

TCT101-3ABC USER MANUAL

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Software V 2.06
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INTRODUCTION

Thanks for choosing a Pixsys device.

Techometer TCT101 allows to read the frequency (max 100KHz) of a signal from single or double (bidirectional encoder) input.
2 universal digital inputs are available (NPN/PNP/Potential free contact) for external commands like output activation or Hold/ Stop current visualization; one input it is also analogue in order to allow setpoint modification by external potentiometers.

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)

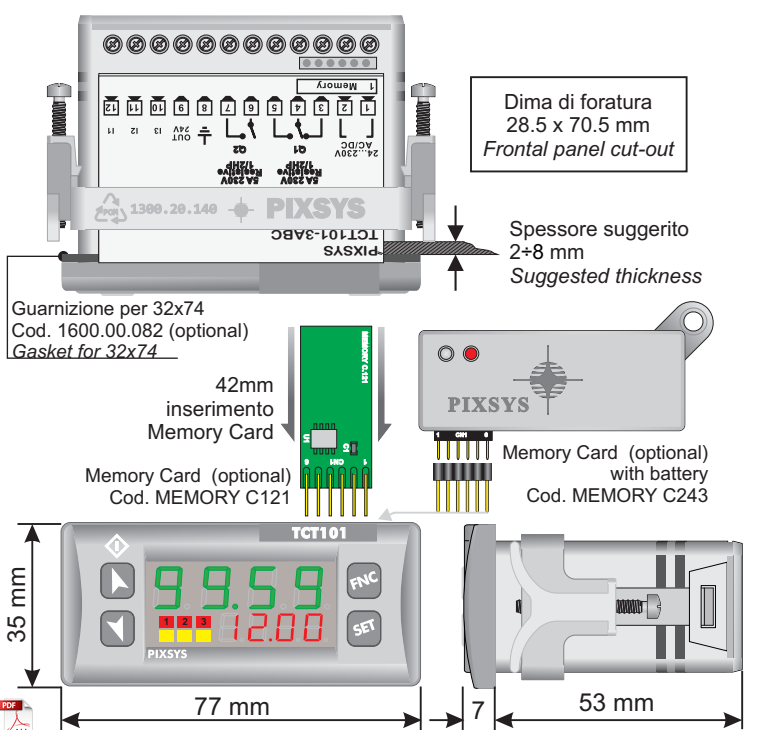
Back-UP Rechargeable battery, approx. 7days autonomy

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

SIZE AND INSTALLATION



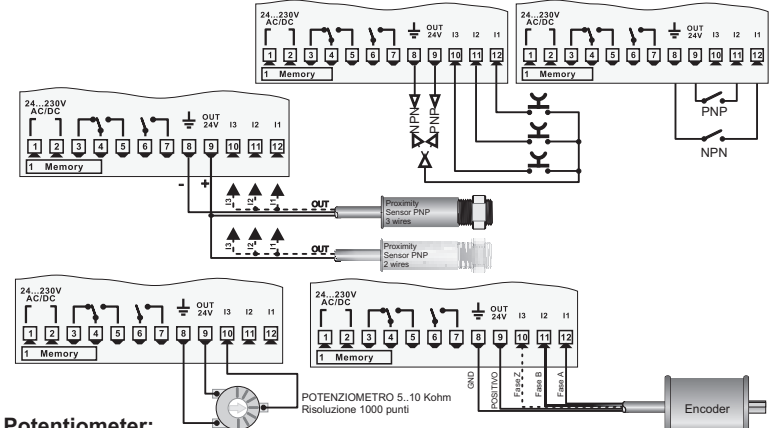
Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device.

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 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.

MAXIMUM AND MINIMUM PEAK FUNCTION		
PRESS	DISPLAY	
1		If enabled maximum peak function, maximum peak value obtained is visualized.
2		If enabled minimum peak function, minimum peak value obtained is visualized.
3	and	If enabled peak function, minimum and maximum peak value will initialize to current timer value.

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

LOADING DEFAULT SETTINGS			
PRESS		DISPLAY	DO
1	 for 3 seconds	Display 1 shows  with 1st digit blinking, while Display 2 shows 	
2	 or 	Modify blinking digit, pass to the next digit pressing 	Enter password 
3	 to confirm	The device loads default settings	Switch the device off and restart it

CONFIGURATION PARAMETER MODIFICATION			
PRESS		DISPLAY	DO
1	 for 3 seconds	Display 1 shows  with 1st digit blinking, while Display 2 shows 	
2	 or 	Modify blinking digit, pass to the next one pressing 	Enter password 
3	 to confirm	Display shows first parameter of configuration table 	
4	 or 	Scroll parameters	
5	 +  or 	Increase or decrease value on display pressing  and an arrow key	Enter the new data that will be stored when releasing the keys
6		End of configuration, the device exits from programming mode.	

PARAMETERS LIST

CLOCK INPUT CONFIGURATION		
P-01 Clock Input	Input signal selection	
I1	Input signal on I1	Default
Encoder	Input signal on I1 and I2 (bidirectional encoder)	
INPUT CONFIGURATION		
P-02 Hardware input 1	Input 1 hardware configuration	
P-03 Hardware input 2	Input 2 hardware configuration	
P-04 Hardware input 3	Input 3 hardware configuration	
NPN	NPN (not available on input 3)	
PNP	PNP	Default
TTL	TTL	
Potent.	Potentiometer (available only for input 3)	
P-05 Filtre Input 1	Input 1 hardware filter configuration	
Off	Input hardware filter disabled	Default
On	Input hardware filter enabled (22nF)	
P-06 Active State Input 2	Input 2 active state	
P-07 Active State Input 3	Input 3 active state	
High Level	High level	Default
Low Level	Low level	
P-08 Function Input 2	Function associated to Input 2	
P-09 Function Input 3	Function associated to Input 3	
Disable	Disabled	Default
Out Enable/Disable	Enable / Desable tachometer outputs	
Hold (only for I3)	Hold visualized tachometer value	
Set1 (only for I3)	Set1 setting by potentiometer	
Set2 (only for I3)	Set2 setting by potentiometer	
P-10 Potentiom. Tarature	Potentiometer calibration procedure	
Disable	Disabled	Default
Enable	Enabled	
P-11 Function Key UP	Function associated to key UP (up arrow)	
Disable	Disabled	Default
Display max peak	Max. registered peak visualization (reset by UP+DOWN key)	
P-12 Function Key DOWN	Function associated to key DOWN (down arrow)	
Disable	Disabled	Default
Display min peak	Min. registered peak visualization (reset by UP+DOWN key)	
BACKUP MEMORY CONFIGURATION		
P-13 Power-off Memory	Power-off memory	
Disable	No peak value stored at switch-off	Default
Min Peak	Minimum peak value stored at switch-off	
Max Peak	Maximum peak value stored at switch-off	
All Peak	Max. and Min. peak values stored at switch-off	

CLOCK INPUT CONFIGURATION

P-14 Minimum Input Frequency	Lower frequency visualized	
0.01 Hz	For lower frequency values 0 is visualized on display. This parameter forces max. refresh time of display from 100 to 0.1 sec.	
0.09Hz		Default
0.1 Hz		
10.0Hz		
P-15 Software Filter	Sampling frequency software filter	
off	No software filter on reading	Default
0.01 sec	Mean realized on samplings done within time set in this parameter. Display will be updated according to this time range.	
1.00 sec		

DISPLAY CONFIGURATION

P-16 Timebase	Visualization time base	
sec	Visualized value referred to the second	Default
min	Visualized value referred to the minute	
hour	Visualized value referred to the hour	
P-17 Pulse in Unit	Impulses on visualized unit	
99.99 pulse	Number of impulses for single unit. For example, in speed measurement, it indicates how many impulses corresponds to a full revolution.	
0.01 pulse		Default
1 pulse		
9999 pulse		
P-18 Decimal Point	Tachometer value visualization format	
0	No decimal digit visualization	Default
0.0	1 decimal digit visualization	
0.00	2 decimal digits visualization	
0.000	3 decimal digits visualization	

MEASURE UNIT CONFIGURATION

P-19 Measure Unit 1	Setting digit 1 of displayed measuring unit	
P-20 Measure Unit 2	Setting digit 2 of displayed measuring unit	
P-21 Measure Unit 3	Setting digit 3 of displayed measuring unit	
P-22 Measure Unit 4	Setting digit 4 of displayed measuring unit	

Edit digits

SETPOINT CONFIGURATION

P-23 Display Set 1	Setpoint 1 display selection	
P-26 Display Set 2	Setpoint 2 display selection	
Disable	Setpoint value not visualized	Default Set2
Visualized	Setpoint value visualized	
Modifiable	Setpoint value visualized and modifiable	Default Set1
P-24 Lower Limit Set 1	Set 1 minimum value (0...9999)	Default 0
P-27 Lower Limit Set 2	Set 2 minimum value (0...9999)	Default 0
P-25 Upper Limit Set 1	Set 1 maximum value (0...9999)	Default 999
P-28 Upper Limit Set 2	Set 2 maximum value(0...9999)	Default 999

OUTPUT ENABLE CONFIGURATION

P-29 Output Enable	Outputs enabled	
Always enable	Tachometer outputs always enabled	Default
Automati enable	Outputs enabled automatically	
Enable by input	Tachometer outputs enabled by digital inputs	
P-30 Logic Output Mode1	Tachometer logic output mode 1	
P-34 Logic Output Mode2	Tachometer logic output mode 2	
High Deviation	Active output with high deviation	Default
Low Deviation	Active output with low deviation	
Inside Band	Active output inside band	
Out of Band	Active output out of band	

P-31 Activation Delay 1	Logic output 1 activation delay	
P-35 Activation Delay 2	Logic output 2 activation delay	
0.0 sec	Defines logic output activation delay.	Default
to	Setting range from 0.0 sec	
999.9 sec	to 999.9 sec.	
P-32 Deactivation Delay 1	Logic output 1 deactivation delay	
P-36 Deactivation Delay 2	Logic output 2 deactivation delay	
0.0 sec	Defines logic output deactivation delay.	Default
to	Setting range from 0.0 sec	
999.9 sec	to 999.9 sec.	
P-33 Output 1 Duration	Tachometer logic output 1 duration	
P-37 Output 2 Duration	Tachometer logic output 2 duration	
Automatic	Automatic output duration	Default
Latch output (clear by FNC key)	Latch output, reset by FNC	
Pulse 0.1 sec	0,1 sec output impulse duration	
to		
Pulse 99.9 sec	99,9 sec output impulse duration	

OUTPUT CONFIGURATION

P-38 Output Q1 Setup	Relay Q1 output setting	
P-39 Output Q2 Setup	Relay Q2 output setting	
Disable	Disabled output	Default 2
Logic Out 1 n.o.	Logic output 1 on n.o. contact	Default 1
Logic Out 1 n.c.	Logic output 1 on n.c. contact	
Logic Out 2 n.o.	Logic output 2 on n.o. contact	
Logic Out 2 n.c.	Logic output 2 on n.c. contact	

TCT101-3ABC "TACHOMETER"

