

# Construction details

# Adiabatic cooling

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## 1. Material options

 Heavy-gauge hot-dip galvanized steel is used for unit steel panels and structural elements featuring <u>Baltibond Hybrid Coating</u>.

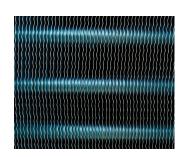
#### 2. Heat transfer media

- The V-shaped finned coil is constructed of staggered and seamless tubes with aluminium, rippled and corrugated fins.
- The fins are spread for optimal air turbulence.
- Thick and seamless copper headers and threaded steel connections.
- Pressure tested at 34 bar.
- Try our option for aggressive environments: special pre-coated anticorrosion aluminium fins.

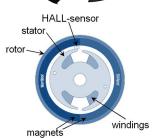
# 3. Air movement system\_

- Axial fan with exceptionally compact direct drive short integrated motor and fan guard.
- The **low profile fan** with fan guard features an **impeller and motor** and is balanced as a complete unit using dynamic single plane balancing. Balance grade is G6.3.
- Fan and motor totally maintenance free, and allow frequent starting.
- Bearings seals and motor encapsulation for long service life.
- The adiabatic units fitted with EC motors (EC in model number)
  provide an immense reduction in power consumption. The fans are
  piloted over an RS485 bus system by the controller supplied together
  with the electrical panel.

**Principle of operation**: the magnetic field of the permanent magnets in the outside rotor is used by the consecutively powered windings in the inside stator to let the fan run. The Hall-sensor detects where the magnetic field is strongest, which determines which set of windings will be activated.









### 4. Adiabatic pre-cooler

- Evaporative cooling pad of **impregnated cellulose** with different flute angles encased in bolted heavy gauge **stainless steel**.
- Distribution pad on top for complete pad wetting.
- Once-through water distribution system, no need for pumps, water drained to sewage.



## 5. Electrical panel and adiabatic controls

- Fully equipped factory-installed electrical panel with integrated motor controls and adiabatic controls as well as all the required circuit breakers and other auxiliary components.
- Intelligent controls featuring the possibility for:
  - An additional pre-programmed free cooling set-point
  - Day/night operation to limit the maximum fan speed to lower the sound levels
  - BMS communication with all common protocols
  - Possibility for a master/slave arrangement to further optimize multiunit installations
  - Automatic cleaning cycle rinsing the pads in taxing environments
  - Possibility to force unit in dry operation in case water usage is prohibited

