

Adiabatic systems

strategic all-round talents



CABERO condensers and heat exchangers: more efficiency through adiabatics.



Dry operation and adiabatic operation:

The adiabatic system switches on as required. In dry operation, heat output is convective using the ambient temperature. When the outside temperature rises, first the volumetric flow is increased via the fans. When these have reached their maximum speed and the air temperature rises above the dry switching point, the adiabatic stages are activated successively. When the temperature decreases again, the spray stages are deactivated again with the closing of the actuators.

Adiabatic subcooling system:

The patented system allows cooling systems to be supplied with liquid (e.g. R134 a) at max. 25 °C all year round - often allowing selection of a smaller machine by one or even two performance levels. The large exchanger surfaces of the adiabatic heat exchanger systems provide many hours of free cooling. For medium temperatures from 18 °C to 12 °C that can be 3000 to 4000 hours per year in Germany where no cooling machine is required, increasing energy savings.



Use with high outside temperatures:

A pipe construction running underneath or on the side of the heat exchanger with integrated spray nozzles can be used to significantly lower the intake temperature when outside temperatures are high. Water is sprayed from the nozzles into the intake air so that evaporation causes a significant cooling process. These adiabatic systems are predestined for use with absorption cooling systems and compression cooling systems with screw and turbo condensers in industrial cooling and power plant cooling.

Two systems LPSS and HPSS:

CABERO offers two systems depending on spray pattern, drop size and primary pressure on the nozzle. The low pressure spray system LPSS has a pressure of 1.5 to 2.5 bar. The high pressure spray system HPSS has a pressure of 2 to 4 bar. The additional water volume ensures that a partially hybrid pressure is created for saturating the air. Depending on the design, both systems achieve media discharge temperatures below the ambient temperature.