

# OPERATING INSTRUCTIONS TT412 & TT12A / TT12C



## SPECIFICATIONS

### DISPLAY

0.3", 7 segment LED ( 6 digits ) For TT412  
0.5", 7 segment LED ( 6 digits ) For TT12

### RANGE

a) 99999.9 sec b) 999999 sec c) 99999.9 min  
d) 999999 min e) 99999.9 hrs f) 999999 hrs

### ACCURACY

Better than 0.05 %

### SETTING

Via key on front panel

### INPUT

Potential free contact

### RESET

Via rear terminals

### RESET TIME

20 ms.

### MEMORY RETENTION

10 years

### CONFIGURATION LOCK

Via rear terminals to avoid inadvertent change in configured parameters

### POWER SUPPLY

90 to 270V AC/ DC, @ 50 / 60 Hz, 1.0VA

### MOUNTING

Panel mounting

### OPERATING TEMP.

0 - 50°C

### HUMIDITY

95% RH

### HOUSING

ABS Plastic

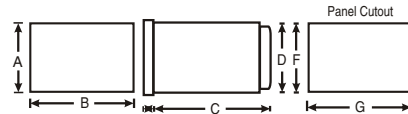
### WEIGHT (in gms)

TT12C - 225  
TT412 - 95

## PRODUCT CODE

MODELS	BEZEL SIZE(mm)
TT12C	48 X 96
TT12A	48 X 96
TT412	36 X 72

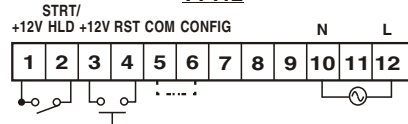
## OVERALL DIMENSIONS (All dimensions in mm)



DIM	A	B	C	D	E	F	G
TT412	33	75	74.5	28	3.5	29	71
TT12A	48	96	123	45	10	46	92
TT12C	50	97.5	88	45	10	46	92

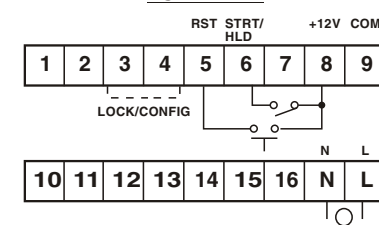
## TERMINAL CONNECTIONS

### TT412



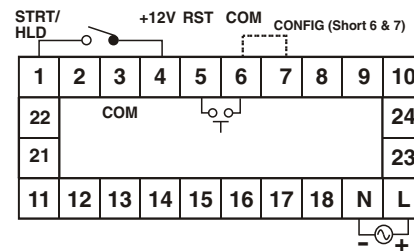
TERMINALS	DESCRIPTION
1	+12V
2	STRT/ HLD
3	+12V supply
3 - 4	Reset input
5	COM (GND)
5 - 6	Short to enter Configuration
10	N (Neutral)
12	L (Live)

### FOR TT12A



TERMINALS	DESCRIPTION
3	LOCK/CONFIG
4	
5	RST Input
6	STRT/ HLD
8	+ 12V
9	COM (GND)
N	Neutral
L	Live

## FOR TT12C



TERMINALS	DESCRIPTION
4 - 1	+12V - Start / Hold
5 - 6	Reset Input
6 - 7	Short to enter Configuration
3 & 6	COM (GND)
N	Neutral
L	Live

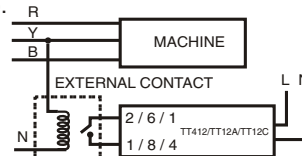
## OPERATION

The TT412 / TT12A / TT12C totalises time when STRT/HLD terminals are shorted (TT412: 1-2, TT12A: 8-6, TT12C: 1-4). When operated, the display advances by 1 count at every interval of selected least count. The display indicates the cumulative total of the time for which the instrument is operated. The time totaliser is used primarily for measuring running / operating time of continuously operating machines. The connections for such an application is given below:

## TYPICAL APPLICATION

**CASE1:** TT412 / TT12A / TT12C operated by external contact

- The display will be continuously ON.
- The time displayed on TT412 / TT12A / TT12C will be indicative of time for which the machine is ON.
- A PNP proximity sensor can be used instead of a switch.
- Connect proximity switch between terminals 1-2 (for TT412), 8-6 (for TT12A) and terminals 1-4 (for TT12C).

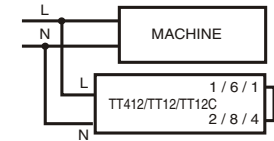


**CASE2:** TT412/TT12A/TT12C operated only by mains connection

- Short T1 & T2 terminals (For TT412), T6 & T8

(For TT12A), T1 & T4 (For TT12C)

2) Display will be on when power is applied to the machine in this case & will display the time for which the machine is ON.



## RANGE SELECTION PROGRAMMING

- Short terminal no 5 & 6 (For TT412), Short terminal no 3 & 4 (For TT12A), Short terminal no 6 & 7 (For TT12C)
- Turn power on
- Program range setting as per instructions below

KEY PRESS	DISPLAY	DESCRIPTION
	Blinking *	
Range	1	Least count = 0.1 sec. Range = 99999.9 sec.
Press	2	Least count = 1 sec. Range = 999999 sec.
Press	3	Least count = 0.1 min. Range = 99999.9 min.
Press	4	Least count = 1 min. Range = 999999 min.
Press	5	Least count = 0.1 hrs. Range = 99999.9 hrs.
Press	b	Least count = 1 hrs. Range = 999999 hrs.

After selecting appropriate code:

- Turn power off
- Remove link between terminal no 5 & 6 (For TT412), Remove link between terminal no 3 & 4 (For TT12A) Remove link between terminal no 6 & 7 (For TT12C)
- Turn power on. Display resets to 0 & start functioning as per selection.

TO READ RANGE ( for 3 sec )		
KEY PRESS (MOMENTARY)	DISPLAY	DESCRIPTION
RNG	1	Range code is displayed for selected range

(Specifications subject to change as development is a continuous process).