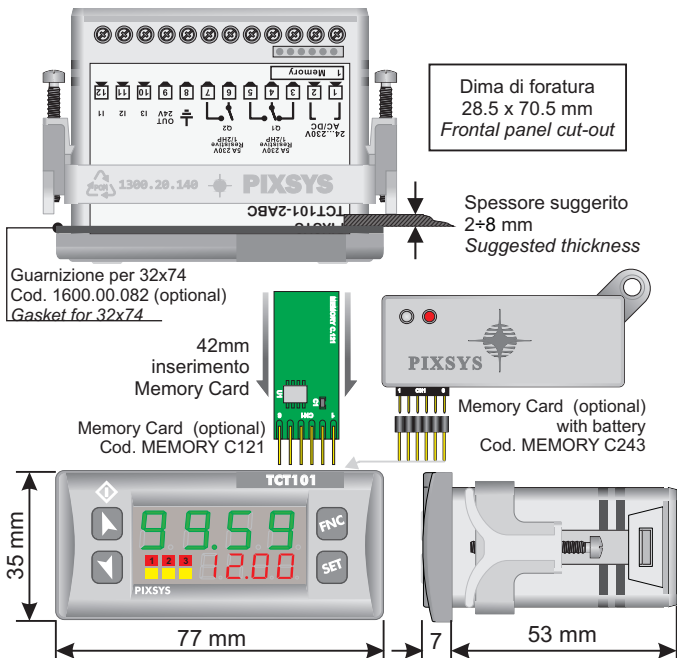




TCT101-2ABC MANUAL

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e-mail: sales@pixsys.net - support@pixsys.net
Software V 2.08
2300.10.121-Rev I 200314

SIZE AND INSTALLATION



TECHNICAL DATA

Operating temperature Operating temperature 0-40°C, humidity 35...95uR%
Sealing Front panel IP65 (with optional gasket) , Box IP30, Terminal blocks IP20

Material PC ABS UL94V0 self-extinguishing

Digital Inputs 3PNP/NPN configurable as analogue for potentiometers. (max 28 Vdc in PNP mode)

Outputs 2 relays 5A resistive charge

OUT 24V 30mA(24Vac),40mA(24 Vdc),60mA (110...230Vac)

Back-UP Rechargeable battery, approx. 7days autonomy

Programming Software Labsoftview 2.6 or later

Power Supply 24...230Vac/Vdc +/-15% 50/60Hz / 2W

LED	MEANING
	Report the activation of Q1
	Report the activation of Q2
	Report serial transmission by the TCT101

SETPOINT MODIFICATION		
PRESS	DISPLAY	
1		Visualizes SETPOINT 1 / 2
2		Modify selected SET
2a		Selects chosen digit
3a		Modify blinking digit of selected SET

INTRODUCTION

Thanks for choosing a Pixsys device.TCT101 can be set in 2 different modes: Single or Double counter, all with independent setting.3 universal digital inputs are available (NPN/PNP/Potential free contact) and can be used for bidirectional encoders reading, UP/DOWN counter function, LOCK/HOLD to lock or hold current visualization.One input is also analogue in order to allow setpoint modification by an external potentiometer.



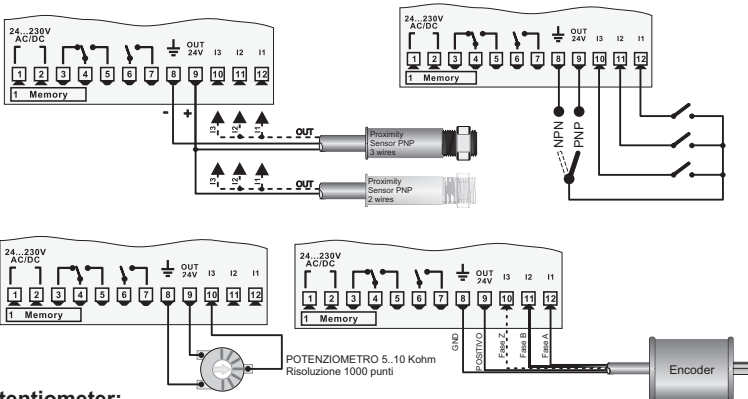
Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device.

Disconnect power supply before proceeding to hardware settings or electrical wirings.

Only qualified personnel should be allowed to use the device and/or service it and in accordance to technical data and environmental conditions listed in this manual.

Do not dispose electric tools together with household waste materials in observance of European Directive 2002/96/CE

WIRING DIAGRAM



Potentiometer:

To modify Set1 or Set2 by external potentiometer follow the steps below:

1-use potentiometers 5kOhm to 10kohm

2-connect cursor to pin I3; a wrong connection may damage the potentiometer and lead to lock of the device.

3-accuracy on input is max 1000 points, therefore set the parameters "Upper limit" and "Lower limit" with a max difference of 1000 units. (Ex.: LoS1 to 50,0 and uPS1 to 150,0 to modify time value related to Set1 between 50 and 150 seconds with steps of one tenth). Greater differences would make unstable the less significant digit.

4-To calibrate the scale of potentiometer enter the configuration mode and select:

Hin.3 as Pot Fin.3 as Set1 or Set2 P.tAr as Enable

Exit configuration mode and place potentiometer at minimum level and press key, then place potentiometer at max level and press premere key: the device automatically exit the calibration procedure.

N.B.: A switch-off of the device would interrupt the calibration.

MEMORY CARD (optional)

Parameters and setpoint values can be copied from one device to another using the Memory card.

There are two methods:

> With the device connected to the power supply insert the memory card when the controller is off.

On activation display 1 shows and display 2 shows=====

(Only if the values stored on Mmemory Card are correct).

By pressing the key display 2 shows LoRA

Confirm using the key .

The device loads the new data and starts again.

> With the controller disconnected from the power supply:

The memory card is equipped with an internal battery with a life of about 1000 uses.

Insert the memory card and press the programming button.

When writing the parameters, the LED turns red and on completing the procedure it changes to green. It is possible to repeat the procedure.

UPDATING MEMORY CARD.

To update the memory card values, follow the procedure described in the first method, setting display 2 to ===== so as not to load the parameters on controller.

Enter configuration and change at least one parameter. Exit configuration. Changes are saved automatically.

LOADING DEFAULT VALUES

This procedure restores the factory settings of the instrument.

LOADING DEFAULT VALUE		
PRESS	DISPLAY	DO
1	Display 1 shows 0000 and 1st digit flashes. Display 2 shows PASS	
2	Modify flashing digit and pass to the next one pressing	Enter password 9999
3	Device loads default settings	Switch-off and restart the device

MODIFY CONFIGURATION PARAMETERS

PRESS	DISPLAY	DO
1	for 3 seconds Display 1 shows 0000 and 1st digit flashes. Display 2 shows PASS	
2	Modify flashing digit and pass to the next one pressing	Enter password 1234
3	to confirm Display shows first parameter of configuration table Func	
4	Scroll parameters	
5 +	Increase or decrease visualized value by pressing and an arrow key.	Enter the new data which will be stored releasing the keys
6	End configuration, controller exits from programming mode.	

PARAMETERS LIST

FUNCTION CONFIGURATION

Func.	P-01 Counter Function	Counter Functions	
S inC	Single (1 Counter)	1 counter functioning	Default
doub	Double (2 Counters)	2 counters functioning	

BACKUP MEMORY CONFIGURATION

PotE	P-02 Power-off Memory	Power-off memory	
d S	Disable	No counter stored at power-off	Default
ent 1	Counter 1	Counter 1 stored at power-off	
ent 2	Counter 2	Counter 2 stored at power-off	
ALL	All Counters	All counters stored at power-off	

INPUT CONFIGURATION

H in 1	P-03 Hardware input 1	Input 1 Hardware configuration	
H in 2	P-04 Hardware input 2	Input 2 Hardware configuration	
H in 3	P-05 Hardware input 3	Input 3 Hardware configuration	
nPN	NPN	NPN (not available on Input 3)	
pNP	PNP	PNP	Default
tTL	TTL	TTL	
Pot.	Potent.	Potentiometer (available only for Input 3)	

F iL 1	P-06 Filter Delay Input 1	Input 1 digital filter configuration	
F iL 2	P-07 Filter Delay Input 2	Input 2 digital filter configuration	
F iL 3	P-08 Filter Delay Input 3	Input 3 digital filter configuration	
00	No delay	Input filter disabled	Default
05	0,5 ms	Filter of 0,5 ms	
...(Step 0,5 ms)	
1000	100,0 ms	Filter of 100,0 ms	

A in 1	P-09 Active State Input 1	Active state Input 1	
A in 2	P-10 Active State Input 2	Active state Input 2	
A in 3	P-11 Active State Input 3	Active state Input 3	
HLEu	High Level	High level (available only for Input 2)	
LEu	Low Level	Low level (available only for Input 2)	
r iS	Rising edge	Rising edge	Default
FALL	Falling edge	Falling edge	

F in 3	P-12 Function Input 3	Function associated to Input 3	
d S	Disable	Disabled	
EncZ	Encoder Z	Loading encoder Z	
Ld 1	Load Counter 1	Loading counter 1	Default
Ld 2	Load Counter 2	Loading counter 2	
Ld 12	Load Counter 1&2	Loading counters 1 and 2	
SEt 1	Set1	Set1 setting by potentiometer	
SEt 2	Set2	Set2 setting by potentiometer	

FtUp	P-13 Function Key UP	Function associated to UP (up arrow key)	
d S	Disable	Disabled	Default
Ld 1	Load Counter 1	Loading counter 1	
Ld 2	Load Counter 2	Loading counter 2	
Ld 12	Load Counter 1&2	Loading counters 1 and 2	

P.tAr	P-14 Potentiom. Tarature	Potentiometer calibration procedure	
d S	Disable	Disabled	Default
En	Enable	Enabled	

COUNTER CLOCK CONFIGURATION

CLC 1	P-15 Clock Counter 1	Counter 1 count mode selection	
CLC 2	P-33 Clock Counter 2	Counter 2 count mode selection	
d S	Disable	Disabled	Default C2
Enc	Encoder	Bidirectional encoder (I1) phase A, (I2) phase B	
uP--	I1 Up, I2 Off	UP mode (I1)	Default C1
da--	I1 Down, I2 Off	DOWN mode (I1)	
--uP	I1 Off, I2 Up	UP mode (I2)	
--da	I1 Off, I2 Down	DOWN mode (I2)	
uPda	I1 Up, I2 Down	UP mode (I1) - DOWN mode (I2)	
uP d	I1 Up, I2 Incr./Decr.	UP mode (I1) with reverse direction (I2)	
uPEL	I1 Up, I2 En./Lock	UP mode (I1) with count lock (I2)	
uPEH	I1 Up, I2 En./Hold	UP mode (I1) with keeping value on display (I2)	
daEL	I1 Down, I2 En./Lock	DOWN mode (I1) with count lock (I2)	
daEH	I1 Down, I2 En./Hold	DOWN mode (I1) with keeping value on display (I2)	
acc	Output Counter 2/1	UP count on rising edge of counter 2/1 output	

COUNTER DISPLAY CONFIGURATION

d iC 1	P-16 Display Counter 1	Counter 1 visualization selection	
d iC 2	P-34 Display Counter 2	Counter 2 visualization selection	

d S	Disable	Counter value not visualized	Default C2
u S	Visualized	Counter value visualized	Default C1
dPC 1	P-17 Decimal Point Counter 1	Counter 1 visualization format	
dPC 2	P-35 Decimal Point Counter 2	Counter 2 visualization format	
0	0	No decimal digit visualization	Default
00	0.0	1 decimal digit visualization	
000	0.00	2 decimal digits visualization	
0000	0.000	3 decimal digits visualization	
inC 1	P-18 Counter 1 input counts	Counter 1 input counts (1...9999)	Default 1
inC 2	P-36 Counter 2 input counts	Counter 2 input counts (1...9999)	Default 1
u iC 1	P-19 Counter 1 Visualized Counts	Counter 1 visualized counts (1...9999)	Default 1
u iC 2	P-37 Counter 2 Visualized Counts	Counter 2 visualized counts (1...9999)	Default 1

SETPOINT CONFIGURATION

d S 1	P-20 Display Set 1	Counter 1 setpoint visualization selection	
d S 2	P-38 Display Set 2	Counter 2 setpoint visualization selection	

d S	Disable	Setpoint value not visualized	Default C2
u S	Visualized	Setpoint value visualized	
Mod	Modifiable	Setpoint value visualized and modifiable	Default C1
LoS 1	P-21 Lower Limit Set 1	Set 1 minimum value (0...9999)	Default 0
LoS 2	P-39 Lower Limit Set 2	Set 2 minimum value (0...9999)	Default 0
uPS 1	P-22 Upper Limit Set 1	Set 1 maximum value (0...9999)	Default 999
uPS 2	P-40 Upper Limit Set 2	Set 2 maximum value (0...9999)	Default 999

AUTOMATIC LOAD CONFIGURATION

ALC 1	P-23 Automatic Load Counter 1	Counter 1 automatic loading	
ALC 2	P-41 Automatic Load Counter 2	Counter 2 automatic loading	
d S	Disable	Automatic loading disabled	Default
SEt 1	Counter = Set 1	Loading if counter = Set1	
SEt 2	Counter = Set 2	Loading if counter = Set2	
Sod 1	Counter = Set 1+Output Duration 1	Loading if counter = Set1 + "Output Duration 1"	
Sod 2	Counter = Set 2+Output Duration 2	Loading if counter = Set2 + "Output Duration 2"	
u iC 1	Counter = Visualized counts	Loading if counter = "Visualized Counts"	
S-d 1	Counter = Set 1-Output Duration 1	Loading if counter = Set1 - "Output Duration 1"	
S-d 2	Counter = Set 2-Output Duration 2	Loading if counter = Set2 - "Output Duration 2"	
SdE 1	Counter = Set 1 after Out. Dur. 1(time)	Loading if counter = Set1 "Output Duration 1"	
SdE 2	Counter = Set 2 after Out. Dur. 2(time)	Loading if counter = Set2 "Output Duration 2"	

COUNTER LOAD VALUE CONFIGURATION

CLd 1	P-24 Counter Load Value 1	Counter 1 loading value	Default 0
CLd 2	P-42 Counter Load Value 2	Counter 2 loading value	Default 0

COUNTER OUTPUT MODE CONFIGURATION

Co 1	P-25 Counter 1 Output Mode	Counter 1 output mode	
Co 2	P-43 Counter 2 Output Mode	Counter 2 output mode	
SEt 1	Counter ≥Set	Output active if Counter ≥Set	Default
t iNE	Counter ≥Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≥Set	
Coen	Counter ≥Set * Output Duration (counts)	Output active for "Output Duration" counts if Counter ≥Set	
SE 12	Counter ≥Set1+Set2	Output active if Counter ≥Set1+Set2	
-SE 1	Counter ≤Set	Output active if Counter ≤Set	Default
-t iN	Counter ≤Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≤Set	
-Coen	Counter ≤Set * Output Duration (counts)	Output active for "Output Duration" counts if Counter ≤Set	
-S 12	Counter ≤Set1 + Set2	Output active if Counter ≤Set1+Set2	

OUTPUT DURATION CONFIGURATION

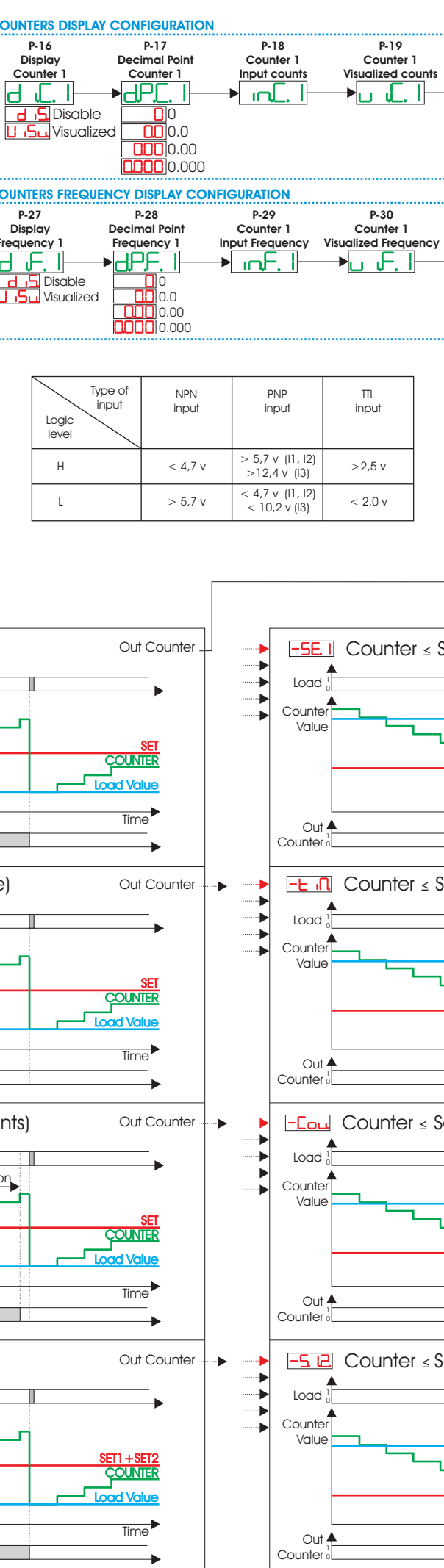
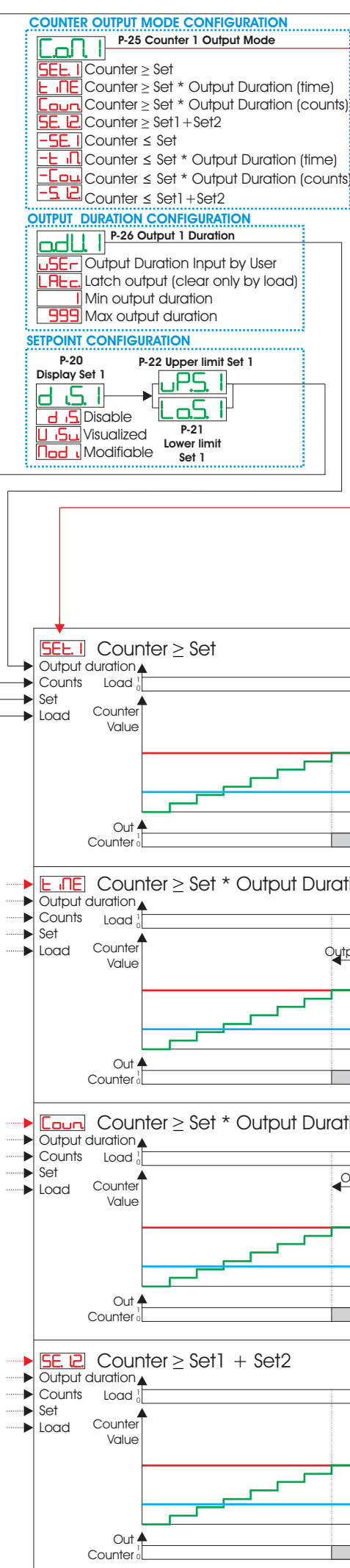
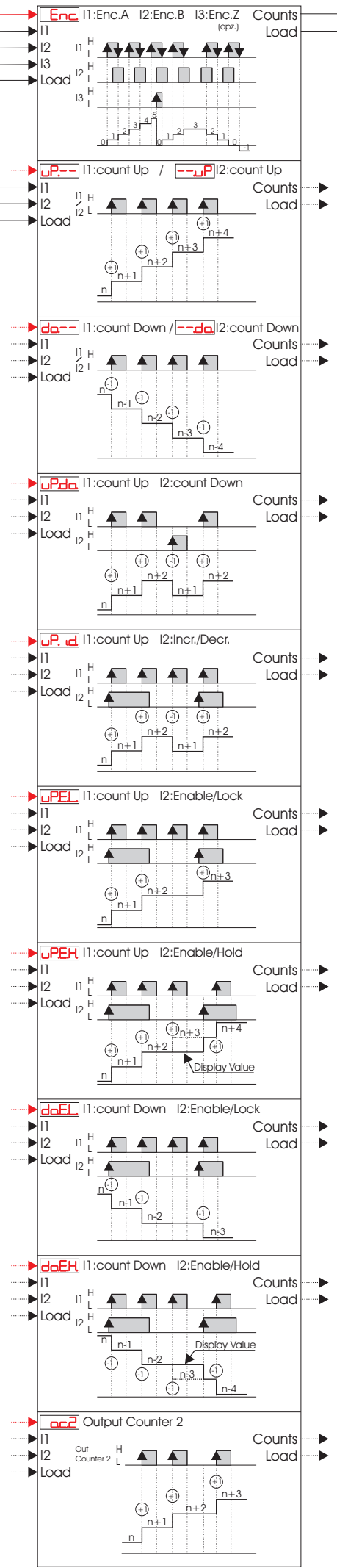
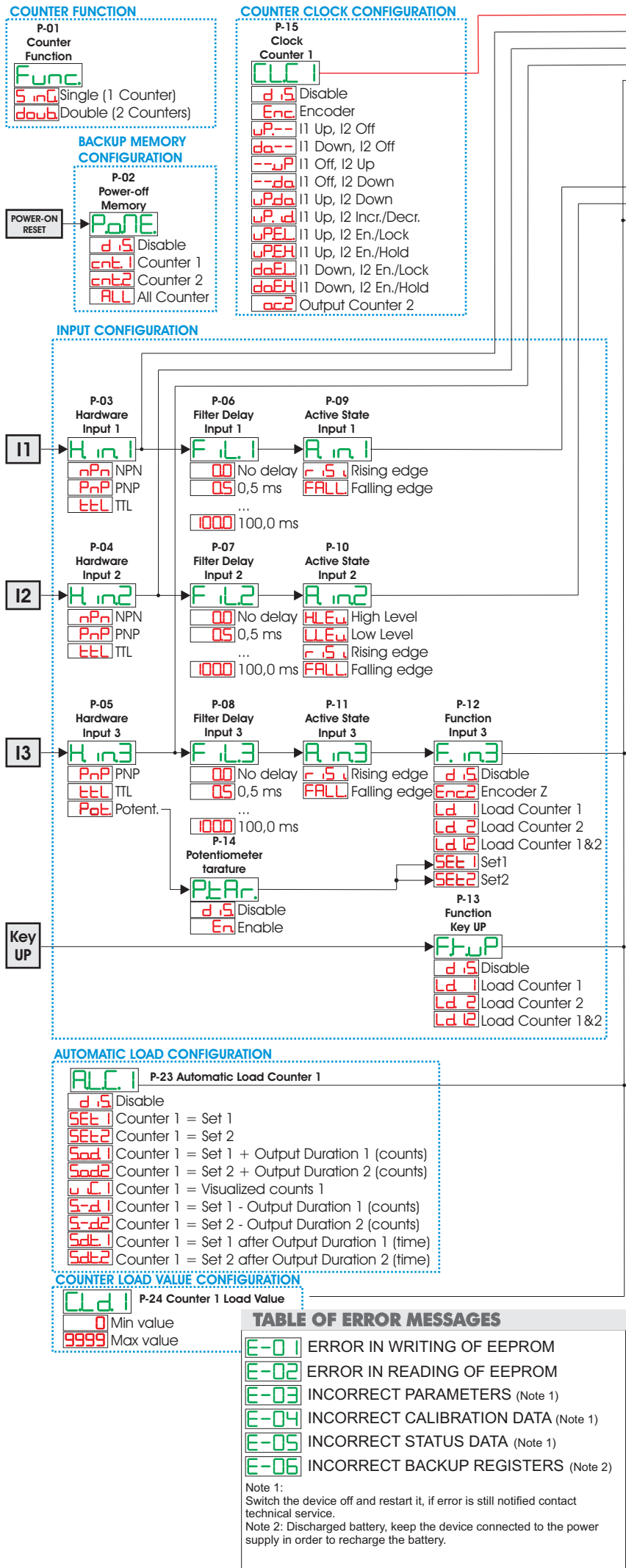
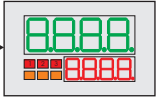
odU 1	P-26 Output 1 Duration	Counter 1 output duration	Default 10
odU 2	P-44 Output 2 Duration	Counter 2 output duration	Default 10
uSEr	Output Duration Input by User	Value modifiable by user	Default
LAte	Latch output (clear only by load)	Latch output, resettable by counter loading	
1	Min output duration	Output duration minimum value	
999	Max output duration	Output duration maximum value	

COUNTER FREQUENCY DISPLAY CONFIGURATION

d f 1	P-27 Display Frequency Counter 1	Counter 1 frequency visualization	
d f 2	P-45 Display Frequency Counter 2	Counter 2 frequency visualization	
d S	Disable	Counter frequency value not visualized	Default
u S	Visualized	Counter frequency value visualized	
dPF 1	P-28 Decimal Point Frequency Counter 1	Counter 1 frequency format	
dPF 2	P-46 Decimal Point Frequency Counter 2	Counter 2 frequency format	
0	0	Visualization with no decimal digit	Default
00	0.0	Visualization with 1 decimal digit	
000	0.00	Visualization with 2 decimal digits	
0000	0.000	Visualization with 3 decimal digits	
inF 1	P-29 Counter 1 Input frequency	Counter 1 input frequency (1...9999Hz)	Default 1
inF 2	P-47 Counter 2 Input frequency	Counter 2 input frequency (1...9999Hz)	Default 1
u f 1	P-30 Counter 1 Visualized Frequency	Counter 1 visualized frequency	Default 1
u f 2	P-48 Counter 2 Visualized Frequency	Counter 2 visualized frequency	Default 1
out 1	P-31 Output Q1 Setup	Output Q1 setting	
out 2	P-32 Output Q2 Setup	Output Q2 setting	
d S	Disable	Disabled output	Default C2
C inc	Out Counter 1 n.o.	Counter 1 output on n.o. contact	Default C1
C inc	Out Counter 1 n.c.	Counter 1 output on n.c. contact	
C2nc	Out Counter 2 n.o.	Counter 2 output on n.o. contact	
C2nc	Out Counter 2 n.c.	Counter 2 output on n.c. contact	

TCT101-2ABC

"COUNTER"



Logic level	Type of input	NPN input	PNP input	TTL input
H		< 4,7 v	> 5,7 v (I1, I2) > 12,4 v (I3)	> 2,5 v
L		> 5,7 v	< 4,7 v (I1, I2) < 10,2 v (I3)	< 2,0 v