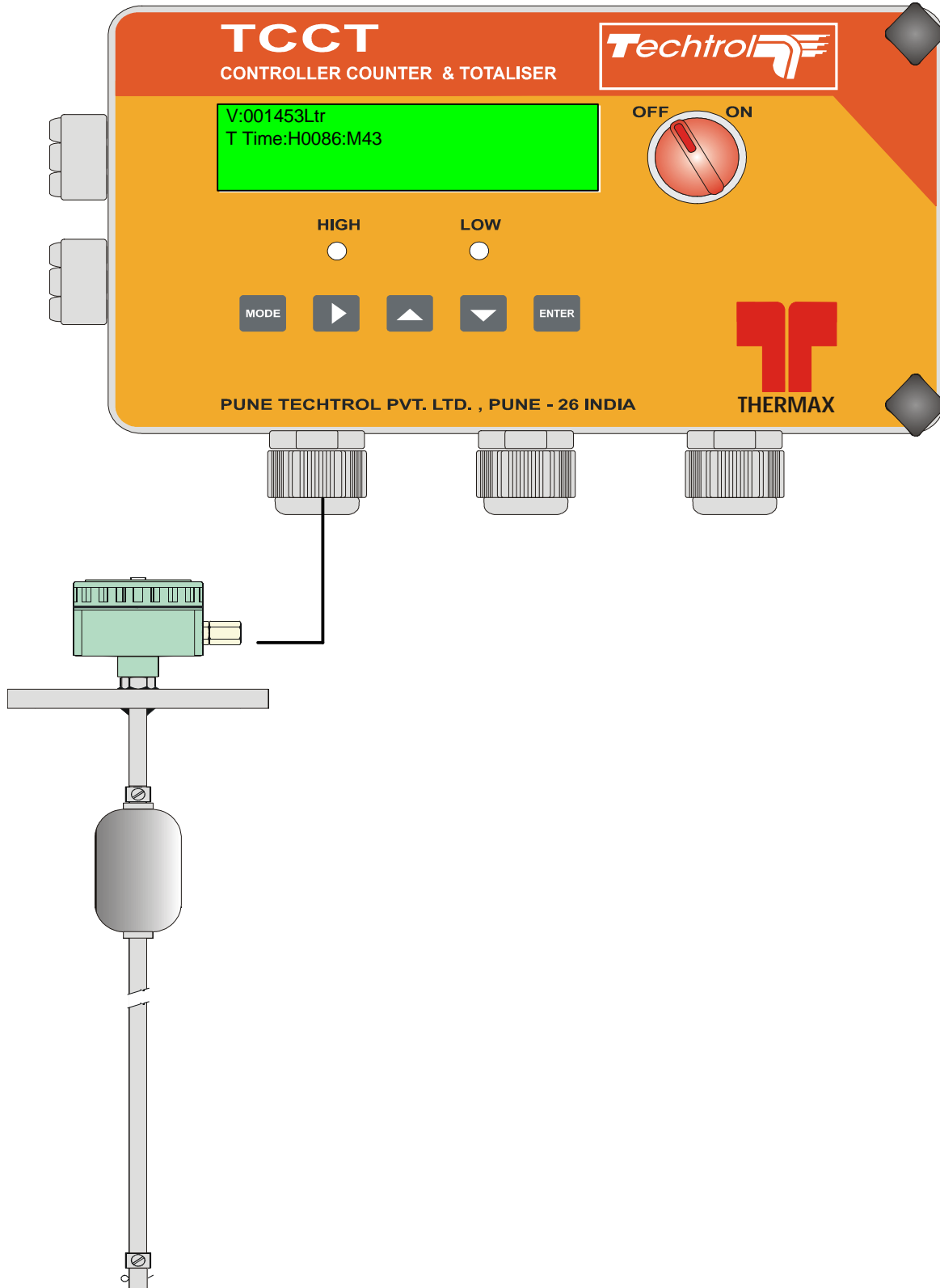


**INSTRUCTION AND MAINTENANCE MANUAL  
FOR  
TECHTROL COUNTER CONTROLLER & TOTALISER (TCCT)**

( Document No. : MAN / TCCT / Rev. 01 / 09 - 2006. )



## **CONTENTS**

### **1 Introduction & Working**

### **2 Features**

### **3 Specifications**

### **4 Construction & Operation**

#### **4.1 Mechanical**

#### **4.2 Display**

#### **4.3 Keys**

#### **4.4 Terminal Details**

### **5 Functional & Programming details**

#### **5.1 Run Mode**

#### **5.2 Program Mode**

**5.2.1 Menu 1** - Run time display configuration

**5.2.2 Menu 2** - Configure Volume Unit, Bottom offset,  
and Volume multiplying factor per cycle.

**5.2.3 Menu 3** - Alarms set point programming .

**5.2.4 Menu 4** - Relay programming

**5.2.5 Menu 7** - Save programmed data.

### **6 Trouble shouting**

We are glad to know that you are using a reliable ' Techtrol Product ". For proper and safe functioning of the same, we suggest you to go through this Manual carefully before installing our instrument.

**INTRODUCTION & WORKING :**

Techtrol CounterController & Totaliser - TCCT is a unit to be used with float guided level switch (FGS). TCCT works on low level and high level detected by FGS. This input is used to control the inlet & outlet of the process by activating relay/s in TCCT as per configuration. A micro-controller based TCCT also counts the cycles, converts cycles to volume, All the parameters can also be viewed on display.

**FEATURES :**

- A 2 line X 16 character dot-matrix backlit LCD display
- B Volume calculations using volume multiplication factor and display in Ltrs / KL / m<sup>3</sup>.
- C Relay outputs 2 nos. independently configurable on alarms or latching type ; set & reset.

**SPECIFICATIONS :**

DISPLAY	2 line X 16 character dot-matrix backlit LCD display 10 mm ht. 2 Red LED's for alarm status.
VIEW PARAMETER	: Volume in Liters / Kiloliters / M3 The cycle count and total accumulated time on the 2nd display line (scrolled display).
CIRCUITRY	: MICROCONTROLLER BASED
INPUT	: Low & High level contacts from FGS
RELAYS:	: Relay out put 2 nos. Contact rating 230VAC, 5A Relay 1 contacts are live and must be used for solenoid valve operation. Relay 1 must be configured on latch mode Set to High Level & reset to Low Level. Relay 2 is with potential free contacts
PROGRAMMING	: 4 Digit security code .Using 5 function keys Mode,Next (Shift), Up (Increment), Down (Decrement), Enter
PROTECTION	: Optical Isolation for Inputs/Outputs Lighting Protection using MOV's
SUPPLY	: 230VAC/110VAC factory settable Amb. Temterature : 70deg.C Amb. Humidity :95% Rh,non condensing, Power consumption : 3VA
ENCLOSURE	: Wall mounting, glass polyster, weather-proof IP65, size: 220(L) x 120(H) x 90(D) mm. Ex.proof Gr IIA & IIB (option)

**CONSTRUCTION & OPERATION :**

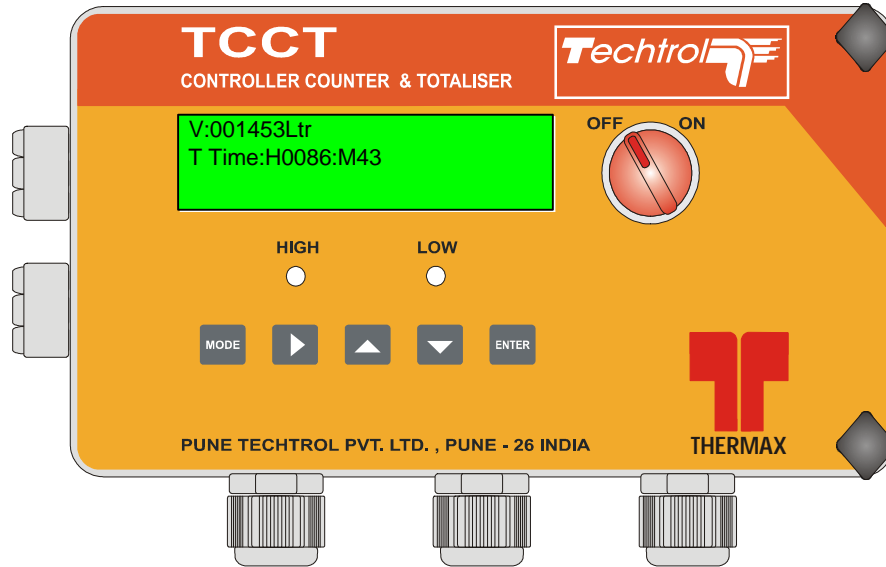
**MECHANICAL - TCCT is a wall mounting instrument**

housed in WP IP-65 glass polyester enclosure.

Size (220mm x 120mm x 90mm).

**DISPLAY** - The front contains a 16 character X 2 lines alphanumeric display dot matrix, LCD Display with Backlit.

**Front Panel**



**KEYS** - Five keys are provided for programming & to configure data. These are as follows,



**Mode Key** - Press this key for programme / Escape to next MENU.



**Next (Shift) Key** - In program mode this key is used to select next menu or shift right character while entering (modify) the data. / this key is used to access previous menu



**Up (Increment) Key** - In programe mode this key is used to increament selected character

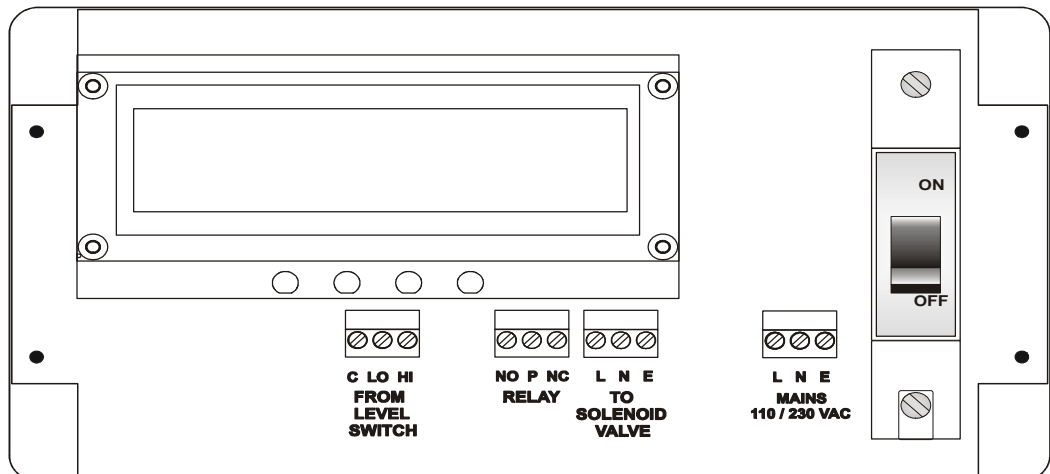


**Down (Decrement) Key** - In programe mode this key is used to decreament selected character



**Enter Key** - Key is used to enter parameter .

**Terminal Details -**



## FUNCTIONAL & PROGRAMMING DETAILS :

### RUN MODE :

In run mode the data on display module can be viewed as in the front column.

V :	0	1	4	2	5	0		L	t	r			
C :	0	0	1	5	0	0							

V :	0	1	4	2	5	0		L	t	r					
T		T	i	m	e	:	H	0	1	4	2	:	M	4	1

V :	0	1	4	2	5	0		L	t	r					
I	t	e	m		D	I	s	a	b	l	e	d			

### PROGRAM MODE :

**MODE**

Press Mode Key for programming.

**ENTER**

Press Enter key to go for programming



if NEXT key escape

The 4 character pass word can be entered  
**Default pass word is press** Enter key 4 times  
 Continue programing to Menu 1 if pass-word is correct.  
 If wrong Pass-word, then return to Run mode

T	o	t	a	l		I	s	e	r		R	e	s	e	t	?
Y	e	s	=	E	n	t	e	r	,	N	o	=	>			

E	n	t	e	r		P	a	s	s	_	w	o	r	d		
P	a	s	W	r	d	:	*	*	*	*	*					

E	n	t	e	r		P	a	s	s	_	w	o	r	d		
W	r	o	n	g		P	a	s	s	_	w	o	r	d		

**Menu 1** - Using this menu the Totaliser and accumalated time can be reset

**ENTER**

Actual totalise volume, total time and menu 1 will toggale after 2sec each  
 For reset press ENTER key for 2 sec

**MODE**

For menu2 press MODE key for 2 sec  
 The display will show reseted value for 2 sec and go to MENU 2

**Menu 2** - Using this menu Password can be changed

**MODE**

Press MODE key for next menu



Press NEXT key for previous menu

**ENTER**

Press ENTER key to change password  
 Enter the password using four key combination  
 The 4 character pass word can be entered

V :	0	1	4	2	5	0		L	t	r					
T		T	i	m	e	:	H	0	1	4	2	:	M	4	1

C	o	n	f	i	r	m		R	e	s	e	t	?	.	.
N	o	=	M	o	d	e	Y	e	s	=	E	n	t	e	r

V :	0	0	0	0	0	0		L	t	r					
T		T	i	m	e	:	H	0	0	0	0	:	M	0	0

C	h	a	n	g	e		p	a	s	s	w	o	r	d		
N	o	=	M	o	d	e	Y	e	s	=	E	n	t	e	r	

E	n	t		o	l	d		p	a	s	s	w	o	r	d	
P	a	s	W	o	r	d	:	_	_	_	_	_				

E	n	t		N	e	w		p	a	s	s	w	o	r	d	
P	a	s	W	o	r	d	:	_	_	_	_	_				

**Menu 3** - This menu is used to save programmed data in nonvolatile memory. Each time any programmed parameter is modified this menu is required to be executed to retain the modified data.

S	a	v	e	?	.	.	.	M	e	n	u	2	=	>
P	r	g	=	M	o	d	e	Y	=	E	n	t	e	r

**MODE**

Press MODE key for program menu



Press NEXT key for previous menu

**ENTER**

Press ENTER key to SAVE & return to Run Mode.

**PROGRAMMING MENU**

**ENTER**

Press MODE key for run menu  
 Press ENTER key for program menu  
 You have to enter 4 digit numeric password '----'  
 if not return to run mode

.	.	.	.	P	r	o	g	r	a	m	m	i	n	g	
Y	e	s	=	E	n	t	e	r	N	o	=	M	o	d	e

E	n	t	e	r	P	a	s	s	_	w	o	r	d
							0	0	0	0			

**Menu 1** This menu is used to select display parameters in Run mode

**ENTER**

Press ENTER key to select

**MODE**

Press MODE key to next menu.

P	r	g	.	D	i	s	p	l	a	y	I	t	e	m	
Y	e	s	=	E	n	t	e	r	N	o	=	M	o	d	e

**ENTER**

Press ENTER key to select Total Time display y/n  
 UP (INC) key is used to toggle y/n.



P	r	g	.	D	i	s	p	l	a	y	I	t	e	m
T	o	t	a	l	T	i	m	e	D	i	s	p	:	n

**ENTER**

Press ENTER key to select Count display y/n  
 UP (INC) key is used to toggle y/n.



P	r	g	.	D	i	s	p	l	a	y	I	t	e	m
C	o	u	n	t		D	i	s	p	l	a	y	:	y

**Menu 2** - Configure Volume Unit and Volume correction factor.

**MODE**

Press MODE to Display MENU - 3.

**ENTER**

Press ENTER to configure Volume Unit.



Press NEXT to Display MENU - 1

P	r	g	.	U	n	i	t		M	e	n	u	1	=	>
M	e	n	u	3	=	M	o	d	e	Y	=	E	n	t	



UP (INC) key is used to select unit.

P	r	g	.	U	n	i	t		^	K	e	y	
V	o	l	u	m	e	U	n	i	t	:	L	t	

**ENTER**

Press **ENTER** key to configure volume multiplying factor per Cycle. NEXT, UP& DEC keys are used to select & modify the digit.

U	s	e					^	v	>		K	e	y		
V	o	l	u	m	e	M	F	P	C	:	4	2	L	t	

**Menu 3** - Level Alarms set point values can be programmed using this menu. **No action**

**Warning :- Programing is disabled. No action on relay output / LED indication .**



Press MODE key to display Menu 4.

A	l	a	m	P	r	o	g	.	M	e	n	u	2	=	>
M	e	n	u	4	=	M	o	d	e	Y	=	E	n	t	



Press NEXT key to display Menu 2



Press **ENTER** key to configure alarm menu  
Alarm menu is Disabled

P	r	g		A	l	a	r	m							
D	i	s	a	b	i	e	d	.	.	.	.				

**Menu 4** - Using this menu each relay can be configured either on one of the count alarms ,volume alarm or on lap time high to low or low to high. Also can be configured on latch mode by setting set & reset levels.

**Relay programing menu is changed and fixed for set = Hi Level reset = Lo Level**

Press NEXT key to display Menu 3

Press MODE key to display Menu 5

R	l	y		P	r	g	.		M	e	n	u	3	=	>
M	e	n	u	5	=	M	o	d	e	Y	=	E	n	t	



Press ENTER key to read the next parameter

R	l	y	1		A	s	s	i	g	n	e	d		t	o
L	a	t	c	h											

R	l	y	1		A	s	s	i	g	n	e	d		t	o	
					S	e	t	:	H	i		L	e	v	e	l

Same logic is followed for second Relay

R	l	y	1		A	s	s	i	g	n	e	d		t	o			
					R	e	s	e	t	:	L	o		L	e	v	e	l

**Menu 6** - This menu is used to save programmed data in

nonvolatile memory. Each time any programmed parameter is modified this menu is required to be executed to retain the modified data.

S	a	v	e	?	.	.	.	M	e	n	u	4	=		>
R	u	n	=	M	o	d	e	Y	=	E	n	t	e	r	



Press MODE key to unsave & return to run mode



Press NEXT key to unsave & return to previous MENU.



Press ENTER key to SAVE & return to Run Mode.

## 6 TROUBLE SHOOTING -

Switch on the Instrument

	<b>Fault / Defect</b>		<b>Cause &amp; Remedy</b>
1	No Backlit & Message appears on Display	a	Check mains supply voltages & fuse
2	No change in Counts	a	Check level switch wiring & terminals.
		b	Check functioning of level switch contacts Low /High..If faulty replace switch assembly.
3	Relay operation error	a	Check Relay wiring is correct.
		b	Relay is faulty
		c	Check MCB contacts
4	Volume reading error	a	Check Volume multiplying factor per cycle
		b	Fault is due to case 2



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