

ModuSat® Floor Standing Communal Heating Units

The Evinox ModuSat® satellite heating system has been designed to provide apartments and communal housing developments with independent fast recovery hot water and high efficiency heating. With a large range of models available, the system suits a variety of applications.

Consisting of a fast recovery hot water tank and a plate heat exchanger, pump and control valve, the ModuSat® offers a total heating solution. In addition to this the ModuSat® can provide direct control of



underfloor heating without the need for any underfloor pumps, blending valves or mixing valves.

The design of the ModuSat® provides the end user with the same autonomy as if they had their own boiler and tank. This includes a meter for billing of energy usage and cold water consumption, where required, for each apartment or house, and also offers models for both heating and cooling.

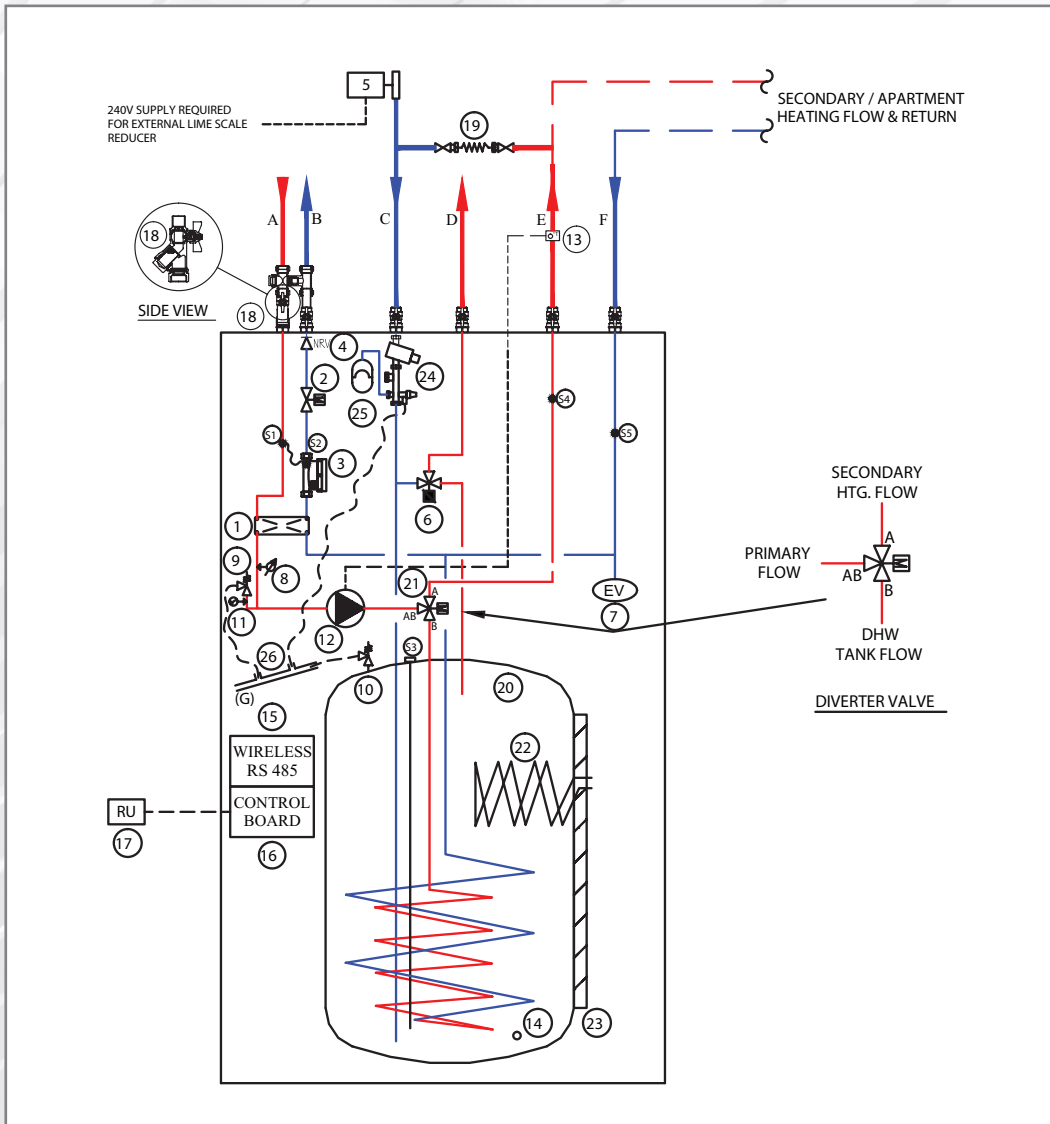
The ModuSat® draws energy from the main heating primary circuit delivered from a centralised plant room. This is in line with latest legislation encouraging centralised plant rather than the use of individual heating and hot water systems.

Features & Benefits

- Global warming potential (GWP) of the cylinder insulation = 0
- Ultrasonic heat meter MID approved and class 2 accuracy (BS EN 1434) – as required by the Heat Network (Metering and Billing) Regulations 2014
- Simple to install due to factory assembled pipe work, internal wiring and integrated heat meter
- Integrates readily with renewable energy sources
- Centralised plant dramatically reduces kW load for the building compared to individual boilers
- Braze welded PHE for primary circuit separation
- Insulated PHE
- Integrated hot water storage within the ModuSat enables central plant space to be greatly reduced
- Fully integrated unvented kit
- Easy access for servicing
- Minimal maintenance requirements
- External filling loop
- PaySmart® unit for debt free energy billing (Optional)
- SmartTalk® two way communication
- In-built Non Return Valve on the return - Prevents incorrect pipework connection
- Wilo PWM Pump - Provides compliance with 2015 pump efficiency regulations
- Pressure Independent Control Valves (PICV) eliminate the requirement for 3 separate valves for the regulation of differential pressure, flow and heat energy
- Hot water blending valve for additional DHW temperature safety
- Electric immersion heater (Optional)
- Wireless RS485 module can provide connection remotely without the requirement of a Bus network (Optional)
- Control board works with TCP/IP and provides operation of up to three heating circuits
- ViewSmart Room Controller with optional ENE3 model
- Remote monitoring, alarms and diagnostics
- No annual gas appliance inspections required
- Cold water meter (Optional external)
- Capable of reading the electrical meter (Option for ENE3)

The in-built energy meter can be tailored to meet the requirements of the building operator and residents. This includes a complete remote billing solution using a hard wired BUS or Ethernet network, or a virtual GPRS network to provide the end user with a fully itemised energy bill.

ModuSat® FS 80 & 150 Circuit Diagram



Components

- A Primary / DH flow
- B Primary / DH return
- C Domestic cold water Inlet
- D Domestic hot water outlet
- E Secondary / Apartment heating flow
- F Secondary / Apartment heating return
- G Connection for safety discharge

Primary Circuit Side

- 1 Insulated plate heat exchanger (Heating)
- 2 Pressure independent control valve (PICV) with actuator - Heating
- 3 Heat meter
- 4 Non-return valve

DHW Secondary Side Circuit

- 5 External lime scale reducer (Optional)
- 6 Blending valve

Heating Secondary Side Circuit

- 7 Heating expansion vessel
- 8 Pressure sensor
- 9 Safety relief discharge
- 10 P&T Safety relief discharge
- 11 Manometer
- 12 Circulation pump
- 13 Safety thermostat external (Optional)
- 14 Drain point

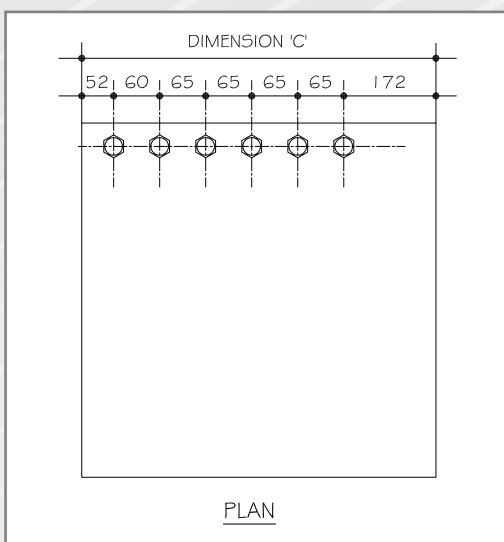
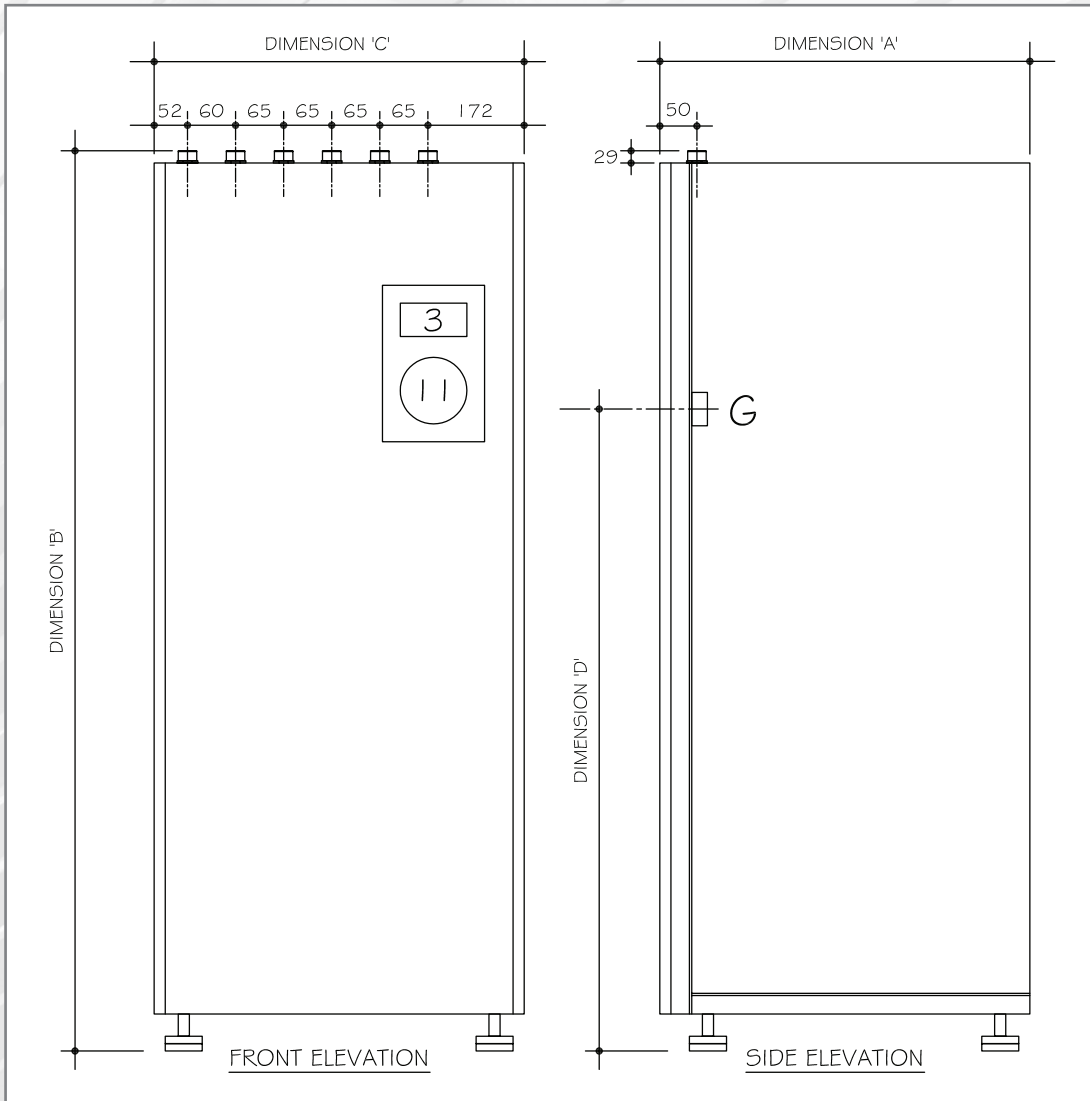
Controls & Other Items

- 15 Wireless RS 485 (Optional)
- 16 Electronic control board
- 17 Room control unit
- 18 IV (Strainer + flushing bypass assembly)
- 19 Filling loop (External)
- 20 DHW storage tank with heating coil
- 21 Motorised diverter valve
- 22 Electric immersion heater (Optional)
- 23 Tank insulation
- 24 Unvented kit (With balanced cold feed)
- 25 Potable expansion vessel
- 26 Multi directional discharge

ModuSat® FS

Heat Interface Units

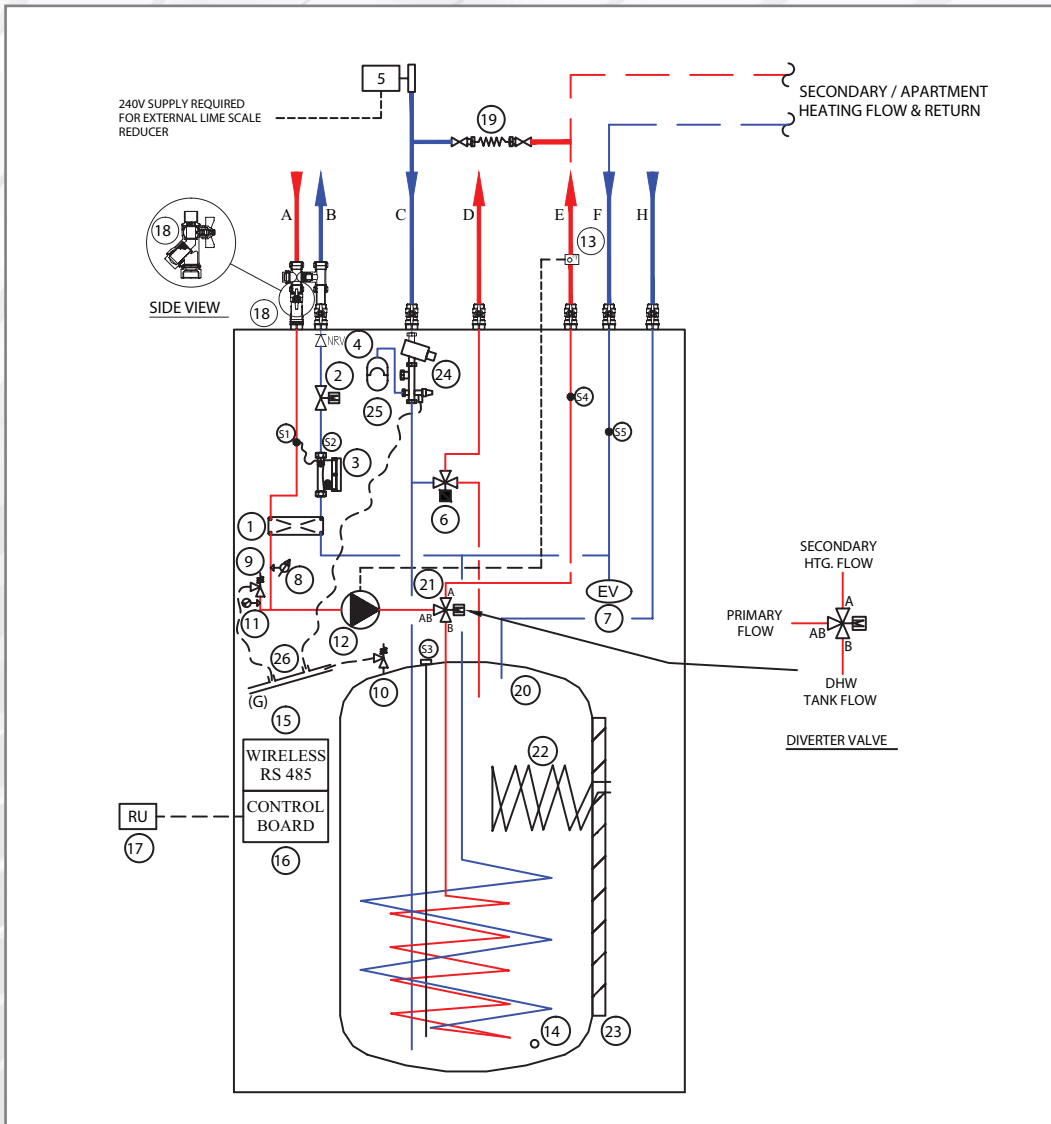
ModuSat® FS 80 & 150 Dimensions



		FS 80	FS 150
Dimension A	mm	560	560
Dimension B	mm	1370	1720
Dimension C	mm	545	545
Dimension D	mm	825	1185

G - Discharge pipe to exit through left or right side of unit through the provision provided.

ModuSat® FS 200 Circuit Diagram



Components

- A Primary / DH flow
- B Primary / DH return
- C Domestic cold water Inlet
- D Domestic hot water outlet
- E Secondary / Apartment heating flow
- F Secondary / Apartment heating return
- G Connection for safety discharge
- H DHW secondary return connection

Primary Circuit Side

- 1 Insulated plate heat exchanger (Heating)
- 2 Pressure independent control valve (PICV) with actuator - Heating
- 3 Heat meter
- 4 Non-return valve

DHW Secondary Side Circuit

- 5 External lime scale reducer (Optional)
- 6 Blending valve

Heating Secondary Side Circuit

- 7 Heating expansion vessel
- 8 Pressure sensor
- 9 Safety relief discharge
- 10 P&T Safety relief discharge
- 11 Manometer
- 12 Circulation pump
- 13 Safety thermostat external (Optional)
- 14 Drain point

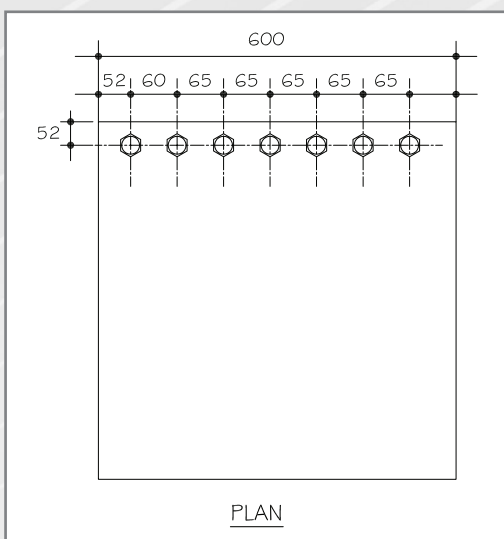
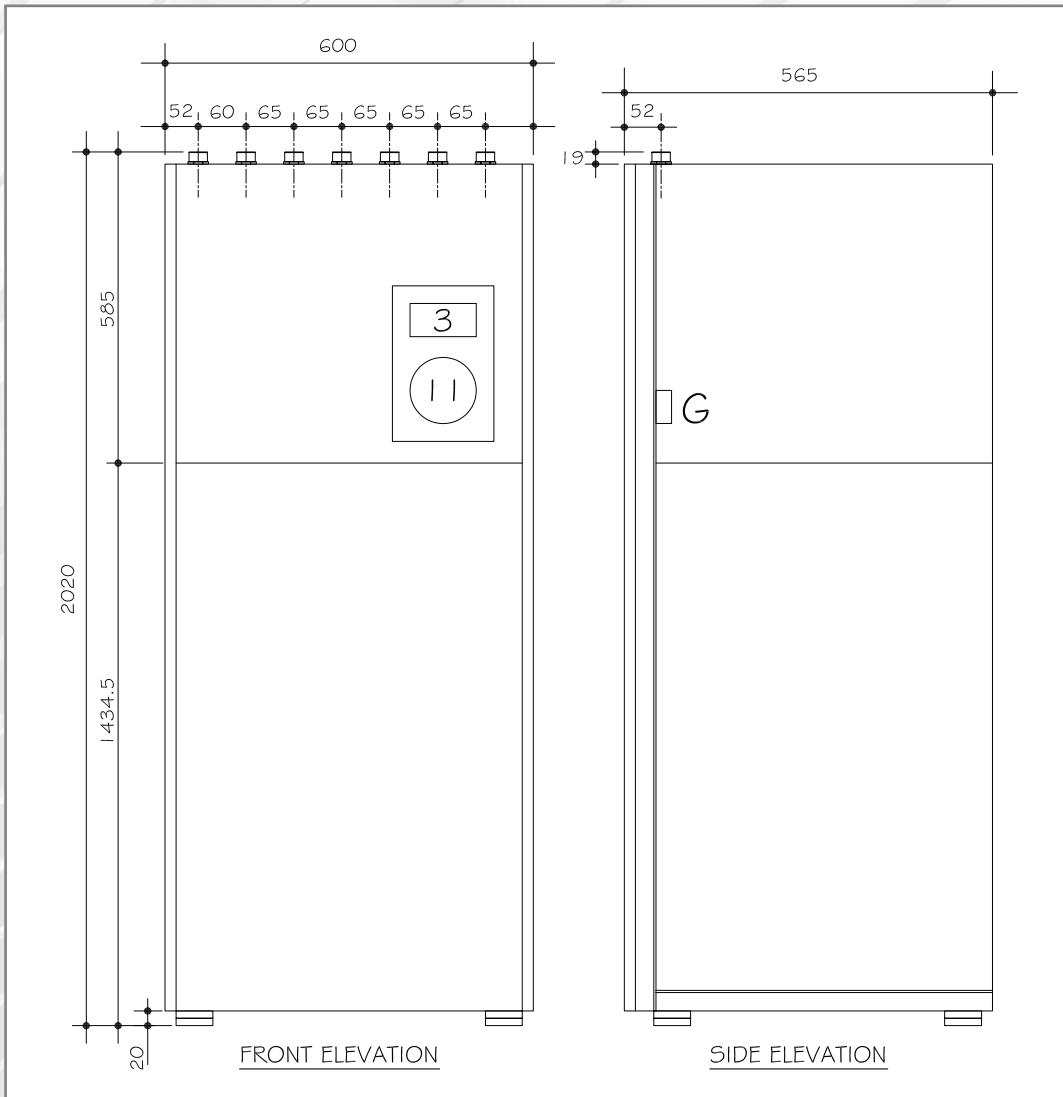
Controls & Other Items

- 15 Wireless RS 485 (Optional)
- 16 Electronic control board
- 17 Room control unit
- 18 IV (Strainer + flushing bypass assembly)
- 19 Filling loop (External)
- 20 DHW storage tank with heating coil
- 21 Motorised diverter valve
- 22 Electric immersion heater (Optional)
- 23 Tank insulation
- 24 Unvented kit (With balanced cold feed)
- 25 Potable expansion vessel
- 26 Multi directional discharge

ModuSat® FS

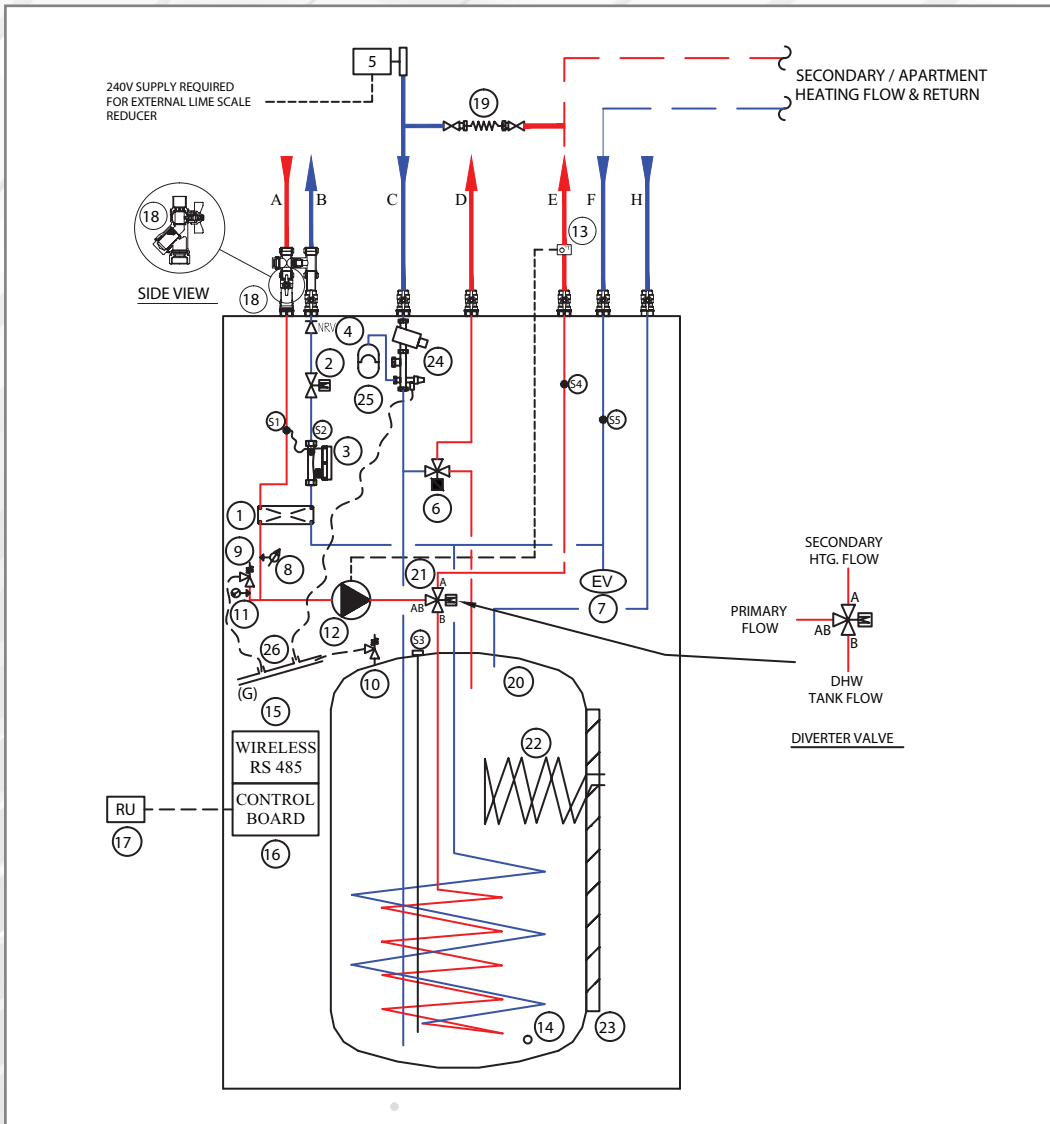
Heat Interface Units

ModuSat® FS 200 Dimensions



G - Discharge pipe to exit through left or right side of unit through the provision provided.

ModuSat® FS 300 & 400 Circuit Diagram



Components

- A** Primary / DH flow
- B** Primary / DH return
- C** Domestic cold water Inlet
- D** Domestic hot water outlet
- E** Secondary / Apartment heating flow
- F** Secondary / Apartment heating return
- G** Connection for safety discharge
- H** DHW secondary return connection

Primary Circuit Side

- 1** Insulated plate heat exchanger (Heating)
- 2** Pressure independent control valve (PICV) with actuator - Heating
- 3** Heat meter
- 4** Non-return valve

DHW Secondary Side Circuit

- 5** External lime scale reducer (Optional)
- 6** Blending valve

Heating Secondary Side Circuit

- 7** Heating expansion vessel
- 8** Pressure sensor
- 9** Safety relief discharge
- 10** P&T Safety relief discharge
- 11** Manometer
- 12** Circulation pump
- 13** Safety thermostat external (Optional)
- 14** Drain point

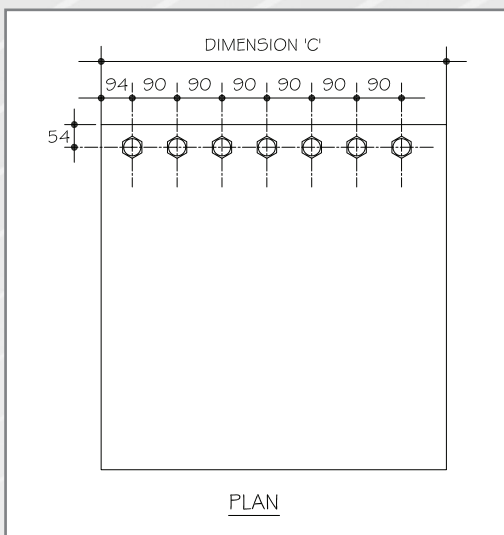
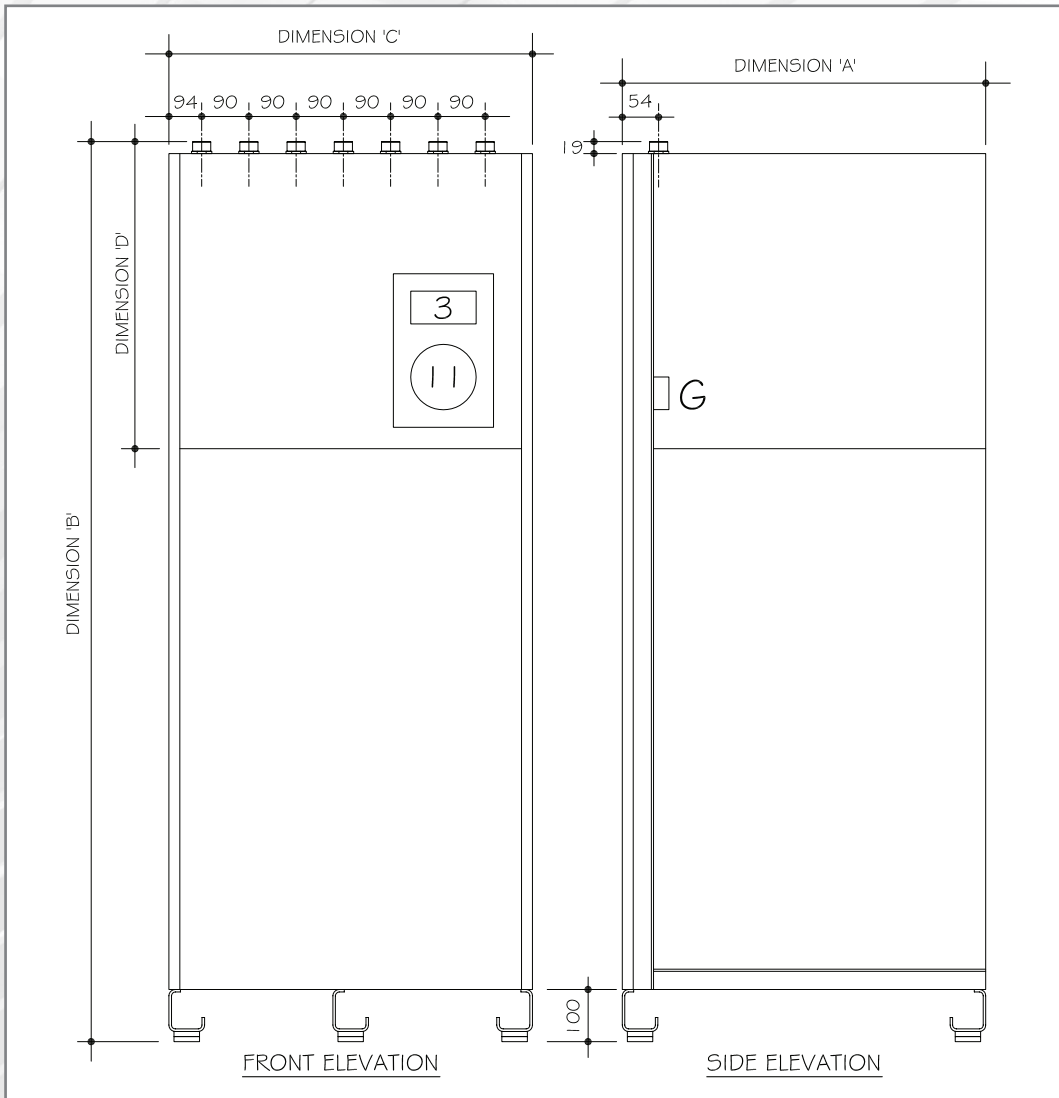
Controls & Other Items

- 15** Wireless RS 485 (Optional)
- 16** Electronic control board
- 17** Room control unit
- 18** IV (Strainer + flushing bypass assembly)
- 19** Filling loop (External)
- 20** DHW storage tank with heating coil
- 21** Motorised diverter valve
- 22** Electric immersion heater (Optional)
- 23** Tank insulation
- 24** Unvented kit (With balanced cold feed)
- 25** Potable expansion vessel
- 26** Multi directional discharge

ModuSat® FS

Heat Interface Units

ModuSat® FS 300 & 400 Dimensions



		FS 300	FS 400
Dimension A	mm	775	775
Dimension B	mm	2070	2320
Dimension C	mm	760	760
Dimension D	mm	624	643

G - Discharge pipe to exit through left or right side of unit through the provision provided.

Technical Details

ModuSat® FS Heat Interface Units

ModuSat® FS Storage Range - Technical Data

		ModuSat® 80		ModuSat® 150		ModuSat® 200		ModuSat® 300		ModuSat® 400	
Water Capacity	Litres	80		150		200		300		400	
Primary flow rate at 80°C Nom / Max	l/h	720	850	720	900	800	1000	1300	1600	1500	1900
Exchanger power Nom / Max	kW	12	24	15	32	20	42	30	54	40	65
Continuous DHW Flow rate at 45 °C	l/m	5	10	6	13	8	17	12	22	16	26
Pre-Heat Times from 10 °C to 60 °C	mins	23	12	35	16	35	16	35	19	35	21
Re-Heat Time to 60°C after 70% of volume drawn off	mins	16	8	24	11	24	11	24	13	24	15
Flow at 45°C for 10 min (Storage at 60°C)	l/m	11		21		28		42		57	
Flow at 45°C for 12 min (Storage at 60°C)	l/m	9		18		24		36		47	

Cold water temperature assumed to be at 10°C

Please note - The above figures are based on nominal / typical primary parameter. The DHW tank coil outputs can be improved subject to primary system performance. For further information please contact the Evinox Technical Department on 01372 722277.

Technical features

- Maximum Primary Operating Pressure: 10 bar (Optional 16 bar)
- Power Supply Voltage: 220/240 Volt (AC) 50 Hz
- Maximum Absorbed Electrical Power: 0.6 Amp
- Max Supply Temperature (Primary): 90°C
- DHW Maximum Temperature: 60°C
- DHW Maximum Pressure: 7 Bar
- DHW Operating Pressure: 3.5 Bar

Expansion Vessel Sizes

Circuit	Heating secondary side circuit	DCW
Floor Standing Unit	Heating	Cold (Potable Water) Expansion Vessel Capacity
ModuSat® FS 80	8 Litre	8 Litre
ModuSat® FS 150	8 Litre	12 Litre
ModuSat® FS 200	10 Litre	18 Litre
ModuSat® FS 300	14 Litre	24 Litre
ModuSat® FS 400	14 Litre	36 Litre

Weights

	Shipping Weight
ModuSat® FS 80	97.5 Kg
ModuSat® FS 150	120.0 Kg
ModuSat® FS 200	130.5 Kg
ModuSat® FS 300	241.0 Kg
ModuSat® FS 400	285.0 Kg

