

HEAT INTERFACE UNITS (HIU)



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SINCE 1960

COMMUNAL HEAT NETWORKS

The HIU is suitable for projects as diverse as apartments, social housing or RHI district heating schemes. A central boiler house will generate heat which is distributed through a network of pipe to each home or apartment in the building. Each home or apartment has its own HIU (heat interface unit), which converts heat from the network as heating and hot water for the home.

Advantages for Designers, Developers

- ✓ Gas supply not required for an HIU
- ✓ No flues to evacuate exhaust combustion
- ✓ No storage cylinder required
- ✓ Meets low emission and efficiency targets

Advantages for the installers

- ✓ Easy to install, add only a programmable room thermostat
- ✓ Compact and lightweight
- ✓ Minimal installation requirements for pipe work
- ✓ Simple maintenance and easy access to all components

Advantages for Landlords

- ✓ Reduced service and maintenance costs
- ✓ Metered energy usage for fairer tenant billing
- ✓ Practical for combining with lower cost renewable technologies
- ✓ No flues to maintain for health and safety laws

Advantages for the Tenant

- ✓ Shared maintenance costs
- ✓ Efficiently controlled heating and hot water supply
- ✓ Accurate billing for only the actual energy used
- ✓ Awareness of energy consumption promotes energy saving

HEAT INTERFACE UNITS

The Hiper HIU is compact and requires very little space and is easy to install. The design meets all varying demands of the home. It is, in many ways like a combi boiler, providing central heating and instantaneous hot water, but without flame or flue.

Energy efficient

- ✓ Instantaneous hot water production
- ✓ Electronic temperature control
- ✓ Optimised heating temperature control as standard
- ✓ Standby mode temperature control
- ✓ Lower return temperatures to the network
- ✓ Low carbon heat networks - renewable energy sources
- ✓ Weather compensation option
- ✓ Low energy pump
- ✓ Radiators or underfloor heating
- ✓ Minimal maintenance reducing running costs



Energy saving

Heat meters and SMART controls can be fitted to give residents awareness and control over their energy use, promoting **energy savings of up to £250 a year**

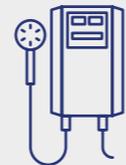


Lower investment costs

No need to connect individual boilers. This alone is a significant cost saving for developers that will also result in future savings due to reduced service and maintenance costs.



Instantaneous hot water production



High flow rates at 53°C ensure a secure hot water provision

Ease of installation and maintenance



No gas supply required
No individual flues needed
Compatible with any boiler
Easy access to all components for low maintenance costs

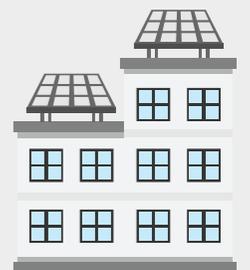
E-billing capable



Ideal for **social housing** solutions

Ease of integration with renewable energy

By connecting with a central energy plant, heat interface units allow easy integration with renewable energy systems such **CHP, solar or heat pumps**.



THE HIPER HIU FEATURES



PID Control Unit (Proportional-Integral-Derivative) maintains the efficiency of the HIU. Provide stable temperatures under varying load conditions. Unique algorithms constantly recalculate the amount and the speed of modulation required for maximum efficiency.

Automatic Fault Diagnostics The control unit can identify faults to components within the HIU and issues an identifying fault code on the screen. Once the fault or error has been rectified the control unit automatically resets and resumes normal operation.

Pressure Independent Control integral PICV with electric actuator giving proportional modulating control as instructed by the PID Controller, 100% authority, (regardless of pressure fluctuations in the district heating supply). Unlike many other HIU, no further control valves (for example DPCV) are required.

Heating Flow Automatic Limitation - decreasing the possibility of starving the DH circuit when extreme demands are made on the entire network. For example in cold weather when a large heating demand is made on the network the control unit does not allow 100% opening on start up and prevents the 'over demand' causing disruptions.

DHWS Priority - DHWS is the priority operation of the HIU. A flow switch detects the demand and the HIU (if in heating mode) switches to DHW production. Even if the heating system is in fault mode, the HIU will still produce DHWS.

Anti-Scale Control in the DHW PHE - the flow is always diverted away from the DHW PHE into the HTG PHE reducing the scale formation potential.

Instant Hot Water Response - Instant water response is guaranteed by keeping heat (supplied by the district supply) close at hand to the HIU at all times. At regular intervals (factory set to 20 minutes), the controller opens (factory set to 2 min) the PICV to deliver a low flow of about 100 l/hr, then closes the valve again. This repeats whenever the HIU is on standby when there is no demand.

Optimised Heating Control - return temperatures are monitored and controlled. The controller of the HIU uses this information to maintain the optimum flow temperature and keep the DISTRICT return temperature as low as possible. This can be seen on the display screen as AUTO and is the factory setting.

Low & High Pressure protection for the HIU

Low pressure switch will stop the circulating pump should the secondary system drop below 0.7 Bar. The HIU is fitted with a Safety Relief valve set at 3 bar for high pressure protection.

Underfloor Heating - the unit is fully compatible with low temperature systems. The installer simply sets the required value for temperature on installation. Full detail available in the installation manual.

Insulation - the HIU panels are all fully insulated including the back-plate to prevent overheating of the surrounding area.

Prepayment Billing can be accommodated with an accessory kit to shut down the unit when the tenant is no longer in credit.

Security - the metal casing can be closed to prevent unauthorised tampering with optional fixing bolts on request.

PROVEN PERFORMANCE

The HIPER HIU has been independently tested and proved conforms to **BS EN13203-01**

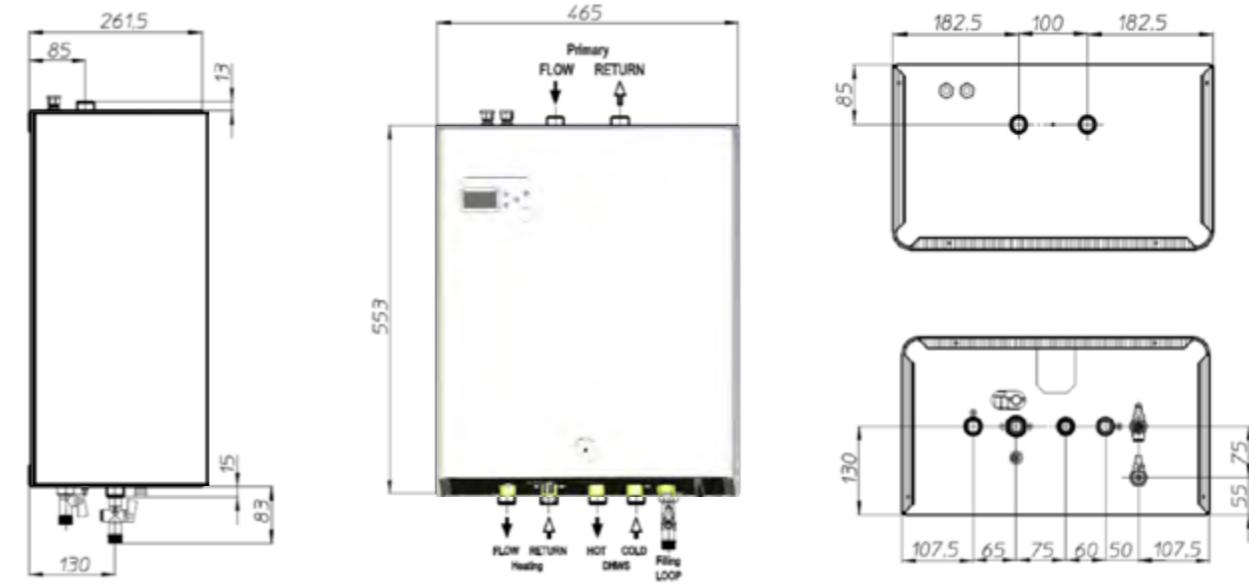
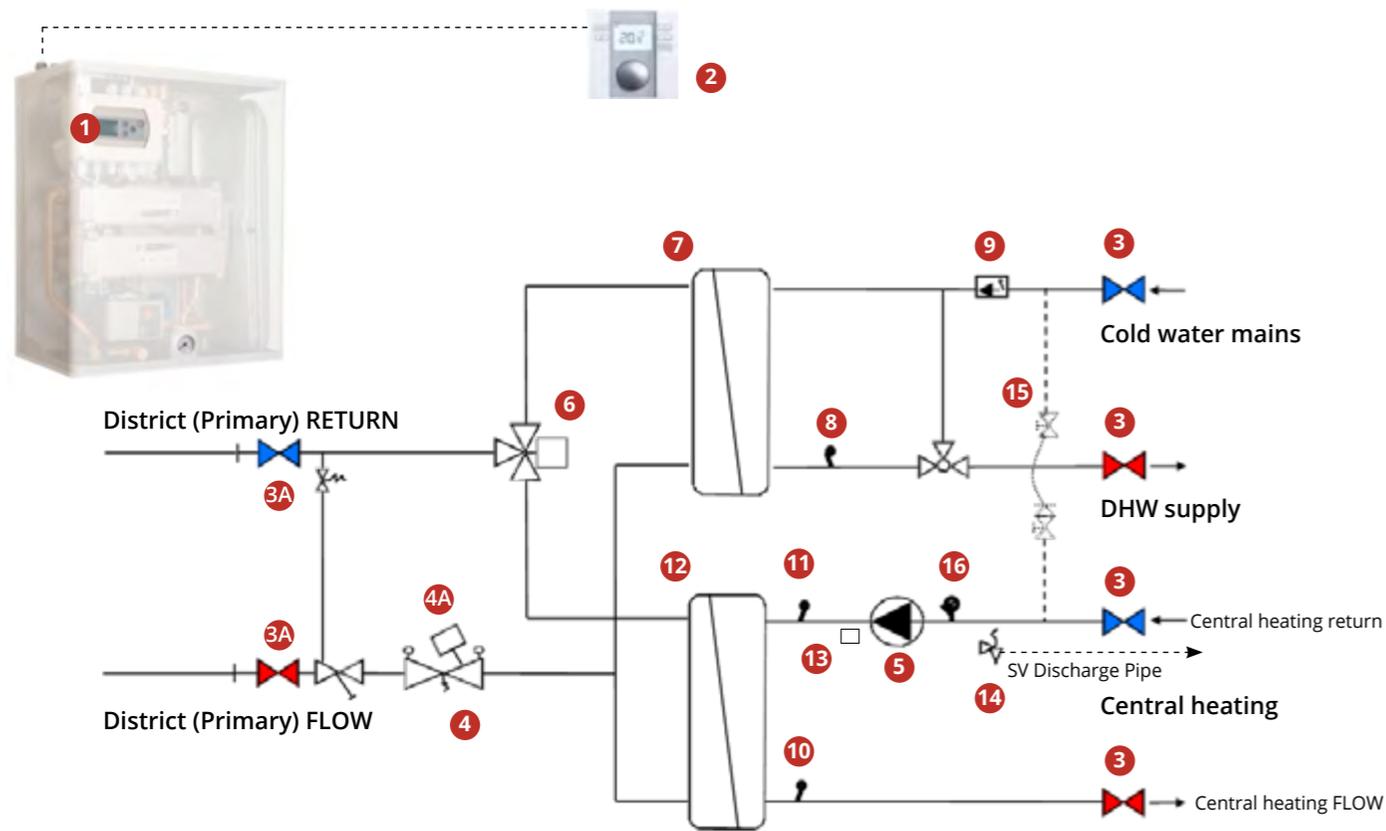
BS EN13203-01 is the British Standard for:

"Gas fired domestic appliances producing hot water - Appliances not exceeding 70 kW heat input and 300 ltr water storage capacity - Part 1, assessment of performance of hot water deliveries"

The HIU was tested, awarded 2 Stars, and measured on delivery of DHW at 55°C, with a DH flow temp of 70°C.

Further details and copy test report available to all qualified enquiries.





- 1 - Electronic PID Controller
- 2 - Room Thermostat (not supplied)
- 3 - Isolation valves (Secondary side)
- 3A - Isolation valves (District side)
- 4 - PICV (Pressure Independent Control valve)
- 4A - PICV Actuator with step motor
- 5 - Circulating Pump for the central heating
- 6 - 3 port Diverting Valve
- 7 - DHW Plate Heat Exchanger
- 8 - DHW temperature sensor
- 9 - Flow switch
- 10 - Central Heating Flow temperature sensor
- 11 - Central Heating Return temperature sensor
- 12 - Central Heating Plate Heat Exchanger
- 13 - Pressure Switch
- 14 - Safety Valve
- 15 - Filling Loop Connection
- 16 - Pressure Gauge

PROPORTIONAL CONTROL

A proportional control system is not simply turning the CH and DHWS on and off, it feeds in the supply from the District side in proportion to the demand. This gives stable hot water supply temperatures, even at very low demands.

The heating is similarly controlled for efficiency, as the room warms up the controller starts to lower the amount of heat being allowed into the PHE supplying the central heating always maintaining minimum energy usage.

DESIGN AND CONSTRUCTION

The unit is designed for the plate heat exchangers to be at the front for easy access. These are mounted onto purpose made brass blocks which contain the integral waterways and component connection points. Inter-connecting pipework is kept to a minimum.

HIPER INDIRECT HIU

- ✓ Two plate heat exchangers (PHE): one for heating (CH) and one for hot water (DHWS).
- ✓ The electronics provide 'PROPORTIONAL' reactive control to demand. PID electronic controller
- ✓ Integral PICV (Pressure Independent Control Valve)
- ✓ Maximum efficiency with lowest return temperatures back into the network.
- ✓ Safety with high temperature limits enforced even without an electricity supply
- ✓ Systems can be designed with little requirement for expensive commissioning.
- ✓ Simple to maintain, the plate heat exchangers can be accessed and removed in just minutes.

- ✓ Insulated with a tamperproof steel casing.
- ✓ Plate Heat Exchangers access from the front
- ✓ Wilo low energy pump, fixed or variable speed
- ✓ Automatic air vent
- ✓ 3 bar safety relief valve on the secondary heating side
- ✓ 3 drain points
- ✓ Large surface area strainer mesh for extended maintenance schedules
- ✓ Sealed system heating
- ✓ Thermostatic high temperature protection
- ✓ Flat face union, 3/4" connections



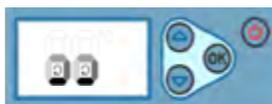
A - PICV with electronic modulating actuator
B - Diverting valve



COMPONENTS

- | | |
|--|--|
| 1 - Electronic PID Controller | 9 - Pressure gauge |
| 2 - District connection block inc. strainer | 10 - Flow switch |
| 3 - PICV (behind the controller) | 11 - Filling Loop connection |
| 4 - Central Heating Plate Heat Exchanger | 12 - Thermostatic High Temp. Limit Valve |
| 5 - DHW Plate Heat Exchanger | 13 - Expansion Vessel |
| 6 - Automatic Air vent | 14 - Diverting valve |
| 7 - Circulating Pump for the central heating | 15 - Spacer for installation of Heat meter |
| 8 - Safety Valve | 16 - Bypass valve |

OPERATION



Switch on the Power supply

When powered up for the first time, the controller goes through a diagnostics check of the HIU. This may last a few seconds and the display shows as above a 'timed out' rotating symbol. If a problem is detected the controller will display an 'ERROR' symbol (see installer or user guide for full details).



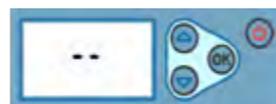
HIU is now on stand-by

Having completed its checks, the controller is now ready to operate. Until a demand is created it remains in standby mode.



Turn on a hot water tap

The hot water temperature is factory set to the industry recommended temperature of 55°C. Once the HIU controller senses water flow it will commence the production of hot water immediately, and stabilise at the set temperature



Turn the tap off (no demand for hot water)

The screen will show the "stand by" symbol.



Room thermostat calls for heating

The HIU now operates in heating mode, and the screen shows the set flow temperature. Any demand for hot water will take priority



Factory settings

- ✓ DHWS at 55°C
- ✓ Central Heating at 60°C

TECHNICAL DATA



	Xi45	Xi60
PRIMARY (heat supply from communal heat source) MAXIMUM PRESSURE	16 bar	16 bar
PRIMARY (heat supply from communal heat source) MAXIMUM TEMPERATURE	90° C	90° C
PRIMARY (heat supply from communal heat source) MAXIMUM pressure differential	4 bar	4 bar
SECONDARY (central heating circuit in the flat, apartment or house) - MAXIMUM PRESSURE	3 bar	3 bar
SECONDARY (central heating circuit in the flat, apartment or house) MAXIMUM TEMPERATURE	85° C	85° C
SECONDARY (central heating circuit in the flat, apartment or house) TEMPERATURE ADJUSTMENT	20°C to 85°C	20°C to 85°C
SECONDARY (central heating circuit in the flat, apartment or house) HEATING OUTPUT	10 Kw	10 Kw
DOMESTIC HOT WATER (including cold water supply main) MAXIMUM PRESSURE	10 bar	10 bar
DOMESTIC HOT WATER MAXIMUM TEMPERATURE LIMITED by TMV	60° C	60° C
DOMESTIC HOT WATER TEMPERATURE ADJUSTMENT	30°C to 65°C	30°C to 65°C
DOMESTIC HOT WATER OUTPUT	45kW	60kW

Designed for easy access to all components

Plate Heat Exchangers are secured by four bolts all directly accessible easily front the front. Both PHE can be removed and exchanged in minutes





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Docherty Group

55 Woodburn Road, Birmingham, B66 2PU

Tel: 0121 555 6789

Email: sales@docherty.co.uk

www.docherty.co.uk

