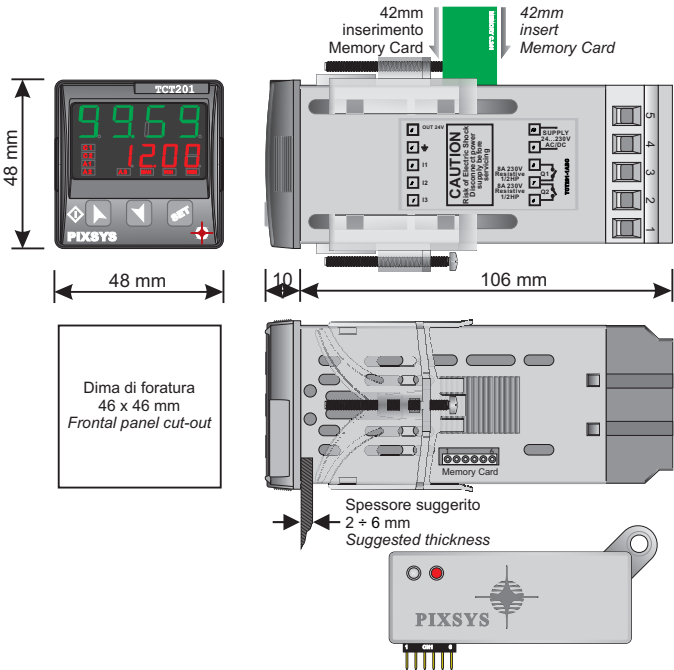


TCT201-2ABC USER MANUAL



PIXSYS www.pixsys.net
 e-mail: sales@pixsys.net - support@pixsys.net
 Software V 2.08
 2300.10.138-RevG 240314

SIZE AND INSTALLATION



LED	MEANING
	Report the activation of Q1
	Report the activation of Q2
	Report serial transmission by the TCT201

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

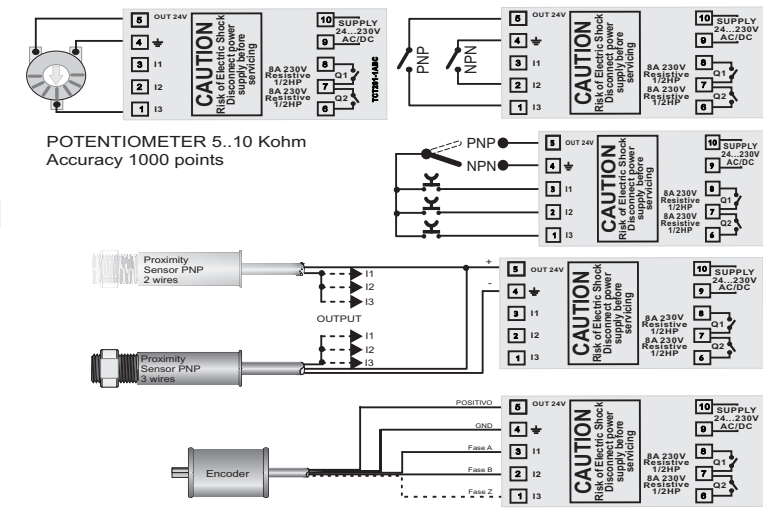
TECHNICAL DATA	
Operating temperature	Operating temperature 0-40°C, humidity 35..95uR%
Sealing	IP65 (with gasket) on front panel, Ip20 box and terminal blocs
Material	PC ABS UL94V0 self-extinguishing
Digital Inputs	3PNP/NPN configurable as analogue for potentiometers.(max 28 Vdc in PNP mode)
Outputs	2 relays 8A resistive charge OUT 24V 30mA(24Vac),40mA(24 Vdc),60mA (110...230Vac)
Back-UP	Rechargeable battery, approx. 60days autonomy
Programming Software	Labsoftview 2.6 or later
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/Potential free contact) 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.

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 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.

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

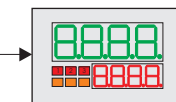
MODIFY CONFIGURATION PARAMETERS		
PRESS	DISPLAY	DO
1	Display 1 shows with first digit blinking, while Display 2 shows	
2	Modifies blinking digit and pass to the next one pressing	Enter password
3	Display shows first parameter of configuration table	
4	Scroll parameters	
5	Increase or decrease visualized 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	PARAMETER	DESCRIPTION	DEFAULT
Func	P-01 Counter Function	Counter functions	
	S in1	Single (1 Counter)	1 counter functioning
	doub	Double (2 Counters)	2 counters functioning
BACKUP MEMORY CONFIGURATION	P-02 Power-off Memory	Power-off memory	
	d.s	Disable	No counter stored at power-off
	cnt 1	Counter 1	Counter 1 stored at power-off
INPUT CONFIGURATION	P-03 Hardware input 1	Input 1 hardware configuration	
	H in1	Hardware input 1	Disable
	H in2	Hardware input 2	Input 2 hardware configuration
FILTER CONFIGURATION	P-06 Filter Delay Input 1	Input 1 digital filter configuration	
	Fil 1	Filter delay input 1	No delay
	Fil 2	Filter delay input 2	Filter of 0,5 ms
ACTIVE STATE CONFIGURATION	P-09 Active State Input 1	Active state input 1	
	A in1	Active state input 1	Disable
	A in2	Active state input 2	Disable
FUNCTION INPUT CONFIGURATION	P-12 Function Input 3	Function associated to input 3	
	F.in3	Function input 3	Disable
	EncZ	Encoder Z	Loading encoder Z
LOAD COUNTER CONFIGURATION	P-13 Function Key UP	Function associated to UP (up arrow key)	
	Ld 1	Load Counter 1	Loading counter 1
	Ld 2	Load Counter 2	Loading counter 2
POTENTIOMETER CONFIGURATION	P-14 Potentiom. Tarature	Potentiometer calibration procedure	
	d.s	Disable	Disabled
	En	Enable	Enabled
COUNTER CLOCK CONFIGURATION	P-15 Clock Counter 1	Counter 1 count mode selection	
	CLC 1	Clock counter 1	UP mode (I1)
	CLC 2	Clock counter 2	UP mode (I1)
COUNTER DISPLAY CONFIGURATION	P-16 Display Counter 1	Counter 1 visualization selection	
	d.c1	Display counter 1	Disable
	d.c2	Display counter 2	Disable

d.s	Disable	Counter value not visualized	Default C2
U.su	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
0.0	0.0	1 decimal digit visualization	
0.00	0.00	2 decimal digits visualization	
0.000	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			
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.su	Visualized	Setpoint value visualized	Default C1
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
SE1	Counter = Set 1	Loading if counter = Set1	
SE2	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.c 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"	
Sdt 1	Counter = Set 1 after Out. Dur. 1(time)	Loading if counter = Set1 "Output Duration 1"	
Sdt 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	
SE1	Counter ≥Set	Output active if Counter ≥Set	Default
t.ne	Counter ≥Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≥Set	
Count	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	
-Count	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			
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	
	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.su	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
0.0	0.0	Visualization with 1 decimal digit	
0.00	0.00	Visualization with 2 decimal digits	
0.000	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 settings	
out 2	P-32 Output Q2 Setup	Output Q2 settings	
d.s	Disable	Disabled output	Default C2
C.in 1	Out Counter 1 n.o.	Counter 1 output on n.o. contact	Default C1
C.in 2	Out Counter 1 n.c.	Counter 1 output on n.c. contact	
C.2n 1	Out Counter 2 n.o.	Counter 2 output on n.o. contact	
C.2n 2	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)
doub Double (2 Counters)

BACKUP MEMORY CONFIGURATION

P-02 Power-off Memory

d.S Disable
cnt.1 Counter 1
cnt.2 Counter 2
ALL All Counter

COUNTER CLOCK CONFIGURATION

P-15 Clock Counter 1

d.S Disable
Enc Encoder
uP-- I1 Up, I2 Off
da-- I1 Off, I2 Up
--uP I1 Off, I2 Down
uPda I1 Up, I2 Down
uPEL I1 Up, I2 En./Lock
uPEH I1 Up, I2 En./Hold
daEL I1 Down, I2 En./Lock
daEH I1 Down, I2 En./Hold
oc2 Output Counter 2

INPUT CONFIGURATION

P-03 Hardware Input 1

nPn NPN
pPn PNP
tTL TTL

P-04 Hardware Input 2

nPn NPN
pPn PNP
tTL TTL

P-05 Hardware Input 3

pPn PNP
tTL TTL
Pot. Potent.

P-06 Filter Delay Input 1

F.L1 No delay
0S 0,5 ms
1000 100,0 ms

P-07 Filter Delay Input 2

F.L2 No delay
0S 0,5 ms
1000 100,0 ms

P-08 Filter Delay Input 3

F.L3 No delay
0S 0,5 ms
1000 100,0 ms

P-09 Active State Input 1

A.S1 Rising edge
FALL Falling edge

P-10 Active State Input 2

A.S2 High Level
L.Ew Low Level
R.S1 Rising edge
FALL Falling edge

P-11 Active State Input 3

A.S3 Rising edge
FALL Falling edge

P-12 Function Input 3

d.S Disable
Enc2 Encoder Z
Ld.1 Load Counter 1
Ld.2 Load Counter 2
Ld.12 Load Counter 1&2

P-13 Function Key UP

d.S Disable
Ld.1 Load Counter 1
Ld.2 Load Counter 2
Ld.12 Load Counter 1&2

P-09 Active State Input 1

A.S1 Rising edge
FALL Falling edge

P-10 Active State Input 2

A.S2 High Level
L.Ew Low Level
R.S1 Rising edge
FALL Falling edge

P-11 Active State Input 3

A.S3 Rising edge
FALL Falling edge

P-12 Function Input 3

d.S Disable
Enc2 Encoder Z
Ld.1 Load Counter 1
Ld.2 Load Counter 2
Ld.12 Load Counter 1&2

P-13 Function Key UP

d.S Disable
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

d.S Disable
SE1 Counter 1 = Set 1
SE2 Counter 1 = Set 2
Sad1 Counter 1 = Set 1 + Output Duration 1 (counts)
Sad2 Counter 1 = Set 2 + Output Duration 2 (counts)
u.C.1 Counter 1 = Visualized counts 1
S-d.1 Counter 1 = Set 1 - Output Duration 1 (counts)
S-d.2 Counter 1 = Set 2 - Output Duration 2 (counts)
Sdt.1 Counter 1 = Set 1 after Output Duration 1 (time)
Sdt.2 Counter 1 = Set 2 after Output Duration 2 (time)

COUNTER LOAD VALUE CONFIGURATION

P-24 Counter 1 Load Value

0 Min value
9999 Max value

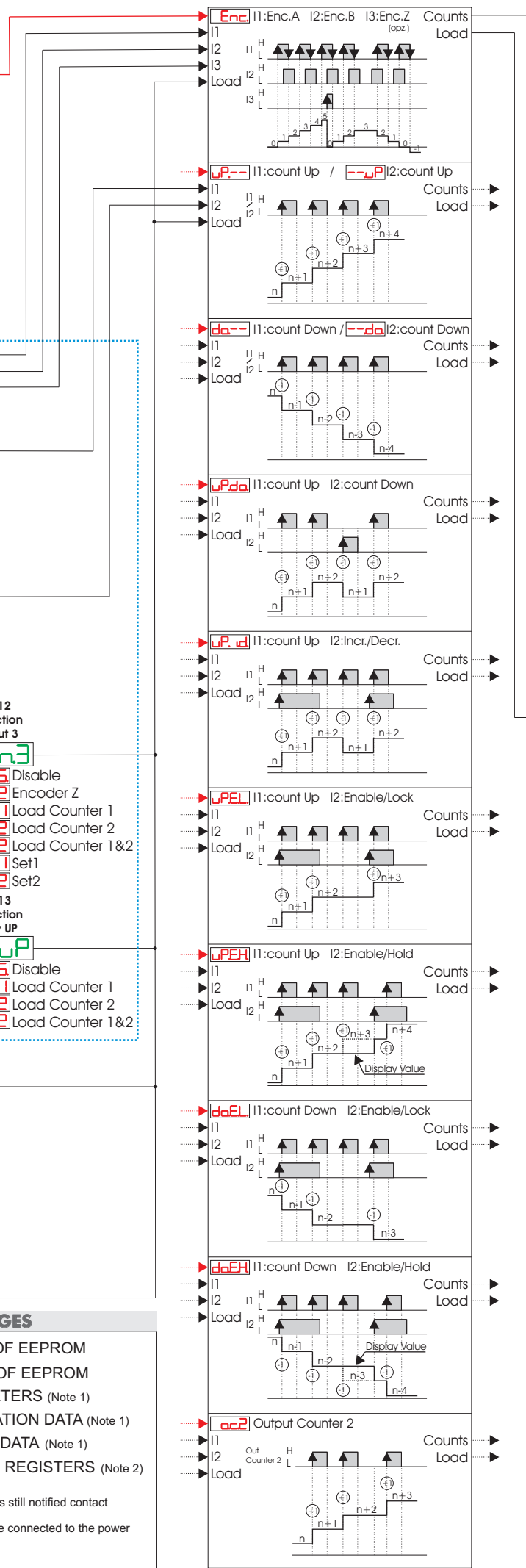
P-23 Automatic Load Counter 1

d.S Disable
SE1 Counter 1 = Set 1
SE2 Counter 1 = Set 2
Sad1 Counter 1 = Set 1 + Output Duration 1 (counts)
Sad2 Counter 1 = Set 2 + Output Duration 2 (counts)
u.C.1 Counter 1 = Visualized counts 1
S-d.1 Counter 1 = Set 1 - Output Duration 1 (counts)
S-d.2 Counter 1 = Set 2 - Output Duration 2 (counts)
Sdt.1 Counter 1 = Set 1 after Output Duration 1 (time)
Sdt.2 Counter 1 = Set 2 after Output Duration 2 (time)

TABLE OF ERROR MESSAGES

E-01	ERROR IN WRITING OF EEPROM
E-02	ERROR IN READING OF 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 2)

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 the power supply in order to recharge the battery.



COUNTER OUTPUT MODE CONFIGURATION

P-25 Counter 1 Output Mode

d.S Disable
SE1 Counter ≥ Set
E.NE Counter ≥ Set * Output Duration (time)
Coun Counter ≥ Set * Output Duration (counts)
SE.12 Counter ≥ Set1 + Set2
-SE.1 Counter ≤ Set
-E.N Counter ≤ Set * Output Duration (time)
-Coun Counter ≤ Set * Output Duration (counts)
-S.12 Counter ≤ Set1 + Set2

OUTPUT DURATION CONFIGURATION

P-26 Output 1 Duration

uSEr Output Duration Input by User
LAtc Latch output (clear only by load)
999 Min output duration
Max output duration

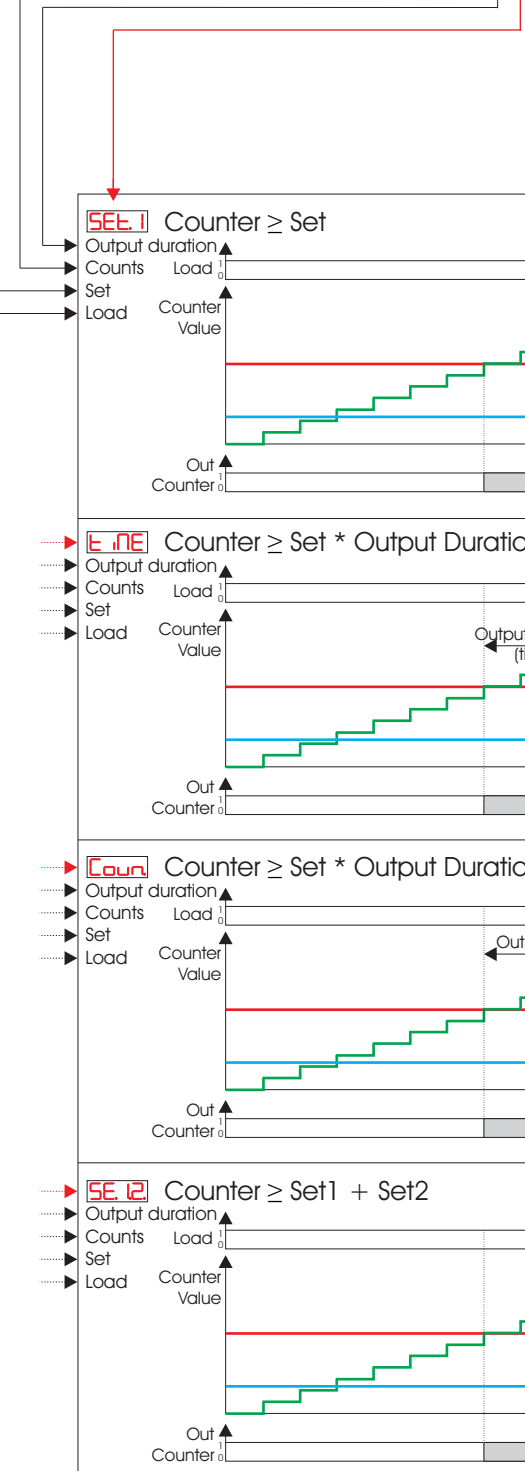
SETPOINT CONFIGURATION

P-20 Display Set 1

d.S Disable
U.Su Visualized
Mod. Modifiable

P-22 Upper limit Set 1

P-21 Lower limit Set 1



COUNTERS DISPLAY CONFIGURATION

P-16 Display Counter 1

d.S Disable
U.Su Visualized

P-17 Decimal Point Counter 1

d.PC.1 0
00 0,0
000 0,00
0000 0,000

P-18 Counter 1 Input counts

P-19 Counter 1 Visualized counts

COUNTERS FREQUENCY DISPLAY CONFIGURATION

P-27 Display Frequency 1

d.F.1 Disable
U.Su Visualized

P-28 Decimal Point Frequency 1

d.PF.1 0
00 0,0
000 0,00
0000 0,000

P-29 Counter 1 Input Frequency

P-30 Counter 1 Visualized Frequency

Logic level	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

OUTPUT CONFIGURATION

P-31 Output Q1 Setup

d.S Disable
C.Inc Out Counter 1 n.o.
C.Inc Out Counter 1 n.c.
C.2nc Out Counter 2 n.o.
C.2nc Out Counter 2 n.c.

P-32 Output Q2 Setup

d.S Disable
C.Inc Out Counter 1 n.o.
C.Inc Out Counter 1 n.c.
C.2nc Out Counter 2 n.o.
C.2nc Out Counter 2 n.c.

