



# The SLIM Extra HIU

Installation Instructions SE2

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## About Thermal Integration

### About Us

We design and manufacture pre-fabricated Hot Water and Central Heating Cylinders, Thermal Stores, Buffer Tanks and Heat Interface Units to suit almost any domestic or commercial application. Our range of products is the end result of over 20 years of continuous development and improvement in heating technology. We hold to the philosophy that all customers deserve our best level of service for the life of the product, as well as complete honesty throughout the product selection process. We hold a significant number of patents in the fields of water storage, heat exchange, and the networking of communal heating systems, and continue to push the boundaries.

As well as the most comprehensive range of hot water systems in the UK, our headquarters in Sudbury also offers the UK's largest renewables training centre, including the first HETAS training and test centre, with working wood, pellet and log biomass rigs, as well as solar. There is also an extensive district heating demonstration and test facility attached to the factory, with the factory building services running from a twin pellet biomass boiler installation, buffer storage, and HIUs to provide services. The entire facility is controlled using our in-house [HIU Control Systems](#) that allow any of our products to be network connected, with online monitoring and dashboard facilities.

For a complete history of the company please read [History of Thermal Integration Limited](#) on Heatweb Wiki.

### Product Range

- Heat Interface Units
- Standard Cylinders
- Shortened Cylinders
- Buffer Cylinders
- Combination Cylinders
- Mains Pressure Thermal Stores
- Mains Hot Water Conversion Kits
- Prefabricated Systems
- Plate Heat Exchangers
- Boiler Conversion Kits
- Control Systems

### Knowledge Base

To make the dissemination of technical material as simple as possible, we publish all our documentation through an online document storage system, the [Heatweb Wiki](#). Links to further information may be found throughout documents.

### Useful Contacts

- Commercial Sales and Operations: 0845 2411441
- Specflue Sales: 0333 9997974

### Web Sites

- <http://www.heatweb.co.uk> Company Website
- <http://www.systemdesigner.co.uk> System Designer
- <http://wiki.heatweb.com/wiki> Heatweb Wiki
- <http://www.heatweb.info> Monitoring software and online APIs

## Explanation of symbols and abbreviations

### Symbols



CAUTION, general safety remark



CAUTION, risk of electrical shock



CAUTION, hot surfaces, risk of burns



Important note



Requirement of 230 Volt Alternating Current



Dispose component



Recycle component if possible



Wrench, manual tool



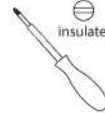
Drill, motorized tool



Manual operation, no tools needed



Phillips screwdriver



Insulated flathead screwdriver

### Abbreviations

DH	District Heating	PE	Protective Earth
CH	Central Heating	°C	Temperature in degrees Celsius
DHW	Domestic Hot Water	kPa	Pressure Kilopascal
DCW	Domestic Cold Water	kg	Weight in kilograms
VAC	Volts Alternating Current	mm	Distance in millimetres
VDC	Volts Direct Current	PN	Pressure class in Bar
A	Current in Amps	"	Thread size in inch (ISO 228/1)
N	230VAC Neutral	HIU	Heat Interface Unit
L	230VAC Live (phase)	ABV	Automatic Bypass Valve

## Introduction

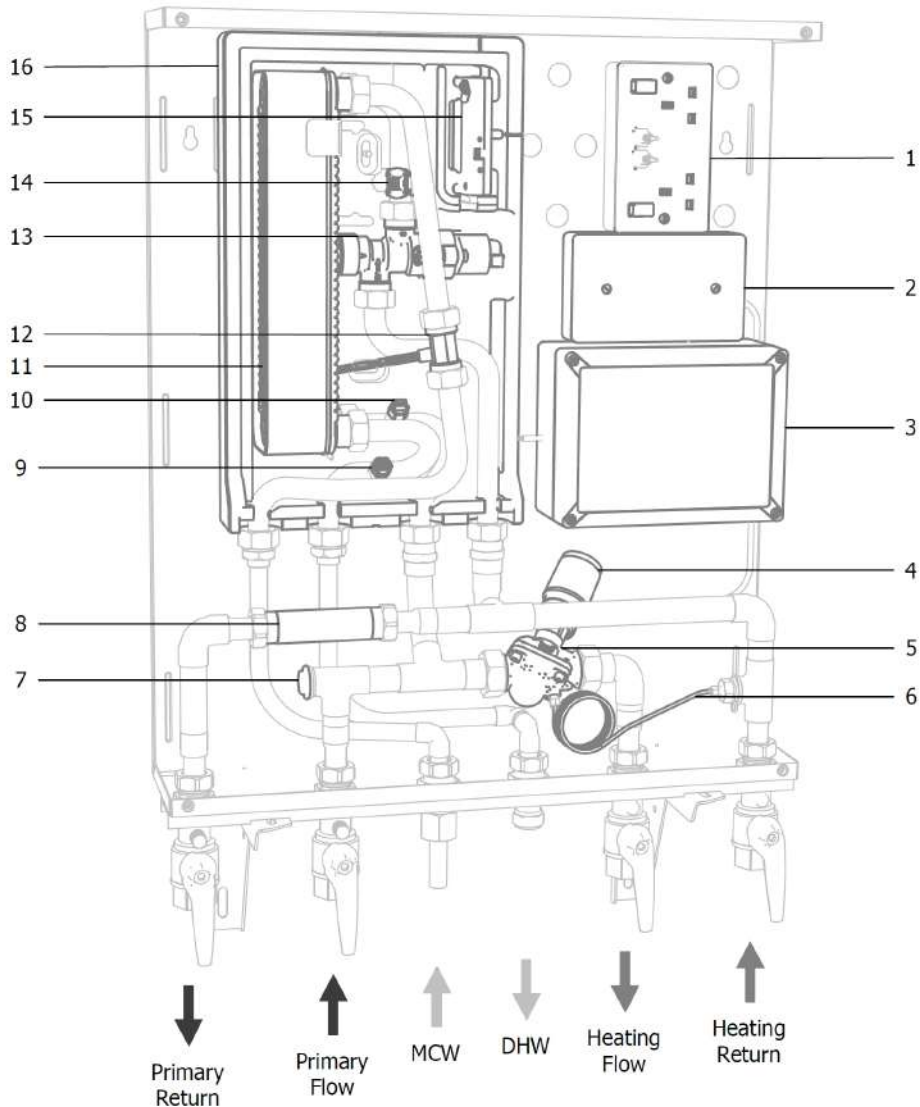
The SLIM Extra combines the power and control of the SLIM HIU, for the DHW circuit, with the addition of direct heating flow and return connections. The central heating system is directly connected to the district heating main, therefore expansion of the heating circuit is provided by the heat network and the unit does not require sealed central heating components or discharge pipework.

The outer casing is an attractive Steel casing, containing the SLIM HIU which itself is compartmentalised in an EPP moulded casing and all pipes are fully insulated. Within the casing are all the components required for a typical property connected to a district network, these include temperature sensors and a pressure independent control valve for extremely accurate DHW control. A differential pressure control valve is fitted to the heating circuit with a motorised head for On/O control via a room thermostat. This also provides a level of flow limitation to reduce the flow to a maximum rate of 1.5 l/min. The Heat Meter display is routed out of the casing for mounting locally to the HIU on the wall.

As an option the SLIM Extra can be fitted with our Node-HIU server, 4 relay channels (heating, prepay, plus 2 spare), and full flow protection with alarming. The Node-HIU server provides properties with a standard platform that can operate indefinitely, without contracts, and provides all the necessary data storage and links to services, such as a User interface to control hot water and central heating locally or over the internet, from a mobile phone or computer, System monitoring for reporting on errors or poor efficiency, Remote diagnostics and commissioning and Energy management and load balancing.

The SLIM Extra is supplied with 2 options for the valve connections. Option 1 has all isolation valves mounted directly onto the bottom of the HIU casing, which is screwed directly to the wall. Option 2 has all isolation valves connected to our standard pre-plumbing jig, for mounting to the wall and plumbing to in advance of the HIU being fitted. The HIU may then be fitted to the pre-plumbing jig at a later date. This option also has the added benefit of spacing the HIU off the wall, so that pipes may be run up the rear of the casing.

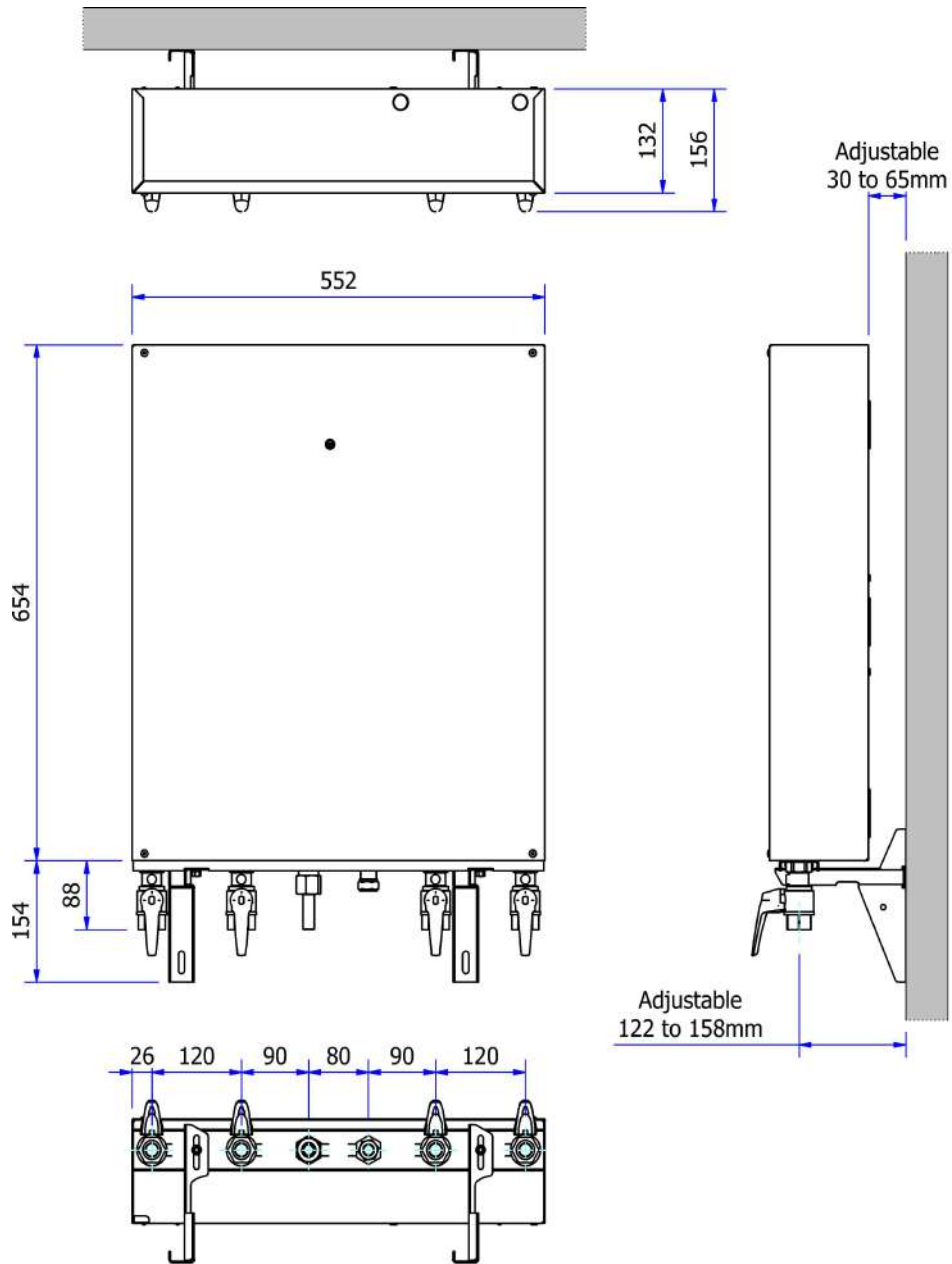
## Overview of Components and Connections



- 1 Mains Power Socket
- 2 Terminal Box
- 3 NODE HIU Server
- 4 Heating On/Off Motorised head
- 5 Heating On/Off DPCV
- 6 DPCV Capillary
- 7 Heat Meter Flow Sensor Port

- 8 Heat Meter Spool Piece
- 9 Domestic Hot Water Temperature Sensor
- 10 Primary Flow Temperature Sensor
- 11 Plate Heat Exchanger
- 12 Flow Sensor
- 13 Hot Water Control Valve
- 14 DHW primary return temperature sensor
- 15 HIU Controller 24V
- 16 SLIM HIU

## Dimensions



## Technical Data

DESCRIPTION	DATA
Nominal primary supply temperature	80C
Maximum primary supply temperature	90C
Minimum primary supply temperature	55C *
Nominal DHW supply temperature	55C
DHW Set Range	45C to 60C
Primary connections	Female / 18mm
Mains & DHW connections	15mm Compression
Central heating connections	Female / 18mm
Domestic Hot water heat exchanger (DHW)	E8AS24
Maximum primary differential pressure	250kPa
Minimum primary differential pressure	50kPa **
Pressure class DH circuit	PN16
Pressure class CH circuit	PN16
Pressure class DHW circuit	PN10
CH Maximum working pressure	2.5 Bar
Casing width	552mm
Casing height	654mm
Casing depth (Min depth from wall)	132mm (162mm)
Casing Material	EPP Expanded Polypropylene / Painted Steel
Maximum Heat Losses	<50W (1.2 kWh/day)
Typical Heat Losses (DHW Only, Keep Warm)	10W
Weight (basic version)	<20kg ***
Electrical supply info	230V 50Hz
Fuse ratings	3 Amp
Sensor DHW	NTC 10kohm @ 25C
Keep Warm Modes	Economy / Comfort
Max Return Temperature during Keep Warm Mode	DHW Setpoint -2C

\* Minimum required DH supply temperature is DHW setpoint + 5C with a minimum of 55C.

\*\* Depends on requested DHW output and available DH supply temperature.

\*\*\* Unit weight may vary depending on the optional components built into the unit

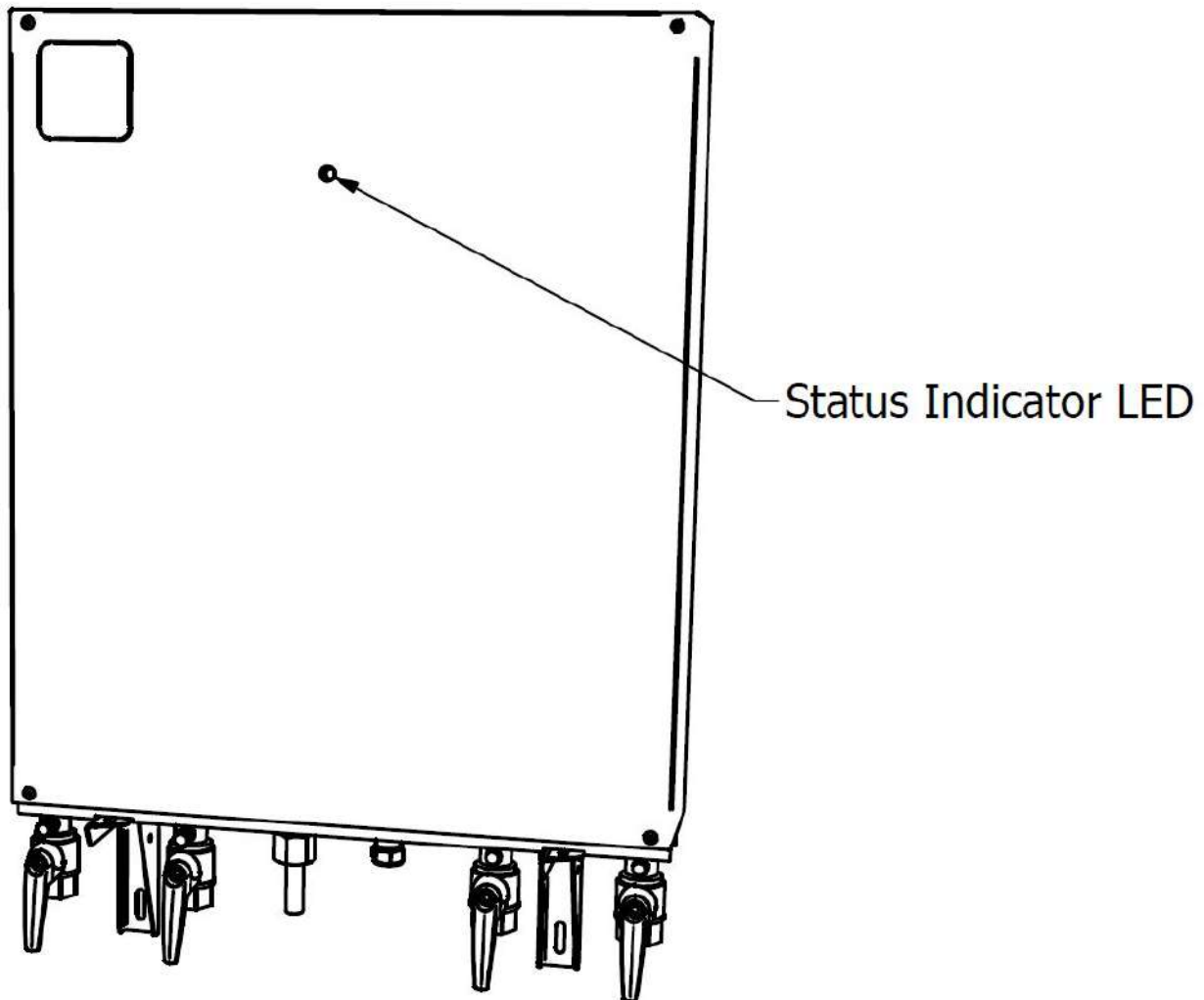


## Application

The SLIM Extra HIU is used to provide hot water and central heating in properties connected to a district heating system using a centralised boiler. Please keep the following conditions in mind during installation:

- The unit must be installed in a frost free area.
- The unit must not be exposed to direct sunlight.
- Ambient temperature should be between +5C and +40C.
- Humidity should be between 10% and 85%.
- The unit must be connected to a fused double pole isolator.
- The unit uses 230 VAC. Use caution when handling. Contact may lead to shock, burns or electrocution.
- Components in the unit and connected to the unit can reach high temperatures. Contact may lead to burns.

### Status indicator LED



- Green blinking (slow): Standby condition
- Blue blinking: Domestic Hot Water Mode / Tap draw-off
- Red blinking: Error
- White continuous: Service mode (installer only)
- No LED: HIU is switched off

## 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](http://www.thermalintegration.co.uk). (Tel: 0845 2411441)

**FAILURE TO INSTALL APPLIANCES CORRECTLY COULD LEAD TO PROSECUTION.**

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.

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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 

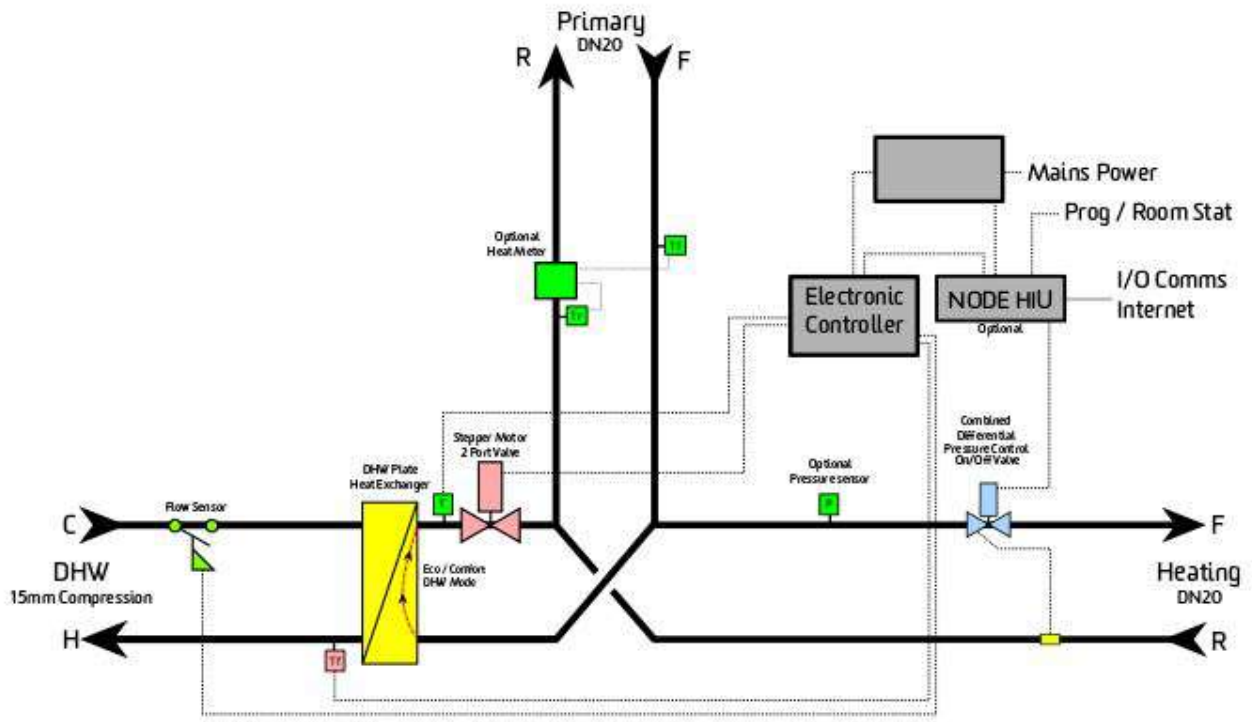
Any additional mains cable should comply fully with the current I.E.E. wiring regulations. It must have a minimum section of 0.75mm<sup>2</sup> and be capable of withstanding a minimum of 85C.

### Power Supply

The SLIM Extra HIU is equipped with a wiring centre to accept incoming mains power, the central heating on/off signal and the MBus communication cable. The smaller SLIM HIU within is fitted with a transformer plug that converts the 230 VAC power supply to 24 VDC.

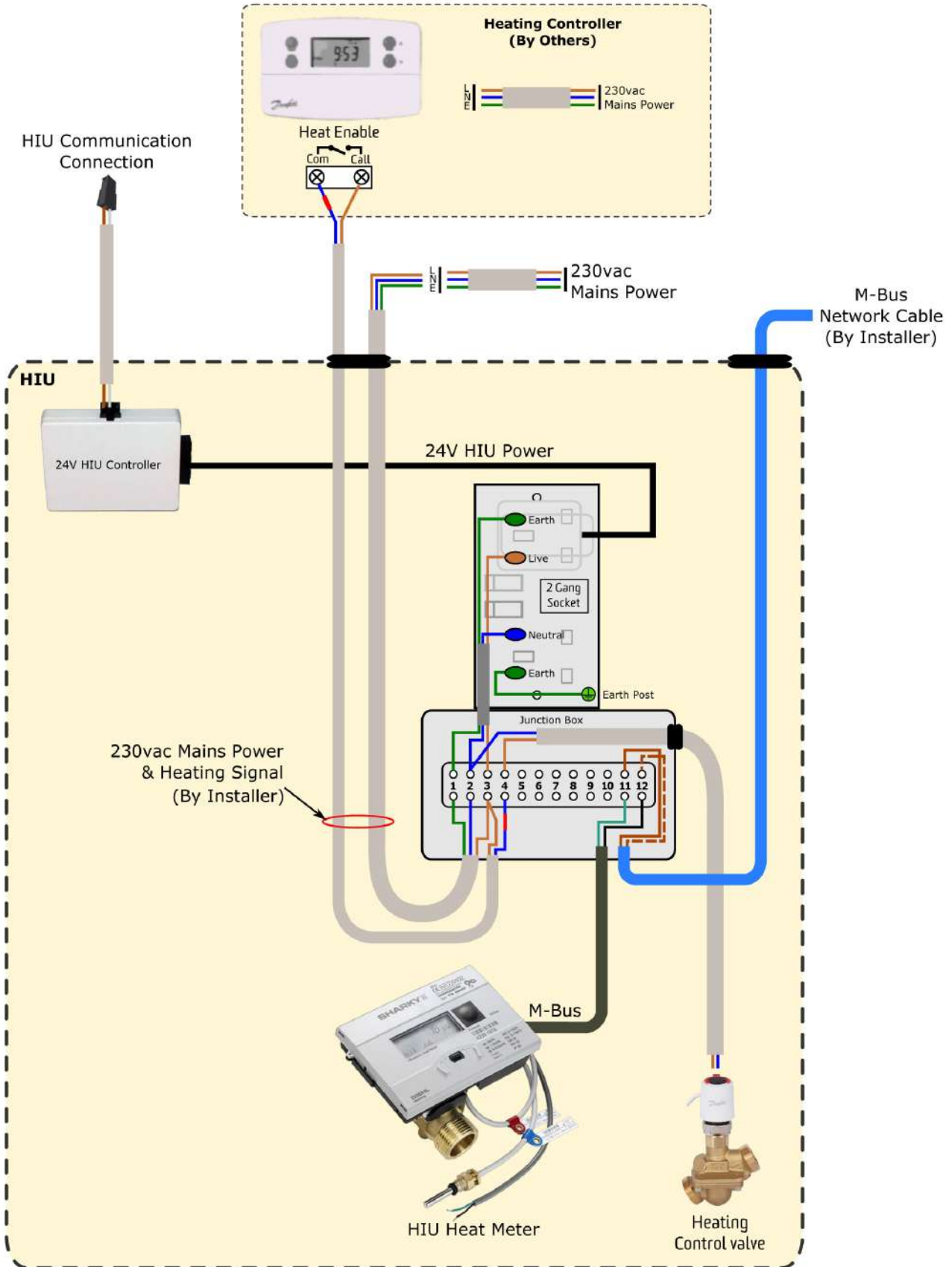
**CAUTION: ISOLATE THE MAINS SUPPLIES BEFORE STARTING ANY WORK AND OBSERVE ALL RELEVANT SAFETY PRECAUTIONS.**

## Schematic Layout



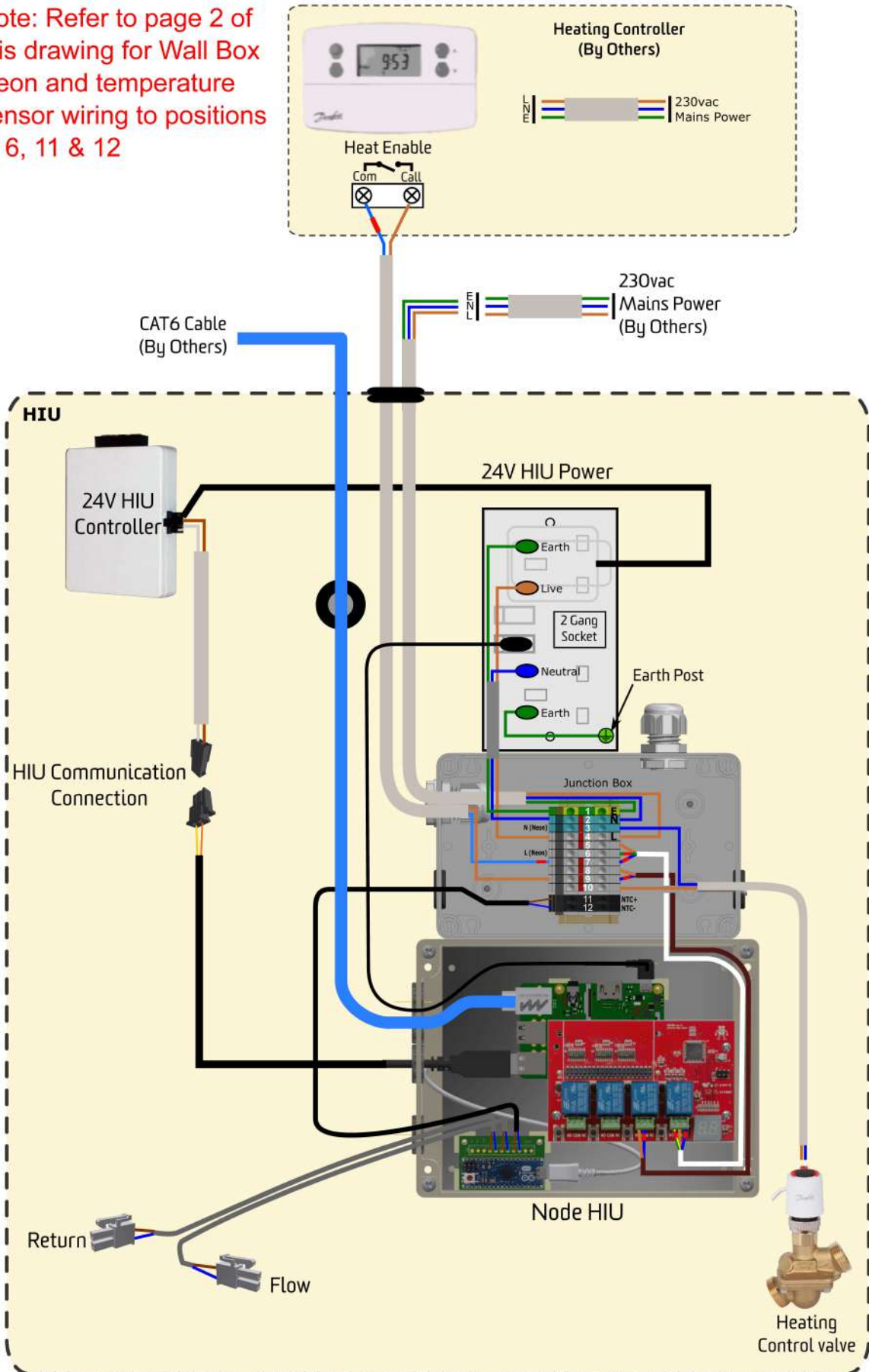
# Wiring Diagrams

## Wiring Diagram - Basic



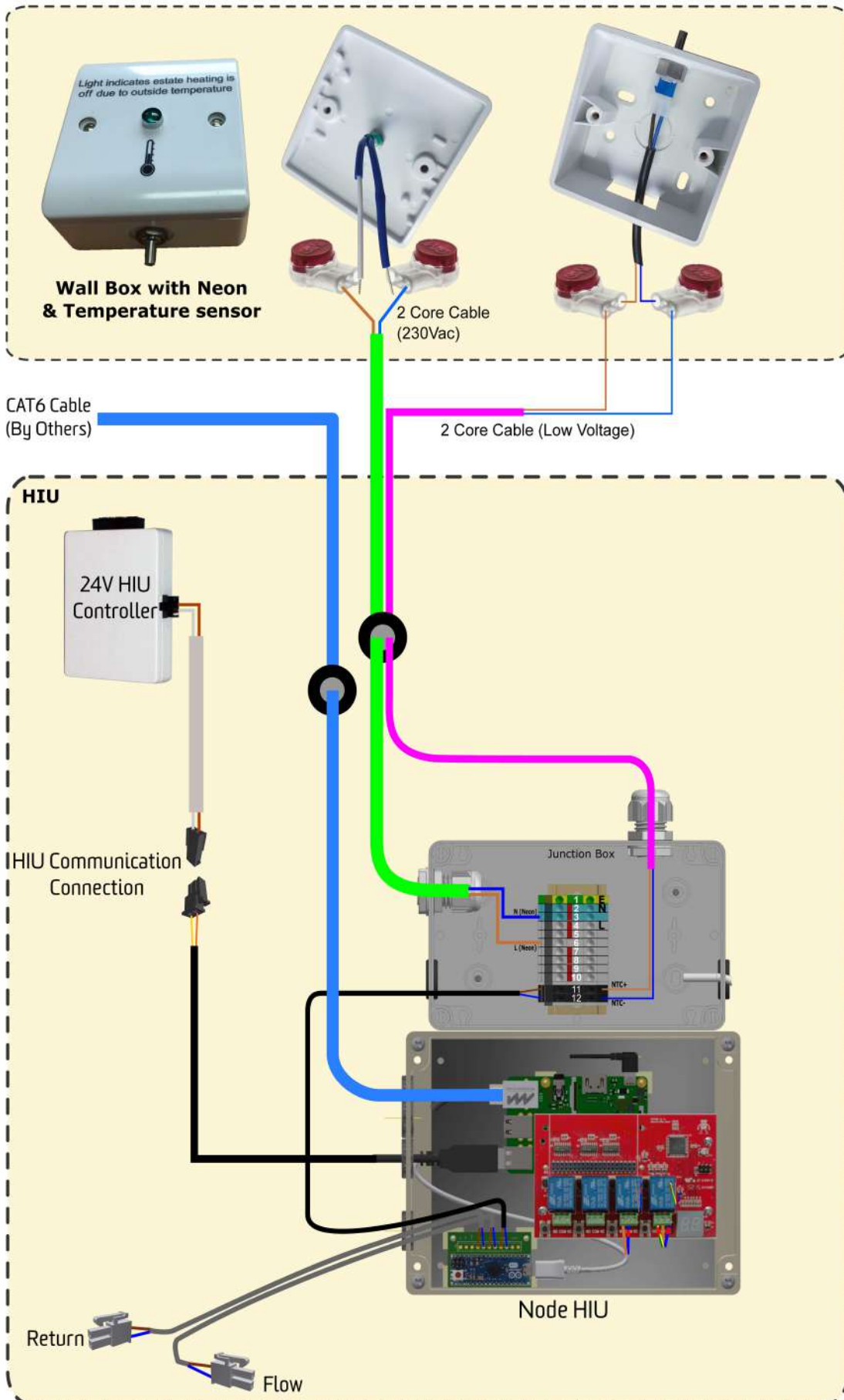
**Wiring Diagram - Node HIU**

Note: Refer to page 2 of this drawing for Wall Box Neon and temperature sensor wiring to positions 3, 6, 11 & 12





Wiring Diagram - Node HIU (Page 2)



## Programmer and Room Thermostat Connection

The unit can be equipped with an ON/OFF thermostat or programmable room thermostat, to control central heating timing and / or room temperature. This control should supply 230Vac to the heating control valve. (See wiring diagrams in section 11 of these instructions)



### CAUTION!

Please use caution when handling the unit.  
Parts and components may be hot or energized.  
Contact may lead to shock, burn or electrocution.

Connecting the programmer / room thermostat:

1. Refer to the wiring diagrams in section 11 of these instructions.
2. Remove and discard the temporary link in the wiring centre.
3. Connect a programmer / room thermostat (sold separately) heating call contacts across the relevant terminals of the HIU's wiring centre.



## Installation Requirements



Components, pipes and radiators in, and connected to the unit may be hot. The SLIM Extra heat interface unit is designed for use with centralised heating systems up to 90C. The pipes and components in the unit and the pipes and radiators in the central heating installation can reach temperatures of 85C and contact may lead to burns.

To ensure the life expectancy of the unit, the system must meet certain requirements. Keep following conditions in mind during installation:

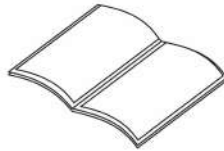
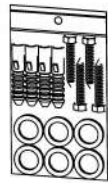
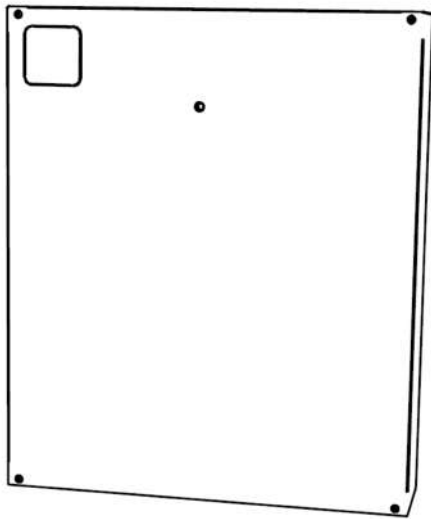
- Maximum pressure supplied by the district heating network is 10 bar.
- Maximum differential pressure supplied by the district heating network is 250 kPa.
- Maximum supplied temperature by the district heating network is 90C.
- Minimal supply temperature is setpoint DHW + 5C.

### Central heating

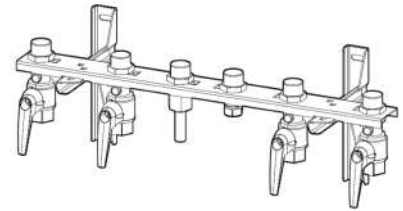
**NOTE** For optimal energy efficiency and comfort, it is of the utmost importance to hydraulically balance the CH system correctly. For the same purpose it is advisable to design the CH system in such a way that the CH return temperatures are as low as possible. We would recommend the use of [Danfoss RA-DV Radiator Valves](#).

# Installation Setup

## Parts Supplied and Required for Installation



### Additional Items Required

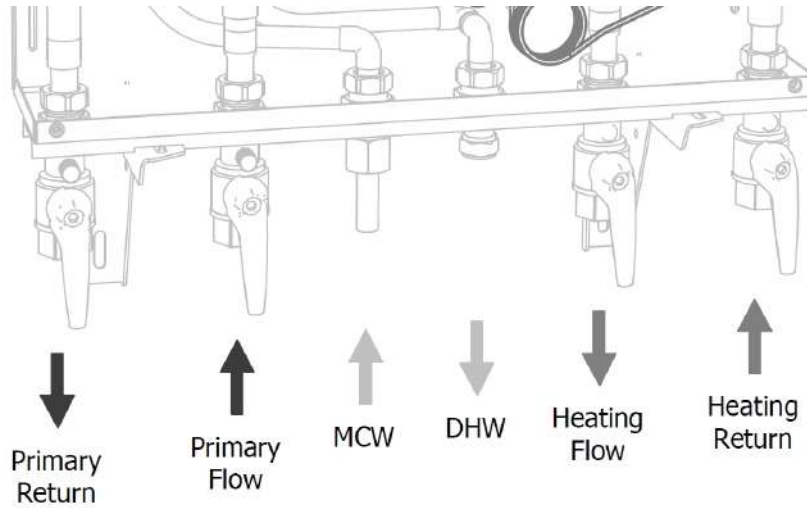


10, 24, 30 mm



Example

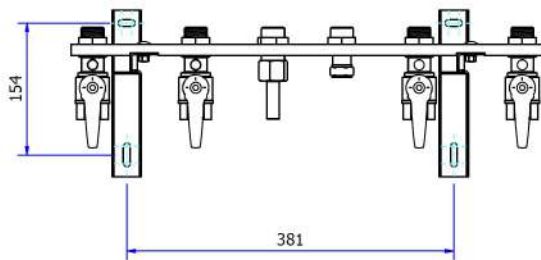
## Connections



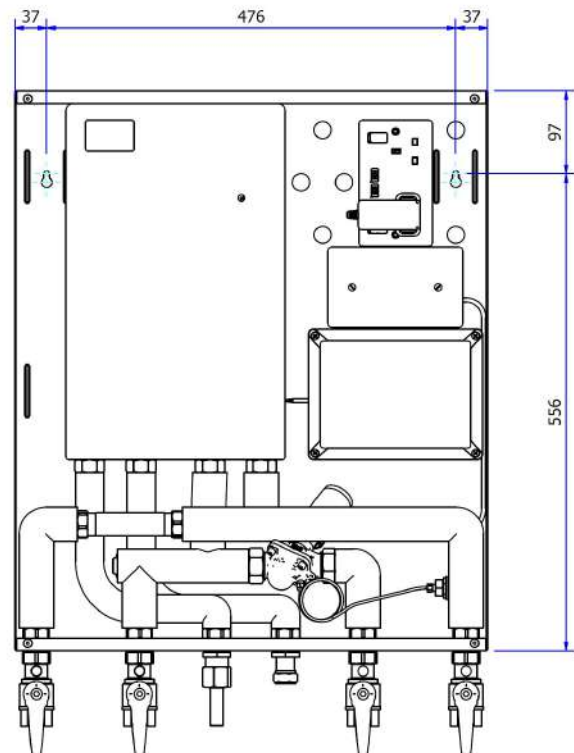
## Stage 1 - Mounting to the wall

Depending on the configuration being installed, the SLIM Extra can be mounted directly onto the wall or on to a pre-plumbing jig. Below are the fixing centres for each option.

1. Mark out the wall with the fixing points using the dimensions shown below.
2. Drill holes using a suitable drill bit to suit wall plugs provided in accessory pack.
3. Using a level, fit the pre-plumbing jig or HIU to the wall.
4. Continue with external pipework as required. With isolating valves closed the systems can be filled for testing.



Mounting with Pre-plumbing jig



Mounting directly to the wall

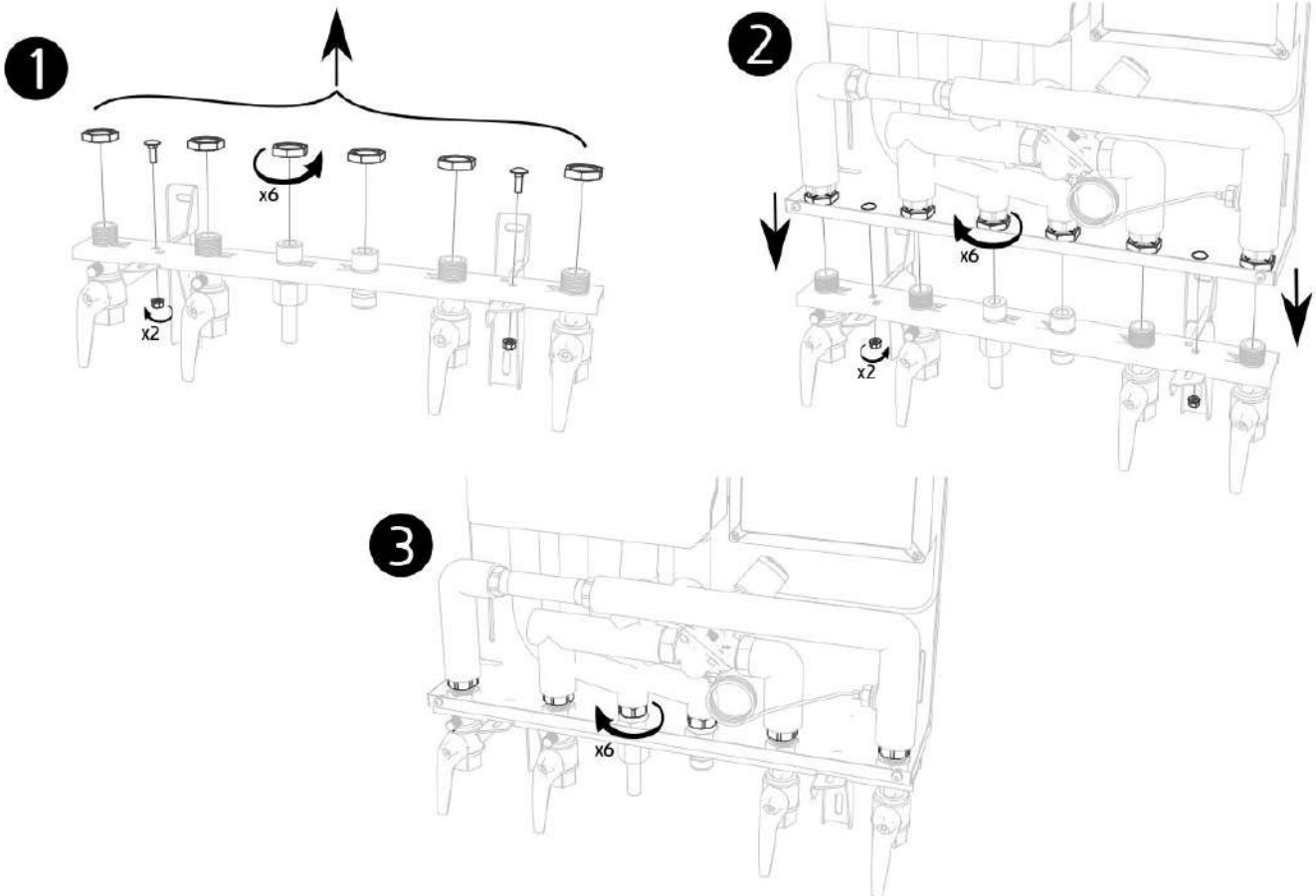
**Mounting to a plywood wall:** Minimal plywood thickness must be 18mm. Make sure that the back wall is at least 50mm wider than the unit to ensure a proper support. Make sure the drill markings are aligned and leveled. Drill holes of 4mm on the marked locations 40mm deep. 4 holes are drilled for the pre-plumbing jig and only 2 for mounting the unit directly to the wall. Mount the unit firmly to the wall using the enclosed screws.

**Mounting to a concrete wall:** Make sure the wall is robust and of good quality. Avoid hollow walls and make sure that the screws are not placed in the flushings of a brick wall. Drill holes of 10mm on the marked locations 60mm deep. 4 holes are drilled for the pre-plumbing jig and only 2 for mounting the unit directly to the wall. Mount the unit firmly to the wall using the enclosed screws and plugs.

## Stage 2 - Mounting on to the Pre-plumbing jig

If the Pre-plumbing jig is being used, then it is necessary to partially dismantle it before fitting the HIU. **ENSURE ALL ISOLATION VALVES ARE IN THE CLOSED POSITION.**

1. Remove the lock nut from each isolation valve, together with the 2 cross brace securing screws.
2. The HIU can then be mounted over the isolation valves to sit on to the cross brace, then the lock nuts and cross brace securing screws can be fitted through the HIU.
3. Finally fit fibre washers to all isolation valves and connect the pipe unions.

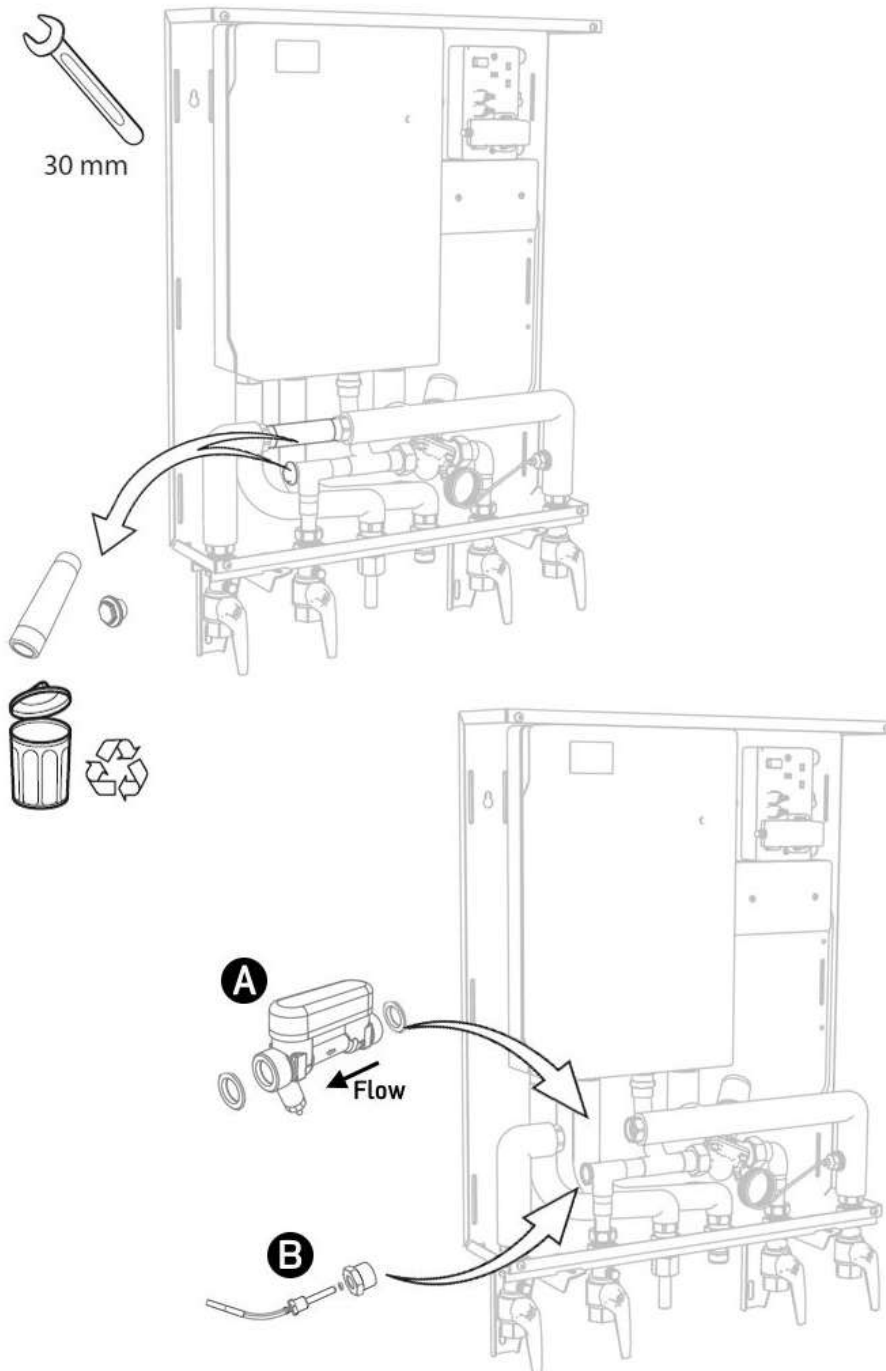


## Stage 3 - Pipework Connections

If the Pre-plumbing jig is already fitted, it is likely that it is also connected to the system pipework. If not, make all pipework connections as per the [Overview of Components and Connections](#) section of these instructions.

## Stage 4 - Fitting a Heat Meter

If a Heat Meter is to be fitted, first remove and discard the spool piece, and pipe cap shown below. The heat meter must have 3/4" BSP connections with 110mm across union faces and should have the return sensor directly mounted into the body. The Heat Meter must be installed in the primary return pipework of the HIU, with the hot (red) temperature sensor directly mounted into the primary pipework flow. Always fit new fibre washer seals, and ensure that the temperature sensor is correctly fitted with its seal, as per the heat meter installation instructions.



**NOTE:** The Heat Meter is mounted in the Primary Return pipework, therefore the flow direction should be from Right to Left.

## Stage 5 - Filling the Heating System


The SLIM Extra HIU hydraulically connects the apartment heating circuit to the primary district heating circuit. It is therefore important that the apartment heating circuit can withstand the pressure imparted by the district heating system.

When filling the apartment heating circuit, it is important that the process is coordinated throughout the district heating circuit right back to the plantroom. It may be necessary to disable any leak alarms or leak prevention valves, and the automatic pressurisation unit may need to be enabled. It is also important that the system is filled with the correct level of inhibitor.

Carry out the following steps to fill the apartment heating circuit:-

1. Ensure all isolation valves are fully closed.
2. Remove the TWA-z actuator from the AB-PM Valve, so that the valve is in the open position.
3. Ensure the AB-PM valve is set to a flow of 70% or higher. (see AB-PM instructions) **The apartment heating circuit will not fill unless the AB-PM valve is opened**
4. Open the flow and return isolation valve on the secondary heating circuit (blue and red valves on the right hand side).
5. Now gradually open the primary flow isolation valve (red valve on the left hand side), to allow flow into the apartment heating system. Wait until flow into the system reduces and any automatic air vents finish venting air.
6. Now gradually open the primary return isolation valve (blue valve on the left hand side), to allow flow to continue through the apartment heating system, and back into the district heating system.
7. Ensure all radiators are fully bled, and that the system is fully checked for leaks.
8. Adjust the AB-PM valve for the required heating flow rate, and lock. (see AB-PM instructions)
9. Ensure the TWA-z actuator head is securely fitted. **DO NOT USE any tools to tighten the actuator to the valve.** (see AB-PM instructions)
10. Balance the apartment radiators to achieve the desired flow and temperature at each.

## Stage 6 - Connect Power

1. Close all isolation valves in the property.
2. Check all coupling nuts for leakage. (nuts may become loose during transport)
3. Make sure the electronics are securely mounted to the frame and avoid cables and pulse pipes from fouling the casing.
4. Connect the units power cables to the wiring centre as shown in the wiring diagrams in section 11 of these instructions, and then connect to the power outlet.
  - Blue cable: N (Neutral)
  - Brown cable: L (Live)
  - Green/yellow cable: E (Earth) 
5. Switch on the power supply to the unit. The Status Indicator LED should show a green blinking light.
6. Check that the central heating controls are calling for heat and the system begins to warm.
7. Slowly open a hot tap in the property. Check to see if the units LED shows a blue blinking light. Open the hot tap completely when the system is fully bled and leave it running for approximately 5 minutes. After 3 to 5 minutes check the water temperature at the tap is between 45C and 60C (Depending on the setpoint).
8. Close the hot tap in the property. The LED will now show a green blinking light.



## Service and Inspection

To ensure proper functioning of the unit, it is advised to periodically inspect the installation. Contact your District Heating Management company about the possibilities for service and inspection. Maintenance and repairs must only be performed by approved personnel.

- Remove the power from the unit when performing maintenance and/or repairs.
- Close the primary flow and return isolation valves.

Close the secondary flow and return isolation valves. Check the unit for dirt/leaks. Check any external strainers for dirt and debris and clean if necessary. Check all internal valves for pollution and clean if necessary. When recommissioning, check the unit for the delivery of DHW and central heating. The outer steel casing can be cleaned with a damp soapy cloth. By no means use abrasives of any kind.



**The unit uses electrical components (230Vac). These components must stay dry at all times. Please use caution when handling these energised components. Touching these energised components can result in an electric shock, burn, or electrocution.**

## Away or on holiday

Do not remove power from the unit. Do not switch the unit off during a long absence or holiday. To prevent damage from frost in the piping of the unit or the distribution network one must not, **under any circumstances**, close the isolation valves to the unit and/or the district heating network. It is recommended to flush all water tapping points for at least 2 minutes after a long period of absence.

## Troubleshooting (End Users)

What can you do?



**CAUTION!**

Please use caution when handling the unit.  
Parts and components may be hot or energized.  
Contact may lead to shock, burn or electrocution.

Always take in account the safety of yourself and others when performing a troubleshoot.

<b>Leakage</b>
1. Close all valves on the plumbing bracket under the unit and the mains cold water feed.
2. Contact your engineer.
<b>Central Heating Circuit does not warm up</b>
1. Make sure the power cord is plugged in and turned on. If in doubt contact an electrician.
2. Make sure the valves on the plumbing bracket are open (handle in vertical position).
3. Check radiator valves are open and calling for heat.
4. Check the programmer is set to ON, and calling for heat.
5. Set the room thermostat higher.
6. Problem solved? If not, contact your engineer.
<b>No domestic hot water</b>
1. Check that the mains cold water valve is open. If not, open the main valve.
2. Problem solved? If not, contact your engineer.
<b>Tap water does not warm up</b>
1. Ensure that all valves on the plumbing bracket under the unit and the main valve are open.
2. Make sure the power cord is plugged in and turned on. If in doubt contact an electrician.
3. Problem solved? If not, contact your engineer.
<b>Sound</b>
NOTE: It is normal that the HIU makes noise when hot water or heating are active. Also, the electronic valves will make a light (buzzing) noise during movement. If the HIU starts to make any loud or disturbing noises, contact your installer.

## Troubleshooting (Technicians)

Complaint	LED indication light	Cause	Solution
<b>Leakage - Close all valves on the fix rail and close the main water supply valve.</b>			
Coupling nut leaking.		Coupling nut is loose.	Tighten coupling nut.
		Gasket is missing.	Fit gasket.
Temperature sensor leaking.		O-ring is missing.	Replace temperature sensor.
		O-ring is damaged.	Replace temperature sensor.
The differential pressure pipe from the differential pressure regulator is leaking.		Coupling is loose.	Tighten coupling.
		Differential pressure pipe is damaged.	Replace differential pressure pipe.
Other components/pipes are leaking.		Component/pipe is damaged.	Replace component/pipe.
<b>Central heating does not warm up.</b>			
Radiators do not warm up.	LED does not light.	No power at power source.	Check power source.
		Unit is not connected to power source.	Connect unit to power source.
		Power cables not properly connected to wiring centre.	Connect power cables to wiring centre.
		Fuse is broken.	Check for any short circuit and replace external fuse. (3A)
		Failure in electronics.	Contact your supplier.
	Blue flashing LED.	Tap is open, unit is in tapping mode.	Close tap.
	Red flashing LED.	Sensors are not connected/bad contact.	Check cable connections and connect sensors properly. Then restart electronics.
		Sensor(s) defect.	Replace broken sensor then restart electronics.
		Possibly faulty electronics or cables.	Contact your supplier.
	White flashing LED.	Unit is in service mode.	Remove USB cable.
			Reset unit by removing then replacing power supply.
		No heating demand from room thermostat.	Set the room thermostat higher than actual room temperature.
		Radiator valves are closed.	Open radiator valves.
		Isolation valves on first fix rail are closed.	Open isolation valves on first fix rail.
		Thermostat cable not properly connected to room thermostat.	Make sure the room thermostat is connected properly.
		Short circuit connector of the room thermostat is not connected /missing (when HIU is NOT connected to a room thermostat)	Connect the wire ends of the room thermostat connection with a short circuit connector.
		Air in the central heating system.	Bleed the HIU and the central heating system.
		Pressure in the central heating circuit is too low.	Set CH pressure to 2bar. Check for leakage in the CH system or a broken expansion vessel.
		Pressure/temperature of the district heating system is not in accordance with specifications.	Check pressure/temperature of the district heating network.
		Differential pressure valve is poorly adjusted.	Adjust valve correctly.
		Strainers are clogged.	Check and clean strainers.
		Possible defect in control valve.	Replace control valve.
<b>No water at hot tap.</b>			
No water at hot tap.		No water pressure.	Check/open main water supply valve.
			Check flow restrictor for correct/proper placement.
			Flow restrictor clogged/jammed. Replace flow restrictor.
			Flow sensor clogged. Replace flow sensor.
			DHW heat exchanger is clogged. Replace DHW heat exchanger.
<b>Hot tap water not at right temperature.</b>			
Hot tap water does not warm up.	LED not lit.	Unit not connected to power source.	Connect unit to power supply.
		No power at power source.	Check power source.
		Power cables not connected to wiring centre.	Connect power cables to wiring centre.
	Green flashing LED.	Tap flow rate too low, minimum 1l/min has not been reached.	Increase tap to 2l/min by opening tap further.
	Red flashing LED.	Sensors not connected/bad contact.	Check cable connections and connect the sensors properly then restart electronics.
		Sensor(s) defect.	Replace broken sensor then restart
		Possible defect in electronics/cables.	Contact your supplier.
		Supply and return valves are closed.	Open supply and return valves.
		Pressure/temperature of the district heating system is not in accordance with specifications.	Check pressure/temperature of the district heating network.
		Strainer is clogged.	Check and clean strainer.
		DHW heat exchanger is clogged.	Replace DHW heat exchanger.
		Possible defect in control valve.	Replace control valve.
Option: Tap water circulation circuit does not warm up.	LED not lit.	Fuse is broken.	Check for any short circuit and replace external fuse. (3A)
		Electronics failure.	Contact your supplier.
<b>Casing does not close properly.</b>			
Casing will not close properly.		Cables trapped between unit and casing.	Free cables.
		Metal flap securing heat exchangers not in correct position.	Correctly position metal retaining flap.
		Heat meter obstructing casing.	Connect heat meter correctly.
		Electronics not properly positioned.	Position electronics correctly.
<b>Other defects - Note: it is normal for the unit to generate light noise during tapping or heating operations.</b>			
Rattling noise.	Red or Green flashing LED	Flow sensor installed incorrectly.	Install flow sensor correctly.

## Dirt and Air Separation

### Dirt and Air Separation

Air bubbles and dirt particles are always present in the water of cooling and heating systems. The dirt can accumulate and cause blockages. The use of filters is not ideal because these do not trap smaller particles, silt up and then have to be regularly cleaned or replaced. Air and gases in a system are generally a consequence of activities performed, micro-leaks and of electrolysis and chemical processes in the water. Traditional de-aeration devices extract insufficient gases from the water, leaving microbubbles behind.

Air and dirt in a system cause problems such as unnecessary faults and extra wear or noise, but also lead to disruption of the system, lower heat transfer and reduced pump performance. The new Flamcovent Smart, Flamco Clean Smart and Flamcovent Clean Smart air and dirt separators are now offered as standard alongside all systems to provide reliable protection of the primary system.

- 60% better performance compared to conventional air and dirt separators.
- Suitable for temperatures of up to 120 C.
- Suitable for operating pressures of up to maximum 10 bar.
- Unique flow velocities, up to 3 m/s.
- Can be used with all kinds of pipework.
- Compact dimensions, light weight.
- Available in various sizes up to 2".
- Extremely low flow resistance and low loss of energy.
- Consistent performance throughout its service life.

 [FlamcoventCleanSmart\\_ENG\\_DEF\\_2014](#)



Flamcovent Clean Smart



Flamcovent Clean Smart Insulated

## Guarantees and After Sales

Heat Interface Units (HIUs) 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. **12 Months 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 HIU is installed by a qualified engineer within 6 months of date of delivery.

**24 Months 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.

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 Thermal Integration approved engineer in compliance with the installation instructions.

c. The installer must complete the commissioning checklist in full at the time the HIU is installed. This checklist must be returned to Thermal Integration within 30 days of commissioning. Checklists are enclosed in the HIU 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 and proof of periodic inspection / maintenance by a Thermal Integration approved engineer is available.

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 district heating system or water network, either domestic hot water or heating side.

g. PH values of the primary medium being less than 7.5 or greater than 9.0.

- h. Harmful additives to the heating water.
- i. Consumables as specified by us, including but not limited to: hoses, gaskets and batteries.

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 HIU breaks down, we may ask you to pay us a deposit before we visit you to repair 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 HIU.

## 9. COMMISSIONING

Thermal Integration offer commissioning services across the UK. The service includes:

- a. The fulfilment of the defined commissioning instructions.
- b. Completion and return of site wide commissioning paperwork.
- c. Rectification of any HIU problems.
- d. Confirmation of HIU performance to contract specifications.
- e. Engineer travel and subsistence.

Commissioning rates are charged on a whole day basis, and it is the responsibility of the client to ensure:

- a. Safe access to properties and HIUs
- b. Correct operation of central plant with delivery of heat to HIUs at specified temperatures, flow and pressures.
- c. All pipework has been correctly tested and flushed.
- d. Credit on billing system to enable security valve.

A minimum 2 weeks notice is required in writing to Thermal Integration before the requested commissioning date.

## SERVICE

Technical assistance and engineer backup can be obtained by calling our offices:

- Commercial Sales and Operations: 0845 2411441
- Specflue Sales: 0333 9997974
- Email: [newenquiries@heatweb.com](mailto:newenquiries@heatweb.com)

## FURTHER INFORMATION

The [Heatweb Wiki website at www.heatweb.com/wiki](http://www.heatweb.com/wiki) contains information on all aspects of HIU design, function, and servicing, and is always the best place to visit for additional documentation or how to guides.



## SLIM EC Declaration



### 1 EC DECLARATION OF CONFORMITY



2 DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EE

DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

3 EC Declaration of Conformity Number: EC267A

4 Equipment or protective system: Electronic DHW system, Model: EcoAdvance Instant I

5 Manufacturer: HSF B.V.

6 Address: Marketing 23, Duiven, The Netherlands

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this declaration and the documents therein referred to.

8 The examination and test results are recorded in Technical file no. 267A. Compliance with the Essential Requirements of the above specified directives has been assured by compliance with:

9 EN 61010-1 : 2010  
EN 55014-1 : 2006 + A1 : 2009 + A2 : 2011  
EN 61000-6-2 : 2005

10 The marking of the equipment or protective system shall include the following:



12 The CE mark was first applied in: 2016

Duiven, Feb 1, 2016

HSF B.V.



M. van de Veen  
Managing Director

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