

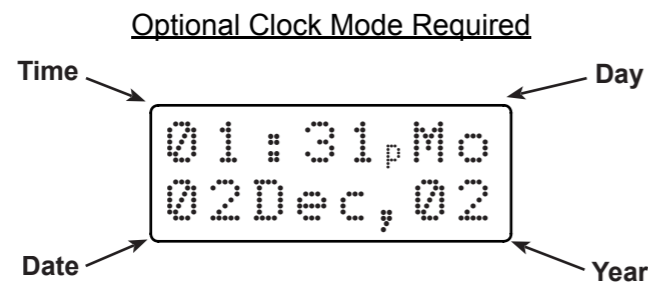
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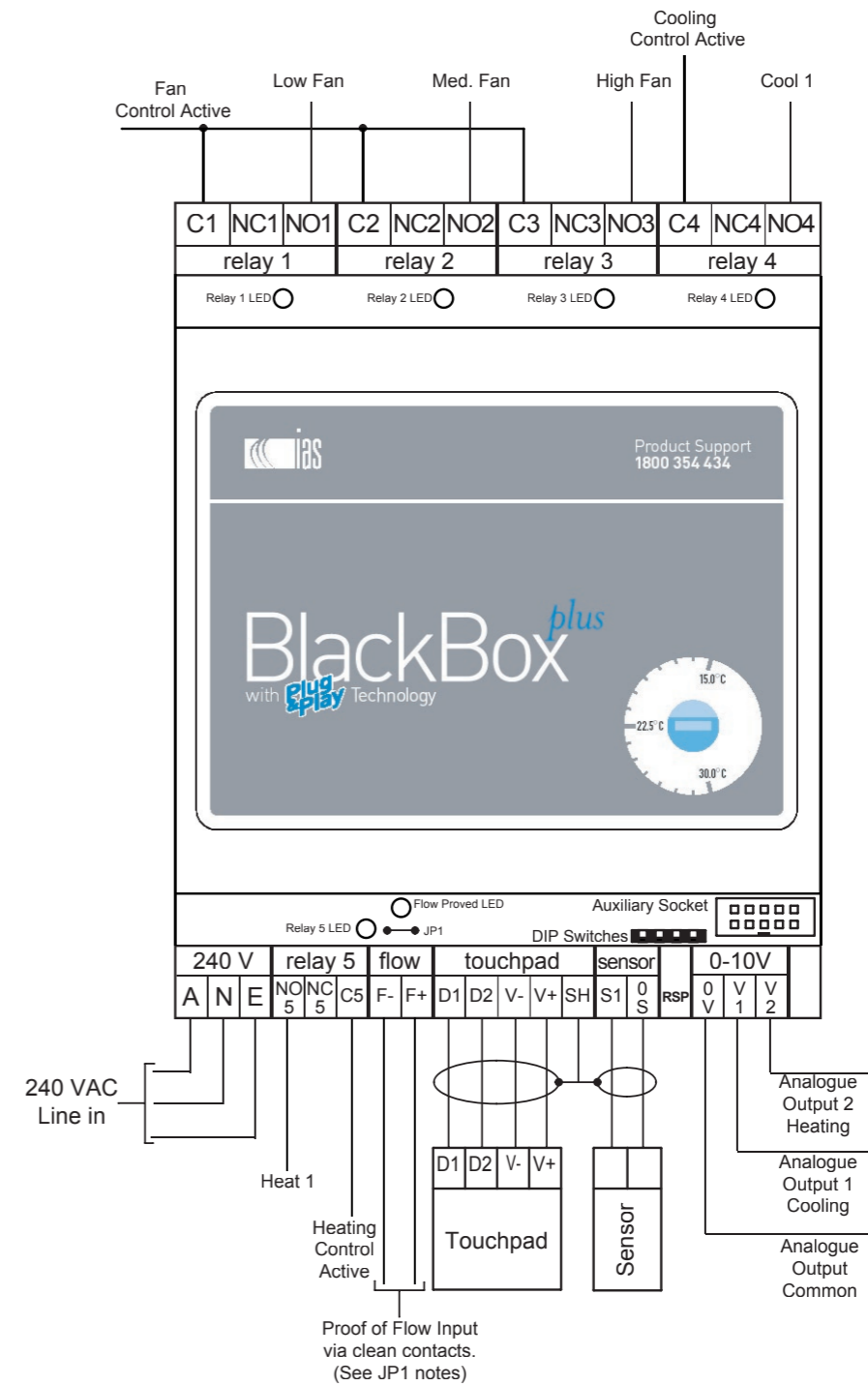
The Default Display Screen



The Clock Display Screen



5.2 C-LCD-311-TL Connection Diagram



NOTES:

JP1 - remove shorting jumper from JP1, located behind Flow Input terminals, for external proof of flow input. Short JP1 for constant flow (no proving)

LED - The green relay LEDs when lit indicate that the NO output for each relay is energised. The flow LED indicates flow proved when lit.

BBP-5 Relay Module DIP Switch Settings

Number	Function	OFF (Factory Default)	ON
1	Compressor Delay	Software Selectable (4 minute default)	4 seconds (max)
2	IAS Factory Use Only		
3	IAS Factory Use Only		
4	Heat Type	Reverse Cycle	EDH or Cool Only

5.0 Installation and Commissioning

- Ensure all electrical connections are in accordance with the supplied connection diagrams and local bylaws.
- Set the Dipswitches on the back of the touchpad according to the notes and tables below.
- Set all the system settings as mentioned in Section 3.
- If the clock module has been purchased and fitted, refer to Section 4.0 to configure the clock and automated on/off programs, holidays and daylight savings.
- Operate the controller in heat, cool and try each fan speed setting.
- Ensure that the Delay in the Settings Menu is restored to Safety prior to finishing commissioning.

5.1 Touchpad Dipswitch Configurations

Some touchpads are backward compatible with earlier Blackbox versions. The touchpad will configure its dipswitches depending on the relay module it is connected to.

Touchpad Dipswitches when connected to Blackbox Plus relay module (BBP-5)

	Function	OFF (Factory Default)	ON
1	Menu Lock	Menus Available	Menus Locked
2	Setpoint Lock	Setpoint Adjustable	Setpoint Locked
3	Setpoint Range	15-30°C (0.5°C increments)	20-25°C (0.5°C increments)
4	On/Off Lock	On/Off Available	On/Off Locked

Touchpad Dipswitches when connected to earlier version Blackbox relay modules (BB-5) for backward compatibility

	Function	OFF (Factory Default)	ON
1	Compressor Delay	Software Selectable (4 minute default)	4 seconds (max)
2	Lock System Settings Menu	Allow Access	Deny Access
3	Setpoint Range	15-30°C (0.5°C increments)	20-25°C (0.5°C increments)
4	Heat Type	Reversing Valve	Electric Duct Heat or Cool Only

1.0 Quick Start Options

This controller provides a menu based user interface. The information that can be displayed at any given time is limited by the screen area of 2x8 character lines. Additional options are viewed by using the arrow buttons to scroll the information across the screen. The flashing cursor indicates the active area of the screen (generally the top line of the display). Pressing the enter button will activate the selection highlighted by the flashing cursor.

- To change the setpoint, press the arrow buttons. Once the required temperature has been set the screen will revert to the default display after a short period (see image page 1).
- All standard menu options are accessible by pressing menu at the default display screen.
- All clock menu options (clock module required) are accessible by pressing menu at the clock display screen.
- Press the clock button to switch between the default display screen and the clock display screen.
- The menu button when pressed will access the various menu screens.
- While in the menu screens the menu button, when pressed, takes you back one step.
- The enter button when pressed moves forward through the various screens, selecting options and saving settings.
- The current active settings appear in CAPITALS.
- The arrow buttons, when pressed in a menu will either cycle the cursor and scroll the screen through the various options available, or, alter the value of the selected variable.
- Press and hold the arrow button to quickly scroll the selected variable.

2.0 Standard Menu Options

While viewing the default display screen press the menu button to gain access to the standard menu options. Use the arrow buttons to cycle the cursor to the desired menu option, then press the enter button to select that option.

Pressing the menu button (or selecting 'Exit' then pressing enter) will exit the current selection if required.

2.1 To Change the Mode

Operation: The Mode controls the operation of the A/C system. Available options are Cool, Heat, Vent or Auto (automatically switches between cooling and heating as required)

- Select '**Set Mode**' from the standard menu options screen (see section 2.0) and the mode selection screen will appear. (Quick Tip: Press menu, down, enter)
- Scroll down with the down arrow to select the required operating mode.
- Press the enter button to save the new value and return to the default display screen.

2.2 To Set the Fan Speed (Multi fan speed models only)

Operation: The Fan Speed enables the user to manually select the fan speed or set the fan to Auto. In Auto mode the fan speed decreases as the temperature approaches setpoint.

- Select '**FanSpeed**' from the standard menu options screen.
- Use the arrow buttons to move the cursor to the required fan speed setting.
- Press the enter button to save the new value and return to the default display screen.

2.3 To Change the HeatFan Setting

Operation: HeatFan controls the indoor fan operation in heating mode. In '**Contin**' mode the fan will run whenever the system is On. In '**Auto/Cyc**' mode the fan will cycle off between heating calls. Electric Duct Heating is protected by 60 second fan run-on.

- Select '**HeatFan**' from the standard menu options screen and press enter.
- Use the arrow buttons to move the cursor to the required setting.
- Press the enter button to save the new value and return to the default display screen.

NOTE: The fan can never cycle off in cool mode or during a cool or heat call.

2.4 To Set the Run Timer (After Hours Timer)

Operation: With the Run Timer enabled, and if the system is off (and outside any timeclock periods), pressing the On/Off button will start the system in Run Timer Mode. The system will run for the duration of time set in the Run Timer, after which the system will turn itself off.

- Select '**RunTimer**' from the standard menu options screen and press enter, the run timer edit screen will appear.
- The cursor will highlight the minutes space.
- Use the arrow buttons to alter the hours shown (in ten minute increments) to the required period (up to 24 hours).
- Press and hold the arrows to scroll numbers quickly.
- Press the enter button to save the new value and return to the default display screen.

To disable the Run Timer, select the minimum value of "----" and press enter.

NOTE: The Run Timer status can be determined from the standard menu options screen. If the Run Timer is enabled, '**RUNTIMER**' will appear in CAPITAL letters in this screen.

2.5 To Edit the Setback Temperatures

Operation: Setback is used to maintain temperature within preset limits at all times. If the temperature moves outside these limits the Controller will turn the system On and heat or cool as required to keep the temperature within the preset limits. These limits are separate and distinct from the normal setpoint.

CAUTION: When activated, Setback will cause the system to start irrespective of any timer programs including holidays. Pressing the Off button WILL NOT stop the system if running in Setback Mode.

NOTE: Active Programs (i.e. programs with a start or stop time or both, AND with active days) will appear in CAPITALS. (E.g. "PROG 02" = active; "prog 02" = not active)

4.3 To Set Holidays

NOTE: Active Holidays (i.e. ONLY holidays with a start AND stop date) will appear in CAPITALS. Active Holidays will cause the system to ignore timeclock switching (on and off).

Holidays may be set as single days, or as blocks.

DATES ARE INCLUSIVE AND ALL HOLIDAY PROGRAMS MUST HAVE A START AND STOP DATE ENTERED OR THEY WILL BE INVALID. FOR A ONE DAY HOLIDAY, MAKE THE START AND STOP DATE THE SAME.

- Select '**Set Hols**' from the timeclock menu options screen (see Section 4.0) then press enter and the set holiday edit screen will appear.
- The cursor will highlight '**Exit**'. Use the arrow buttons to select the Holiday program to be edited, then press enter to move to the set start date screen.
- The cursor will highlight the Month value. Use the arrow buttons to select the correct Month, then press enter.
- Repeat this procedure for the Day value which completes setting the start date for the holiday.
- The display will change to the set stop date screen.
- Repeat the steps detailed above to set the required stop date for the holiday.
- The display will revert to the set holiday edit screen and the cursor will highlight the last holiday edited.
- To return to the clock display screen, simply use the arrows to navigate back up to the '**Exit**' options and press the enter button.
- To enter more holidays, use the arrow buttons to select another holiday entry and repeat the entire process.
- To disable a holiday setting, program it's date to "----".

4.3 To Set Daylight Savings

Operation: The daylight savings function advances the clock's time by 1 hour whilst the current date and time are between the start and stop dates set. (E.g. Southern Hemisphere = Oct31...Mar31; Northern Hemisphere = Mar31...Oct31)

- Select '**Day Save**' from the timeclock menu options screen (see Section 4.0) then press enter and the start daylight savings edit screen will appear.
- Use the arrow buttons to select the correct Month, then press enter.
- Repeat this procedure for the Day value which completes setting the start date for the daylight savings.
- The display will change to the set stop daylight savings screen.
- Repeat the steps detailed above to set the required stop date for the daylight savings.

To disable daylight savings, simply select a start date of "----" or start & stop in the same month.

NOTE: The 1 hour advance happens at 1:59am (the next minute is 3:00am) and the 1 hour back happens at 2:59 (next minute is 2:00am).

4.0 Clock Menu Options

NOTE: This clock section is only relevant if the optional clock module has been plugged in to the relay module. The clock module CAN BE plugged in (and removed) while the relay module is powered up and running.

- From the default display screen press the clock button to enter the clock display screen.
- While the clock display screen is displayed press the menu button to enter the timeclock menu options screen.
- Use the arrow buttons to cycle the cursor to the desired menu option, then press the enter button to move to the edit screen for that menu option.

4.1 To Set the Clock

- Select '**SetClock**' from the timeclock menu options screen (see Section 4.0) then press enter and the set clock edit screen will appear.
- The cursor will highlight the Hour value. Use the arrow buttons to select the correct hour (watch for am/pm), then press enter.
- Repeat this procedure for the Minutes, Day, Month and Year values.
- After pressing enter on the Year, the display will return to the clock display screen.

4.2 To Edit the Timeclock Programs

- Select '**SetProgs**' from the timeclock menu options screen (see Section 4.0) to go to the set program edit screen. The cursor will highlight '**Exit**'.
- Use the arrow buttons to select the timeclock program to be edited, then press enter to move to the set start time screen.
- The cursor will highlight the minutes value. Use the arrow buttons to select the correct time in 10 minute increments, then press enter.
- The display will then change to the set stop time screen.
- Follow the same procedure as detailed above to set the stop time then press enter.
- The display will then change to the set run days screen. This is the screen at which you define the days that are going to use these start and stop times. Use the arrow buttons to toggle between UPPER and lower case.
- The cursor will highlight the first letter on the bottom line, representing Sunday. These letters "SMTWTFS", when made UPPER CASE, attach the start and stop times to that day of the week. To ignore the start and stop times on a particular day, make the corresponding letter lower case. Press enter to save and move the cursor to the next letter.
- Repeat the procedure detailed above for each day of the week. Press menu to go back one letter if required.
- Pressing enter after Saturday will return the display to the set programme edit screen and the cursor will be highlighting the last edited program.
- To return to the clock display screen, simply use the arrows to navigate back up to the exit options and press the enter button.
- To enter more programs, use the arrow buttons to select another program and repeat entire process.

To disable a program, select a start & stop time of "--:--".

To disable Setback, select a minimum of "----" and a maximum of "----". These "----" settings are found by scrolling the minimum all the way down, and the maximum all the way up.

- Select '**Setback**' from the standard menu options screen and the setback edit screen will appear.
- The cursor will highlight the minimum temperature value.
- Use the arrow buttons to alter the value to the required temperature (in 1°C increments).
- Press enter to save and the cursor moves to the maximum temperature value.
- Use the arrow buttons alter the value to the required temperature (in 1°C increments).
- Press enter to save and return to the default display screen.

NOTE: The setback function is enabled whenever there is at least one valid limit set as detailed above. The setback temperatures are to be linked to setpoint in the following manner:

- The highest minimum setback temperature allowed is SETPOINT MINUS 2°C
- The lowest maximum setback temperature allowed is SETPOINT PLUS 2°C
- The Setback Range is from 5 - 50°C.

3.0 To Edit the System Settings (Service Personnel Only).

Changing these settings may adversely affect system operation and in extreme cases may cause system damage.

- Select '**Settings**' from the standard menu options screen and press enter to access the settings sub-menu screen.
- The line '**CAUTION!**' will alternate with '**Service**' and '**use only**'.
- Press either arrow button to scroll the cursor from '**Exit**' to '**Proceed**' then press enter to access the settings sub-menu screen .

3.1 To Change the Compressor Delays

Operation: The compressor delays dictate the length of time that the compressor must remain on or off after cycling.

- Select '**Delays**' from the settings sub-menu screen, then press enter to access the delay select screen.
- The current Delay setting is displayed in CAPITALS.
- Use the arrow buttons to highlight the required Delay setting.
- Press enter to save and the display will return to the settings sub-menu screen.

The following options are available for Compressor Delays:

Safety = 4 minutes (minimum)

Extended = 40 seconds (minimum)

Standard = 4 seconds (minimum)

Instant = 1 second (min), 4 seconds (max)

3.2 To Set the Deadband

Operation: A deadband value other than 0 will create separate Heating and Cooling setpoints (half of the deadband value either side of the displayed setpoint).

- Select '**Deadband**' from the settings sub-menu screen, then press enter to access the deadband edit screen .
- The cursor will highlight the deadband value.
- Use the arrow buttons to alter the value in 1°C increments from 0 to 3.
- Press enter to save and return to settings sub-menu screen.

3.3 To Set the Control Band

Operation: Control Band is a common variable covering both Stage Separation and Switching Differential. There is a separate control band for Heating and Cooling working from the heating and cooling setpoints dictated by the DEADBAND.

- Highlight '**CtrlBand**' from the settings sub-menu screen, then press enter to access the control band edit screen.
- The cursor will highlight the Heating value.
- Use the arrow buttons to change the value.
- Press enter to save the value and move the cursor to the Cooling value. Now change this value by using the arrow buttons.
- Press enter to save and return to the settings sub-menu screen.

SINGLE STAGE CONTROLLERS: The control band for single stage controllers is adjustable in 0.5°C increments from 0.5°C to 1.5°C, resulting in a switching differential equal to the control band value and stage separation also equal to the control band value.

TWO STAGE CONTROLLERS: The control band for two stage controllers is adjustable in 1.0°C increments from 1.0°C to 3.0°C, resulting in a switching differential for each stage equal to half the control band value and stage separation equal to half the control band value.

THREE STAGE CONTROLLERS: The control band for three stage controllers can either be 1.5°C or 3.0°C, resulting in a switching differential for each stage equal to 1/3 the control band value and stage separation equal to 1/3 the control band value.

3.4 To Edit the Service Timer

Operation: The Service Timer monitors system run time and at the end of the timer period displays a message (see 3.8 page 6) and gives an audible warning (2 beeps every 16 seconds). Press any button to silence the audible warning.

- Select '**SvcTimer**' from the settings sub-menu screen, then press enter to access the service timer edit screen .
- Use the arrow buttons to move the cursor to highlight '**Set**'. Press the enter button and the cursor will highlight the number of hours. Use the arrow button to change the hours shown in increments of 10 hrs.
- Press enter and the Service Timer will reset and the cursor will move back to highlight '**Set**'.
- Press menu to return to the settings sub-menu screen.
- To disable the service timer, select a set time of "----".

NOTE: The Due Value is the time remaining until the Service Timer message appears on the display. This value will revert to the Set Value when the above procedure is followed.

3.5 To Select the Forced Vent Input Message

- Select '**Msg S1op**' from the settings sub-menu screen and press enter.
- The screen will display the abbreviated message library, with the cursor highlighting the current selection.
- Press the arrow buttons to scroll to the required selection then press enter.

Refer to the message library table on the back page for the complete list of available messages and their abbreviations. Refer to the BBP-5 Installation Manual for information on input triggers.

3.6 To Select the Remote On/Off Input Message

- Select '**Msg S1cl**' from the settings sub-menu screen and press enter.
- The screen will display the abbreviated message library, with the cursor highlighting the current selection.
- Press the arrow buttons to scroll to the required selection then press enter.

3.7 To Select the System Fault Message

Operation: The input trigger for the System Fault Message (S2 closed circuit), when activated, displays the message and causes the touchpad to emit an audible warning (2 beeps every 16 seconds). Press any button to silence the audible warning.

- Select '**Msg S2cl**' from the settings sub-menu screen and press enter.
- The screen will display the abbreviated message library, with the cursor highlighting the current selection.
- Press the arrow buttons to scroll to the required selection then press enter.

3.8 To Select the Service Timer Message

- Select '**MsgTimer**' from the settings sub-menu screen and press enter.
- The screen will display the abbreviated message library, with the cursor highlighting the current selection.
- Press the arrow buttons to scroll to the required selection then press enter.

3.9 To Edit the Custom Message

- Highlight '**Edit Msg**' and press enter.
- The display will show '**SERVICE REQUIRED**' and the cursor will highlight the first letter. Using the arrow buttons, select the alphanumeric symbol required then press enter to save and move to the next letter. (Press menu to go back, if required.)
- Repeat until the both 8 character lines are complete.
- Press enter to save and return to settings sub menu screen.