Installation & Operating Guide

TU16

Timer Unit

Fully programmable, multiple event, seven day timer unit from CIE Ltd.

Please read before attempting to operate or install the equipment.

IMPORTANT

- **To prevent the risk of fire or electric shock do not expose this unit to rain or moisture.**

- **Throughout this manual the word 'event' is frequently used. In the context of this manual and the TU16 it refers to the time at which one of the output channels is to be turned on or off.**

WARNING

- **The five output channels relay contacts are rated to switch maximum voltages of 60V DC and 125V AC. Under no circumstances must these ratings be exceeded. If higher voltage switching or heavy load switching is required please contact the Engineering Division of CIE Ltd.**

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1. Introduction...

The TU16 is a microcontroller based, multiple event, timeswitch that has five independent relay output channels.

Up to sixteen timed events can be programmed per day, i.e., latched ON/OFF or pulsed and each event can be assigned to any one of the output channels. Latched events are activated at the programmed ON time and de-activated at the programmed OFF time. Pulsed events are activated for a two-second period.

To prevent unauthorised tampering, the TU16 is fitted with a security key switch. Event and time settings can only be changed whilst the switch is set to the Programming position. Programming is kept very simple, the authorised user enters all event data via the keypad. Prompts are given at each step by the back lit Liquid Crystal Display (LCD).

The unit can be configured during installation to operate in a 24 hour or 7 day mode. In the 24 hour mode up to sixteen events in total may be used and repeated on a daily basis. In the 7 day mode up to one hundred and twelve (112) different events may be used, i.e., sixteen per day.

All programmed event times can be displayed in the View mode without any danger of accidental change. This feature is useful for checking any entered event prior to running.

Another useful feature, available in the 7-day mode only, is the ability to block copy sixteen daily events from one day to another day. This feature may help to speed up initial programming in instances where only one or two event times need changing during another day. By doing a block copy using the Copy mode and then changing the necessary event times in the Programme Event mode will help reduce the number of keypad entries.

In the Run position the keypad is ineffective and the LCD shows the current time of day. Active channels are instantly recognised by illuminated Light Emitting Diodes (LED) protuding through the lid of the unit.

In the event of power failure, programmed memory will be retained for longer than 40 years and the Real Time Clock maintained for longer than 10 years.

The TU16 is supplied in a robust metal case that can be wall mounted. It is powered by 240v 50Hz AC mains and has provision for 24v DC supply backup.

1.1 Key features…

- Configurable twenty four hour or seven day operating mode.
- Sixteen programmable events per day or 112 programmable events per week.
- One of five selectable output channels for each programmable event.
- Programmable pulsed or latched type outputs for each event.
  The pulse period is set at two seconds and the minimum latched period is one minute.
- Five relay output channels, each providing SPCO potential free contacts.
- Anti-tamper programming switch.
- Two line back lit LCD display for clear viewing and user prompts.
- Large numeric keypad for quick event programming and time/day setting.
- Active output channel LED indication.
- Non-volatile memory in the event of supply voltage failure.
- Robust metal casing for wall mount applications.

1.2 Description...

• Key switch: (Fig 1, Item 1)
The TU16 is supplied with two keys to allow only authorised personnel to programme events. The key switch is fitted to the lid of the unit and marked Run and Programme. If an event is to be programmed or the time and day needs to be altered, the position 'Programme' must be selected. An arrow on the keylock barrel will indicate the selected position. After programming is complete the key switch must be returned to 'Run', the normal operating position, and the key removed. The key is removable in both positions.

• Programme LED indicator: (Fig 1, Item 2)
The red 'Programme' LED situated next to the key switch on the lid of the unit indicates, when illuminated, that the TU16 is operating in the programming mode. All output channel relays are kept in a de-activated state in this mode.

• Relay output channel:
When an event time is reached in the Run mode, the relay output channel that has been programmed to the event will be activated. The relay provides single pole changeover contacts for external use. Up to five relay output channels can be activated; the duration for each is set during programming.

• Relay output channel LED indicators: (Fig 1, Item 3)
The five green output channel LEDs situated on the lid of the TU16 indicate, when illuminated, which relay output channel is activated.

• Liquid Crystal Display (LCD): (Fig 1, Item 4)
The LCD is a sixteen character by two-line backlit module fitted to the lid of the TU16. In the Run mode, the display only shows the day and time of day. In the Programming mode the display shows various information such as day, time, event data on the top line and user prompts on the bottom line.

• ***Numeric Keypad: (Fig 1, Item 5)***
The numeric keypad is used for inputting time, day and event data when prompted by the LCD display. When a numeric entry is made, the display is updated and the cursor position is advanced.

The '*' and '#' keys are each bi-functional, i.e., 'CLEAR or NO' and 'STEP or YES' respectively.
The 'Clear' key deletes incorrectly entered numeric values and also allows the user to step backwards through the programming process.
The 'No' key is only available for use when the LCD prompts the user with a question that requires a 'Yes/No' answer.
The 'Step' key allows the user to step forward over a displayed numeric value when the value requires no change.
The 'Yes' key is only available for use when the LCD prompts the user with a question that requires a 'Yes/No' answer.

• ***24V DC input:***
The TU16 can be powered by an external 24V DC @ 0.5 Amp power supply via the marked screw terminals. The unit has reverse current protection, so that both the mains supply and the external 24V can be connected at the same time (e.g. when used in systems requiring battery backup).

• ***240V AC mains input:***
The unit is to be supplied with a standard input voltage of 240V AC 50/60 Hz, via the marked screw terminals.

Figure 1. Layout of TU16 lid.

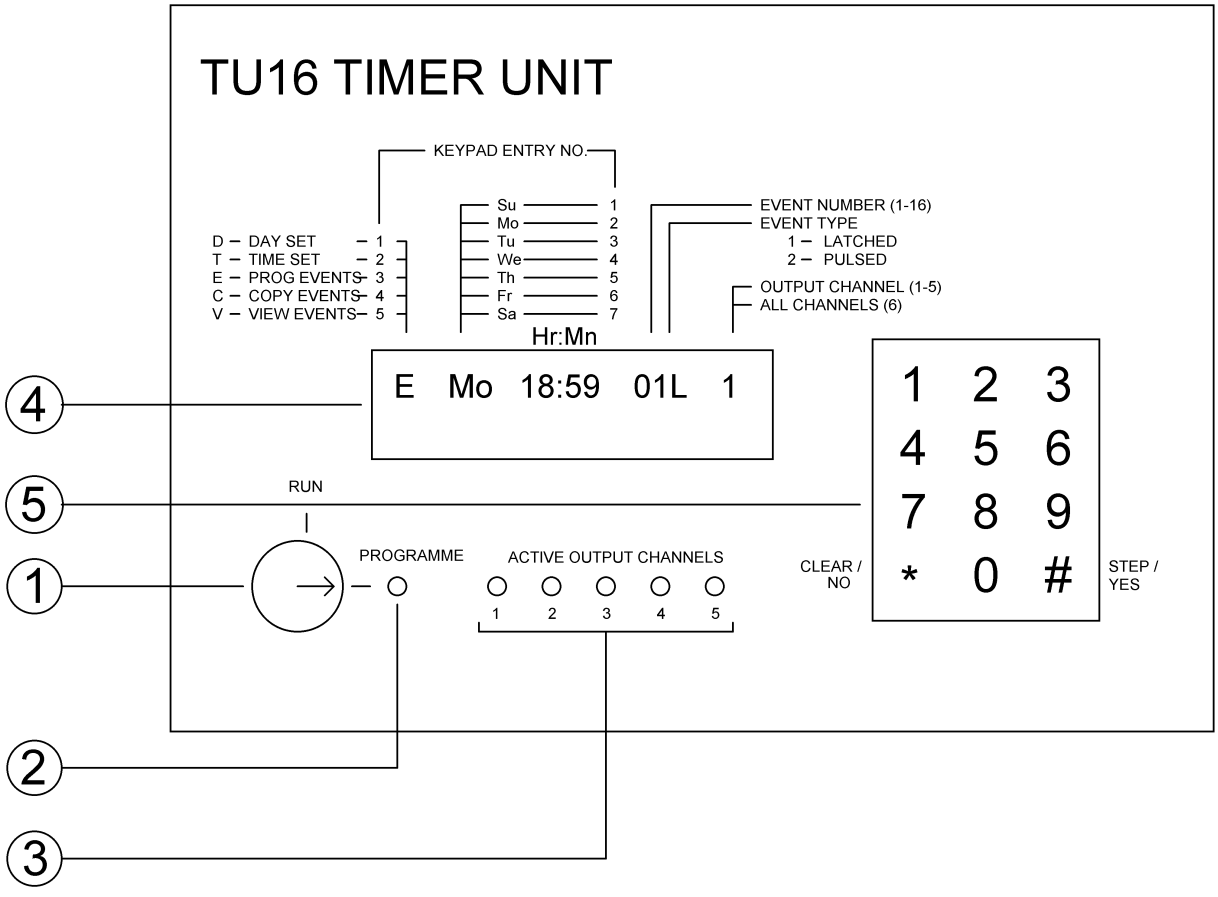
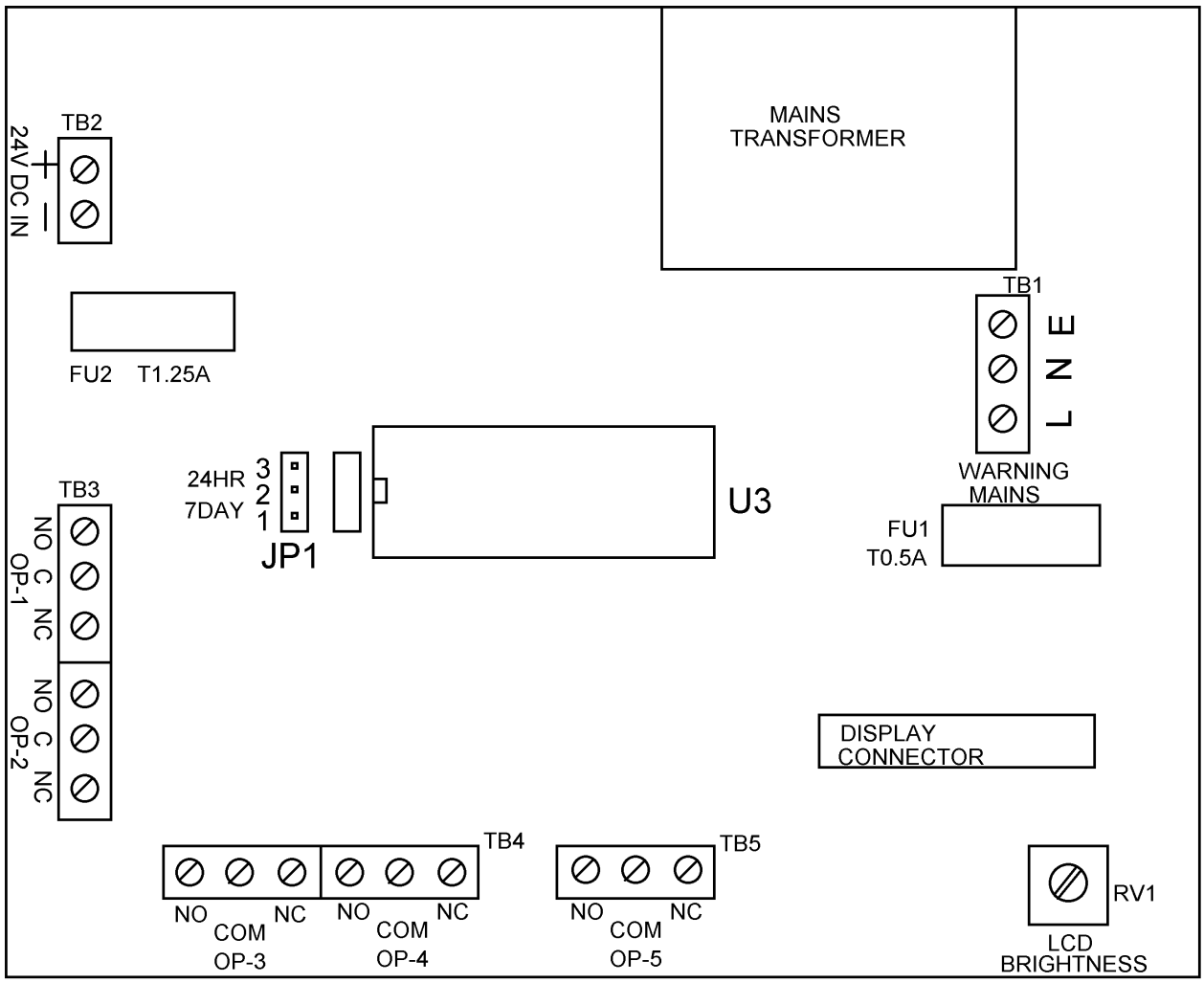


Figure 2. Connection and configuration details.



TU16 TIMER BOARD

2. Connection Details...

WARNING:

Under no circumstances must any wiring or maintenance be carried out to the unit whilst the mains power is connected.

The five output channels relay contacts are rated to switch maximum voltages of 60V DC and 125V AC. Under no circumstances must these ratings be exceeded. If higher voltage switching or heavy load switching is required please contact the Engineering Division of CIE Ltd.

Please refer to Figure 2 – 'Connection and configuration details' for terminal layout.

Terminal Block	Designation	Description
TB1	L (Live) N (Neutral) E (Earth)	240v AC input supply terminals (please ensure that the supply cord is held firmly in place by the cable clamp next to the terminals).
TB2	24V DC IN	24V DC input supply terminals. These terminals are provided for systems that require battery backup. If used, please observe polarity during connection.
TB3	OP-1	Output channel 1, potential free single pole changeover contacts for control of external equipment.
	OP-2	Output channel 2, potential free single pole changeover contacts for control of external equipment.
	NO	Normally Open contact
	COM	Common contact
	NC	Normally Closed contact
TB4	OP-3	Output channel 3, potential free single pole changeover contacts for control of external equipment.
	OP-4	Output channel 4, potential free single pole changeover contacts for control of external equipment.
	NO	Normally Open contact
	COM	Common contact
	NC	Normally Closed contact
TB5	OP-5	Output channel 5, potential free single pole changeover contacts for control of external equipment.
	NO	Normally Open contact
	COM	Common contact
	NC	Normally Closed contact
TB6	KEY SWITCH	Not fitted.

3. Configuration and set up...

WARNING:

Extreme care must be exercised when working on the TU16 when it is connected to the mains supply due to exposed high voltage terminations within the unit.

Please refer to Figure 2 – 'Connection and configuration details' for configuration layout.

LNK	SETTING	COMMENTS
JP1	1 to 2	The TU16 is set to operate in the 7-day mode. One hundred & twelve (112) different programmed event times can be entered, sixteen per day.
JP1	2 to 3	The TU16 is set to operate in the 24-hour mode. Sixteen (16) different programmed event times can be entered. These event times will be repeated on a daily basis.

Liquid Crystal Display back light contrast adjustment:
The LCD contrast level has been adjusted prior to leaving the factory. However, if the level requires further adjustment then potentiometer RV1 on the TIMER BOARD is provided for this purpose.

4. Programming Procedure...

Before the TU16 timer unit can be used for the first time in the 'Run' position, it must be configured (see section "Configuration and set up") and then programmed. To programme the unit, the keyswitch must be set to the 'Programme' position; the 'Programme' LED on the lid will be illuminated. Whilst in the programming mode, all output channel relays are kept in a de-activated state to prevent operation of external equipment.

Exiting the programming mode of operation can be carried out at any time by returning the keyswitch back to the 'Run' position.

During programming the user will be prompted to enter the type of event output required. There are two types available:
1) Pulsed output type.
With pulsed type, the event output will be activated for two seconds only. A pulsed type event will be recognised whilst programming by the letter 'P' that will be displayed next to the event number.
2) Latched output type.
With latched type, the event output will be activated at the programmed event ON time and de-activated at the programmed event OFF time. A latched type event will be recognised whilst programming by the letter 'L' that will be displayed next to the event number.

If a pulsed or latched type event is not required to be activated during the day, then clear the event time at the display prompt 'Clear the event?'. Cleared event times will be displayed as '- -:- -'. Alternatively enter 24:00 as the event time, this is the value assigned to all cleared (not used) events. The next time the event is displayed it will show '- -:- -'.

Event time information:
- Midday is represented by 12:00
- One minute to midnight is 23:59
- Midnight is represented by 00:00
- Cleared (not used) events are represented by key entry 24:00 and displayed as '- -:- -'.

When the TU16 is operating in the 7-day mode, it is possible to have a latched type event output to be turned ON during one day and turned OFF during the next day. This is accomplished by programming an event's initial ON time as normal and clearing the same day's event OFF time (24:00). On the next day, the same event number's ON time must be programmed to 00:00 and the same event's OFF time to the time that the event is to be turned OFF. The event's output channel number must be the same for each day. It is also possible to programme latched type event outputs to be ON for periods exceeding two days, see examples in the APPENDIX section of this manual.

It's worth mentioning here about the keypad keys '*' and '#'.
The '*' key represents either 'Clear' or 'No'. The 'Clear' key is used for erasing an incorrectly entered numeric value. The 'No' key can be used to respond to a displayed prompt question that requires a Yes or No answer.
The '#' key represents either 'Step' or 'Yes'. The 'Step' key is used to step over a displayed numeric value that does not require any change. The 'Yes' key can be used to respond to a displayed prompt question that requires a Yes or No answer.

There are five different programming modes that can be selected:

1) **Set Day**.
   This mode allows the user to change today's day.
2) **Set Time**.
   This mode allows the user to change today's current time.
3) **Programme Events**.
   This mode allows the user to change the programmed events for the day.
4) **Copy Events**.
   This feature is available to the user only when the TU16 is set to operate in the 7-day mode. It allows the user to copy a block of sixteen programmed events from one day to another. It's main purpose is to help speed up initial programming of the unit when only one or two event times during the day may be different from another day.
5) **View Events**.
   This mode allows the user to view any programmed events without the danger of accidental change. Keeping the YES key pressed at the 'View Next ?' display prompt will auto-step through the events, thus reducing the number of key depressions required during the viewing.

The instruction below will give user guidence to each of these modes in turn.

4.1 Set Day.

1. Switch the keyswitch from 'Run' to 'Programme' position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **'Enter Mode (1-5)'** on the bottom line and the cursor will be flashing a question mark '?' at the start of the top line.
3. Enter the numeric value 1 at the keypad to 'Set Day'. The displayed '?' will be replaced with a 'D' and the cursor will be advanced to the day position.
4. Enter **today's** day number (1 – 7):
   1 = **Su**nday
   2 = **Mo**nday
   3 = **Tu**esday
   4 = **We**dnesday
   5 = **Th**ursday
   6 = **Fr**iday
   7 = **Sa**turday
5. The display will be updated with the entered day and the cursor will be returned to the flashing question mark.

4.2 Set Time.

The time is displayed and entered in the 24-hour format. Reading from left to right the display shows 10's of hours, hours, colon, 10's of minutes, minutes.

Midday is represented by 12:00
One minute to midnight is 23:59
Midnight is represented by the display 00:00

1. Switch the keyswitch from ‘Run’ to ‘Programme’ position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **‘Enter Mode (1-5)’** on the bottom line and the cursor will be flashing a question mark ‘?’ at the start of the top line.
3. Enter the numeric value 2 at the keypad to ‘Set Time’. The displayed ‘?’ will be replaced with a ‘T’ and the cursor will be advanced to the time position. The bottom line of the display will prompt **‘Enter Time Hr:Mn’**.
4. Enter the current time, starting at the tens of hours. After each numeric entry, the cursor will be advanced to the next position.

4.3 Programme Events.

Internal configuration of the TU16 determines which operating mode is currently in use, i.e. 24 hour or 7 day. This will become apparent to the user at step 4 below. If the display prompts the user to enter the event number then the TU16 has been configured for 24-hour operation. If the display prompts the user to enter the day number then it has been configured for 7-day operation.

4.3.1 Programme Events for the 24-hour mode of operation.

1. Switch the keyswitch from ‘Run’ to ‘Programme’ position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **‘Enter Mode (1-5)’** on the bottom line and the cursor will be flashing a question mark ‘?’ at the start of the top line.
3. Enter the numeric value 3 at the keypad to ‘Programme Events’. The displayed ‘?’ will be replaced with an ‘E’.
4. The display cursor will be advanced to the event number position and the bottom line of the display will prompt **‘Enter Evnt(1-16)’**.
5. Enter the required event number within the range 01 to 16. If it is less than 10, the event number must be preceded with a zero, e.g. 01, 09.
6. If the display shows ‘- - : - -‘ (cleared event) proceed to step 11 below, else continue.
7. The bottom line of the display will prompt **‘Clear the event?’**.
8. If the event time is to be cleared (event not required) press ‘Yes’ and then continue at the next step. If the event time is not to be cleared press ‘No’ and then proceed to step 11 below.
9. The bottom line of the display will prompt **‘Save new event ?’**.
10. To save the cleared event time in memory press ‘Yes’ and then proceed to step 22 below. If the cleared event time is not to be saved in memory press ‘No’ and then continue at the next step (the event time initially displayed is still held in memory).
11. The display cursor will be advanced to the event output type position and the bottom line of the display will prompt **‘Enter Type (1-2)’**.
12. Enter the numeric value 1 or 2 to select the event output type to be Latched or Pulsed.
    1 = Latched 2 = Pulsed
13. The display cursor will be advanced to the event ON time position and the bottom line of the display will prompt **‘Enter Ev ON time’**.
14. Enter the required time for the event to be turned ON, starting at the tens of hours. After each numeric entry, the cursor will be advanced to the next position.
15. Proceed to step 18 below if the event output type ‘Pulsed’ was selected at step 11 above.
16. After the event ON time entry, the display cursor will advance to the event OFF time position and the bottom line of the display will prompt **‘Entr Ev OFF time’**.

17. Enter the required time for the event to be turned OFF, starting at the tens of hours. After each numeric entry, the cursor will be advanced to the next position.
18. After the event time has been entered, the display cursor will be advanced to the output channel position and the bottom line of the display will prompt **'O/P 1-5 or 6=All'**.
19. Enter the required output channel number that the event is to activate. The number must be in the range 1 to 5. If all the output channels are required to be activated together by the event time, enter the value 6.
20. After the output channel number has been entered, the display will be cleared and the bottom line of the display will prompt **'Save event ?'**. This gives the programmer the choice of whether to save the programmed event into memory or not.
21. Enter 'Yes' to save the event or 'No' to discard it.
22. The display now prompts **'Exit ?'**. This gives the programmer the choice of exiting the 'Programmed Events' mode or to allow another event to be programmed.
23. Enter 'Yes' to exit or 'No' to programme the next event.
24. Repeat steps 4 to 23 above if the next event is to be programmed. If 'Exit' is selected, the display will revert back to the prompt 'Enter Mode (1-5)' and the cursor will flash the question mark '?' again.

4.3.2 Programme Events for the 7-day mode of operation.

1. Switch the keyswitch from 'Run' to 'Programme' position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **'Enter Mode (1-5)'** on the bottom line and the cursor will be flashing a question mark '?' at the start of the top line.
3. Enter the numeric value 3 at the keypad to 'Programme Events'. The displayed '?' will be replaced with an 'E'.
4. The display cursor will be advanced to the day number position and the bottom line of the display will prompt **'Enter Day (1-7)'**.
5. Enter the required day number for the event, within the range 1 to 7.

   1 = **Su**nday 3 = **Tu**esday 5 = **Th**ursday 7 = **Sa**turday
   2 = **Mo**nday 4 = **We**dnesday 6 = **Fr**iday
6. The display cursor will be advanced to the event number position and the bottom line of the display will prompt **'Enter Evnt(1-16)'**.
7. Enter the required event number within the range 01 to 16. If it is less than 10, the event number must be preceded with a zero, e.g. 01, 09.
8. If the display shows '- - : - -' (cleared event) proceed to step 13 below, else continue.
9. The bottom line of the display will prompt **'Clear the event?'**.
10. If the event time is to be cleared (event not required) press 'Yes' and then continue at the next step. If the event time is not to be cleared press 'No' and then proceed to step 13 below.
11. The bottom line of the display will prompt **'Save new event ?'**.
12. To save the cleared event time in memory press 'Yes' and then proceed to step 24 below. If the cleared event time is not to be saved in memory press 'No' and then continue at the next step (the event time initially displayed is still held in memory).
13. The display cursor will be advanced to the event output type position and the bottom line of the display will prompt **'Enter Type (1-2)'**.

14. Enter the numeric value 1 or 2 to select the event output type to be Latched or Pulsed.
    1 = Latched 2 = Pulsed
15. The display cursor will be advanced to the event ON time position and the bottom line of the display will prompt **'Enter Ev ON time'**.

16. Enter the required time for the event to be turned ON, starting at the tens of hours. After each numeric entry, the cursor will be advanced to the next position.
17. Proceed to step 20 below if the event output type 'Pulsed' was selected at step 13 above.
18. After the event ON time entry, the display cursor will advance to the event OFF time position and the bottom line of the display will prompt **'Entr Ev OFF time'**.
19. Enter the required time for the event to be turned OFF, starting at the tens of hours. After each numeric entry, the cursor will be advanced to the next position.
20. After the event time has been entered, the display cursor will be advanced to the output channel position and the bottom line of the display will prompt **'O/P 1-5 or 6=All'**.
21. Enter the required output channel number that the event is to activate. The number must be in the range 1 to 5. If all the output channels are required to be activated together by the event time, enter the value 6.
22. After the output channel number has been entered, the display will be cleared and the bottom line of the display will prompt **'Save event ?'**. This gives the programmer the choice of whether to save the programmed event into memory or not.
23. Enter 'Yes' to save the event or 'No' to discard it.
24. The display now prompts **'Exit ?'**. This gives the programmer the choice of exiting the 'Programmed Events' mode or to allow another event to be programmed.
25. Enter 'Yes' to exit or 'No' to programme the next event.
26. Repeat steps 4 to 25 above if the next event is to be programmed. If 'Exit' is selected, the display will revert back to the prompt 'Enter Mode (1-5)' and the cursor will flash the question mark '?' again.

4.4 Copy Events.

This feature is only available when the TU16 has been configured to operate in the 7-day mode.

1. Switch the keyswitch from 'Run' to 'Programme' position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **'Enter Mode (1-5)'** on the bottom line and the cursor will be flashing a question mark '?' at the start of the top line.
3. Enter the numeric value 4 at the keypad to 'Copy Events'. The display will be cleared and the prompt **'Copy day events?'** will be given.
4. Enter 'Yes' to copy the sixteen daily events from one day to another, or 'No' to exit.
5. If copying is required, the display will prompt **'Copy Day _ to _'** on the top line and **'Enter Day (1-7)'** on the bottom line. The display cursor will be advanced to the source day number.
6. Enter the source day number, within the range 1 to 7, of the sixteen-programmed events to be copied from.
7. The display cursor will be advanced to the destination day number.
8. Enter the destination day number, within the range 1 to 7, for the sixteen-programmed events to be copied to.
9. When entered, the bottom line of the display will prompt **'Are you sure ?'**.
10. Entering 'Yes' will start the block copy to the destination day address in memory. Entering 'No' will prevent the block copy to memory.
11. The display now prompts **'Exit ?'**. This gives the programmer the choice of exiting the 'Copy Events' mode or to allow another block copy.
12. Enter 'Yes' to exit or 'No' to do another block copy.

13. Repeat steps 5 to 12 above if another block copy is required. If ‘Exit’ is selected, the display will revert back to the prompt ‘Enter Mode (1-5)’ and the cursor will flash the question mark ‘?’ again.

4.5 View Events…

The viewing mode allows the authorised user to check all the programmed events without the danger of accidental change to any event. Keeping the YES key pressed at the ‘View Next ?’ display prompt will auto-step through the events, thus reducing the number of key depressions required during the viewing.

1. Switch the keyswitch from ‘Run’ to ‘Programme’ position (arrow pointing to Programme). The Programme LED will be illuminated on the lid of the TU16.
2. The display will prompt **‘Enter Mode (1-5)’** on the bottom line and the cursor will be flashing a question mark ‘?’ at the start of the top line.
3. Enter the numeric value 5 at the keypad to ‘View Events’. The display will be cleared and the prompt **‘View day events?’** will be given.
4. Action the simple display prompts as required, when they are given.

5. Run mode…

After the TU16 has been programmed, the keyswitch must be returned to the ‘Run’ position and the key removed. The keypad will be ineffective and the LCD will show the current time of day.

For latched output event types, the output channel relays will be activated at the programmed ON times and de-activated at the programmed OFF times.
For pulsed output event types, the output channel relays will be activated at the programmed ON times and de-activated after two seconds.

Illuminated LEDs on the lid of the unit will indicate active output channels.

APPENDIX

In the following examples, the event time indicated by - -:- - denotes a time not being used. Clearing events during programming is simply done by answering 'Yes' to the display prompt 'Clear the Event ?'. Alternatively enter 24:00 as the event time, this is the value assigned to all cleared (not used) events.

1. Examples of programming latched events to be ON for periods longer than 1 day.

   i) Event number 1 to be activated on Monday morning at 08:00 hours and de-activated on Friday afternoon at 17:00 hours.

Day #	Event #	Event time	Output Channel #	Comments
Su 1	01	- -:- - ON	1	No action taken by timer unit.
Su 1	01	- -:- - OFF	1	No action taken by timer unit.
Mo 2	01	08:00 ON	1	**Initial activation of event # 1.**
Mo 2	01	- -:- - OFF	1	Enter 24:00, no action taken by timer unit.
Tu 3	01	00:00 ON	1	Event #1 on at midnight.
Tu 3	01	- -:- - OFF	1	Enter 24:00, no action taken by timer unit.
We 4	01	00:00 ON	1	Event #1 on at midnight.
We 4	01	- -:- - OFF	1	Enter 24:00, no action taken by timer unit.
Th 5	01	00:00 ON	1	Event #1 on at midnight.
Th 5	01	- -:- - OFF	1	Enter 24:00, no action taken by timer unit.
Fr 6	01	00:00 ON	1	Event #1 on at midnight.
Fr 6	01	17:00 OFF	1	**De-activate event # 1.**
Sa 7	01	- -:- - ON	1	No action taken by timer unit.
Sa 7	01	- -:- - OFF	1	No action taken by timer unit.

   ii) Event number 2 to be activated on Friday afternoon at 17:01 hours and de-activated on Monday morning at 07:59 hours.

Day #	Event #	Event time	Output Channel #	Comments
Su 1	02	00:00 ON	2	Event # 2 on at midnight.
Su 1	02	- -:- - OFF	2	Enter 24:00, no action taken by timer unit.
Mo 2	02	00:00 ON	2	Event # 2 on at midnight.
Mo 2	02	07:59 OFF	2	**De-activate event # 2.**
Tu 3	02	- -:- - ON	2	No action taken by timer unit.
Tu 3	02	- -:- - OFF	2	No action taken by timer unit.
We 4	02	- -:- - ON	2	No action taken by timer unit.
We 4	02	- -:- - OFF	2	No action taken by timer unit.
Th 5	02	- -:- - ON	2	No action taken by timer unit.
Th 5	02	- -:- - OFF	2	No action taken by timer unit.
Fr 6	02	17:01 ON	2	**Initial activation of event # 2.**
Fr 6	02	- -:- - OFF	2	Enter 24:00, no action taken by timer unit.

Sa	7	02	00:00	ON	2	Event # 2 on at midnight.
Sa	7	02	- -:- -	OFF	2	Enter 24:00, no action taken by timer unit.

6. Specification...

24 hour or 7 day operation:	Selectable by internal jumper link.
Programmable Events:	16 per day (112 per week in the 7 day operating mode).
Programmable Event Types:	Pulse for 2 seconds or Latched ON and OFF time.
Minimum latched event ON time:	1 minute.
Maximum latched event ON time:	
- 24 hr operating mode	23 hours 59 minutes.
- 7 day operating mode	167 hours 59 minutes.
Programmable Output Channels:	5.
Output channel relay rating:	SPCO, Contact rating 0.5A @ 125V AC, 1A @ 24V DC Max switched voltage 60V DC, 125V AC.
Programmed memory:	Stored in EEPROM, 40 years power failure protection.
Operating temperature range:	0 to 40 degrees Centigrade.
LCD display:	2 lines x 16 characters per line, character size 2.96 x 5.56mm, back-lit.
Keypad:	Numeric 0 – 9 (3 x 4 matrix).
Security:	By keylock switch on the lid of the unit.
Visual status indication:	By LED indicators protruding the lid of the unit.
Connections:	Screw terminals on PCB.
Standards:	EMC EN50081-1 (Generic)
Power requirements:	240V AC 50/60Hz, with provision for 24V DC battery backup.
Power consumption:	< 6 Watt @ 240V AC, 250mA @ 24V DC.
Case material:	Light grey painted metal.
Case dimensions (mm):	183L x 123W x 60H
Weight:	1.2kg

CIE Ltd reserve the right to alter the above specification without prior notice.

7. USER PROGRAMMING TABLE.

DAY / EVENT	EVENT NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN	HR:MN
1. SUN ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
2. MON ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
3. TUE ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
4. WED ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
5. THU ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
6. FRI ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																
7. SAT ON	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
OFF	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
O/P (1to 5 or all = 6) and Pulse or Latch (P or L)																

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