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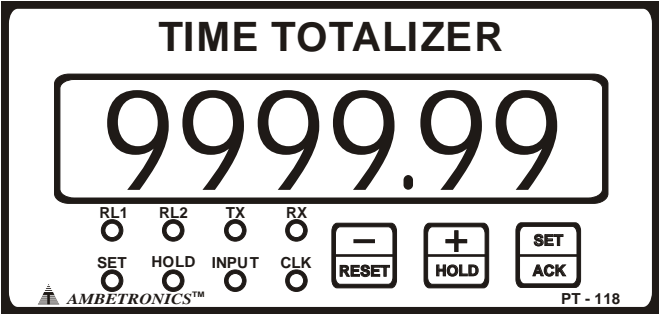


MANUFACTURER OF TIMER , COUNTER , RPM & TEMPERATURE INSTRUMENTS & PROCESS AUTOMATION

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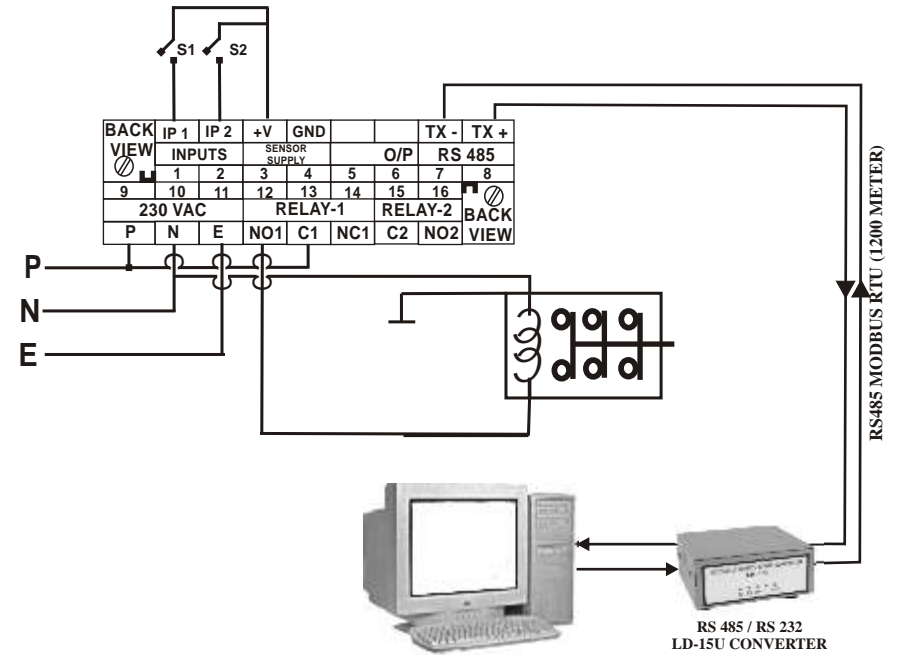
USER'S MANUAL FOR PROGRAMMABLE
TIME TOTALIZER

MODEL NO. PT-118



Ver. : 110106
Date : 190106

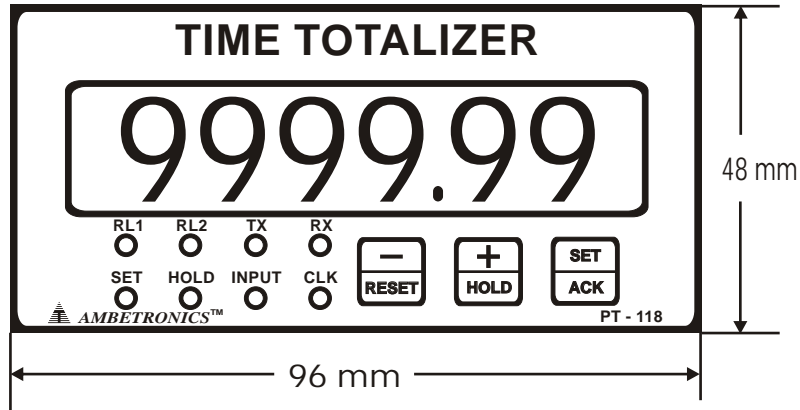
8) WIRING DIAGRAM:-



- P : PHASE**
 - N : NEUTRAL**
 - E : EARTH**
 - IP1 : FOR RESET FUNCTION.**
 - IP2 : TO START TOTALIZER FUNCTION.**
 - TX- :**
 - TX+ :**
 - +V : 12VDC.**
 - GND: GROUND.**
 - NO1**
 - C1**
 - Nc1**
 - C2**
 - NO2**
- 230 VAC Supply.
 → FOR RS-485 SERIAL COMMUNICATION.
 → For RL1 → For RL2

7) CUTOUT & DIMENSION :-

• FRONT VIEW:



• SIDE VIEW:

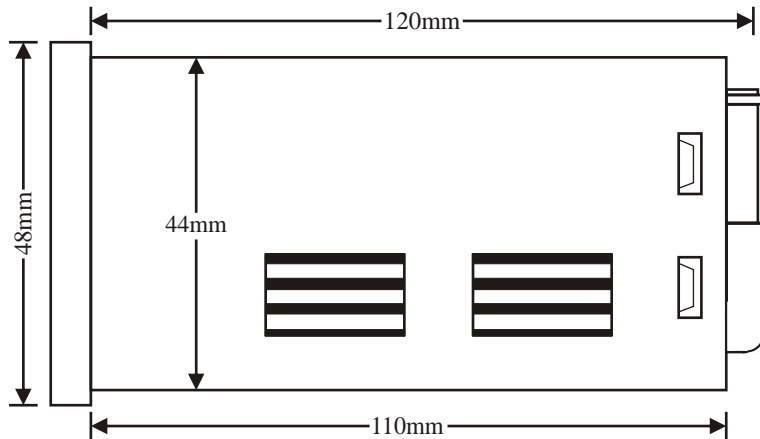











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1. INTRODUCTION:-

The PT-118 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
* 0-999999	6 digit programmable Time Totalizer with RS-485 serial port.	PT-118

- F] **PonoPt** Then display flashesh 'PonoPt' means Power ON mode status of time. Select any mode by using  key. There are three modes described as follows :
- 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 be held at the last count, indicated by glowing of 'Hold' L.E.D. To start further release the hold by pressing  key. Then display flashes with 'rESUñ_'. Then further totalizer operation will start.
- PorSt 'Power ON Reset,' means at power on, the display will erase the all previous count & start counting from first. Select the desired power ON mode by means of  key & press '' key.
- G] **no CYC** Then display flashes 'no CYC' means number of cycles. This setting works only for pulse cycle mode. The setting is available from 0000 to 9999. If you ke e p number of cycle 0 then the timer runs continuously t i l l power off. In this case no of cycle will increment 999999 and reset back to 0 & totalizer runs continuously till power OFF. You can see number of cycle completed by pressing '' & '' keys at time. After setting no. of cycle press  key.
- H] **CyCALn** This mode come after no. Of cycle mode. This is only for pulse cycle ON/OFF mode. You can set cycle no. at you want this RL2 to Operate. This can be release by pressing  key. After setting cycle no., Press  key to come out of programming mode.

Note : You can set no. Of cycle in 'noCyC' mode & 'CyCALn' mode By pressing  &  keys.

D] **rELAYt** Then the display flashes 'rELAYt' means Relay action type. Select desired Relay action mode by pressing  key. There are six various Relay action types are available in this totalizer.


noFF 'Normally OFF', means Delay On. In this mode relay should be off at starting 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 reaches 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 / OFF 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 OFF time which is set in 'rLY tñ' mode. (relay ON / OFF 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 up to relay on time which is set in relay ON / OFF mode & then relay should be OFF & again it starts next cycle. In this way it will complete the total no. of cycles which set in noCyC 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 OFF time' which is set in relay ON / OFF mode & then Relay should be ON & again it starts the next cycle. In this way it will complete the total no. of cycles which set in noCyC mode. After selecting desired mode press  key.

E] **rLy tñ** Then display flashesh 'rLy tñ' relay ON / OFF time. It is used only in Pulse mode. select the desired range from 000.1 to 999.9 Sec. by using  &  keys. Then press  key.



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 5A/ 250VAC.
- * Cycle Relay output of 1NO/C/NC Relay contact rated 5A/ 250VAC.
- * 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. i.e.   
- * Compact in size, very easy to program and operate in field.
- * Built in +12VDC supply for Proximity switch, Infrared sensor, Encoder.
- * HOLD facility from front panel side.
- * RESET facility from front & rear terminal.
- * Isolated RS485 serial port with MODBUS RTU Protocol (Optional)



3) TECHNICAL SPECIFICATIONS:-




- Range** : 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
- Resolution** : 1,01,0.01 (Programmable) for Sec/Min/Hour)
- Accuracy** : Better than 0.1%
- Display** : 6 digits of 13.0 mm digit height 7 segment L.E.D. Display.
- Setting** : 3 membrane keys on front panel. i.e.   
- Count Mode:**Count Up, Count Down user selectable.
- Relay Action:**Normally ON, Normally OFF, Pulse O/P from 0 to 9999 second.
- Start (IP2)** : To start the time totalizer function activate IP2 with +V on rear terminal.
- Reset (IP1)** : Manual by pressing (-) key or remote reset from rear side terminal, activate IP1 with +V Terminal.
- Output** : 1NO/C/NC relay potential free contact rated 5A / 250VAC.
Cycle Relay O/P of NO/C/NC Relay contact rated 5A / 250VAC.
- Sensor Supply** : Built-in +12VDC / 50mA, supply for proximity, infrared, buzzer etc.
- Supply** : 230VAC ± 10% 50Hz, 110VAC ± 10% 50Hz, 24VDC
- Mounting** : Panel mounting/Wall mounting for flameproof model.
- Dimension** : 96 (W) X 48 (H) X 120 (D) in mm.
- Cutout** : 92 (W) X 44 (H) in mm.
- Cabinet** : ABS Plastic Black/White colour.
- Terminal** : 16 No. PBT connector of 2.5sq.mm lugs pin type or 2.5Sq.mm wire.
- Optional** : Isolated RS-485 serial port with MODBUS RTU Protocol output for PC interface.
- Weight** : 1 K.G. (Approx.)

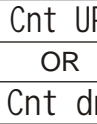


6) DESCRIPTION OF FLOW CHARTS - 1:-

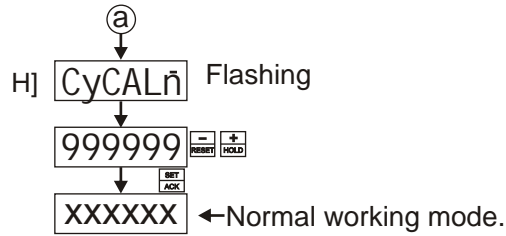
A]  To enter in programming mode press  key, then the display flashesh with 'HrS' i.e., Hour, Min. & Sec. Setting. Select the timerange in second/minute/hour as per given table.

SYMBOL	TYPE	RANGE
HrS	Hour	000001 to 999999
ñ n	Minute	000001 to 999999
SEC	Second	000001 to 999999
HHHH.ññ	Hour-Minute	0000.01 to 9999.59
ññññ.55	Minute-Second	0000.01 to 9999.59
HH.ññ.SS	Hour-Minute-Second	00.00.01 to 99.59.59

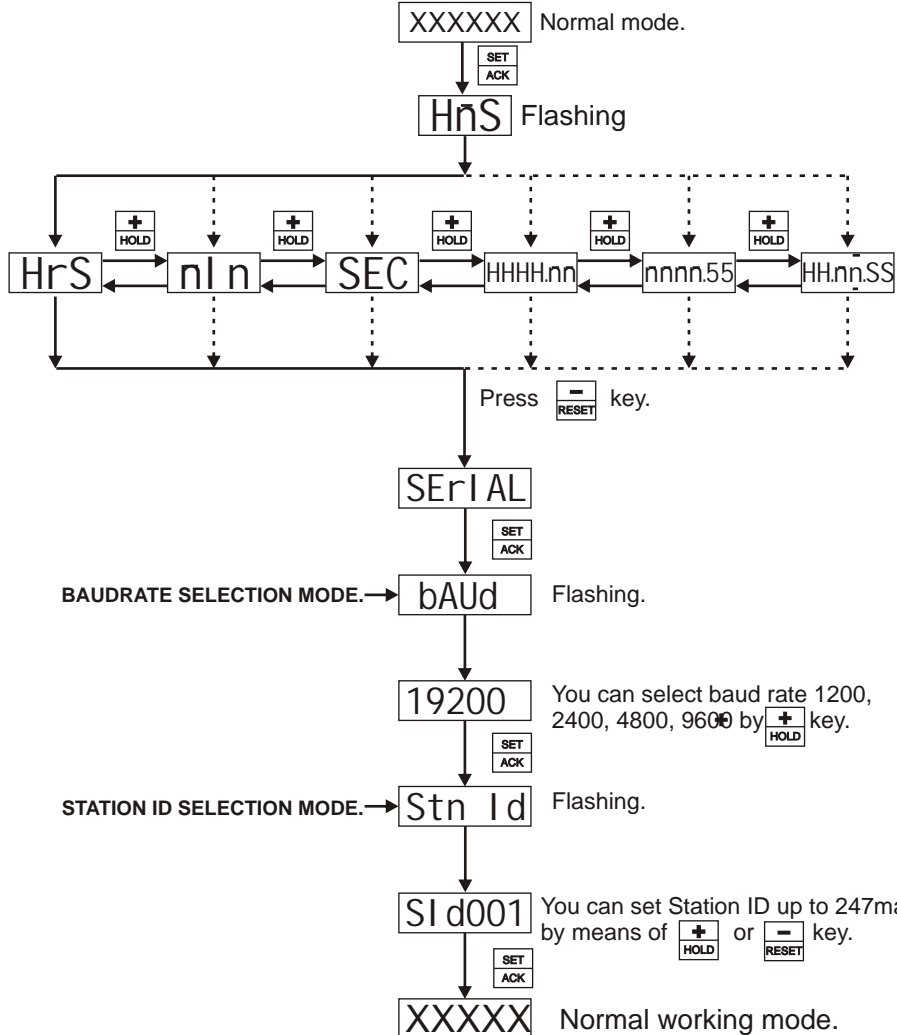
Adjust time range which you required by  key.& Press  key.

B]  Then display will show 'Pu_dEC' .This parameter is useful for setting resolution in Hour, Min & Sec as shown in flow chart. Resolution is acceptable for ranges Second or Minute or Hour only. Select the desired resolution by pressing  & then press  key.

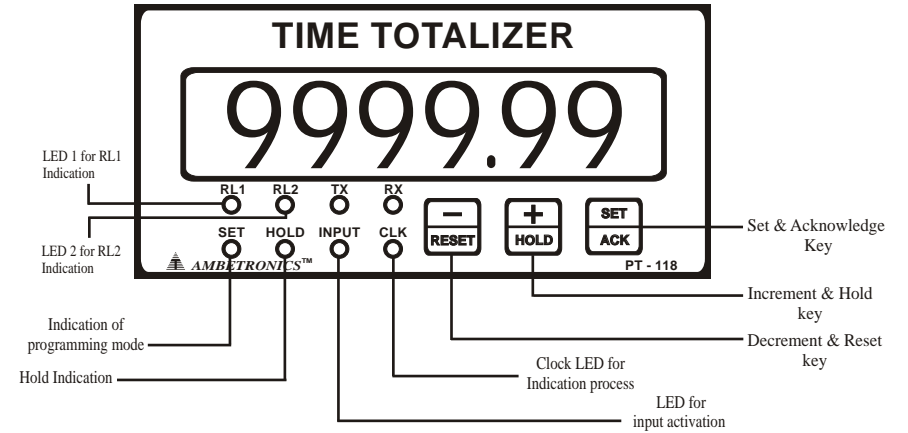
C]  Then display will show 'Cnt UP OR Cnt dn ' means count mode. There are two modes available i.e., up count & down count. Select desired count mode by  key & press  key.



FLOW CHART - 2 :- To go in serial to set station Id & Bound rate



4) FRONT PANEL DESCRIPTION:-






A) DISPLAY:-

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

B) LED INDICATION:-

- 1) **RL1**: It is indication of RL1. It operates as per the set relay type.
- 2) **RL2**: It is the indication of RL2. This relay is provided only for cycle relay type i.e. PCYnon & PCYnof. It operates at cycle set in cycle alarm mode.
- 3) **TX, RX** : These indicate RS485 serial communication is going ON. For serial communication bound rate & station Id between instrument & software should same as well as your comport selection in software should be perfect.
- 4) **SET**: This L.E.D. glows after pressing **SET ACK** key, indicates you are in programming mode
- 5) **HOLD**: This L.E.D. glow when **HOLD** key is pressed. If you select 'Power Stop' Relay type mode then after coming power, Hold L.E.D. Blinks by holding the value before power OFF.
- 6) **INPUT**: It glows when any connection to IP₂ is connected. It is the indication of activation of IP₂
- 7) **CLK** : Clock LED for indication of totalizer operation. This L.E.D. shows the timer operation is going ON. It goes OFF when timer operation is completed even if IP₂ is connected.

C) KEYS FUNCTION :-

KEY TYPE	PROGRAMMING MODE	NORMAL MODE
1) SET / ACKNOWLEDGE KEY 	It is used to move to the next parameter in programming mode & to register the new setting.	It is used to Acknowledge the RL2 when timer is in cycle mode.
2) INCREMENT / HOLD KEY 	It is used to increment / select parameter value in programming mode.	It is used to Hold the operation from front side. When this key is pressed 'Hold' comes on display to hold the operation & to release the 'Hold', again press this key, the display will show rESUnE& further operation will start
3) DECREMENT / RESET KEY 	1) It is used to decrement parameter value in programming mode. 2) To enter into serial mode.	It is used to Reset the operation from front side. When this key is pressed front side 'rESEt_' come on display, shows reset is done.

5) FLOW CHART - 1 :-

To Set Hour, Min., Sec. Setting, follow this flow chart

