

District heating transfer station

The individual complete solution



Overview

The district heating transfer station, together with the heat source and the supply network, is a fundamental element of a district heating system. It ensures heat transfer between the district heating network (primary) and the heating system (secondary) and provides hot water. The heat transfer station measures the delivered heat quantity and enables integration into the remote monitoring and control system.

Each station is designed and produced in accordance with the technical guidelines of the district heating supplier and can also be manufactured according to special requirements. The dimensions can be adapted to the intended installation site. Compact design and good accessibility of components allow user-friendly maintenance. Depending on the model and customer requirements, power can be transmitted from

20 kW up to 4 MW can be transmitted. A modular system makes it possible to react quickly to different customer requirements from standard modules.



Benefits

- Complete solution of heat transfer requirements including all necessary hydraulic and control components
- Individually planned and built for the respective area of application
- „Plug and heat“ functionality: Savings of installation costs and time
- Factory pressure test
- Compact design, good accessibility of components (service, maintenance)
- Control functions adapted to the transfer station coordinated
- Consulting, planning, production and support by a professional team
- Certified production in consistently high quality
- Made in Europe

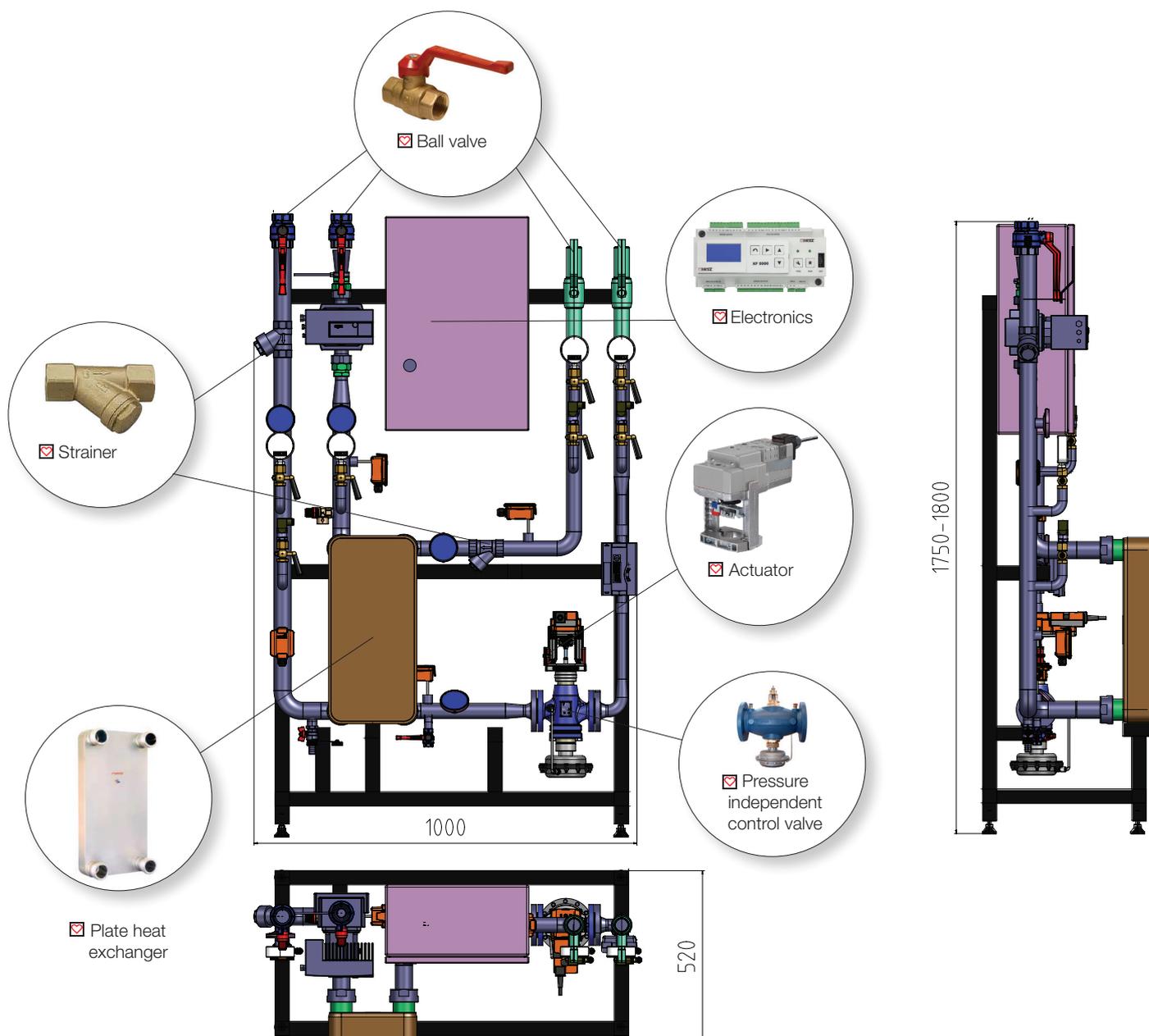
☑ Station structure

The standard model includes a heat exchanger (brazed or bolted), combination valve, electric actuator, ultrasonic flow meter, circulating pump (variable speed), temperature and pressure measuring devices, expansion tank, strainer, check valves, and spring safety valve.

☑ Electrics and electronics

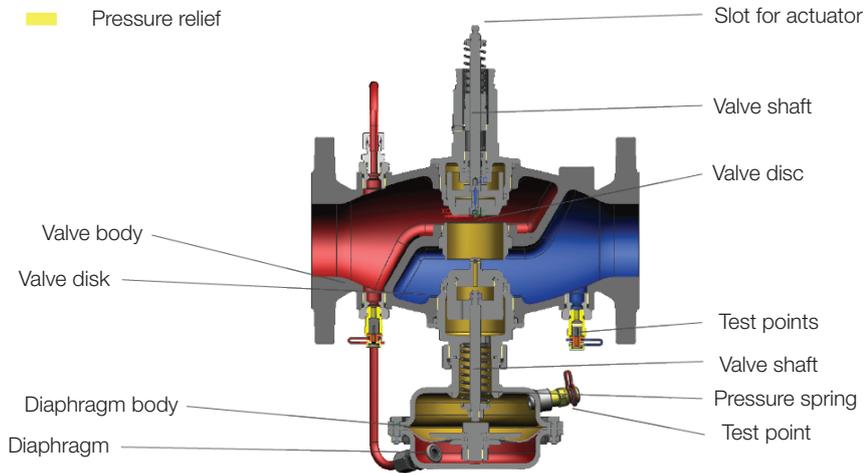
The electrical structure includes fuses, contactors, switches and indicators for the circulating pump, as well as measurement and control devices with an electrical controller and input and output modules, a calculator for the heat meter, temperature sensors, pressure transducers and communication tools.

☑ 3D representation of the district heating substation



☑ Pressure-independent control valve

A combination valve (pressure-independent control valve) is operated with an electric actuator, which is controlled by the microprocessor control. The currently required flow rate is controlled by the electric actuator.



☑ Heat exchanger

High quality plate heat exchangers are used in the district heating transfer stations. Depending on the technical requirements, they can be soldered or bolted. The plates of the heat exchanger are made of stainless steel. The substations can have all kinds of connections.

☑ Automatic regulation

The XF 5000 microprocessor controller regulates the operation of the district heating substation and ensures an efficient heat supply.

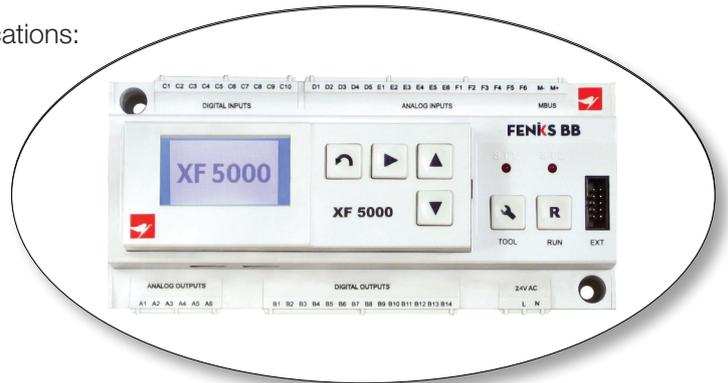
The XF 5000 microprocessor controller has the following certifications:

EMC (Electromagnetic Compatibility)

- ☑ EN 61000-6-2 : 2019
- ☑ EN 61000-6-3 : 2022
- ☑ EN 61000-6-4 : 2020

LVD (Low Voltage Directive)

- ☑ EN 61010-1



The basic control functions that ensure optimal operation of the district heating substations are:

- ☑ Flow control via the primary side of the district heating stations
- ☑ Adaptation of the flow temperature of the heating system depending on the outside temperature
- ☑ Heating mode can be set and programmed
- ☑ Constant pre-set temperature of domestic water

The microprocessor controller can be expanded if additional input and output signals are required. All measured values can be displayed and all relevant target values can be set using the control unit with LCD screen.

☑ Delivery and commissioning

A district heating substation is designed as a wall substation or as a free-standing heat transfer substation (with a steel frame and adjustable height).

Depending on the dimensions, the substations can be delivered as a complete unit or in several modules. All substations are factory tested and ready for operation. Particular attention is paid to user training for the operation and maintenance of the district heating substations.

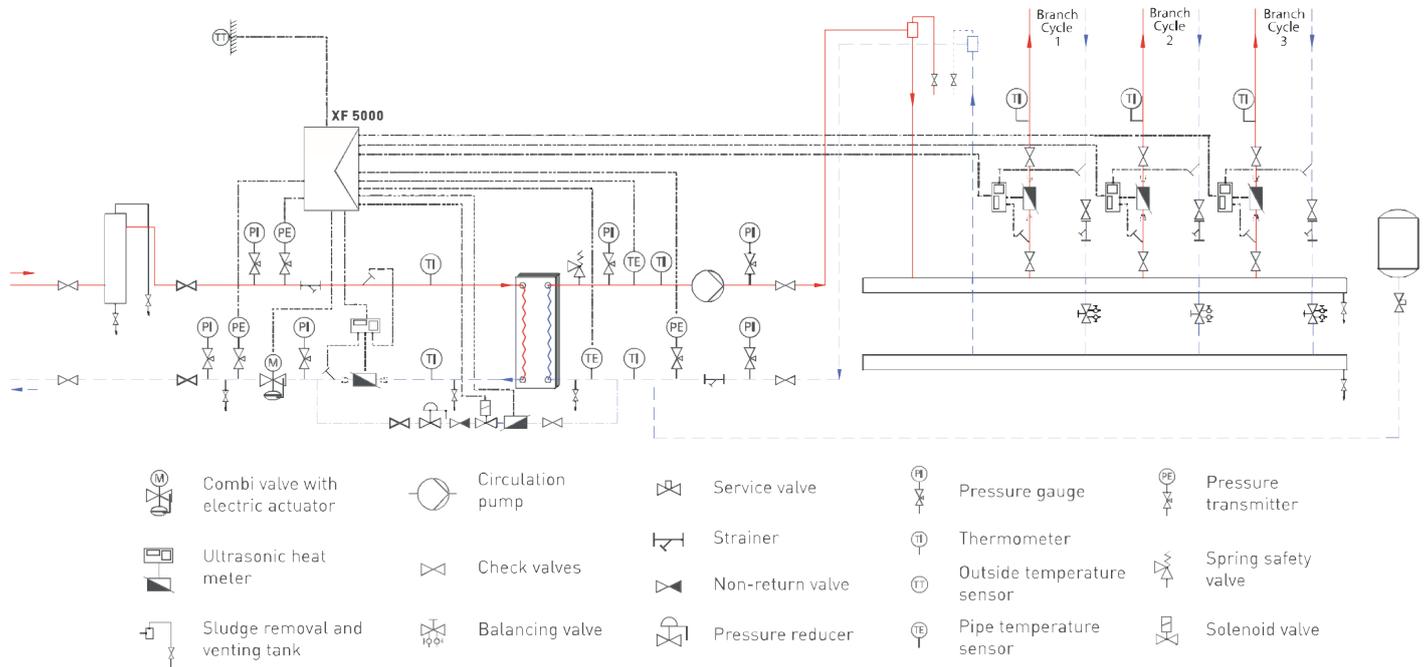
☑ Technical parameters and selection

Heating capacity (kW)	Temperature mode				Standard dimensions		
	110/75 °C Primary (DN)	70/90 °C Secondary (DN)	130/75 °C Primary (DN)	70/90 °C Secondary (DN)	L (mm)	H (mm)	B (mm)
50	25	32	25	32	1200	1000	300
80	32	40	25	40	1600	1400	400
100	32	40	32	40			
150	40	50	32	50			
200	50	65	40	65			
300	50	65	50	65	2200	1600	500
400	65	80	50	80			
500	65	80	50	80			
600	65	80	65	80	2400	1800	600
700	80	100	65	100			
800	80	100	65	100			
900	80	100	65	100			
1000	80	100	80	100			

Nominal pressure PN16/25; Maximum temperature on the primary side $T_{max}=150\text{ °C}$

The district heating substation can also be manufactured according to special requirements. The dimensions can be adapted to the intended mounting location. Services are provided for all types of heat transfer substations during and after the warranty period. The entire station and its accessories have quality certificates that confirm compliance with guidelines and standards.

Diagram



Safety instructions

All activities relating to the testing, maintenance and operation of the heat substation must be carried out in accordance with the associated operating and maintenance manual and the instructions for use. Activities that do not correspond to the instructions for use and measures described in the operating instructions can lead to serious personal injury, damage or destruction of components and accessories of the heat transfer substation. The testing, servicing and maintenance of the substations may only be carried out by authorised, qualified and trained personnel.



After the end of use, disassemble the product, sort the parts by material and hand them over to an authorized waste collection point to protect the environment and comply with your country's regulations.

All drawings are schematic and in no way to be understood as an assembly plan. All specifications and declarations in this data sheet correspond to the information available at the time of printing and are for informational purposes only. HERZ reserves the right to change technical specifications or products without prior notice.

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☑ Questionnaire for ordering the district heating station

1. Customer Information									
Company contact person / Design / Address									
E-mail / Phone / Fax									
Technological / Hydraulic diagram					Yes: <input type="checkbox"/>				
2. Operating conditions									
1.	Total heating capacity	kW							
2.	Operating pressure	bar							
3.	Pressure drop	bar							
4.	Outside design temperature	°C							
5.	Primary temperature mode - winter	°C	Supply:	<input type="checkbox"/>	Return:	<input type="checkbox"/>			
6.	Primary temperature mode - summer	°C	Supply:	<input type="checkbox"/>	Return:	<input type="checkbox"/>			
7.	Ultrasonic heat meter		Yes:	<input type="checkbox"/>	Dimension:	<input type="checkbox"/>			
8.	Power supply for the ultrasonic heat meter		230 V AC:	<input type="checkbox"/>	Battery:	<input type="checkbox"/>			
3. Heating			Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
1.	Heating capacity	kW							
2.	Secondary temperature mode	°C	Supply:	<input type="checkbox"/>	Return:	<input type="checkbox"/>			
3.	Heat exchanger type (if any)		Brazed:	<input type="checkbox"/>	Gasket:	<input type="checkbox"/>			
4.	Pressure drop on the exchanger (max. allowed value)	kPa	Hot side:	<input type="checkbox"/>	Cold side:	<input type="checkbox"/>			
5.	Pressure drop in a heating system (secondary side)	bar							
6.	Static height of the heating system	m							
7.	Control valve type		Combi:	<input type="checkbox"/>	Through flanged:	<input type="checkbox"/>	Three-way flanged:	<input type="checkbox"/>	
8.	Power supply of the valve actuator (Nom. pressure)		1x230 V AC:	<input type="checkbox"/>	24 V AC:	<input type="checkbox"/>			
9.	Control valve actuator / control signal		Three-point:	<input type="checkbox"/>	0 - 10 V DC:	<input type="checkbox"/>			
10.	Circulation pump / frequency controlled		Frequency controlled:	<input type="checkbox"/>	Three speed rates:	<input type="checkbox"/>			
4. Refill (if needed)			Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
1.	Water meter for refilling		Yes:	<input type="checkbox"/>	Adapter pipe:	<input type="checkbox"/>			
2.	Water meter for refilling / type		Turbine:	<input type="checkbox"/>	Ultrasonic:	<input type="checkbox"/>			
3.	Solenoid valve		Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
5. Pressurization (if needed)			Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
1.	Diaphragm expansion tank		Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
2.	Pressure maintenance system		Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
3.	Other type according to the technical diagram		Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
6. Domestic hot water			Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
1.	Domestic hot water heating capacity	kW							
2.	Secondary temperature mode	°C	Supply:	<input type="checkbox"/>	Return:	<input type="checkbox"/>			
3.	Heat exchanger type (if any)		Brazed:	<input type="checkbox"/>	Gasket:	<input type="checkbox"/>			
4.	Pressure drop on the exchanger (max. allowed value)	kPa	Hot side:	<input type="checkbox"/>	Cold side:	<input type="checkbox"/>			
5.	Pressure drop in the circulation circle, STV	bar							
6.	Control valve type		Combi:	<input type="checkbox"/>	Through flanged:	<input type="checkbox"/>	Three-way flanged:	<input type="checkbox"/>	
7.	Power supply of the valve actuator (Nom. pressure)		1x230 V AC:	<input type="checkbox"/>	24 V AC:	<input type="checkbox"/>			
8.	Control valve actuator / control signal		Three-point:	<input type="checkbox"/>	0 - 10 V DC:	<input type="checkbox"/>			
9.	Circulation pump / frequency controlled		Frequency controlled:	<input type="checkbox"/>	Three speed rates:	<input type="checkbox"/>			
10.	Recirculation pump / Nom. pressure		1x230 V AC:	<input type="checkbox"/>	3x380 V AC:	<input type="checkbox"/>			
11.	Spare recirculation pump		Yes:	<input type="checkbox"/>	No:	<input type="checkbox"/>			
12.	Water meter		Yes:	<input type="checkbox"/>	Adapter pipe:	<input type="checkbox"/>			
7. Additional information									
1.	Connections positioning		Primary side:			Secondary side:			
2.	Available dimension space (W x L x H) (mm)	mm							
3.	Note: Special requirements for the microprocessing controller: functions, software, communication								

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