ENGINEERING
TOMORROW

Data sheet

DSE FLEX – Compact Substation

General description and application

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 provide 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 a 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 still offers the robustness and friendly, appealing look of the old product with the advantage of a lighter profile, smaller size and a design for a faster and safer transport.

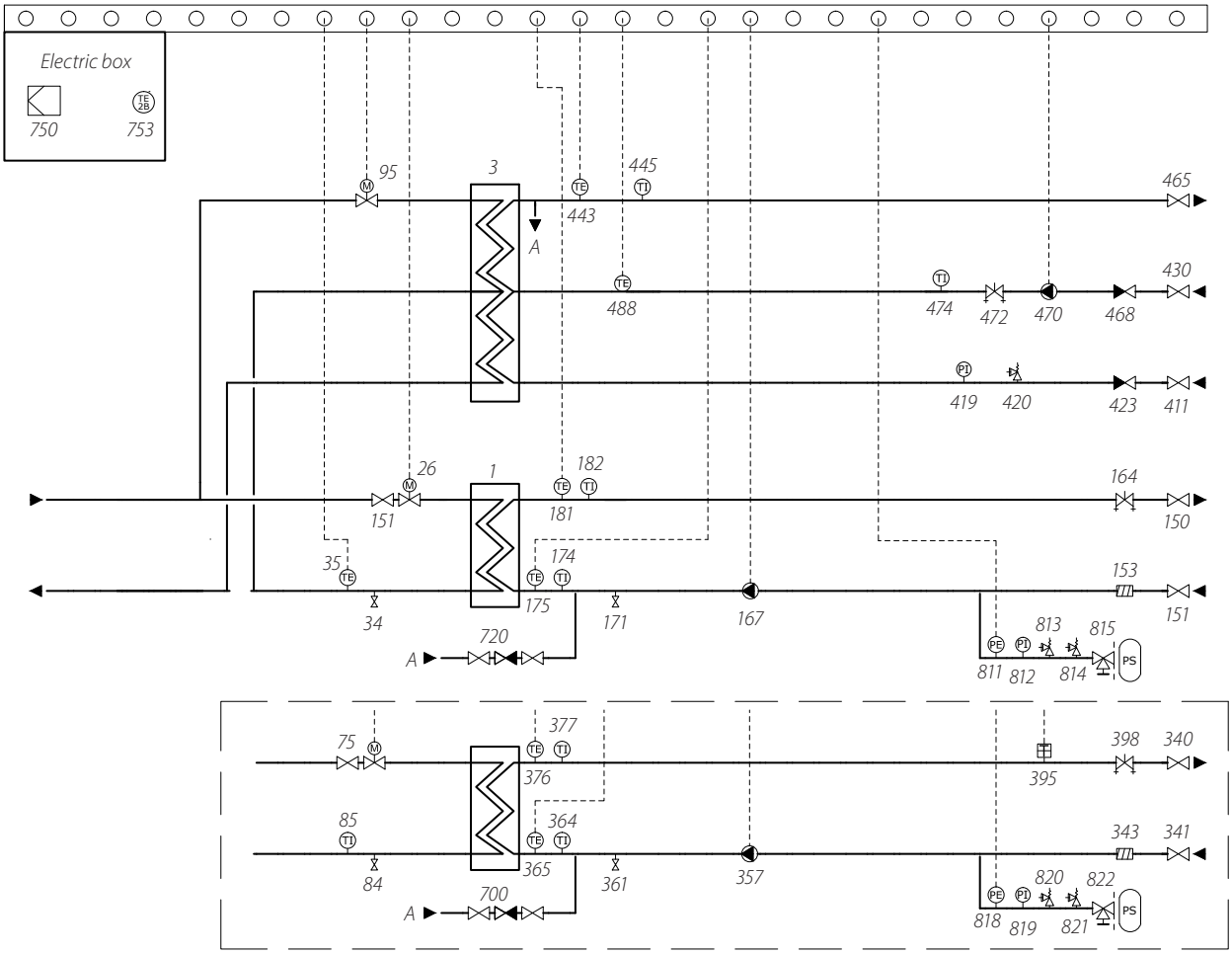
Maximum operating parameters

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)

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, l=0.038 W/mK
Insulation (heat exchanger)	PU foam, l =0.035 W/mK
Insulation (piping)	PU foam, l =0.029 W/mK

Circuit diagram



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

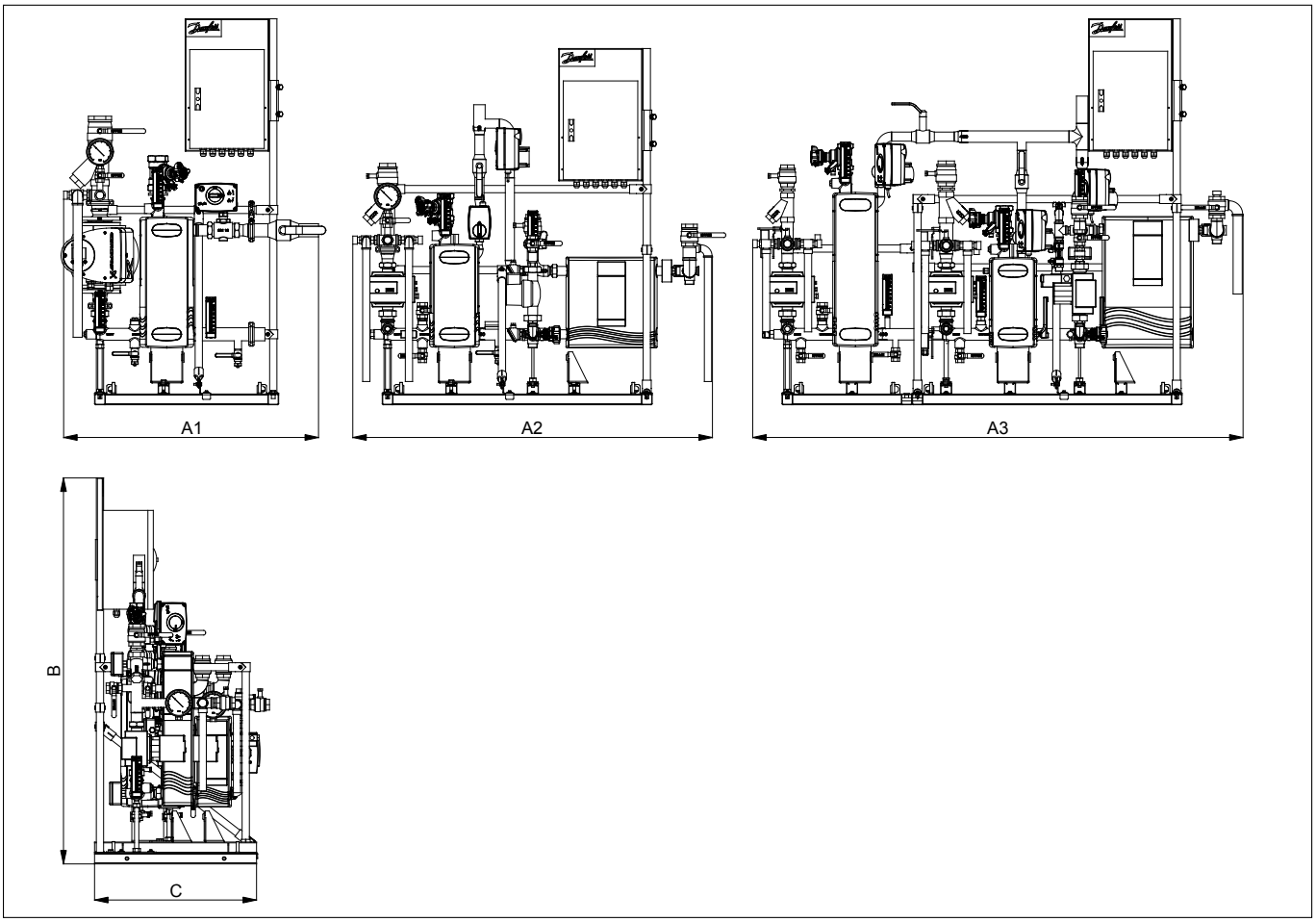
Function

The DSE FLEX platform can be used for various applications such as heating, domestic hot water and other water based heating systems. 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. The construction offers easy access to all components for maintenance and servicing purposes. Heat transfer between the district heating network and the building installation is ensured via a micro plate heat exchanger, which ensures high energy efficiency and low 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).

Dimensions

Capacity [kW]			Pipe diameter				External dimensions (max)					Weight		
Heating 1	Heating 2	DHW	Heating 1	Heating 2	Cold/ warm water	DHW circulation	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	1500	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.



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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.

Configuration

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

Danfoss A/S
Climate Solutions • danfoss.com • +45 7488 2222