



DSE FLEX – Compact Substation

Description

New generation substation is suitable for the already proven flexible, efficient and economical infrastructure of a low carbon city, a District Heating network. Danfoss district heating substations provides the link between district heating suppliers and customer installations. They contain all the necessary equipment to adjust the heat supplied for the needs of the object premises as specified in the heating supply contract. In this respect they must comply with all applicable standards and with the supplier's technical connection conditions. Indirect connections (in which district heating and in-house systems are hydraulically isolated) incorporate components that separate the systems (heat exchanger), limit the flow volume to that specified in the contract, regulate the secondary supply temperature and measure energy consumption. It is an exclusive solution designed to optimally fulfil specific requests and stringent requirements for district heating. By use of the Danfoss dimensioning program you can find out if the application you need fits DSE FLEX. The new generation substation is designed to be floor mounted, it keeps the robustness and friendly / appealing outlook of the old product with the advantage of a lighter profile, smaller size and designed for a faster and safer transport.

Features & benefits

- Compact size for an easy transport and installation
- The adjustable feet are from construction inside the profile
- Hauling instructions for a faster and safer transport
- The height of the connections is very low
- Electronic controller for heating and domestic hot water systems with access to ECL Portal
- Advanced gasket system primary side
- Fast and reliable delivery
- Substation with high efficiency brazed plate heat exchanger with the new microplate technology
- Danfoss substations and heat exchangers are manufactured according to European Pressure Directive PED

Functions

The DSE FLEX platform can be used for various applications such as heating, domestic hot water and / or other water based heating system.

Due to its flexibility, it is possible to deliver a 1-, 2- or 3-circuit substation with possibility to make combinations between modules if more circuits are required. This is based on customer requests and the needed application(s).

The construction allows easy access to all components for maintenance and servicing purposes.

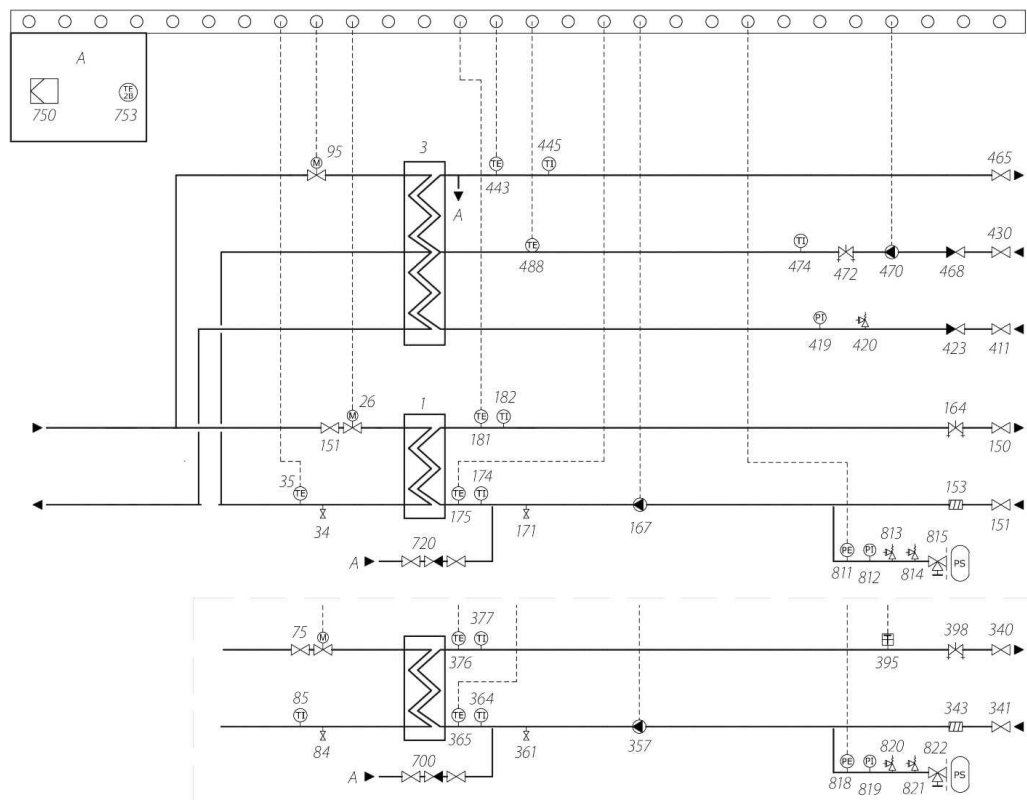
Heat transfer between the district heating network and the building installation is achieved by way of a micro plate heat exchanger, which ensures better heat transfer, higher energy efficiency and reduced pressure loss.

In addition to the standard controller functions, the ECL310 offers easy remote access via an internet page with data logging possibilities and energy optimization functions such as weather compensation and auto-tuning (adaptive settings for domestic hot water parameters)

Product details

Design

Circuit diagram



A	Electric box	182	Thermometer	443	Temperature sensor
26	Control valve HE	340, 341	Ball valve	445	Thermometer
34	Drain valve	343	Strainer	465	Ball valve
35	Temperature sensor	357	Pump	468	Check valve
75	Ball valve	361	Drain valve	470	Pump
84	Drain valve	364	Thermometer	472	Balancing valve
85	Thermometer	365	Temperature sensor	474	Thermometer
95	Control valve DHW	376	Temperature sensor	488	Temperature sensor
150, 151	Ball valve	377	Thermometer	750	Electronic controller
153	Strainer	395	Safety thermostat	753	Outdoor sensor
164	Balancing valve	398	Balancing valve	811, 818	Pressure transmitter
167	Pump	411	Ball valve	812, 819	Pressure measurement
171	Drain valve	419	Pressure measurement	813, 814	Safety valve
174	Thermometer	420	Safety valve	815, 822	Expansion valve
175	Temperature sensor	423	Check valve	820, 821	Safety valve
181	Temperature sensor	430	Ball valve		

Configuration

Contact the sales staff responsible for additional details and a quotation for the DSE FLEX

Materials

Pipes, fittings, flanges, valves (primary side)	P235GH, EN-JL1040 (GGC25), CuSn5Pb5Zn5-C (RG-5), EN-GJS-400-18-LT (GGG 40.3)
Pipes, fittings, flanges, valves (heating side)	P235GH, EN-JL1040 (GGC25), EN-GJS-400-18-LT (GGG 40.3), brass (DZR type)
Pipes, fittings, flanges, valves (DHW side)	1.4301, 1.4404, brass (DZR type), CuZn35Pb2Al-C (CC752S)
Heat exchanger	1.4404 with Cu solder
Insulation (casted parts)	EPP foam, $\lambda=0.038$ W/mK
Insulation (heat exchanger)	PU foam, $\lambda=0.035$ W/mK
Insulation (piping)	PU foam, $\lambda=0.029$ W/mK

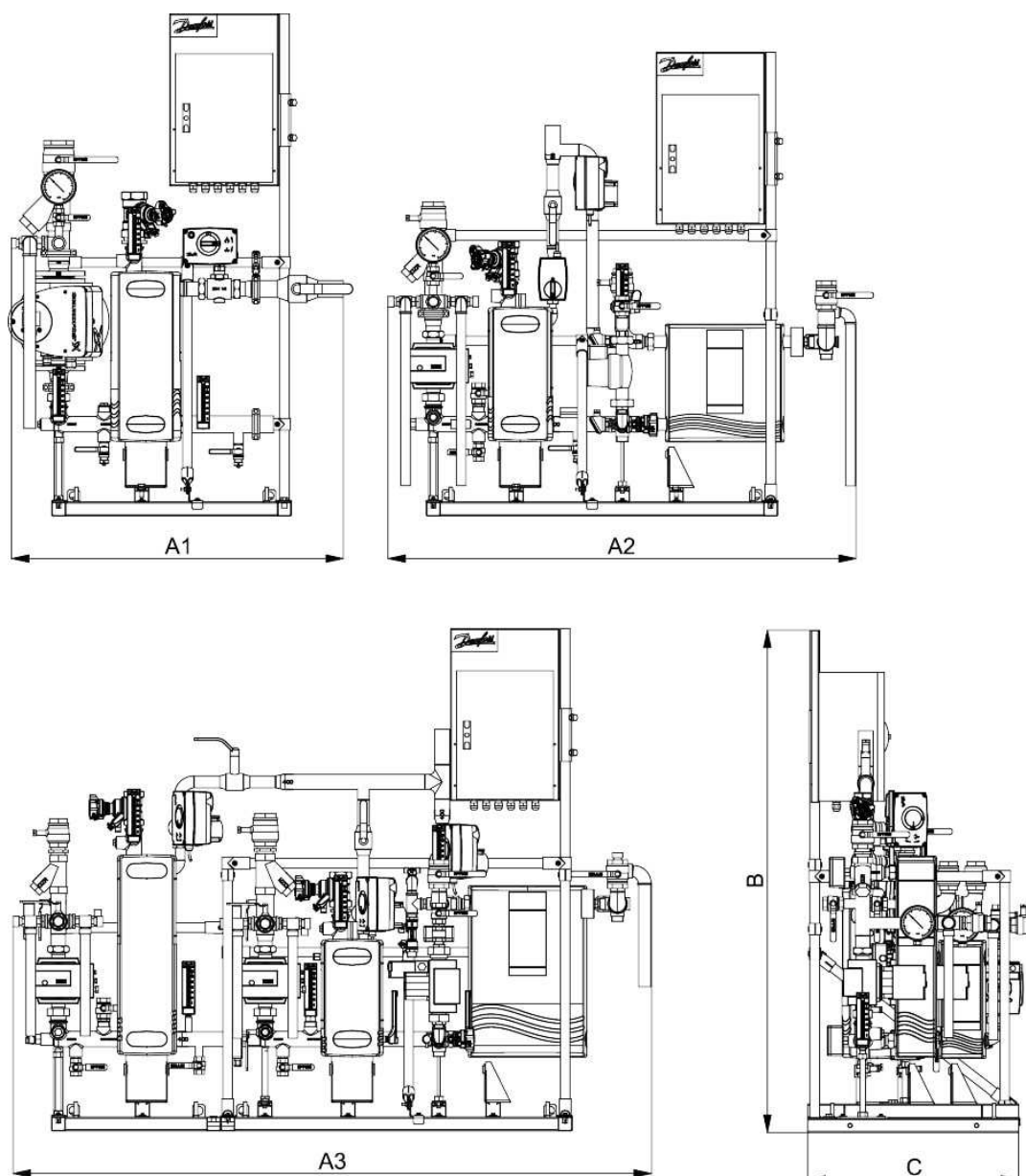
Pressure and temperature data

Primary	
Maximum permissible supply temperature, primary	135°C
Maximum permissible operating pressure, primary	14,2 bar(g)
Rated pressure, primary	PN16
Secondary Heating	
Maximum permissible temperature, secondary	100°C
Maximum permissible operating pressure, secondary	6 bar(g)
Minimum required pressure (static), water supply	1.0 bar(g)
Secondary Domestic Hot Water	
Maximum permissible temperature, secondary	90°C
Maximum permissible operating pressure, secondary	10 bar(g)
Minimum required pressure (static), water supply	1.0 bar(g)

Dimensions

Capacity [kW]			Pipe diameter				External dimensions (max)					Weight		
Heating 1	Heating 2	DHW	Heating 1	Heating 2	Cold/warm water	DHW circ.	Length (A1)	Length (A2)	Length (A3)	Height (B)	Depth (C)	Weight 1 circuit	Weight 2 circuits	Weight 3 circuits
115-45/ 50-80	115-65/ 60-80	70-25/ 10-58	[DN]	[DN]	[DN]	[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[kg]	[kg]
60	40	70	25	25	25	15	900	1000	1600	1300	500	54	71	99
95	60	100	25	25	25	15	900	1100	1600	1300	500	59	77	109
120	80	150	32	32	25	15	900	1150	1700	1300	500	65	83	119
150	100	195	32	32	32	20	900	1150	1700	1300	500	70	88	127
190	125	245	40	40	32	20	950	1200	1750	1300	610	87	110	170
235	160	300	40	40	40	25	950	1200	1750	1300	610	102	129	199
295	200	380	50	50	40	25	1150	1400	1900	1400	650	110	140	215
370	245	395	50	50	50	25	1150	1400	1900	1400	650	141	180	276
560	410	590	65	65	50	32	1200	1500	2000	1400	650	164	210	322

These are only few examples of all the possible combinations. Depending on the customer requirements, type of heat exchangers, application, DN combinations, etc. the dimensions may vary. Depth dimension C is considered for 2 and 3 circuit stations. Height dimension B is considered with the electrical box in the minimum height position and the heating pump on the return line.



Accessories

The DSE FLEX platform is designed for Full Insulation. This reduces significantly the energy loss in the heating room. In order to receive this accessory and also for additional details and quotations please contact the sales responsible.

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



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