



# Cetetherm Maxi Cooling

## District cooling substation for larger buildings

Maxi Cooling substations are high-quality, district cooling substations designed by Cetetherm. They feature ready-made basic, configurable solutions for all cooling requirements.



### BENEFITS

- Energy efficient and environmental friendly.
- All Maxi Cooling substations include high-quality components.
- The unit is designed for easy servicing and maintenance work.
- Modularised component and piping solutions aid installation and options are easy to add.
- Easy to transfer to the technical room and install due to the narrow design of the unit and the frame
- The heat exchangers are optimised for cooling applications
- Customised substations can be provided
- Manufactured according to PED

### DISTRICT COOLING

There are many advantages of using district cooling. For instance, district cooling is an environmentally friendly way of producing and distributing cooling. Free sources of cooling like seawater or groundwater could be used for example.

As for property owners, district cooling is a simple and reliable method of creating a pleasant indoor climate. Another positive effect could be the reduction of noise in the building as there would be no need for noisy coolers connected.

### APPLICATIONS

Maxi is a heating unit based on brazed heat exchangers from Cetetherm. Due to the modularized concept a MAXI has a relatively short delivery time. The units are compact, and ready to connect to any buildings pipe systems, as well as for the district heating pipe network.

### GENERAL FEATURES

Each unit is delivered as a ready-made module in a solid frame. With concern for the customer, depending on its size and weight Cetetherm can deliver the substation in sections.

The PHE will then be delivered separately and the frame with the pipes will be delivered as one unit to be connected to the PHE. If Cetetherm IQHeat control unit is chosen, all electrical equipment will be internally connected to the control box and tested. Maxi Cooling substations have a compact design and leave a small footprint in relation to their capacity. They are easily installed and put into operation. The unit can be supplied with or without a meter section, secondary equipment and pump.

### APPROVALS AND RELIABILITY

All products are manufactured in accordance with CE and PED requirements. Maxi Cooling substations fulfil all local and national requirements.

### AHRI-CERTIFICATION

AHRI (Air Conditioning, Heating and Refrigeration Institute) is the only worldwide organization, that certifies the performance of plate heat exchangers. This third-party verification of thermal performance in the AHRI Liquid to Liquid Brazed and Fusion bonded Heat Exchangers Certification Program ensures:

- An **energy-efficient** system performing according to specifications that reduces lifetime operating costs.
- **Confidence** that the system is performing according to promised performance.
- **Correct** thermal performance when choosing the heat .



## DIMENSIONS

Thanks to its flexible design, the Maxi Cooling unit can be easily optimised for different temperature programmes, such as 6-16/17-7 or 6-16/18-8. Maxi Cooling units are dimensioned based on flow, temperature and pressure drop according to the table below.

## CALCULATION DATA

The temperature programmes 6-16/7-17 °C and 6-16/8-18 °C are typical for district cooling.

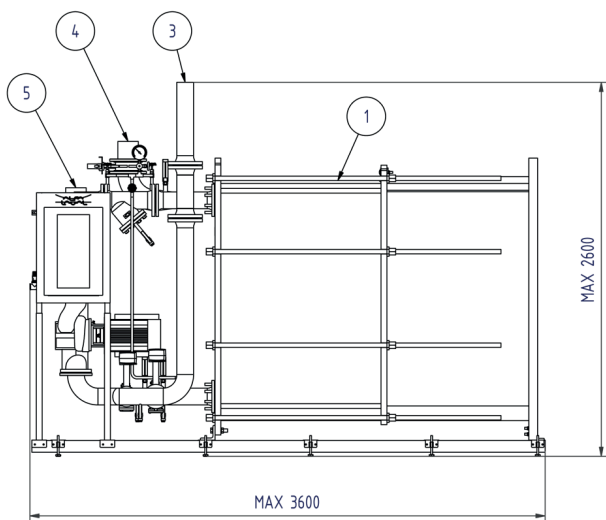
Capacity (kW)	Temperature programme (°C)	Heat exchanger	Pipe connection DN Prim/Sek
100	6-16 / 17-7	AQ2L-112	50 / 50
200		AQ2L-217	65 / 80
300		AQ4L-151	80 / 100
400		AQ4L-199	80 / 100
600		AQ4L-296	100 / 125
100	6-16 / 18-8	AQ2L-49	50 / 50
200		AQ2L-97	65 / 80
300		AQ2L-147	80 / 80
400		AQ2L-207	80 / 100
600		AQ4L-155	100 / 125
800		AQ4L-209	100 / 125

The table above should be seen as a guideline: other combinations may apply depending on the conditions. Cetetherm is able to provide customized solutions or any level of capacities.

## OPERATING DATA

	District cooling	Secondary side
Design pressure (bar)	PN10/16	10
Design temperature	0-60°C	0-60°C

## A MAXI COOLING SUBSTATION WITH AQ4L-209 AND FULLY EQUIPPED



## COMPONENTS

Cetetherm always uses well-known components for its products. Standard pipes are made in stainless steel.

Cetetherms own IQHeat control unit is the standard control module. Alternatively, the Maxi Cooling substation can be delivered with valves and 0-10V actuators for DDCs chosen by the customer.

The Maxi Cooling substation can be delivered with or without a meter section, by-pass section and secondary side equipment.

All units can be delivered with an optional drip tray for the condensate. All the components included can be easily reached for servicing and inspection. All Maxi Cooling substations can be equipped with capacity controlled pumps.

## CONTROLLER CETETHERM IQHEAT

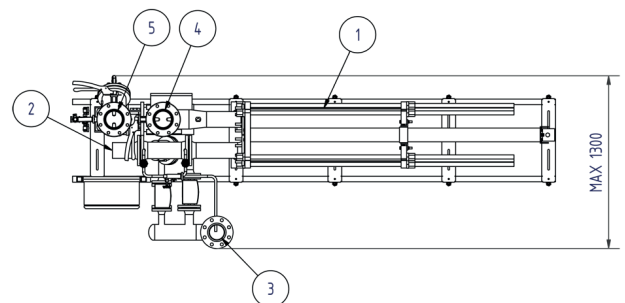
Maxi Cooling can be equipped with the Cetetherm IQHeat control system, an integrated Direct Digital Control (DDC) unit for reading and steering of data. The IQHeat is ready for operation and can be fit to the customer requirements.

Communication is via internet, ModBus or BacNet without any extra cost per month. Maxi Cooling with IQHeat can be controlled and monitored using a standard PC/mobile with internet connection or by the built-in display.

## DESIGN

The main component in the unit is Alfa Laval's AQ2L or AQ4L heat exchanger, with especially good thermal properties and a heat transfer ability suited to district cooling applications. Other heat exchangers may also be used in smaller and bigger capacities.

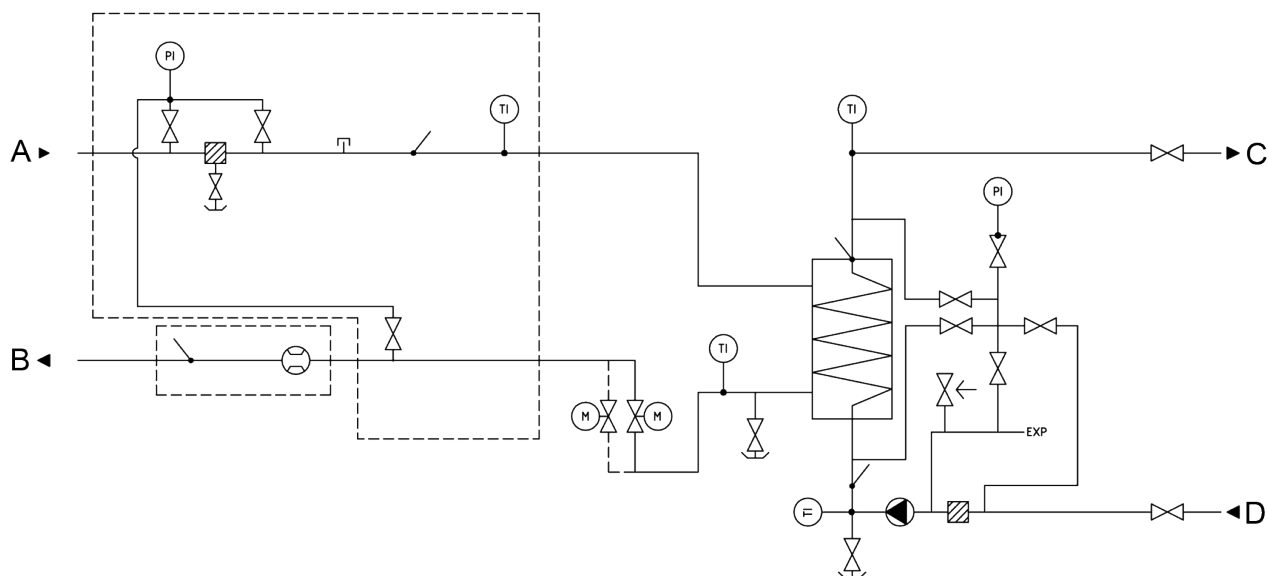
Standard version of Maxi Cooling has AHRI-certified heat exchanger.



## COMPONENTS

- |                   |             |
|-------------------|-------------|
| 1. Heat exchanger | AQ4L-FG-209 |
| 2. DC supply      | DC DN100    |
| 3. DC return      | DC DN100    |
| 4. Cooling supply | DN125       |
| 5. Cooling return | DN125       |

THE FLOW CHART SHOWS AN EXAMPLE OF A TYPICAL COOLING SUBSTATION. THE COMPLETE SUBSTATION VARIES IN SIZE DEPENDING ON ITS COOLING CAPACITY AND WHAT MODULES ARE CHOSEN.



A - DC supply

B - DC return

C - Cooling supply

D - Cooling Return



Shut-off valve



Control valve actuator



Non-return valve



Safety valve



Pump



Dummy



Sensor



Drain valve



Strainer



Termometer



Manometer



Heat exchanger