

EDGE-T Twin Plate Heat Interface Unit (HIU)

For control of tertiary space heating and domestic hot water circuits



Overview

EDGE-T heat interface units are electronically controlled and supply both tertiary space heating and domestic hot water. Both circuits are hydraulically separated from the secondary heat network by twin SWEP plate heat exchangers (PHEs).

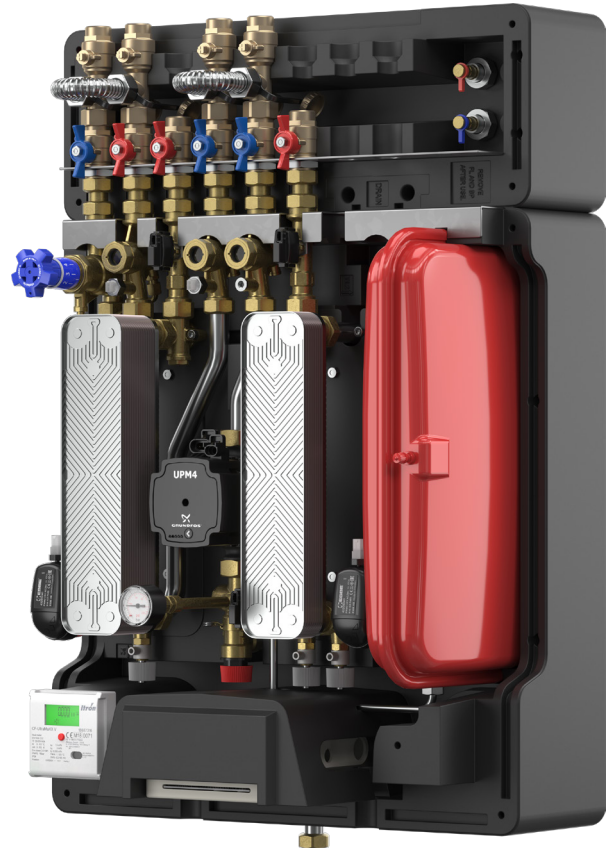
Domestic Hot Water

Domestic hot water is prioritised over heating as standard, and feedback from a Grundfos Vortex Flow Sensor (VFS) is used to determine whether any open hot water outlets require heat (taps, showers etc). While secondary flow rate from the heat network is controlled by an integral PWM ESBE SLB valve, the domestic hot water flow rate on the tertiary side is dependent on sufficient mains cold water pressure.

Heating

The heating circuit is operated via mains enable signal from a room controller, or common enable from a wiring center where multiple zones are present. A second PWM ESBE SLB valve controls the secondary flow rate from heat network into PHE, and the tertiary flow rate is controlled via PWM Grundfos UPM4S pump.

When there is no domestic hot water or heating demand, the HIU drops back to a Keep-Warm Mode (KWM), where the DHW PHE is kept at a target temperature for faster response when hot water is needed.



DESIGN



- Flexible plate heat exchanger options to meet project requirements
- Fully insulated HIU and valve enclosure to minimise heat losses
- ESBE PWM tamperproof, fast acting 2-port control valves go from closed to fully open in just two seconds to provide a fast response for DHW and heating supply
- Option for dual primaries

Product Codes

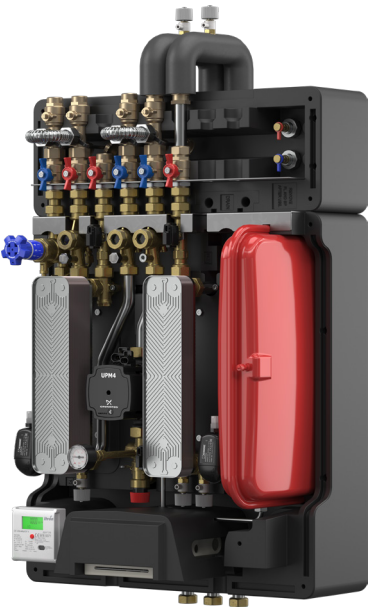


Product Codes				
HIU	EAHIUT-001		EAHIUT-002	
First Fix Kit	EAFKHT-001	EAFKHT-003	EAFKHT-004	EAFKHT-002
Configuration				
	All-top	HN & DHW top HTG bottom	HN top Tertiary bottom	All-bottom
Application examples	Prefabricated Utility Cupboards (PUCs) / Heat Networks. With or without underfloor heating manifold below.			Retrofit heat network with boiler replacement

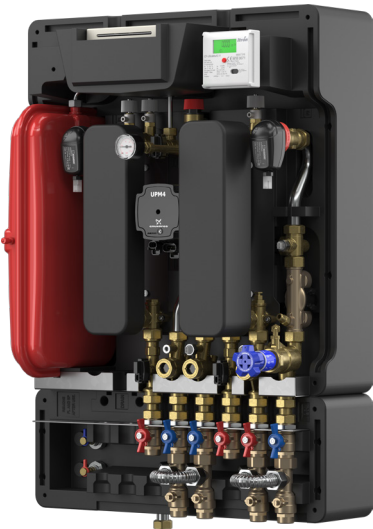
	A	B	C	D	E	F	Y
Key	HN Flow	HN Return	MCW Inlet	DHW Outlet	HTG Flow	HTG Return	
	Secondary			Tertiary		To Drain	

* 00 – digits can change to suit PHX options for project, ‘00’ denotes standard configuration.

Insulation Details



Pre-insulated pipe kits available



Pre-insulated PHEs as standard

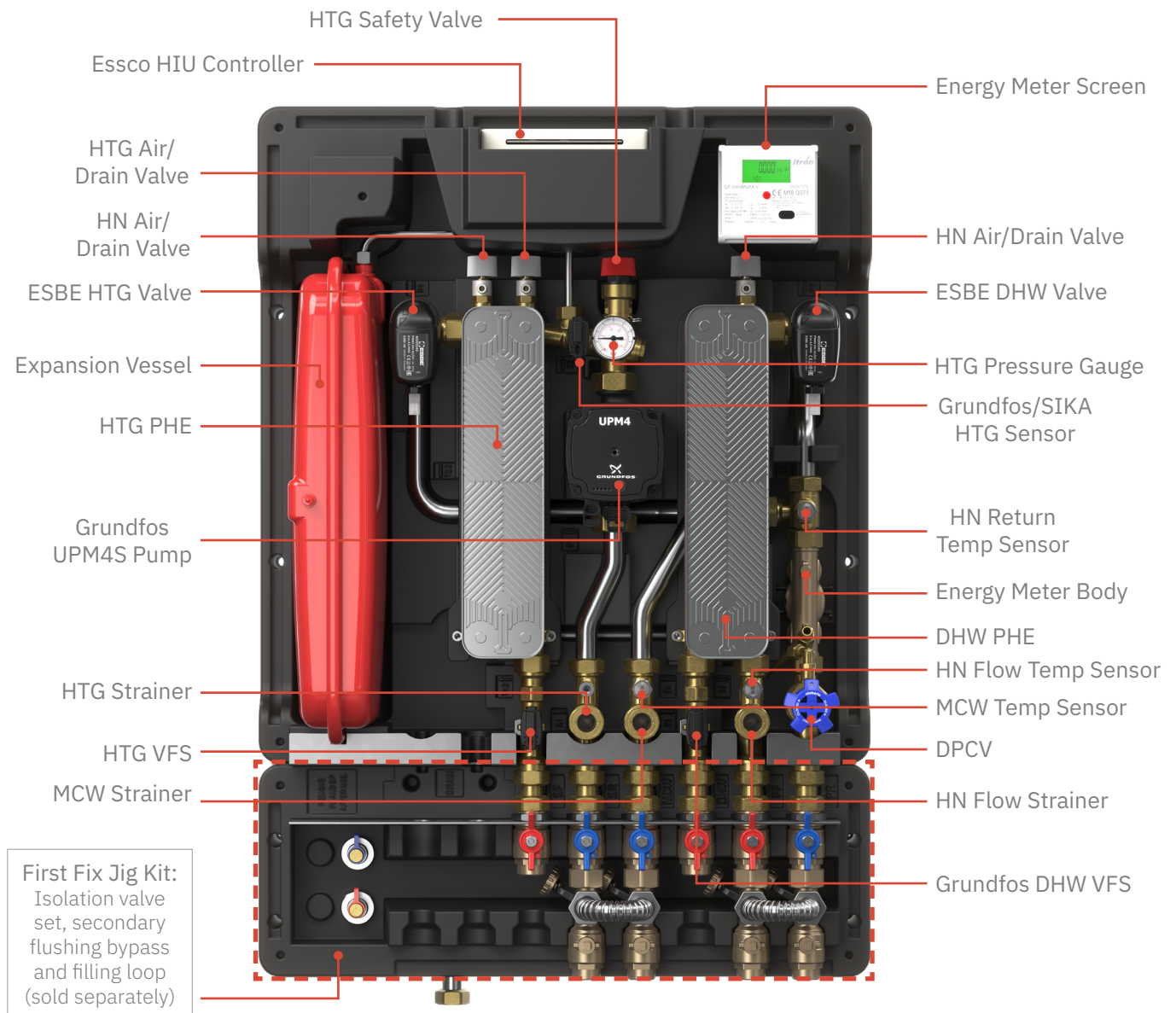


Insulated cover (standard) and first fix jig kit (sold separately)

Main Components

EDGE HIUs feature first-class components, including the market-leading valve from ESBE and intelligent electronic flow and temperature control technology.

All components are FULLY accessible via the front of the unit for quick install and easy maintenance.



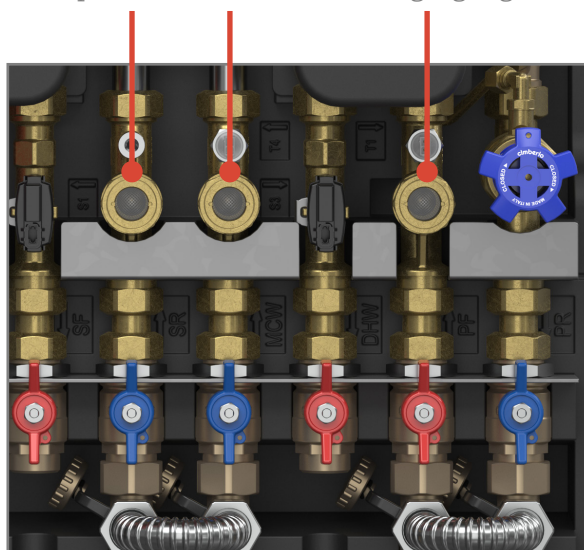
NOTE: 'HN' = Heat Network (secondary)

INSTALLATION & MAINTENANCE

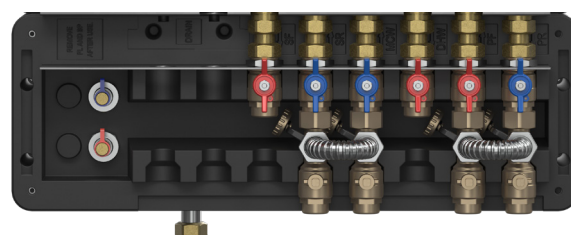


- Hydraulically reversible design allows all top or all bottom entry as standard
- Designed for quick installation with no additional brackets or jig required
- Supplied preconfigured with temperature set points such as heating, DHW and keep warm, for quick install and set-up
- Inbuilt rear offset as standard allows pipes to run behind HIU easily without brackets
- One of few fully front accessible HIUs on the market! All components are FULLY accessible via the front of the unit for quick install and easy maintenance
- Supplied with pre-insulated pipe kits
- Detachable flushing bypass (in line with CIBSE CP1) ensures all bypasses are closed
- Binder test points included as standard to replace flushing bypass post commissioning
- Inspectable strainers that feature sight glass for a quick visual check and easy maintenance
- Pressure tested in accordance with BS EN 12266-1:2012 to greatly reduce risk of leaks on site
- LEDs on controller, pump and control valves to show the status for simple visual fault finding
- Web App for online access to the HIU controller with engineer access to advanced settings for quick commissioning

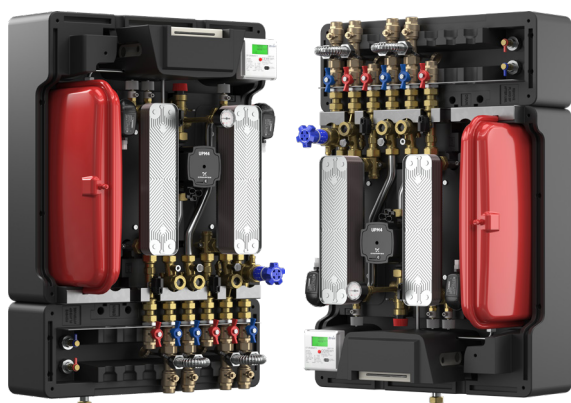
Inspectable strainers featuring sight glass



Detachable flushing bypass (in line with CIBSE CP1) ensures all bypasses are closed



Hydraulically reversible design



Technical Specification

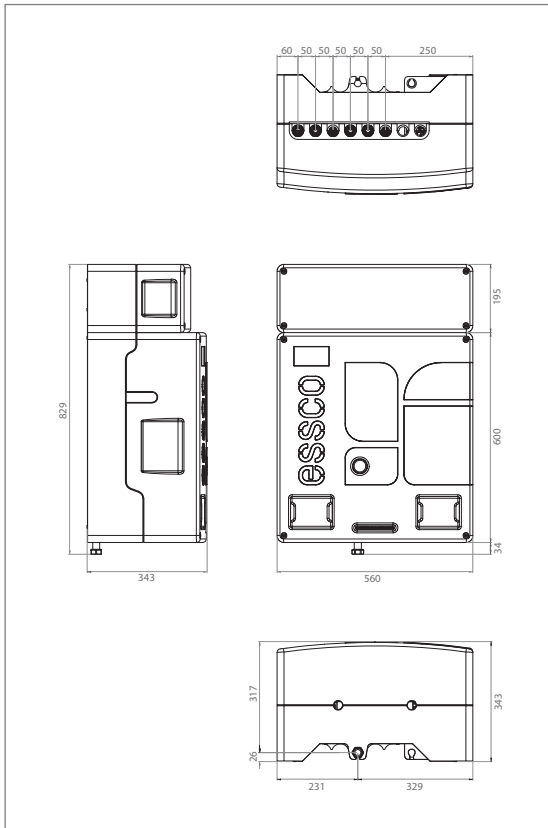


EDGE-T HIU	
Medium	Heating / glycol mix and domestic hot water
Maximum glycol concentration	30%
Secondary pressure rating	PN10
DHW Pressure rating	PN10
Tertiary space heating maximum pressure	3 bar
Expansion vessel	8 liters
Pressure relief valve presetting	3 bar
Maximum secondary temperature	90°C
Maximum differential pressure	4 bar
DPCV control range	20-60 KPa
Installation	Vertical all-top, or all-bottom connections Preformed pipes also available for other options
HIU to first fix jig connection	Telescopic design for maximum 10mm deviation
Seals / gaskets	EPDM
Threads	¾" Male BSP
Handles	Butterfly type. Red / blue handles denote flow / return connections respectively
Insulation	Main shells EPP 45kg/m³, average 30mm thickness
	Internal PHE shells Material: PE Density: 30 kg/m³ Thermal conductivity (ISO 8301): 0.0404 at 40°C W/m K
	22x13mm Pipe lagging (pre-formed pipes) Thermal conductivity (EN ISO 8497, EN 12667) $\lambda = 0.037 \text{ W/(mK)}$ at +40°C Permeability (EN 13469), $\mu > 10000$ Fire properties, Euro Class BL - s2, d0
Standard space heating pump	DN15 x 130mm Grundfos UPM4S 15-60 (PWM) Features anti-blocking software restarting pump via relay every 1.33 seconds at maximum torque
Electrical requirements	230V / 50Hz, 5A switched fused spur
Acoustic sound pressure level (LP) for moving parts	Grundfos UPM4S < 32 dB(A) ESBE valve < 39.5 dB(A), average 36.8 dB(A)
Warranty	5 years
	Extended to 7 years for new installations where an appropriate IWTM protector product is installed in the plant room, and an appropriate magnetic dirt separator is fitted on the HIU tertiary heating circuit Terms and conditions apply

Dimensions

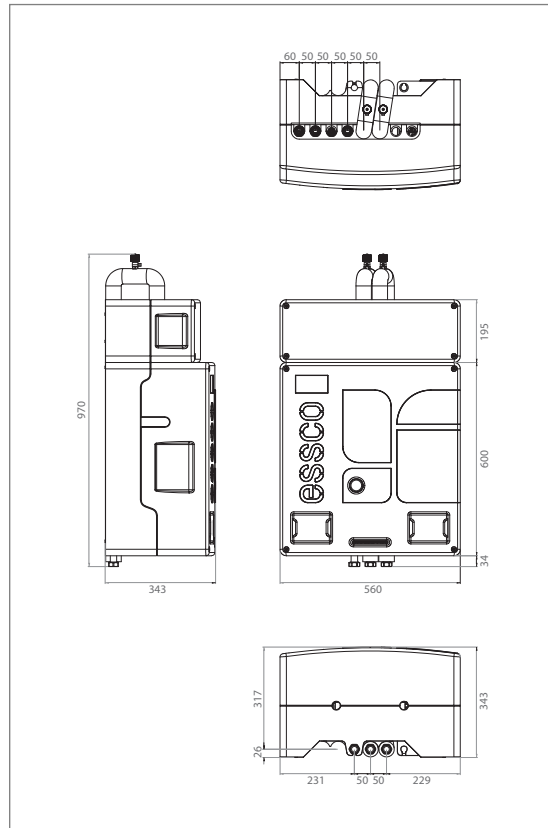
All Top

(EAHIUT-001 + EAFKHT-001)



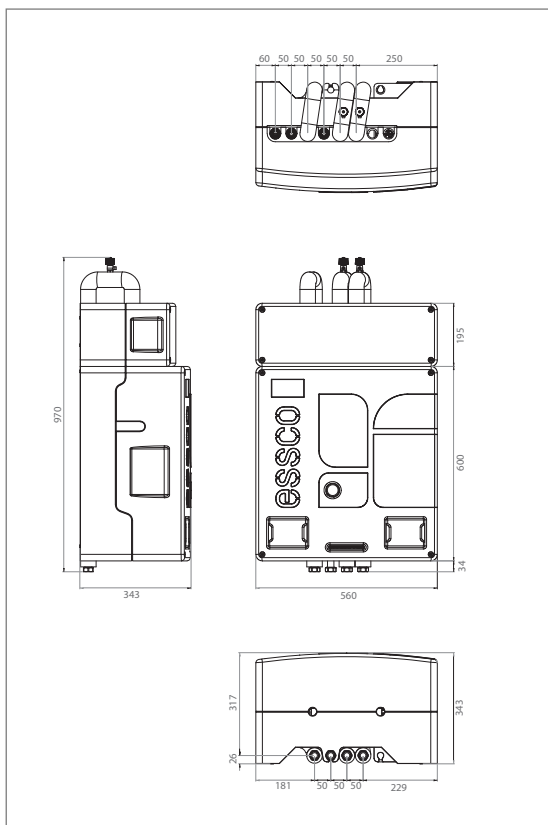
Secondary Top, HTG Bottom

(EAHIUT-001 + EAFKHT-003)



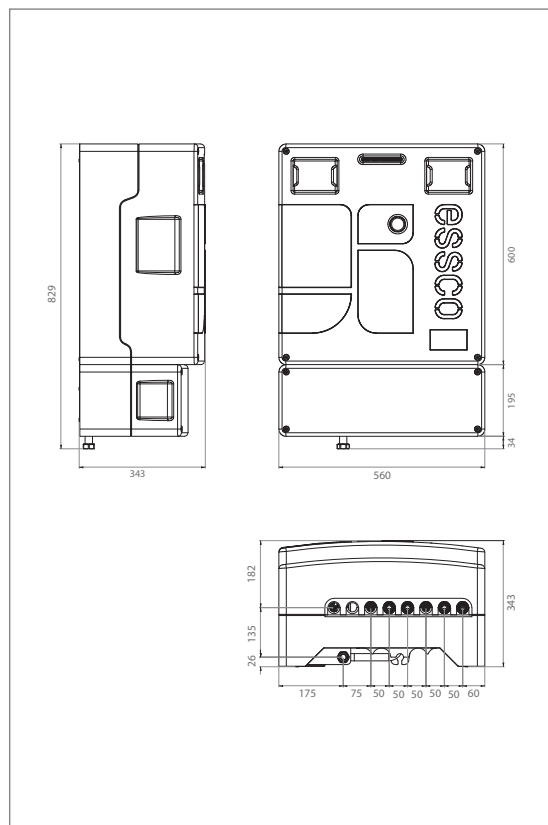
Secondary Top, DHW & HTG Bottom

(EAHIUT-001 + EAFKHT-004)



All Bottom

(EAHIUT-002 + EAFKHT-002)

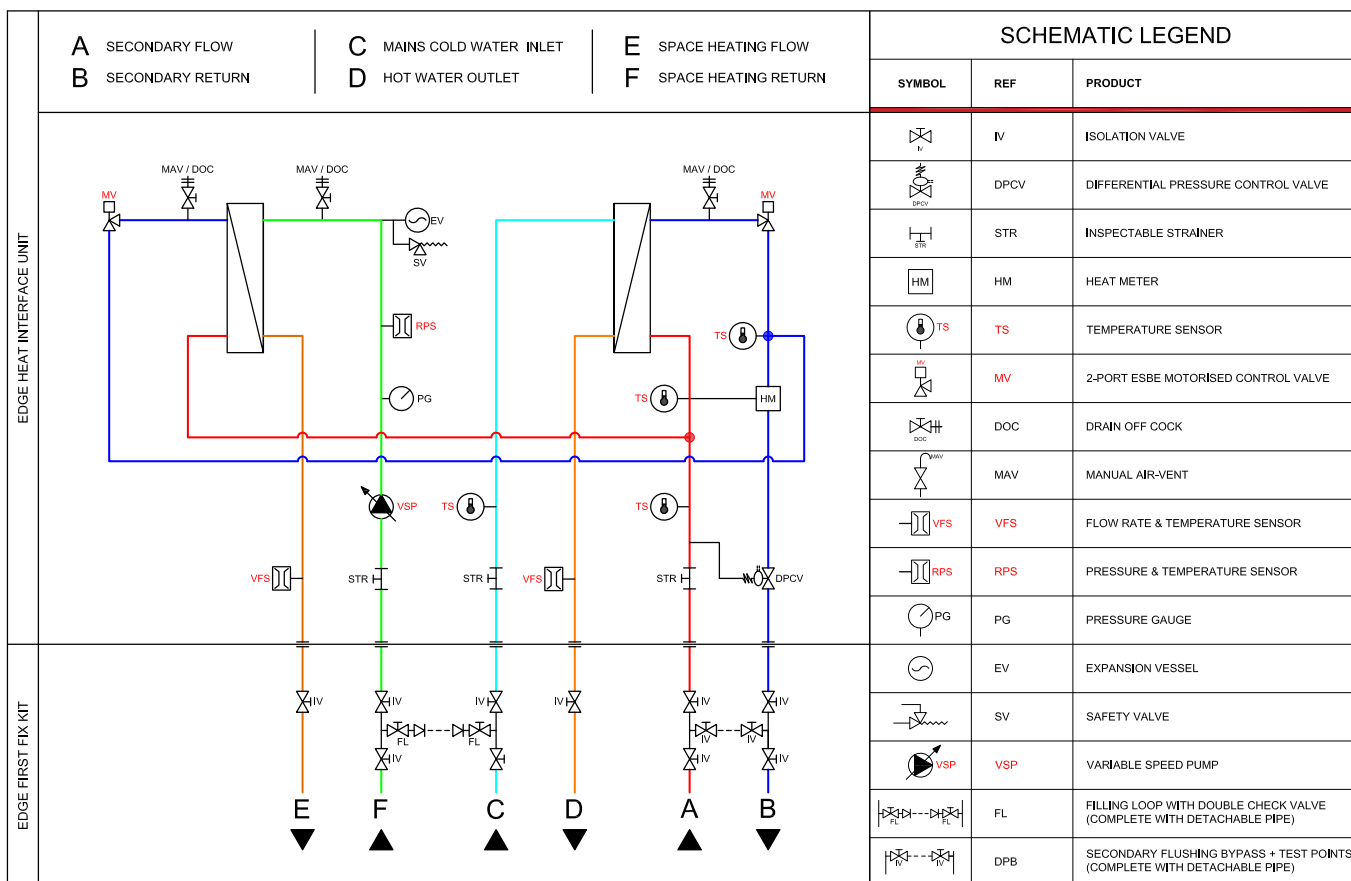


00 denotes standard PHE and pump configuration. Digits can change to suit specific selection for the project.

Hydraulic Schematics



Standard Model (EAHIUT)



EFFICIENCY & REGULATIONS

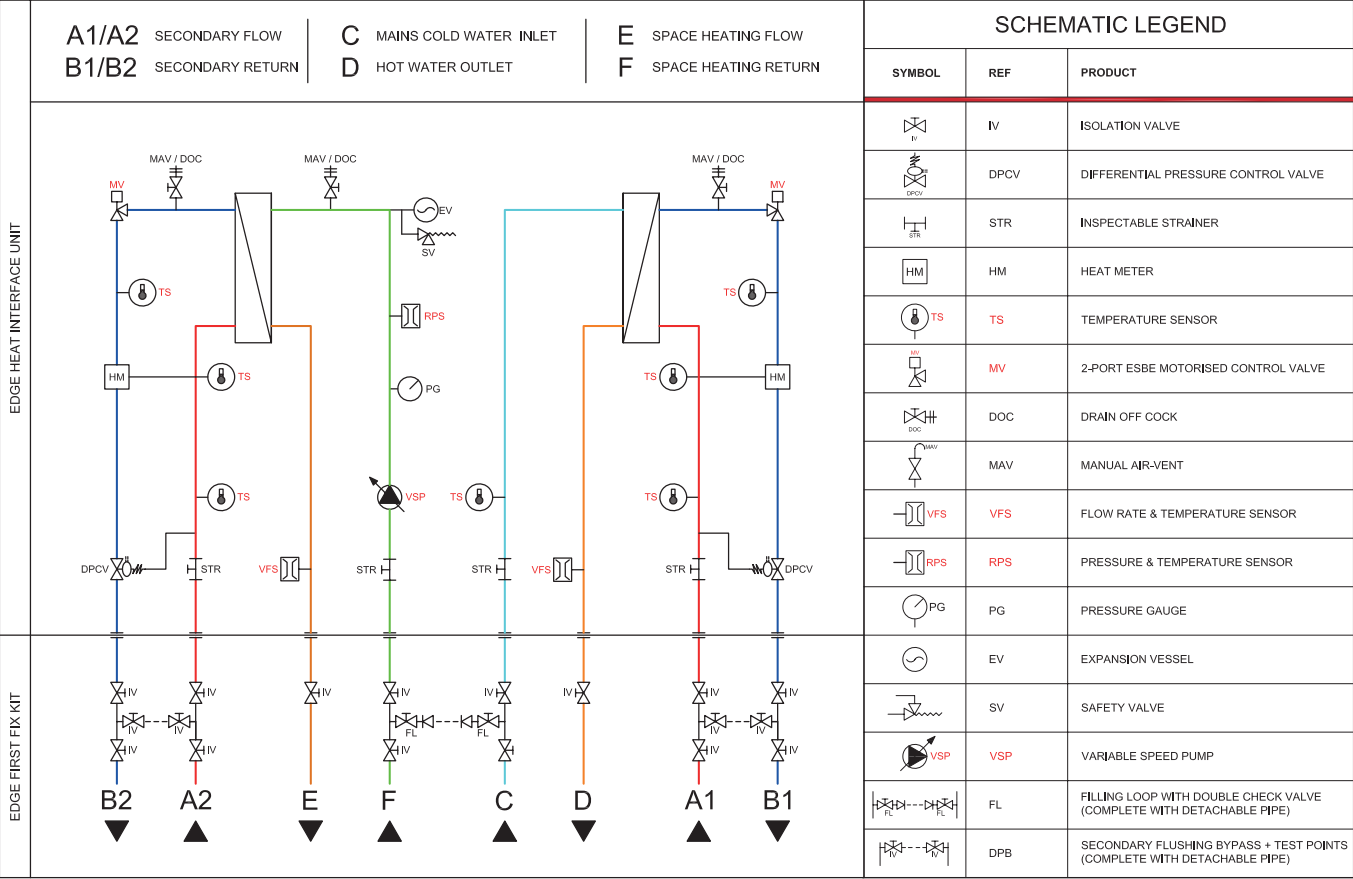


- EDGE-T MRK1 is tested to the BESA UK Standard for Heat Interface Units (2021) (VWART: 28°C / 29°C High / Low temperature test)
EDGE-T MRK2 is set to achieve top performance in the 2023 test
- Regulation 4 compliant with WRAS approved unit and components (Pending)
- Programmable keep-warm functionality enables quick hot water response without the requirement of manual/trickle valves

Hydraulic Schematics



Dual Secondaries Model (EAHIUT2)



Technical Information

HIU Controller Features

EDGE-T CONTROLLER	
230V AC pump supply	
Wi-Fi Direct (P2P)	
3 x PWM input / output	
8 x analogue sensor inputs	
4 x 230V switched inputs	Room thermostat
	Billing controller relay
	UFH high limit thermostat
	1 x spare
3 x outputs (volt free or 24V)	Demand output
	2 x spare outputs
Modbus interface (optional)	
Metering and Billing neutral	
Status LED's for power, transformer, inputs and outputs	

Free Wi-Fi web-app (P2P) for service engineers provides manual control, setpoint changes, and visibility of temperatures / flow rates and pressure

230V Installer wiring harness supplied as standard to keep connections external to controller

METERING AND BILLING

- Billing neutral, ready for connection to any standard Credit or PAYG system, so no tie-in's
- MID approved, Class 2 Ultrasonic M-Bus meter
- Open access to meter readings via standard M-Bus set-up or remotely via third party

CONTROL

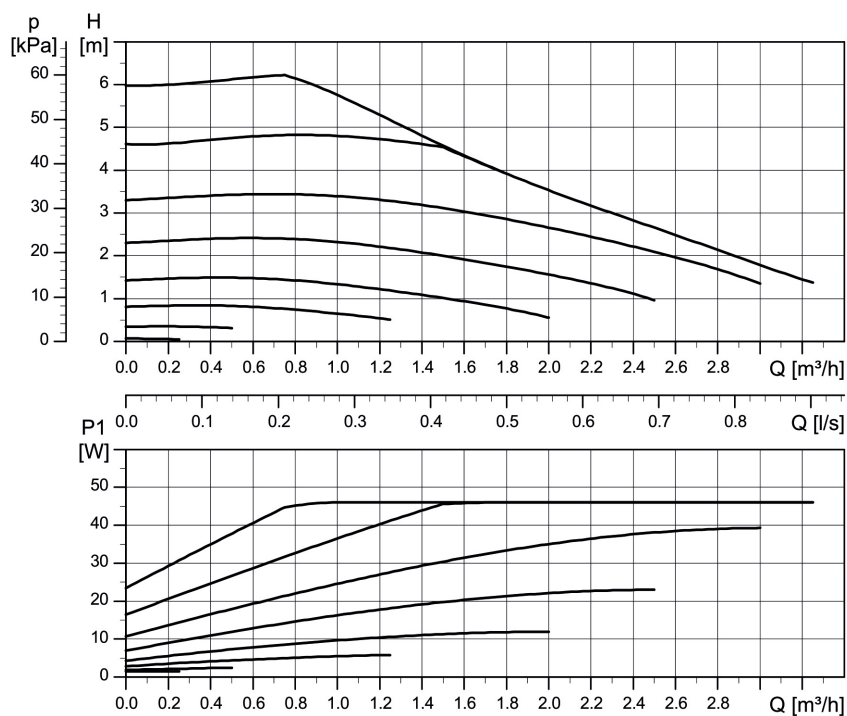
- Intelligent electronic PID control that modulates ESBE control valves to match real-time project demands and improve efficiency
- Web App for online access to the HIU controller using inbuilt Wi-Fi P2P (Peer-to-Peer) Includes user levels for engineer and homeowner
- HIU can be connected to the homeowners Wi-fi network to enable remote fault finding and control
- Modbus on board for networked connection if required



Technical Information

Space Heating Pump Curve

Standard model: Grundfos UMP4S 15-60 130



Other models also available for larger heating loads.