

# **SEQUENTIAL TIMER**

**MODEL-150**

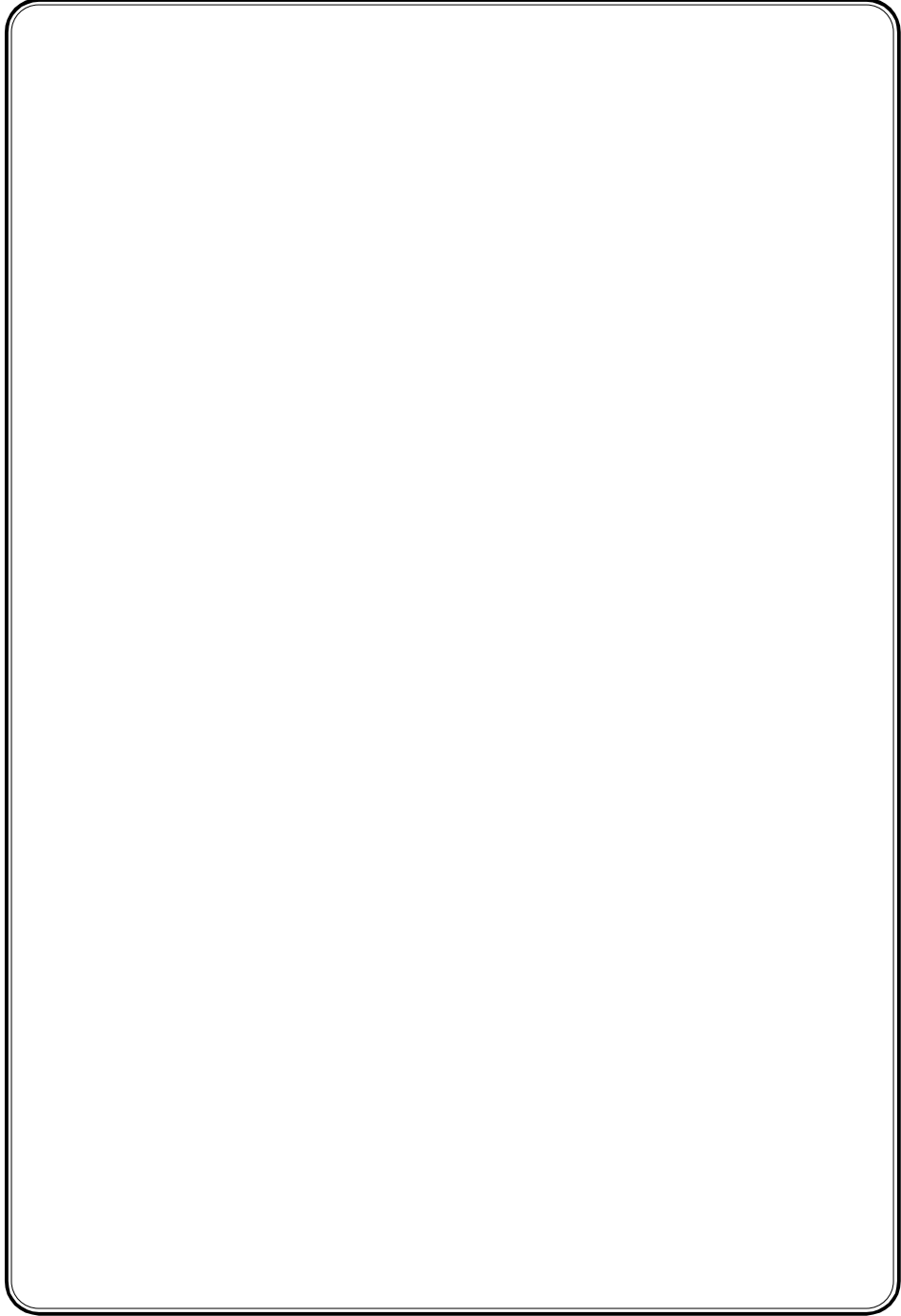


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## **SEQUENTIAL TIMER**

### ***1.General Description***


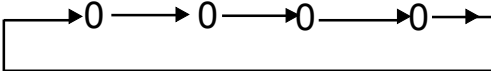

The flash controller based seq.timer is a versatile system that can be used to control the operation of 'n' number of independent circuits. The programming facility through front panel key switch assembly allows the user to alter the operational sequence to match his application. The display window holds half an inch bright display split in to three windows. First one being the single digit for Time base indication, second one is two digit display to indicate channel number and last window being the four digit display to indicate progressing time.

The features includes the user configurable Time base, independent ON/OFF/INTERVAL time setting, channel skip facility and a Auto/Manual start function.

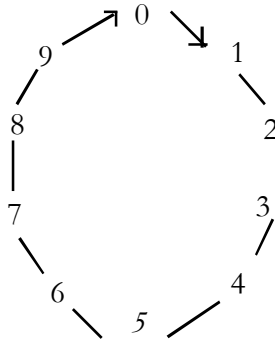
The smart terminal blocks access easy wiring. The enclosure of model 150/160 is of IP 54 with dust & waterproof. The front door is fitted with see through glass window for easy visible of front panel controls.

## 2.Key pad Descriptpion

The programming feature is accessed by 2x4 matrix keyswitch assembly. The key switches are designated as

<b>CHN NO</b>	On continuous pressing scrolls the channe number
<b>ON TIME</b>	<u>Function</u> 1 <sup>st</sup> Pressing displays ON Time Base. 2 <sup>nd</sup> Pressing displays ON Time Range.
<b>OFF TIME</b>	<u>Function</u> 1 <sup>st</sup> Pressing displays OFF Time Base. 2 <sup>nd</sup> Pressing displays OFF Time Range.
<b>INT. TIME</b>	<u>Function</u> 1 <sup>st</sup> Pressing displays INT Time Base. 2 <sup>nd</sup> Pressing displays INT Time Range.
<b>CH. PAU MAN</b>	<u>Function</u> Selects manual operation in Run Mode. Channel pause selection in Prog. Mode.
	while pressing moves the digit which flashes indicating it is changeable. Every time it is pressed the changeable digit is moved in the sequence given below. Holding it down moves the digit automatically in the same sequence continuously. <div style="text-align: center; margin-top: 10px;">  </div>
	While pressing changes a value. Every time this key is pressed, the displayed value can be changed in the following sequence. Holding down the key

permits changes in the same sequence continuously.



#### Function



1. To update the selected numerals for further operation as 'Enter key' in program mode.
2. To start the Timing in manual mode.

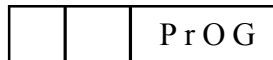
Note: Time base is the measurement unit expressed in milliseconds, seconds, minutes & hours.

#### **LED Indicators**

- ◆ ON TIME flashes when ON time is in progress
- ◆ OFF TIME flashes when OFF time is in progress
- ◆ INT. TIME flashes when Interval time is in progress.

#### **3.Run/prog. mode selection**

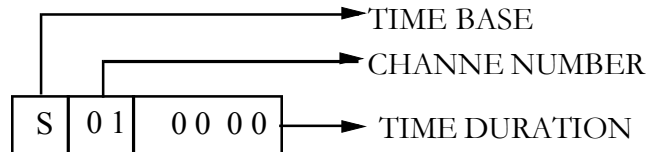
Pressing ► & ▲ key together enters into Prog.mode.



Similarly, the same keys are used to come back for run mode.permits changes in the same sequence continuously.

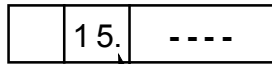
**RUN MODE FUNCTION**

Scans the timing process sequentially by displaying the respective channel number with the time base function.



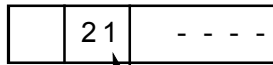
- ◆ Performs manual functions using manual start key.  
Prog. mode Function
- ◆ Selects the time base and timing range of respective channels.
- ◆ Select or pause the channel which are not in use.

Note : To decrement the channel while you are at say channel 15 press ► key so that a decimal point appears at channel number display window.

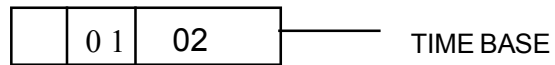
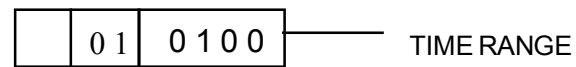


Now by pressing **CHN. NO** key decrements the channel. Again to

increment the channel number press ▲ key which replaces the decimal point.



This function must be performed before activating other keys. After the selection of Prog.mode **CHN. NO** press key. **ON TIME** Next press key which selects time base on first pressing and time range on second pressing

**First Pressing****Second Pressing**

“Time base’ which selects the timing range in milliseconds/ seconds/minutes/hours. The time base has code number which has to be selected in program mode. The different code numbers are listed below.

**4.List of Time Base**

code number	Time base	Resolution
00	milli seconds / seconds	10mS/0.01S
01	- do	100 mS / 0.1S
02	seconds	1S
03	minutes	0.01 minute
04	minutes	0.1 minute
05	minutes	1 minute
06	hours	0.01 hour
07	hours	0.1 hour



### 5. List of Time Range

Code number	Range
0 0	99.99 seconds
0 1	999.9 seconds
0 2	9999 seconds
0 3	99.99 minutes
0 4	999.9 minutes
0 5	9999 minutes
0 6	99.99 hours
0 7	999.9 hours

After selecting the time base press ► key so that first digit in the 3rd display window starts flashing indicating that it is changeable.

  0 1  □ 2   — Time Base

Again press ► key so that second digit in the 3rd display window starts flashing indicating that it is changeable.

  0 1  0 □   — Time Base

Now using ▲ key select the desired code number which is limited in the list.

  0 1  0 3   — Time Base

and then press



key

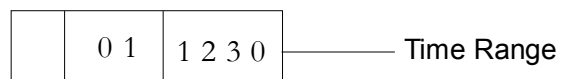
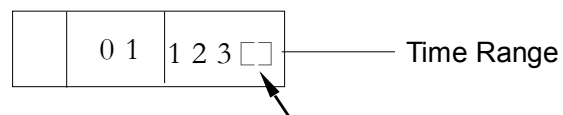
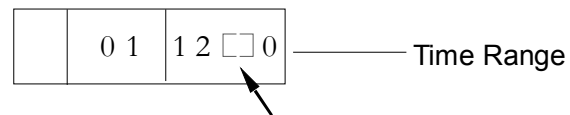
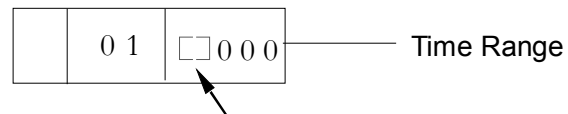
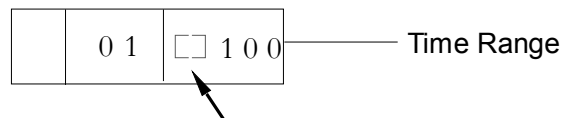
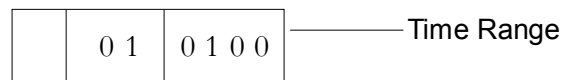


After selecting the Time Base once again press



key to select

it's Time Range. Again repeat the same procedure which is explained above.



*The same procedure is followed for 'OFF Time' and 'Interval time' selection. (if interval time is not required enter 00 in the interval time range)*

### 6. Channel Skip Function

The user can skip the unwanted channels which are not in the process. The 

CH. PAU
MAN

 key performs such function by displaying

select/pause which ever required.

	0 1	S E L
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If 'SEL' is displayed then press ► or ▲ key to display 'PAU'

	0 1	P A U
--	-----	-------

or If pau is displayed then press same ► or ▲ key to display

'SEL' After selecting desired option definitely press 

◀
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 key.

	0 1	E
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### 7. Manual operation

This function is performed only in RUN MODE. On pressing this key displays

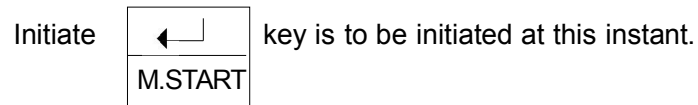
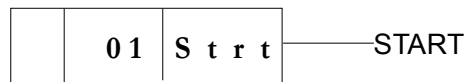
	n̄ A	n U A L
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→ Manual Mode

After the display of this mnemonics press 

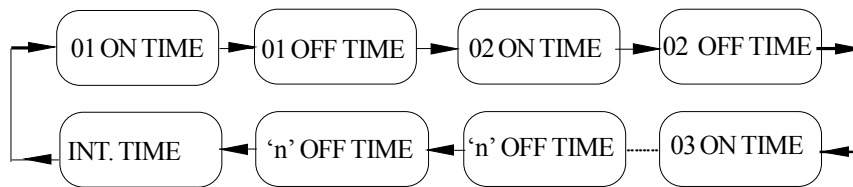
CHN
NO

 key which displays



The timer starts functioning for the preset 'ON TIME' duration and stops. Repeat the same, for other channels.

### **7.Sequence of operation**



### **WITHOUT BACKUP FUNCTION**

Normally the Seq. Timer is provided with backup facility in order to retain the elapsed time during power interruption. If the user feels the operation to be without Backup, then select the shorting link (jumper j1) provided in the CPU (PCA 284A) card to the other direction so as to start the time function from beginning.

### 8. Technical Specification

Description	:	Programmable 'SEQUENTIAL TIMER'
Model	:	150
Display digits	:	seven 1 digit for Time Base 2 digit for Channel number 4 digit for Timing
Display size	:	0.39" 7 segment
Display type	:	Red LED
Range	:	see code definitions
Scale	:	Hrs/minutes/secs
Sense	:	Real Time Base
Mode	:	ON/OFF/INT
Setting through	:	2 x 4 Matrix key pad switch
Output	:	1 C/o potential free relays for each channel out put 24v dc
Relay rating	:	1A @ 24 VDC
Number of setpoints	:	Two set points for each channel. (ON time & OFF time) One set point for INTERVAL time
Start operation	:	given for manual function
Memory retention	:	10 Yrs
Accuracy	:	0.05 %
Power supply	:	90-270 VAC @ 50 Hz
Case material	:	MS sheet enclosure
Ambient Temperature	:	50 °C
Dimensions in mm	:	250(W) x200(H) x130(D)mm (Model:150)

**Installation**

Prior to the installation, safe operation is not possible in the following cases :

- ◆ When the instrument shows clearly visible damage.
- ◆ After lengthy storage in unfavourable conditions.
- ◆ After serious damage incurred during transport

**9.Wiring****SUPPLY VOLTAGE**

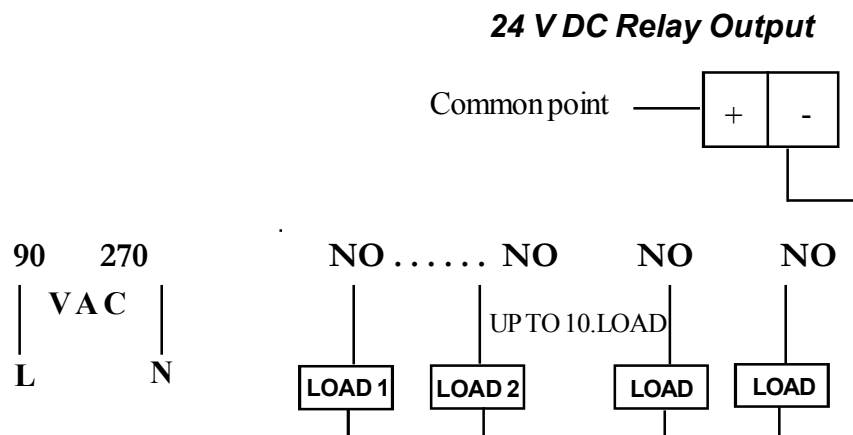
The instrument can take a power supply voltage with range VAC terminal (Ensure that supply voltage is 90-270 VAC)

**Earth**

Before making any connection, the instrument must be earthed.

**Relay Terminals**

The module works for 10 channels . The sequential timer offered is generally provided with one common terminal for every 10 channel and a individual normally open contacts for each channel. So that the main module is provided with two common terminals and 10 NO terminals for first 10 channels.

**Connection Diagram :**

### 10. General Operating Procedure

A general operating procedure of the instrument is illustrated in the form of a flow chart

