANGER – immediate risk of physical injury or even death.
DANGER – immediate risk of serious damage.



IMPORTANT – information critical to the installation or installer.
IMPORTANT – information critical to the user.



NOTE – useful information regarding the operation or installation of the HIU.

Earthing Instructions, take note!



Do not tamper or make any alteration to the earthing connections provided as indicated on the casing with the provision of an earthing label!

One earthing point is on the outside of the lower casing, underneath the HIU. The other is inside the HIU on the casing backplate. **Each earthing connection is provided with a metric**

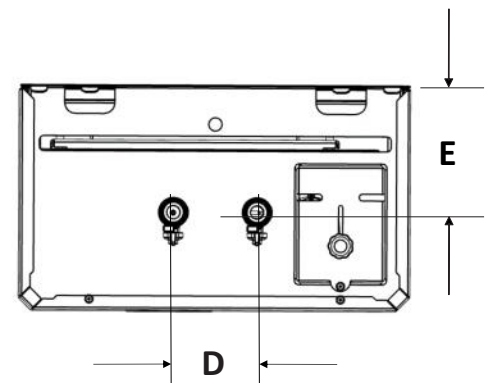
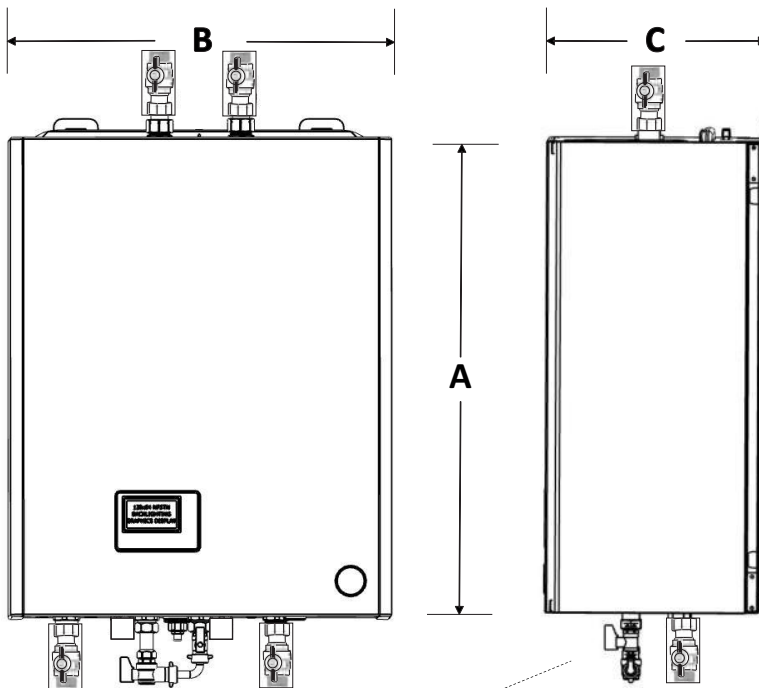
Earthing label



SECTION 2 - Dimensions and components

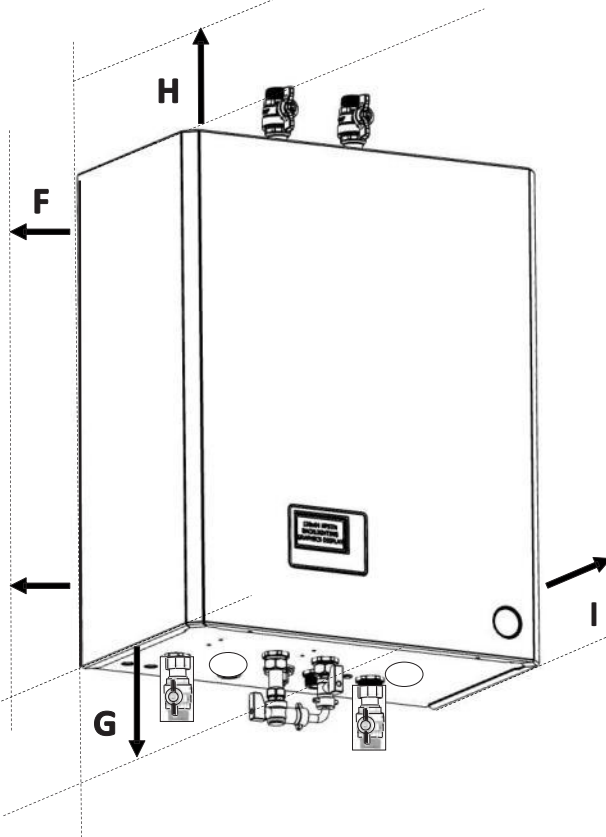


Inta Description	Inta Code
HIPER II V1 HEATING ONLY Single Plate HIU with Ista Heat Meter	HIPER2SPHOIS
HIPER II V1 HEATING ONLY Single Plate HIU with Zenner Heat Meter	HIPER2SPHOZE
HIPER II V1 HEATING ONLY Single Plate HIU (NO HEAT METER)	HIPER2SPHONM



Dimensions

A	585 mm	Height
B	465 mm	Width
C	265 mm	Depth
D	100 mm	Pipe Distance
E	140 mm	Pipe Distance



Clearances

F	Sides	30mm
G	Below	300mm
H	Above	200mm
I	In front	50mm

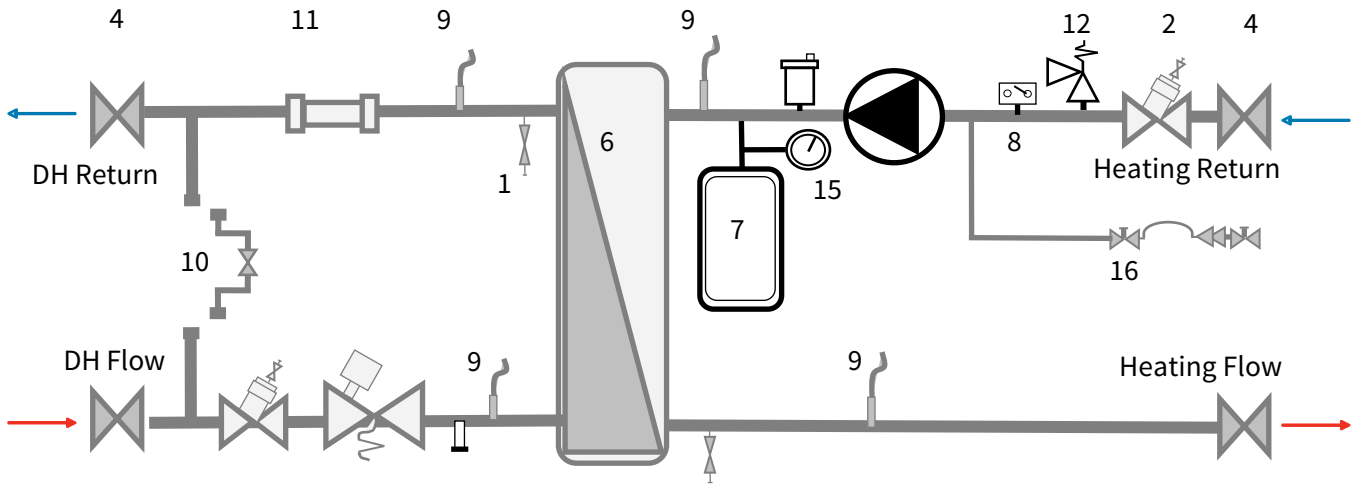


* clearance of at least 300mm to allow the cover to be removed!

Due care must be given by the installer that the cover, heat meter viewing door and components are all accessible!

Isolation valves ordered separately as accessory pack HIAC03BVPACK.

Schematic

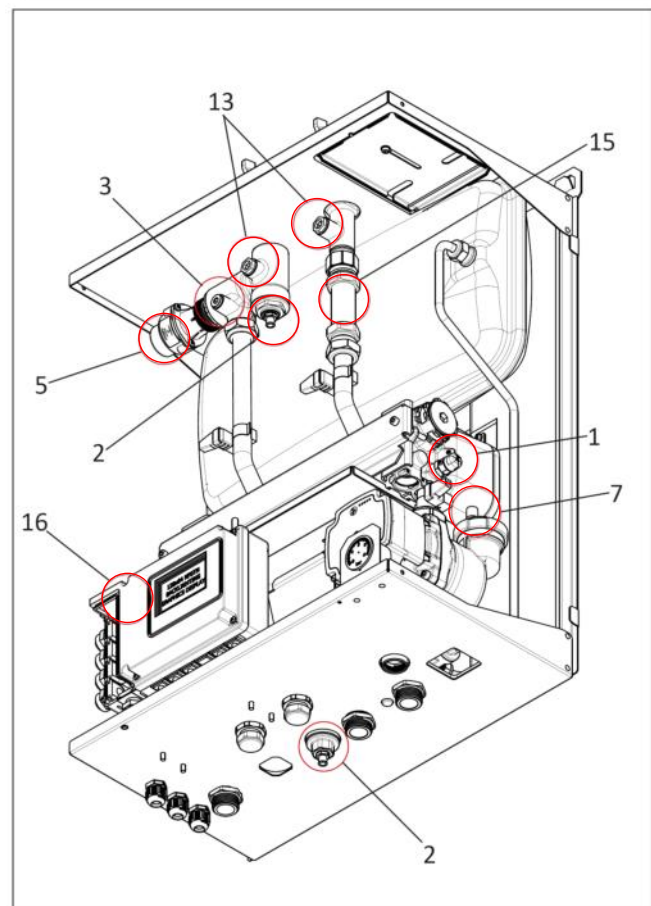
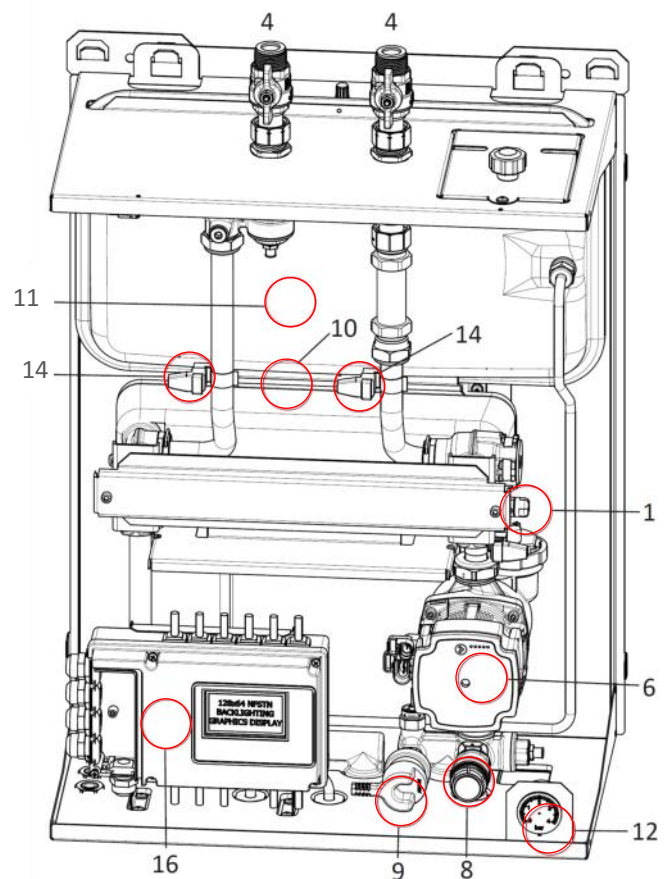


1	Drain and vent valves	
2	Strainer with drain valve	
3	Pocket for heat meter sensor	
4	Isolation valves	
5	Pressure independent control valves	
6	Plate heat exchanger (PHE)	
7	Expansion vessel	
8	Low pressure switch	

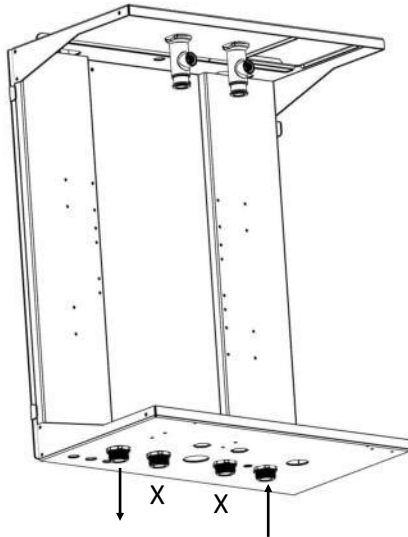
9	Temperature sensors	
10	Temporary bypass accessory	
11	Heat meter or temporary spacer pipe	
12	Safety relief valve	
13	Circulation pump	
14	Automatic air vent	
15	Pressure gauge	
16	Filling group	

SECTION 4 - Components

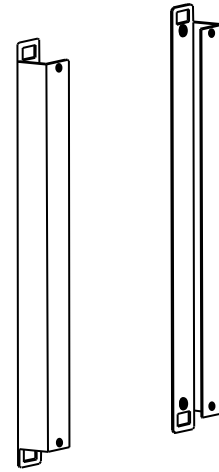
1. Drain and air venting valves
2. Strainer with drain cap.
3. Pocket for installing heat meter temperature sensor.
4. Isolation Valves (ordered separately).
5. Pressure independent control valve (PICV) and fast acting stepper actuator.
6. Circulating pump for secondary heating.
7. Automatic air vent.
8. Safety pressure relief valve.
9. Low pressure switch.
10. Plate Heat Exchanger.
11. Expansion vessel 8 Ltr.
12. Pressure gauge
13. Temporary bypass or test ports.
14. NTC temperature sensors
15. Heat Meter position or temporary spacer pipe 110mm.
16. Electronic PID controller



SECTION 5 - Accessories



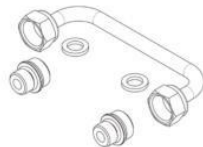
First Fix Jig
Using the Jig allows pipe work to be installed without the HIU.
HI2ACJIG.
Same Jig is used for all Hiper II HIU so only use the heating connections.



Pair stand off wall brackets.
HIAC01SOBPACK



Pack of 4 Secondary isolation valves.
HIAC03BVPACK



Temporary By Pass Kit A
HI2AKITA



Temporary By Pass Kit B
HI2AKITB



Temporary By Pass Kit C
HI2AKITC

ACCESSORIES for HIPER 2 TWIN PLATE HIU	Part Code
Pack of 4 Secondary straight isolation valves.	HIAC03BVPACK
Pair stand off wall brackets (to allow for pipes to be run behind the HIU).	HIAC01SOBPACK
Flushing By Pass Kit A for internal installation. (temporary pipe).	HI2AKITA
Flushing By Pass Kit B for internal installation (Fixed connection to HIU with shut off valve).	HI2AKITB
Flushing By Pass Kit C (valve and tee fittings) for external installation.	HI2AKITC
First fix JIG.(use as a template for first fix piping, use with HIACPFKIT)	HI2ACJIG
Pack of 4 Secondary straight isolation valves.	HIAC03BVPACK
Prepayment relay (for billing systems using a 230v signal).	HIAC0423OKIT
Security - anti-tamper fixing screws + driver.	HIAC05SSPACK
Insulation jacket for HIU isolation valve.	ARM022129

6.1 Before installation read and comply with the following



Comply with all safety provisions. Do not tamper with the earthing connections as indicated on the casing. To secure the casing when closing the cover, use the provided M4 screw and washer to ensure earth continuity on the casing.



The Installer's Responsibility - in accordance with Part L of the Building Regulations, all hot and cold water pipes should be labelled and insulated to the current standards.



Installation should only be carried out by a qualified and competent plumbing installer and a qualified and competent electrical installer in accordance with the current document Building Regulations, Legislation and Standards.



It is the installer's responsibility to ensure that the place of installation and wall is suitable. An unsuitable location or provision of adequate supplies (Primary Heating and Cold Water mains) will not justify any warranty or fault claim;

- The wall must be capable of bearing the weight of the HIU when permanently filled with water.
- Locations where access is restricted for maintenance, see page 3.
- The HIU is only for WALL MOUNTING in the orientation shown in this manual.
- Locations where criminal damage or illegal tampering cannot be reasonably preventable.
- Locations where discharge pipe is not able to be safely or legally installed and connected.
- Supplies which are not suitably clean, and free from contaminants.
- Supplies which contain chemical contaminants.
- On site precautions must be made by the installer to protect the unit from builders' dust and debris.



Wall fixing bolts are to be provided by the installer and be suitable to bear the weight of the HIU when permanently full of water.



Before removing the cover turn off the power supply at the mains (fused spur 230v 50Hz).

6.2 Consider which installation method is to be used.



1. HIU as delivered to site.
2. HIU and stand off brackets as delivered to site
3. HIU JIG at First Fix Pipe work stage, with the HIU to follow later.
4. HIU JIG and stand off brackets, with the HIU to follow later.

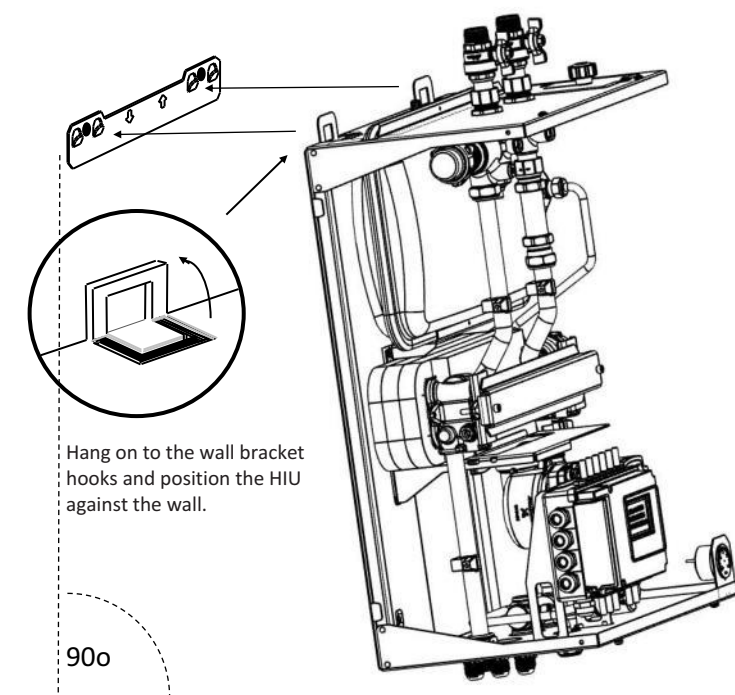
6.3 General installation notes .



1. Ensure all pipes are labelled and insulated in accordance with Part L of the building regulations.
2. The HIU can only be installed in one orientation, with the heat network connections at the top, and in a vertical position.

SECTION 6 - Installation

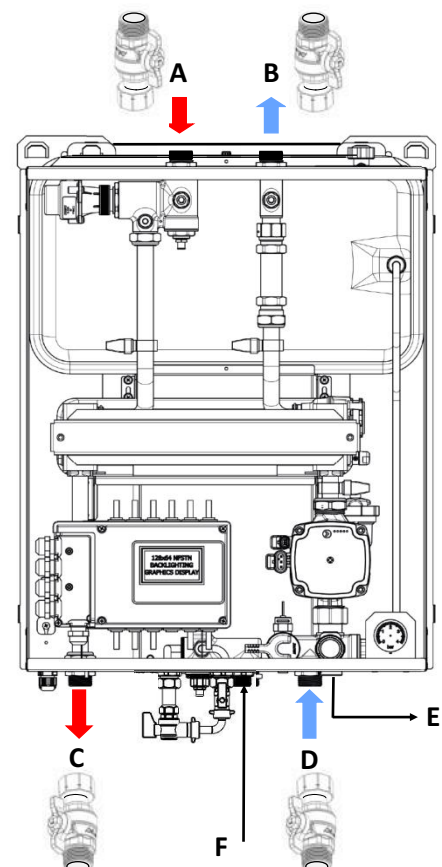
- 6.4** Ensure the chosen installation site is inside the building, weather proofed and provides good access for maintenance, minimum requirements as on page 3. Note where and which pipe connections will be required, and pay attention to where the safety valve discharge pipe will terminate, and ensure this meets all current building regulations and has a continuous fall.
- 6.5** Making sure the wall the HIU is to be mounted on complies with 5.1, mark up the position for the wall bracket. The position of the HIU is to be on a true vertical plane as in 5.3. Drill and plug the wall, and secure the HIU with suitable wall fixings (not provided with the HIU).



6.6 Plumbing Connections

- A Heat Network Flow
- B Heat Network Return
- C 3/4" Heating Flow (radiators or underfloor heating).
- D 3/4" Heating Return
- E 1/2" Safety valve discharge
- F Cold water connection for filling. Installer to provide isolation stopcock.

Make connections with HIAC03BVPACK Isolation valves with flat face unions and gasket seals (ordered separately).

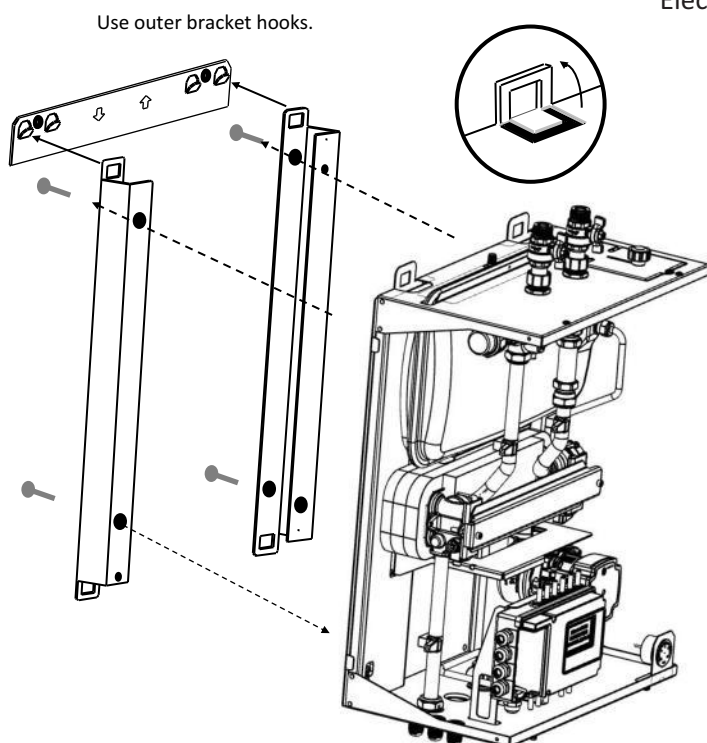
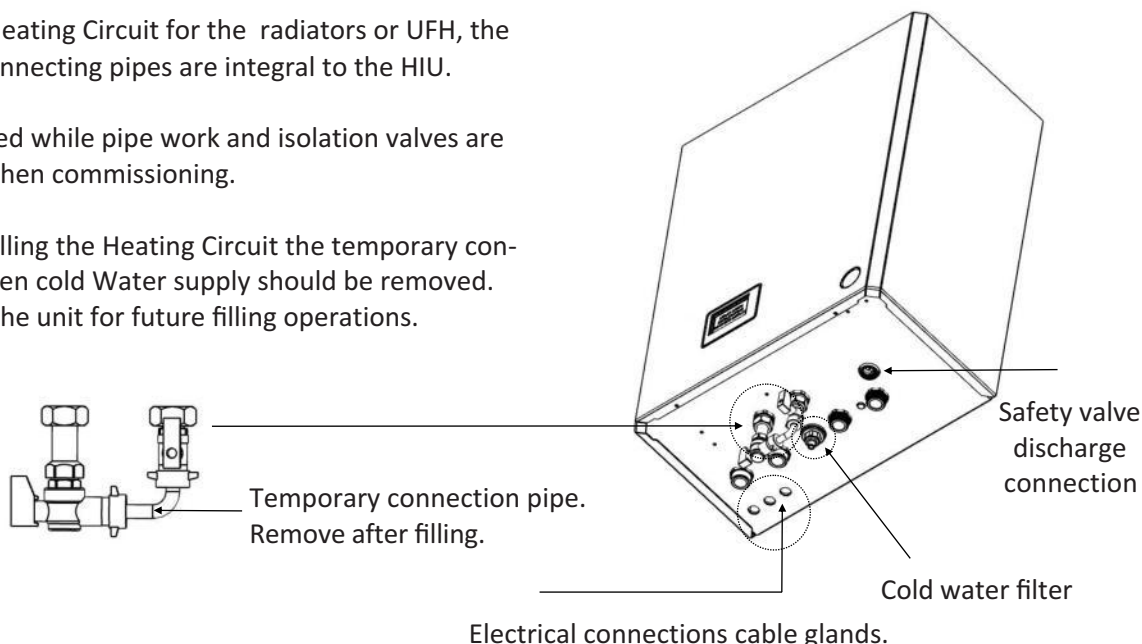


SECTION 6 - Installation

6.7 For filling the Heating Circuit for the radiators or UFH, the filling valves and connecting pipes are integral to the HIU.

This may be removed while pipe work and isolation valves are made good. Refit when commissioning.

On completion of filling the Heating Circuit the temporary connection pipe between cold Water supply should be removed. Place safely inside the unit for future filling operations.



Accessory option - stand off brackets (SOB) 6.8

Stand off brackets create a space behind the HIU that can be used to run pipes in. The stand off brackets are 40mm off the wall allowing for 13mm pipe insulation thickness.

First attach the brackets using 4 x fixing screws to the back of the HIU in the matching fixing holes provided.

Fit the wall bracket as in 5.6 and per 5.1

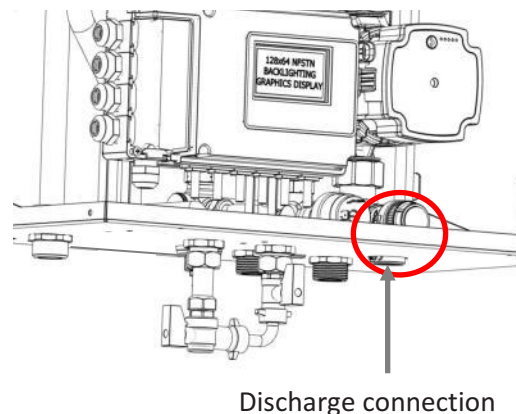
Then hang the HIU as in diagram 5.6, but this time using the outer wall bracket hooks.

6.9 Safety valve discharge pipe.

The safety valve has a 1/2" F threaded connection for 15mm pipe to be connected to (15mm x 1/2" M compression coupling to be provided by the installer).

The discharge pipe should have a continuous fall and conform to BS6798.

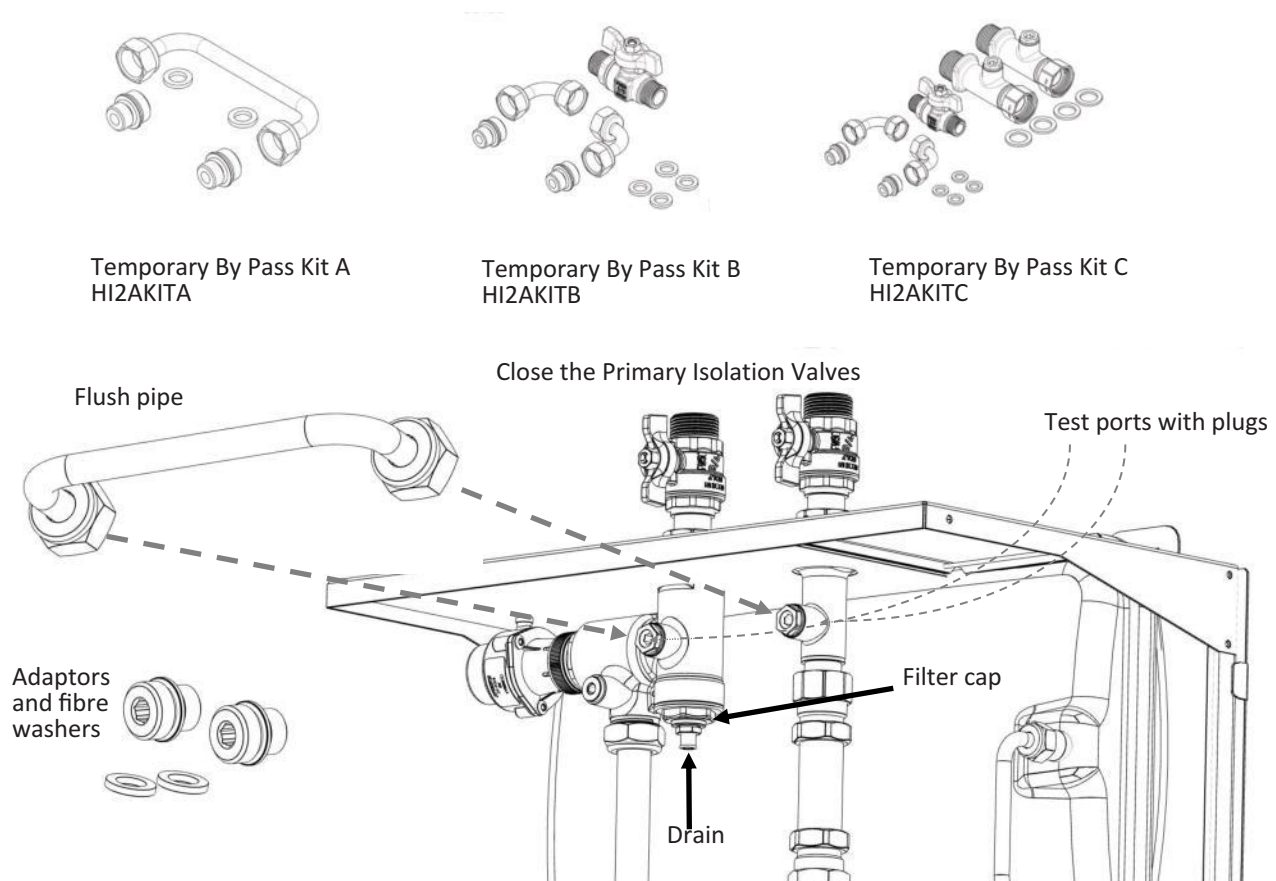
Where the pipe empties into a drain then that area must be frost free, and consideration as to a trap being included as well as a tundish to ensure any discharge is fully visible.



6.10 Flushing Bypass Kits - instructions for KIT A and B

- See section 6, HIU wiring complete. HIU turned off to close the PICV.
- All HIUs on this circuit must be flushed using this method at the same time.
- Close the isolation valves as shown, and empty of water through the drain valve into a bowl.
- remove test port plugs.
- Install the kit adaptors making water tight seal on the O rings of the adaptors.
- Fix the flushing pipe in position as shown, tighten the union nuts making a water tight seal with the fibre washers provided.
- Open the isolation valves for system flushing.
- When the flushing operation is finished, close the isolation valves as shown below, and empty water through the drain valve again.
- Now remove and clean the filter mesh by undoing and removing the filter cap.
- Replace the now clean filter mesh, and replace the filter cap. Remove and store the flushing pipe, replace the test plugs and make water tight. Do not over tighten the O rings.
- Fill the HIU, ready for commissioning.

For External Flushing bypass valves use the above as guidance and follow the instructions included with the valve



Check Connections!

- Flow and Return in correct positions?
- All union nuts have been tightened, and a visual inspection expects them to be water tight.
- All union nuts inside are tightened, and a visual inspection expects them to be water tight.

All isolation valves in the closed position

All drain valves and air vent valves are closed.

SECTION 7 - Electrical connections



7.1 Before electrical connection read and comply with the following.



Comply with all safety provisions.



Installation should only be carried out by a competent electrical installer and the installation conform to all IEE regulations



Note that the Room thermostat switching must be VOLT FREE !!



Note that the billing connection for pre-payment function must be VOLT FREE !!



Isolate all electrical supplies before removing the access panel !

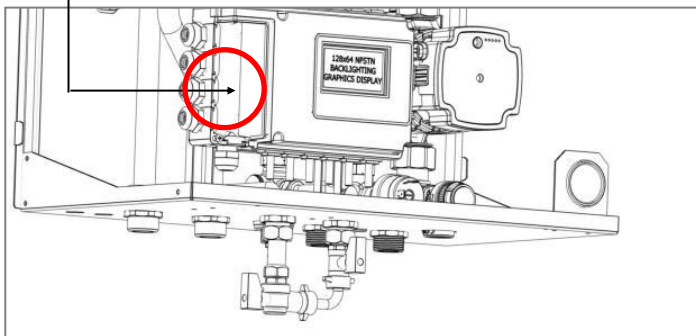
7.2 The installer is to provide a 230vAC 3 amp fused supply as per BS EN 7671:2008. Entry for cables is provided by 3 x cable glands located beneath the HIU (at the rear, LHS).

Live, neutral and earth connections as per the diagram below.

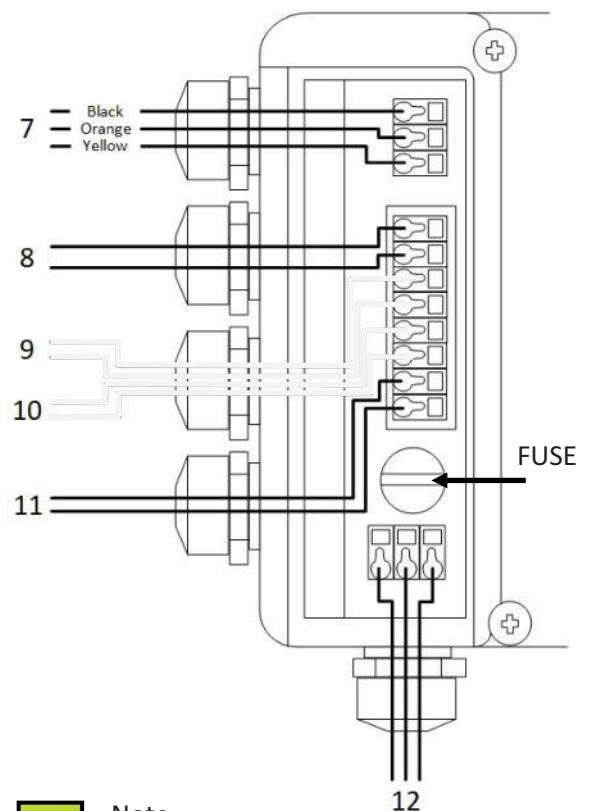
7.3 Room thermostat connection as per the diagram below. This is a 2 core cable connection and VOLT FREE.

The room thermostat switching position is NORMALLY OPEN (though this can be changed to normally closed in the installer level programming of the controller which is covered in the separate programming manual).

Electrical connections access panel; remove securing screws to enter



7	CN1 MODBUS 9600K baud connection. Maximum of 9600 bits per second (bps). 8
	ROOM THERMOSTAT—VOLT FREE!
9	DO NOT USE
10	DO NOT USE
11	Pre-payment connection to VOLT FREE supply.
12	Power connection 230V.



Note
Internal fuse specification 630 mA
glass fuse

Section 8 - sequence of first power up and user menu.



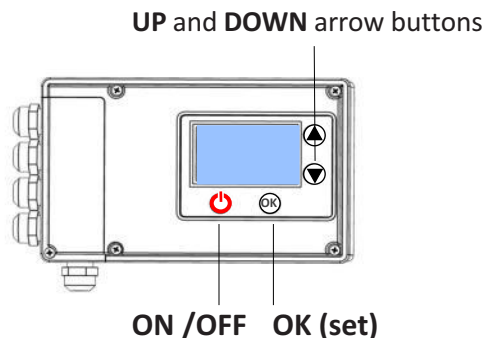
First start up sequence to ensure the selection of radiators or UFH.

On first power up, the controller will perform a check on all connected components. If all is OK, it will automatically proceed to the set up menu. If a fault or wiring error is detected, a warning symbol will appear until the error is corrected.

START HERE



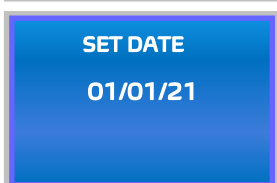
ENGLISH, ITALIANO, FRANCAIS, NEDERLAND or DEUTSCH.



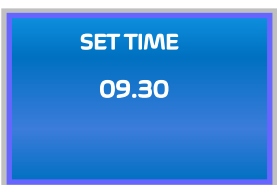
1.



2.



3.



4.



SELECT FLOOR HEATING or RADIATOR

UFH is the factory default. Use the arrow UP/DOWN arrow buttons to change to RADIATORS



5a.



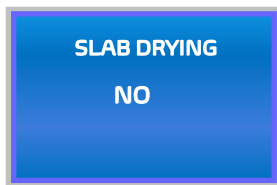
Factory setting for UFH is 30°C. Press OK or change with the UP and DOWN arrow buttons to increase or decrease the heating flow temperature. Press OK to set.

5b



Factory setting for radiators is 60C. Press OK or change with the up and down arrow buttons to increase or decrease the heating flow temperature. Press OK to set.

6.

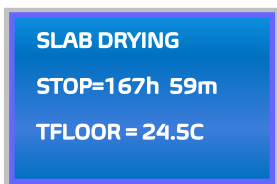


Change to YES using the UP or DOWN button to initiate the floor drying for a new UFH system.



When in use the SET temperature will be shown on the screen. The screen does not show room temperature.

6a.



7.



Controller screen looks like this, now in standby mode.

Drying starts at the minimum temperature. 25°C as factory setting for 3 days then rises to the maximum factory set temperature (40°C as factory set) for 4 days. The function can be stopped by pressing the OFF button.



Screen symbol for radiator heating ON



Screen symbol for UFH heating ON



All features and functions can be accessed in the installer level programming. How to access, and a list of all the parameters which can be programmed are in a separate document that is not to be left with the end user as misuse of these set parameters may cause the HIU to not operate as efficiently as commissioned. Refer to the Installer Controller Parameter Settings Guide, available from Inta or the supplier request.

Features available in the HIU Controller

- Language options.
- UFH or Radiator Heating.
- UFH floor drying (slab drying)*
- Minimum temperature limiting HTG
- Maximum temperature limiting HTG
- Optimised heating (uses less heat as the HTG temperature nears the set point)
- Flow limiting in HTG mode
- Frost protection.
- PWM pump control.
- Manual switching of the pump.
- Prepayment operation and shutting down of the HIU when out of credit.
- Manual mode for the PICV actuator.
- Room thermostat switching options for normally open or normally closed switching.

***SLAB DRYING** (first time of applying heat to the screed/floor).

Select YES to initiate the floor drying for a new UFH system

Drying starts at the minimum temperature (25°C as factory set) for 3 days then rises to the maximum factory set temperature (40°C as factory set) for 4 days => 7 days total. These minimum and maximum temperatures can be reset respectively with parameter 03 and parameter 12 in the installer menu. The screen shows the time left for this operation. The function can be stopped by pressing the OFF button.

Programming the HIU Controller.

Any changes to the factory settings should be carried out during commissioning. Details of programming parameters are to be found in the **Controller Programming Guide**.

Contact Inta to request the Controller Programming Guide.

This document is not to be left with the HIU or the occupier of the home!

This document is available on request from your Inta Specification Manager involved with this installation project.

Alternately contact by;

Inta website <https://intatec.co.uk/contact-us/>

Phone 01889 272181 ask for HIU Technical Support or HIU Service Desk.



The **Controller Programming Guide** is only for the use of the installer or commissioning engineer, and under no circumstances should be left with the user or home owner. Incorrect parameter programming may result in inefficient performance or error code diagnostics which prevent the HIU operating as required.



Check the temperature sensors are clipped securely to the pipes for accurate control. All the sensors are colour coded for ease of identification and checking that the sensor is in the correct position.

RED = Primary FLOW

BLUE = Primary RETURN

WHITE = Heating FLOW

GREY = Heating RETURN

SECTION 10 - Controller factory settings

Description /parameter	Factory Set
Start temperature floor drying.	25
Factory set temperature for underfloor heating (UFH).	30oC
Factory set temperature for radiators heating.	60oC
Select heating type (FLOOR HEATING or RADIATORS)	FLOOR HEATING
Set minimum temperature for underfloor heating (UFH).	20oC
Set maximum temperature for underfloor heating (UFH).	40oC
Set minimum temperature for radiator heating.	40oC
Set maximum temperature for radiator heating	65oC
Optimised heating function switch ON (YES) or OFF (NO).	NO
Set ΔT heating optimized function for UFH (ΔT opt. UFH).	5oC
Set ΔT optimized heating function for radiator heating	10oC
Set time period for measuring the ΔT in optimized heating function in minutes.	25
Limiting the primary flow for Heating (max travel of the stepper motor in heating mode) value 99 % valve fully closed.	70
Set max. primary return temperature limit.	60oC
Select pump protection. If the pump is not run after 24 hours, the pump is turned on, this prevents the pump from seizing during long periods of no usage).	NO
Set the time for running the pump during the pump protection programming function in minutes.	2
Set frost protection. Temperature is measured from the heating return temperature sensor.	3oC
Set PWM function (00 = OFF). 99 is on max speed modulation from external source. PWM cable provided only as an accessory.	00
Manual operation of heating pump (overrides room thermostat).	NO
Select type of contact room stat connection switching (N.OPEN = Normally open / N.CLOSE = normally closed)	N.OPEN

Description/parameter	Factory Set
Prepayment - select Prepayment NO or YES. 'Pay as you go' (PAYG). Connected to a Billing Provider by a VOLT FREE connection.	NO
PICV ACTUATOR - manual operation stepper motor PICV 00 = AUTO. (Setting 01 = FULLY CLOSE Setting 02 = FULLY OPEN).	AUTO
PUMP - manual operation. 00 = AUTO. (Setting 01 = PUMP ON Setting 02 = PUMP OFF)	AUTO
Language.	English
SLAB - start the slab drying function.	NO
Reset to Factory Settings. Note if operating as a single plate HIU - reset parameter 60!	NO
Diagnostics (display shows operation, temperature, valve opening steps).	NO

Programming HIU Controller.

Any changes to the factory settings should be carried out during commissioning. Details of programming parameters are to be found in the **Controller Programming Guide**.

This document is available on request from your Inta Specification Manager involved with this installation project.

Alternately contact by;

Inta website <https://intatec.co.uk/contact-us/>

Phone 01889 272181 ask for HIU Technical Support.

ΔT = Temperature differential value



The **Controller Programming Guide** is only for the use of the installer or commissioning engineer, and under no circumstances should be left with the user or home owner. Incorrect parameter programming may result in inefficient performance or error code diagnostics which prevent the HIU operating as required.

Diagnostics - Fault code definitions.

A fault code informs that the controller has diagnosed a fault in one of the HIU's components. When any fault occurs, the relevant code will be displayed on screen.

code	Cause	Effect	Remedy
F1	Primary flow temperature sensor is short circuit or broken circuit, or disconnected.	The HIU will not operate in Heating mode.	Check that the sensor cable plug connection is good, and if OK then check the connection inside the controller. If this doesn't clear the F1 code, then replace the sensor. The F1 will clear and return to normal operation.
F3	Heating flow temperature sensor is short circuit or broken circuit, or disconnected.	The HIU will not operate in Heating mode.	Check that the sensor cable plug connection is good, and if OK then check the connection inside the controller. If this doesn't clear the F3 code, then replace the sensor. The F3 will clear and return to normal operation.
F4	Primary return temperature sensor is short circuit or broken circuit, or disconnected.	The HIU will not operate in Heating mode.	Check that the sensor cable plug connection is good, and if OK then check the connection inside the controller. If this doesn't clear the F4 code, then replace the sensor. The F4 will clear and return to normal operation.
F5	Heating return temperature sensor is short circuit or broken circuit, or disconnected.	The HIU 'heating optimisation' function is disabled as this sensor controls the heating return temperature .	Check that the sensor cable plug connection is good, and if OK then check the connection inside the controller. If this doesn't clear the F5 code, then replace the sensor. The F5 will clear and return to normal operation.
F7	Either the pressure in the heating system is too low or the pressure switch is faulty.	The HIU will not operate in Heating mode.	Check the system pressure on the gauge on the HIU. The pressure switch will cut out at 0.15 bar. Refill system to 1.2 bar. Resets normal operation after 30 seconds. If low pressure is not the issue, replace the pressure switch.
F8	The controller is recognising from the feedback from the electrical connection that the rotation of the pump is not what it is expected to be.	The HIU will not operate in Heating mode.	Check wiring connections to the pump. Check pump for red LED lights signifying a fault. Check PWM is not set as ON in parameter 24. Setting must be 00 as factory set.* Only consider replacing the pump head once everything else has been checked Check water quality which is usually the cause of a premature pump failure



The **Controller Programming Guide** is only for the use of the installer or commissioning engineer, and under no circumstances should be left with the user or home owner. Incorrect parameter programming may result in inefficient performance or error code diagnostics which prevent the HIU operating as required.

<p>A Fault code is not displayed but the following has occurred.</p> <ul style="list-style-type: none"> • No Room Heating • Radiators are COLD. • Under Floor Heating is installed Floor is COLD. 	<ul style="list-style-type: none"> • Check the ambient temperature. Is the reason that the room thermostat setting is too low to switch on the heating? • System low pressure. Has the safety valve discharged? Check system pressure and top up if necessary. • Air blockage in the radiators. • Check the Circulating Pump (see LED lights on the pump which can warn of a problem or a fault). Is the pump fully operational? • Is the controller set up correctly? See Installer settings. • Is the Room thermostat wired correctly? Is it working? • Check that the communal heating is supplying heat to the unit. • Check then that the isolation valves to the unit are open. • Is the Bypass Valve open on the valve above the HIU?
---	---

SECTION 11 - Fault and Error Codes / Fault finding guide

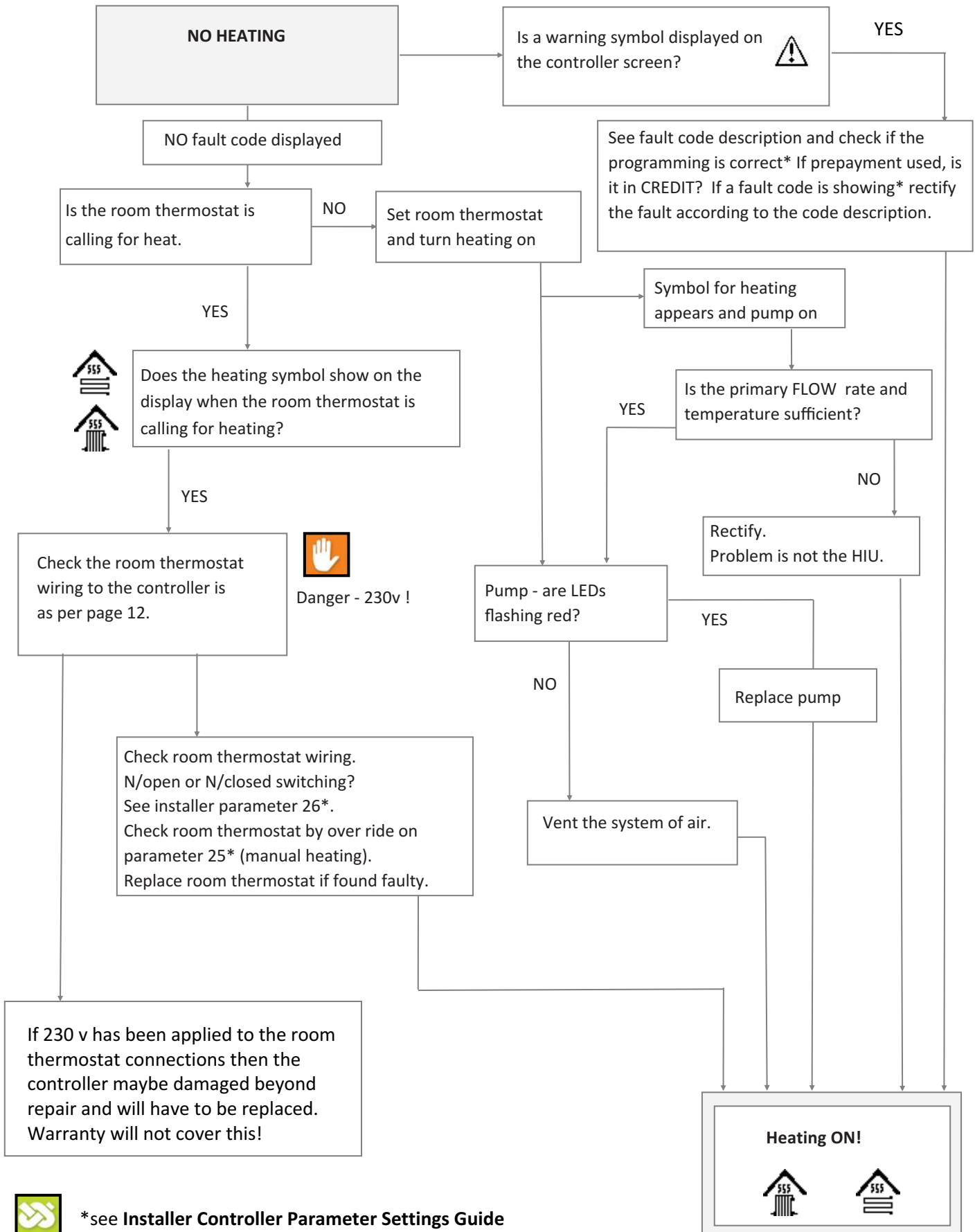
Diagnostics - Error code definitions.

When an error code is displayed, the controller is warning of unsuitable operating conditions that may be causing the HIU to operate inefficiently or possibly, not at all. If left in that state, these conditions could become a safety issue.

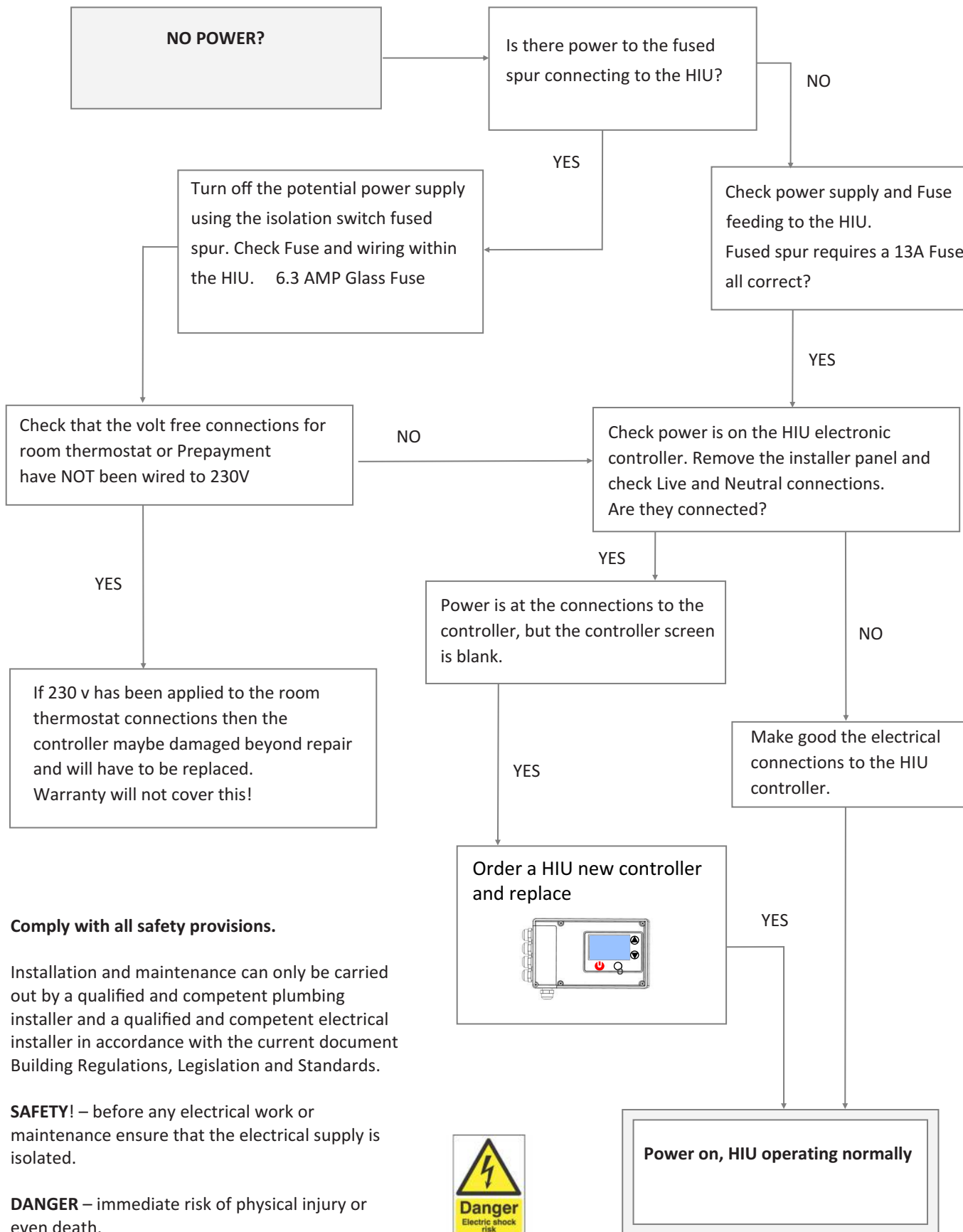
code	Cause	Effect	Remedy
E1	The measured primary temperature is lower than the set point temperature is for heating so the HIU will not be able to achieve the set temperature. This is after approximately 60 seconds of flow.	The function is re-enabled when the primary exceeds the setpoint temperature.	Check the set point in the controller, adjust if the set point is set higher than the design supply temperature. Check that the primary temperature probe is correctly connected to the primary pipe. When the primary temperature and set point are aligned, the error code E1 automatically disappears.
E2	In installations where Radiators are at very high temperatures, then this is a warning that the return temperature is higher than the maximum allowed in parameter 20.	As this is a safety function, the PICV closes until the sensor on the primary return sees a temperature drop of 10C below the parameter 20 set point for maximum.	Check parameter 20 is set correctly, if too low, reset this at 5C higher than secondary heating flow set temperature. Check the temperature probe is positioned correctly. Reset (turn power on and off) to recalibrate the PICV actuator.
E3	The controller is recognising and warning that the HIU performance is not as the algorithm predicts. The energy transfer is poor, and the HIU is not delivering heat as it should be.	Heat transfer is inefficient, heating capacity reduced and temperature control unstable.	If signs of blockage it could be the strainer is blocked or the PHE is partially blocked with lime scale. Check PICV fully open and check flow on the heat meter. Low flow value would prove that a blockage of some sort is the issue.
E5	Heating is not reaching the set point so is performing poorly or not at all.	Heating stops after 20 minutes and shows the E5 code. Resets after 30 seconds Or Error LEDs on the pump? Power ON and OFF at the mains switch, this allows the PICV to recalibrate, and in doing this will allow a small flow into the PHE, which then proves the PICV and Diverter not at fault.	Check the following possibilities. - Primary temperature is too low? - Is the set temperature on the controller higher than the incoming primary (network) temperature and temperature is impossible to reach? Rest set the temperature so it is 10C lower than the primary. - PICV blocked / strainer blocked? - Diverter in the wrong position?
E6	Temperature information from the heating temperature sensors is wrong or unusual.	Return temperature is too high with no apparent control being seen.	This error code is showing that either; 1.The heating temperature sensors have been wrongly positioned with the flow on the return and the return on the flow, change them to their correct position. 2.The installer has not connected the primary connections correctly, with the flow connected to the return connection. Check temperatures.
E7	The heating return temperature is too high and the HIU is warning the operator. Various causes may be considered, example all TRVs may be closed with only 1 x small radiator open, but the room thermostat is still calling for heat.	Various causes may be considered, example all TRVs may be closed with only 1 x small radiator open, but the room thermostat is still calling for heat. The return temperature is much too high, so the HIU ceases .The effect is that the controller shuts down the pump before re-starting again after 10 minutes.	The E7 will automatically reset itself after 10 minutes. Attention should be paid to the set up of the heating radiators and controls. Is the room thermostat positioned correctly to turn off before all the TRVs shut down? Is the radiator circuit balanced correctly at the radiator valves? E7 may occur under certain test conditions where unnatural operating conditions are forced.
E8	The PICV actuator cable has been disconnected from the controller or there's a failure on the actuator itself. The E8 code appears on the screen. Heating is no longer available.	To avoid over heating risk , when the HIU detects a heating flow temperature 10°C above setpoint for more than the programmed time interval (90 seconds factory set, adjustable up to 210 seconds) the HIU will shut down and show an E8 error code. Pump will switch off.	Allow the unit to cool down first! Check PICV actuator connection, and that the valve stem pin is not jammed (free if possible). Power OFF then ON again, check for movement in the actuator stem. Replace the actuator if found to be seized. Replace the valve cartridge if found to be seized.



* Have the 'Controller Programming Guide at hand!



*see Installer Controller Parameter Settings Guide



Comply with all safety provisions.

Installation and maintenance can only be carried out by a qualified and competent plumbing installer and a qualified and competent electrical installer in accordance with the current document Building Regulations, Legislation and Standards.

SAFETY! – before any electrical work or maintenance ensure that the electrical supply is isolated.

DANGER – immediate risk of physical injury or even death.



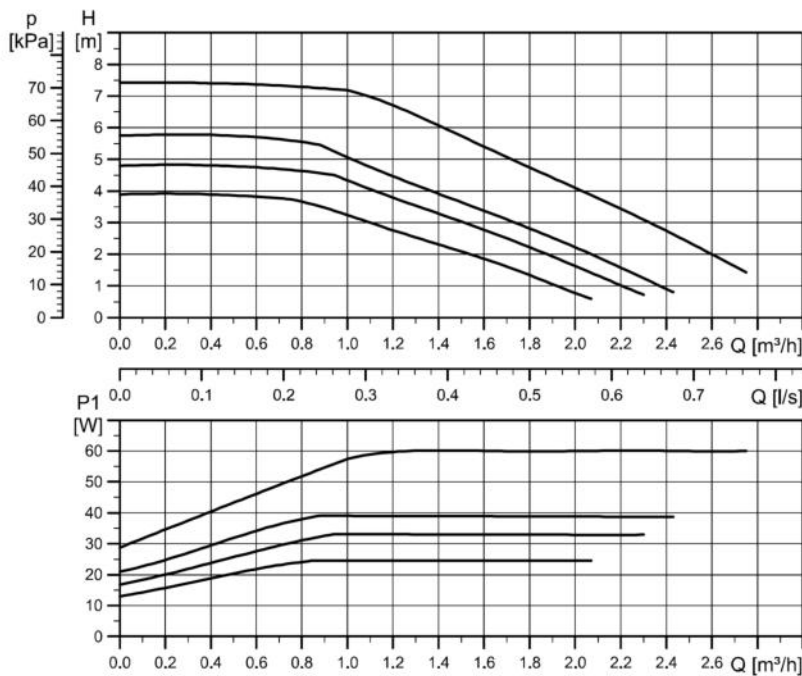


Pump operating and Fault LEDs

ALARM STATUS		FAULT		OPERATING PANEL		CONTROL MODE	
●	●	●	●	0	● ● ● ● ● ● ● ●	PWM PROFILE A 1 - SIGNAL OFF	☑
●	●	●	●	1	● ● ● ● ● ● ● ●	PWM PROFILE A 1 - PWM SIGNAL ON	☑
●	●	●	●	2	● ● ● ● ● ● ● ●	PWM PROFILE A 2 - SIGNAL OFF	☑
●	●	●	●		● ● ● ● ● ● ● ●	PWM PROFILE A 2 - PWM SIGNAL ON	☑
●	●	●	●		● ● ● ● ● ● ● ●	PWM PROFILE A 3 - SIGNAL OFF	☑
●	●	●	●		● ● ● ● ● ● ● ●	PWM PROFILE A 3 - PWM SIGNAL ON	☑

FLASH INDICATION	
●	1 FLASH PER SECOND
●	8 FLASHES PER SECOND

UPM3(K) FLEX AS 15-75 CIAO2 (GFNJB)



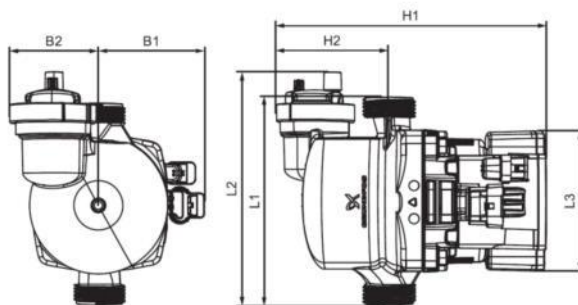
High efficiency

Setting	Max. head _{nom}
Curve 1	4 m
Curve 2	5 m
Curve 3	6 m
Curve 4	7.5 m

Setting	Max. P _{1 nom}
Curve 1	25 W
Curve 2	33 W
Curve 3	39 W
Curve 4	60 W

EEL ≤ 0.20 Part 3
 P_{L,avg} ≤ 28 W

Performance curve



Dimensions [mm]

Pump type	L1	L2	L3	B1	B2	H1	H2
UPM3(K) FLEX AS 15-75 CIAO2	130	148	90	72	55	173	77

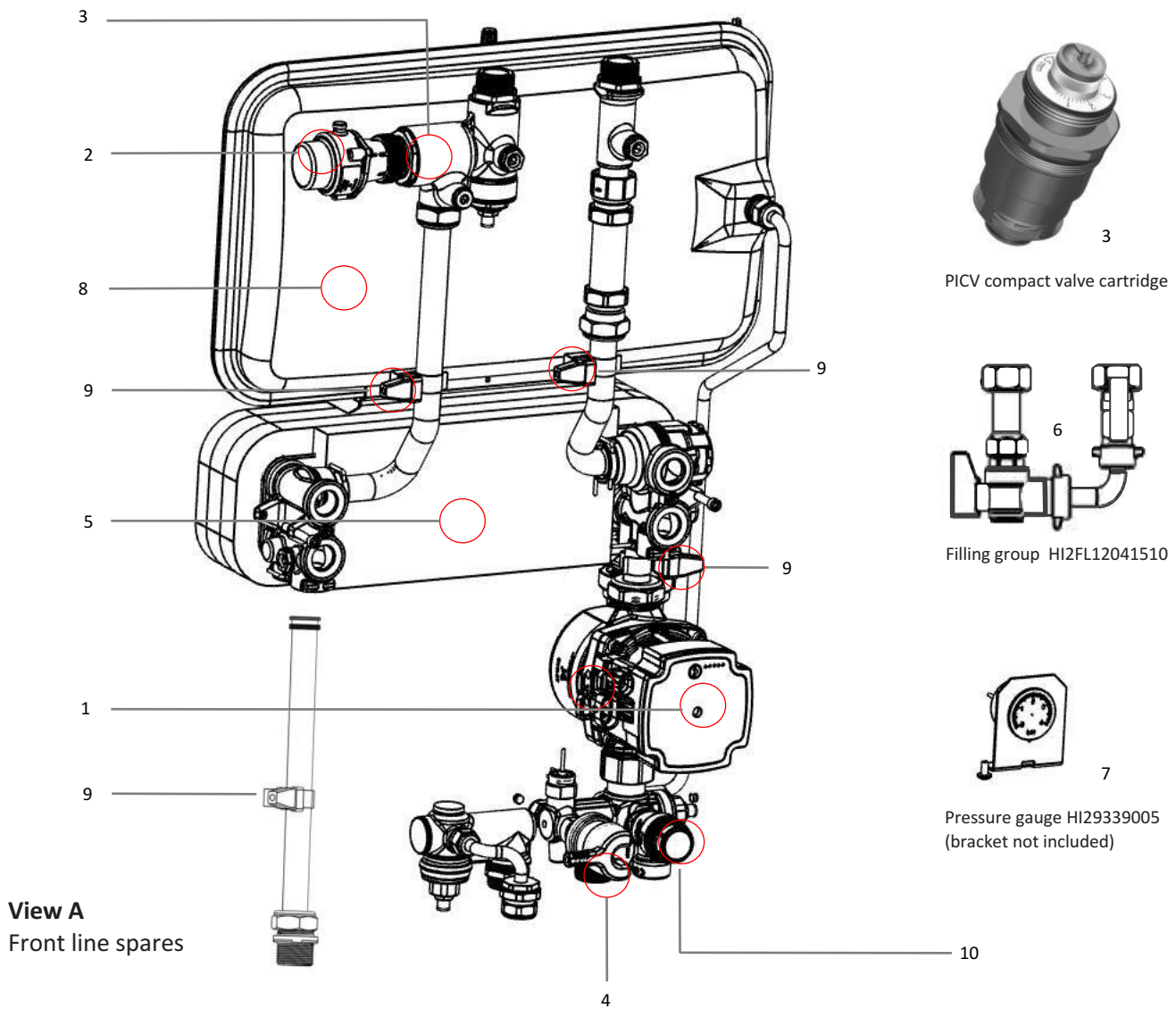
General

Control method	Electronic PID controller with fast acting stepper / PICV.
Plate Heat Exchanger	Stainless steel—insulated Wras approved
Expansion Vessel	8 Ltr
Casing	Fully insulated steel backplate and cover
Dimensions	585mm H x 465mm W x 265mm D
Heat meter options	Zenner C5 MID compliant 1.5 qp M3/hr 110mm
Filters 1) Primary 2) Htg	800 micron
Internal pipework	copper
Isolation Valves with flat face union connection	NOT included, order separately from ACCESSORIES

Technical

DH maximum pressure	16 bar
DH maximum temperature	85° C
DH maximum pressure differential.	4 bar
HTG maximum working pressure	2.5 bar
HTG safety valve setting	3 bar
HTG maximum temperature	75° C
HTG - radiators temperature adjustment	30°C to 75°C
UFH - underfloor heating temperature adjustment	20°C to 50°C
HTG maximum output (85C at 1330 ltrs/hr)	29kW
HTG minimum output	1kW
Pump - Grundfos UPM3 (K) FLEX AS 15-75 CIAO2 (GFNJB)	
Heating pump nominal head capacity	7.5 kPa
Electrical supply	1 ph 50Hz 230v

SECTION 14 - Spares

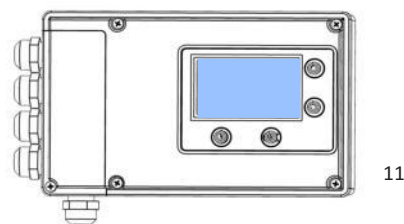


View A
Front line spares

Ref	Front line spares description	Part Code
1	Grundfos UPM3 FLEX AS Pump - Head and Block	HI29337005
2	PICV stepper ACTUATOR	HI29330005
3	PICV compact valve cartridge	HI29329005
4	Pressure switch 0.7bar	HI29308005
5	Heating plate heat exchanger x 18	HI28559005
6	Filling group	HI2FL12041510
7	Pressure gauge	HI29339005
8	Zilmet expansion vessel	HI29340005
9	NTC temperature sensor	HI29531005
10	3 Bar fast connection safety relief valve	HI23520040

Spares (not pictured)	Part Code
Flow meter cable	HI29532045
Pressure switch cable	HI29532055
Primary flow temperature sensor cable RED	HI29532065
Primary return temperature sensor cable BLUE	HI29532075
Heating flow temperature sensor cable WHITE	HI29532085
Heating return temperature sensor cable GREY	HI29532095
DHW temperature sensor cable ORANGE	HI29532105
Casing earth wire	HI29532115
Cable gland	HI29287005

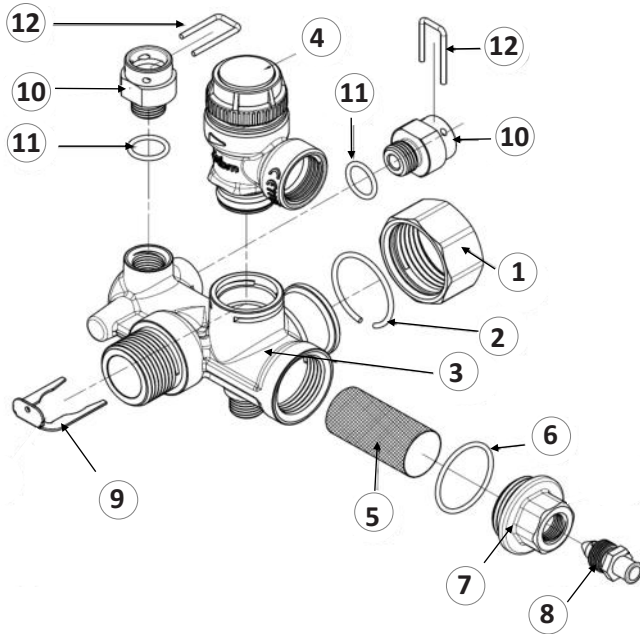
	Controller and Cables Spares	Part Code
11	HIUC PID Controller	HI29295-005
*	HIUC PID Controller printed circuit board with casing base	PFAP-1462-00
*	HIUC PID Controller front cover with touch screen	PFFG0652-00
*	HIUC Controller cable gland	CMPD-4066-00
*	Pump power cable	HI29532-025
*	Pump PWM cable	HI29532-035
*	Power supply cable	HI29532-125



HIUC PID Controller HI29295-005

SECTION 14 - Spares

View B



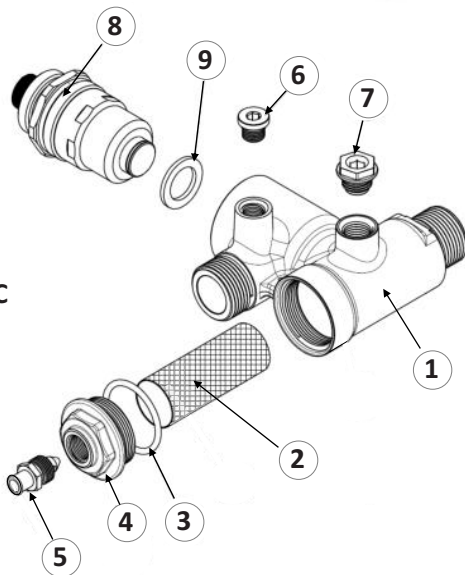
View	Ref	Heating Group	Part Code	Qty
C		Heating Group - assembled	HI29332003	1
C	1	HEATING MANIFOLD BODY	HI29332004	*
C	2	ELASTIC RING Ø28,2X2	HI24580005	*
C	3	1" NUT	HI27494014	*
C	4	3BAR FAST CONNECTION SAFETY RELIEF VALVE	HI23520040	1
C	5	L=41 STRAINER 800 MICRON ***	HI29299005	10
C	6	O-RING Ø26,70X1,78	HI25022045	***
C	7	3/4" STRAINER CAP	HI29298004	***
C	8	M12X1 DRAIN VALVE	HI29300004	***
C	9	Ø18 FORK CLIP	HI234400002	**
C	10	1/4" FAST CONNECTION ADAPTER	HI29302004	*
C	11	O-RING Ø10,82X1,78	HI25009045	*
C	12	ADAPTER CLIP	HI29324005	**

*Part of fully assembled group of components **HI29332003**

Included with **Service Kit HI238940000

***Purchase as **Service KIT2**

View C



View	Ref	PICV and Primary Strainer Group	Part Code	Qty
E		PICV and Primary Strainer Group - assembled	HI29320003	1
E	1	PICV and strainer manifold BODY only	HI29320004	*
E	2	L=60 Strainer mesh 800 MICRON***	HI29321005	10
E	4	1" Strainer cap	HI29322004	***
E	3	O-RING Ø29,82X2,62	HI25024045	***
E	5	M12X1 Drain valve	HI29300004	***
E	8	PICV compact OEM cartridge	HI29329005	1
E	7	1/4" test / flush port plug	HI2602013	*
E	6	M10 Heat meter temperature probe plug	HI225560002	*
E	9	PICV Cartridge flat sealing gasket	HI27113005	*

*Part of fully assembled group of components **HI29320003**

Included with **Service Kit HI238940000

***Purchase as **Service KIT3**

Contents of Service KIT1	
Ø18 Fork clip	1
Clip	2
1/4" manual air vent	1
Spacer ring	2
O-Ring Ø20 x 4	8
1/4" manual air vent	1
Ø2 x 21 U CLIP	6
Fibre washer Ø30 x Ø21 x 2	2
FASIT GASKET Ø24 x Ø16 x 2	5
FASIT GASKET Ø18,5 x Ø11 x 2	3
FASIT GASKET Ø14,6 x Ø9 x 2	1
FASIT GASKET Ø11 x Ø6.2 x 2	3
O-RING Ø17,86X2,62	6

Contents of Service KIT2	
STRAINER 800 MICRON x 41MM	1
O-RING - STRAINER- DIA 26MM	1
3/4" CAP - STRAINER	1
DRAIN VALVE	1

Contents of Service KIT3	
STRAINER 800 MICRON x 60MM	1
O-RING DIA 26MM	1
1" CAP - STRAINER	1
DRAIN VALVE	1

Contents of FIXINGS KIT	
SCREW DIN 912 M5 X 40MM	6
SCREW DIN 912 M5 X 110MM	6
SCREW DIN 912 M5 X 16MM	6
SELF TAPPING SCREW 4.2 X 13	20

Service Kits Part Codes	
Service Kit 1 seals, clips, o rings and air vents.	HI238940000
Strainer Service Kit 2 (secondary strainers)	7801115
Strainer Service Kit 3 (Primary strainer)	7801117
Fixings Kit (assorted screws)	7801119

SECTION 14 - Warranty

**Extended Product Warranty**

Intatec Limited (company number 04359938) (we, us, our) offers any business customer which has purchased directly from us (Buyer/you) any of those products which are part of our Hiper HIU range of products described in paragraph 2 of Section A of this extended warranty document (Hiper HIU), the benefit of an extended warranty in respect of manufacturing defects, subject to the following conditions and exclusions.

Section A: Our Warranty

1. Intatec warrants to the Buyer that the Hiper HIU shall be free from manufacturing defects under normal and proper use (Warranty) for a period of 3 years following the Warranty Commencement Date (as defined in paragraph 5 of this Section A) (Warranty Period).
2. The Warranty only applies to the following products which are part of our Hiper HIU range:
 - Twin Plate HIU;
 - Single Plate HIU;
 - Cooling Interface Unit;
 - HIU with HW Cylinder arrangement but not including the cylinder.
3. Subject always to the warranty exclusions set out in Section B of this extended warranty document, during the Warranty Period we will repair or replace at our discretion, the Hiper HIU or any defective part thereof, which is proven to be a component failure caused by manufacturing defects.
4. The Hiper HIU must be correctly installed and commissioned by a competent and qualified installer and in accordance with the installation manual to which this extended warranty document is enclosed (which includes the requirement for you to issue to us (or procure the issue of), those commissioning documents requested by us from time to time such as the 'Benchmark' commissioning checklist), otherwise the Warranty may not apply. Proof of installation and commissioning in accordance with this paragraph 4 may be required to validate the Warranty.
5. The Warranty must be registered by you (or on your behalf) via the internet at https://www.intatec.co.uk/register_hiu_product or by post to Intatec Limited, Airfield Industrial Estate, Hixon ST18 0PF, no later than 30 days following the Hiper HIU being installed at the relevant property, with the date of installation being the 'Warranty Commencement Date' for the purposes of the Warranty. In the event that you fail to register the Warranty in accordance with this paragraph 5, then the Warranty Commencement Date shall be deemed to be the date that we dispatch the Hiper HIU to you.
6. The Warranty only relates to the Hiper HIU and integrated controls and does not extend to any connected system or accessories including without limitation any external pumps, external wiring, filters and valves.
7. The Warranty only extends to the Buyer and the Buyer shall not assign or transfer its rights or obligations under the Warranty without our prior written consent. However, nothing in this paragraph shall prevent the Buyer's customers and/or the end-users of the Hiper HIU from contacting us in accordance with paragraph 1 of Section C.
8. The Warranty is not insurance backed.

Section B: Warranty Exclusions and Our Liability

1. The Warranty shall not apply and we shall not be liable where:
 - a) any alterations or adjustments have been made to the Hiper HIU (including without limitation alterations or amendments to its design and/or construction);
 - b) further use is made of the Hiper HIU after we have been notified of an alleged defect;
 - c) repairs have been attempted by anyone other than us or our authorised representatives; the Hiper HIU has been moved from its original place of installation;
 - d) defects are caused by:
 - i. wilful damage, neglect, negligence or abnormal storage or working conditions;
 - ii. accidental or malicious damage (e.g. vandalism) or events outside of our control (e.g. fire, flood or explosion);
 - iii. theft or attempted theft;
 - iv. fair wear and tear;
 - v. a failure to adhere to installation, usage, maintenance and/or servicing instructions provided (orally or in writing) by us from time to time, including, without limitation, the installation manual issued to you and available via our [website at www.intatec.co.uk](http://www.intatec.co.uk);
 - vi. incorrect or improper installation, fitting or use of the Hiper HIU (including without limitation where damage is caused to the controller of the Hiper HIU by connecting voltage to connections that are in the installation manual advised as being "Volt Free");
 - vii. use of non-genuine spare parts (which have not been approved by us in advance in writing) in the installation, maintenance, service or repair of the Hiper HIU;
 - viii. any problems or defects caused by the supply of services (such as electricity, gas or water) to the property where the Hiper HIU is installed;
 - ix. any fault or failure in the systems to which the Hiper HIU is connected (e.g. pumps and boilers);
 - x. any damage caused by the condition of water which supplies the systems (including without limitation hard water scale deposits or sludge resulting from corrosion).

2. The Warranty only applies to any Hiper HIU bought in and installed and used in the United Kingdom and Republic of Ireland.

3. Except as provided in this extended warranty document and our Standard Terms and Conditions of Sale (which can be found online at www.intatec.co.uk), which form the basis of the contract between you and us, we shall have no liability to you in respect of any defect in the Hiper HIU supplied.

4. The terms implied by sections 13 to 15 of the Sale of Goods Act 1979 are, to the fullest extent permitted by law, hereby excluded.

5. We shall in no circumstances be liable to you in contract, tort (including negligence), breach of statutory duty, or otherwise for any of the following losses arising under or in connection with the Warranty:

- a) any indirect, consequential or special losses;
- b) any loss of profit (whether direct, indirect or consequential); and
- c) any loss of sales or business (whether direct, indirect or consequential).

6. Nothing in the Warranty excludes or limits any liability which cannot legally be limited including liability for death or personal injury caused by negligence or fraud or fraudulent misrepresentation.

7. The Warranty shall apply to any repaired or replaced Hiper HIU supplied to you by us. For the avoidance of doubt, any repair or replacement carried out under the terms of the Warranty does not extend the Warranty beyond the Warranty Period.

Section C: How to Claim

1. In the unlikely event that you encounter a problem with the Hiper HIU, you or your customer and/or end-user should contact us promptly in writing (whether by post or email) or by telephone, using the contact details set out below in this Section and in any event within 10 days of the defect becoming evident. Any claim made under the terms of the Warranty must be made within the Warranty Period.

2. Once you or your customer and/or end-user have contacted us in accordance with paragraph 1 above to report a problem, we will contact you or your customer or end-user (as the case may be) by telephone in the first instance so that we can ask a series of initial questions to get a better understanding of the nature of the problem and provide some initial guidance. If we are unable to resolve the problem by telephone remotely, we will arrange, at a mutually agreed time, for an engineer to visit the site where the Hiper HIU is installed to examine the Hiper HIU.

3. Please note, health and safety is of paramount importance to us and if our engineers cannot gain safe access to the Hiper HIU or our engineer cannot gain access to the property where the Hiper HIU is located, then an abortive charge equal to our 'initial call out charge' (as referred to in paragraph 5 of this Section C) shall apply and shall be payable by you on demand.

4. After examination by our engineer, we will arrange to repair or replace any part(s) of the Hiper HIU, which are in our opinion a component failure caused by manufacturing defects, free of charge.

Important note: We will require you to provide details of the serial number of the Hiper HIU in order for us to be able to consider any claim, so please have such details readily available upon request.

Our contact details:

Email: sales@intatec.co.uk
 Telephone: 01889 272180
 By Post:
 F.A.O Technical Department
 Airfield Industrial Estate
 Hixon
 Stafford
 Staffordshire
 ST18 0PF

5. If, after examination by us, we are of the opinion that the defect(s) is/are not covered by the terms of the Warranty, additional call out charges (including without limitation an initial call out charge) shall apply. Details of such charges (and our payment terms) are displayed on our website at www.intatec.co.uk.

Section D: General

1. In the event that we receive any personal information from you, we will only use such personal information to administer the Warranty. We may share such personal information with our engineers in order to conduct any repairs or replacements covered by the Warranty. We will process such personal information in accordance with our privacy policy (a copy of which is available on request or can otherwise be found at https://www.intatec.co.uk/privacy_policy).

2. This extended warranty document does not give rise to any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of the Warranty.

3. If the terms and conditions set out in this extended warranty document have not been complied with in full, then we reserve the right to declare the Warranty as null and void.

4. Any words following the terms including, include, in particular, for example or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

5. If any exclusion or limitation expressly set out in this extended warranty document is or becomes invalid, illegal or unenforceable, it shall be deemed deleted, but that shall not affect the validity and enforceability of the rest of this extended warranty document.

6. The terms of this extended warranty document are subject to the law of England and Wales and the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this extended warranty document.

Hiper II V1 Heating only single plate HIU

Intatec Ltd

Airfield Industrial Estate
Hixon
Staffordshire
ST18 0PF

Tel : **01889 272 180**

Fax : **01889 272 181**

Email : **sales@intatec.co.uk**

Web : **www.intatec.co.uk**