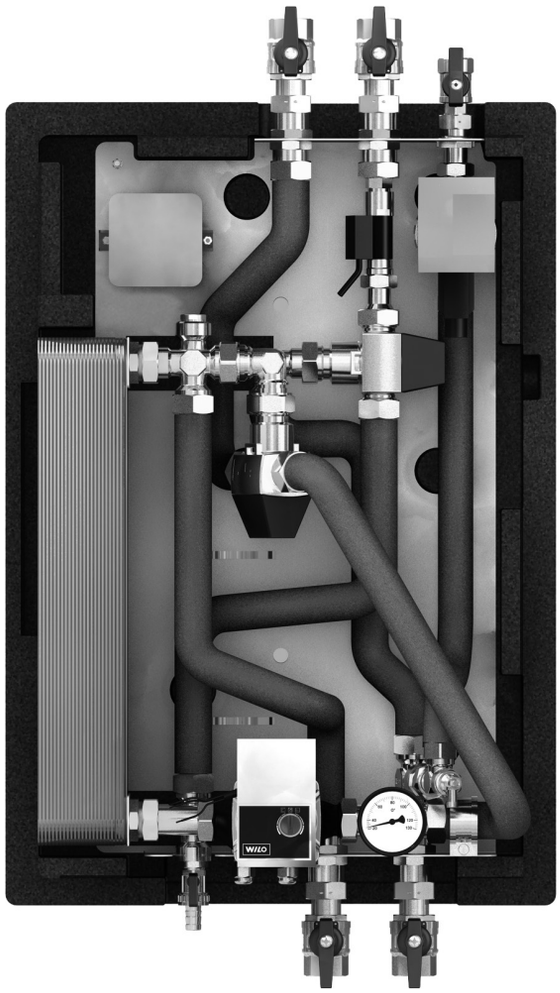
KE KELIT®
CLIMATE CONTROL SYSTEMS

Technical Data for Installation and Operation



LogoFresh Fresh Water Station

Thermostatically Controlled

Technische Änderungen vorbehalten

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Content

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1. Safety instructions

Please follow these safety instructions carefully in order to avoid hazards and damage to people and property.

Target group
These instructions are intended exclusively for authorised trained experts.

- Only trained experts are permitted to work on the heating system's domestic water, gas and electric circuits.

Guidelines and standards
When carrying out work, you must comply with:

- the statutory accident prevention guidelines,
- the statutory environmental protection guidelines,
- the German Employer's Liability Insurance Association regulations,
- the pertinent safety requirements of DIN, EN, DVGW, TRGI, TRF and VDE,
- ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE,
- SEV, SUVA, SVGW, SVTI, SWKI and VKF,
- and all new and regionally applicable guidelines and standards

When working on the system

- Disconnect the system from the mains and monitor it to ensure that no voltage is being supplied (e.g. at the separate cut-out or a main switch).
- Secure the system against being restarted.
- WARNING: Risk of scalding: Medium temperature > 60°C

2. Technical data

The thermostatically controlled DN 25 LogoFresh fresh water station comprises:

Yonos PARA 15/6 recirculation pump, stainless steel plate heat exchanger, primary and secondary thermostatic mixing valves, primary circuit thermometer, fill and drain ball valve, ventilation options, 1“ shut-off ball valves. All mounted on a base plate and inspected. Stainless steel pipe connections with insulation in EEP thermal insulation housing. Models with or without domestic water circulation module.

Dimensions H/W/D in mm (insulation)	**: 735 x 500 x 355 ; including cutoff: 890 x 500 x 355**
Connections	**: Ball valve 1" internal thread (hot water circulation: 3/4" internal thread)**
Max. operating pressure - heating	**: 3 bar**
Max. operating pressure - sanitary	**: 6 bar**
Max. permissible temperature	**: 110°C**

Heating cold water K	Supply temperature primary °C	Return temperature primary °C	Draw-off rate hot domestic water* l/min	Rated power hot domestic water kW	Flow primary l/h	Pressure loss primary bar	Residual delivery head primary bar	Pressure loss secundary bar
35 (10 → 45°C)	50	26	15	37	1310	0,36	0,15	0,13
35 (10 → 45°C)	55	22	20	49	1310	0,36	0,15	0,23
35 (10 → 45°C)	60	20	24	59	1310	0,36	0,15	0,33
35 (10 → 45°C)	65	19	28	69	1310	0,36	0,15	0,45
35 (10 → 45°C)	70	18	32	77	1310	0,36	0,15	0,59
35 (10 → 45°C)	75	17	35	86	1310	0,36	0,15	0,71

* with sufficient domestic water circuit pressure

Heating cold water K	Supply temperature primary °C	Return temperature primary °C	Draw-off rate hot domestic water* l/min	Rated power hot domestic water kW	Flow primary l/h	Pressure loss primary bar	Residual delivery head primary bar	Pressure loss secundary bar
40 (10 → 50°C)	55	28	15	41	1310	0,36	0,15	0,13
40 (10 → 50°C)	60	24	19	53	1310	0,36	0,15	0,21
40 (10 → 50°C)	65	22	23	64	1310	0,36	0,15	0,31
40 (10 → 50°C)	70	21	26	72	1310	0,36	0,15	0,39
40 (10 → 50°C)	75	19	30	83	1310	0,36	0,15	0,52

* with sufficient domestic water circuit pressure

Heating cold water K	Supply temperature primary °C	Return temperature primary °C	Draw-off rate hot domestic water* l/min	Rated power hot domestic water kW	Flow primary l/h	Pressure loss primary bar	Residual delivery head primary bar	Pressure loss secundary bar
50 (10 → 60°C)	65	33	14	48	1310	0,36	0,15	0,12
50 (10 → 60°C)	70	28	18	62	1310	0,36	0,15	0,19
50 (10 → 60°C)	75	26	21	73	1310	0,36	0,15	0,26

* with sufficient domestic water circuit pressure

3. Functional description

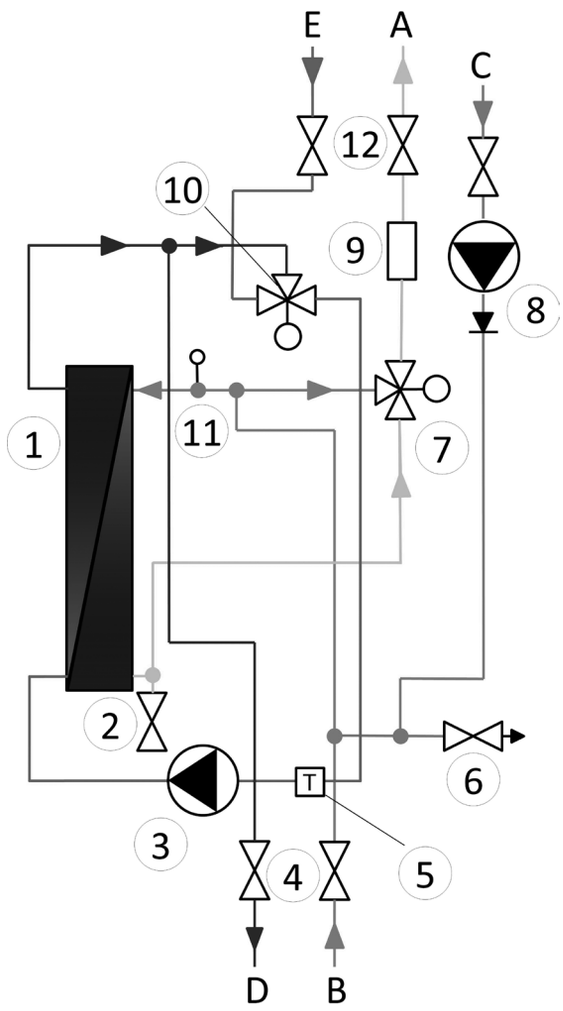
The thermostatically controlled fresh water station can supply one to two residential units with fresh warm domestic water. The energy is supplied by a heating water buffer tank. Drawing warm domestic water from the tank triggers the heating pump. The domestic water is heated by the stainless steel plate heat exchanger according to the continuous flow principle. The mixing valve in the primary circuit keeps the hot water outlet temperature constant at the thermostatic head. The optional circulation pump set makes it possible to recirculate the domestic water constantly, or according to an automatic timer.
The mixing tap prevents the likelihood of scalding on the domestic water side.

The benefits:

- hot water on demand
- low return temperature of heating water (depending on the design)
- no hot water storage, which considerably reduces the growth of legionella

4. Hydraulic diagram

Principal diagram
Fresh water station (thermostatically controlled)

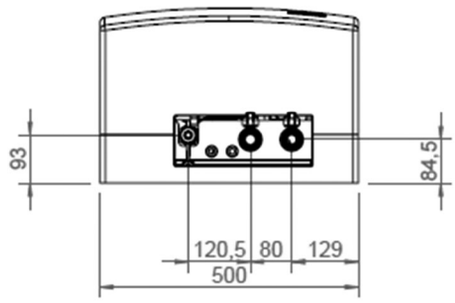


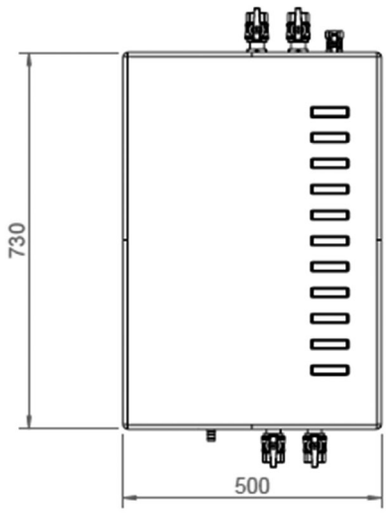
Legend:

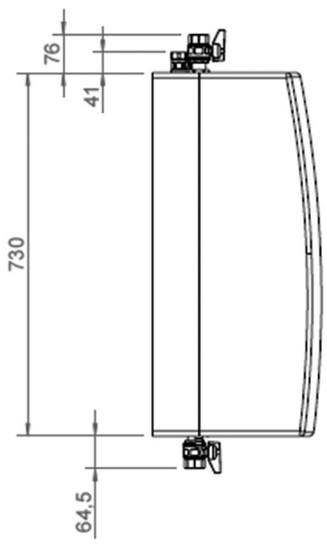
1	Plate heat exchanger
2	Fill and drain ball valve with hose nozzle
3	Wilo Yonos PARA 15/6 recirculation pump
4	Ball valves 1"
5	Thermometer (display range 20 – 130°C)
6	Manual air bleed device
7	Thermostatic mixing valve, secondary side (Domestic water, adjustable 45 – 65°C, factory setting 50°C)
8	Wilo Star Z-Nova recirculation pump
9	Flow switch
10	Thermostatic mixing valve, primary side (Heating, adjustable 50 – 75 °C, factory setting 60°C)
11	Temperature sensor connector
12	Ball valves 1"
A	Domestic water, hot
B	Domestic water, cold
C	Domestic water circulation
D	Heating return (e.g. to the buffer accumulator)
E	Heating supply (e.g. from the buffer accumulator)

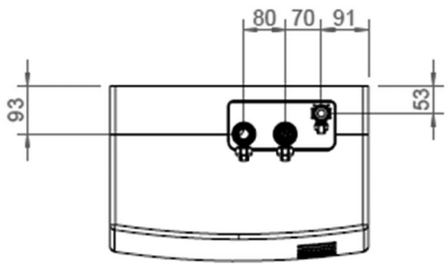
5. Installation

Please follow the safety instructions contained in this document during installation!
Installing and operating the stations incorrectly will invalidate any warranty claims.
Hazards resulting from adjoining masonry components must be avoided.
Free access to the station and connection lines must be ensured.
Make sure the connection to the station is tension-free.
The station should be installed directly adjacent to a hot water buffer accumulator where possible.
The system should be installed on a dry wall that can take the load.









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5.1 Heating connection

Once the station has been installed correctly, connect the heating circuit.

Connection D 1" internal thread: heating return
Connection E 1" internal thread: heating supply
Max. permissible operating pressure: 3 bar
Max. permissible operating temperature: 110°C

5.2 Sanitary connection

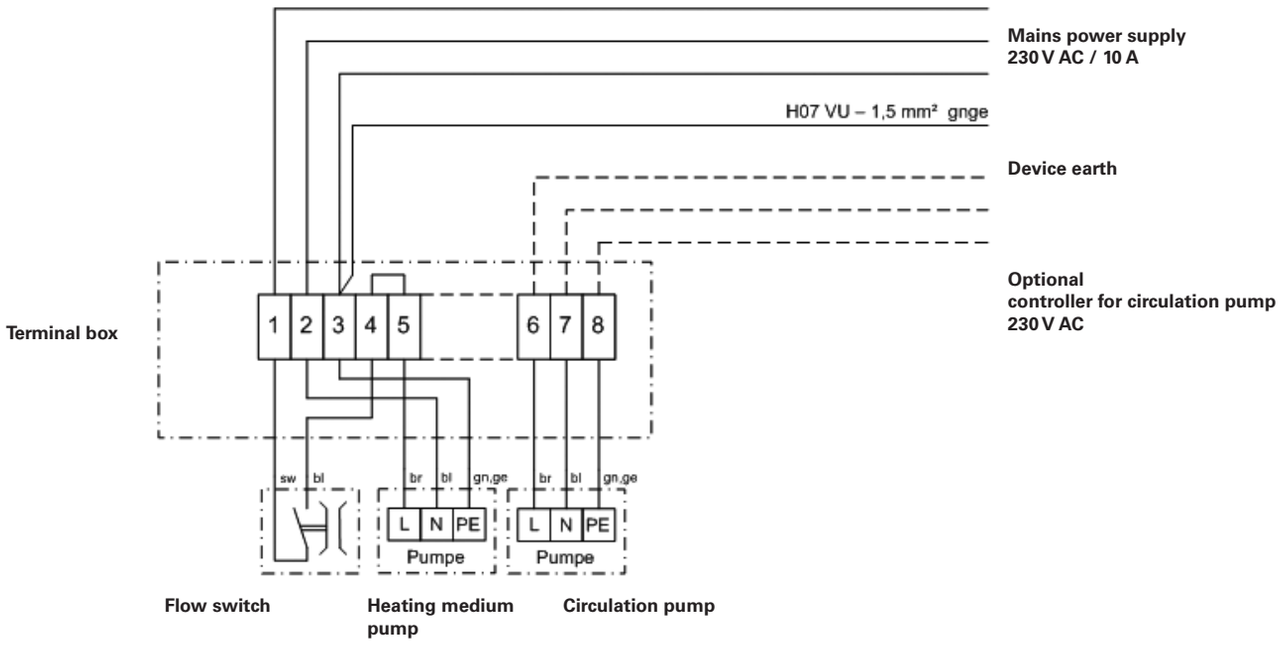
Please note:
The safety fuse on the cold water side must comply with DIN 1988 and DIN EN 1717, i.e. with safety group and an expansion tank. Once the station has been installed correctly, connect the sanitary circuit.

Connection A 1" internal thread: hot water outlet
Connection B 1" internal thread: cold water inlet
Connection C 3/4" internal thread: circulation connection (optional)

Max. permissible operating pressure: 6 bar
Max. permissible operating temperature: 110°C

5.3 Electrical connections

To prevent the pumps from running dry, only connect the thermostatically controlled fresh water station to the power supply when the system has been filled and bled. The thermostatically controlled fresh water station is supplied in a fully cabled and functional state. The system is connected to the mains supply using the attached power lead. The power lead must be connected to 230V/ 50 Hz AC.
This electric circuit must be protected by a 10 A circuit breaker.
Comply with the EVU regulations!



6. Flushing and filling the system

- **Flush the system carefully before filling.**
- **Check all connections and repair them if necessary.**
- **Ensure all threaded joints are screwed tightly.**
- **Once the system has been filled, bleed the station and refill the heating system as required.**

7. Commissioning and accessories

- **Commission the system once it has been flushed and filled and a pressure test has been carried out.**
- **All heating and sanitary installations must be complete.**
- **Bleed the system every so often during the commissioning process.**

7.1 Mixing valves

The maximum operating limits of the mixing valves are 95°C and 10 bar.

Mixing valve external thread 1" primary side (heating)
- Use: adjustable tap capacity, calcification protection
- Adjustable range 50°C - 75°C; factory setting 60°C

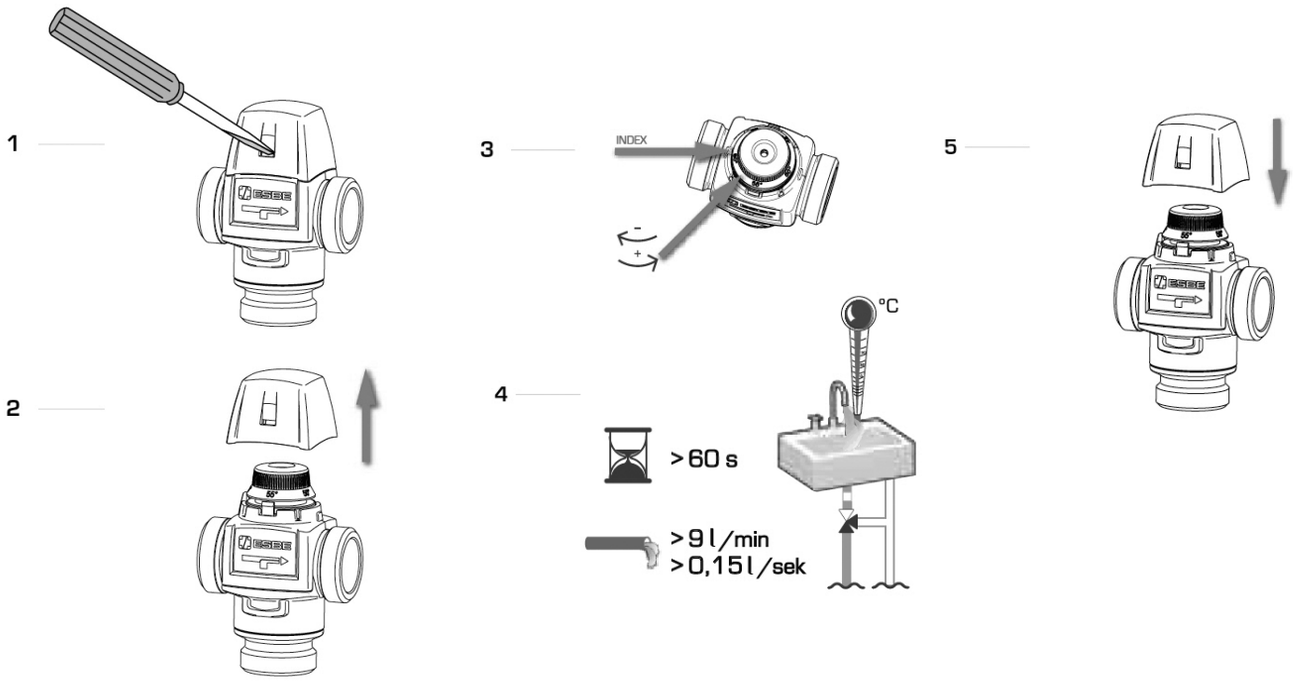
Mixing valve external thread 1" secondary side (domestic water)
- Use: protection against scalding or legionella
- Adjustable range 45°C - 65°C; factory setting 50°C

Adjusting the water temperature

The mixing valves are fitted with a protective cap. The four-sided upper cover is used to protect the temperature setting (tamper-proof against unauthorised adjustments).
Please remove the cap to adjust the temperature, then replace.

To adjust the mixing temperature, follow the instructions provided in the previous Fig.
Check the temperature setting by measuring the water temperature at the valve of the nearest water tap.
The temperature must be checked annually to ensure that the valve is adjusted correctly.

Note:
Some figures and texts in the mixing valve chapter have been taken from the ESBE installation instructions.



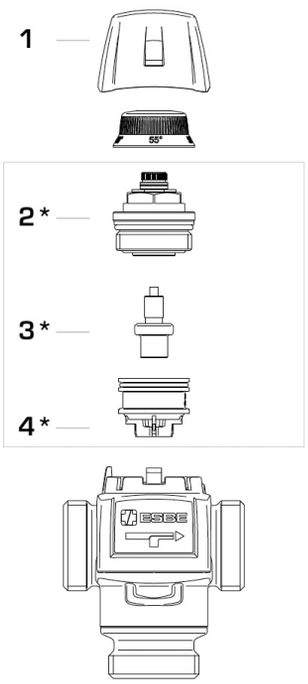
Maintenance and operation

The thermostatic control valves (mixing valves) do not have to be serviced under normal operational conditions. However, it is possible to replace the thermostatic element and the valve cone without dismantling the fitting. The following diagrams include details on the replacement parts.

WARNING: Turn off the water supply before dismantling the fitting. To do so, close the respective ball valve (on the domestic water or heating water side) .

Hard water can cause limescale deposits which can prevent the valves from functioning properly. The cleaning process described below can help restore the valves to proper working order. It is sometimes also necessary to clean the lower part or replace the thermostat.

1. Turn off the water to depressurize the system.
2. Remove the protective sleeve (1) and disassemble parts 2 to 4. (see Fig.)
3. Clean all parts thoroughly.
4. Please use silicon grease suitable for use with domestic water. Then reassemble the parts.
5. Re-adjust the mixing temperature. (See Fig.)



7.2 Plate heat exchanger

Note:
If the water is hard, limescale deposits can build up on hot areas of the plate heat exchanger at high water temperatures. These should be removed at regular intervals using appropriate means (e.g. flushing). Only use substances suitable for use with domestic water and heating water.

7.3 Domestic water circulation

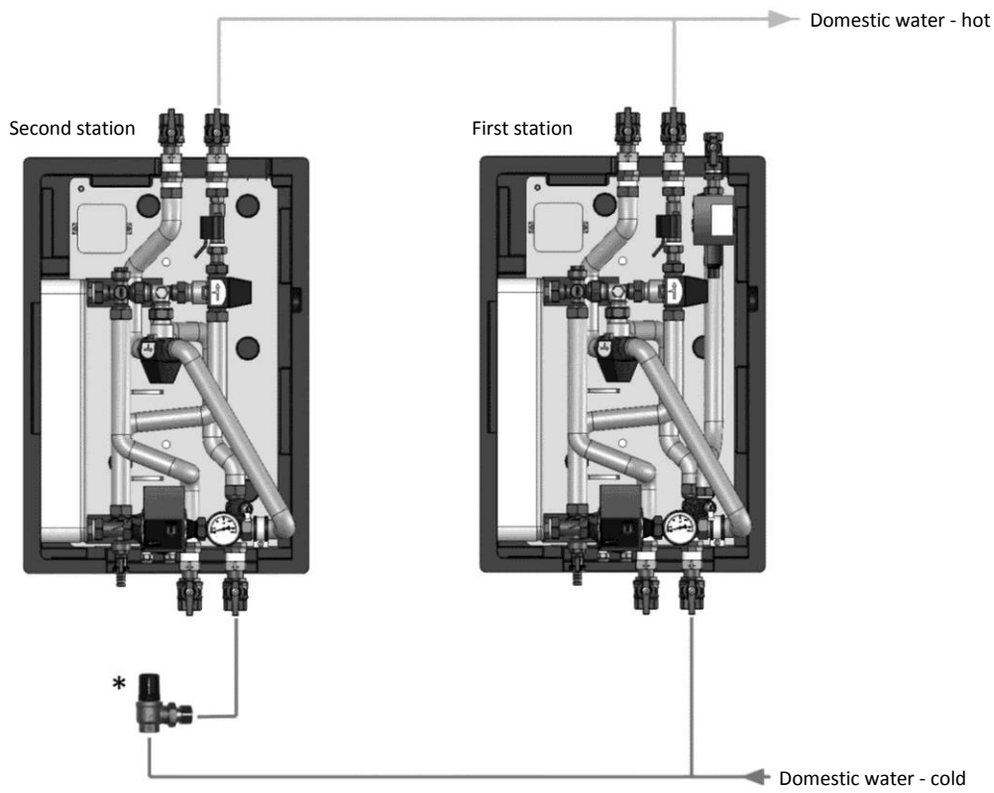
The domestic water circulation system is used to provide a constant supply of hot water to the taps. Please ensure you comply with the relevant technical regulations and guidelines.

In order to prevent any unwanted circulation, a check valve must be installed in the domestic water circuit on the pressurized side of the circulation pump . The Wilo Star-Z Nova, a high-energy-efficiency pump for water hardness levels up to 20°dH, is pre-installed in the circulation module. A clock timer is used to control the domestic water circulation system.

7.4 Cascade connection

If large quantities of hot water are required, two or more thermostatically controlled fresh water stations can be joined together in a cascade using overflow valves. In this case, the second and any subsequent fresh water stations do not require the domestic water circulation pump set. The circulation function is performed by the first station. During the commissioning process, the settings of the first station are transferred to the second. The overflow valve is adjusted so that the downstream station begins to operate from a specified flow of hot domestic water.

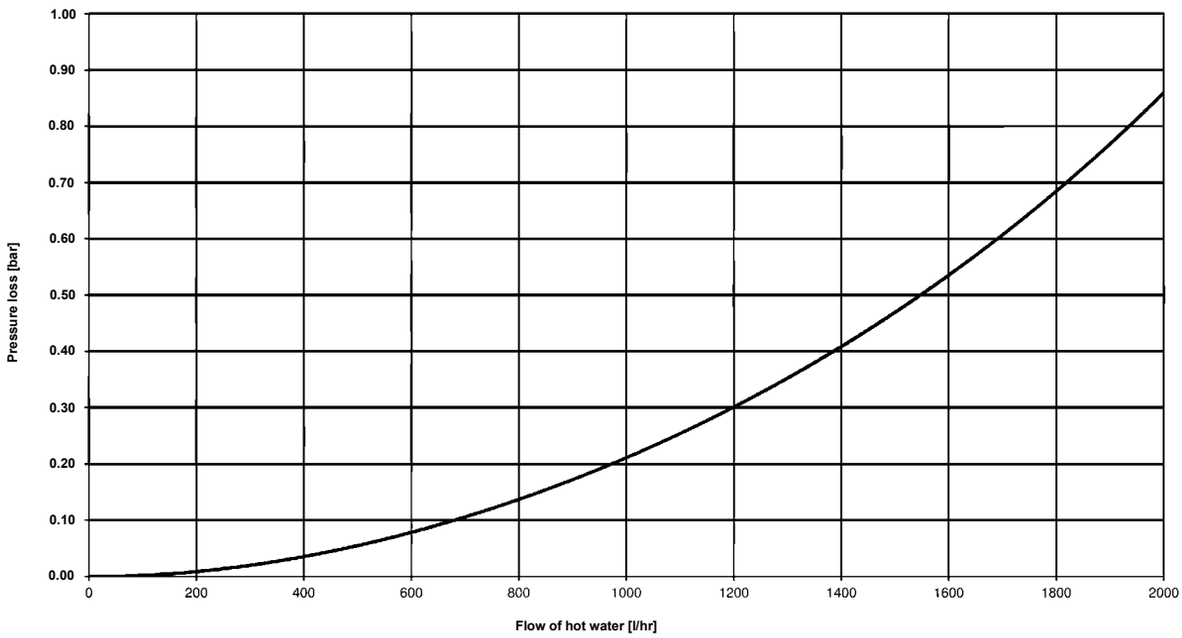
Installation example:



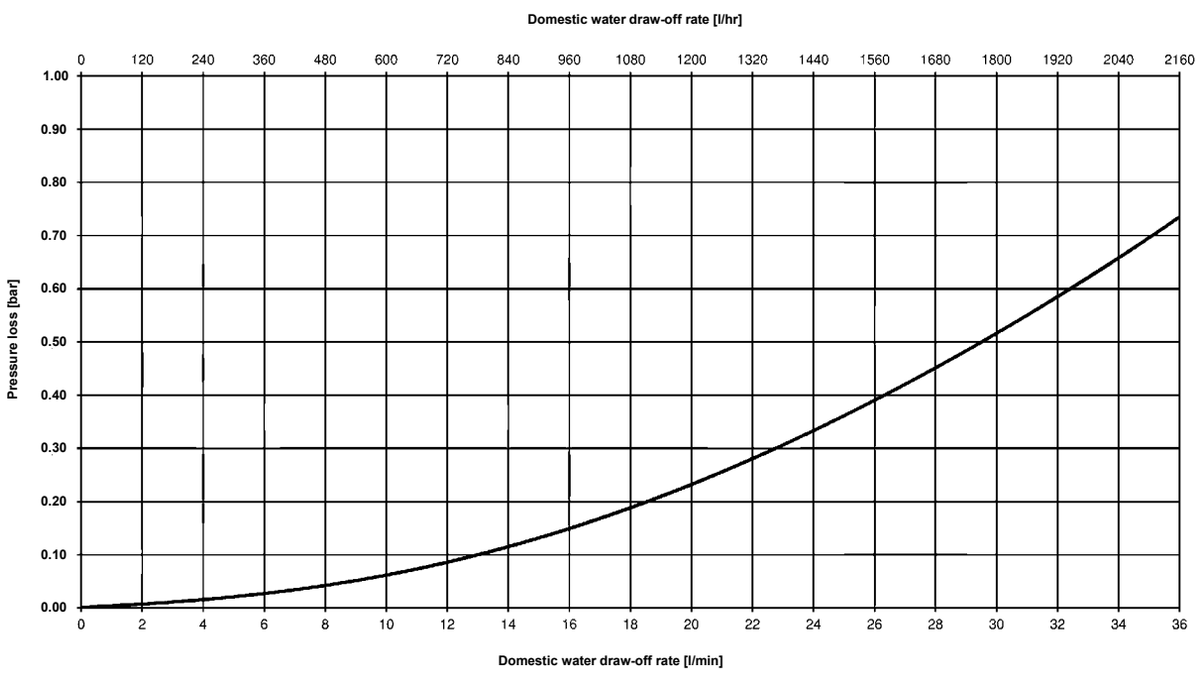
* Required accessories: overflow valve DN 25 for cascade connection; adjustable range 100 to 500 mbar

8. Diagrams

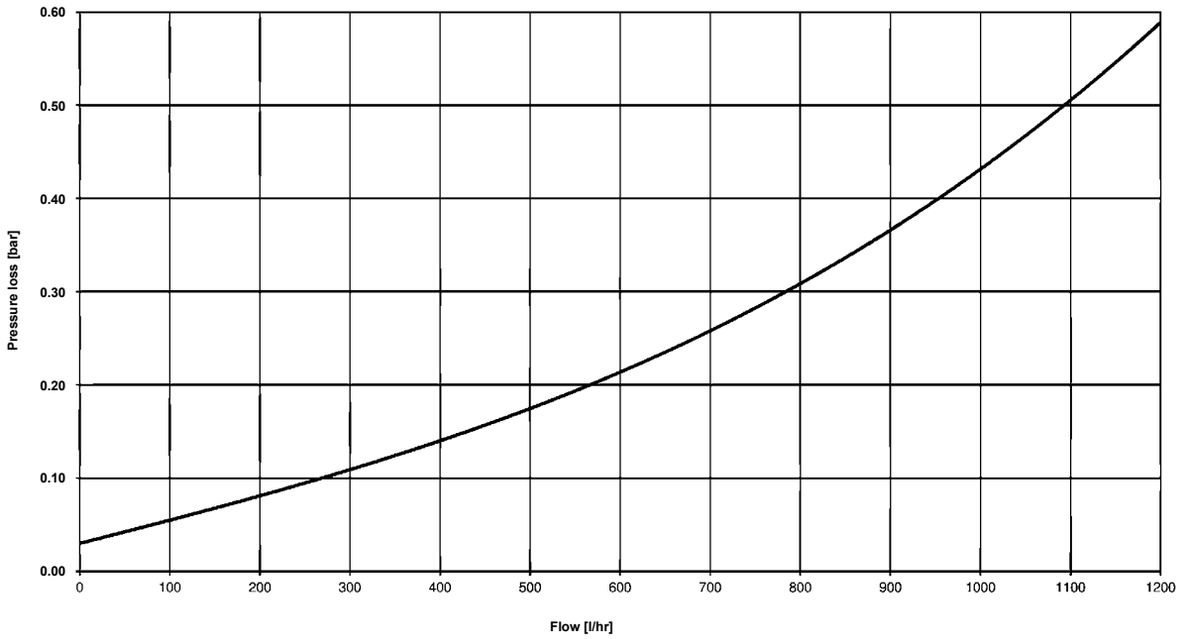
Thermostatic LogoFresh fresh water station DN25 Pressure loss on the primary side of the device in relation to the flow of hot water



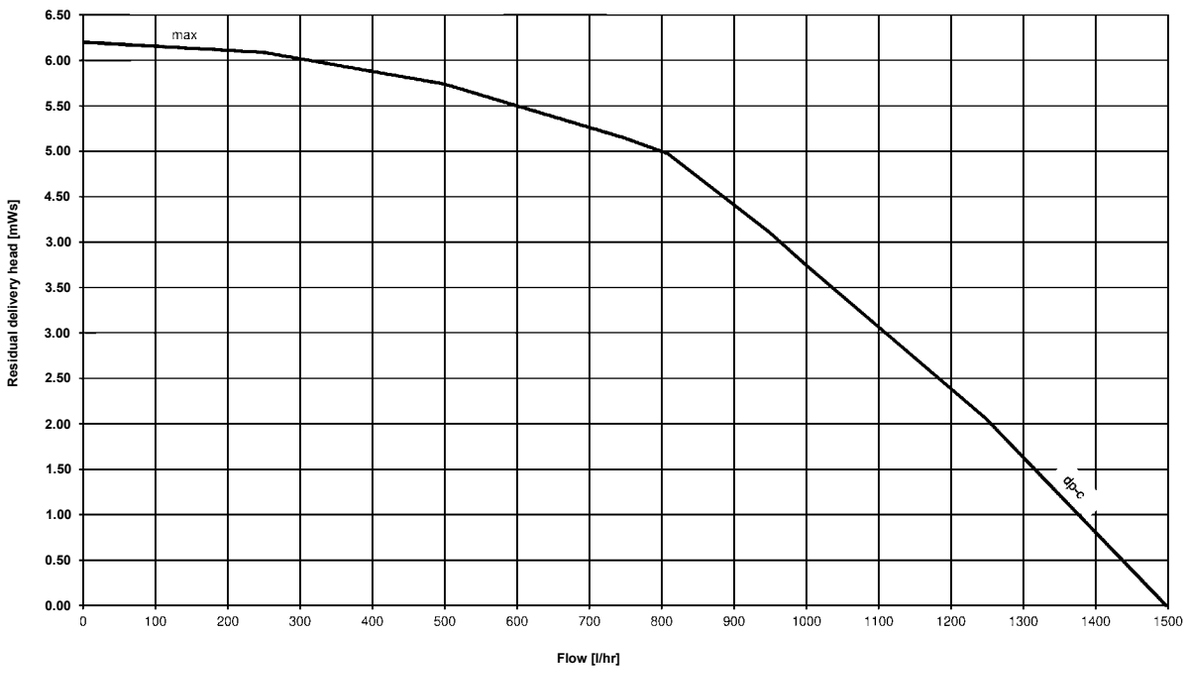
Thermostatic LogoFresh fresh water station DN25 Pressure loss on the secondary side of the device in relation to the domestic water draw-off rate



Thermostatic LogoFresh fresh water station DN25 Pressure loss on the secondary side of the device (circulation circuit) in relation to the flow



Pump residual delivery head diagram for the primary side of the thermostatic LogoFresh fresh water station DN25 WiloYonos ParaRS15/6



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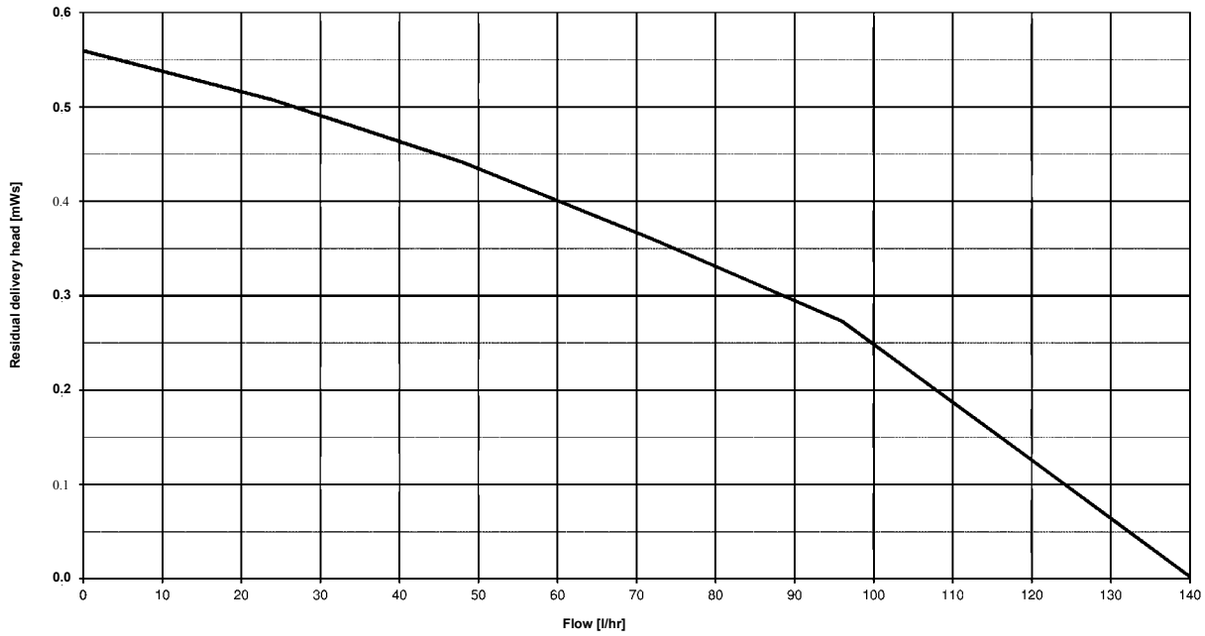
Pump residual delivery head diagram for the circulation circuit of the thermostatic LogoFresh fresh water station DN25 Wilo Star-Z NOVA



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