



Högfors
GST
Energy used wisely.

UNIS SUBSTATIONS



The Unis substation is of extremely high technical quality. Furthermore, it is energy-efficient and easy to use, has a clear exterior, and is installable in a class of its own.

All Unis-substations are available on MagiCAD.

Before choosing district heating substation, the following should be observed:

Choose the devices together with the designer:

- The floor heating suppliers use different pipe sizes that affect the choice of the device.
- The ventilation system, too, can affect the choice of the device.
- The normal rated temperature of the substation is 115 °C. If the temperature is lower, the dimensioning must be checked again.

The choice of the right heating systems for your house requires the point of view of an expert.

Pay attention to the following:

- Environmental friendliness and energy-efficiency (for example pumps of energy class A)
- Installability
- Ease of use
- Pipe system durability (HST pipe system)
- Living comfort (no sound problems)
- Serviceability

Unis equipment

Standard fittings in the Unis substation:

- Electronic controls for heating and domestic hot water
- Plug-connected electric control centre, which includes a control switch and operating switches for pumps
- Circulation water pump for heating and domestic hot water systems (three pumps in the 3-circuited-circuit model)
- Brazed plate exchangers (plate material EN 1.4401)
- Secondary network temperatures can be read on the control centre display
- Manometers
- Filling valve for heating systems and filling valve for domestic hot water, as well as shut-off and relief valves

- Expansion tank
- Heating pump stopper thermostat in floor-heating models (F, RF) (3-circuited models have two heating pump stoppers)

Unis options:

- Primary side equipment (includes thermometers and manometers as well as shut-off valves)
- Differential pressure controller, if pressure difference adjustment must be used in the site (great pressure difference)

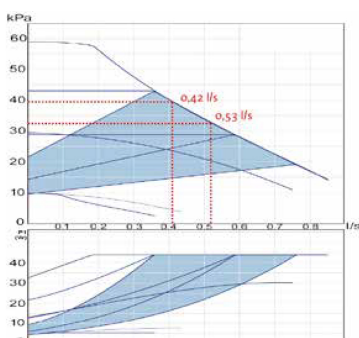
The capacity curves of Alpha 2L 15-60 CIL2 and Magna 25-100 pumps

The tables below show the lifting height of the pumps for maximum flow rate conditions. The tables also show the effect of a change in flow rate to the lifting height. The optimal pump operating range communicated by the manufacturer is written in the table with green colour.

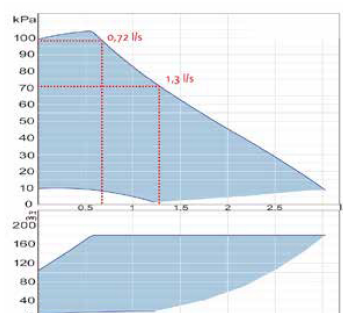
Heating circuit pumps in use:

- Unis 100-2RF, Alpha 2L 15-60 CIL2
- Unis 100-3RF, Alpha 2L 15-60 CIL2
- Unis 150-2RF, Magna 25-100
- Unis 200-2RF, Magna 25-100

Alpha 2L 15-60 CIL2



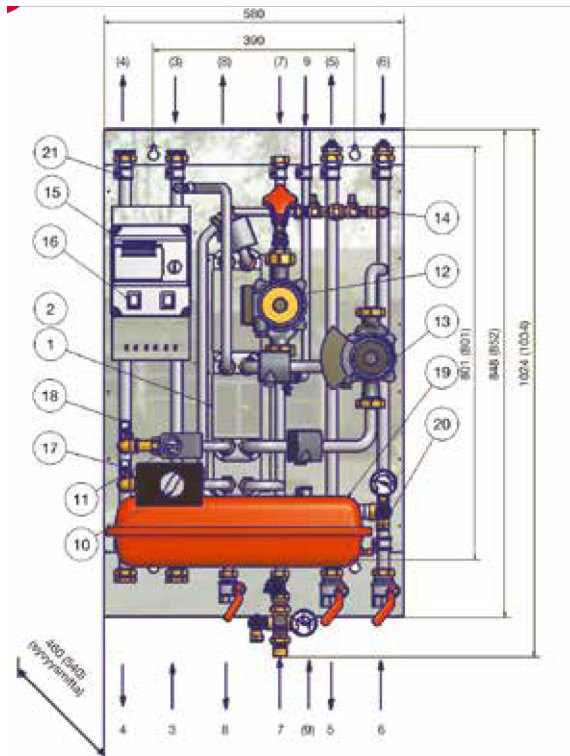
Magna 25-100



UNIS 100-2RF / UNIS 150-2RF / UNIS 200-2RF

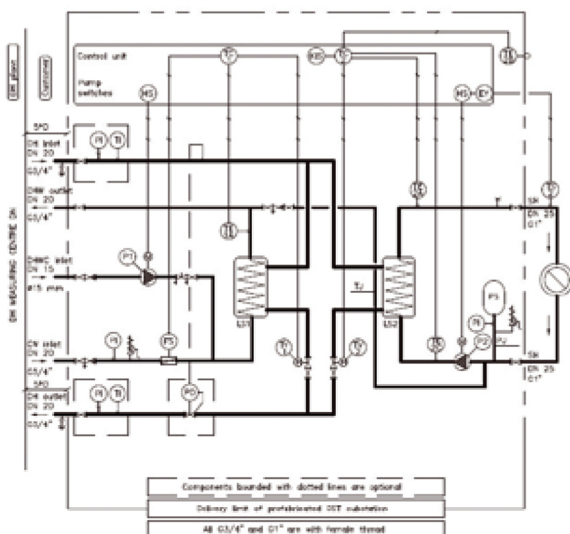
N:o Component

1. Heat exchanger for DHW, LS1
2. Heat exchanger for SH, LS2
3. Inlet: DH
4. Outlet: DH
5. Outlet: SH
6. Inlet: SH
7. Inlet: Cold water
8. Outlet: DHW
9. Inlet: DHW circulation
10. Control valve, DHW, TV1
11. Control valve, SH, TV2
12. Circulation pump (230V), DHW, P1
13. Circulation pump (230V), SH, P2
14. Filling valve for SH circuit
15. Control Unit for DHW and SH
16. Pump switches for DHW (P1) and SH (P2)
17. Shut-off valve for DHW
18. Shut-off valve for SH
19. Expansion vessel for SH, 12 liter
20. Safety valve, SH, DN15 / 250 kPa
21. Differential pressure controller (option)



DH = District heating, DHW = Domestic hot water, CW = Cold water, SH = Space heating

Circuit diagram UNIS 100-2RF / UNIS 150-2RF / UNIS 200-2RF



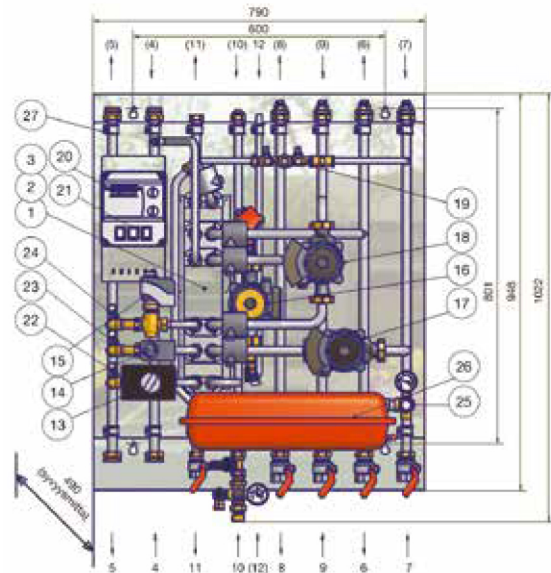
Unis 100-3RF

N:o Component

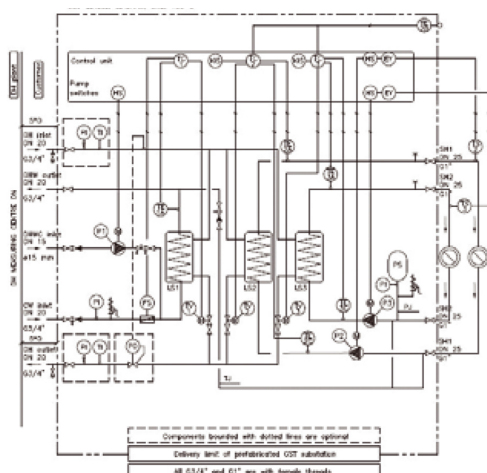
1. Heat exchanger for DHW, LS1
2. Heat exchanger for SH1, LS2
3. Heat exchanger for SH2, LS3
4. Inlet: DH
5. Outlet: DH
6. Outlet: SH1
7. Inlet: SH1
8. Outlet: SH2
9. Inlet: SH2
10. Inlet: Cold water
11. Outlet: DHW
12. Inlet: DHW circulation
13. Control valve, DHW, TV1
14. Control valve, SH1, TV2
15. Control valve, SH2, TV3
16. Circulation pump (230V), DHW, P1
17. Circulation pump (230V), SH1, P2
18. Circulation pump (230V), SH2, P3
19. Filling valve for SH1-2 circuits
20. Control Unit for DHW and SH1-2
21. Pump switches for DHW (P1) and SH1-2 (P2,P3)
22. Shut-off valve for DHW
23. Shut-off valve for SH1
24. Shut-off valve for SH2
25. Expansion vessel for SH1-2, 12 liter
26. Safety valve for SH1-2, DN15 / 250 kPa
27. Differential pressure controller (option)

(Number In brackets () = alternative connection possibility)

DH = District heating, DHW = Domestic hot water, CW = Cold water, SH = Space heating



Circuit diagram Unis 100-3RF



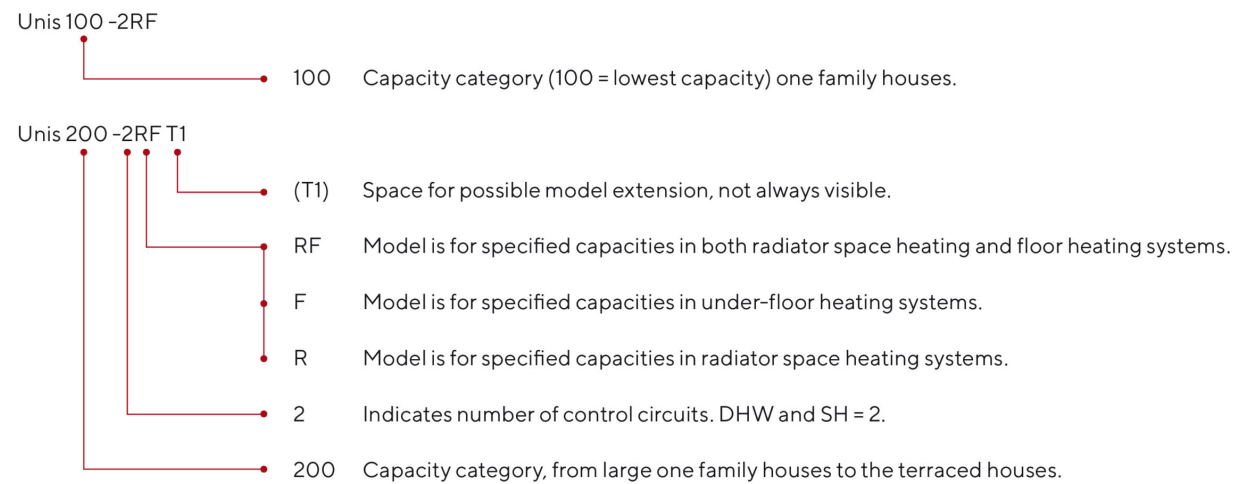
Technical product data

Unis models	LVI-code EAM-code (Siemens)	LVI-code EAM-code (Ouman)	Temp. [°C] Primary Secondary	DHW [kW] 70-25°C 10-58°C	Radiator [kW] 115-45°C 40-70°C	Radiator [kW] 115-45°C 40-70°C	Under-floor [kW] 115-35°C 30-39°C	Under-floor [kW] 115-35°C 30-37°C	Under-floor [kW] 115-35°C 30-35°C	max Flow rate* [dm ³ /s] (floor)	Package outside/mm LxWxH	Weight (kg) gross
Unis 100-2RF	5316033 6415853160346	5316034 6415853160339	-	67	13	15	20	15	11	0.53	985x600x585	45
Unis 150-2RF	5316042 6415853160421	5316043 6415853160438	-	90	45	32	27	21	15	0.72	985x600x585	47
Unis 200-2RF	5316045 6415853160452	5316046 6415853160469	-	126	45	32	50	38	27	1.3	985x600x585	65
Unis 100-3RF (L 1)	5316040 6415853160407	5316041 6415853160414	-	67	29	20	16	12	9	0.42	990x815x600	60
Unis 100-3RF (L 2)	5316040 6415853160407	5316041 6415853160414	-	67	13	15	20	15	11	0.53	990x815x600	60

NB! In Unis 100-3 both SH-circuits can be connected either to the radiator or to under-floor heating circuits. In table above both maximum capacities are given for both connection possibilities! (Unis 100-3). *Flow rates in table are recommended maximum flow rates for under-floor heating!

Unis options, elective. Packed separately in delivery.	LVI-code EAN-code (Siemens/Ouman)	Elective	Content
Accessories for primary side	5316075 6415853160759	1 piece / substation	Contains 2 thermometers, 2 manometers, 2 shut-off valves
Differential pressure controller	5316070 6415853160704	1 piece / substation	Contains 1 differential pressure controller with DA-516 kvs-4 connector.

Unis product information



Designed for space heating with radiators or floor heating and production of domestic hot water

The Unis product family is the number one choice for connecting detached houses to the district heating system. Unis is a Finnish substation product family, which prides itself on its extensive and sound knowledge of district heating systems, efficient engineering and installation, as well as Finnish design. The Unis substations are introduced to the market by well-known professionals of district heating.

Unis substations are compact and lightweight and they have a carefully designed appearance. Particular attention has been paid during the design and implementation stages to the clarity, installation properties and usability of the substation. The original Unis is heat distribution centre for one-family houses that contains, as standard equipment, a frequency changing pump with Class A energy labelling and an HST pipe system. This results in a reliable, high-quality product that can rapidly be deployed. The Unis product family offers the right choices for new buildings and renovation projects fitted with a radiator, under-floor or air heating system.

The 2-circuited Unis models feature two heating circuits, which produce domestic hot water and the hot water needed in the heating system. The 3-circuited substations include an additional heating circuit, allowing for example independent floor heating for wet spaces at all times regardless of the need for radiator heating. Unis substations are designed for use in one-family detached houses and small terraced houses. (See Product Specifications at the end of the brochure.)

Long warranty, short delivery time

Your Unis substation has always competitive warranty. Exact terms of warranty are market based, fulfilling however all area requirements and standards. For example in Finland Unis substation's heat exchangers have a five-year warranty, pipework and other components in substation have two-year warranty in district heating use. All terms are stated in HögforsGST warranty conditions. On the other hand a short delivery time is an important part of our operations minimising project time and ensuring smooth installations and start-ups.

The easiest and fastest to assemble in the market

The installation only requires the pipe connections to the district heating and to the heating and service water networks. After the external sensor and socket-outlet installation, no other installations are required.

Installation is made even easier, as:

- The substation can be assembled either from top or bottom
- All pipe connections are G3/4" and G1"



All Unis-substations are available on MagiCAD.

HögforsGST – Energy used wisely

HögforsGST Oy specialises in the manufacture, sales and marketing of high-quality heating systems. The company's strong expertise on heating systems reaches beyond Finland. Our competence is based on our in-depth experience in production, line manufacturing, high-volume customisation and project production as well as familiarity with the HVAC acquisition channels and logistics both in Finland and abroad.

Our business has always been based on determining sufficient operating requirements on the market, customer-orientation and reliability. Equally important is our uncompromising approach with the high quality of our products and services.

We reserve the right to make changes.