

8 Channel Digital Timer Unit

Programming Guide



Introduction

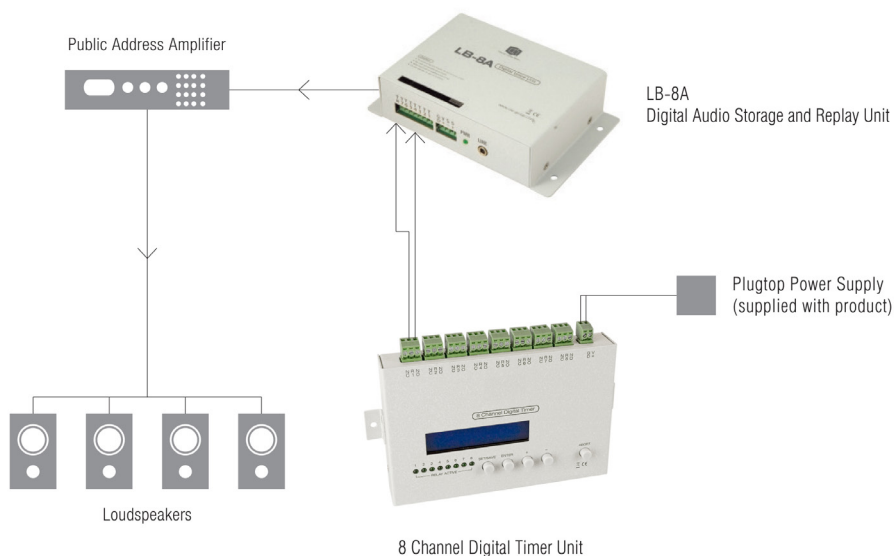
Thank you for purchasing the **TU-8A 8 Channel Digital Timer Unit**.

The TU-8A is a weekly event programmable timer providing 8 independent relay outputs for general apparatus control. Each output is capable of providing either a NO or NC relay contact. Providing 64 events per day (32 on and 32 off) the TU-8A is ideal for applications in Education, Industry and Retail environments where the timed broadcast of tones, messages or audio files is required (via a separate message device such as the LB-8A).

Further functions include an option to manually override events , DST (day light saving time) for compensating for spring and autumn time changes and clock tuning for maintaining accuracy of the timer.

A clear blue LCD screen displays the timer status as well as menu functions for programming and set up. Push buttons provide the user interface for programming, a row of 8 green LED's provide a visual indication of when each relay is active. The relay outputs and power are connected via removable phoenix screw terminals, which are housed within a removable security cover to prevent unauthorised access to the connections. Removable brackets allow the device to be securely fastened to a wall.

Suggested System Configuration





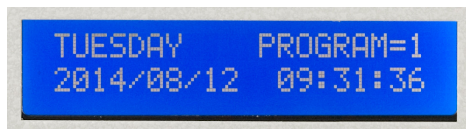
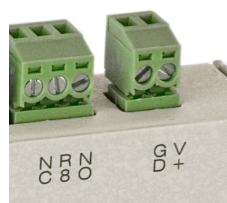
Date and Time

Connect the 12v DC Power to the terminal (Positive V+ and Negative GD). Ensure the correct polarity is observed.

Once powered the LCD screen will illuminate showing the Home Screen, this shows the Day, Date and Time. This will need to be reset to represent your current local time and date settings.

Press SET/SAVE the display will show >SET DATE & TIME, press ENTER

Using the + and – buttons scroll to the desired day, press ENTER to jump to the Date settings.



Please Note: The date is shown in the Year/Month/Day format; use the + and – buttons to change the field, pressing ENTER after each is set.

Follow the same procedure for adjustment of the Time.

Once the Date and Time are configured press SET/SAVE and the message CHANGES SAVED will display for a short time before reverting to the Home Screen.

If at any time of the above process you wish to cancel the programming, press ABORT which will return the unit back to its last SET/SAVE format.

Setting the Programme

There are three (3) program options :

PROGRAM # 1 = Monday to Friday, PROGRAM # 2 = Saturday & Sunday and PROGRAM # 3 = User Defined

It is possible to set each day to operate on any of the above programs, this is explained later in the guide.

Press SET/SAVE until the display shows >SET PROGRAM #1; press ENTER

TU-8A will ask if you want to ERASE PROGRAM FIRST? this will wipe the current program memory leaving it clear for a new schedule. Press <+> :YES or <->:NO

The display will display PROGRAM # 1 EVENT #01
 XX:00:00 00000000

Using the + and – buttons set the desired time, displayed as Hours, Min and Sec pressing ENTER to jump to the next setting. The eight (8) 00000000 represents the relay outputs which can be triggered 0=Not Selected 1=Selected. Using the + or – button will change the relay status. Any combination of the outputs may be selected.

Once the required time and relay combination are programmed press SET/SAVE and the message CHANGES SAVED will display for a short time before the TU-8A will jump to the next EVENT.

After saving your program information ABORT will return you to the Home Screen.

Please Note:The TU-8A can provide 64 events per day, this represents 32 on and 32 off. The duration of the relay activation is determined by the time difference between EVENT #01 (starting the relay) and EVENT #02 (closing the relay).

For Example:

EVENT #1 08.30.00 10001000
EVENT #2 08.30.30 00000000

At 08.30.00 timer will activate/trigger relays 1 and 5, at 08.30.30 the program will deactivate the relays, 30 seconds after the first command.

The minimum time period between events is 00.00.01 (1 second).

PROGRAM #2 and PROGRAM #3 are configured in the same way above.

Assigning Programs

As a 7 day Timer, the TU-8A will allow you to change the assigned program/schedule running on any day. There are 4 options 1 = PROGRAM #1, 2= PROGRAM #2, 3 = PROGRAM #3 and X = NOT ACTIVE.

From the home Screen press SET/SAVE until >ASSIGN PROGRAMS is displayed, press ENTER.

The display will show: MO TU WE TH FR SA SU

 1 1 1 1 1 2 2

This indicates that the TU-8A is set up to operate with PROGRAM #1 from Monday to Friday and PROGRAM #2 on Saturday and Sunday (default).

To change the assigned program for each day press the + or – button until the required setting is displayed then press ENTER to jump to the next day.

Manual Control

This facility will provide the ability to activate any or all of the relay outputs immediately. The relays will remain active until the next scheduled event, at which time the manual setting will be cancelled. Alternatively re-entering the Manual Control menu and deselecting relays will also de-activate the relays.

From the home Screen press SET/SAVE until >MANUAL CONTROL is displayed, press ENTER.

Using the ENTER button Scroll across the 8 relay outputs using the + or – buttons to change the relay status.

0 = Off and 1 = On.

If 1 is selected the relay will instantly activate, and the Green LED will illuminate on the front panel.

SET/SAVE will exit the program back to the Home Screen.

Clock Tuning

This facility is provided to maintain accuracy of the TU-8A timer and gives the ability to compensate for any slight drift of time over an operational period. A number of factors can influence the clock accuracy, operation within temperatures above and below 25 C and long term usage aging the device components.

The accuracy of the internal clock is +/- 34 seconds per year.

From the home Screen press SET/SAVE until >CLOCK TUNING is displayed, press ENTER.

The display shows OFFSET: 0

Using the + button will slow down/decrease the clock accuracy and using the – button will speed up/increase the clock accuracy. Each 1 step represents 64 second change over a 1 year period.

SET/SAVE will exit the program back to the Home Screen.

Please Note: It is recommended that unless the clock accuracy deviates by more than 34 seconds per year this facility is not implemented, manual adjustment of the time as highlighted at the beginning of this manual should be applied.

DST Shift Time

To compensate for time changes across the seasons, the unit has the ability to automatically adjust time (between GMT and BST for example).

The TU-8A can handle up to a 4 Hour change in time which can be adjusted as below, the SPRING: time moves forwards and the FALL: time moves backwards.

From the home Screen press SET/SAVE until >SET DST SHIFT TIMES is displayed, press ENTER.

Using the ENTER button gives access to the SPRING: setting, use the + or – buttons to change time to the desired difference then press ENTER to jump to the FALL: setting, use the + or – buttons to change time to the desired difference then press SET/SAVE.

The settings for UK should read as follows SPRING: 1AM FALL: 2AM

Please Note: This facility will not become active until the DST Operation facility is enabled, see the next section for how to activate this function. Do not use this function if your area/region does not use the DST facility.

Set DST Operation

After the DST Shift Time has been set, you can then add Start and End dates for DST operation.

Up to 10 entries can be stored in advance, so for example the TU-8A can store the time changes for the next 10 years.

From the home Screen press SET/SAVE until >SET DST #1 is displayed, press ENTER.

Change the Year using the + or – button, then ENTER using the same procedure to set the Month and Date, this is the SPRING date.

After setting the above the display jumps to another date, showing a Month and Date, this is the FALL date, adjust as above.

Once happy with the setting press SET/SAVE and the TU-8A will jump to >SET DST #2. This continues for up to 10 entries, it is up to the user how many of these are pre-set.

Specifications

TU-8A	
Number of Output Channels	8
Events per Day	64 (32 On, 32 Off)
Schedule	7-day week
Relay Rating	12A @ 120v AC, 10A @ 240v AC/24v DC
Case Material	Powder-coated steel
Power	12v DC (Mains plugtop PSU supplied)
Relay Outputs	8 x N.O or N.C
Dimensions	110mm(H) x 140mm(W) x 25mm(D)
Weight (Net)	0.52kg
Weight (Gross)	0.90kg

Please Note: The TU-8A also has an on-board battery to maintain the time and program memory in the event of a power loss, this will provide back up for approx.7 days. If left for longer than 7 days without power the settings will be lost and the TU-8A will need to be re-programmed.

