811 and 851 TIMESWITCHES

Seven day timeswitches for commercial applications

The 811 and 851 timeswitches each allow time control of a single output channel. The 811 will switch directly up to 30 amp resistive loads, whilst the 851 will switch up to 10 amp resistive load with changeover contacts. Both units have voltage free output contacts.

BOTH UNITS INCORPORATE:-

200 event memory.
Up to 200 ON or OFF switching times can be set over the seven day period, with a setting resolution of one minute.

Key protection.
Programmes can only be entered or cancelled with the security key in position, thus stopping unauthorised or accidental programme amendments.

Keypad membrane.
Instructions are entered via a touch sensitive keypad, which gives visual and audible verification of action. The keypad membrane prevents dust and dirt getting into the unit, which is maintenance free.
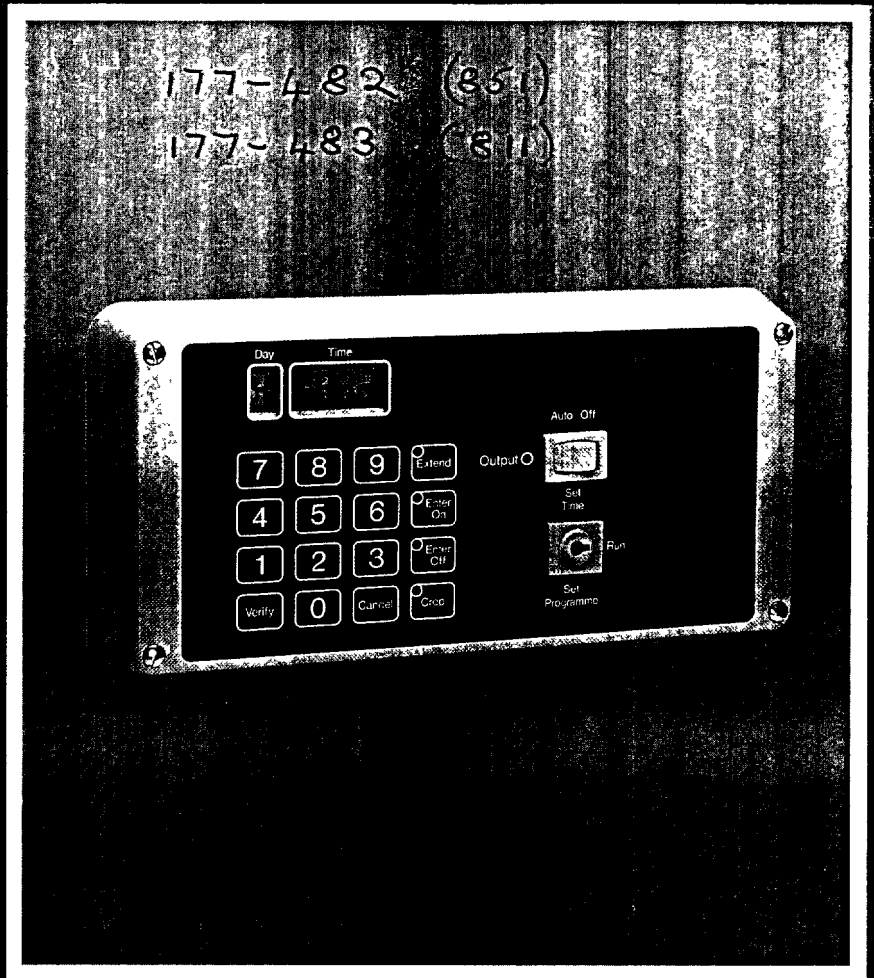
EXTEND and CROP overrides.
Touching an EXTEND keypad once will switch the output ON, if OFF, for a pre-set 1,2,3 or 4 hour period. If already ON, this period will extend by the pre-set time. CROP means 'Cancel Remainder of ON Programme' and touching this keypad turns the output OFF if ON. Both overrides are self-cancelling after the override period has elapsed, and are operated without the security key in position. A second touch of the relevant keypad will immediately cancel the override and revert back to the programmed cycle.

Battery back up.
The integral re-chargeable battery will retain programme and time of day settings for up to three months in the event of any power failure.

Square or double gang conduit box adaptors are available as accessories.

Randall

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TECHNICAL SPECIFICATION

WIDTH	226mm
HEIGHT	112mm
DEPTH	50mm
ELECTRICAL VOLTAGE RATING	220/240 A.C. 50Hz
MAX CURRENT RATING 811	30 amp (resistive) SPST
851	10 amp (resistive) SPDT
	Both have voltage free contacts
TEMPERATURE RATING	0-45°C

The unit should be installed by a competent electrician and the installation should conform to I.E.E. Wiring Regulations. The unit should be wired through a class A disconnect in accordance with BS3955 e.g. via a plug and socket or double pole switched outlet. Generous sized wiring terminals are clearly identified. Each unit is individually packed in a robust box, complete with full installation and operating instructions. All units are fully guaranteed with clear indication of warranty expiry date on the inside of the unit.
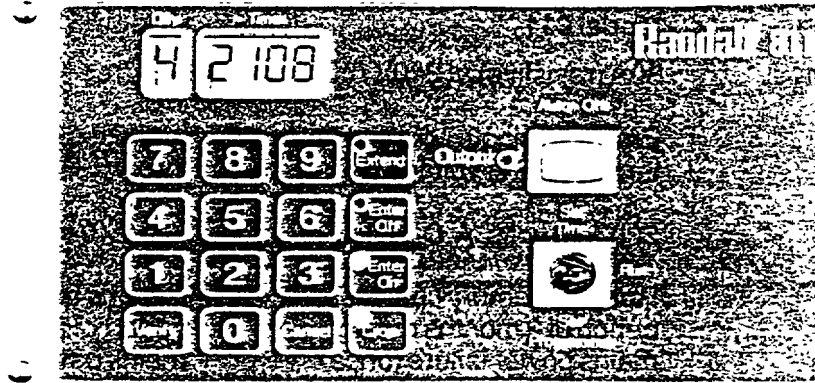
Randall Seven Day Single Channel Electronic Timeswitches

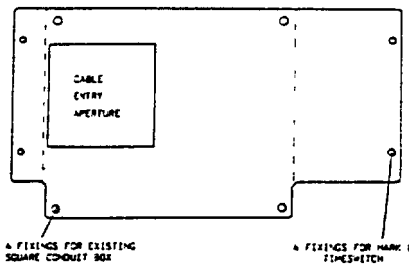## Installation and Wiring Instructions for Models 811 & 851

The Model 811 or 851 timeswitch must be installed by a competent electrician and the installation should conform to IEE Wiring Regulations.
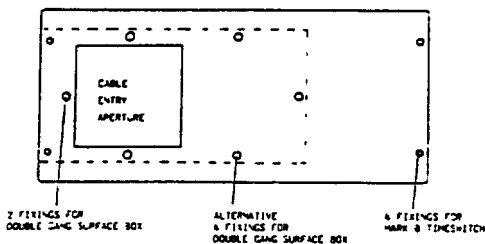
Installation and Wiring

1. Slacken the four fixing screws, one in each corner of the unit, and carefully separate the front and rear portions. Unplug the ribbon cable from the rear portion. **CAUTION** Do not allow either half of the unit to hang by the ribbon cable as damage could be caused.

2. Remove the polystyrene packing piece from the top of the transformer. It is marked 'REMOVE'.

3. Select the desired fixing position and observe the label **'THIS WAY UP'** inside the rear portion. The two halves will only assemble correctly one way round.

4. Four fixing holes are provided for attaching the rear portion to the wall or mounting surface.
Conduit box adaptors as shown below are available if required.

PART NO: 8/3222 Square Conduit Box Adaptor

PART NO: 8/3223 Double Gang Surface Box Adaptor

5. Surface cable entries to the units can be made from above, below or from the left hand side. Conduit or recessed cable entry is through the aperture in the rear moulding.

6. For surface cable entry remove the appropriate knock-out and ensure one of the two cable clamps is positioned correctly.

7. Connections to the units should be made as shown below.
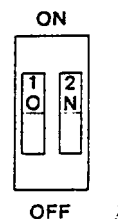
Model 811

Model 851
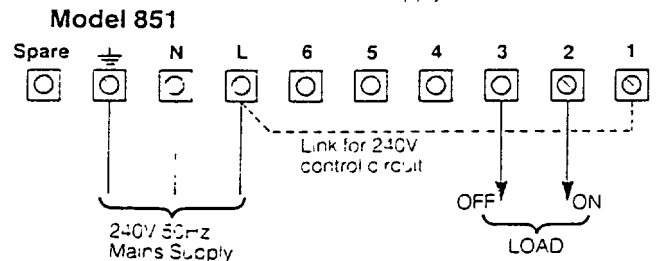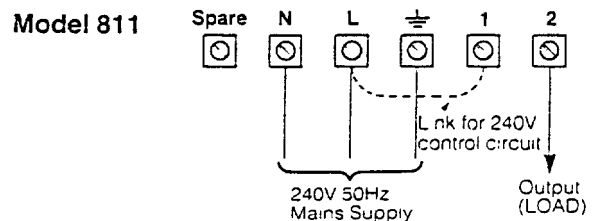
If the control circuit is to operate at 240V then terminals L & 1 must be linked ensuring that the cable is sheathed and of a size to carry the required load current.

If, however, the control circuit is operating at other than 240V then no link should be fitted and for Model 811 both terminals 1 and 2 should be connected to the load circuit; for Model 851 terminals 1, 2 and 3 (if required) should be connected to the load circuit.

8. The unit is supplied with the Extend facility set at 1 hour This can be set to any of 4 periods (1, 2, 3, or 4 hours) by setting the 2 position rocker switches in one of 4 positions as follows:

Switch No	Switch Position	Extend Period
1	OFF	1 HOUR
2	OFF	(as supplied)
1	ON	2 HOURS
2	OFF	
1	OFF	3 HOURS
2	ON	
1	ON	4 HOURS
2	ON	

9. Upon completion of wiring plug in the ribbon cable ensuring the polarised plug is fully inserted into the socket. Refit the front half of the timeswitch ensuring correct alignment and that no cables are trapped before re-tightening the screws.

Technical Specification	Model 811	Model 851
Max. current rating of output	30A (resistive) at 240V A.C.	10A (resistive) at 240 A.C.
Output contacts	Enclosed single pole single throw (SPST) voltage free.	Enclosed single pole double throw (SPDT) voltage free.
Mains supply required	220/240 volts. A.C. 50 Hz	220/240 volts. A.C. 50 Hz.
Battery reserve	Retains memory settings for a period of 3 months during mains power failure (once battery is fully charged).	Retains memory settings for a period of up to 3 months during mains power failure (once battery is fully charged).
Temperature Rating	0°C to +45°C	0°C to +45°C
Max. number of programmable operations	200 which may be freely allocated throughout the 7 days.	200 which may be freely allocated throughout the 7 days.
Setting resolution	1 minute	1 minute
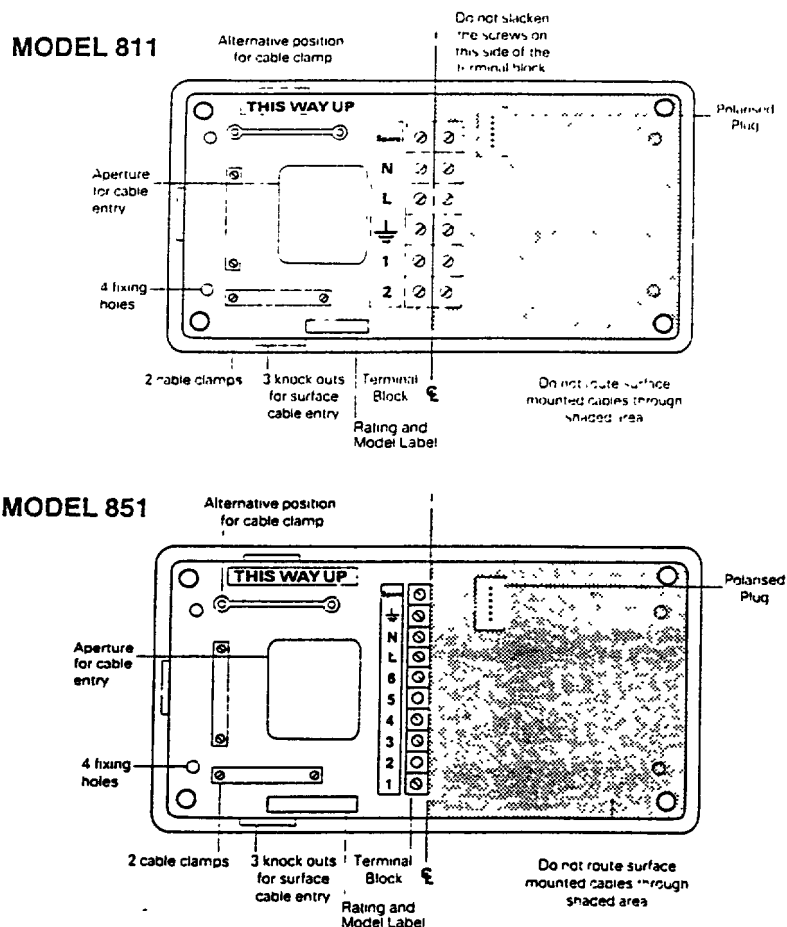
MODEL 811

MODEL 851

Randall Electronics Limited

Randall
Seven Day 2 Channel Electronic Timeswitch

Technical Specification for Model 852 .

Max. current rating of output	10A* (resistive) at 240V AC on each channel *Note: total loading on unit must not exceed 10 amps
Output contacts	Enclosed single pole double throw (SPDT) voltage free on each channel.
Mains supply required	220/240 volts. AC 50 Hz
Battery reserve	Retains memory setting for a period of up to 3 months during mains power failure (once battery is fully charged).
Temperature Rating	0°C to +45°C
Max. number of programmable operations	200 which may be freely allocated throughout 7 days.
Setting resolution	1 minute
I.P. RATING Classification of degrees of protection provided by enclosures: BS 5490	IP4X if cable entry is from the rear only and unit is directly mounted onto a wall, not allowing access.

Alternative position for cable clamp

THIS WAY UP

Polarised Plug

Aperture for cable entry

Spare, N, L, 6, 5, 4, 3, 2, 1

4 fixing holes

2 cable clamps

3 knock outs for surface cable entry

Terminal Block

Rating and Model Label

Do not route surface mounted cables through shaded area

Installation and Wiring Instructions for Model 852

The Model 852 timeswitch must be installed by a competent electrician and the installation should conform to IEE Wiring Regulations.

Installation and Wiring

1. Slacken the four fixing screws, one in each corner of the unit, and carefully separate the front and rear portions. Unplug the ribbon cable from the rear portion. **CAUTION** Do not allow either half of the unit to hang by the ribbon cable as damage could be caused.
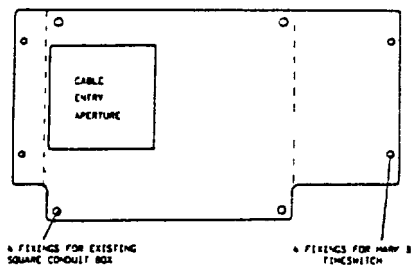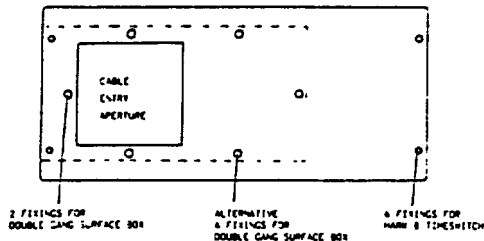
2. Remove the polystyrene packing piece from the top of the transformer. It is marked 'REMOVE'.

3. Select the desired fixing position and observe the label 'THIS WAY UP' inside the rear portion. The two halves will only assemble correctly one way round.

4. Four fixing holes are provided for attaching the rear portion to the wall or mounting surface.
   Conduit box adaptors as shown below are available if required.

**PART NO: 8/3222 Square Conduit Box Adaptor**

PART NO: 8/3223 Double Gang Surface Box Adaptor

5. Surface cable entries to the unit can be made from above, below or from the left hand side. Conduit or recessed cable entry is through the aperture in the rear moulding.

6. For surface cable entry remove the appropriate knock-out and ensure one of the two cable clamps is positioned correctly.

7. Connections to the unit should be made as shown below.
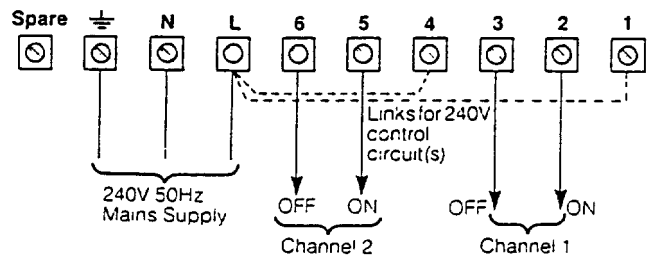
If the control circuits are to operate at 240V then terminals L, 1 and 4 must be linked ensuring that the cable is sheathed and of a size to carry the required load current.

If, however, the control circuit(s) are operating at other than 240V then terminals 1, 2 and 3 (if required) should be connected to the load controlled by Channel 1, and terminals 4, 5 and 6 (if required) to the load current controlled by Channel 2.

8. The unit is supplied with the Extend facility set at 1 hour. This can be reset to any of four periods (1, 2, 3 or 4 hours) by altering the pair of two position rocker switches (situated on the rear of the front half of the unit) to any of four positions as follows:

Switch No	Switch Position	Extend Period
1	OFF	1 HOUR
2	OFF	(as supplied)
1	ON	
2	OFF	2 HOURS
1	OFF	
2	ON	3 HOURS
1	ON	
2	ON	4 HOURS

9. Upon completion of wiring, plug in the ribbon cable ensuring the polarised plug is fully inserted into the socket. Refit the front half of the timeswitch ensuring correct alignment and that no cables are trapped before re-tightening the screws.

Day of Week Display
Time of Day Display Programme Indicator Lights
Output Indicator Lights

Randall 852

10 Numeric Keypads

2 position Selector Switches

4 Position Keyswitch
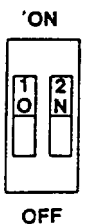
8 Function Keypads
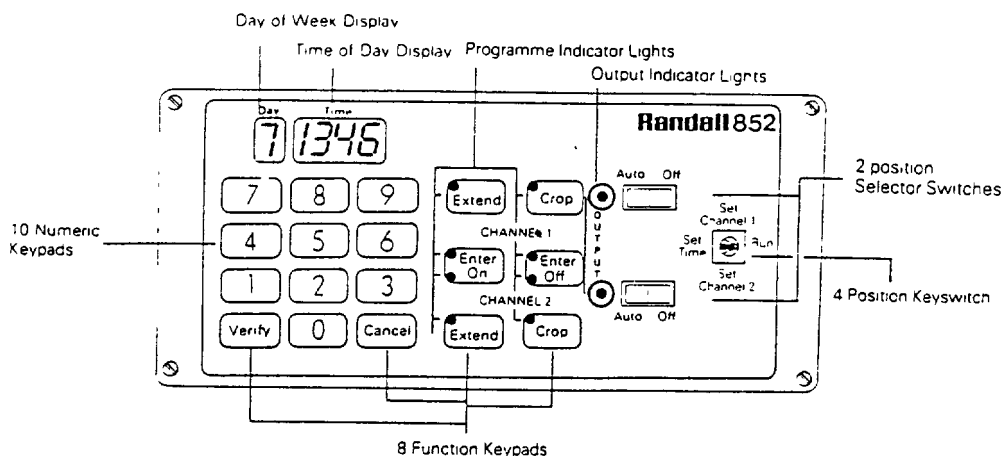
CAUTION The unit operates at mains voltage and should only be opened by a qualified engineer after disconnection from the mains supply

3

Description

The **Day** and **Time** are displayed as five digits on a liquid crystal display (L C D)

The first digit in its separate window marked **Day** will be a numeral from 1 to 7 which may be allocated in sequence to the days of the week at the user's discretion The normal convention is Monday = 1, Tuesday = 2 .. .. .. Sunday = 7

The remaining four digits in the window marked **Time** will display the time to a resolution of one minute from 0000 to 2359

A short 'bleep' will be heard when a keypad is pressed In addition when a numeric keypad is pressed the associated digit of the L C D will either blink or change

There are ten red indicator lights Eight (4 per channel) are associated with the keypads (Enter On) (Enter Off) (Extend) (Crop) and two (1 per channel) labelled 'Output'.

The 2 position selector switches may be set to **Off** to override the programmes or they may be set to **Auto** to follow the programme which has been set

On the respective channels the programme indicator lights will switch on and off to follow the set programme events in both the selector switch positions but the output status indicator lights will only be on if the selector switch is at **Auto** and either the **Enter On** or **Extend** indicator lights are on

If the **Enter On** and **Crop** indicator lights for any one channel are on, the output status indicator light for that channel will be off

It is recommended that the key be removed from the keyswitch to prevent unauthorised or accidental changes to the settings The key can only be removed when in the **Run** position

4

Time Of Day

The mains electricity supply must be ON, the key inserted and turned to the **Set Time** position before carrying out the operations detailed on this page.

When the timeswitch is first connected, or when the battery has been allowed to discharge fully, and the mains electricity supply is switched ON a dash (—) will be displayed in each of the five digit positions.

Decide which day of the week you wish to assign as Day 1.

Press the number key representing the current day of the week (listen for the 'bleep')

The remaining days will be automatically numbered in sequence

Key in the time using four keypads e g. 8:30 a m. must be keyed as (0) (8) (3) (0) and 6 15 p.m. as (1) (8) (1) (5)

The unit will not allow the entry of a spurious day or time e g. day 8 will not be accepted nor will a time entry of 3600 Depression of an out of range key will not register on the display; the L C D digit will blink but remain unchanged until an acceptable number is keyed

DO NOT PRESS ANY FUNCTION KEYPADS.

Returning the key to the **Run** position will enter the time shown on the display

5

The mains electricity supply must be ON the key inserted and turned to set **Channel 1** position before carrying out any of the operations detailed on this page

If the **Day** and **Time** are displayed as a series of dashes (-) (----) then set TIME OF DAY as described on page 5 before proceeding to set any switching times, alternatively the display will show the current day and time

Since the timeswitch is capable of automatically carrying out up to 200 switching operations it is recommended that the required programme be tabulated before setting is commenced noting that the day number on display is the current day of the week A table is provided on Page 9 for this purpose

In addition facilities are provided to record the programmes entered on the enclosed card which can then be located adjacent to the unit if required

It is not essential to key in the programme in sequence since it will automatically be sorted into chronological order

To set a programme event:

First press the number key representing the day of the week to be programmed

Secondly, key in the time using four numeric keypads in the range 0000 to 2359

Finally press either (Enter On) or (Enter Off) to enter the required event into the memory

The unit will not allow the entry of a spurious day or time e g day 8 will not be accepted nor will a time entry of 3600

Depression of an out of range key will not register on the display, the L C D digit will blink but remain unchanged until an acceptable number is keyed

Proceed with the programming of every event using the same entry sequence

If an attempt is made to exceed 200 programme events then the display will show (F) (FFFF) indicating that the memory is full

If an incorrect key is pressed then press the (Cancel) key and re-commence the sequence

If a programme event is repeated at the same time on different days then the keying may be simplified as follows Key in the first event using the normal entry sequence Now simply key in the new day number and then (Enter On) or (Enter Off) as required.

The appropriate indicator lights at the top left of the keypad will illuminate.

The complete programme may be checked by the use of the (Verify) key Each press of this key will advance the programme by one event allowing a complete review in chronological sequence commencing from the day and time on display If a particular day's programme is to be reviewed then key the day number followed by (0)(0)(0)(0) and (Verify) when the first programmed event for that day will be displayed then proceed with repeated presses of the (Verify) key

When re-programming one or more events, unwanted events must be cleared by advancing to the event in question using the (Verify) key as explained above and then clearing it by a single press on the (Cancel) key

When programming of **Channel 1** is complete, turn the key to **Set Channel 2** and enter the programme required for this channel in the same manner

When pressing either of the **Enter** keypads the appropriate indicator light at the bottom left of the keypad will illuminate

Note: The 200 switching operations are able to be freely spread over both channels. If a common event time is required on both channels this represents only one switching operation

To clear the entire programme on both channels, press and hold down the (Cancel) key for approx. 3 seconds until the display shows (E) (EEEE)

On completion of programming return the key to **Run** and both selector switches to **Auto**

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Battery Reserve

The unit does not rely on the internal battery in order to work satisfactorily providing the mains power supply is connected to the unit. The battery is fitted purely to memorise the Time of Day and selected Switching Times in the event of a power failure or disconnection of supply.

When the unit is first connected, it will require a minimum of 24 hours to become sufficiently charged in order to perform this memory function. Thereafter the battery is automatically recharged.

If the mains power supply is lost for any reason, the display and lights on the unit will go out and the output will be switched off. The battery will maintain the memory for a period of up to 3 months during this condition. When the power supply is restored, the unit will automatically switch on again and resume the set programme without any resetting being necessary.

Extend Facility

The mains electricity supply must be ON and the keyswitch set to **Run** before carrying out the operations detailed on this page

At the time of installation the extend period can be set to provide 1 2, 3 or 4 hours (Note the unit leaves the factory with this set at 1 hour)

Pressing the appropriate (Extend) key allows an additional period of operation (1, 2, 3 or 4 hours dependent upon setting) without disturbing the set programme on that channel

If the key is pressed when the output is 'Off' it will switch the relative channel on immediately and will automatically switch off after the Extend period has elapsed The associated red indicator light will be illuminated throughout the Extend period

If the key is pressed when the output is 'On' the current 'On' period on the relative channel will be extended by the length of the Extend period

The red indicator light will be illuminated until the output is switched off

The Extend facility may be cancelled at any time by pressing the key again when the indicator light will go out and the unit will revert to the set programme

Crop Facility

This facility enables a current 'On' period to be cancelled without having to disturb the set programme

If the (Crop) key is pressed when the output light is illuminated it will switch the output off on the relative channel until the next programmed 'On' event During the remainder of the present 'On' period the associated red light will be illuminated and the output light will be off The programme event lights will remain unchanged

Pressing the (Crop) key again will cancel the crop facility and restore the unit to the set programme

(Note Pressing the (Crop) key when the output is already programmed to be off will have no effect)

8

Record of Programme

Example	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Assigned Day No	1		2		3		4		5		6		7	
Event/Time	ON OFF	0830 1342	ON OFF	0929 2317	ON OFF ON	0436 1129 1916	OFF ON OFF	0034 0708 1723	ON OFF	0929 2317	ON OFF	0853 1342		

Record	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Assigned Day No														
Event/Time **Channel** **1**														
Channel **2**														

9

The mains electricity supply must be ON the key inserted and turned to the **Set Time** position before carrying out the operations detailed on this page

When the timeswitch is first connected or when the battery has been allowed to discharge fully and the mains electricity supply is switched ON a dash (—) will be displayed in each of the five digit positions

Decide which day of the week you wish to assign as Day 1

Press the number key representing the current day of the week (listen for the bleep)

The remaining days will be automatically numbered in sequence

Key in the time using four keypads e g 8 30 a m must be keyed as [0] [8] [3] [0] and 6 15 p m as [1] [8] [1] [5]

The unit will not allow the entry of a spurious day or time e g day 8 will not be accepted nor will a time entry of 3600 Depression of an out of range key will not register on the display, the L C D digit will blink but remain unchanged until an acceptable number is keyed

DO NOT PRESS ANY FUNCTION KEYPADS.

Returning the key to the **Run** position will enter the time shown on the display

5

Setting Switching Times

Proceed with the programming of every event using the same entry sequence

If an attempt is made to exceed 200 programme events then the display will show (F) (FFFF) indicating that the memory is full

If an incorrect key is pressed then press the (Cancel) key and re-commence the sequence

If a programme event is repeated at the same time on different days then the keying may be simplified as follows Key in the first event using the normal entry sequence Now simply key in the new day number and then (*Enter On) or (*Enter Off) as required

The complete programme may be checked by the use of the (Verify) key Each press of this key will advance the programme by one event allowing a complete review in chronological sequence commencing from the day and time on display If a particular day's programme is to be reviewed then key the day number followed by [0] [0] [0] [0] and (Verify) when the first programmed event for that day will be displayed then proceed with repeated presses of the (Verify) key

When re-programming one or more events, unwanted events must be cleared by advancing to the event in question using the (Verify) key as explained above and then clearing it by a single press on the (Cancel) key

To clear the entire programme on both channels, press and hold down the (Cancel) key for approx 3 seconds until the display shows (E) (EEEE)

On completion of programming return the key to **Run** and the selector switch to **Auto**

7

Record of Programme

Example	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Assigned Day No	1		2		3		4		5		6		7	
Event/Time	ON OFF	0830 1342	ON OFF	0929 2317	ON OFF ON	0436 1129 1916	OFF ON OFF	0034 0708 1723	ON OFF	0929 2317	ON OFF	0853 1342		

Record	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Assigned Day No														
Event/Time														

9

Setting Switching Times

The mains electricity supply must be ON the key inserted and turned to the **Set Programme** position before carrying out any of the operations detailed on this page

If the **Day** and **Time** are displayed as a series of dashes ⊝ (----) then set TIME OF DAY as described on page 5 before proceeding to set any switching times, alternatively the display will show the current day and time

Since the timeswitch is capable of automatically carrying out up to 200 switching operations it is recommended that the required programme be tabulated before setting is commenced noting that the day number on display is the current day of the week A table is provided on Page 9 for this purpose

In addition facilities are provided to record the programme entered on the enclosed card which can then be located adjacent to the unit if required

It is not essential to key in the programme in sequence since it will automatically be sorted into chronological order

To set a programme event

First press the number key representing the day of the week to be programmed

Secondly key in the time using four numeric keypads in the range 0000 to 2359

Finally press either (•Enter On) or (•Enter Off) to enter the required event into the memory

The unit will not allow the entry of a spurious day or time e.g. day 8 will not be accepted nor will a time entry of 3600

Depression of an out of range key will not register on the display, the L C D digit will blink but remain unchanged until an acceptable number is keyed

6

Extend Facility

The mains electricity supply must be ON and the keyswitch set to **Run** before carrying out the operations detailed on this page

At the time of installation the extend period can be set to provide 1, 2, 3 or 4 hours (Note the unit leaves the factory with this set at 1 hour)

Pressing the (•Extend) key allows an additional period of operation (1, 2, 3 or 4 hours dependent upon setting) without disturbing the set programme

If the key is pressed when the output is 'Off' it will switch on immediately and will automatically switch off after the extend period has elapsed
The associated red indicator light will be illuminated throughout the extend period

If the key is pressed when the output is 'On' the current 'On' period will be extended by the length of the extend period
The red indicator light will be illuminated until the output is switched off

The Extend facility may be cancelled at any time by pressing the key again, when the indicator light will go out and the unit will revert to the set programme

Crop Facility

This facility enables a current 'On' period to be cancelled without having to disturb the set programme

If the (•Crop) key is pressed when the output light is illuminated it will switch the output off until the next programmed 'On' event
During the remainder of the present 'On' period the associated red light will be illuminated and the output light will be off
The programme event light will remain unchanged.

Pressing the (•Crop) key again will cancel the Crop facility and restore the unit to the set programme

Note. Pressing the (•Crop) key when the output is already programmed to be off will have no effect

8

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Battery Reserve

The unit does not rely on the internal battery in order to work satisfactorily providing the mains power supply is connected to the unit. The battery is fitted purely to memorise the Time of Day and selected Switching Times in the event of a power failure or disconnection of supply.

When the unit is first connected, it will require a minimum of 24 hours to become sufficiently charged in order to perform this memory function. Thereafter the battery is automatically recharged.

If the mains power supply is lost, for any reason, the display and lights on the unit will go out and the output will be switched off. The battery will maintain the memory for a period of up to 3 months during this condition. When the power supply is restored, the unit will automatically switch on again and resume the set programme without any resetting being necessary.

Models 811 and 851 are identical in appearance except for the model number shown on the facia

The **Day** and **Time** are displayed as five digits on a liquid crystal display (L C D)

The first digit in its separate window marked **Day** will be a numeral from 1 to 7 which may be allocated in sequence to the days of the week at the user's discretion. The normal convention is Monday = 1 Tuesday = 2   Sunday = 7

The remaining four digits in the window marked **Time** will display the time to a resolution of one minute from 0000 to 2359

A short bleep will be heard when a keypad is pressed. In addition when a numeric keypad is pressed the associated digit of the L C D will either blink or change

There are five red indicator lights. Four are associated with the keypads (Extend) (Enter On) (Enter Off) and (Crop) and 1 labelled 'Output'.
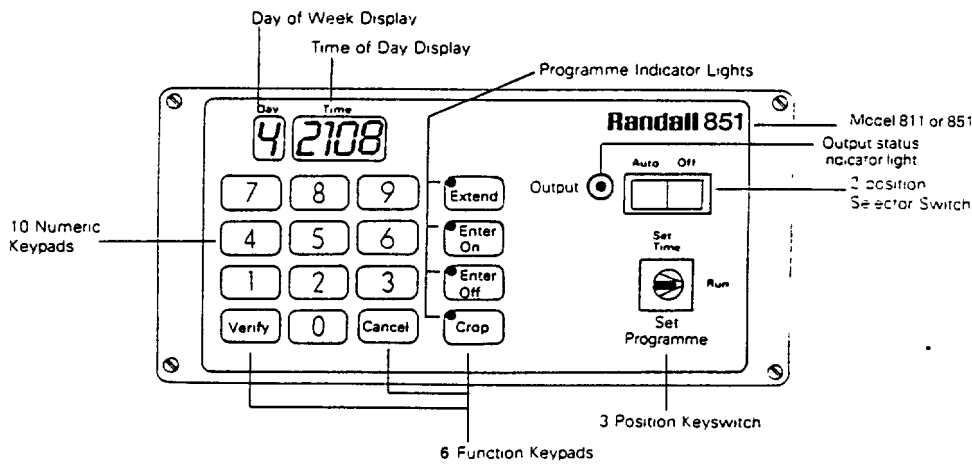
The 2 position selector switch may be set to **Off** to override the programmes or they may be set to **Auto** to follow the programme which has been set. The programme indicator lights will switch on and off to follow the set programme events in both the selector switch positions but the output status indicator light will only be on if the selector switch is at **Auto** and either the **Enter On** or **Extend** indicator lights are on

If the **Enter On** and **Crop** indicator lights are On the output status indicator light will be off

It is recommended that the key be removed from the keyswitch to prevent unauthorised or accidental changes to the settings
The key can only be removed when in the **Run** position

4

The Controls

Day of Week Display
Time of Day Display
Programme Indicator Lights
Model 811 or 851
Output status indicator light
2 position Selector Switch
10 Numeric Keypads
6 Function Keypads
3 Position Keyswitch

CAUTION The unit operates at mains voltage and should only be opened by a qualified engineer after disconnection from the mains
3   supply