

AquaHeat Arctic – ST

Application

The Fortes Aqua Heat Arctic indirect is a twin plate heat interface unit (HIU) for the generation of instantaneous domestic hot water and indirect space heating.

The HIU provides hydraulic separation between the domestic hot water and the space heating circuits and the primary centralised low temperature heating system via a pair of stainless steel Copper brazed heat exchangers.

The HIU is suitable for radiator or underfloor heating and is complete with a DHW electronic controller for precise and efficient water temperature control and MODBUS communication port.

Design

- The Fortes Aqua Heat electronic domestic hot water controller makes it possible to deliver water at the correct temperature, even in the event of lower supply temperatures and pressures on the primary heating system.
- Very short reaction time with accurate temperature control when there is a demand for DHW.
- Insulated cover minimises heat loss from the unit.
- Features two pressure independent control valves with fast acting stepper motors.
- Advanced programmable electronic controller providing:
 - ~ 100% Hot water priority within 3 seconds
 - ~ Anti-legionella programme
 - ~ Red, green and blue LED status indicators
 - ~ Modbus I/O communication
- Compact and light weight design for easy handling.
- DHW & Indirect Heating.
- Ready for Low primary supply temperature 65°C.
- 100% priority on DHW.
- No moving parts in DHW circuit (low pressure drop).
- Adjustable or disabled idle temperature function.



Typical configuration with bottom connections

Features and Benefits

- Compact design.
- DHW programmable electronic controller.
- Programmable DHW temperature range
- Control via room thermostat or weather compensator
- Compact brazed stainless steel heat exchangers.
- 8 litre expansion vessel.
- Programmable heating supply temperature range.
- Very low standby losses.
- EPP Polypropylene cover.
- Direct volt free connection to controller for programmable room thermostat.
- Frese OPTIMA Compact pressure independent control valves:
 - ~ Adjustable DHW and heating design flow
 - ~ +/- 2K hot water temperature control

Optional

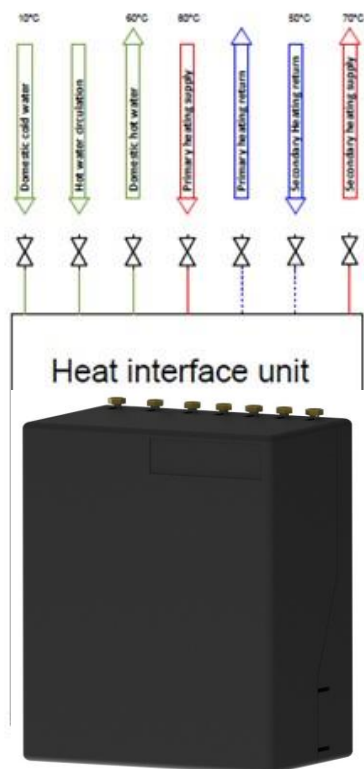
- Flushing bypass assembly complete with P/T plugs.
- First Fix bracket and/or Isolation valves.
- Ultra-sonic MID heat meter with M-Bus and 3 x pulsed inputs/outputs.
- DHW Recirculation pump.

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Operation

- Hot water priority within 3 seconds.
- Red, green and blue LEDs indicate operational status.
- Anti-legionella program - example 1 hour per 24 hours at >55°C.

Dimensions



Top connections DHW recirculation connection shown.

Dimensions including cover

Height	800mm
Width	580mm
Depth	260mm

Connections

A Primary supply flow	¾" flat faced union
B Primary supply return	¾" flat faced union
C Secondary heating supply	¾" flat faced union
D Domestic hot water	¾" flat faced union
E Domestic hot water recirculation	¾" flat faced union
F Domestic cold water	¾" flat faced union
G Heating return	¾" flat faced union

Technical Specification

Additional Connections

Relief valve drain:	15mm compression
Heat meter spool piece:	110mm x ¾"
Heat meter temperature sensor pocket:	M10 x1 or G½
Security valve/dP spool piece:	110mm x ¾"

Primary heat - centralised boiler plant

Max. supply temperature:	85°C
Min. supply temperature:	65°C
Nominal supply temperature:	80°C
Pressure class:	PN16
Max. differential pressure:	400 kPa
Min. differential pressure:	50 kPa

Secondary Heating

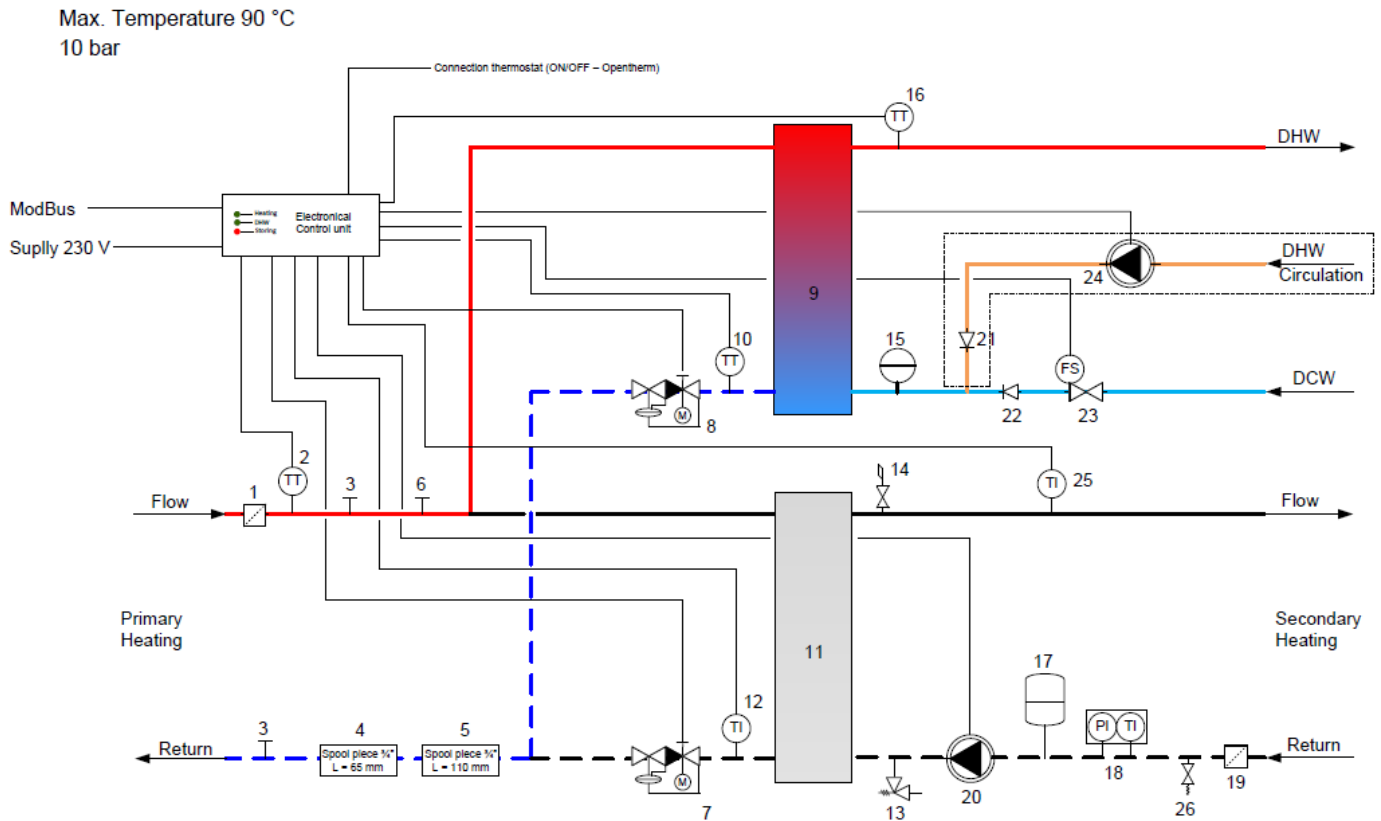
Controls:	Electronic
Max. temperature set point:	80°C
Heat exchanger:	SWEP E8ASx36
Circulation pump energy class:	A
Max. flow circulation pump:	600 l/h
Pump over run time:	15 minutes
Expansion vessel:	8 litres
Pressure relief valve setting:	3 bar

Domestic Hot Water Circuit

Controls:	Electronic
Pressure class:	10 bar
Max. output:	24 l/m
Max. output @ 10/60:	70 kW
Heat exchanger:	SWEP E8ASx36
Max. pressure loss @ 20 l/m:	60 kPa
Nominal cold water temperature:	10°C
Nominal DHW temperature:	60°C
DHW temperature set point range:	45 to 60°C

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Pipework and Wiring Schematic



Item	Component	Item	Component
1	Strainer	15	Water hammer arrestor
2	Temperature sensor (LTHW supply)	16	Temperature sensor (DHW supply)
3	P/T plug	17	Expansion vessel
4	Spool piece (for prepayment valve)	18	Pressure & Temperature gauge
5	Spool piece (for heat meter)	19	Strainer
6	M10 sensor pocket	20	Circulation Pump - space heating
7	PICV for space heating control	21	Check valve (Optional)
8	PICV for hot water control	22	Check valve
9	Hot water heat exchanger	23	Flow sensor
10	Isolation valve (Normally Closed)	24	DHW recirculation pump (Optional)
11	Space Heating heat exchanger	25	Multi-functional sensor
12	Temperature sensor (DHW Return)	26	Drain & Filling valve
13	Safety relief valve	27	Electronic controller
14	Air vent valve	28	Transformer (not shown)