

# Maxi Cooling

# District cooling substation for larger buildings



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

# **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

A district cooling substation is suitable for a wide range of uses when connecting different types of buildings such as offices, public buildings, commercial buildings, etc. to the district cooling network. The dimensions of the unit can be adjusted to the site.

# General features

Each unit is delivered as a ready-made module in a solid frame with flange connections for simple assembly with the heat exchanger. With concern for the customer, depending on its size and weight Alfa Laval 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 Alfa Laval's 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.

# 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.

Туре	Capacity kW	Temperature programme °C	Heat exchanger	Pipe connection P/S DN
Maxi Cooling	100	6-16 / 17-7	TL6B	50 / 65
Maxi Cooling	200	6-16 / 17-7	TL6B	65 / 65
Maxi Cooling	400	6-16 / 17-7	TL10B	80 / 100
Maxi Cooling	600	6-16 / 17-7	TL10B	100 / 125
Maxi Cooling	700	6-16 / 17-7	TL10B	100 / 125
Maxi Cooling	100	6-16 / 18-8	TL6B	50 / 65
Maxi Cooling	200	6-16 / 18-8	TL6B	65 / 65
Maxi Cooling	400	6-16 / 18-8	TL6B	80 / 100
Maxi Cooling	600	6-16 / 18-8	TL10B	100 / 125
Maxi Cooling	800	6-16 / 18-8	TL10B	100 / 125
Maxi Cooling	1000	6-16 / 18-8	TL10B	125 / 125
Maxi Cooling	1200	6-16 / 18-8	TL10B	125 / 150

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

#### 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
- Clear positions for primary and secondary sides
- 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
- ISO 9001 and ISO 14001 certified
- Manufactured according to PED 97/23/EC

## Maxi Cooling substation with maximum measurements based on TL10B





1. Heat exchanger cooling TL10

4. Cooling supply

DC supply
DC return

5. Cooling return

#### Components

All components and pipes are selected according to requests. Alfa Laval always uses well-known components for its products. All the pipes included can be supplied in either stainless steel or carbon steel, with the option of also being anti-corrosion treated.

Alfa Laval's 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 without a meter section, by-pass section and without 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.

#### Design

The main component in the unit is Alfa Laval's TL6B or TL10B 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.



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. Measures with TL10.

Max.	width:	950 mm
Max.	height:	2000 mm
Max.	length:	Depending or

Max. length: Depending on capacity and chosen equipment

# Operating data

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

# **IQHeat control unit**

With Alfa Laval's own IQHeat control unit it is possible to add several applications for performance control. IQHeat is a ready-made intelligent control unit with potential for web-applications and support for communication with building management system protocols; OPC, BACnet/IP, TCP/IP, M-bus, and LON. There are several additional services that can be added to the control unit such as optimisations and alarm-handling.

#### Approvals and reliability

Alfa Laval's quality system is ISO 9001 and ISO 14001 certified. All products are manufactured in accordance with CE and PED requirements. Maxi Cooling substations fulfil all local and national requirements.

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Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval Up-to-date AlfaLaval contact details for all countries are always available on our website on www.alfalaval.com