

Blue Cool Air-conditioning

Dehumidification Setup & Operation

Blue Cool – Dehumidification.....	4
Programming the dehumidification settings.....	4
To access the set point menu	4
Programming Setting Options	5
Selecting the dehumidification profile.....	6
Synchronization of chiller control & cabin controls	7
Limitations to operation – Extreme climatic conditions	7

Blue Cool – Dehumidification

Blue Cool products have the ability to run a dehumidification cycle with the air-conditioning system switched OFF, (power supply ON but switched OFF at the Digital Control Panel). The system can be set to operate in dehumidification mode either once, twice or three times per 24 hour period.

The system will operate the chiller, (and air handlers if set up correctly), every 8, 12 or 24 hours (as selected) until the system is either switched ON or the power supply is removed.

Programming The Dehumidification Settings.

In order to operate the dehumidification cycle some setup of the system may be required, this is usually completed at installation / commissioning stage.

To change the system parameters entry into the system setup programming mode at 15°C (59° F) set point will be required.



To access the 15°C (59° F) set point menu:

- Turn ON the chiller control panel using the ON / OFF button (1).
- Decrease the set point temperature to 15°C (59° F).
- Turn OFF the panel using the panel ON / OFF button (1).
- Simultaneously press and hold the Cool (3) and Heat (5) buttons, if a security code is active then "Code" will be displayed.

1. Press the Heat (5) or Cool (3) button to raise or lower the set value until the entry access code is displayed; factory default = C 64 (upper case C).
2. If security code is not active "195" will be displayed.
3. Using the "F" (2) button scroll through the lines of programming until line "c" (lower case c) is displayed with the current setting.
4. To change a programmed value, use either the Heat (5) or Cool (3) button to raise or lower the set value.
5. Press the "F" (2) button to validate a change and to scroll through the lines of programming.
6. If you wish to leave programming without accepting a changed parameter press the ON/OFF button to exit programming, do not press the "F" button as this will accept the new value currently shown in display.
7. Press the "F" (2) button to accept the new value and to go to the next line of programming.
8. The current Code number is indicated to the left of the four digit display (6) and the setting value is indicated to the right of the four digit display (7).
9. Once all changes have been made, press the ON / OFF button to save changes and exit programming mode, the display will show "NENo" (memo) then return to cabin temperature display after a few seconds.

The chiller control panel and all cabin control panels will require programming to the same settings in order for the dehumidification cycle to operate effectively.

Programming Setting Options

Programming at 15°C (59° F) set point entry – Dehumidification Settings				
CODE #	DEFAULT SETTING	REQUIRED SETTING	Min / Max Values	DESCRIPTION
c	1	40 – "Winter" Setting - Temperate 15 – "Summer" Setting - Temperate 1 – "Tropical"	1 to 99	Duration in minutes of heat cycle under dehumidifying procedure.
d	1	20 – "Winter" Setting - Temperate 45 – "Summer" Setting - Temperate 45 – "Tropical"	1 to 99	Duration in minutes of cool cycle under dehumidifying procedure.

Selecting the dehumidification profile

The system can be set to operate in dehumidification mode either once, twice or three times per 24 hour period or the dehumidification can be switched OFF.

To change the settings entry into the user “F” code or secondary commands settings mode will be required.

- To access the user settings using “F” code menu
- Turn ON the chiller control panel using the panel ON / OFF button.
- Wait for cabin temperature to be displayed.
- Press the “F” button repeatedly until the display shows d0, d1, d2, or d3, amend value as per table below using the Heat or Cool button to raise or lower the set value.
- If “Code” is displayed press the Heat (5) or Cool (3) button to raise or lower the set value until the entry access code is displayed; factory default = C 64 (upper case C), continue to setting “d” as above.
- Press the “F” button to enter the modified parameter and move to the next parameter.
- Press the ON / OFF button to exit user settings and save modified parameters.
- The panel should momentarily display “NENo” (memo) then the display will return to the cabin temperature.
- Turn OFF the panel using the panel ON/OFF button.

Provided that the power supply remains connected the system will operate in dehumidification cycle until the system is switched ON using the panel ON/OFF button.

Secondary Commands – Accessible by pressing “F” button – Dehumidification Settings				
CODE No.	DEFAULT SETTING	REQUIRED SETTING	Min / Max Values	DESCRIPTION
d	0	0 = No dehumidification cycle 1 = 1 dehumidification cycle in 24 hours 2 = 2 dehumidification cycles in 24 hours 3 = 3 dehumidification cycles in 24 hours	1 to 3	Number of dehumidification cycles every 24 hours.

If on board the vessel set $d=0$ to prevent automatic operation of the dehumidification cycle.
If $d=1, 2$ or 3 then the system will operate in dehumidification cycle at the chosen frequency, once, twice or three times per 24 hour period.

The automatic dehumidification cycle is provided for use when no one is on board.
If setting $d = 1, 2,$ or 3 and the system is switched OFF at the panel it may wake you up (blowers speed at maximum) in the middle of the night.
If you are on board, just leave the air-conditioning operating normally, air will be dried by the system as part of the normal operation of the air-conditioning operation.

If using the automatic dehumidification cycle always ensure that the condensate pump(s) if fitted are also energised. Operation in dehumidification mode will generate condensation within the condensate trays and this must be allowed to drain away.

Synchronisation of chiller control & cabin controls

If the system comprises a main chiller control panel with additional separate cabin control panels for air handlers located in separate cabins then to synchronize the “clocks” on all controls the control panels must be switched OFF using the panel ON / OFF button, all at the same time or within a few seconds of each other. Failure to switch OFF all controls at the same time will result in the air handlers trying to operate at different times to the chiller with the result that the recirculation water temperature will be incompatible for effective dehumidification.

Limitations to operation – Extreme climatic conditions

The dehumidification cycle is intended for use in temperate climatic regions where extreme weather is not anticipated.

The dehumidification cycle involves the operation of the air-conditioning in both the heating and cooling cycles and as such may not function correctly if the raw water temperature is either too high or too low.

At low raw water temperatures the system efficiency is poor when in heat cycle and there is a risk of freezing the raw water within the condenser, as a safe guard the unit may shut down on A01 (low pressure) at low water temperatures (approx. 6°C (43°F) and below).

At high raw water temperatures (above 20°C (68°F)) the heat cycle may shut down on A02 (high pressure) as the units are designed to provide heating in cold climatic conditions where it is unlikely to see raw water temperatures in excess of 20°C (68°F).