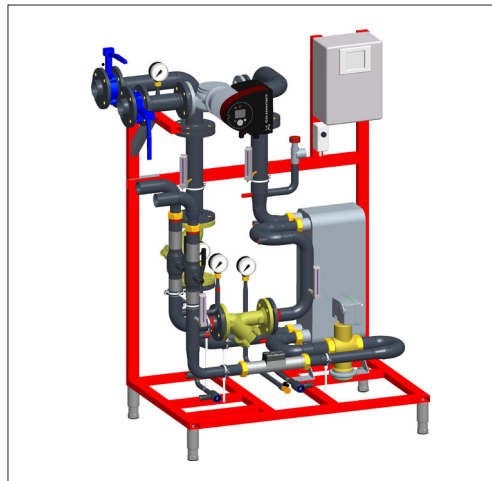


Data sheet

Danfoss DH Standard Welded Stations

Type DSP 1 MAXI CEE

General description and application



District heating transfer stations provide the link between district heating suppliers and customers' systems. They incorporate the necessary equipment to tailor the supplied heat to the needs of the object premises as specified in the heating supply contract. In this they need to 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 to separate the systems (heat exchanger), to limit the flow volume to that specified in the contract, regulate the secondary supply temperature and measure the energy consumption. The system described here is a standard type in which one of different types of pump modules and different options can be connected on the secondary. Thus, this system is especially suitable for District Heating applications.

Maximum operating parameters

Primary		
Maximum permissible supply temperature, primary	TVP	130°C / (150 °C for material design components)
Maximum permissible operating pressure, primary	PZP	16 bar(g)
Rated pressure, primary	PN	16
Maximum permissible pressure differential, primary	DPP	12 bar (PN16)
Maximum permissible flow volume, primary	VPP	10,0 m³/h for w ≤ 1,5 m/s
Secondary		
Maximum permissible supply temperature, secondary	TVS	100 °C
Maximum permissible operating pressure, secondary	PZS	3 bar(g)
Rated pressure, secondary	PN	10
Maximum permissible flow volume, secondary	VPS	19,5 m³/h for w ≤ 1,5 m/s

Technical data

type no.	VPP max. [m³/h]	DN prim.	QP [m³/h]	AVQM KVS [m³/h]	HEX type	VPS max. [m³/h]	DN sec.	max. dpp* [kPa]	max. dpp** [kPa]	max. dps*** [kPa]	D [mm]	W [mm]	H [mm]	B [mm]	A [mm]	mass [kg]	exp. vessel [l]
01	3	25	3	6,3	XB12 H 90	4,5	32	51	60	25	750	1150	1670	1038	1409	131	150
02	3,5	32	3,5	8	XB12 M 110	6,2	32	54	59	21	750	1150	1670	1038	1409	136	200
11	6	32	6	12,5	XB52 M 50	7,1	40	69	81	25	750	1150	1670	1038	1409	144	300
12	6	32	6	12,5	XB52 M 70	11,5	50	65	79	23	750	1150	1670	1038	1409	153	500
21	8,2	40	10	16	XB59 M 80	11,5	65	64	70	19	750	1150	1670	1038	1423	166	500
22	8,2	40	10	16	XB59 M 110	15,8	65	63	69	24	750	1150	1670	1038	1423	175	750
31	10	50	10	20	XB59 M 110	15,8	65	57	66	33	750	1150	1670	1038	1443	184	750
32	10	50	10	20	XB59 M 140	19,3	65	61	72	31	750	1150	1670	1038	1443	195	750

* without heatmeter (HM) / include insert

** include heatmeter (HM) SonoMeter 40, battery, M bus

*** inside station

exp. vessel is not included. The intent is only recommended. Please check your conditions.

Materials

Pipes and pipe fittings, flanges, threaded nuts	P235GH-TC1, C22.8, CuSn5Pb5Zn5-C (RG-5)
Heat exchanger	1.4404 with CU brazing compound
Fittings	CuSn5Pb5Zn5-C (RG-5), ST37.0, EN-GJS-400-18-LT (GGG40.3)
Insulation	PU-Hardfoam, black, $\lambda = 0,027$ W/mK

Function

Hot water drawn from the pipeline of the local or district heating supply company is fed into the station at an appropriate temperature and pressure, which may be higher in winter than in summer.

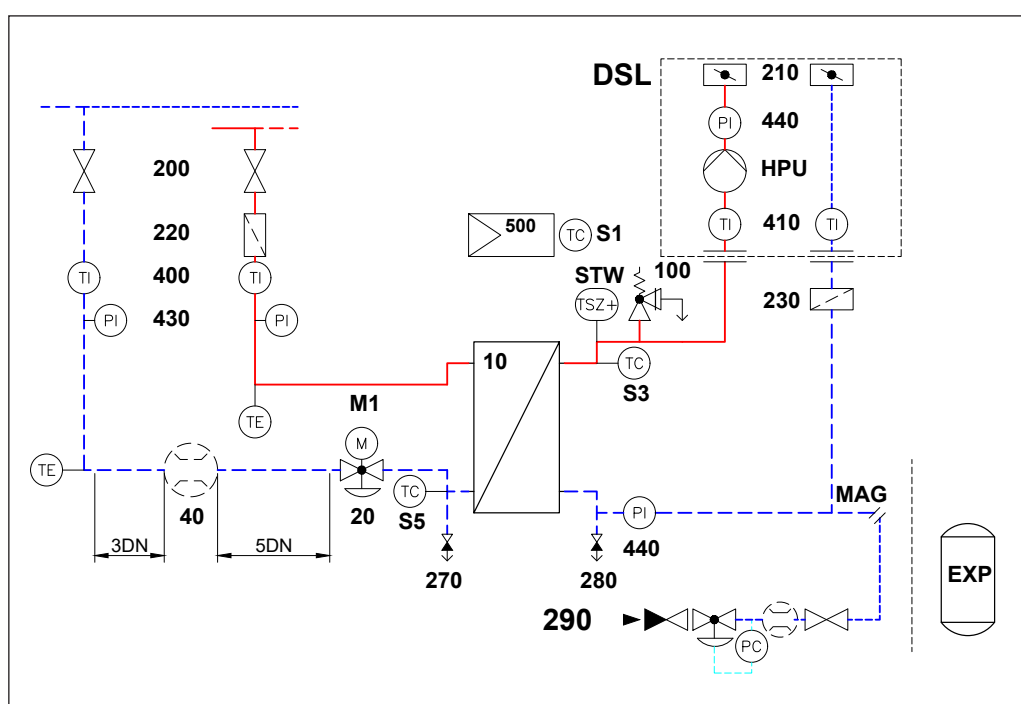
In the primary supply line this hot water will flow through a shut-off valve and a dirt trap/strainer. The supply and return lines will incorporate a thermometer and a manometer to register the temperature and pressure.

There will also be regulatory equipment in the return lines of the primary as specified by the circuit design.

The cooled heating water then flows back to the local or district heating supply company via the primary return pipe.

On secondary side different types of pump modules and different options can be connected.

Circuit diagram



DSP 1 MAXI

200	Shut-off device for primary (left/right conn.)	100	Safety valve
220	Dirt trap / strainer	S3	Supply temperature sensor secondary
430	Manometer	EXP	Expansion Vessel (delivered by costumer)
400	Thermometer	MAG	Pressure retention connector
40	Insert / optional Heatmeter	280	Drain valve
20	Motorized Combi (Control) valve	230	Dirt trap / strainer
M1	Electrical actuator	440	Manometer
S5	Return temperature limiter primary	500	Electronic controller
270	High-pressure drain valve	S1	Outdoor sensor
10	Heat exchanger		
	Optional sheet metal harcover (accessory)		
DSL		410	Thermometer
HPU	Heating Pump	440	Manometer
210	Shut-off device secondary		
290	Refilling line (accessories)		

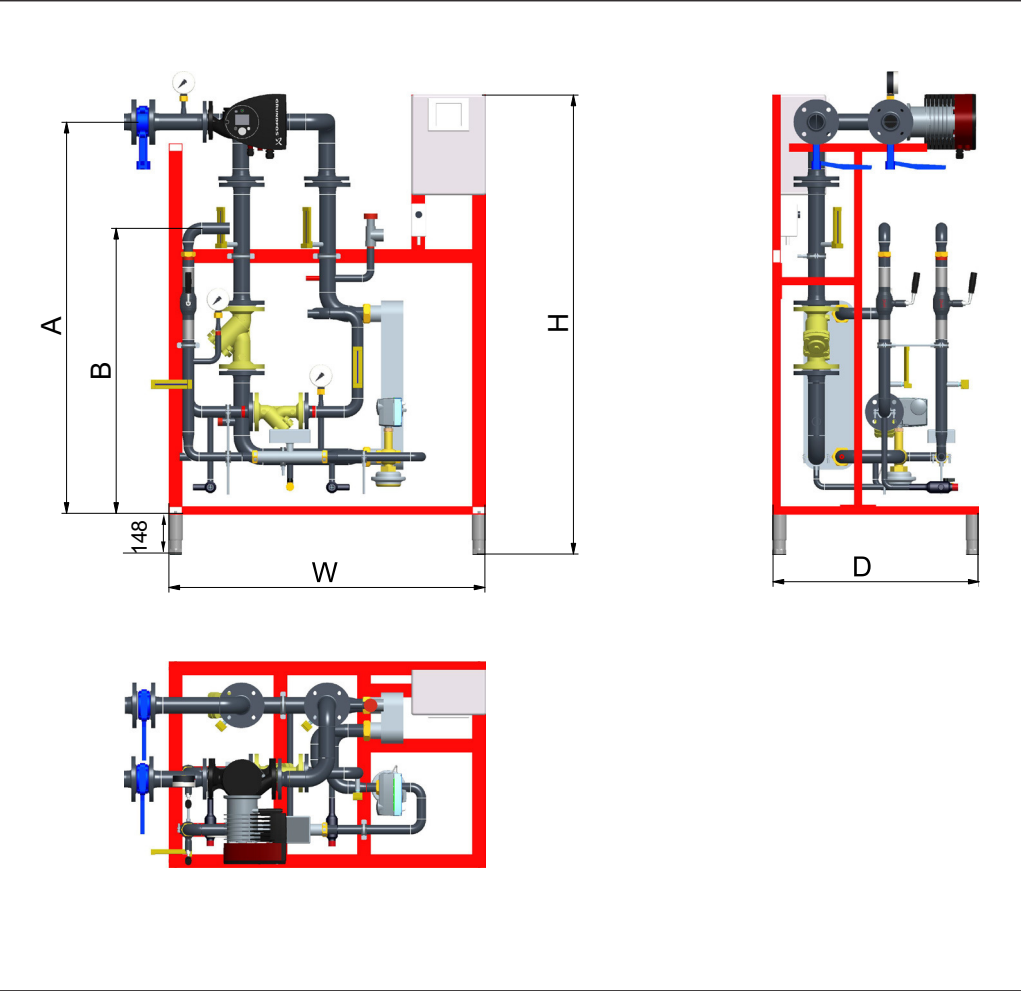
Type designation

DSP 1 MAXI	-	PD	-	11	-	LT	-	S100
Base type		P=Electrical box Controller Danfoss D = ECL310		Type No. see Page 1		LT: PN16/130°C		Lenght of insert for HM or HM SonoMeter 40 QP .. S035 = SonoMeter 40 QP 3,5 battery S060 = SonoMeter 40 QP 6,0 battery S100 = SonoMeter 40 QP 10,0 battery I260 = Insert 260 mm I300 = Insert 300 mm

Type designation
for Pump Module

DSL	-	40-120 F	-	MG1
Pump module		Pump properties		Type of pump MG1 = MAGNA1 MG3 = MAGNA3

Dimensions



Data sheet

Danfoss DH Standard Welded Stations

type DSP 1 MAXI CEE

Capacity range
Temperature
programs

Capacities [kW]	100	125	150	175	200	300	350	400	450
Temperatures primary/secondary [°C]	Type								
130 -> 75 / 90 < 70	01	02	11	12	12	22	22	32	
120 -> 65 / 80 < 60	01	02	11	12	12	22	22	32	
110 -> 60 / 75 < 55	01	02	11	12	12	22	22	32	
110 -> 55 / 70 < 50	01	02	11	12	12	22	22	32	
90 -> 60 / 75 < 55	01	02	11	11	12	22	32		



use impossible

Ordering codes

Standard substation			Accessory			
Codes	Type	Type no.	Module pump		Refilling line	
			Codes	Description	Codes	Description
861L1745	DSP 1 MAXI-PD-01 LT S035 CEE	01	861L1396 / 861L1397	DSL 25-120F MG1 / DSL 25-120F MG3	004F5910	Refilling line: -2 pcs. Ball valves DN25 + Pressure reducer + flowmeter+connection port for expansion vessel
861L0880	DSP 1 MAXI-PD-01 LT I260	01				
861L1746	DSP 1 MAXI-PD-02 LT S035 CEE	02				
861L0881	DSP 1 MAXI-PD-02 LT I260	02				
861L1747	DSP 1 MAXI-PD-11 LT S060 CEE	11	861L1398 / 861L1399	DSL 32-120F MG1/ DSL 32-120F MG3		
861L0882	DSP 1 MAXI-PD-11 LT I260	11				
861L1748	DSP 1 MAXI-PD-12 LT S060 CEE	12	861L1400 / 861L1401	DSL 40-120F MG1 / DSL 40-120F MG3		
861L0883	DSP 1 MAXI-PD-12 LT I260	12				
861L1749	DSP 1 MAXI-PD-21 LT S100 CEE	21	004F5908 / 144G4157	DSL 50-120F MG3 / DSL 50-120F MG1		
004F4831	DSP 1 MAXI-PD-21 LT I300	21				
861L1750	DSP 1 MAXI-PD-22 LT S100 CEE	22				
004F4832	DSP 1 MAXI-PD-22 LT I300	22				
861L1751	DSP 1 MAXI-PD-31 LT S100 CEE	31				
004F4833	DSP 1 MAXI-PD-31 LT I300	31				
861L1752	DSP 1 MAXI-PD-32 LT S100 CEE	32	004F5909 / 144G4158	DSL 50-150F MG3 / DSL 50-150F MG1		
004F4834	DSP 1 MAXI-PD-32 LT I300	32				

Example for ordering:

substation 210 kW, type 12 without heatmeter

DSP 1 MAXI

DSP 1 MAXI-PD-12 LT I260

Type 12

861L0883

Application Key

087H3802 (Application Key need to be ordered separate.
Not included in station)

Pump Module

DSL 40-120F MG3

861L1401

Optional

Refilling line

004F5910

Danfoss A/S

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