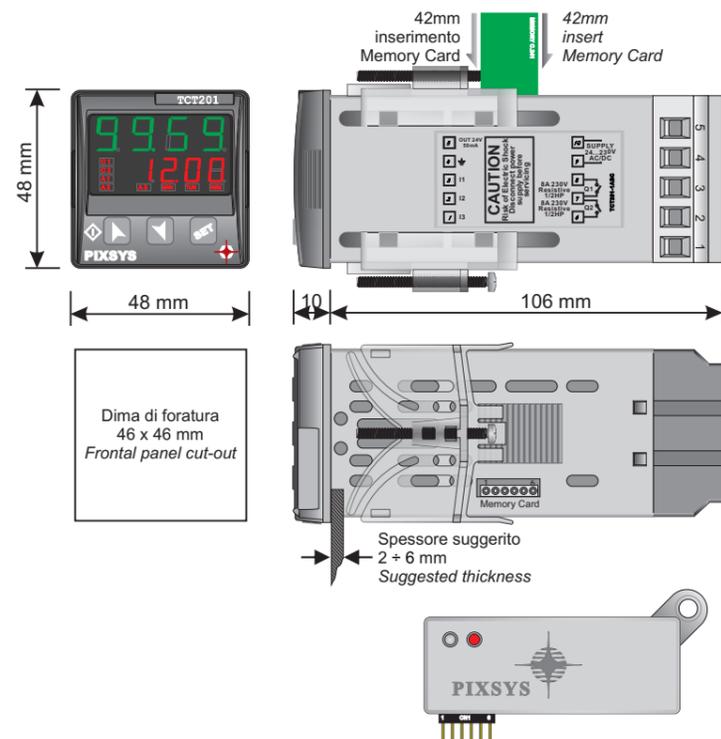


TCT201-2ABC USER MANUAL

PIXSYS www.pixsys.net
 e-mail: sales@pixsys.net - support@pixsys.net
 Software V 2.03
 2300.10.138-RevA 130510



SIZE AND INSTALLATION



SETPOINT MODIFICATION	
PRESS	DISPLAY
1	Visualizes SETPOINT 1 / 2
2	Modify selected SET

TECHNICAL DATA

Operating temperature Operating temperature 0-40°C, humidity 35..95uR%

Sealing Front panel IP65 (with gasket), IP20 box and terminal bloks

Material PC ABS UL94VO self-extinguishing

Digital Inputs 3PNP/NPN configurable as analogue for potentiometers.

Outputs 2 relays 5A resistive charge.

Back-UP Rechargeable battery, approx. 60days autonomy

Programming Software Labsoftview 2.0

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

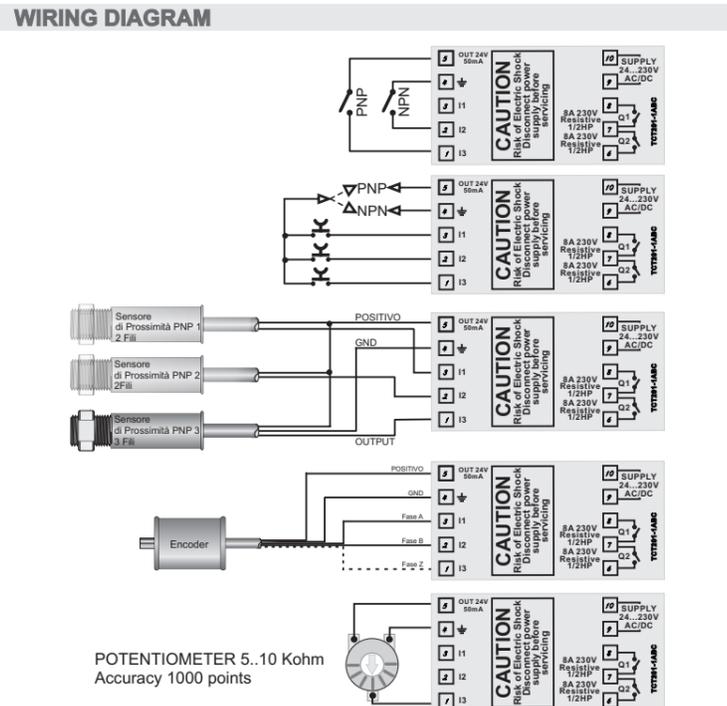
INTRODUCTION

Thanks for choosing a Pixsys device.

Counter TCT201 can be set in 2 different modes: Single or Double counter, all with independent setting.

3 universal digital inputs are available (NPN/PNP) and can be used for bidirectional encoders reading, or Up/Down count function, count inversion, Lock/ Hold to lock or hold current visualization.

One input is also analogue in order to allow setpoint modification by an external potentiometer.



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 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 car.

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

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

PRESS	DISPLAY	DO
1	Display 1 shows with 1° digit blinking, while Display 2 shows	
2	Modifies blinking digit and pass to the next one pressing	Enter password
3	Device loads default values	Switch the device off and restart it

MODIFY CONFIGURATION PARAMETERS

PRESS	DISPLAY	DO
1	SET for 3 seconds	
2	Modifies blinking digit and pass to the next one pressing	Enter password
3	to confirm	
4	Scroll paremeters	
5 +	Increase or decrease visualized value pressing and an arrow key	Enter the new data that will be saved when releasing arrow key
6 +	End configuration, controller exits from programming mode	

PARAMETERS LIST

FUNCTION CONFIGURATION

Code	Parameter Name	Description	Default
Func	P-01 Counter Function	Counter functions	
S in 1	Single (1 Counter)	1 counter functioning	Default
double	Double (2 Counters)	2 counters functioning	

BACKUP MEMORY CONFIGURATION

Code	Parameter Name	Description	Default
Poff	P-02 Power-off Memory	Power-off memory	
d.s	Disable	No counter stored at power-off	Default
cnt 1	Counter 1	Counter 1 stored at power-off	
cnt 2	Counter 2	Counter 2 stored at power-off	
ALL	All Counters	All counters stored at power-off	

INPUT CONFIGURATION

Code	Parameter Name	Description	Default
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.	Potentiometer	Potentiometer (available only for input 3)	

FILTRATION

Code	Parameter Name	Description	Default
Fil 1	P-06 Filtre Delay Input 1	Input 1 digital filter configuration	
Fil 2	P-07 Filtre Delay Input 2	Input 2 digital filter configuration	
Fil 3	P-08 Filtre 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)	
100	100,0 ms	Filter of 100,0 ms	

ACTIVE STATE INPUTS

Code	Parameter Name	Description	Default
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	
HL	High Level	High level (available only for input 1)	
LL	Low Level	Low level (available only for input 2)	
r.s	Rising edge	Rising edge	Default
FALL	Falling edge	Falling edge	

FUNCTION INPUT 3

Code	Parameter Name	Description	Default
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 1&2	Load Counter 1&2	Loading counters 1 and 2	
SEt 1	Set1	Set1 setting by potentiometer	
SEt 2	Set2	Set2 setting by potentiometer	

FUNCTION KEY UP

Code	Parameter Name	Description	Default
d.s	Disable	Disabled	Default
Ld 1	Load Counter 1	Loading counter 1	
Ld 2	Load Counter 2	Loading counter 2	
Ld 1&2	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

Code	Parameter Name	Description	Default
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 2	Output Counter 2/I	UP count on rising edge of counter 2/I	

COUNTER DISPLAY CONFIGURATION

Code	Parameter Name	Description	Default
d.C 1	P-16 Display Counter 1	Counter 1 visualization selection	
d.C 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
d.PC 1	P-17 Decimal Point Counter 1	Counter 1 visualization format	
d.PC 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	
in 1	P-18 Counter 1 input counts	Counter 1 input counts (1...9999)	Default 1
in 2	P-36 Counter 2 input counts	Counter 2 input counts (1...9999)	Default 1
u.C 1	P-19 Counter 1 Visualized Counts	Counter 1 visualized counts (1...9999)	Default 1
u.C 2	P-37 Counter 2 Visualized Counts	Counter 2 visualized counts (1...9999)	Default 1

SETPOINT CONFIGURATION

Code	Parameter Name	Description	Default
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

Code	Parameter Name	Description	Default
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	
SPa 1	Counter ≥ Set 1 + Output Duration 1	Loading if counter = Set1 + "Output Duration 1"	
SPa 2	Counter ≥ Set 2 + Output Duration 2	Loading if counter = Set2 + "Output Duration 2"	
u.C 1	Counter ≥ Visualized counts	Loading if counter = "Visualized Counts"	

COUNTER LOAD VALUE CONFIGURATION

Code	Parameter Name	Description	Default
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

Code	Parameter Name	Description	Default
CO 1	P-25 Counter 1 Output Mode	Counter 1 output mode	
CO 2	P-43 Counter 2 Output Mode	Counter 2 output mode	
d.s	Disable	Disabled output	Default
SEt 1	Counter ≥Set	Output active if Counter ≥Set	
Time	Counter ≥Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≥Set	
Counts	Counter ≥Set * Output Duration (counts)	Output active for "Output Duration" counts if Counter ≥Set	
SEt 2	Counter ≥Set1+Set2	Output active if Counter ≥Set1+Set2	

OUTPUT DURATION CONFIGURATION

Code	Parameter Name	Description	Default
odL 1	P-26 Output 1 Duration	Counter 1 output duration	Default 10
odL 2	P-44 Output 2 Duration	Counter 2 output duration	Default 10
uSEr	Output Duration Input by User	Value modifiable by user	Default
LARc	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	

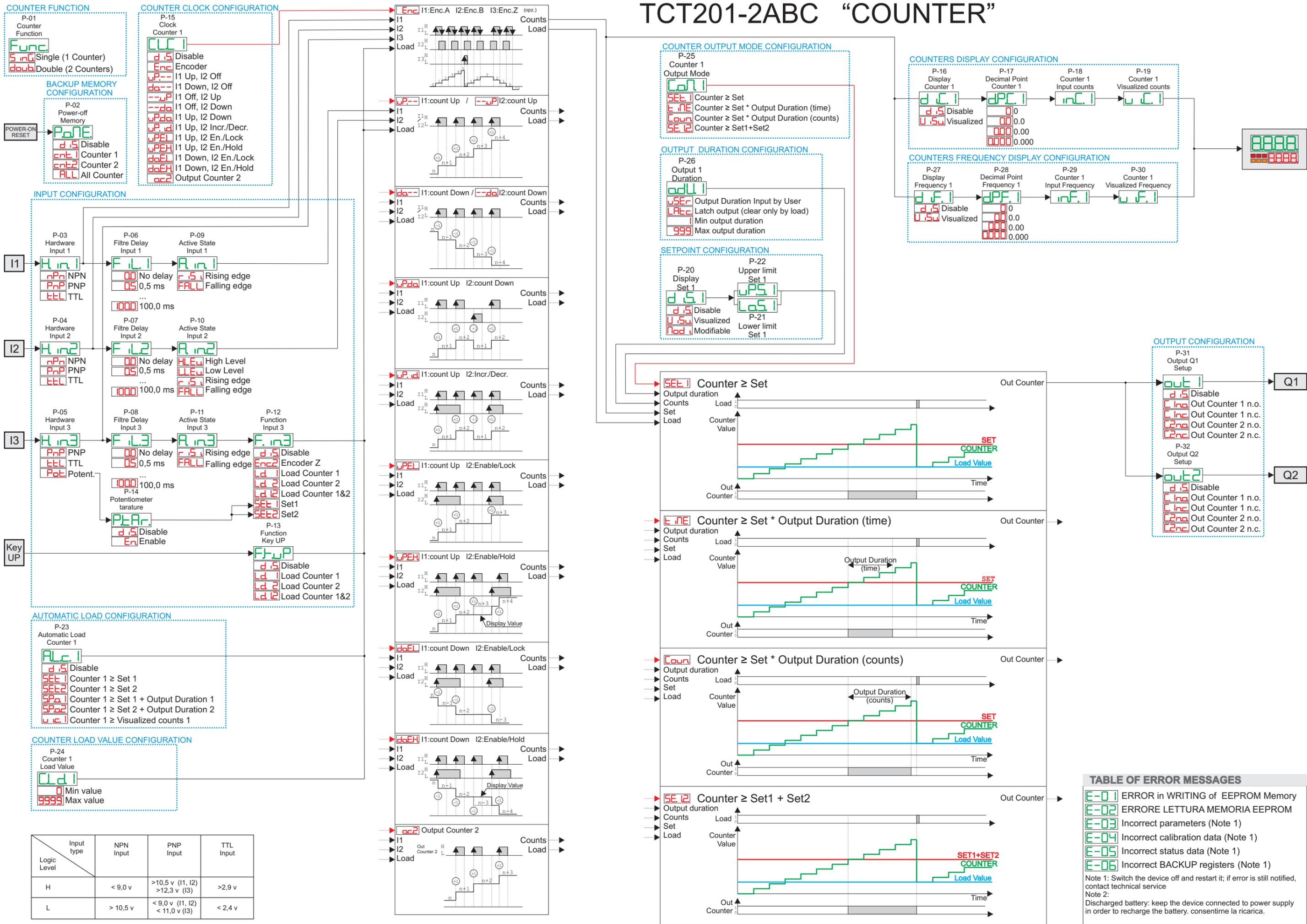
COUNTER FREQUENCY DISPLAY CONFIGURATION

Code	Parameter Name	Description	Default
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	
d.PF 1	P-28 Decimal Point Frequency Counter 1	Counter 1 frequency format	
d.PF 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	

COUNTER OUTPUT SETUP

Code	Parameter Name	Description	Default
in 1	P-29 Counter 1 Input frequency	Counter 1 input frequency (1...9999Hz)	Default 1
in 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 settings	
out 2	P-32 Output Q2 Setup	Output Q2 settings	
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	
C.Out	Out Counter 2 n.o.	Counter 2 output on n.o. contact	
C.Out	Out Counter 2 n.c.	Counter 2 output on n.c. contact	

TCT201-2ABC "COUNTER"



COUNTER FUNCTION

P-01 Counter Function

Func

Single (1 Counter)

Double (2 Counters)

COUNTER CLOCK CONFIGURATION

P-15 Clock Counter 1

Enc

Dis

Enc

I1 Up, I2 Off

da

I1 Down, I2 Off

up

I1 Off, I2 Up

da

I1 Off, I2 Down

up

I1 Up, I2 Down

up

I1 Up, I2 En./Decr.

up

I1 Up, I2 En./Lock

up

I1 Up, I2 En./Hold

up

I1 Down, I2 En./Lock

da

I1 Down, I2 En./Hold

da

oc2

Output Counter 2

INPUT CONFIGURATION

P-03 Hardware Input 1

Pin

NPN

PNP

TTL

P-04 Hardware Input 2

Pin

NPN

PNP

TTL

P-05 Hardware Input 3

Pin

PNP

TTL

Potent.

P-06 Filtre Delay Input 1

FD

No delay

05

0,5 ms

1000

100,0 ms

P-07 Filtre Delay Input 2

FD

No delay

05

0,5 ms

1000

100,0 ms

P-08 Filtre Delay Input 3

FD

No delay

05

0,5 ms

1000

100,0 ms

P-09 Active State Input 1

AS

Rising edge

FALL

Falling edge

P-10 Active State Input 2

AS

High Level

Low Level

Rising edge

Falling edge

P-11 Active State Input 3

AS

Rising edge

FALL

Falling edge

P-12 Function Input 3

Func

Dis

Enc

Encoder Z

Ld 1

Load Counter 1

Ld 2

Load Counter 2

Ld 12

Load Counter 1&2

SET 1

Set1

SET 2

Set2

P-13 Function Key UP

Func

Dis

Ld 1

Load Counter 1

Ld 2

Load Counter 2

Ld 12

Load Counter 1&2

AUTOMATIC LOAD CONFIGURATION

P-23 Automatic Load Counter 1

ALC

Dis

SET 1

Counter 1 ≥ Set 1

SET 2

Counter 1 ≥ Set 2

SP 1

Counter 1 ≥ Set 1 + Output Duration 1

SP 2

Counter 1 ≥ Set 2 + Output Duration 2

U.C.

Counter 1 ≥ Visualized counts 1

COUNTER LOAD VALUE CONFIGURATION

P-24 Counter 1 Load Value

CLD

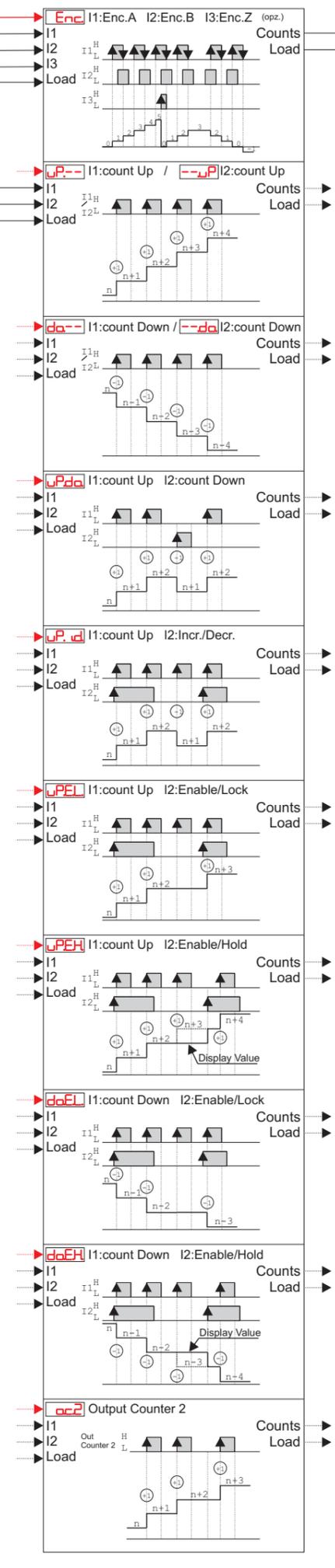
0

Min value

9999

Max value

Logic Level	Input type	NPN Input	PNP Input	TTL Input
H		< 9,0 v	>10,5 v (I1, I2) >12,3 v (I3)	>2,9 v
L		> 10,5 v	< 9,0 v (I1, I2) < 11,0 v (I3)	< 2,4 v



COUNTER OUTPUT MODE CONFIGURATION

P-25 Counter 1 Output Mode

CO

SET 1

Counter ≥ Set

ENE

Counter ≥ Set * Output Duration (time)

COU

Counter ≥ Set * Output Duration (counts)

SE 12

Counter ≥ Set1+Set2

OUTPUT DURATION CONFIGURATION

P-26 Output 1 Duration

ODU

USER

Output Duration Input by User

LATCH

Latch output (clear only by load)

999

Min output duration

999

Max output duration

SETPOINT CONFIGURATION

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

SETPOINT CONFIGURATION (continued)

P-20 Display Set 1

Dis

Dis

U.Su

Visualized

Mod

Modifiable

P-22 Upper limit Set 1

LoS

Lower limit Set 1

COUNTERS DISPLAY CONFIGURATION

P-16 Display Counter 1

Dis

Dis

U.Su

Visualized

P-17 Decimal Point Counter 1

DP

0

00

0.0

000

0.00

0000

0.000

P-18 Counter 1 Input counts

INC

P-19 Counter 1 Visualized counts

U.C.

COUNTERS FREQUENCY DISPLAY CONFIGURATION

P-27 Display Frequency 1

Dis

Dis

U.Su

Visualized

P-28 Decimal Point Frequency 1

DP

0

00

0.0

000

0.00

0000

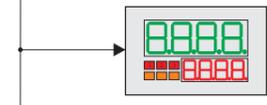
0.000

P-29 Counter 1 Input Frequency

INF

P-30 Counter 1 Visualized Frequency

U.F.



OUTPUT CONFIGURATION

P-31 Output Q1 Setup

out 1

Dis

Dis

C.Inc

Out Counter 1 n.o.

C.Inc

Out Counter 1 n.c.

C.Inc

Out Counter 2 n.o.

C.Inc

Out Counter 2 n.c.

P-32 Output Q2 Setup

out 2

Dis

Dis

C.Inc

Out Counter 1 n.o.

C.Inc

Out Counter 1 n.c.

C.Inc

Out Counter 2 n.o.

C.Inc

Out Counter 2 n.c.

TABLE OF ERROR MESSAGES

E-01	ERROR in WRITING of EEPROM Memory
E-02	ERRORE LETTURA MEMORIA EEPROM
E-03	Incorrect parameters (Note 1)
E-04	Incorrect calibration data (Note 1)
E-05	Incorrect status data (Note 1)
E-06	Incorrect BACKUP registers (Note 1)

Note 1: Switch the device off and restart it; if error is still notified, contact technical service

Note 2: Discharged battery: keep the device connected to power supply in order to recharge the battery. consentire la ricarica.