

# Principle of operation

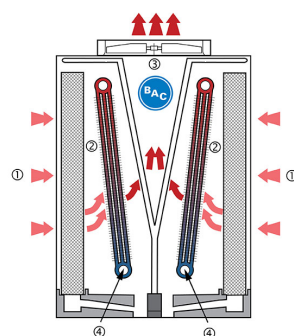
## Adiabatic cooling

## Principle of operation

### Dry Mode

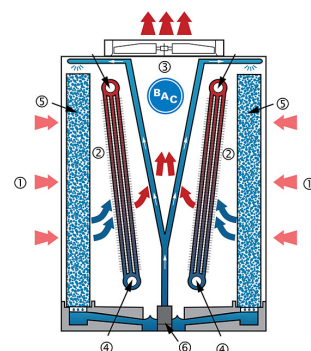
When the ambient air temperature is below the set point, the unit operates as an air cooled condenser.

**Ambient air (1)** is drawn over the **dry finned coils (2)** by **axial fans (3)** and condenses the **refrigerant (4)**.



## On-Demand Adiabatic Pre-Cooler Mode

When the unit is in On-Demand Adiabatic Pre-Cooler mode, water is evenly sprayed over the highly efficient **pads (5)** located in front of the **dry finned coils (2)**. At the same time **axial fans (3)** draw **ambient air (1)** through the pads. A portion of the water evaporates and cools down the air from the dry-bulb temperature close to the wet bulb temperature (typically 8 to 10°C lower). This increases the cooling capacity significantly. The cooler air passes over the coils and extracts the heat from the refrigerant. The excess water assists in rinsing the pads and is recirculated by a **pump (6)**. The EcoFlex Controls regularly purge the water from the sump.



Interested in the TSDC TrilliumSeries CO<sub>2</sub> condenser for your refrigeration project? Contact your local [BAC representative](#) for more information.