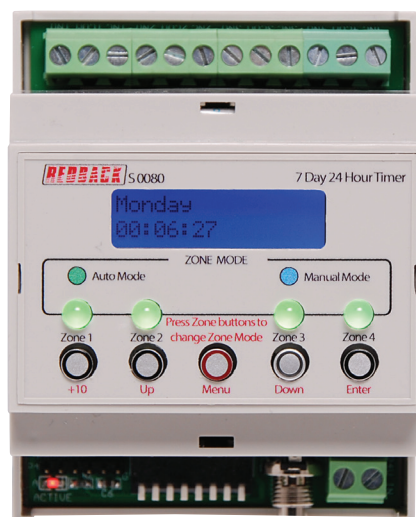




Operating Manual

S0080 50 Event 24 Hour 7 day Timer - Din Rail



1.0 OVERVIEW

The A S0080 is a 7 day timer housed in a convenient DIN rail housing, which has four closing contact outputs. It permits a total of 50 station (event) switching times. Each can be set to turn on any single day of the week or on multiple days, from 1 sec up to 24 hours. Switching events programmed for multiple days count as only a single station (event) and each of the 50 event times may be set to any (but not multiple) output.

Manual override is provided so that any of the four outputs can be set "ON" or "OFF" manually which overrides any of the event times programmed for that output.

The unit has security lock out of Time Edit, Station Edit and Clear Memory Functions via DIP switch selection.

2.0 OPERATION

On the front of the timer there are four LED's and five switches which provide a visual indication of the status of each of the four output zones and provide navigation of the programming menu (Refer to Fig 2.1).

The LED's indicate whether a zone is in "Auto" mode or "Manual" mode. A green LED indicates a zone is in "Auto" mode, and will therefore follow the programmed sequence of triggers entered by the user.

A blue LED indicates that a zone is in "Manual" mode and therefore has been manually set to be either "ON" or "OFF" by the user. Once a zone is in "Manual" mode it will stay in this mode until the user sets it back to "Auto" mode, or the unit is switched off (NOTE : All zones will return to 'Auto Mode' on power up).

The switches are used to navigate the programming menu, while the switch LED's indicate the output status of the zone. i.e. if the zone is "On" or "Off".

On the rear of the unit are the four, output zone "voltage free" closing contacts. Provision has been included for a normally open and a normally closed contact on each output.

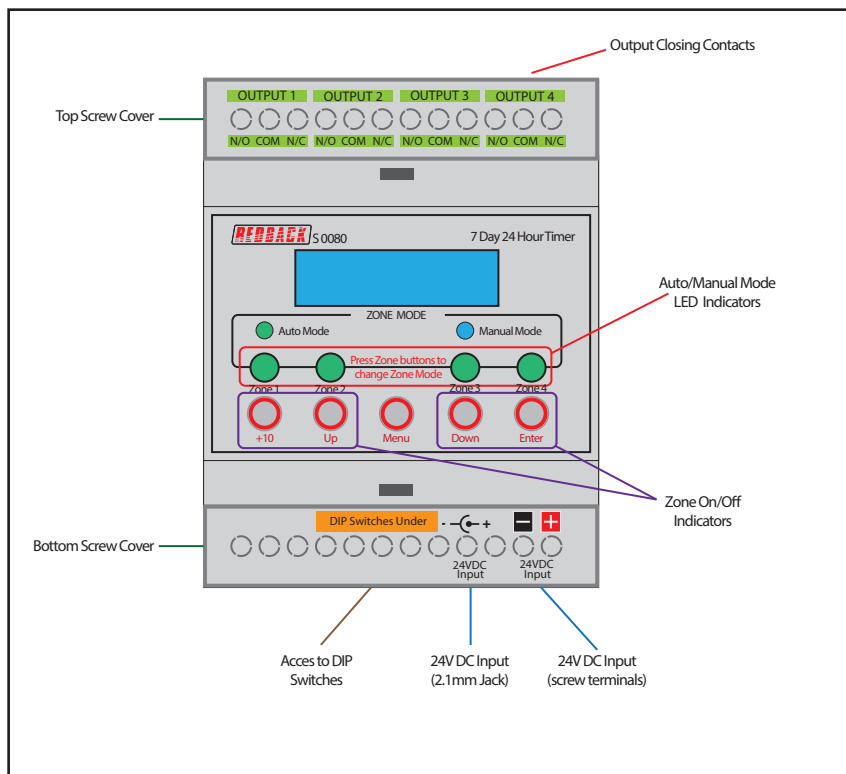
If a zone is set to "ON" the corresponding output zone will become active. The normally open (N/O) contact for that zone will short, the normally closed contact (N/C) will become open and these contacts will stay this way until the zone is again set "OFF".

SPECIAL NOTE ABOUT "AUTO MODE" OPERATION
 If the timer is not displaying the main clock screen, where the time is changing, the unit is not running in "Auto Mode". This means it will not be checking any of the programmed events and hence will not activate any outputs automatically. Essentially this means that as soon as the Menu button is pressed the unit is no longer in "Auto Mode".
 Make sure to return to the main screen by exiting all menu's when not making changes.

3.0 CONNECTIONS

Figure 3.1 shows the layout of the S0080.

Fig 3.1



3.1 24V DC Connectors

The unit is powered by 24V DC. Connection can be made via a 2.1mm DC jack or screw terminals. These two inputs are connected in parallel inside the unit, so either could be used as an input, while the other could be used as a 24V DC output to power another device.

Fig 3.2



3.2 DIP Switch Settings

IMPORTANT NOTE:
Ensure power is switched off when adjusting DIP switches.
New settings will be effective when power is switched back on.

There are four DIP switches accessible on the inside of the S 0080 which are for selecting the backup battery and various security lockout features (See Fig 3.3). To access the DIP switches remove the bottom screw cover.

Switch 1 - Battery Backup

When switch 1 is set to the "ON" position the internal battery is connected to the units clock chip. If power is ever removed the battery will ensure the clock chip continues to run and therefore keep the current time.

NOTE : This battery does not provide backup power to the entire S 0080 unit. The display will not light up and the unit will not function. Only the internal clock chip will still be supplied power.

If the entire S 0080 requires backup power a backup power supply can be connected to the 24V DC input.

DIP Switch Settings	
SW	ON
1	Battery Backup On
2	Station Edit Lockout Enabled
3	Edit Time Lockout Enabled
4	Clear Memory Lockout Enabled

Fig 4.1

Switch 2 - Station Edit Lockout

When switch 2 is set to "ON" access to the Station Edit Mode will be restricted. Therefore there can be no tampering of the Station (Event) times.

Switch 3 - Time Edit Lockout

When switch 3 is set to the "ON" access to the Time Edit Mode will be restricted. Therefore there can be no changes made to the current time.

Switch 4 - Clear Memory Lockout

When switch 4 is set to the "ON" access to the Clear Memory Mode will be restricted. Therefore there can be no erasing of the Station (Event) times stored in memory.

3.3 Closing Contacts:

These contacts "close" when the corresponding output zone is set "ON".

(Note: these relay contacts are voltage free and have a rating of 1 amp).

These can be used to trigger devices such as the Redback A 1741 MP3 Message player, which require a closing contact to activate. Or they could be used to trigger external relays to switch power to external devices.

Fig 3.4 illustrates an example of connecting the S 0080 to the triggers of an A 1741, and also using an S 4455 high current relay box to switch an external power supply.

A 24V DC plugpack is used to power the S 0080 and another to power the A 1741, although a single 1A 24V DC supply would be sufficient to power both.

In the example shown the Zone Output 1 closing contact of the timer is connected to the Input 1 trigger of the A 1741 message player. When Zone1 is activated by the timer, the normally open contact closes and triggers input 1, subsequently playing message 1 of the message player.

With the addition of the Redback S 4455 10 amp relay box we can switch as external supply to power a high current drawing device. The S 4455 can be set to 12/24/48V operation (in this case we have set it to 24V) via the on board jumper. We then use output 4 of the timer to switch the positive side of the 24V supply, to power the S4455 relay box. The 24 V in this case is being piggy backed off the supply from the timer (but a separate power supply could be substituted). Hence when output 4 is triggered by the timer, power is applied to the S 4455 relay box. The normally open contact on the S 4455 therefore closes and power is then switched from the external supply to the external device (in this case a pump, solenoid, etc).

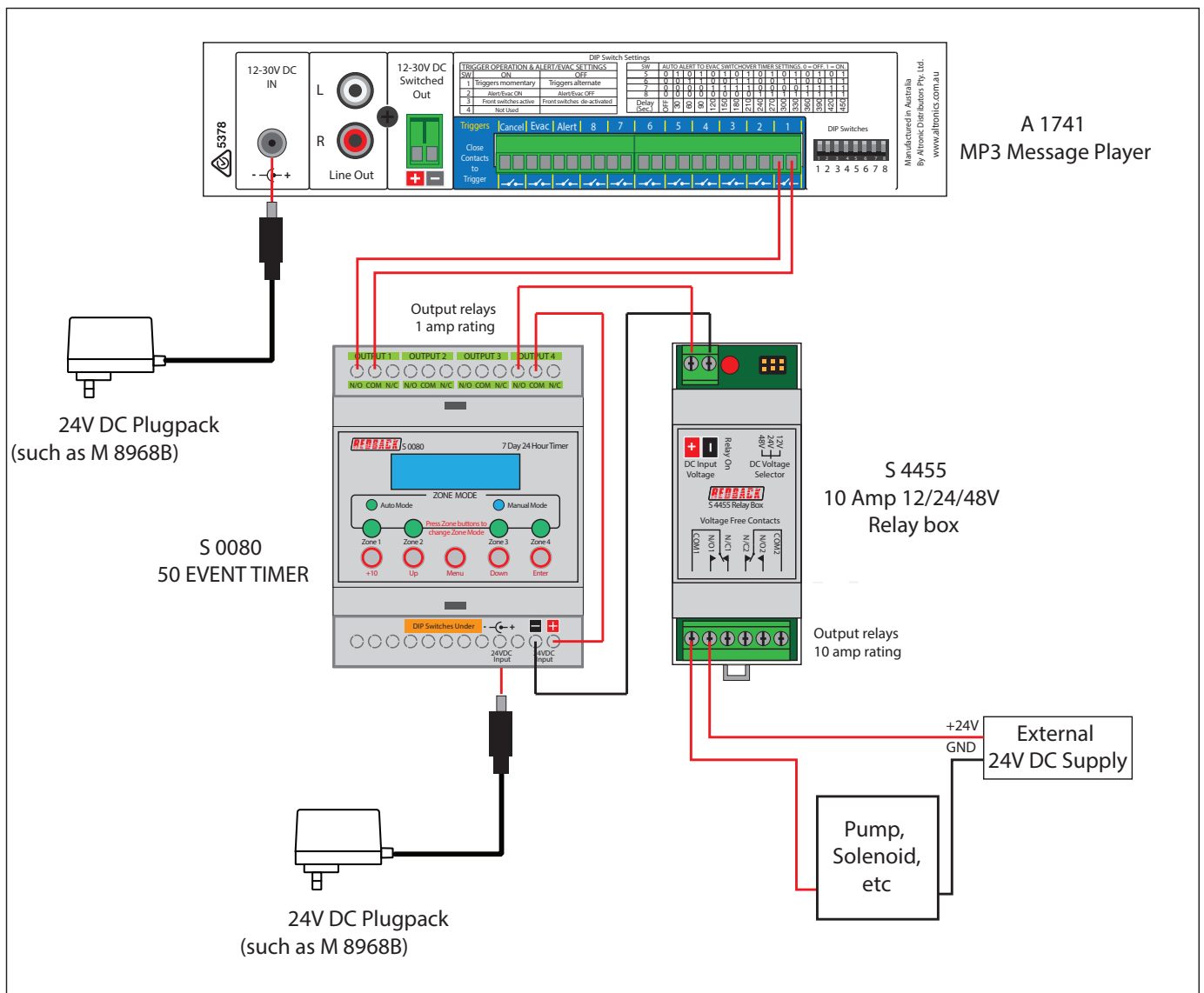


Fig 3.4

4.0 BATTERY BACKUP

Inside the unit is the battery used to backup the internal clock chip. If DIP switch 1 (battery backup) is set to "ON" and the unit fails to keep the correct time after a power failure then it may be possible that the backup battery is flat. To replace the battery, remove the rear of the DIN rail enclosure using a small flat blade screwdriver.

Inside you will find two boards which are screwed together. Carefully removed these from the DIN rail enclosure.

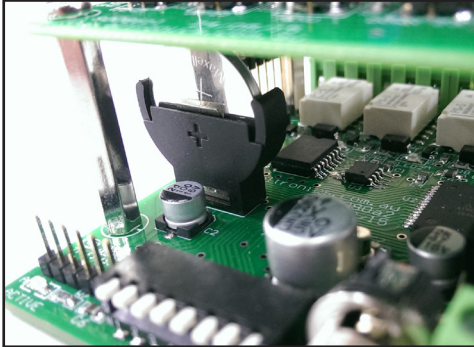


Fig 4.1

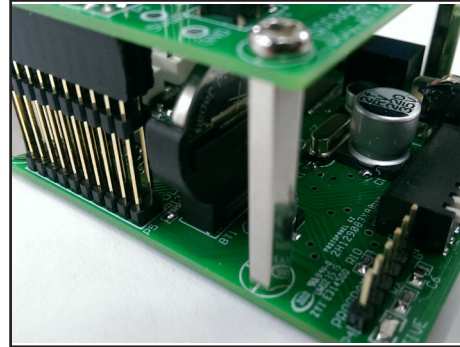


Fig 4.2

The battery required is a 3V Lithium (CR2032) such as Redback S 4999B and is mounted in a vertical mount battery holder as shown in figures 5.1 and 5.2.

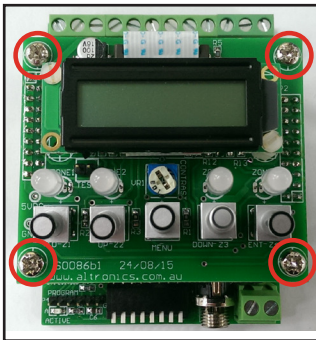


Fig 4.3

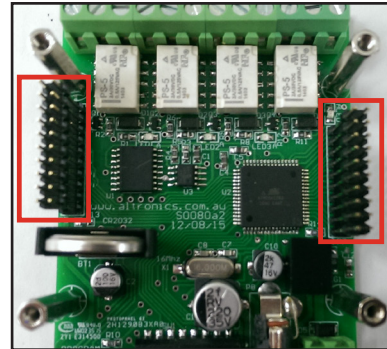


Fig 4.4

Remove the screws highlighted in figure 5.3 and then remove the top board, so that the battery is accessible as shown in figure 5.4.

Replace the battery and then reverse the procedure to assemble the unit back together. Make sure the header pins highlighted in figure 5.4 are lined up correctly before screwing the boards back together.

3.0 NAVIGATING THE MENUS

In order to setup the unit to run automatically, the station (or event) times will need to be programmed. There are five buttons on the front of the timer which are used to program the unit and navigate the various menus. When the unit is first powered up, the model number and Chipset will be displayed briefly before the current time is shown IN figure 3.1.



Fig 3.1

The main screen (Current Time Screen) shown in Fig 3.2 displays the current time. When this screen is displayed the unit is running in "AUTO MODE" and therefore all outputs will work as programmed. However if the unit is in any of the sub menu's (Menu Mode) the unit will no longer respond to any event that has been programmed to occur, while the unit

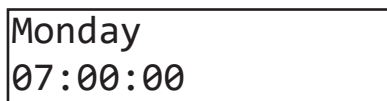


Fig 3.2

remains in menu mode. On exiting the menu, the timer will check all programmed events and update the status of the output zones.

Press the "Menu" button on the front of the timer. The unit is now in "Menu Mode" and the screen should display the Manual Select of Output Zones Screen. This is the first of 5 sub menu screens which are navigated by pressing the up and down buttons as shown in Fig 3.3. Pressing the Menu button again will return the user to the Main Screen. Select the desired sub menu by pressing the "Enter" button.

3.1 SUB MENU'S

There are 4 options to choose from.

- 1) Manual Selection Of Output Zones
- 2) Add or Edit A Station Time
- 3) Edit Time on Clock
- 4) Clear Memory of ON/OFF Times

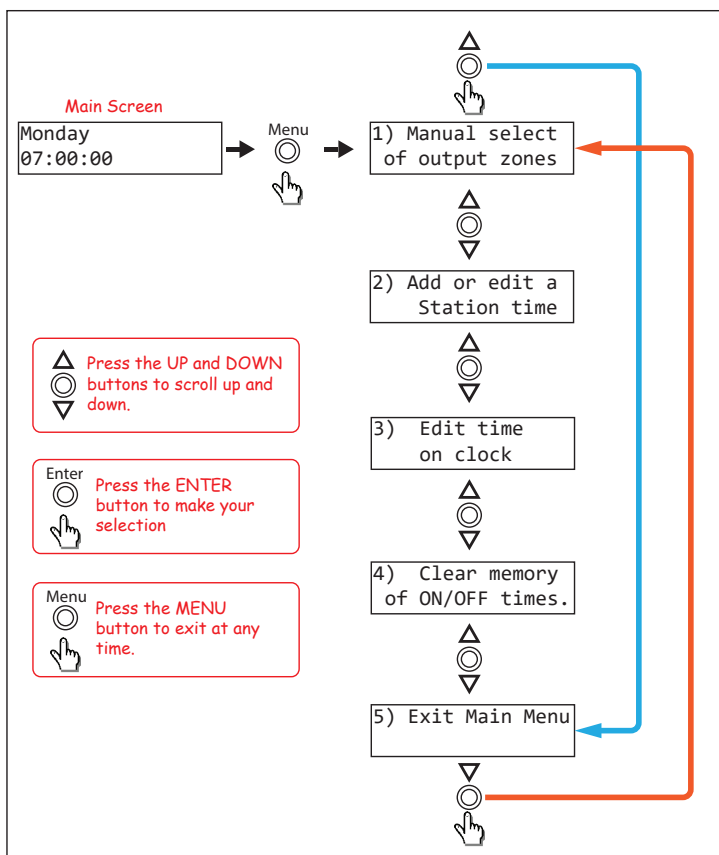


Fig 3.3

3.1.1 Manual Selection OF Output Zones

QUICK ACCES MANUAL OPERATION

On

After selecting this option the screen should appear as shown in Fig 3.4. The square brackets indicate the cursor position on the screen.



Fig 3.4

To set a Zone manually, scroll to the desired zone using the up and down buttons as shown in Fig 3.5 and then press "Enter" when you reach your selection. When finished scroll to the "Exit Manual Zone Selection" screen and press "Enter" or press the "Menu" button to exit at any time. (NOTE: For the unit to continue in "AUTO MODE" you must exit back to the Main Screen.)

SPECIAL NOTE:
If power is removed, all outputs will switch off and all zones will return to Auto mode once power is restored.

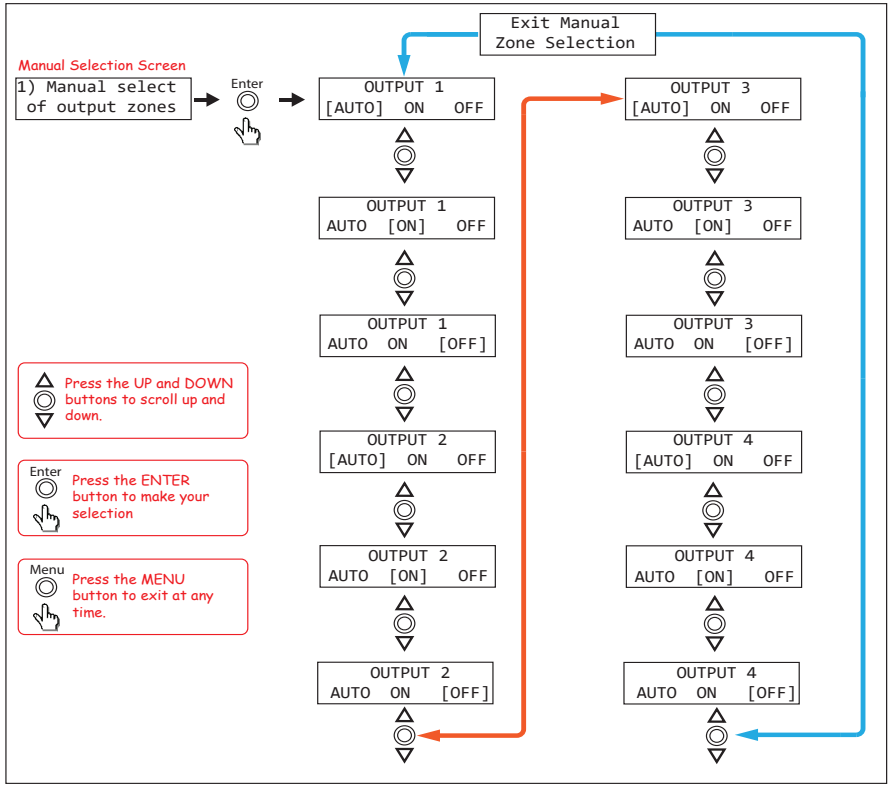


Fig 3.5

3.1.2 Add or Edit A Station Time

This option allows the user to enter the Station (Event) information which includes the event "Turn on time", "Duration" and "Output Zone".

If this is the first time an Event has been entered the memory will need to be "Cleared" first. To do this follow the directions in the section "Clearing the Memory".

SPECIAL NOTE FOR FIRST TIME USE:
When powering up the unit for the first time it will be necessary to clear the memory before entering any Station (Event) times. If this is not done the unit will not operate correctly. To do this use option 4 in the menu. Refer to the section on "Clearing the Memory".

Navigate to the "Add or Edit a Station Time" Sub Menu as shown in Fig 3.3. If this is the first time entering this menu the screen should appear as shown in Fig 3.6. The number "1)" shown is the Station (or Event) number which is highlighted by a flashing cursor.

1) - DAY
 Start @ 00:00:00

Fig 3.6

From this point the user can scroll through all 50 stations using the up and down buttons as shown in fig 3.7. This makes it very easy to view all Station time settings at a glance. Once the station number desired is shown on the LCD press the "Enter" button to confirm and move to the next step which is to make changes to the station "day".

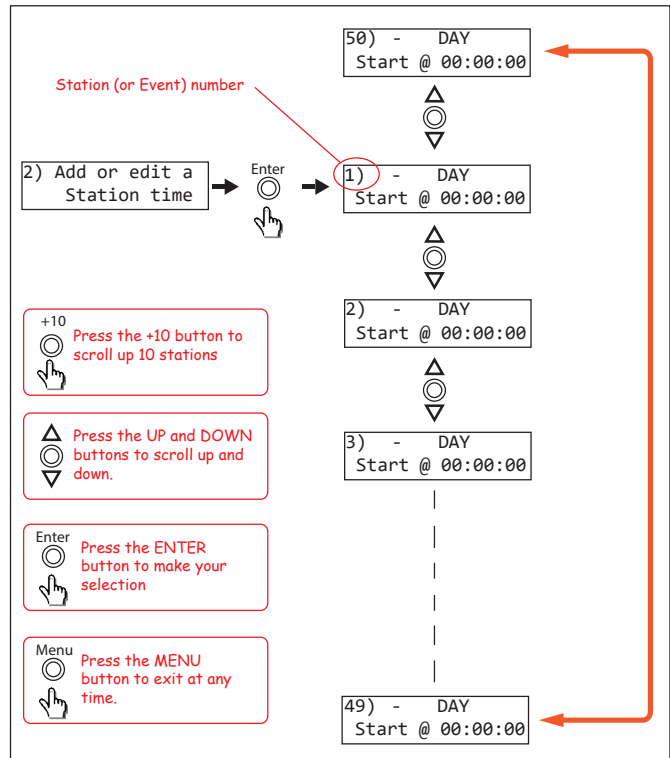


Fig 3.7

The DAY represents the day of the week that the Event will take place and can be any day from Monday to Sunday or one of many multiple day options which are listed below. Pressing the up and down buttons will scroll through the days monday to friday and then through the multiple days.

- Mon-Fri
- Sat-Sun
- Mon/Wed/Fri
- Tue/Thu/Sat
- Mon-Thu
- Mon-Sun
- Tue-Fri
- Mon/Fri
- Tue/Wed/Thu
- Mon/Wed
- Mon/Thu
- Mon/Tue/Thu
- Tue/Thu
- Tue/Wed/Fri
- Tue/Thu/Fri
- Wed/Fri
- Mon/Tue/Wed

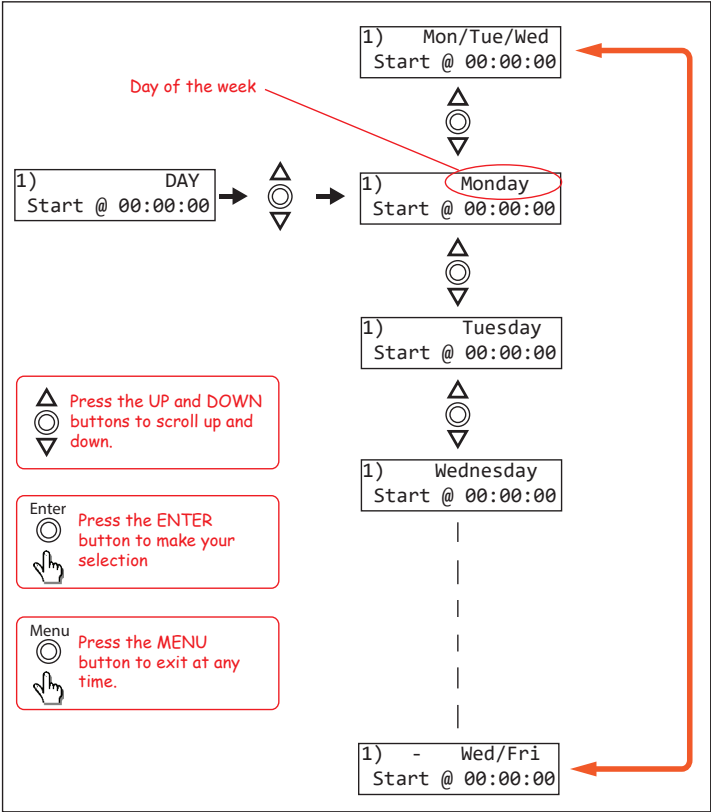


Fig 3.8

Once the day or multiple days desired is shown on the LCD, press the "Enter" button to confirm. The cursor will now move to the start time. This is the time the "Event" is to take place and is in 24 hour format.

The cursor is now positioned over the hour section of the start time as shown in Fig 3.9.

Change the hour by pressing the +10, up and down buttons and press "Enter" when finished. The cursor will now move to the minute section of the start time. Repeat the above procedure to change the minutes and press "Enter" when finished. The cursor will now move to the seconds section of the start time. Repeat the above procedure again to change the seconds and press "Enter" when finished. The start time is now set for this Station (or Event).

After completing the start time, the screen will change to the Zone and Duration options screen as shown in Fig 3.10.

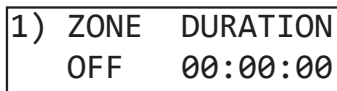


Fig 3.10

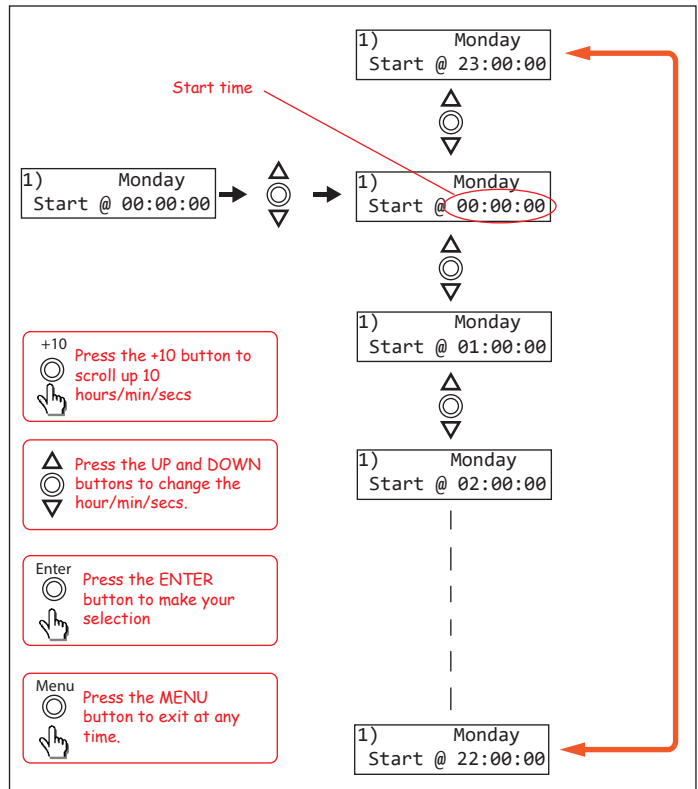


Fig 3.9

From this point the user can scroll through all 50 stations using the up and down buttons as shown in fig 3.11. This makes it very easy to view all Output Zone settings at a glance. Once the station number desired is shown on the LCD press the "Enter" button to confirm and move to the next step which is to make changes to the zone output.

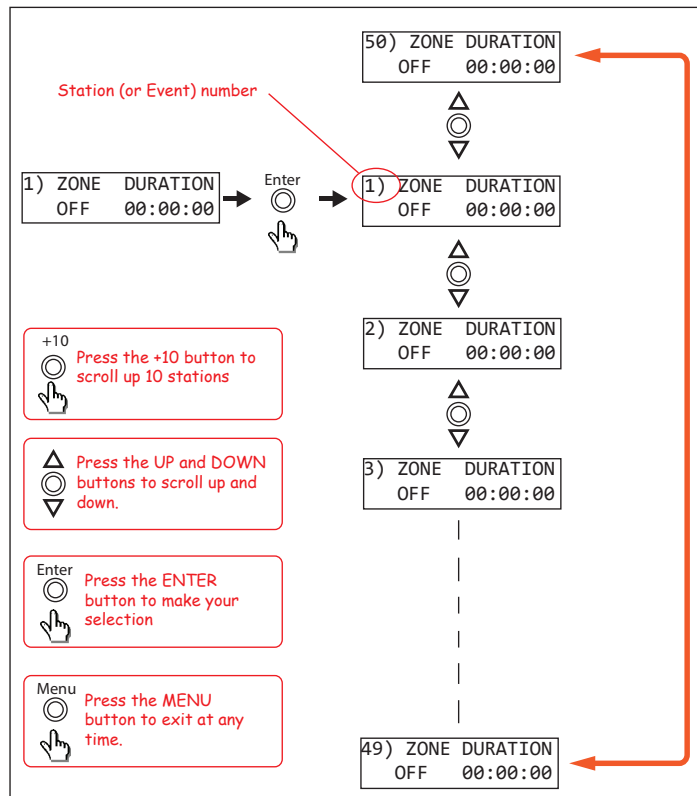


Fig 3.11

Fig 3.12 illustrates the Zone Output setup procedure. There are 4 output zones to choose from. Use the up and down buttons to change the zone output and press "Enter" when finished. The zone can also be set to "OFF" which will turn this output off, but not affect the time settings so that it can easily be re-initiated by setting the zone output later.

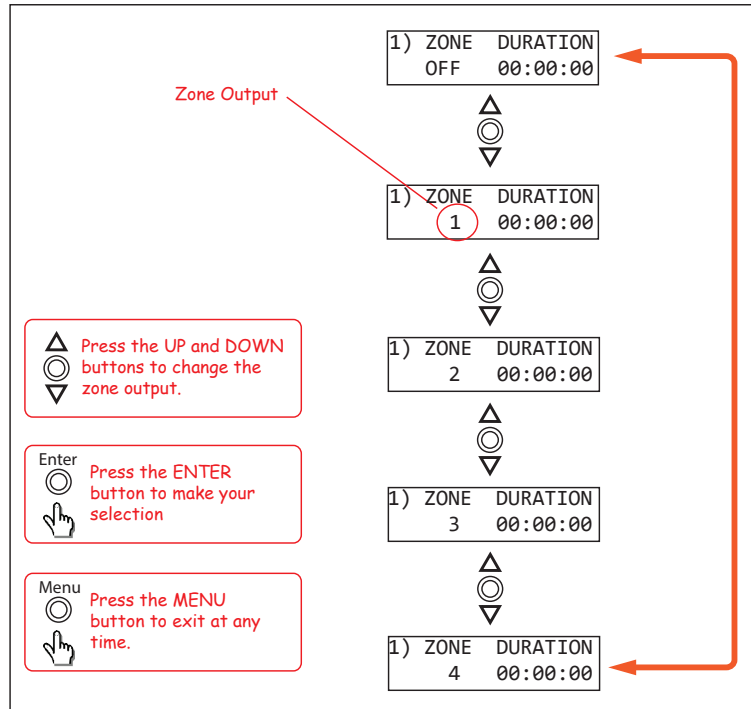


Fig 3.12

The cursor is now positioned over the hour section of the Zone Duration as shown in Fig 3.13. The duration is the amount of time the event will occur for, after the start time.

Change the hour by pressing the +10, up and down buttons and press "Enter" when finished. The cursor will now move to the minute section of the duration. Repeat the above procedure to change the minutes and press "Enter" when finished. The cursor will now move to the seconds section of the duration. Repeat the above procedure again to change the seconds and press "Enter" when finished. The menu button can be pressed at any time to exit the setup. The duration is now set for this Station (or Event).

After completing the duration, the screen will change to the next station ready to enter the next events details.

NOTE: IF the duration is set to 00:00:00 the zone output will be set back to "OFF" on exiting the "Set Duration" screen.

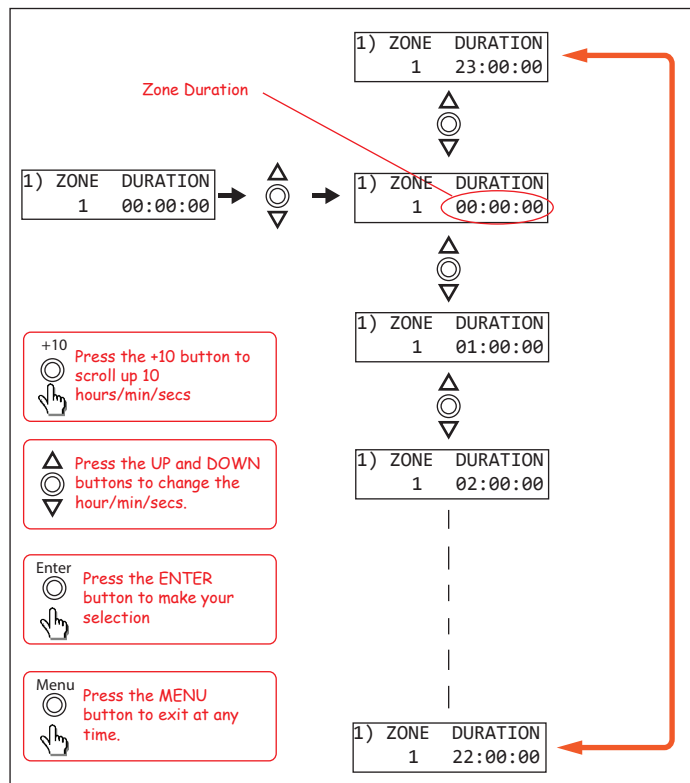


Fig 3.13

3.1.3 Edit the Clock Time

This option sets the current time.

After selecting the "Edit Time on Clock" option from the menu shown in Fig 3.3 the LCD will display the screen shown in Fig 3.13 where the cursor flashes on the current day.

Pressing the up and down buttons will scroll through the days Monday to Sunday. Pressing "Enter" will confirm the day and then move the cursor to the hour option as shown in Fig 3.14.

Change the hour by pressing the +10, up and down buttons and press "Enter" when finished. The cursor will now move to the minute section of the clock time. Repeat the above procedure to change the minutes and press "Enter" when finished. The cursor will now move to the seconds section of the clock time. Repeat the above procedure again to change the seconds and press "Enter" when finished. The menu button can be pressed at any time to exit the setup. The clock time is now set.

After completing the clock time, the screen will change to the current time.

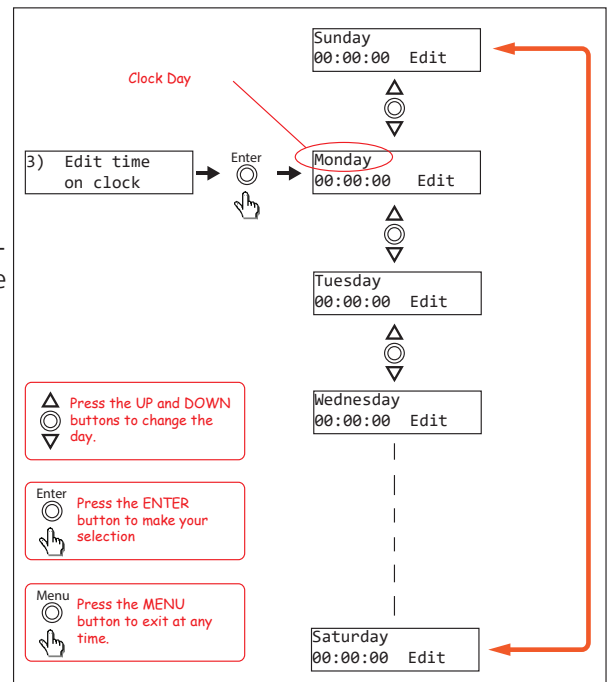


Fig 3.13

3.1.4 Clearing the Memory

This function will clear the internal memory, erasing any information entered.

IMPORTANT NOTE:
The memory must be cleared before using the unit for the first time.

Navigate to the "Clear Memory of ON/OFF times" Sub Menu as shown in Fig 3.3.

Press "Enter" to activate this option. If DIP switch 4 is set to "ON" the screen will display the message shown in Fig 3.15.

Not Available
Check Settings

Fig 3.15

This is one of the security options to protect the information stored in memory. See the DIP Switch settings for more information. Set the DIP switch 4 to "OFF" and then press "Enter" again. This time you should enter the Clearing the Memory Sub Menu. The following two screens should be briefly displayed.

This will clear
all ON/OFF times

Are you sure?

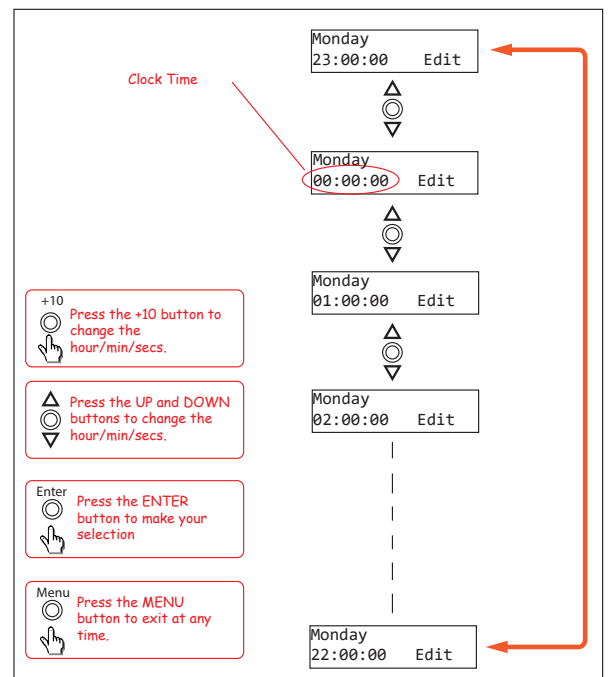


Fig 3.14

Then you will be asked to press "Enter" to confirm you want to clear the memory or press "Menu" to exit.

Hold ENTER for Y
or MENU for No

If you press Menu you will return to the Clear Memory Sub Menu.

If you press Enter, the unit will cycle through the memory locations clearing any data stored. This will take a few minutes. Once finished you will return back to the Clear Memory Sub Menu.

NOTE: It is advisable to now set DIP switch 4 to "ON" to prevent accidental clearing of the memory.

7.0 EVENT TIMES RECORD

A sheet has been provided to record all of the Event(s) information for easy reference.

OUTPUT 1 = _____ **OUTPUT 2 =** _____

OUTPUT 3 = _____ **OUTPUT 4 =** _____

STATION	OUTPUT	DAY	TURN ON TIME	DURATION	TURN OFF TIME
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					