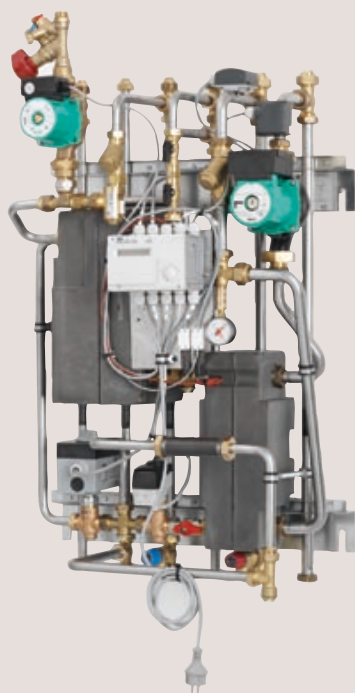




Cetetherm Mini Plus

District heating substation for single-family houses and multi-family buildings (1 to 8 dwellings)



Cetetherm Mini Plus is a complete, ready-to-install district heating substation for heating and hot water. Cetetherm Mini Plus is designed for buildings with a primary connection to a district heating network. It can be used for single-family houses or multi-family buildings (1-8 dwellings).

Alfa Laval has years of experience in district heating technology and has developed Cetetherm Mini Plus with well-planned pipework and with all components easily accessible for inspection and future servicing.

Comfort

Cetetherm Mini Plus has a fully-automatic temperature control for heating and hot water. Heating is controlled in relation to the outside temperature and desired room temperature. Hot water temperature is controlled and maintained at the desired temperature.

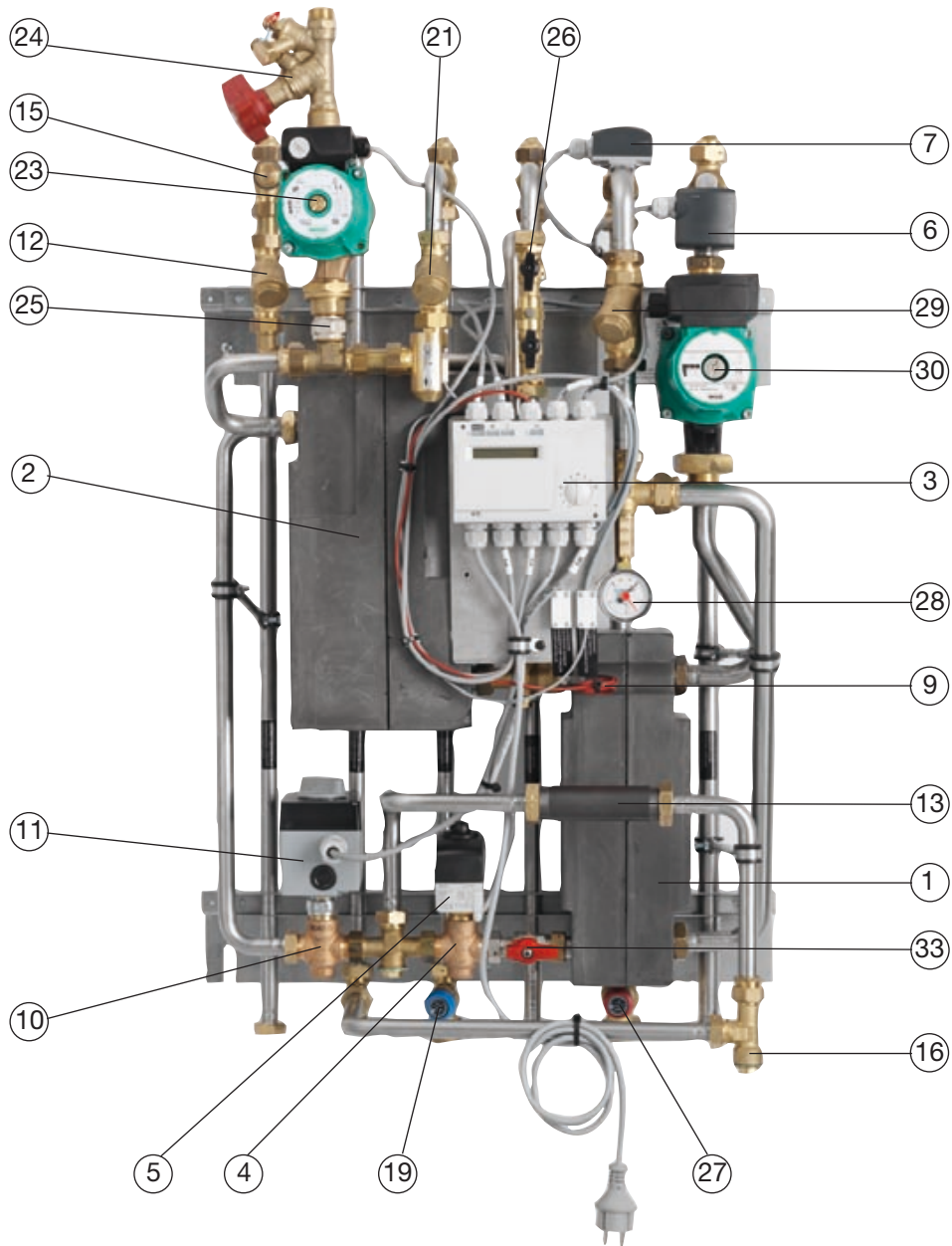
Installation

Well-planned pipework and ready-wired electrics make installation very simple. A pre-programmed controller and plug-socket connection provide further simplification, allowing the substation to be started without delay. The Cetetherm Mini Plus can be hung on a wall.

Long-term security

All of the heat exchanger's plates and pipes are made of acid-resistant stainless steel for long life. All components are adjusted together and undergo thorough functional testing in accordance with Alfa Laval's ISO 9001:2000 quality assurance system. For future servicing requirements, all components are easily accessible and individually replaceable.

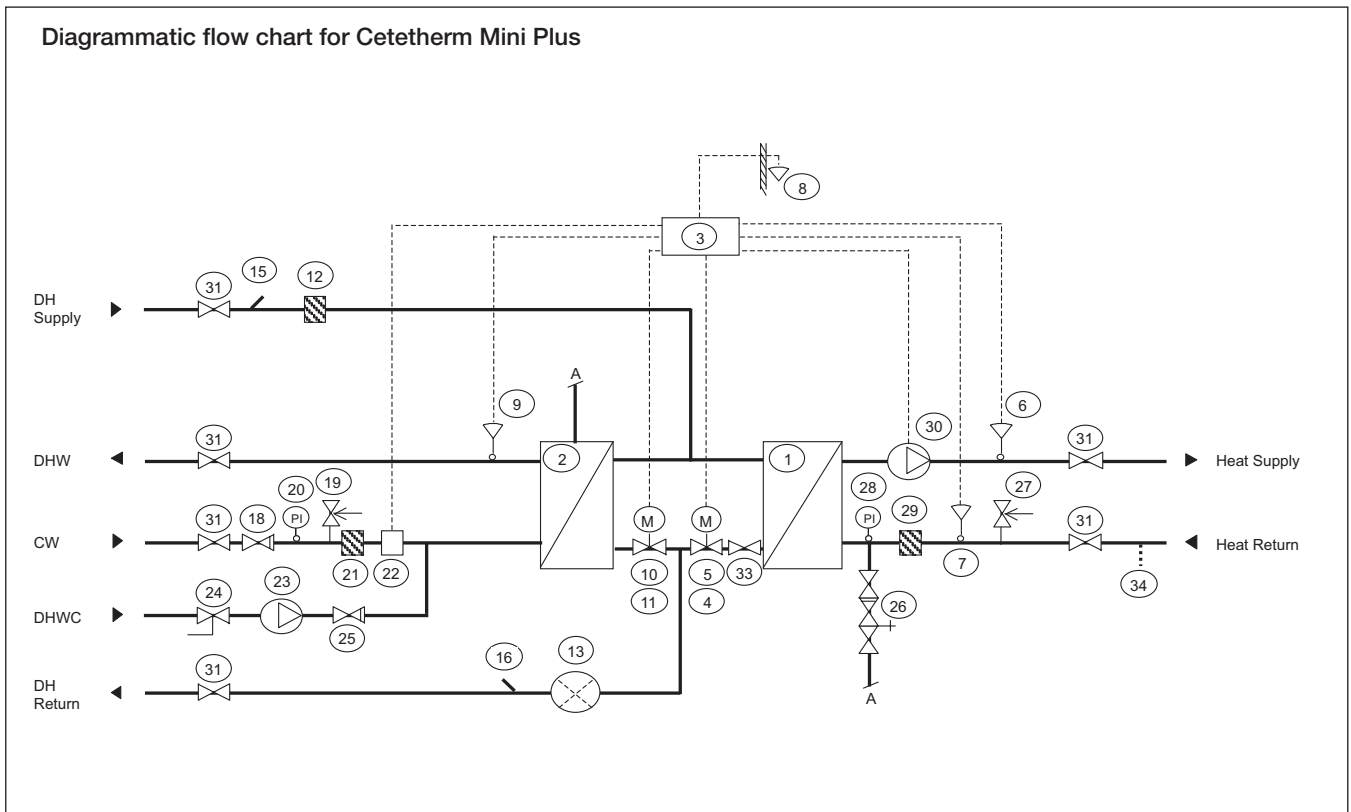
Cetetherm Mini Plus is CE-marked to certify that the substation conforms to international safety regulations. To maintain the validity of the CE marking, only identical replacement parts may be used.



Components

- | | |
|---|---|
| 1. Heat exchanger, heating | 19. Safety valve DHW 9 /10 Bar |
| 2. Heat exchanger, hot water | 20. Pressure gauge, cold water (optional) |
| 3. Control center | 21. Strainer, cold water (not shown) |
| 4. Control valve, heating | 22. Flow switch, cold water (optional) |
| 5. Actuator, heating | 23. Circulation pump, hot water |
| 6. Temp. sensor, heating supply | 24. Balancing valve, hot |
| 7. Temp. sensor, heating return | 25. Non-return valve, hot water circulation (not shown) |
| 8. Temp. sensor, outdoor (not shown) | 26. Topping up, heating EN1717EA |
| 9. Temp. sensor, hot water | 27. Safety valve, heating 2,5 Bar |
| 10. Control valve, hot water | 28. Pressure gauge, heating 0-4 Bar |
| 11. Actuator, hot water | 29. Strainer, heating |
| 12. Strainer, district heating | 30. Circulation pump, heating |
| 13. Adaptor for flow meter 1"x 130 mm | 31. Shut off valve set 4 pcs 3/4" + 2 pcs 1" |
| 15. Temperature sensor connection, primary supply | 33. Summer shut off valve, heating |
| 16. Temperature sensor connection, primary return | 34. Connection expansion vessel (not included) |
| 18. Check valve, cold water (not shown) | |

Diagrammatic flow chart for Cetetherm Mini Plus



Operation

The temperature and pressure of the incoming district heating water from the culvert network are very high. For this reason, only the heat from this water is used. The district heating water does not enter the heating and hot water systems of the building.

The heat from district heating water is transferred to the heating and hot water systems of the building in the heat exchangers. The heat is transferred through thin plates of acid-resistant stainless steel which keep the district heating water completely separate from the systems in the building.

Cetetherm Mini Plus has automatic temperature control for heating and hot water. The heating circuit is controlled as per the outside temperature and the desired room temperature by means of a controller, flow line sensor and outside temperature sensor.

When no heat is needed, the circulation pump in the heating circuit stops automatically, but is started regularly to make sure that it does not seize up during long idle periods. The hot water temperature is controlled by a temperature control system that is set to approximately 55 °C.

After adjustment, the Cetetherm Mini Plus operates completely automatically. However, in hard water areas it is advisable to be attentive and to remedy any faults in good time if the temperature of the hot water gets too high, otherwise the risk of limescale deposits in the heat exchanger may increase.

Operating data

	District heating	Heating	Hot water
Design pressure, MPA	1.6	0.6	1.0
Design temperature, °C	120	100	100
Safety valve opening pressure, MPa	–	0.25	0.9/1.0
Volume, heat exchanger, L	2.6/7.7	1.1/3.5	1.7/3.3

Performance at primary operating pressure 100-600 kPa

Design temperature program (°C)	Capacity (kW)	Primary flow (l/s)	Actual return temp. (°C)	Secondary flow (l/s)
Hot water circuit				
65-25/10-50	75	0.4	20	0.44
65-22/10-55	58	0.32	22	0.31
70-25/10-50	66	0.3	17	0.4
70-25/10-55	62	0.3	20	0.33
Heating circuit				
100-63/60-80	40	0.25	61	0.48
100-43/40-60	40	0.16	41	0.48
100-33/30-40	20	0.07	31	0.48
115-65/60-80	40	0.18	61	0.48
115-45/40-70	60	0.19	41	0.48
115-35/30-40	20	0.04	31	0.48

Connections	Screws	Other information
District heating supply	G 3/4	Electrical data: 230 V, single phase 100 W
District heating return	G 3/4	Sound level: <70 dB(A), 1.6 meters above the floor and 1 meter from the sound source
Heating supply	G 1	Dimensions: Width 600 mm x depth 470 mm x height 1000 mm
Heating return	G 1	Weight: 41 kg
Cold water	G 3/4	
Hot water	G 3/4	

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Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com