ECP16000 Installation and Operation Manual

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2 – Commissioning
3 – Operation

1 Installation

This installation section describes the installation of the cooler with standard controls. If other control such as a thermostat or humidistat is to be use the ***5 speed control panel*** must be consulted

Delivery

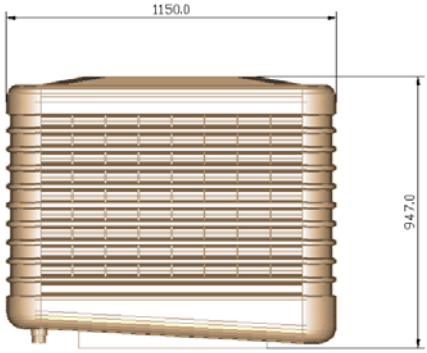
The unit is delivered mounted on a pallet which is used to support the unit during installation. A protective cardboard cover is, together with internal polystyrene pads, banded to the pallet.

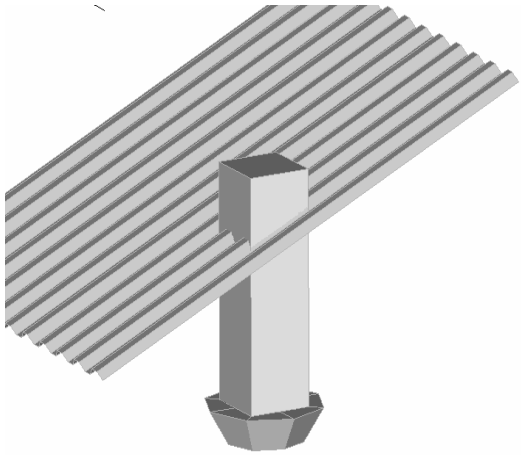
This is a fragile item and must be handled carefully. The maximum stacking height is 2. Once removed from the pallet take great care not to damage the drain which protruded from the bottom of the unit.

The dimensions of the unit are shown in the diagram opposite.

A minimum of 300mm clearance must be provided around the unit to enable the side panels to be removed.

The operating weight of the unit, when full of water is 92Kg





The ECP 16000 is designed to be supported from a plain square duct with nominal external dimensions 645mm x 645mm**.**

Note that due to the variation in the moulding of plastics there may be some variation in these dimensions – the final duct must be manufactured to fit the cooler.

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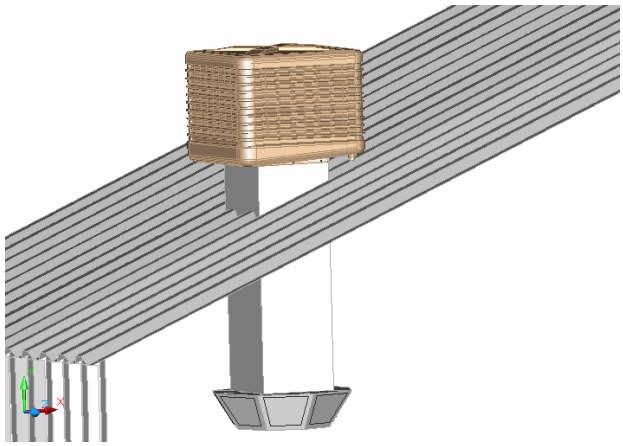
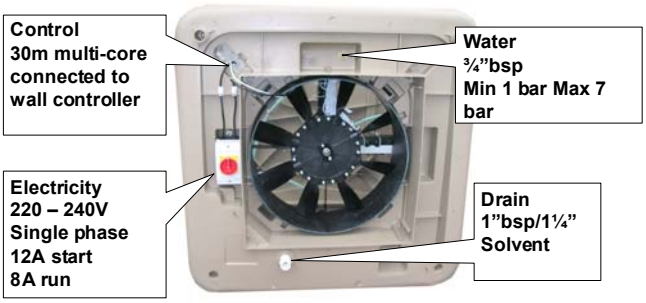
The side frames are also act as a guard for the fan. Set screws prevent their removal unless a tool is used to comply with guarding regulations.

There are location points for the cooler to sit on the duct. When the cooler sits on a level duct these points ensure the cooler is level. The cooler must be installed on a level to ensure safe and efficient operations. The duct enters the cooler 30mm.

A typical roof mounted installation to a plenum chamber is shown. Checks must be made that the roof structure can support the full operating weight of the system plus the ductwork and plenum chamber.

Coolers should not be placed where the intake are could be contaminated with fumes, heavy dust etc,





The services are all fed from the bottom at the points shown

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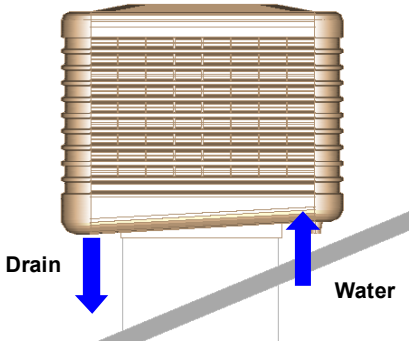
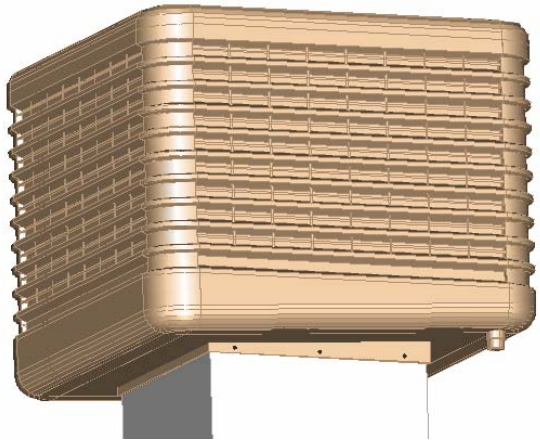
On a sloping roof the cooler is normally installed with the drain at the lowest point.

The cooler must be mounted sufficiently high so that the drain connection can be made – typically 150mm clear from the roof on the upper side





The cooler is then fixed to the ductwork using fixings appropriate for the duct material. It is recommended than a minimum of 3 fixings are made on each side.

Appropriate weather proofing should be made according to the roof structure and local weather conditions

Electrical Supply

The cooler requires a 240V 13A Single phase supply. This is connected to the external isolator/RCD on the underside of the cooler.

This isolator can be relocated onto the duct to improve accessibility. The RCD may also be relocated to the mains distribution board to make resetting easier.

Water

The cooler must be supplied with fresh, mains water to maintain hygienic and efficient operation. It is connected to the underside of the cooler using a 1/2" bsp connection. It is recommended that a flexible connector is used to prevent stress on the underside of the control valve

The water pressure must a minimum of 1 bar and a maximum of 7 bar with a total flow rate of 500l/hr.

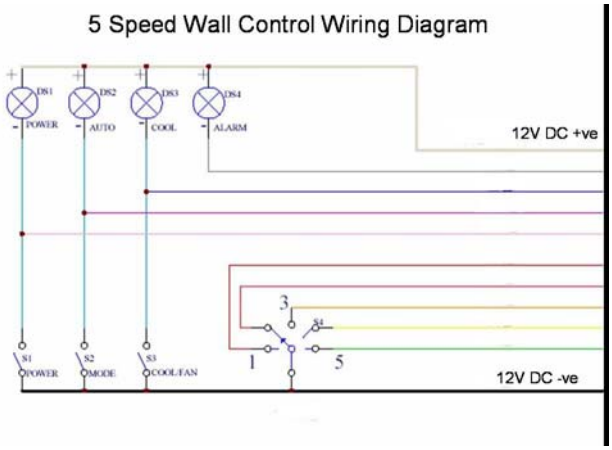
Drain

The drain outlet is a 1"bsp / solvent weld 1 ¼" fitting. The drain capacity must exceed 2000 l/hr to an appropriate disposal point which conforms to local water regulations.

The wall mounted controller comes fitted with a 30m control cable. This can be extended up to 200m using appropriate standard cable.

The control voltages contained within these controllers are 12V.

The wiring diagram for the controller is shown opposite. If the Automatic function is not being used then this should be disabled



2 Commissioning and Fault Finding

The ECP16000 comes fully operational and ready for use. There are a number of options which are enabled using the dipswitches mounted on the main control board inside the machine.

The options available are:

- Pre-cool
- Salinity concentration
- 24 hour dry cycle
- Maximum fan speed
- Complete stop in Automatic Mode

Full details or these functions and their settings are contained in the document ***5 speed control panel.***

Fault Finding

Faults are reported by the flashing alarm light on the wall mounted panel and this is replicated in the cooler by the LED

When the cooler enters an alarm condition the LED on the wall controller flashes to give an indication of the problem.

1 flash – Slow fill Auto Reset
If the high level probe is not covered within 20 minutes this means there is a water supply problem. Either the water has not been switched on or there is a problem with the inlet valves.

2 flashes – Overflow Manual Reset
This is activated when the Very High Level probe is covered.

3 flashes – Probes out of sequence Manual Reset
If any probe is covered out of sequence this alarm is activated. This is either a fault with the probe or the float sticking on its support.

4 flashes – Abnormal evaporation Manual Reset
In 'COOL' operation if a fill cycle is not activated in a 6 hour period this alarm is activated. This is typical of a circulation pump failure.

5 flashes – Slow Drain Auto Reset
In a drain operation if the Very Low Level probe is not uncovered in 10 minutes this alarm is activated

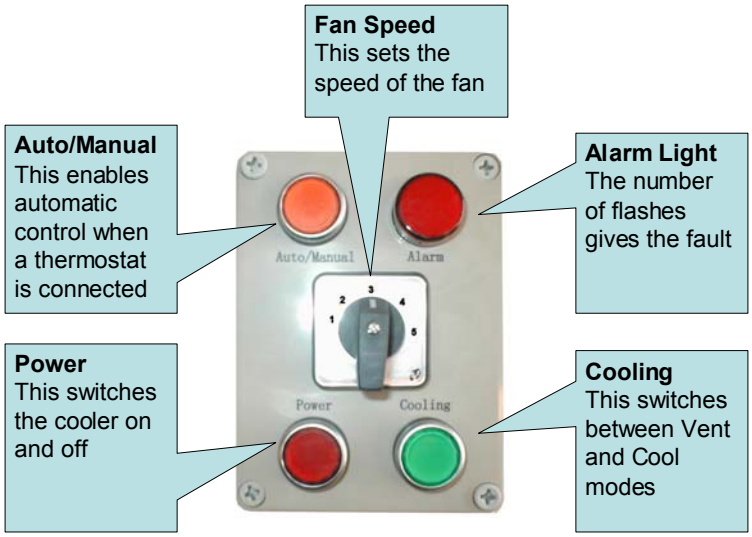
6 flashes - External Alarm Auto Reset
In the control panel there are a set of contacts which can be connected to an external alarm switch. If this is activated this alarm is operated.

In Auto Reset the alarm will automatically clear when the fault clears. A manual reset alarm requires the cooler to be turned off at the wall box after the fault has been cleared.

The LED in the main control box also gives a readable value to the alarm condition. This value will be kept after the alarm has been re-set so that the last alarm condition can always be identified. If another alarm condition occurs then this is lost. If the power is interrupted the alarm condition is lost and the LED shows the salinity control cycle for seconds

ECP1600 Evaporative Cooling Operating Instructions

All controls are accessed from the wall mounted control box using the inputs shown below:



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Always refer to the website www.ecocooling.org for latest specifications