

Maxi ETS 11



District energy substation for domestic hot water and space heating applications

The Maxi ETS 11 is a high quality and standardized district heating substation. It features preconfigured solutions for all heating and domestic hot water requirements.

DISTRICT HEATING AND COOLING

District energy is an efficient technology that meets the need for central heating and cooling in a simple, convenient and secure way. The expansion of district energy has reduced emission of greenhouse gases from heating and cooling by about 20%, while the economics are very competitive compared to other forms of heating and cooling.

APPLICATIONS

The Maxi ETS 11 district heating substation is appropriate for a wide range of uses from a single multi-family dwelling to large commercial buildings. Each unit is built to dimensions appropriate to the application and site.

WORKING PRINCIPLE

Energy transfer stations (ETS) take the higher level of energy from a distribution network and transform it to a level low enough to meet the space and domestic water heating needs of a specific building via hydraulic separation.

CHARACTERISTICS

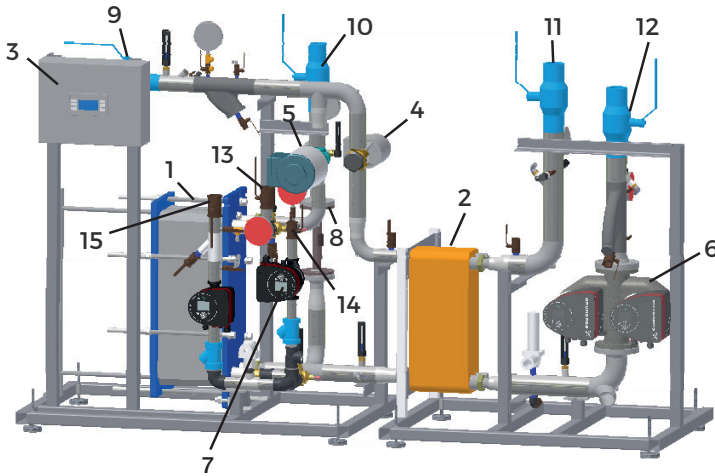
ETS units are built around the most technologically advanced, compact and energy-efficient plate heat exchangers. Due to the modular design, the units are cost-efficient and have a relatively short delivery time. Upon delivery, the units are ready to connect the building's communication protocol and piping, as well as to the district energy network.

COMPONENTS

Energetx Systems uses only high quality components that comply with US regulations and standards. Space heating and cooling applications utilize pumps with integrated variable frequency drive to ensure optimal energy use and low operating costs. The standard controller has communication and optimization capabilities to adapt to most interfaces (Modbus, BACnet, and more). Energetx Systems can supply an energy meter that is compliant to EN1434.

BENEFITS

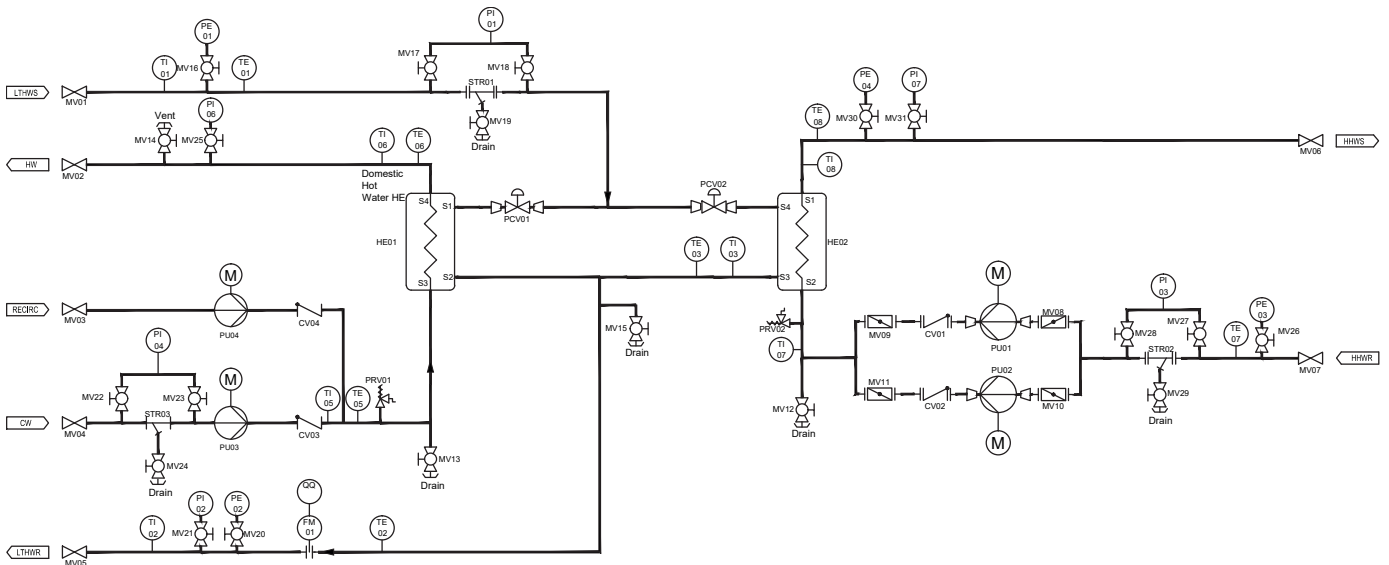
- Standard component solution for short lead time
- Compact and modular design allows for easy passage into mechanical room and installations
- Pretested at factory to ensure quick and easy start up
- AHRI Certified double-wall, plate frame heat exchanger used for all DHW applications
- All DHW process line components meet NSF-61, Annex C requirements
- High efficiency pumps with integrated VFD



COMPONENTS

1. DHW AHRI Certified double wall plate heat exchanger
2. Space heating brazed plate heat exchanger
3. Control panel
4. Control valve - space heating
5. Control valve - DHW
6. Secondary space heating circulation pumps
7. Secondary DHW recirculation pump
8. Energy meter
9. Primary Supply connection
10. Primary return connection
11. Secondary space heating supply
12. Secondary space heating return
13. DHW supply
14. DHW recirculation connection
15. Cold water connection

EXAMPLE OF A FLOW CHART FOR AN ETS WITH ONE CIRCUIT FOR HOT WATER HEATING AND ONE FOR SPACE HEATING.



TESTS AND CERTIFICATIONS

- ETS units are manufactured in accordance with ANSI, ASME, AWS, NEMA, CU and CUL standards, and the entire system is pressure tested. Factory acceptance tests are performed on each unit to ensure full functionality at start up.
- The units are supplied with AHRI certified plate heat exchangers and brazed heat exchangers.

ADVANTAGES

- Energy-efficient solution
- Plug-and-play
- Low return temperature in district heating
- Easy to service
- Prefabricated optimized systems that are pretested
- Compact packaged design allows for easy installation and operation



CODE SELECTION

MAXI ETS	11	BC	1250	3000	XX
Main type and use of unit 11 = Domestic hot water and heating		Domestic hot water load (MBH)		Space heating load (MBH)	
Main type and use of unit A = without domestic hot water tank/charging pump B = with domestic hot water tank/charging pump C = single heating pump, 1 x 100% D = two parallel heating pumps, 2 x 100% M = Grundfos Magna3D pumps used for secondary heating ND = No DHW pumps NR = No heating pumps NR = No DHW recirculation pump				Options 2D = split control valves, DHW 2H = split control valves, heating 3W = 3-way PCV (primary) NE = no energy meter XX = other	

SELECTION

Type	Model No.	Load		Flow Rate				Line Sizes (in)				Substation Dimensions (in.) / Weight (lbs.)			
		DHW HX (MBH)	HHW HX (MBH)	Q DHW Prim. (gpm)	Q DHW Sec. (gpm)	Q HHW Prim. (gpm)	Q HHW Sec. (gpm)	LTHW	DHW	Recirc	HHW	Length (in)	Width (in)	Height (in)	Weight (lbs)
11.ACM	ETS11ACM-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	98	38	64	1100
	ETS11ACM-560-500	560	500	17.7	14.0	25.3	51.2	2.5	1.25	1.25	2.5	98	38	64	1150
	ETS11ACM-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	106	38	68	1370
	ETS11ACM-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	110	38	69	1460
11.AC	ETS11AC-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	112	38	64	1225
	ETS11AC-560-500	560	500	17.7	14.0	25.3	51.2	2.5	1.25	1.25	2.5	112	38	64	1285
	ETS11AC-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	122	38	68	1542
	ETS11AC-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	130	38	70	1839
	ETS11AC-1850-5500	1850	5500	50.6	38.9	226.0	450.0	4	2	1.25	5	176	39	77	2981
11.ADM	ETS11ADM-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	102	38	68	1130
	ETS11ADM-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	112	38	68	1426
	ETS11ADM-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	118	38	78	2674
11.AD	ETS11AD-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	102	38	64	1585
	ETS11AD-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	112	36	68	2097
	ETS11AD-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	118	38	78	2401
	ETS11AD-1850-5500	1850	5500	50.6	38.9	226.0	450.0	4	2	1.25	5	213	53	78	4041
11.BC	ETS11BC-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	98	40	64	1112
	ETS11BC-560-500	560	500	17.7	14.0	25.3	51.2	2.5	1.25	1.25	2.5	98	40	64	1162
	ETS11BC-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	106	40	68	1382
	ETS11BC-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	110	40	69	1472
	ETS11BC-1850-5500	1850	5500	50.6	38.9	226.0	450.0	4	2	1.25	5	213	53	78	3010
11.BD	ETS11BD-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	102	40	64	1600
	ETS11BD-560-500	560	500	17.7	14.0	25.3	51.2	2.5	1.25	1.25	2.5	102	40	64	1650
	ETS11BD-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	112	40	68	2100
	ETS11BD-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	118	40	77	2431
	ETS11BD-1850-5500	1850	5500	50.6	38.9	226.0	450.0	4	2	1.25	5	213	60	78	4071
11.BDM	ETS11BDM-250-750	250	750	6.8	5.2	30.7	61.3	2	1.25	1.25	2.5	102	38	64	1160
	ETS11BDM-1000-1250	1000	1250	27.3	21.0	52.0	102.2	2.5	1.5	1.25	3	118	38	77	1376
	ETS11BDM-1000-1850	1000	1850	27.3	21.0	77.0	151.3	3	1.5	1.25	3	118	38	77	2681

TECHNICAL DEMANDS MAXI ETS

Primary Side	
Design pressure PS	150 psi (10 bar)
Design temperature TS	248F (120C)
Temperature program(s) winter, heating	210-160/155-180F (98, 9-71, 1/68,3-82.2°C)
Temperature program(s) summer, DHW	160-85/45-140 F (71.1-29,4/7,2-60°C)
Fluids in District Heating	Water
Available differential pressure	min. 12 psi - max 50 psi (min. 83 kPa - max 345 kPa)
Pipe material	Carbon steel
Pressure code	ASME

Heating, secondary side	
Design pressure PS	150 psi (10 bar)
Design temperature TS	200 F (100°C)
Temperature program(s)	210-160 / 155-180°F (98.9 - 71.1/68.3 - 82.2°C)
Capacity range	250 - 5500 MBH (44 kW - 1600 kW)
Max pressure drop HX primary	5 psi (24 kPa)
Max pressure drop HX secondary	5 psi (24 kPa)
Fluids	Water
Pipe material	Carbon steel
Pressure code	ASME

Domestic hot water, secondary side	
Design pressure PS	150 psi (10 bar)
Design temperature TS	200° F (93,3°C)
Temperature program(s)	160-85 / 45 - 140°F (71.1 - 29.4/7,2 - 60°C)
Capacity range	250 - 1850 MBH (60 - 542 kW)
Max pressure drop HX primary	5 psi (24kPa)
Max pressure drop HX secondary	5 psi (45kPa)
Fluids	Water
Safety valve opening pressure	150 psi (10 Bar)
DHW circulation	Always, 35% of secondary flow and 5 psi (35 kPa) head
Pipe material	Copper, 304 SS, Lead-Free Bronze
Pressure code	ASME

Energetx Systems reserves the right to change specifications without prior notification