

COMMERCIAL AIR CONDITIONING SYSTEM CONTROL INTERFACE

Operating Instructions

Model Number CP05 (Supplied as Standard)



Model Number CP10 (Optional)



Please Read This Manual

Congratulations on your purchase of an ActronAir air conditioning system. This unit has been designed and manufactured with the highest quality standard in mind.

Please read this manual thoroughly and keep it near the unit for future reference.

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CONGRATULATIONS! On your purchase of the latest ActronAir commercial range air conditioning system. With the application of an intelligent interactive software technology controller, this system has been designed to give you many years of reliable service and the convenience of menu-driven control. Your controller is manufactured from the highest quality materials and has passed numerous "in house" and "external" inspection procedures to ensure years of satisfactory operation.

IN THIS MANUAL, You will find instructions on how to program and utilise the many advanced features this controller has to offer. Please take time to familiarise yourself with all these features, apply their functions to suit your optimum comfort requirement and achieve energy cost savings at the same time. Thoroughly read this manual in order to ensure correct installation and the safe utilisation of your ActronAir air conditioner.

IMPORTANT NOTICE, ActronAir base the development of its air conditioning products on more than 30 years of experience in HVAC, sound & continuous investments in technological innovations and product improvements, advancement in manufacturing processes and quality control through 100% functional product testing. However, ActronAir cannot guarantee that all the aspects of the product and the software included with the product respond to the requirements of final application, despite the product being developed according to state of the art technology. The customer, both end user/specifier and installer, assume all liability and risks relating to the configuration of the product in order to reach the expected results in relation to the specific design and system installation. ActronAir, based on specific agreements, may be consulted for the positive commissioning, installation and application of the unit, however in no case does ActronAir accept liability for the correct operation of the final equipment / system.

Your ActronAir air conditioning unit is one of the most advanced & innovative products in the market. Its operation is specified in the technical documentation supplied with the product or which can be downloaded from our website: www.actronair.com.au. Your air conditioner requires setup/configuration/programming in order to be able to operate in the best possible way to suit your requirement. Failure to complete such operations, may result in malfunction and/or damage to the unit, for which ActronAir accepts no liability.

Installation, commissioning and other technical services must only be carried out by a qualified technician. Ensure that the unit installation complies with all relevant council regulations and building code standards. All electrical wiring must be in accordance with current electrical authority regulations and all wiring connections to be as per electrical diagram provided. Always use appropriate PPE for your safety and protection. Make sure that any safety guards and covers are always firmly secured and not damaged. WH&S rules and regulations must be observed at all times and will take precedence during installation process and operation of the unit.

In addition, the following instructions must be observed:

- Prevent the electrical components and electronic circuits from getting wet.
- Do not install the controlling devices in a particularly hot environment as extreme temperatures may damage the electronic equipment.
- Do not attempt to open the controller and other electronic devices in any way other than described in this manual.
- Do not drop, shake or hit the devices, which can cause irreparable damage to its internal circuits and mechanisms.

- Do not use corrosive chemicals, solvents or other aggressive detergents to clean the unit and the control interface.
- Do not use the unit for applications other than those specified in the technical manual. Contact ActronAir for technical data.
- Do not install the unit in environment with highly flammable, combustible and/or explosive articles and materials.
- The product, particularly the controlling devices, must be stored and installed in a location that complies with the temperature and humidity limits specified in this manual.

ActronAir is constantly seeking ways to improve the design of its products, therefore specifications are subject to change without prior notice. Please check with your ActronAir Technical Support Department on toll free number: **1800 119 229**.

Storage & Operating Conditions

- Storage conditions: -20 to 70°C, 90% RH non-condensing
- Operating conditions: -10 to 60°C, 90% RH non-condensing

Waste Electrical & Electronic Equipment Disposal Guidelines



- 1. Do not dispose off the waste electrical & electronic equipment with local council waste. These must be disposed off through the council designated hazardous waste collection centre.
- 2. The terminal contains a battery that must be removed and separated from the rest of the product before disposing off the terminal.
- 3. The equipment may contain hazardous substances, improper or incorrect disposal may have a negative effect on human health and on the environment.





SAFETY PRECAUTIONS

- 1. Read all instructions in this manual before operating the air conditioning unit. Failure to do so may result in damage to the unit and void your warranty.
- 2. Turn-Off power from mains supply by removing fuse or switching the circuit breaker to the "Off" position before installation or servicing this control interface.
- 3. Beware of EC Motors with high power capacitors and which can have dangerous voltages at terminals for up to 5 min. after main power has been isolated. Wait at least 5 minutes after power isolation and test for high voltage before performing service work.
- 4. EC Plug Fan has dual power supplies, i.e. 415V/3Ph+N/50Hz motor power supply plus 10VDC control power supply. Care must be taken to ensure both are safely isolated to prevent personal injury and damage to the equipment.
- 5. Follow sound Lock Out & Tag Out procedures to ensure that power supply is not re-energised accidentally.
- This control interface has power supply from the control board via telephone connector, with voltage of 18 - 30VDC Class II & maximum power input of 0.5W. Ensure that this unit is not installed on voltages higher than 30V DC supply.
- 7. Installation and/or servicing must be carried out by a qualified installer or technician.
- 8. Ensure that the unit installation complies with relevant council regulations and building code standards. All electrical wiring must be in accordance with current electrical authority regulations and all wiring connections to be as per electrical diagram provided.
- 9. WH&S rules and regulations must be observed and will take precedence during installation process.
- 10. Only use this wall controller with an ActronAir air conditioner as described in this operating manual.

OPERATIONAL PRECAUTIONS

ACCESS PANELS AND GUARDS: NEVER remove any access panels or guards as this could cause injury from electric shock and burns from extremely hot components. Never allow any bodily parts such as fingers or objects to protrude through the fan guards or any other opening as they could cause personal injury and damage the air conditioner.

RETURN AIR FILTER: The air conditioner must never be operated without a return air filter as this will allow a build up of dust or dirt on the indoor coil. This is very difficult to clean and can cause the system to operate inefficiently or even fail.

CRANKCASE HEATER PRECAUTION: The main power (switch board) to the system must be kept ON at all times to prevent damage to the outdoor compressor. Should the main power be disconnected or interrupted for 6 hours or longer, then no attempt should be made to start the system for 2 hours after the power has been restored to outdoor unit. This allows the compressor to warm up, and remove any liquid refrigerant that may cause damage.

ADVANCE FEATURES

1	Menu Tree Based Program Navigation The control system features ease of operation via menu tree.
2	LCD Display The LCD displays the system mode, operation and fault diagnostics log.
3	LCD Backlight The LCD backlight features instant On/Off backlighting to suit individual preferences in viewing the displays. It can also be set to automaticaly Turn-Off after pressing the last button and to instantly Turn-On at the press of any button.
4	7-Day Time Clock with 2 On/Off Events per Day The Control Inteface, through the 7-Day time clock function, can be programmed for each day of the week to turn on or off your air conditioner. Each day has 2 ON / Off events which you can set for your individual control preference.
5	12 Programmable Special Days with 2 On/Off Events per Day 12 Special Days can also be programmed within the year which provide you control flexibility to satisfy your individual requirements.
5	Auto Defrost Function (Heating Mode) At certain outdoor conditions (low temperature) there may be a build up of frost on the outdoor heat exchanger. This gradual build up of frost reduces the performance of the air conditioner. The controller will detect this frost build up and will automatically activate the defrost mode.
6	Hot Start Function (Heating Mode) When the air conditioner starts in heating mode, the indoor fan is delayed for a short period of time, this allows the heat exchanger to warm up before the air flow starts, thus preventing cold drafts. The hot start feature also activates itself when the system finishes defrosting.
7	Auto-Restart After Power Failure On the event of power failuer, the controller will automatically restart the air conditioner to the previous state when the power is restored.
8	Return Air Filter Alarm Indication This is a time based alarm control, which is used to indicate when the filters will need to be checked for cleaning or replacement. The controller will not stop the air conditioning system from operation, but will just indicate a warning alarm.
9	Dual Control Interface Operation (Optional) Two Control Interfaces can be installed on the commercial range air conditioning system. Either of the controllers can control the air conditioning system and mimic each other, displaying the same control parameters for ease of system control management.
10	Fault Diagnostics In the unlikely event that a fault develops with the air conditioner the control system will diagnose the fault (where possible) and display a date & time stamped fault log, with up to 100 events memory.

CONTROL INTERFACE FRONT VIEW



1 LCD Display Displays the setting and operation

conditions (see menu page for details).

- (2) Alarm / Reset Button Alarm Indication and Reset Button.
- (3) Program Button To bring-up programming Main Menu screen. (Display will revert back to default screen after 5 minutes idle time at any stage of programming).
- (4) ESC Button

To exit programming menu.

- Scroll Up / Increment Button To scroll up from existing menu or to increase setting parameter.
- (6) Enter Button To lock the selected menu or to enter set parameters.
- (7) Scroll Down / Decrement Button To scroll down from existing menu or to decrease setting parameter.

SYSTEM DEFAULT SCREEN



MPORTANT NOTES

CP05 and **CP10** are two identical control interfaces with the same display and functions. The only differences are the interface buttons and front case appearances. **CP05 is supplied as standard,** while **CP10** is supplied as optional control interface for commercial range air conditioning systems. This manual covers operations applicable to both control interfaces, however CP05 control interface features are shown for ease of illustrations.

INITIALISATION DISPLAYS - STATUS INDICATIONS

POWER-UP (INITIALIZATION DISPLAYS

Display Progression



When the control interface is powered "ON" for the first time, The display will be blank for 5 - 10 seconds



ActronAir logo will then be displayed for the next 5 - 10 seconds



System Screen (default) provides an overview of system status, showing the Room Temperature, Supply Temperature, Compressors, Reversing Valves ON/OFF status and System Defrost indicator.



COMPRESSORS & REVERSING VALVES STATUS INDICATIONS

Display Progression



Both Compressors & Reversing Valves are Off, as indicated by clear triangles



Compressor 1 & Reversing Valve 1 are On. (System in Heat Mode), first triangles are darkened



Compressors 1 & 2 and Reversing Valves 1 & 2 are On. (Systems are in Heat Mode), all triangles are darkened

Displays for two compressors & reversing valves are shown above for illustration purposes only. The number of compressors / reversing valves displayed will depend on the air conditioning system model.

DEFROST OPERATION INDICATIONS



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CONSUMER / END USER MENU



A. On/Off Unit Sub-Menu Level 1

Menu screen to Turn ON / OFF the unit.



B. Setpoint Sub-Menu Level 2

Menu screen to set the setpoint temperature / setback temperature.



C. Mode of Operation Sub-Menu Level 3

Menu screen for selection of COOL, HEAT or AUTO

Main Menu 3/8 ➡ A. On / Off Unit Š[‡] B. Setpoint ^{□ is} C. Mode of Operation CHANGEOVER operation.

D. Clock Sub-Menu Level 4

Menu screen to set the date & time.



E. Status Sub-Menu Level 5

Read only Menu screen to view the unit running conditions, such as



Room Air temperature, Fan Speed, Outside temperature, LP/HP, Discharge Temperature, OD Fan Speed, etc...

F. Alarm History Sub-Menu Level

Read only Menu screen that indicates the alarm history



NOTE: Only up to level 6 covered by this manual are accessible by the end user.

TURN ON/OFF

- 1. Press "**O**" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press " ()" Button to enter Sub-Menu **A. On** /**Off Unit**. Display will show the On/Off Unit page with switch symbol pointing towards "OFF" position, indicating the unit is Turned-Off. (Symbol will be pointing towards "ON" position when the unit is Turned-ON or



"FAN ONLY" when the unit is running in Fan Only mode.

TO TURN-ON THE UNIT

- 3. Press "学" Button, the cursor "■" will appear and start blinking near "ON".
- 4. Press "分" or "♣" Button to select switch "ON" position. Display will show the On/Off Unit page with switch symbol pointing towards "ON" and the cursor "■" will still be blinking.
- 5. Press "

TO TURN-OFF THE UNIT / SELECT FAN ONLY MODE

- 6. Repeat Steps 1 & 2, then press "^少" Button, cursor "■" will appear and start blinking near "ON".
- 7. Press "♣" or "♠" Button to select switch "OFF" or "FAN ONLY" position. Display will show the On/ Off Unit page with switch symbol pointing towards "OFF" or "FAN ONLY" and the cursor "■" will still be blinking.
- 8. Press "I" Button to Turn-Off the unit or switch to the "FAN ONLY" mode. The cursor "" will disappear and the unit will Turn-Off or switch to Fan ONLY mode.

TO RETURN TO THE MAIN MENU

9. Press "⑤" (Escape / Return) Button twice to return to the Main Menu. Otherwise press "⑥" Button.

Display Progression



BACKLIGHT

- 1. Press "**O**" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press "신" Button to enter Sub-Menu A. On /Off Unit.
- 3. Press "Ŷ" or "♣" Button to get into the **Display Backlight** sub-level menu.



- 4. Press "신" Button to select the **Display Backlight** page and the cursor "**I**" will appear on the first letter of the current display backlight setting.
- 5. Press "⁴ or "⁴ Button to select the backlight setting from either "AUTO", "ON" or "OFF".
- 6. Press "<[□]" Button to lock-in the selected display backlight setting and the cursor "■" will disappear. The backlight will imediately Turn ON / OFF, depending on the selected mode. NOTES: On AUTO mode, the Backlight will Turn Off in 5 minutes after the last button is pressed. Backlight will instantly Turn ON / OFF when either of the mode is selected.

TO RETURN TO THE MAIN MENU

7. Press "�" (Escape / Return) Button twice to return to the Main Menu. Otherwise press "●" Button.

Display Progression



SETTING ROOM TEMPERATURE SETPOINT

- 1. Press "**●**" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press "♣" Button to scroll down to **B. Setpoint** sub-menu.
- 3. Press "邻" Button to enter **B. Setpoint** submenu. "**Room setpoint**" (room set point temperature) screen will appear.



- 4. Press "4" Button cursor "" will appear and blink next to the setpoint temperature.
- 5. Press "&" or "个" Button to change room temperature setting. NOTE: Temperature setpoint can be changed with an incremental/decremental value of 0.1°C.
- 6. Press "신" Button to lock-in your desired room set point temperature. The cursor "■" will disappear and the new room setpoint temperature will be displayed.

TO RETURN TO THE MAIN MENU

7.Keep pressing "♦" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.

Display Progression



Step 7

SETTING THE TEMPERATURE SETBACK

- 1. Press "**⊙**" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press "♣" Button to scroll down to **B. Setpoint** sub-menu.
- 3. Press " 에 Button to enter **B. Setpoint** submenu. "**Room setpoint**" (room set point temperature and temperature setback) screen will appear.



- 4. Press "
- 5. Press "⁴" or "⁴" Button to change the temperature setback prompt from DISABLE to ENABLE.
- 6. Press " "Button to enable temperature setback functon and the cursor "" will move next to the cooling temperature setback setting.
- 7. Press "争" or "争" Button to change the cooling temperature setback setting. NOTES:
 - Temperature can be changed with an incremental/decremental value of 0.1°C.
 - Cooling temperature setback can be selected between 26°C to 30°C.
- 8. Follow steps 6 & 7 above, to set the heating temperature setback. NOTE:
 - Heating temperature setback can be selected between 10°C to 20°C

TO RETURN TO THE MAIN MENU

9.Keep pressing "♣" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.



Display Progression

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OPERATION MODE ...

CHANGING THE MODE OF OPERATION

- Press "O" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu A. On/Off Unit.
- 2. Press "♣" Button to scroll down to C. Mode of Operation sub-menu.



3. Press "剑" Button to go into C. Mode of

Operation sub-menu. Display will change to **Operation Mode** and **Fan Mode** selection menu, showing the **current Mode and Fan mode**.

NOTE: For Optional 3 Speed Fan Operation, **Fan Speed** wil be shown and can be selected via the service menu (See Display Progression Step 3A below).

4. Press "

TO SELECT COOL ONLY MODE (from HEAT ONLY mode)

- 5. Press "♣" or "♠" Button to scroll to **COOL ONLY** mode. Display will show **COOL ONLY** mode with the cursor "■" still blinking.
- 6. Press "

NOTES:

- Mode of Operation menu will be locked for 3 min after changing mode as a safety time delay in order to prevent frequent mode changes.
- To select HEAT ONLY or AUTO CHANGE OVER mode, follow steps 4 to 6 above.

CHANGING THE FAN MODE

- 7. Follow steps 1 to 4 above and then press "<^I" Button to get into the Fan mode selection menu. The "■" will be blinking at the first letter of the current Fan mode setting.
- 8. Press "I" or "I" Button to select Auto Cycle or Continuous Fan mode.
- 9. Press "伊" Button to lock-in your desired Fan mode.

CHANGING THE FAN SPEED (For 3 Speed Fan Operation, when applicable)

- 10. Follow steps 1 to 4 above and then press "신" Button to get into the Fan Speed selection menu. The "■" will be blinking at the first letter of the current Fan Speed setting.
- 11. Press """ or """ Button to select LOW, MED or HIGH fan speed.

TO RETURN TO THE MAIN MENU

13. Keep pressing "⇔" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "• Button.

... OPERATION MODE

Display Progression



Step 12

Step 13

*For Optional 3 Speed Fan Operation, when applicable (See Display Progression Step 3A above).

SETTING THE CLOCK ...

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Cloc

Day:

Date:

Hour:

Enable Scheduler:

- 1. Press "**⊙**" Button to get into the Main Menu. Display will show Main Menu and highlighted **A. On/Off Unit** main menu.
- 2. Press "⁴/₂" Button to scroll down to **D. Clock** / **Scheduler** main menu.
- 3. Press "分" Button to enter **D. Clock/** Scheduler main menu. Display will show the Day, Date, Hour page and Enable Scheduler status.
- 4. Press "4" Button and the cursor "" will appear next to the date indicator and the corresponding day will be shown,

i.e. Monday, 22/09/14 (22nd September 2014).

- 5. Press "♣" or "♠" Button to change the date.
 NOTE: Day changes corresponding to the change in date as follows: Sunday, 21/09/14 (21th September 2014), Tuesday, 23/09/14 (23rd September 2014).
- 6. Press "4" Button to lock-in the Date and the cursor "" will move next to the month indicator.
- 7. Press "♣" or "Ŷ" Button to change the month.

NOTE: Day changes corresponding to the change in month as follows: Friday, 22/08/14 (22nd August 2014), Wednesday, 22/10/14 (22nd October 2014).

- 8. Press "4" Button to lock-in the Month and the cursor "" will move next to the year date.
- 9. Press "♣" or "♠" Button to change the year.
- **NOTE**: Day changes corresponding to the change in year as follows: Sunday, 22/09/13 (22nd September 2013), Tuesday, 22/09/15 (22nd September 2015).

Display Progression



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Monday

10:27

No

22/09/14

... SETTING THE CLOCK

- 10. Press "④" Button to lock-in the Year & Date and the cursor "■" will move next to the hour indicator.
- Press "◆" or "Ŷ" Button to change the hour.
 NOTE: The Hour display is in 24 hour format. This can be changed with an incremental value of 1 hour.



- 12. Press "4" Button to lock-in the hour and the cursor "" will move next to the minute indicator.
- Press "♣" or "♠" Button to change the minute.
 NOTE: Minute can be changed with an incremental value of 1 minute.
- 14. Press "신" Button to lock-in the minute and the cursor "■" will disappear. Set date & time are now locked-in.

TO RETURN TO THE MAIN MENU

15. Keep pressing "♣" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.

Display Progression



Note: Use the "♣" or "♠" Button to toggle on the D. Clock / Scheduler sub-menu functions.

DAYLIGHT SAVING TIME ENABLE ...

- From the main menu, scroll down to D. Clock /Scheduler menu following the procedures from "Setting the Clock" section.
- 2. Press "♀[¶]" Button to enter **D. Clock/** Scheduler main menu.
- 3. Press "♣" Button to scroll down to Daylight Saving Time sub-menu.



- 4. Press "쉐" Button to enter **Daylight Saving Time** sub-menu and the cursor "■" will appear on "ENABLE" indicator. If the indicator shows "DISABLE", press "♣" Button to change to "ENABLE".
- 5. Press "
- 6. Press "♣" or "♣" Button to select the number of minutes for transition into daylight saving time.. **NOTE**: The transition time can be set in 1 minute increment up to 60 minutes maximum.
- 7. Press "
- 8. Press "♣" or "♠" Button to select the "First", "Second", "Third", "Fourth" or "Last" for transition into daylight saving time, e.g. FIRST.
- 9. Press " 에 Button to lock-in "FIRST" and the cursor "■" will next move to the Day for the start of the transition to occur.



Display Progression

... DAYLIGHT SAVING TIME ENABLE

- 10. Press "**小**" or "**介**" Button to select the "Day" for transition into daylight saving time, e.g. SUNDAY.
- 11. Press "쉐" Button to lock-in Sunday for the transition to occur, i.e. FIRST SUNDAY. The cursor "■" will next move to the starting month selection segment.



- 12. Press "♣" or "♠" Button to select the "Month" for transition into daylight saving time.
- 13. Press "^신" Button to lock-in the Month for transition to occur, i.e. October. The cursor "■" will next move to the starting time selection segment.
- 14. Press "♣" or "♠" Button to select the "hour" on Sunday for transition into daylight saving time. **NOTE**: The time clock is in 24:00 format, i.e. 2:00 AM will be 2.00 and 8:00 PM will be 20.00.
- 15. Press "⁽⁾" Button to lock-in the time on the "FIRST SUNDAY" for transition to occur, i.e. 2.00. The cursor "■" will next move to the transition to end condition of Daylight Saving Time.
- 16. Repeat steps 8- 15 to set up the end of Daylight Saving Time parameters.
- 17. Press "④" Button to enable the Daylight Saving Time and lock-in the parameters.

TO RETURN TO THE MAIN MENU

18. Keep pressing "⁽)" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "⁽)" Button.

Display Progression



NOTE: Use the "♣" or "♠" Button to toggle on the D. Clock / Scheduler sub-menu functions.

DAYLIGHT SAVING TIME DISABLE

- From the main menu, scroll down to D. Clock / Scheduler menu following the procedures from "Setting the Clock" section.
- 2. Press "에" Button to enter **D. Clock/** Scheduler main menu.
- 3. Press "⁴" Button to scroll down into **Daylight Saving Time** sub-menu.



- 4. Press " 에 Button to enter **Daylight Saving Time** sub-menu and the cursor " **T**" will appear on "ENABLE" indicator.
- 5. Press "♣" or "♠" Button to select the "DISABLE" Daylight Saving Time function. NOTE: The segment will change from "ENABLE" to "DISABLE".
- 6. Press "<" Button to disable the **Daylight Saving Time** function. The cursor will disappear and the "DISABLE" sub-menu screen will be displayed.

TO RETURN TO THE MAIN MENU

7.Keep pressing "♣" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.

Display Progression



NOTES: 1. Use the "♣" or "♠" Button to toggle on the D. Clock / Scheduler sub-menu functions.
2. The programmed Day Light Saving Time parameters will be retained until next time Day Light Saving Time is enabled.

7-DAY PROGRAMMING ...

- From the main menu, scroll down to D. Clock / Scheduler menu following the procedures from "Setting the Clock" section.
- 2. Press "⁽⁾" Button to enter **D. Clock**/ **Scheduler** main menu.
- 3. Press "실" Button repeatedly until the cursor "I" gets down to **Enable Scheduler** sub-menu.
- 4. Press "♣" or "♠" Button to prompt Enable Scheduler, "Yes" will replace "No" in this sub-menu with the cursor "■" flashing.
- 5. Press "4" Button to enable the scheduler sub-menu, note the cursor "" will disappear.
- 6. Press "⁴" Button to scroll down to "Clock Schedule 01" sub-menu.
- 7. Press "
- 8. Press "♣" or "♠" Button to change the hour. NOTE: The time clock is in 24:00 format, i.e. 6:00 AM will be 06:00 and 6:00 PM will be 18:00.
- 9. Press " []" Button to lock-in the time and the cursor "" will move next to Event 1 starting minute indicator.
- 10. Press "♣" or "♠" Button to change the minute.

Display Progression





... 7-DAY PROGRAMMING

- Press "♀" Button to lock-in Monday Event 1 starting time, the cursor will now move to Monday Event 1 ending hour indicator.
 Example: Monday starting time is set at 6:00 AM, i.e. 06:00.
- 12. Repeat steps 7- 10 to set up Monday Event 1 ending time and the cursor will next move to Monday Event 2 starting hour indicator.



Example: Monday ending time is set to 9:30 AM, i.e. 09:30.

- Repeat steps 7- 11 to set up Monday Event 2 starting & ending time and the cursor will next move to Tuesday Event 1 starting hour indicator.
 Example: Monday Event 2 starting & ending times are at 17:30 and 22:00, respectively.
- 14. Repeat steps 7- 12 to set up the succeeding days programming start and end times. NOTE: The scheduled program for each nominated day will be in operation every time each nominated day occurs during the year, i.e. the program for Monday will be repeated on every Monday, until the program is revised.

The scheduled time may need to be synchronized with the daylight saving time. See daylight saving time set-up procedures.

TO RETURN TO THE MAIN MENU

15. Keep pressing "⇔" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "[●]" Button.



Display Progression

NOTES:

- 1. Use the "♣" or "♠" Button to toggle all of the "Clock Schedule" sub-menu functions.
- 2. If the event end time is set before the event start time, then the event end time will happen on the next day.

Example: Monday Event 1 start time is set at 04:00 and the end time is set at 03:58 Monday Event 2 start time is set at 18:00 and the end time is set at 22:00,

The unit will then start at 4:00AM on Monday and will end at 3:58AM on Tuesday and the Event 2 for Monday will be ignored even if it is set.

AFTER HOURS TIMER

- 1. From the main menu, scroll down to **D**. **Clock / Scheduler** menu following the procedures from "Setting the Clock" section.
- 2. Press "⁽⁾" Button to enter **D. Clock**/ **Scheduler** main menu.



- 3. Press "♣" Button to scroll down to "Clock Schedule 05" (After Hours operation duration) sub-menu.
- 4. Press "
- 5. Press "⁴" or "⁴" Button to select the duration of after hours timer.
 - **NOTES**: The A/H function can be enabled when it's duration is set and disabled when set to 0. The duration of the after hours timer can be set in 0.5 hour increment up to 2.0 hours maximum.
- 6. Press " Button to lock-in the selected after hours duration, note the cursor "" will disappear and the selected duration will be displayed. i.e. 1 hour (1.0 H).

TO RETURN TO THE MAIN MENU

7. Keep pressing "♣" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.



Display Progression

NOTES:

- 1. Use the "⁴" or "⁴" Button to toggle all of the "Clock Schedule" sub-menu functions.
- 2. The remote push button needs to be pressed for 5 seconds while activating the After Hours.
- Refer After Hours wiring details in wiring diagram provided in the unit's electrical panel, before enabling this function.

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12 PROGARAMMABLE SPECIAL DAYS ...

- 1. From the main menu, scroll down to **D. Clock / Scheduler** menu following the procedures from "Setting the Clock" section.
- 2. Press "④" Button to enter **D. Clock/** Scheduler main menu.



- 3. Press "⁴" Button to scroll down to "Clock Schedule 06" (365-Day Programming) sub-menu.
- 4. Press "⁽¹⁾" Button to enter "Clock Schedule 06" sub-menu and the cursor "" will appear on the day of the month of Special Day 1.

- 5. Press "♣" or "♠" Button to change the day (Date) of the month.
- 6. Press "4" Button to lock-in the day of the month and the cursor "" will move next to the month.
- 7. Press "♣" or "♠" Button to change the month.
- 8. Press "
- 9. Follow steps 7- 12, procedures in setting up Events 1 & 2, from 7-Day Programming section and the cursor will move to the next "Clock Schedule' sub-menu.
- 10. Repeat steps 4- 8 above to set up the succeeding special days programming start and end times.
 - **NOTES:** The scheduled program events for each nominated special day will be in operation everytime each nominated day and events occurs during the year, i.e. the program events for Special Day 1 will be repeated every year, until the program is revised.

Leave the scheduled event untouched, should you not wish any of the particular programmable event to occur.

The scheduled events may need to be synchronized with the daylight saving time. See daylight saving time set-up procedures.

The 365-Day Special Day program will override the 7-Day program events.

TO RETURN TO THE MAIN MENU

11. Keep pressing "⇔" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.

NOTES:

- 1. Use the "♣" or "♠" Button to toggle all of the "Clock Schedule" sub-menu functions.
- 2. To Turn-Off any Special Days, simply set the "Day" to "0", this will then disable the selected Special Day.

Display Progression



NOTE:

The 365-Day 12 special days programmed events will override the 7-Day programmed events.

STATUS

- 1. Press "O" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press "♣" Button to scroll down to E. Status sub-menu.
- 3. Press "신" Button to enter **E. Status** submenu. Display will show the first screen under this sub-menu.



- 4. Press "⁴" Button to scroll down to the second screen and view the operating parameters.
- 5. Press "&" Button repeatedly to scroll down to the next succeeding operating parameter screens.
- 6. Press ""?" Button to scroll up and to view the previous screens.

TO RETURN TO THE MAIN MENU

7.Keep pressing "♣" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "●" Button.

Display Progression

Step 7



ALARM HISTORY ...

- 1. Press "**O**" Button to get into the Main Menu. Display will show Main Menu and highlighted Sub-Menu **A. On/Off Unit**.
- 2. Press "♣" Button to scroll down to **F. Alarm History** main menu.
- 3. Press " (가 Button to enter **F. Alarm History** main menu. Display will show the first screen under this sub-menu.



NOTE: Alarm History is time & date stamped.

- 4. Press "">" Button to scroll down to the second screen and view the alarm history.
- 5. Press "
 ⁴" Button repeatedly to scroll down to the next succeeding screens and view the other alarm log.
- 6. Press "⁽T") Button to scroll up and to view the previous alarm history screens.

TO RESET THE ALARM

7. Press the " \triangle " Button twice to reset the alarm.

NOTE:

The alarm log will not be cleared but remain in the alarm history (See Warning Note below).

TO CLEAR THE ALARM HISTORY

- 8. From the **F. Alarm History menu**, press "<" Button two times to get into **Reset alarm log** screen. (Press the "<" Button if you are in any of the alarm log).
- 9. Press the "" Button. The cursor will appear on the "No" option.
- 10. Press "♣" or "♠" Button to change the prompt to "Yes", and then press the "♣" Button again to clear the Alarm History.
 - **NOTE**: After 2 seconds, the prompt will revert back to "No", signifying that the Alarm History has been cleared.

TO RETURN TO THE MAIN MENU

11. Keep pressing "⇔" (Escape / Return) Button until you get to the Main Menu screen. Otherwise press "• Button.

WARNING NOTE:

All alarm fault conditions must be investigated and rectified before proceeding to reset or clear the alarm. If the cause of the fault condition has not been eliminated, the alarm fault conditions will be reported and logged in again on next data cycle. **Repeated resetting and restarting can cause damage to the unit and may render your warranty null & void.**

... ALARM HISTORY

Display Progression



ALARM MATRIX

Description	Туре	Alarm Condition	Reset Condition	
Discharge Temperature 1 /	Alarm	Temperature out of Range	Temperature & Pressure Normal	
High Pressure Comp 1 Fault	Alann	Compressor 1 High Pressure		
Discharge Temperature 2 /	Alarm	Temperature out of Range	Temperature &	
High Pressure Comp 2 Fault	Alann	Compressor 2 High Pressure	Pressure Normal	
Compressor 1 LP Fault	Alarm	Compressor 1 Low Pressure	Normal Pressure	
Compressor 2 LP Fault Alarm		Compressor 2 Low Pressure	Normal Pressure	
Outdoor Coil Temp1 Fault	Warning	Temperature out of Range	Temperature OK	
Outdoor Coil Temp2 Fault	tdoor Coil Temp2 Fault Warning Temperature out of R		Temperature OK	
Room Air Temperature Sensor Fault	Warning	Temperature out of Range	Temperature OK	
Outside Air Temperature Sensor Fault	perature Warning Temperature out of Range		Temperature OK	
Filter Alarm	rm Alarm Air Filter Timer T		Clean / Replace Filter and Reset Timer	
Anti-Freeze Protection	Warning	Indoor Coil Temperature Too Low	Normal Operating Temperature	
Indoor Coil Sensor Fault	Warning	Temperature out of Range	Temperature OK	

IMPORTANT NOTE:

All alarm fault conditions must be investigated and rectified before proceeding to reset or clear the alarm. If the cause of the fault condition has not been eliminated, the alarm fault conditions will be reported and logged in again on next data cycle. **Repeated resetting and restarting can cause damage to the unit and may render your warranty null & void.**

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TROUBLESHOOTING GUIDE

CONDITION	CAUSES OR CHECKPOINTS
The system does not start	 Check that 5 minutes has passed from Turn-On time, as the system has inbuilt timers. Check that setpoint temperature settings are correct. Check that the setpoint temperature is set low enough for cooling or high enough for heating.
Air does not flow (Indoor Unit)	 During heating operation, air does not flow out for approximately 15 seconds after start up, this prevents cold draft.
Cooling/Heating is not sufficient	 The cooling/heating function may not work effectively when the indoor "return air filter" is clogged with dust and dirt. Make sure the air inlet and air outlet on the outdoor unit are not blocked. The outside temperature is above or below the design conditions.
Steam is coming out from the outdoor unit	 It is caused by the defrosting of the outdoor unit in heating operation during cold ambient conditions.
Water from the outdoor unit	 This is normal during heating operation, which is due to water forming on the heat exchanger.
Occurring of noises	 When heating or cooling is started or stopped, a swishing or gurgling noise may be heared, This noise is generated by the refrigerant flowing between the outdoor and the indoor units. A swooshing noise may be heared from the outdoor unit during operation. This noise is generated when the refrigerant changes direction in the defrost operation. On start up, the outdoor unit may be louder than normal for a few seconds while the compressor reaches the designated speed and operating pressure. During defrost operation, the compressor may generate more noise than normal.
Setpoint Temperature cannot be adjusted	 The Control Interface has inbuilt upper and lower limit setting. Setpoint temperature can only be adjusted within these limits.
7-Day Timeclock is not turning the air conditioner On and Off	Check that the timeclock is activated (see pages. 23-24).
	ntacting your installer for further assistance, please have your airconditioner's and Serial No, with you. (See page 35).

MAINTENANCE

Maintenance Procedures

This section describes the specific maintenance procedures that must be performed as a part of normal maintenance program. Always disconnect electrical power to the unit before performing these procedures. It is always a safe practice to observe all safety warnings and cautions when conducting maintenance tasks.



Live Electrical Connections !

It may be necessary to work near live electrical components on certain maintenance tasks. Only qualified technicians, who are competently trained, are allowed to perform service tasks.



Hazardous Voltage !

- Always make sure that all power supplies, including remote controls, are isolated before performing maintenance.
- Beware of EC Motors with high power capacitors and which can have dangerous voltages at terminals for up to 5 min. after main power has been isolated. Wait at least 5 minutes after power isolation and test for high voltage before performing service work.
- EC Plug Fan has dual power supplies, i.e. 415V/3Ph+N/50Hz motor power supply plus 10VDC control power supply. Care must be taken to ensure both are safely isolated to prevent personal injury and damage to the equipment.
- Observe proper Lock-Out / Tag-Out procedures to ensure that power cannot be inadvertently energised.
- Failure to isolate power before maintenance procedures can result in serious injury or death.

Periodic Maintenance Checkpoint

- Perform all monthly maintenance inspections
- Inspect coil surfaces for cleanliness. Clean as required, apply cleaning procedures based on prevailing industry standard.
- Inspect unit air filters, clean or replace as required.

Annual Maintenance Checklists

- Perform general maintenance inspections.
- Perform scheduled start-up checks.

- Leak test refrigerant circuits.
- Inspect contacts of all contactors and relays. Replace all worn contacts as required.
- Inspect, clean and tighten all electrical connections.
- Check fans for balanced operation. Make sure that there are no loose screws/bolts, no fan blades interference and no damage to the fans and guards.
- Inspect unit air filters, clean or replace as required.
- Clean and repaint any corroded panel surface.

Cleaning the Control Interface

Wipe the control interface with dry cloth. Do not use water or any other solvent based solutions as it can cause damage to the outer case and electronic components of the controller.

Air Filter Maintenance.

Regularly check the air filters for cleanliness or when a filter alarm is indicated on the control interface.

Cleaning the Condenser Coils

Clean the coils at least once a year or more frequently if unit is located in a dusty and/or dirty environment, in order to maintain your system's proper operating performance. High discharge pressures are a good indication that the coils need cleaning. When using detergent or solvents to clean the coils, follow the manufacturer's instructions to avoid potential damage to the coils and to the unit.

To clean the refrigerant coils, use a soft brush and water spray, such as garden hose or pressure washer with low pressure nozzle.

Outdoor Maintenance

Do not obstruct airflow to the outdoor coil to ensure your air conditioner operates efficiently. Use light detergent solutions to clean the surface of the panels. Repaint corroded panel surface, as required.

TRI-CAPACITY SETTINGS LOG:

NOTES: Please log all required information below, before any software changes are to be made. Failure to do so will cause difficulties in re-starting the unit operation back to original settings. Leave this manual in a secure location near the unit.

INSTALLATION INFORMATION

CUSTOMER	Name:	Tel. No.
	Address:	
INSTALLER	Name:	Tel. No.
	Address:	
SITE ADDRESS:		Date:

MODE OF OPERATION

MODE OF OPERATION	INDOOR FAN SETTINGS				
Mode Auto Cool Only		Heat Only	% ID Fan Spe	eed	%
Indoor Fan Mode	Continuous	Auto Cycle			
Return Air Temperature Se	tpoint °C				
Temp. Setback °C	Enabled	Disabled			
Enable Scheduler	Yes	No			
Daylight Saving Time Set	Yes	No			
Transition Time min.	Start in	at	End	in	at

TIMECLOCK SETTINGS

	Event 1	Event 2
Monday	to	to
Tuesday	to	to
Wednesday	to	to
Thursday	to	to
Friday	to	to
Saturday	to	to
Sunday	to	to

SPECIAL DAYS LOG

	Day / Month	Event 1	Event 2		Day / Month	Event 1	Event 2
Day 1				Day 7			
Day 2				Day 8			
Day 3				Day 8			
Day 4				Day 10			
Day 5				Day 11			
Day 6				Day 12			

SYSTEM CONFIGURATIONS (To access this menu, please enter the Service password: 7378).

<u>G. Service</u> — e. Communicate config.	<u>G. Service</u> → <u>f. Service settings</u> → <u>a. Working hour set</u>		
Enable BMS to turn the unit On/Off Yes No	Indoor Filter hours		
On loss of communication turn off / turn on / use timeclock	Indoor Fan hours		
Enable Din4 to turn the unit On/Off Yes No	Compressor hours		
	Reset ID Fan		
<u>G. Service</u> — f. Service settings — b. Probe adjustment	Reset Comp 1 Yes No		
	Reset Comp s Yes No		
(Return Air Temperature) Room Temp cal : °C	Reset Comp 3 Yes No		
<u>G. Service Service</u> — <u>f. Service settings</u> —	Multi Input 1		

	<u>G. Service Service</u> — <u>f. Service</u> <u>c. Thermoregulation</u>	settings		<u>Multi Input 1</u>	
1	Room Temperature setpoint		°C		
2.	Dead band		°C	Controlling	Probe Type
3.	Cool Proportion band		°C		
4.	Heat Proportion band		°C	Supply Air Temp	NTC
5.	Integral Time		seconds	Phase Fail Relay	🗌 On 🗌 Off
6.	Room temp. probe weight value			0-10VDC In Fan Spd	0-10VDC
7.	Supply Fan Min. Speed		%	0-10VDC Stage Cont	0-10VDC
8.	Supply Fan Med. Speed		%	Night Mode Enable	🗌 On 🗌 Off
9.	Supply Fan Max. Speed		%	Economy Enable	🗌 On 🗌 Off
10.	Supply Fan Min. Temp.		°C		
11.	Supply Fan Max. Temp.		°C	Multi Input 2	
12.	Supply Fan Continuous	Yes	No		
13.	Cycle on de-ice	Yes	No	Controlling	Probe Type
14.	One Speed Fan	Yes	No		
15.	Fan Speed 🗌 Low	Med	High	Supply Air Temp	NTC
16.	Supply Fan Run-on		seconds	Phase Fail Relay	🗌 On 🗌 Off
17.	Heat Start Delay		seconds	0-10VDC In Fan Spd	0-10VDC
18.	* Temp. Diff to Enable Cycle		°C	0-10VDC Stage Cont	0-10VDC
19.	*Economy Offset Co-efficient			Night Mode Enable	🗌 On 🗌 Off
20.	*Economy Proportion band		°C	Economy Enable	On Off
21.	*Min. Outside temp.		°C		
22.	*Min. Outside position		%	Linit Control	Mode
23.	Setpoint Limit Min. by user		°C	Unit Control Mode	
24.	Setpoint Limit Max. by user		°C	Internal Sensors	
25.	User Setpoint	Lock	Unlock	Remote Terminal	
26.	User Mode Set	Lock	Unlock	Remote Demand	
27.	Return air temp. probe weight value		seconds	External Input	

* These parameters are only available when economy cycle has been fitted and enabled.

UNIT INFORMATION					
Model Number:	Serial Number:				
The air conditioner model and serial number is situated on the side panel of the unit's bottom left corner, near the compressor compartment.					
Date Installed:					



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