

# MTA Plus

Heat pump optimised indirect heat interface unit



#### **Regulation & documentation**



CIBSE CP1 Heat Networks Code of Practice for the UK (revised in 2020) CIBSE Heat Networks Design Guide BSRIA BG62/2015 Heat Interface Unit Guide Building Engineering Services Association (BESA) HIU Testing & Performance Guide Heat Network (Metering and Billing) Regulations 2014

HNTAS 2026

Heat Network Zoning



Incorporating Heat Pumps into Low Temperature Heat Networks (LTHNs)

## How can intelligent HIUs effect Heat Network performance?





## Guaranteeing network performance - Smart Controls



#### Return temperature limitation

Radiator covers, drying washing on the radiator, putting a sofa in front of a radiator and valve tampering will all harm the network delta T and affect all those connected.

The MTA Plus has return temperature limiting functionality on the HIU as standard.

The function is configurable and will modulate the pump to hold a specific pre-set return temperature.

This guarantees the network delta T remains within design, reducing the risk of network failure.





#### Primary flow rate limitation

A '3kW apartment' will pull far more than 3kW in cold weather.

7 to 9 kW space heating loads are not unusual on start up, even in spring.

If enough apartments go into heating mode at the same time, the network will fail as the calculated demand is much lower than the actual demand.

Configurable, primary flow rate limitation will ensure that a '3kW apartment' can only ever take 3kW from the network.

Limiting the maximum flow rate that the HIU can take from the primary system, during space heating production, guarantees the design flow rate used to calculate the system demand is not exceeded.

## Guaranteeing network performance - Smart Controls



Flow switch for rapid

#### Anti-scaling

Where does scaling typically occur? - Domestic side of the DHW plate.

Why does scaling occur? - Slow acting control valves. Conduction of heat to the temperature probe.

Utilising an electronic flow switch ensures rapid cessation of primary flow when DHW tapping stops.





Not all heat networks are created equal.

A 'one size fits all' HIU approach can never be the ideal for every network.

The MTA Plus has preheat configurability:

- On / Off / Timed (24/7 calendar)

- Configurable plate keep warm temperature

- Configurable hysteresis range

The HIU can be configured to match the apartment requirements for each individual project.

By a significant margin, the highest number of HIU failures are due to pump seizures.

Wet bearing pumps are sitting idle for most of the year. In an apartment block, this can be 10 months of the year.

Just when the heating is needed most, the pump fails to run.

The Modutherm MTA Plus features 24-hour pump exercising.

If the heating circuit has not been used for 24 hours, the MTA Plus will run the pump for a 10 seconds ensuring debris, dirt or corrosion cannot build up in the pump bearings.

#### Advanced diagnostics data



#### The key to effective maintenance and system performance

- **1** Primary flow temperature
- 2 DHW temperature
- 3 MCW temperature
- 4 Primary return temperature
- 5 District modulating valve stepper motor position (0 to 250)
- 6 DHW flow rate
- 7 DHW regulation valve stepper motor position (0 or 250)
- 8 Heating regulation valve stepper motor position (0 or 250)
- 9 Heating flow temperature
- **10** Heating pressure
- **11** Heating flow rate
- **12** Heating return temperature
- 13 Primary flow rate



The MTA Plus has Modbus remote read/write communication built in.

Each HIU can be remotely interrogated to capture temperatures, operating parameters and even differential pressure at the individual HIU.

Many parameters, such as temperature set points, preheat configuration, return temperature limitation etc. can be remotely set and configured.

#### **District Boost Mode**



Modutherm's **Patent Pending** District Boost Mode allows the MTA Plus HIU to control an in-line immersion heater on the primary flow, boosting the incoming temperature during DHW production.



- The immersion heater is powered by a separate 230V supply
- The internal HIU relay controls the external immersion heater contactor
- The external sensor is wired to the Modutherm MTA Plus HIU

When there is DHW demand, the HIU checks if the external sensor temperature is higher than the DHW set point +5°C.

If the primary flow temperature is higher, the DHW regulation starts.

If the primary flow temperature is lower, the HIU connects the internal relay which starts the immersion heater.

When DHW demand stops, the internal relay is disconnected and the immersion heater turns off.

Α	Primary flow	Е	Domestic Hot Water Outlet
В	Primary Return	F	Mains Cold Water Inlet
С	Heating Flow	G	Domestic Cold Water Outlet
D	Heating Return	н	Pressure Relief Valve Drain

## Benefits





- ✓ Most efficient HIU on the market today based on independent testing
- The lowest return temperature and annual volumes of any HIU on the market based on independent testing.
- ✓ 'Smart' controls can protect the heat network from failure and allow for project/HIU matching
- Due to investment in HydraBlok® backplate technology, the MTA is a very competitive HIU
- $\checkmark$  Little potential for leaks
- ✓ Configured for easy maintenance
- $\checkmark$  Reduced chance of scaling and pump failure
- $\checkmark$  16 bar maximum operating pressure (tested to 24 bar)
- $\checkmark$  2-year labour & 5-year parts warranty
- ✓ Easily accessible heat meter, pressure gauge & quick-fill device
- $\checkmark$  Available from stock