

# Thuse Electronics P.Ltd.

Electronics OEM Mfg. Since 1989, Plot #33A, Sector-7, PCNTDA, Bhosari MIDC, Pune 411026. Contact: +91 20 6733 3444 , +91 8888 151 151

## Timeline Street Astronomical/Combo Street Light Timer

### User Manual + Warranty Information



### Product Overview:

Street Light Timer is a microcontroller based smart product to switch ON/OFF load depending upon the geographical location of the device. **Astronomical Timer Mode** keeps track of each days sunrise/sunset time and takes the smart control of light depending upon sunrise and sunset times and saves power. **Timer Pro Mode** is for the pre settable times to switch ON/OFF the load. **Night Out Mode** is for keeping the street lights, hoardings OFF at the night duration for a given period by user to save the power. It is very useful to save power and manpower to switch the load.

#### **Features:**

- **Astronomical Timer Mode (Astro Mode)**
- **Pre Settable Timer Mode (Pro Mode)**
- **Night Out Mode** to power OFF the loads at night for given duration to save power.
- **Time Offset** available for ON and OFF times.
- User friendly & intuitive user interface design.
- **Bypass Mode** available for manual switch ON-OFF control.
- Bi-colour panel LED to indicate load on or off.
- Saves power by punctually maintaining on-off timings of the load.

#### **Applications:**

- Street Lights auto ON/OFF depending upon accurate sunrise and sunset times for given location.
- Lights on construction site auto ON/OFF.
- Corridors Lights auto ON/OFF.
- Parking lots Lights auto ON/OFF.
- Staircase Lights, Street lights auto ON/OFF.

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Specifications:	Compliant to following IEC Standards:
<ul style="list-style-type: none"><li>• <b>Supply Voltage:</b> 90V to 440V A.C, 50 Hz, 1Ø</li><li>• <b>Max. Current Rating:</b> 30A @ 230V AC (Resistive)</li><li>• <b>Temperature Range:</b> 5 °C to 48 °C</li><li>• <b>Max. Humidity:</b> 85% Rh</li><li>• <b>Dimensions (mm) :</b> 60 (H) x 117 (w) x 65 (D)</li><li>• Bright backlit LCD display to show status</li><li>• Power failure memory backup</li><li>• User friendly operations</li><li>• Designed &amp; Mfd. In India to achieve robust performance.</li></ul>	<ul style="list-style-type: none"><li>• IEC 61000-4-4</li><li>• IEC 61000-4-5</li><li>• IEC 61000-4-11</li><li>• IEC 61000-4-14</li><li>• IEC 61000-4-28</li></ul>

## Astro Mode Parameters:

In “Astro Mode” ON time and OFF time gets automatically selected by the software depending upon GPS coordinates, Date-Month and GMT offset.

### 1. **GPS Coordinates:**

Search GPS coordinates on the internet for location and edit for the same.  
Please refer coordinate settings.

### 2. **OFF Set Time (+ve And –ve offsets):**

- **ON offset time** will add or subtract the selected minutes from astronomical ON time (sunset time).
- **OFF offset time** will add or subtract the selected minutes from astronomical OFF time (sunrise time).
- Both offset times are in minutes (1 min to 59 minutes).
- **Offset time can be applied by pressing and holding “SET” key for 6 seconds in normal run mode. And same operation for removing the offset times.**
- ↓ Symbol in normal mode indicates that time offsets are applied.

### 3. **Night Out Mode (Black out duration at night):**

- In Night Out Mode, it is possible to set the blackout window for only duration from ON time to OFF time. This way for pre-set duration in the night, user can turn off the load. This mode is available in ‘Astro Mode’ only.
- To switch OFF the load at night select the OFF time i.e. HH:MM
- To switch ON the load again before sunrise select the ON time i.e. HH:MM
- For selected OFF time to ON time the load will be OFF.

## Pro Mode Parameters:

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In “*Pro Mode*”, ON time and OFF time is independently programmable.

- Switching of load happens every day as per pre-set timings.
- Timer powers ON/OFF the load at preset timings irrespective of changes in calendar months or seasons.
- This timer can be set to turn ON/OFF the load at any time of the day.

## Operating Instructions:

### 1. Timer Mode Selection Settings:

Step	Operation	Key	Display
1	To select Timer Mode: 1.Astronomical Timer Mode ( <i>Astro Mode</i> ) 2. Pre settable Timer Mode. ( <i>Pro Mode</i> )	• Press and hold <b>UP key and Power ON the unit</b> .	Timer Mode: ASTRO ➡ PRO
2	To select the desired mode	• Press <b>NEXT</b> key it will go to the selected modes setting.	A. If <i>Astro Mode</i> selected-> GPS coordinate settings. B. If <i>Pro Mode</i> selected-> ON time / OFF time settings.

- A. If *Astro Mode* is selected, follow point no.2-“*Astro Mode Settings*”.  
B. If *Pro Mode* is selected, follow point no.3-“*Pro Mode Settings*”.

### 2. *Astro Mode Settings:*

Step	Operation	Key	Display
1	To edit GPS coordinates.	• As per point no 1, step 2. If <i>Astro Mode</i> selected then press <b>NEXT</b> key.	GPS coordinates are displayed. (First Latitude coordinates are displayed).

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Latitude:

0 1 2 . 9 6 6 7 N

N-North  
S-South

2	To change the value of blinking field.	• Press <b>UP</b> key.	Value corresponding to blinking field increases.
3	To move the cursor to next field.	• Press <b>NEXT</b> key once.	Next field flashes.
Step	Operation	Key	Display
4	To save current GPS Latitude settings.	• Press <b>NEXT</b> key till blinking cursor is at the last field and press <b>NEXT</b> key one more time.	Longitude coordinates are displayed.

Longitude:

0 7 7 . 5 6 6 7 E

E-East  
W- West

5	To change the value of blinking field.	• Press <b>UP</b> key.	Value corresponding to blinking field increases.
6	To save current GPS Longitude settings.	• Press <b>NEXT</b> key till blinking cursor is at the last field. • Press <b>NEXT</b> key one more time.	"ONTIME OFFSET" " + 00 min "
7	Edit ON time offset.	• To change the + /- Offset press <b>UP</b> key. • Press <b>NEXT</b> key. • Press <b>UP</b> key to edit the ON time.	Selected and edited field value blinks.
8	Edit OFF time offset.	• Press <b>NEXT</b> key. • To change the + /- Offset press <b>UP</b> key. • Press <b>NEXT</b> key. • Press <b>UP</b> key to edit the OFF time.	Selected and edited field value blinks.
9	To select the Night Out Mode	• Press <b>NEXT</b> key. • To choose the Night Out Mode ON/OFF press <b>UP</b> key.	<b>ON/OFF</b> blinks depending upon selection. Time value changes as per increments and the current edit field blinks.

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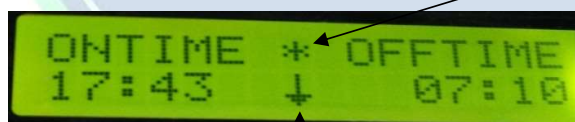
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		<ul style="list-style-type: none"> <li>Press <b>NEXT</b> key for changing the night Mode OFF-ON time.</li> </ul> <p><b>Night Out Mode time settings (OFF time-ON time) settings only displayed if Night Out Mode –‘ON’ is selected.</b></p>	
10	To Edit Night Mode OFF time _ ON Time	<ul style="list-style-type: none"> <li>Use <b>UP</b> key to edit the blinking field value.</li> <li>Use <b>NEXT</b> key to change the field i.e. HH:MM.</li> <li>Press <b>NEXT</b> key again to save the settings.</li> </ul>	Field value blinks depending upon selection. At the end <b>“SETTINGS SAVED”</b> Is displayed and timer comes in normal run mode.

## Applying/Removing Time Offset in *Astro* Timer Mode:

- In normal runtime press and hold **SET** key for 5-6 seconds, the offset times set in the *Astro* Mode configuration will be applied to the astronomical ON time and OFF time and message is displayed as **“APPLYING TIME OFFSETS”**. For Removing the OFFSETS press and hold **SET** key for 5-6 seconds, message is displayed as **“REMOVING TIME OFFSETS”**.
- ↓ Symbol in running display indicates offsets are applied. If symbol is absent then offsets are not applied.

### Astro Mode Display Indications:



“\*” Indicates “Night Out Mode” is enabled

**ON time**=Sunset time +/- ON time offset  
**OFF time**=Sunrise time +/- OFF time offset  
 Load will be OFF during Night Out Period, if “\*” is displayed.

Indicates time offsets are applied.

### 3. Pro Mode Settings:

Select *Pro* mode as stated in mode selection settings above and go for the following:

Step	Operation	Key	Display
1	To go to ON/OFF time edit settings.	<ul style="list-style-type: none"> <li>Press and hold <b>SET</b> key for 2 seconds</li> </ul>	'HH' field of ON time blinks(HH:MM)
2	To edit the value of blinking field.	<ul style="list-style-type: none"> <li>Press <b>UP</b> key</li> </ul>	Value corresponding to blinking field increases.

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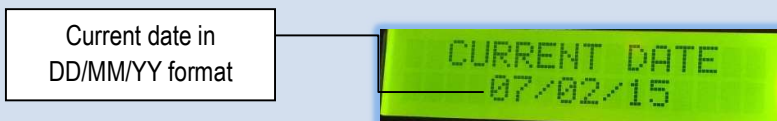


3	To move the cursor to next field.	• Press <b>NEXT</b> key.	Next field blinks.
4	To save and exit On/Off time settings.	• Press <b>NEXT</b> key till blinking cursor moves to last field and press <b>NEXT</b> key one more time.	' <b>SETTINGS SAVED</b> ' message flashes.

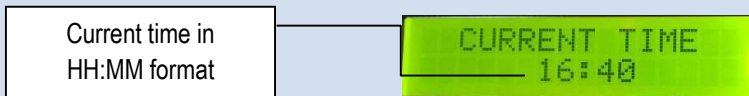
## Common Settings for Pro Mode and Astro Mode:

### 4. Current Date and Time Settings:

Step	Operation	Key	Display
1	To select date and time edit settings.	• Press and hold <b>(SET+UP+NEXT)</b> keys for 2 seconds.	'DD' field of current date blinks(DD:MM:YY)
2	To edit the value of blinking field.	• Press <b>UP</b> key.	Value corresponding to blinking field increases.



3	To move the cursor to next field	• Press <b>NEXT</b> key.	Next field flashes.
4	To move to time settings.	• Press <b>NEXT</b> key when last field is blinking.	Time settings are displayed.
5	To edit the value of blinking field.	• Press <b>UP</b> key.	Value corresponding to blinking field increases.



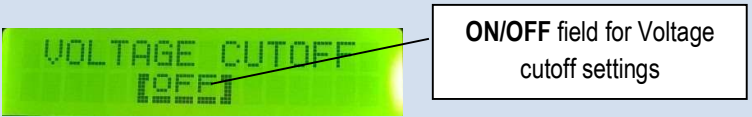
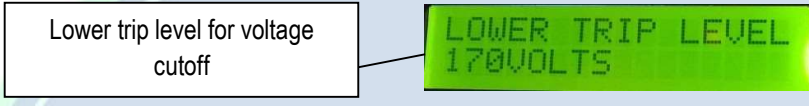
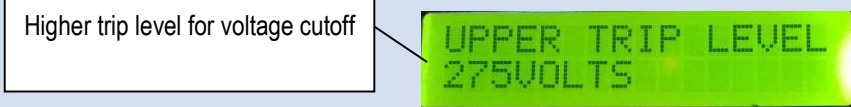

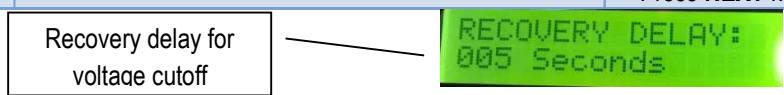
6	To save and exits current date/time settings.	• Press <b>NEXT</b> key till blinking cursor is at the last field and press <b>NEXT</b> key one more time.	' <b>SETTINGS SAVED</b> ' message flashes.
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**Note:** If **NEXT** key is not pressed, whatever setting done so far will automatically get saved after 10 seconds and setting mode exits.

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## 5. Voltage Cutoff Settings:

Step	Operation	Key	Display
1	To enter into voltage cutoff setting.	• Press and hold <b>NEXT</b> key for 3 seconds	“ <b>VOLTAGE CUTOFF</b> ” “ <b>OFF</b> ”
2	To toggle between enable and disable cutoff field.	• Press <b>UP</b> key.	<b>ON/OFF</b> field toggles.
			
3	To move to next setting i.e. lower voltage limit	• Press <b>NEXT</b> key.	Lower voltage limit is displayed.
4	To change the value of blinking field	• Press <b>UP</b> key.	Blinking field increments.
			
5	To move to next setting i.e. upper voltage limit.	• Press <b>NEXT</b> key.	Upper voltage limit is displayed.
6	To change the value of blinking field.	• Press <b>UP</b> key.	Blinking field increments.
			
7	To save and move to the next settings i.e. Hysteresis settings.	• Press <b>NEXT</b> key.	Hysteresis settings are displayed.
8	To change the value of blinking field	• Press <b>UP</b> key.	Blinking field increments.
			
9	To save and move to the next settings i.e. Recovery delay settings.	• Press <b>NEXT</b> key.	3 digit recovery delay settings are displayed.
10	To change the value of blinking field.	• Press <b>UP</b> key.	Blinking field increments.
11	To move to the next field.	• Press <b>NEXT</b> key.	Next field blinks.
			
12	To save and exit the settings	• Press <b>NEXT</b> key when last field settings are done	“ <b>Settings saved</b> ” message appears

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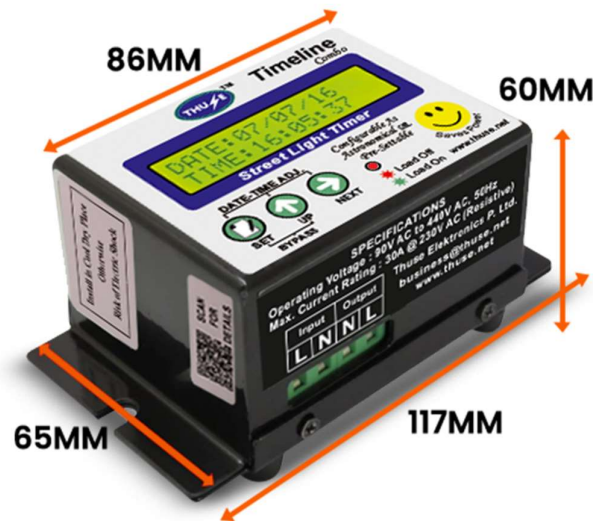
**Note:** If no key is pressed for longtime, whatever setting done so far will automatically get saved after 10 seconds and setting mode exits.

## 6. Select Bypass Mode:

Step	Operation	Key	Display
1	To Select Bypass Mode.	• Press and hold (SET+UP) Keys for 2 seconds.	'BYPASS MODE' is displayed
2	To exit from Bypass Mode.	• Press and hold (SET+UP) Keys for 2 seconds.	Displays ON-OFF time and Current Date-time

**Bypass Mode:** In this mode, you can manually switch ON the load during OFF time. Similarly, during ON time, you can switch OFF the load if bypass mode is selected. When internal relay is in OFF condition, it turns ON if Bypass Mode is selected. While the same relay is in ON condition, it turns OFF if Bypass Mode is selected.

## Product Photo & Dimension:



**Note:** Image for reference only. You need to connect input power supply to the timer for it to work.

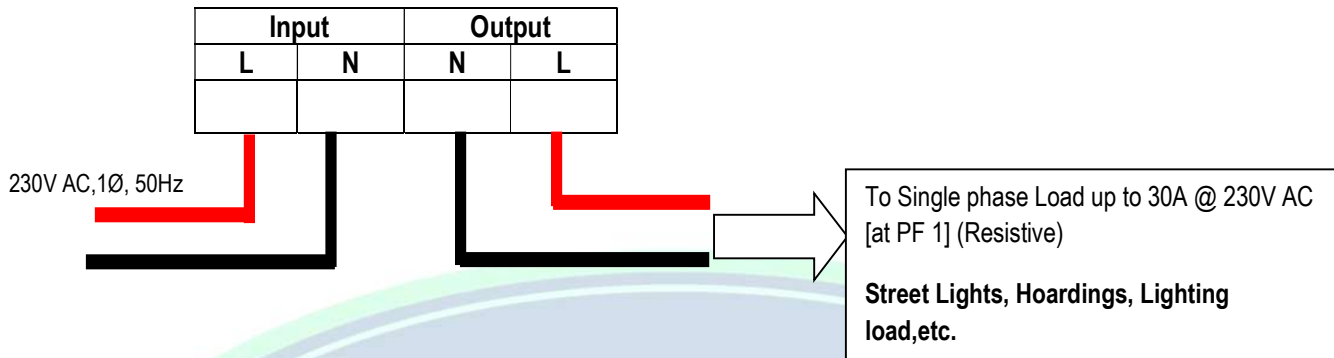


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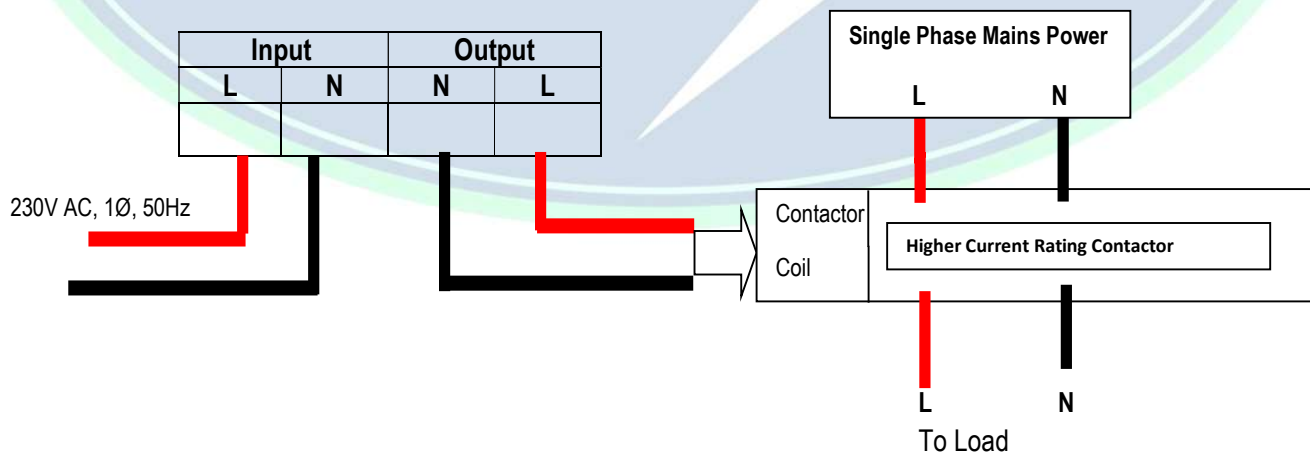
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## Wiring Guide:

- Terminal Connections for single phase load up to 30A @ 230V AC [at PF 1] (Resistive) (Read Notes Below\*):



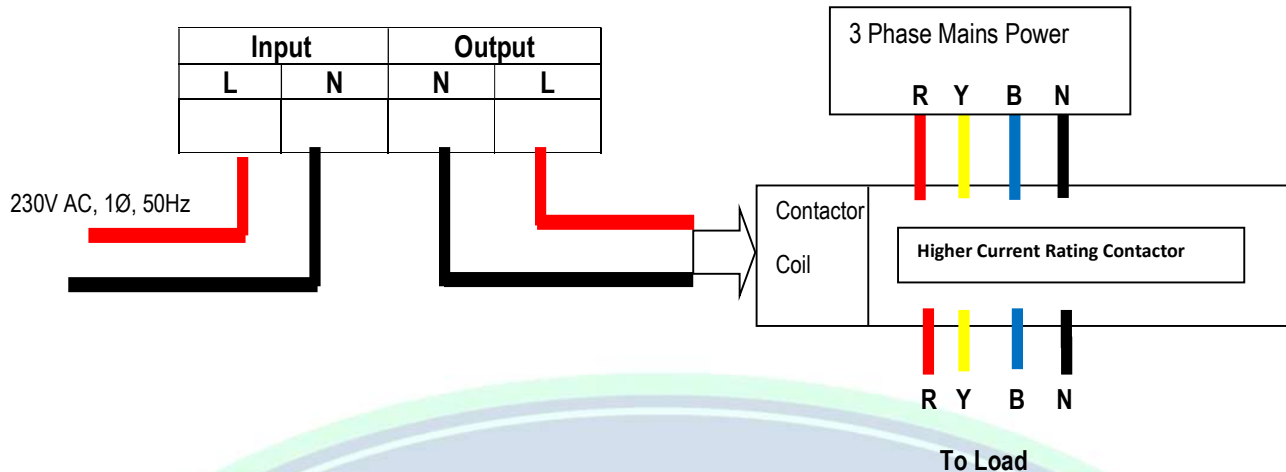
- Terminal Connections for single phase load more than above mentioned current rating (Read Notes Below\*):



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- Terminal Connections for 3 Phase Load (Read Notes Below\*):



## \*Notes:

- 1) In case you're going to connect a contactor coil to the timer's output as shown above, please connect a 1uF/400V AC MPP or any equivalent capacitor across the output of the timer, to eliminate any problems due to back-emf from the contactor's coil. You may purchase such capacitor locally in your market or can even buy from us at an additional cost. Please contact our customer care (+91 8888 151 151, [business@thuse.net](mailto:business@thuse.net)) in case you need to purchase the capacitor from us.
- 2) In view of continuous improvement, we reserve the right to change/alter the specifications without prior notice / intimation.

## Product installation & usage recommendations:

- 1) Install in a cool and a dry place and in a covered area.
- 2) Avoid direct exposure to rain, water, dust, direct sunlight and various other environmental factors.
- 3) Keep away from children. Install in a safe place to prevent any unauthorized access/tampering to the timer.
- 4) Timeline Astronomical Streetlight Timer works in 24H clock format only and not in 12H clock format, so please enter any timings accordingly in the 24H format.
- 5) Do not attempt to open the enclosure of the product while it's in use. Risk of electric shock if opened.
- 6) Product installations to be done by skilled electrical technicians only. Refer to wiring guide above for installation
- 7) No user serviceable part inside the product. However, you may contact our customer service (+91 8888 151 151, [business@thuse.net](mailto:business@thuse.net)) if you want any assistance.
- 8) Do not operate the product beyond it's specified operating limits.

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## **Warranty Information:**

This product is covered for 12 months of warranty from the date of purchase. Warranty is covered as per Legal Disclaimer & Warranty Terms mentioned below :-

## **Legal Disclaimer:**

- 1.) Manufacturer takes no direct, indirect or any type of consequential liability of whatsoever nature under any condition, by using Timeline Astronomical Street Light Timer.
- 2.) Product has to be used in a specific way and for the specified purposes well specified in user's operating instructions. Any deviation/s found in usage may cause malfunction in the product may lead to any kind of failures for which warranty will not be extended.
- 3.) Transaction/s of Supply of Timeline Astronomical Street Light Timer is subject to Pune Jurisdiction only
- 4.) Thuse Electronics P. Ltd. owes liability of this product not exceeding the selling price of the product, in case of any warranty claim.

## **Terms of Warranty:**

- 1.) One year warranty from the date of original purchase against any kind of manufacturing defect shall apply.
- 2.) Warranty starts from the date of your purchase bill.
- 3.) Manufacturer reserves the rights to repair or replace Timeline Astronomical Street Light Timer.
- 4.) Any kind of warranty claim arising due to misuse, physical damage, water damage, wrong connections, damages due to short circuit, unauthorized service attempts or fiddling would not be covered under warranty and would result in termination of warranty.
- 5.) Warranty liability on seller is limited to a maximum amount of selling price of the product. No consequential and indirect compensations are payable by the seller under any condition.
- 6.) Warranty is Carry In Type warranty. Customer needs to send the product for service at manufacturer's factory location at his/ her cost with copy of original purchase bill. After necessary service the same will be returned back to the customer by manufacturer at their cost..