ENGINEERING
TOMORROW

Data sheet

Standard Welded Stations
Type DSP 1 MAXI

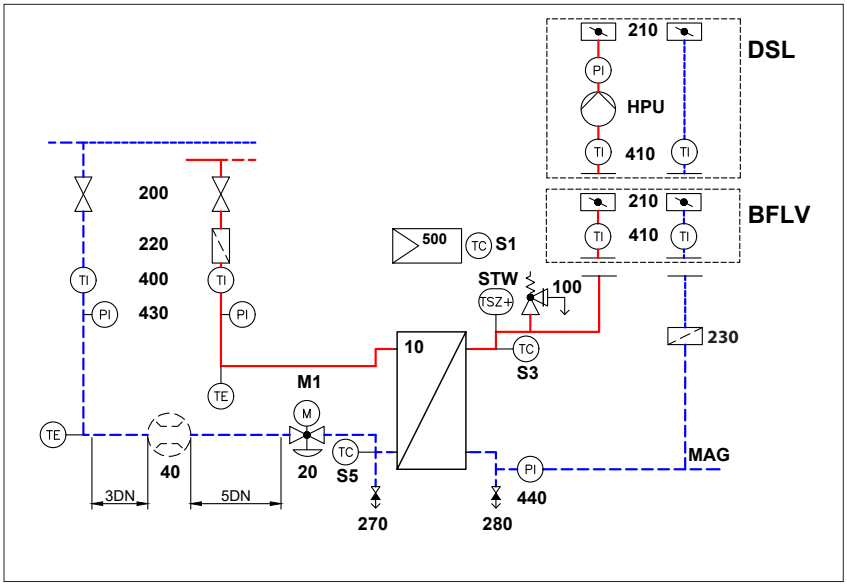
General description and application

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 different types of applications can be connected on the secondary.Thus, this system is especially suitable for biomass applications.

Maximum operating parameters

Primary		
Maximum permissible supply temperature, primary	TVP	100°C (PN16=LT) / 140 °C (PN25 = HT)
Maximum permissible operating pressure, primary	PZP	16 bar(g) = LT / optional 25 bar(g) = HT
Rated pressure, primary	PN	16 = LT / optional 25 = HT
Maximum permissible pressure differential, primary	DPP	12 bar (PN16=LT) / 16 bar (PN25=HT)
Maximum permissible flow volume, primary	VZP	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	VZS	19,5 m3/h for w <= 1,5 m/s

Circuit diagram



DSP1 MAXI	
200	Shut-off device for primary (left/right conn.)
220	Dirt trap / strainer
430	Manometer
400	Thermometer
40	Insert or Heatmeter
20	Motorized Combi (Control) valve
M1	Electrical actuator
S5	Return temperature limiter primary
270	High-pressure drain valve
10	Heat exchanger
100	Safety valve
S3	Supply temperature sensor secondary
STW	Safety thermostat (optional for HT)
MAG	Pressure retention connector
280	Drain valve
440	Manometer
230	Dirt trap / strainer
500	Electronic controller
S1	Outdoor sensor
DSL	Pump group - optional
HPU	Heating pump
210	Shut-off device secondary
BFLV	Shut-off valve set - optional
210	Shut-off device secondary
410	Thermometer

Materials

Pipes and pipe fittings, flanges	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, λ = 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 applications and systems can be connected.

Technical data

type no.	VPP max. [m³/h]	DN pri.	QP [m³/h]	AVQM Kvs [m³/h]	HEX type	VPS max. [m³/h]	DN sec.	max. dpp * [kPa]	max. dpp ** [kPa]	max. dps *** [kPa]	DSL type	D [mm]	W [mm]	H [mm]	A [mm] with DSL	A1 [mm] with BFLV	B [mm]	mass with DSL [kg]	mass with BFLV [kg]
01	3	25	3	6,3	XB12 H 90	4,5	32	51	60	19	DSL 25-120F MG1	750	1150	1670	1409	1190	1038	131	104
01	3	25	3	6,3	XB12 H 90	4,5	32	51	60	19	DSL 25-120F MG3	750	1150	1670	1409	1190	1038	131	104
02	3,5	32	3,5	8	XB12 M 110	6,2	32	54	59	21	DSL 25-120F MG1	750	1150	1670	1409	1190	1038	136	107
02	3,5	32	3,5	8	XB12 M 110	6,2	32	54	59	21	DSL 25-120F MG3	750	1150	1670	1409	1190	1038	136	107
11	6	32	6	12,5	XB52 M 50	7,1	40	69	81	19	DSL 32-120F MG1	750	1150	1670	1409	1190	1038	144	114
11	6	32	6	12,5	XB52 M 50	7,1	40	69	81	19	DSL 32-120F MG3	750	1150	1670	1409	1190	1038	144	114
12	6	32	6	12,5	XB52 M 70	11,5	50	65	79	23	DSL 40-120F MG1	750	1150	1670	1409	1190	1038	153	123
12	6	32	6	12,5	XB52 M 70	11,5	50	65	79	23	DSL 40-120F MG3	750	1150	1670	1409	1190	1038	153	123
21	8,2	40	10	16	XB59 M 80	11,5	65	64	70	20	DSL 50-120F MG1	750	1150	1670	1423	1297	1038	166	133
21	8,2	40	10	16	XB59 M 80	11,5	65	64	70	20	DSL 50-120F MG3	750	1150	1670	1423	1297	1038	166	133
22	8,2	40	10	16	XB59 M 110	15,8	65	63	69	22	DSL 50-120F MG1	750	1150	1670	1443	1297	1038	175	142
22	8,2	40	10	16	XB59 M 110	15,8	65	63	69	22	DSL 50-120F MG3	750	1150	1670	1423	1297	1038	175	142
31	10	50	10	20	XB59 M 110	15,8	65	57	66	21	DSL 50-120F MG1	750	1150	1670	1443	1297	1038	175	149
31	10	50	10	20	XB59 M 110	15,8	65	57	66	21	DSL 50-120F MG3	750	1150	1670	1443	1297	1038	175	149
32	10	50	10	20	XB59 M 140	19,3	65	61	72	23	DSL 50-150F MG1	750	1150	1670	1423	1297	1038	195	158
32	10	50	10	20	XB59 M 140	19,3	65	61	72	23	DSL 50-150F MG3	750	1150	1670	1423	1297	1038	195	158

* *without heatmeter (HM) / include insert* ** *include heatmeter (HM) SonoMeter 40* *** *inside the Station*

type DSL 1 MAXI: - PD - 32 HT S100

- **PD** – Base type
- **32** – Type No.
- **HT** – LT: Variant PN16/100°C; HT: Variant PN25/140°C
- **S100** – Lenght of insert for HM or HM SonoMeter 40 QP ..

PD – P = Electrical box

Controller Danfoss

D = ECL310

NA = not available

S100

S035 = SonoMeter 40 QP 3,5 230V

S060 = SonoMeter 40 QP 6,0 230V

S100 = SonoMeter 40 QP 10,0 230V

I260 = Insert 260 mm

I300 = Insert 300 mm

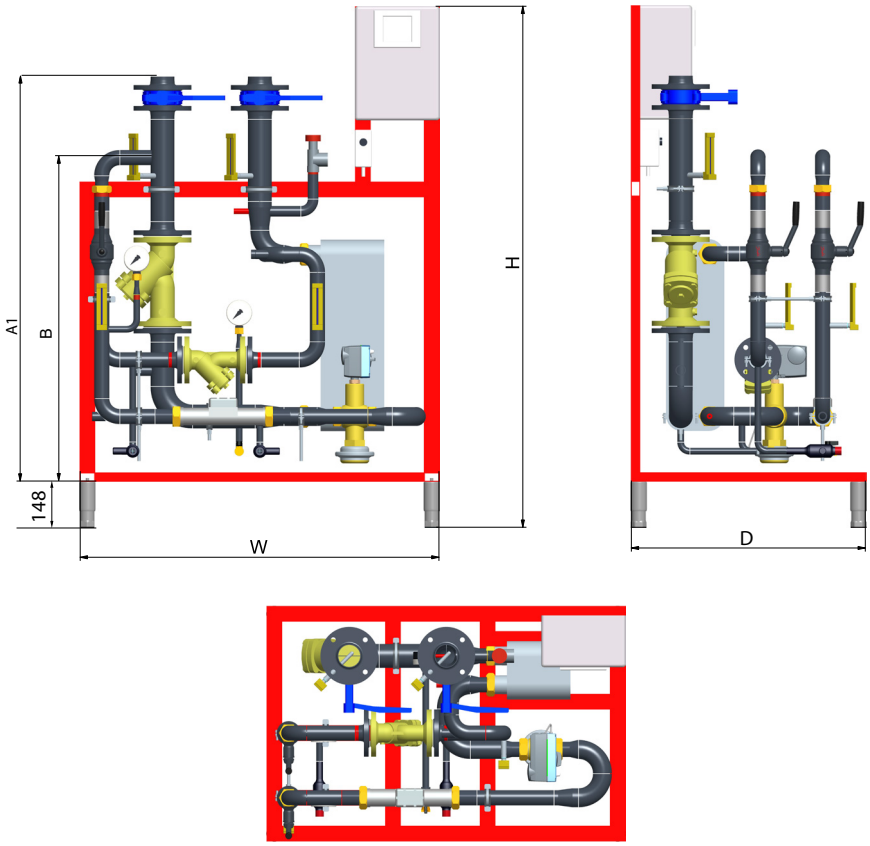
Type designation for pump module

DSL - 40–120 F - MG1

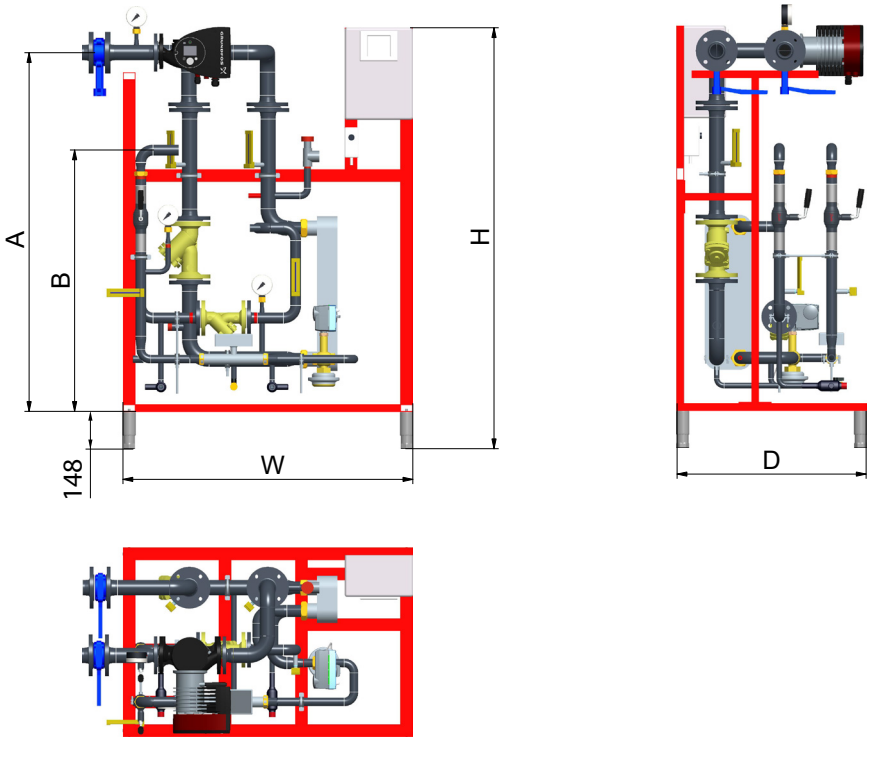
- **DSL** – Pump module
- **40–120 F** – Pump characteristics
- **MG1** – Pump model
  MG1 = MAGNA 1
  MG3 = MAGNA 3

Dimensions

dimensions with BFLV



dimensions with DSL



Capacity range Temperature programs (HT)

Capacity [kW] →	**100**	**125**	**150**	**175**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**
Temperatures primary/secondary ↓	Type no. selection											
130->60/80<-55°C	M	01	02	02	11	12	12	12	22	22	32	32
120->50/70<-45°C	M	01	02	02	11	12	12	22	22	22	32	32
110->50/90<-45°C	M	01	01	02	02	02	11	11	21	21	21	21
110->55/70<-50°C	M	02	11	12	12	12	22	22	32	–	–	–
110->50/70<-45°C	M	01	02	02	11	12	12	22	22	22	32	32

Please be aware, that in case of high differential temperature primary heatmeters or inserts for can be oversized!
M = Please choose for these capacity standard station type **DSA 1 MINI**
- = Use impossible

Ordering codes

codes	type	pump module DSL		BFLV	
		codes	description	codes	description
861L0880	DSP1 MAXI PD-01 LT I260	861L1396 / 861L1397	DSL 25-120F MG1 / DSL 25-120F MG3	861L1402	BFLV +thermometer in dim DN32 *
861L0884	DSP1 MAXI PD-01 HT I260				
861L0888	DSP1 MAXI PD-01 LT S035				
861L0892	DSP1 MAXI PD-01 HT S035				
861L0898	DSP1 MAXI-NA-01 HT I260				
861L0894	DSP1 MAXI-NA-01 LT I260				
861L0881	DSP1 MAXI PD-02 LT I260				
861L0885	DSP1 MAXI PD-02 HT I260				
861L0889	DSP1 MAXI PD-02 LT S035				
861L0893	DSP1 MAXI PD-02 HT S035				
861L0899	DSP1 MAXI-NA-02 HT I260				
861L0895	DSP1 MAXI-NA-02 LT I260				
861L0882	DSP1 MAXI PD-11 LT I260	861L1398 / 861L1399	DSL 32-120F MG1 / DSL32-120F MG3	861L1403	BFLV+thermometer in dim DN40 *
861L0886	DSP1 MAXI PD-11 HT I260				
861L0890	DSP1 MAXI PD-11 LT S060				
861L0904	DSP1 MAXI PD-11 HT S060				
861L0896	DSP1 MAXI-NA-11 LT I260				
861L0900	DSP1 MAXI-NA-11 HT I260				
861L0883	DSP1 MAXI PD-12 LT I260	861L1400 / 861L1401	DSL 40-120F MG1 / DSL 40-120F MG3	861L1404	BFLV+thermometer in dim DN50 **
861L0887	DSP1 MAXI PD-12 HT I260				
861L0891	DSP1 MAXI PD-12 LT S060				
861L0905	DSP1 MAXI PD-12 HT S060				
861L0897	DSP1 MAXI-NA-12 LT I260				
861L0901	DSP1 MAXI-NA-12 HT I260				
004F4855	DSP1 MAXI-NA-21 LT I300	004F5908 / 144G4157	DSL 50-120F MG3 / DSL 50-120F MG1	004F4859	BFLV +thermometer in dim DN65 **
004F5721	DSP1 MAXI-NA-21 HT I300				
004F4837	DSP 1 MAXI-PD-21 HT I300				
004F4831	DSP 1 MAXI-PD-21 LT I300				
146B5882	DSP1 MAXI PD-21 LT S100				
146B5888	DSP1 MAXI PD-21 HT S100				
004F4903	DSP1 MAXI-NA-22 LT I300				
004F5722	DSP1 MAXI-NA-22 HT I300				
004F4838	DSP 1 MAXI-PD-22 HT I300				
004F4832	DSP 1 MAXI-PD-22 LT I300				
146B5883	DSP1 MAXI PD-22 LT S100				
146B5889	DSP1 MAXI PD-22 HT S100				
004F4910	DSP1 MAXI-NA-31 LT I300				
004F5723	DSP1 MAXI-NA-31 HT I300				
004F4839	DSP 1 MAXI-PD-31 HT I300				
004F4833	DSP 1 MAXI-PD-31 LT I300				
146B5884	DSP1 MAXI PD-31 LT S100				
146B5890	DSP1 MAXI PD-31 HT S100				
004F4917	DSP1 MAXI-NA-32 LT I300	004F5909 / 144G4158	DSL 50-150F MG3 / DSL 50-150F MG1		
004F5724	DSP1 MAXI-NA-32 HT I300				
004F4840	DSP1 MAXI-PD-32 HT I300				
004F4834	DSP1 MAXI-PD-32 LT I300				
146B5891	DSP1 MAXI PD-32 HT S100				
146B5885	DSP1 MAXI PD-32 LT S100				

* *Ball valve* ** *Butterfly valve*

Data sheet **DSP 1 MAXI**

Capacity range
Temperature programs (LT)

M = Please choose for these capacity standard station type **DSA 1 MINI**
- = Use impossible

Capacity [kW] →	75	100	125	150	175	200	250	300	350	400	450	500
Temp. prim./sec. ↓	Type no. selection											
95->65/85<-60°C	M	01	02	11	11	11	21	21	31	32	–	–
95->65/80<-55°C	M	01	02	02	11	11	21	21	22	31	32	–
95->60/75<-55°C	M	01	02	11	12	12	12	22	22	32	–	–
95->60/80<-57°C	M	01	02	02	11	12	12	21	22	31	32	–
95->60/80<-55°C	M	01	01	02	11	11	12	21	22	31	32	–
95->55/75<-50°C	M	01	01	02	11	11	12	12	22	22	32	32
95->55/75<-52°C	M	01	02	02	11	12	12	12	22	22	32	32
90->60/70<-50°C	M	01	02	11	12	12	21	22	32	32	–	–
90->60/75<-50°C	M	01	02	02	11	11	21	21	22	31	32	–
90->60/75<-55°C	M	01	02	11	12	12	21	22	31	32	–	–
90->60/80<-55°C	M	01	02	11	11	11	21	21	31	32	–	–
90->50/70<-47°C	M	01	02	02	11	12	12	12	22	22	32	32
90->50/75<-45°C	M	01	01	02	11	11	12	12	22	22	32	32
85->55/70<-50°C	M	01	02	11	12	12	21	22	31	32	–	–
80->55/70<-50°C	M	02	02	11	12	21	21	31	32	–	–	–
80->50/65<-45°C	M	01	02	11	12	12	21	22	31	32	–	–
75->55/70<-50°C	02	11	11	12	21	21	31	–	–	–	–	–

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