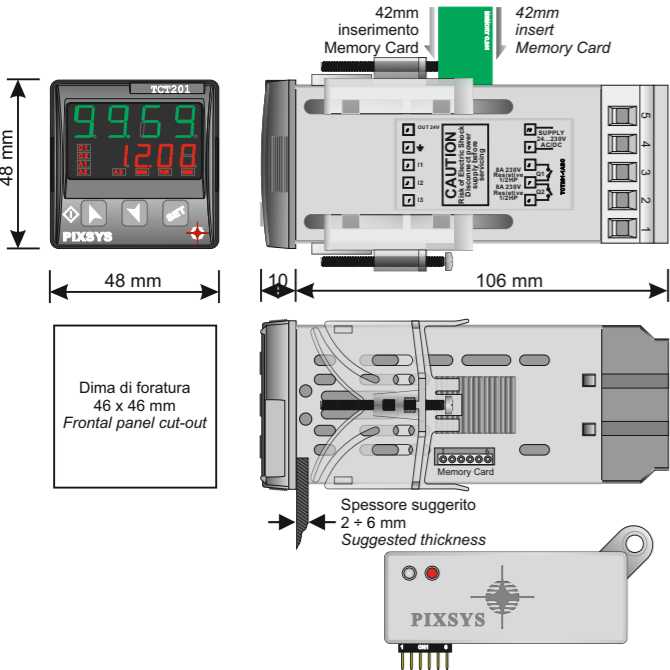




TCT201-2ABC USER MANUAL

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

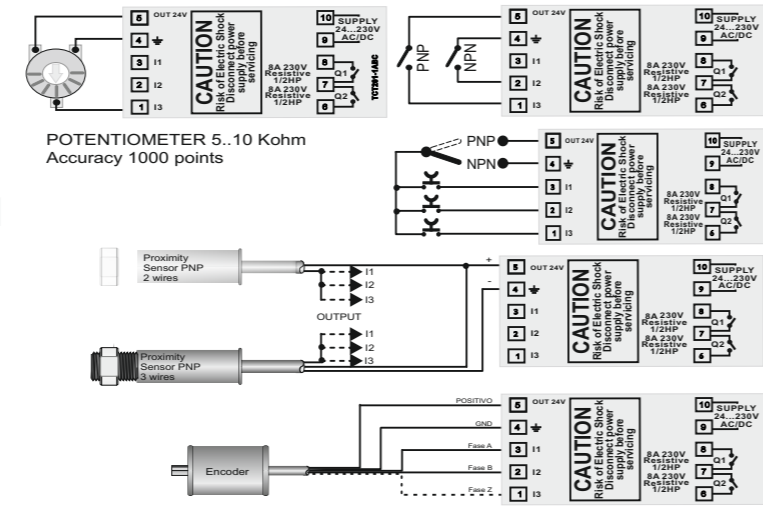
TECHNICAL DATA	
Operating temperature	Operating temperature 0-40°C, humidity 35..95uR%
Sealing	IP65 (with gasket) on front panel, Ip20 box and terminal blocks
Material	PC ABS UL94V0 self-extinguishing
Digital Inputs	3PNP/NPN configurable as analogue for potentiometers.(max 28 Vdc in PNP mode)
Outputs	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.

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

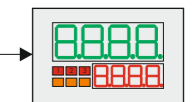
MODIFY CONFIGURATION PARAMETERS		
PRESS	DISPLAY	DO
1	SET for 3 seconds Display 1 shows with first digit blinking, while Display 2 shows	
2	Modifies blinking digit and pass to the next one pressing	Enter password
3	to confirm Display shows first parameter of configuration table	
4	Scroll parameters	
5	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		
Func	P-01 Counter Function	Counter functions
S in1	Single (1 Counter)	1 counter functioning
double	Double (2 Counters)	2 counters functioning
BACKUP MEMORY CONFIGURATION		
Power	P-02 Power-off Memory	Power-off memory
d.s	Disable	No counter stored at power-off
cnt1	Counter 1	Counter 1 stored at power-off
cnt2	Counter 2	Counter 2 stored at power-off
ALL	All Counters	All counters stored at power-off
INPUT CONFIGURATION		
H in1	P-03 Hardware input 1	Input 1 hardware configuration
H in2	P-04 Hardware input 2	Input 2 hardware configuration
H in3	P-05 Hardware input 3	Input 3 hardware configuration
nPN	NPN	NPN (not available on input 3)
pNP	PNP	PNP
TTL	TTL	TTL
Potent.	Potentiometer	Potentiometer (available only for input 3)
Fil1	P-06 Filter Delay Input 1	Input 1 digital filter configuration
Fil2	P-07 Filter Delay Input 2	Input 2 digital filter configuration
Fil3	P-08 Filter Delay Input 3	Input 3 digital filter configuration
00	No delay	Input filter disabled
05	0,5 ms	Filter of 0,5 ms
...(Step 0,5 ms)
1000	100,0 ms	Filter of 100,0 ms
A in1	P-09 Active State Input 1	Active state input 1
A in2	P-10 Active State Input 2	Active state input 2
A in3	P-11 Active State Input 3	Active state input 3
HLeW	High Level	High level (available only for input 1)
LEW	Low Level	Low level (available only for input 2)
r.s	Rising edge	Rising edge
FALL	Falling edge	Falling edge
F in3	P-12 Function Input 3	Function associated to input 3
d.s	Disable	Disabled
EncZ	Encoder Z	Loading encoder Z
Ld1	Load Counter 1	Loading counter 1
Ld2	Load Counter 2	Loading counter 2
Ld12	Load Counter 1&2	Loading counters 1 and 2
SE1	Set1	Set1 setting by potentiometer
SE2	Set2	Set2 setting by potentiometer
FtUp	P-13 Function Key UP	Function associated to UP (up arrow key)
d.s	Disable	Disabled
Ld1	Load Counter 1	Loading counter 1
Ld2	Load Counter 2	Loading counter 2
Ld12	Load Counter 1&2	Loading counters 1 and 2
PtAr	P-14 Potentiom. Tarature	Potentiometer calibration procedure
d.s	Disable	Disabled
En	Enable	Enabled
COUNTER CLOCK CONFIGURATION		
CLC1	P-15 Clock Counter 1	Counter 1 count mode selection
CLC2	P-33 Clock Counter 2	Counter 2 count mode selection
d.s	Disable	Disabled
Enc	Encoder	Bidirectional encoder (I1) phase A, (I2) phase B
UP--	I1 Up, I2 Off	UP mode (I1)
da--	I1 Down, I2 Off	DOWN mode (I1)
--uP	I1 Off, I2 Up	UP mode (I2)
--da	I1 Off, I2 Down	DOWN mode (I2)
uPd	I1 Up, I2 Down	UP mode (I1) - DOWN mode (I2)
uPd	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)
doEL	I1 Down, I2 En./Lock	DOWN mode (I1) with count lock (I2)
doEH	I1 Down, I2 En./Hold	DOWN mode (I1) with keeping value on display (I2)
acc2	Output Counter 2/1	UP count on rising edge of counter 2/1
COUNTER DISPLAY CONFIGURATION		
d.c1	P-16 Display Counter 1	Counter 1 visualization selection
d.c2	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
dpc1	P-17 Decimal Point Counter 1	Counter 1 visualization format	
dpc2	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	
in1	P-18 Counter 1 input counts	Counter 1 input counts (1...9999)	Default 1
in2	P-36 Counter 2 input counts	Counter 2 input counts (1...9999)	Default 1
u.c1	P-19 Counter 1 Visualized Counts	Counter 1 visualized counts (1...9999)	Default 1
u.c2	P-37 Counter 2 Visualized Counts	Counter 2 visualized counts (1...9999)	Default 1
SETPOINT CONFIGURATION			
d.s1	P-20 Display Set 1	Counter 1 setpoint visualization selection	
d.s2	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
LoS1	P-21 Lower Limit Set 1	Set 1 minimum value (0...9999)	Default 0
LoS2	P-39 Lower Limit Set 2	Set 2 minimum value (0...9999)	Default 0
uPS1	P-22 Upper Limit Set 1	Set 1 maximum value (0...9999)	Default 999
uPS2	P-40 Upper Limit Set 2	Set 2 maximum value (0...9999)	Default 999
AUTOMATIC LOAD CONFIGURATION			
ALC1	P-23 Automatic Load Counter 1	Counter 1 automatic loading	
ALC2	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	
Sod1	Counter = Set 1+Output Duration 1	Loading if counter = Set1 + "Output Duration 1"	
Sod2	Counter = Set 2+Output Duration 2	Loading if counter = Set2 + "Output Duration 2"	
u.c1	Counter = Visualized counts	Loading if counter = "Visualized Counts"	
S-d1	Counter = Set 1-Output Duration 1	Loading if counter = Set1 - "Output Duration 1"	
S-d2	Counter = Set 2-Output Duration 2	Loading if counter = Set2 - "Output Duration 2"	
Sdt1	Counter = Set 1 after Out. Dur. 1(time)	Loading if counter = Set1 "Output Duration 1"	
Sdt2	Counter = Set 2 after Out. Dur. 2(time)	Loading if counter = Set2 "Output Duration 2"	
COUNTER LOAD VALUE CONFIGURATION			
CLd1	P-24 Counter Load Value 1	Counter 1 loading value	Default 0
CLd2	P-42 Counter Load Value 2	Counter 2 loading value	Default 0
COUNTER OUTPUT MODE CONFIGURATION			
Co1	P-25 Counter 1 Output Mode	Counter 1 output mode	
Co2	P-43 Counter 2 Output Mode	Counter 2 output mode	
SEt	Counter ≥Set	Output active if Counter ≥Set	Default
t.nE	Counter ≥Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≥Set	
CoW	Counter ≥Set * Output Duration (counts)	Output active for "Output Duration" counts if Counter ≥Set	
SE12	Counter ≥Set1+Set2	Output active if Counter ≥Set1+Set2	
-SE1	Counter ≤Set	Output active if Counter ≤Set	Default
-t.nL	Counter ≤Set * Output Duration (time)	Output active for "Output Duration" time if Counter ≤Set	
-CoW	Counter ≤Set * Output Duration (counts)	Output active for "Output Duration" counts if Counter ≤Set	
-S12	Counter ≤Set1+Set2	Output active if Counter ≤Set1+Set2	
OUTPUT DURATION CONFIGURATION			
odL1	P-26 Output 1 Duration	Counter 1 output duration	Default 10
odL2	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	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	
in1	P-29 Counter 1 Input frequency	Counter 1 input frequency (1...9999Hz)	Default 1
in2	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
out1	P-31 Output Q1 Setup	Output Q1 settings	
out2	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	
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	

TCT201-2ABC "COUNTER"



COUNTER FUNCTION

P-01 Counter Function
Func Single (1 Counter)
Func 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 Down, I2 Off
--uP I1 Off, I2 Up
--da 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
pPp PNP
tTL TTL

P-04 Hardware Input 2
nPn NPN
pPp PNP
tTL TTL

P-05 Hardware Input 3
pPp PNP
tTL TTL
Pot. Potent.

P-06 Filter Delay Input 1
00 No delay
05 0,5 ms
1000 100,0 ms

P-07 Filter Delay Input 2
00 No delay
05 0,5 ms
1000 100,0 ms

P-08 Filter Delay Input 3
00 No delay
05 0,5 ms
1000 100,0 ms

P-09 Active State Input 1
r.S Rising edge
f.F Falling edge

P-10 Active State Input 2
HL High Level
LL Low Level
r.S Rising edge
f.F Falling edge

P-11 Active State Input 3
r.S Rising edge
f.F Falling edge

P-12 Function Input 3
d.S Disable
EncZ 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
Sod1 Counter 1 = Set 1 + Output Duration 1 (counts)
Sod2 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)

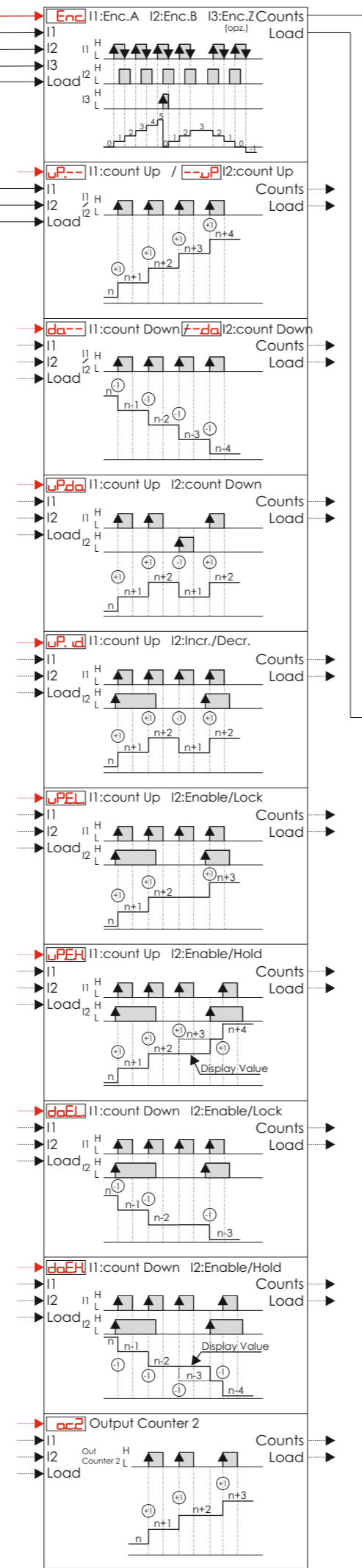
COUNTER LOAD VALUE CONFIGURATION

P-24 Counter 1 Load Value
0 Min value
9999 Max value

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
SE1 Counter ≥ Set
ENE Counter ≥ Set * Output Duration (time)
Cou Counter ≥ Set * Output Duration (counts)
SE12 Counter ≥ Set1+Set2
-SE1 Counter ≤ Set
-EN Counter ≤ Set * Output Duration (time)
-Cou Counter ≤ Set * Output Duration (counts)
-S12 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
999 Max output duration

SETPOINT CONFIGURATION

P-20 Display Set 1
d.S.1 Disable
U.Su Visualized
Mod.1 Modifiable

P-22 Upper limit Set 1
LoS.1 Lower limit Set 1

COUNTERS DISPLAY CONFIGURATION

P-16 Display Counter 1
d.S Disable
U.Su Visualized

P-17 Decimal Point Counter 1
0 0
00 0.0
000 0.00
0000 0.000

P-18 Counter 1 Input counts
in.C.1

P-19 Counter 1 Visualized counts
u.C.1

COUNTERS FREQUENCY DISPLAY CONFIGURATION

P-27 Display Frequency 1
d.S Disable
U.Su Visualized

P-28 Decimal Point Frequency 1
0 0
00 0.0
000 0.00
0000 0.000

P-29 Counter 1 Input Frequency
in.F.1

P-30 Counter 1 Visualized Frequency
u.F.1

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.q.
C.Inc Out Counter 1 n.c.
C2nc Out Counter 2 n.q.
C2nc Out Counter 2 n.c.

P-32 Output Q2 Setup
d.S Disable
C.Inc Out Counter 1 n.q.
C.Inc Out Counter 1 n.c.
C2nc Out Counter 2 n.q.
C2nc Out Counter 2 n.c.

