



**AMBETRONICS™** AN ISO 9001 : 2000 COMPANY



MANUFACTURER OF TIMER , COUNTER , RPM & TEMPERATURE INSTRUMENTS & PROCESS AUTOMATION

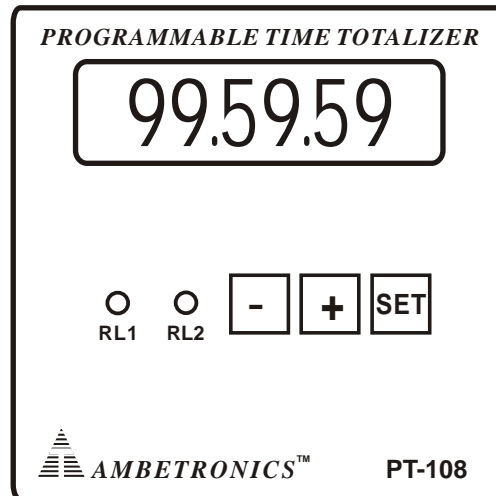
FAC : 17-B, TARUN INDUSTRIAL ESTATE, MOGRA PADA, ANDHERI (EAST),MUMBAI - 400069. INDIA.

TEL : 022-2837 1143/ 1086, 5699 5525/26, FAX : 022-2822 6570. Mobile :- 98210 62102, 93242 54646/7

Email - sales@ambetronicscom • ambetronics@vsnl.com • Website : www.ambetronics.com

USER'S MANUAL FOR PROGRAMMABLE  
TIME TOTALIZER

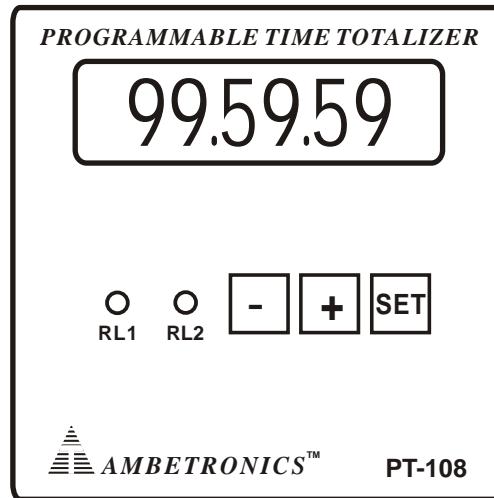
MODEL NO. PT-108



## TABLE OF CONTENTS

<b>S.NO</b>	<b>SUBJECT</b>	<b>PAGE NO.</b>
1.	INTRODUCTION	1
2.	CLASSIC FEATURES	2
3.	TECHNICAL SPECIFICATIONS	3
4.	FRONT PANEL DESCRIPTION	4
5.	FLOW CHARTS	5
6.	DESCRIPTION OF FLOW CHARTS	6
7.	CUTOUT & DIMENSIONS	9
8.	WIRING DIAGRAM	10
9.	TEST REPORTS	11

## 1. INTRODUCTION:-



The PT-108 Digital Presetable Timer is a part of the Ambetronics PT series intelligent, microcontroller based control instrument for realisation of economic solution for time control problems. The family includes besides the microcontroller based Timer, the following:

- |            |                                     |        |
|------------|-------------------------------------|--------|
| * 0-9999   | 9 Step 1 Relay ON / OFF Pulse Timer | Pt-101 |
| * 0-999999 | 6 digit programmable ON/OFF Timer   | Pt-107 |
| * 0-999999 | 6 digit programmable Time Totalizer | Pt-108 |
| * 0-9999   | 4 digit Presetable Time Totalizer   | Pt-110 |
| * 0-999    | 2 Channel ON/OFF Cyclic Timer       | Pt-120 |
| * 0-999    | 34 Channel Sequential Timer         | Pt-130 |
| * 0-9999   | Digital Timer Internal Meter        | Pt-141 |
| * 23-59    | Digital Real Time Switch            | Pt-150 |

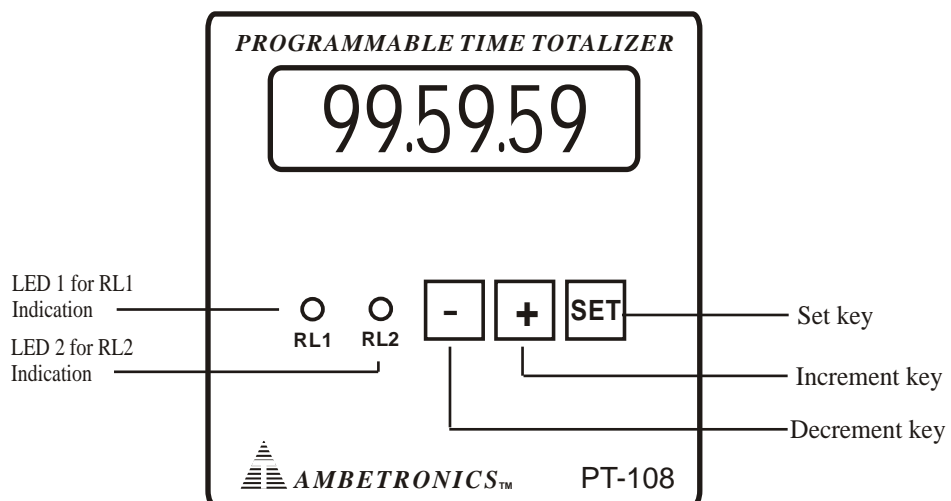
## **2) CLASSIC FEATURES:-**

- \* SECOND, MINUTE, HOUR Range User Selectable.
- \* 0.01, 0.1, 1 Resolution Programmable.
- \* Minute - Second range from 0000.01 to 9999.59.
- \* Hour - Minute range from 0000.01 to 9999.59
- \* Hour - Minute - Second from 00.00.01 to 99.59.59
- \* Count up, Count down mode Programmable.
- \* Delay OFF, Delay ON, Pulse O/P Programmable with Pulse duration.
- \* Built in 4 digit (9999) batch counter for Timer Pulse cycle mode..
- \* Power fail three conditions programmable i.e., Power on reset, power on resume, power on stop.
- \* Built in watch-dog circuit for fail safe operation.
- \* Relay output of 1 NO/C/NC relay contact rated 6A/240V A.C.
- \* 6 digit 13 m.m height bright red L.E.D display.
- \* 2 Nos red L.E.D for relay ON indication.
- \* 3 Feather touch keys for easy online program setting.
- \* Compact in size, very easy to program and operate in field.
- \* Built in +12 V DC supply for Proximity switch, Infrared sensor, Encoder.
- \* Built in HOLD and RESET facility from front & rear terminal.

### **3) TECHNICAL SPECIFICATIONS:-**

<b>Range</b>	:	Second, Minute, Hour (Programmable) range from 1 to 999999. Minute - Second range from 0000.01 to 9999. 59 Hour - Minute range from 0000.01 to 9999.59 Hour - Minute - Second range from 00.00.01 to 99.59.59
<b>Resolution</b>	:	1,01,0.01 (Programmable) for Sec/Min/Hour
<b>Time Base</b>	:	11.059 MHz quartz crystal time base for high accuracy..
<b>Accuracy</b>	:	Better than 0.1%
<b>Setting</b>	:	3 membrane keys on front panel.
<b>Display</b>	:	6 digits of 13.0 mm digit height 7 segment L.E.D. display.
<b>Count Mode</b>	:	Count Up, Count Down user selectable.
<b>L.E.D.</b>	:	One no. L.E.D., red colour for relay status indication.
<b>Relay Action</b>	:	Normally ON, Normally OFF, Pulse O/P from 0 to 9999 second.
<b>Start (IP2)</b>	:	To start the time totalizer function activate IP2 with +ve on rear terminal.
<b>Reset (IP1)</b>	:	Manual by pressing (-) key or remote reset from rear side terminal, activate IP1 with +V Terminal.
<b>Output</b>	:	1NO/C/NC relay potential free contact rated 230V/5Amp.
<b>Supply</b>	:	230 VAC A10% 50Hz, 110 VAC A10% 50Hz.
<b>Mounting</b>	:	Panel mounting/Wall mounting for flameproof model. .
<b>Dimension</b>	:	96 (W) X 48 (H) X 120 (D) in mm. 96 (W) X 96 (H) X 120 (D) in mm. 186(W) X 340(H) X 110(D) in mm. (FLAMEPROOF IP65)
<b>Cutout</b>	:	92 (W) X 44 (H) in mm. 92 (W) X 92 (H) in mm.
<b>Cabinet</b>	:	ABS Plastic Black/White colour
<b>Terminal</b>	:	16 No. PBT connector of 2.5sq.mm lugs pin type or 2.5Sq.mm wire.
<b>Sensor Supply</b>	:	Built-in +12VDC 50mA, supply for proximity, infrared, buzzer etc.

#### **4) FRONT PANEL DESCRIPTION:-**



#### **THREE KEYS:-**



This key use to move to the next parameter in programming mode.



This key use to increment parameter value in programming mode & for manual hold operation of time from front side.



This key use to decrement parameter value in programming mode & for manual reset of time from front side.

#### **LED INDICATION:-**

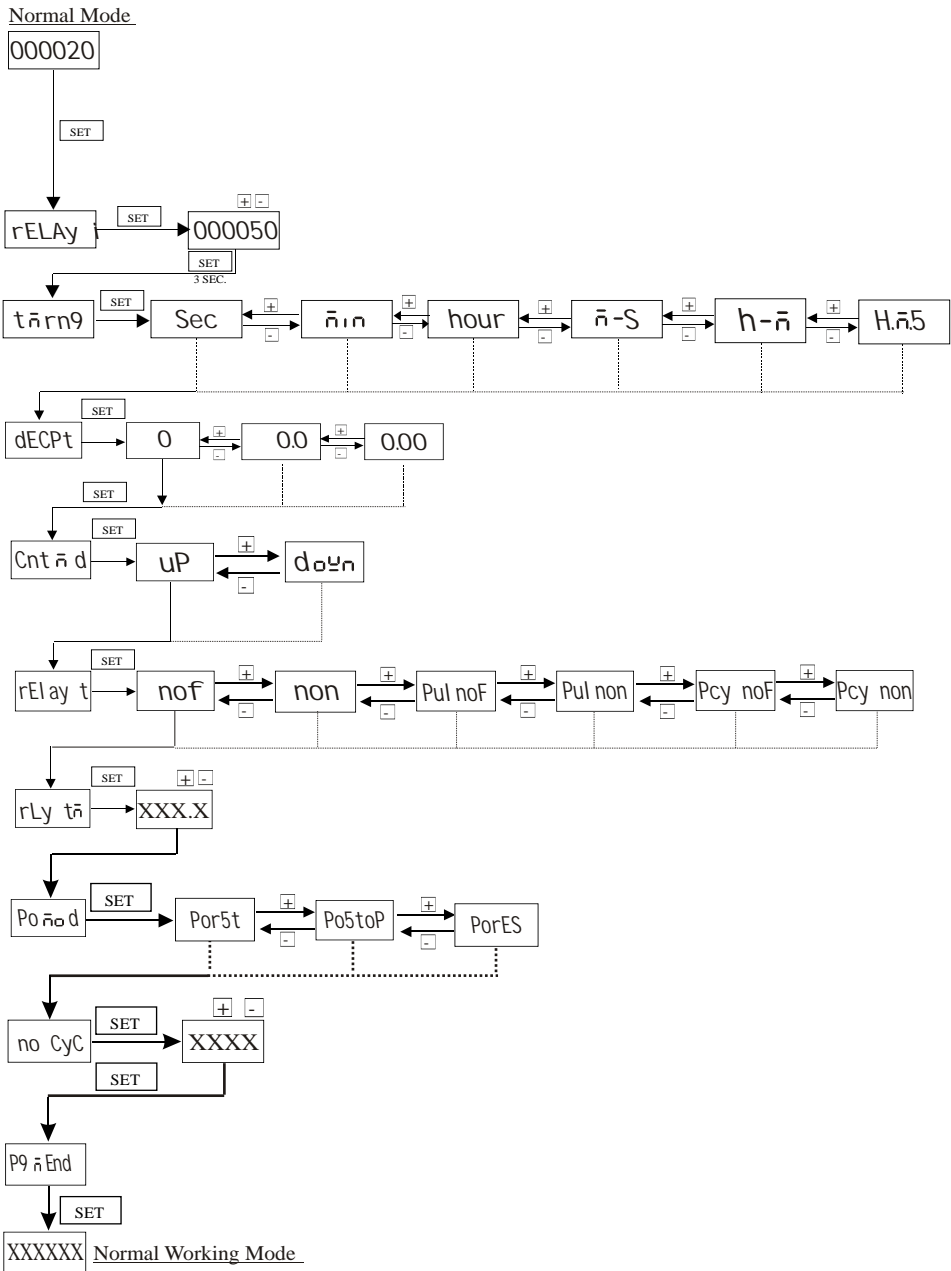
RL1: LED indication for relay 1st set value.

RL2: LED Not applicable.

#### **DISPLAY:-**

Six digit seven segment 13.0mm. height L.E.D display for timer operation.

**5) FLOW CHART:-**



Note:- To start the program after setting the program parameters press ‘-’ key or activate IP2 with +ve terminal from back side..

## 6) Description of flow charts:-

rELAYl

Press 'SET' key the display will reads rELAYl , Again press 'SET' key the display will ask set time value. Using '+' & '-' key set the require set value.

tnrng

The display will show 'tnrng' i.e., time range. Here you can select the time range second/minute/hour as per given table. Adjust time range which you required by '+' or '-' key.

SYMBOL	TYPE	RANGE
SEC	Second	000001 to 999999
ñ n	Minute	000001 to 999999
Hour	Hour	000001 to 999999
ñ -5	Minute-Second	0000.01 to 9999.59
H-ñ	Hour-Minute	0000.01 to 9999.59
H.ñ5	Hour-Minute-Second	00.00.01 to 99.59.59

Set the desired time range you have required & press 'SET' key.

dECPt

The display will show 'dECPt' i.e., resolution

1 - 0  
.1 - 0.0  
0.01 - 0.00

Select any resolution which you want. Resolution is acceptable for ranges Second or Minute or Hour only. Select the desired resolution & press 'SET' key.

Cntñd

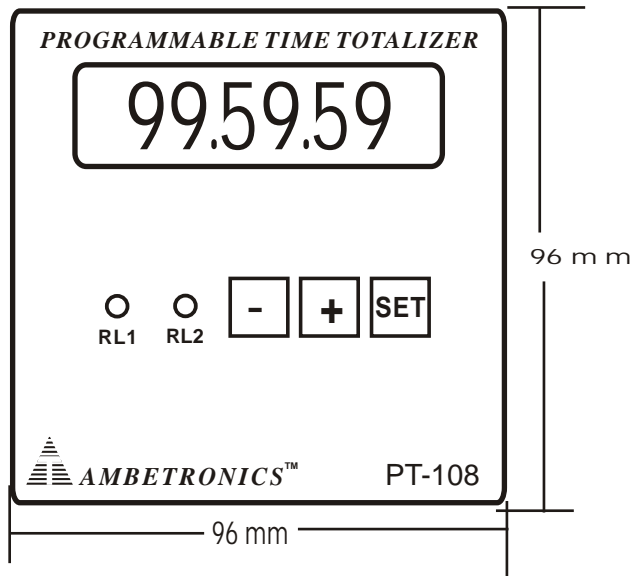
The display will show 'Cntñd' means count mode. Select desired count mode by '+' or '-' key & press 'SET' key. There are two modes available i.e., up count & down count.

rELAyT	Press 'SET' key the display will show 'rELAyT' means relay action type. There are six various type relay action are available in this timer.
noFF	'Normally OFF', means Delay On. In this mode relay should be off at starting & 'ON' when the time reaches the set value it should be 'ON'.
non	'Normally ON' means delay off in this mode relay should be 'ON' at the starting & when time reach at the set value it should be 'OFF'
PULnoF	'Pulse Normally OFF' means pulse delay ON. In this mode the relay should be off at the starting & when the time reaches at the set value should be 'ON' upto Relay ON time which is set in rLy tñ mode (relay ON time), & then relay should be off..
PULnon	'Pulse Normally ON' means pulse delay off'. In this mode the relay should be ON at the starting time & when the timer reaches at the set value it should be off upto relay ON time which is set in rLy tñ mode. (relay ON time) & then relay should be ON.
PcynoF	'Pulse Cycle Normally OFF means. Pulse cycle delay ON. In this mode the relay should be OFF at the starting time & when the timer reaches at the set value it should be ON upto relay on time which is set in relay type mode & then relay should be OFF & again it starts next cycle. In this way it will completed the total no. of cycles which set in noCyC mode. (If you can select noCyC (no. of cycles) zero(0) then this mode will work as per PULnon mode (i.e., pulse normally on mode.)
Pcynon	'Pulse Cycle Normally ON' means Pulse Cycle Delay OFF' In this mode the Relay should be ON at the starting time & when the timer reaches at the set value it should be off upto 'Relay ON time' which is set in rLy tñ mode & then relay should be ON & again it start the next cycle. In this way it will completed the total no. of cycles which set in noCyC mode. (If you can select noCyC (no. of cycles) zero(0) then this mode will work as per PULnon mode (i.e., pulse normally on mode.)
rLy tñ	The display will show 'rLy tñ' relay ON time. It is use only in Pulse mode. select the desired range from 000.1 to 999.9 Sec. press 'SET' key.

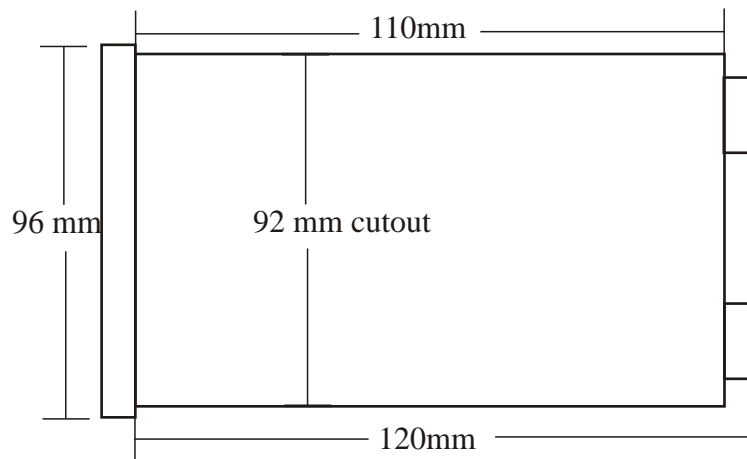
Ponod	The display will show 'Ponod' means Power ON mode status of time. Select any mode as per given below.
Po rES	'Power ON Resume', means at power ON the display will show last count & start further.
Po StoP	'Power ON Stop', means at power on the display will show the last count & flasting the 'Hold' on display. To start further release the hold by pressing '+' key or activate the IP2 with +ve terminal from rear (back)side.
PorSt	'Power ON Reset,' means at power on the display will erase the all previous count & start counting from 1. Select the desired power ON mode & press 'SET' key.
no CyC	The display will show 'no CyC' means number of cycles. This setting is work only in pulse cycle mode. The setting is available from 0000 to 9999. If you keep number of cycle 0000 then if you keep number of cycle 0000 then the timer runs continuously till power off.
PgnEnd	Press 'SET' key the display will show 'PgnEnd' means program End press 'SET' key the timer will come into normal working mode.

**7) CUTOUT & DIMENSION :-**

**FRONT VIEW:**



**SIDE VIEW:**





## **9) TEST REPORT :-**

1. MODEL NO.
2. Customer Name:
3. Instruments Used.
  - 1) Digital Multimeter
  - 2) Osilloscope
  - 3) Stop watch
  - 4) Vibration metter
  - 5) Contacter
  - 6) Oven
4. No. of Channels:
5. Relay outputs:
6. Timer operation:
7. Power Supply:
8. AC Current:
9. Primary resistance Secondary resistance.
10. Instruments size:
11. Timing range: ON time :  
OFF time:
12. Battery back up facility:
13. Vibration test:
14. Contactor test:
15. Under voltage test:
16. Front sticker
17. Back sticker
18. PCB lacquer coating.
19. Instrument clamp:

**Tested by**

11

**Quality tested by.**