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PIXSYS TCT101-3ABC Timer Counter Tachometer

INTRODUCTION

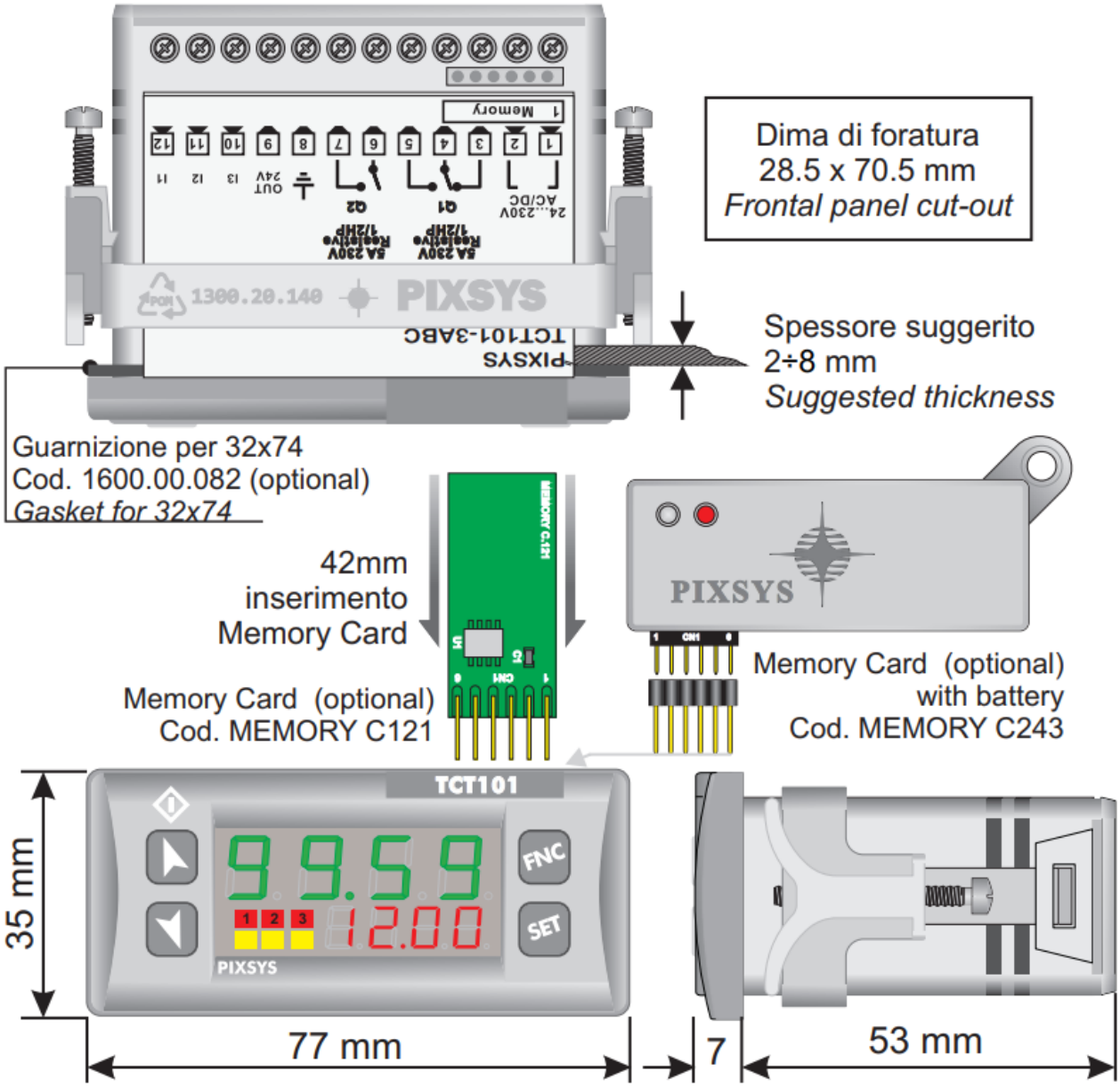
Thanks for choosing a Pixsys device. Techometer TCT101 allows to read the frequency (max 100KHz) of a signal from single or double (bidirectional encoder) input. 2 universal digital inputs are available (NPN/PNP/Potential free contact) for external commands like output activation or Hold/ Stop current 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 OUT 24V** 2 relays 5A resistive charge 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

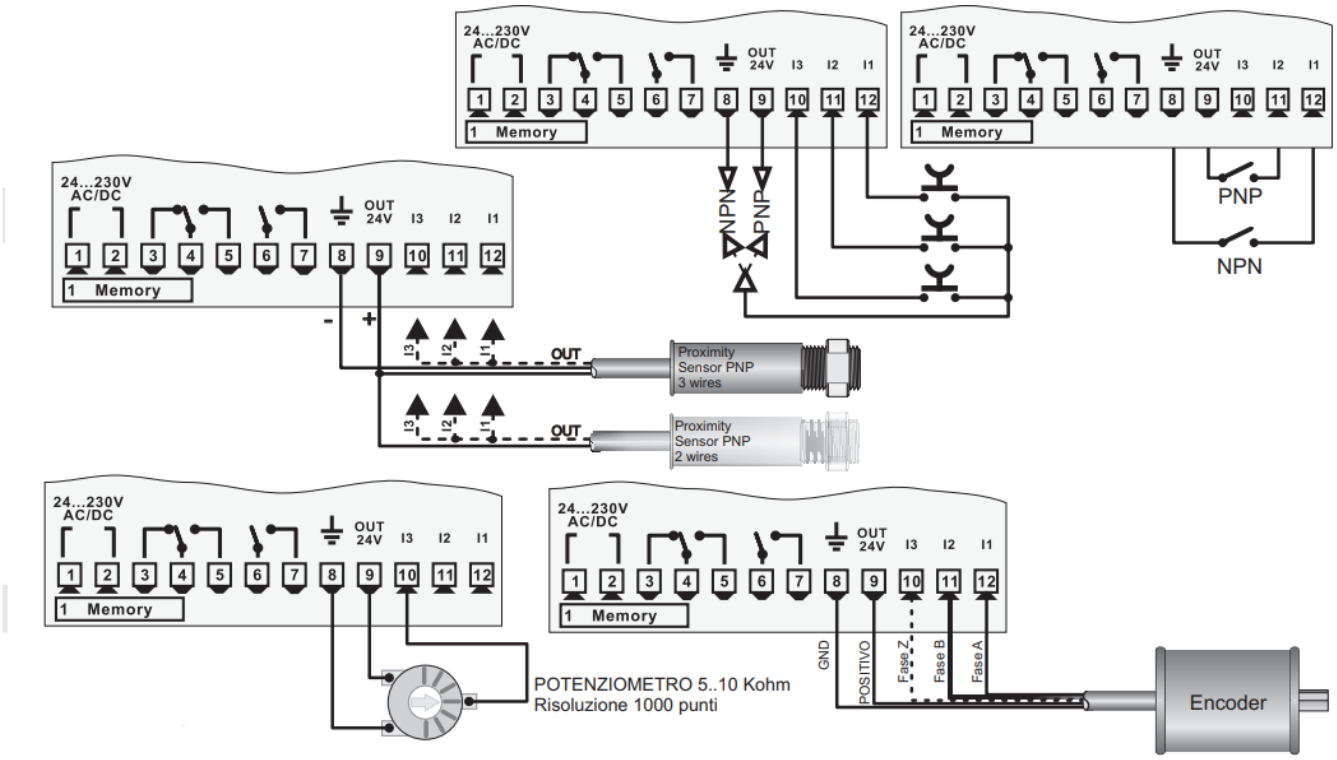
LED	MEANING
	Report the activation of Q1
	Report the activation of Q2
	Report serial transmission by the TCT101

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 an 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 the less significant digit.
4. To calibrate the scale of the 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 the key: the device automatically exit the calibration procedure.
   N.B.:Aswitch-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 Memory Card are correct).
- By pressing the key display 2 shows LoAd
- 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 the controller. Enter the 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

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

LOADING DEFAULT SETTINGS			
	PRESS	DISPLAY	DO
1	FNC for 3 seconds	Display 1 shows 0000 with 1st digit blinking, while Display 2 shows PASS	
2	or	Modify blinking digit, pass to the next digit pressing	Enter password 9999
3	SET to confirm	The device loads default settings	Switch the device off and restart it

CONFIGURATION PARAMETER MODIFICATION			
	PRESS	DISPLAY	DO
1	FNC for 3 seconds	Display 1 shows 0000 with 1st digit blinking, while Display 2 shows PASS	
2	or	Modify blinking digit, pass to the next one pressing	Enter password 1234
3	SET to confirm	Display shows first parameter of configuration table Func	
4	or	Scroll parameters	
5	SET + or	Increase or decrease value on display pressing SET and an arrow key	Enter the new data that will be stored when releasing the keys
6	FNC	End of configuration, the device exits from programming mode.	

PARAMETERS LIST

CLOCK INPUT CONFIGURATION

CL. in	**P-01 Clock Input**	***Input signal selection***	
in 1	I1	*Input signal on I1*	Default
Enc	Encoder	*Input signal on I1 and I2 (bidirectional encoder)*	

INPUT CONFIGURATION

H in 1	**P-02 Hardware input 1**	Input 1 hardware configuration	
H in2	**P-03 Hardware input 2**	Input 2 hardware configuration	
H in3	**P-04 Hardware input 3**	Input 3 hardware configuration	
nPn	NPN	*NPN (not available on input 3)*	
PnP	PNP	*PNP*	Default
tEL	TTL	*TTL*	
Pot	Potent.	*Potentiometer (available only for input 3)*	
F iL 1	**P-05 Filtre Input 1**	Input 1 hardware filter configuration	
oFF	Off	*Input hardware filter desabled*	Default
on	On	*Input hardware filter enabled (22nF)*	
A in2	**P-06 Active State Input 2**	Input 2 active state	
A in3	**P-07 Active State Input 3**	Input 3 active state	
HLEv	High Level	*High level*	Default
LLEv	Low Level	*Low level*	
F. in2	**P-08 Function Input 2**	Function associated to Input 2	
F. in3	**P-09 Function Input 3**	Function associated to Input 3	
dis	Disable	*Desabled*	Default
outE	Out Enable/Disable	*Enable / Desable tachometer outputs*	
HoLd	Hold (only for I3)	*Hold visualized tachometer value*	
SEt 1	Set1 (only for I3)	*Set1 setting by potentiometer*	
SEt2	Set2 (only for I3)	*Set2 setting by potentiometer*	
PtAr.	**P-10 Potentiom. Tarature**	Potentiometer calibration procedure	
dis	Disable	*Desabled*	Default
En	Enable	*Enabled*	
FtuP	**P-11 Function Key UP**	Function associated to key UP (up arrow)	
dis	Disable	*Desabled*	Default
MAHP	Display max peak	*Max. registered peak visualization (reset by UP+DOWN key)*	
Ftdo	**P-12 Function Key DOWN**	Function associated to key DOWN (down arrow)	
dis	Disable	*Desabled*	Default
MinP	Display min peak	*Min. registered peak visualization (reset by UP+DOWN key)*	

BACKUP MEMORY CONFIGURATION

PoME	**P-13 Power-off Memory**	Power-off memory	
dis	Disable	*No peak value stored at switch-off*	Default
MinP	Min Peak	*Minimum peak value stored at switch-off*	
MAHP	Max Peak	*Maximum peak value stored at switch-off*	
ALL	All Peak	*Max. and Min. peak values stored at switch-off*	

CLOCK INPUT CONFIGURATION

nInF	**P-14 Minimum Input Frequency**	Lower frequency visualized	
001	0.01 Hz	*For lower frequency values 0 is visualized on display.*	
	...	*This parameter forces max. refresh time of display*	
009	0.09Hz	*from 100 to 0.1 sec.*	
01	0.1 Hz		Default
	...		
100	10.0Hz		
SFLt	**P-15 Software Filter**	Sampling frequency software filter	
oFF	off	*No software filter on reading*	Default
001	0.01 sec	*Mean realized on samplings done within time set*	
	...	*in this parameter. Display will be updated according to*	
100	1.00 sec	*this time range.*	

DISPLAY CONFIGURATION

bASE	**P-16 Timebase**	Visualization time base	
SEc	sec	*Visualized value referred to the second*	Default
Min	min	*Visualized value referred to the minute*	
Hour	hour	*Visualized value referred to the hour*	
PuLS	**P-17 Pulse in Unit**	Impulses on visualized unit	
9999	99.99 pulse	*Number of impulses for single unit. For example,*	
	...	*in speed measurement, it indicates how many impulses*	
001	0.01 pulse	*corresponds to a full revolution.*	
1	1 pulse		Default
	...		
9999	9999 pulse		
dP	**P-18 Decimal Point**	Tachometer value 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*	

MEASURE UNIT CONFIGURATION

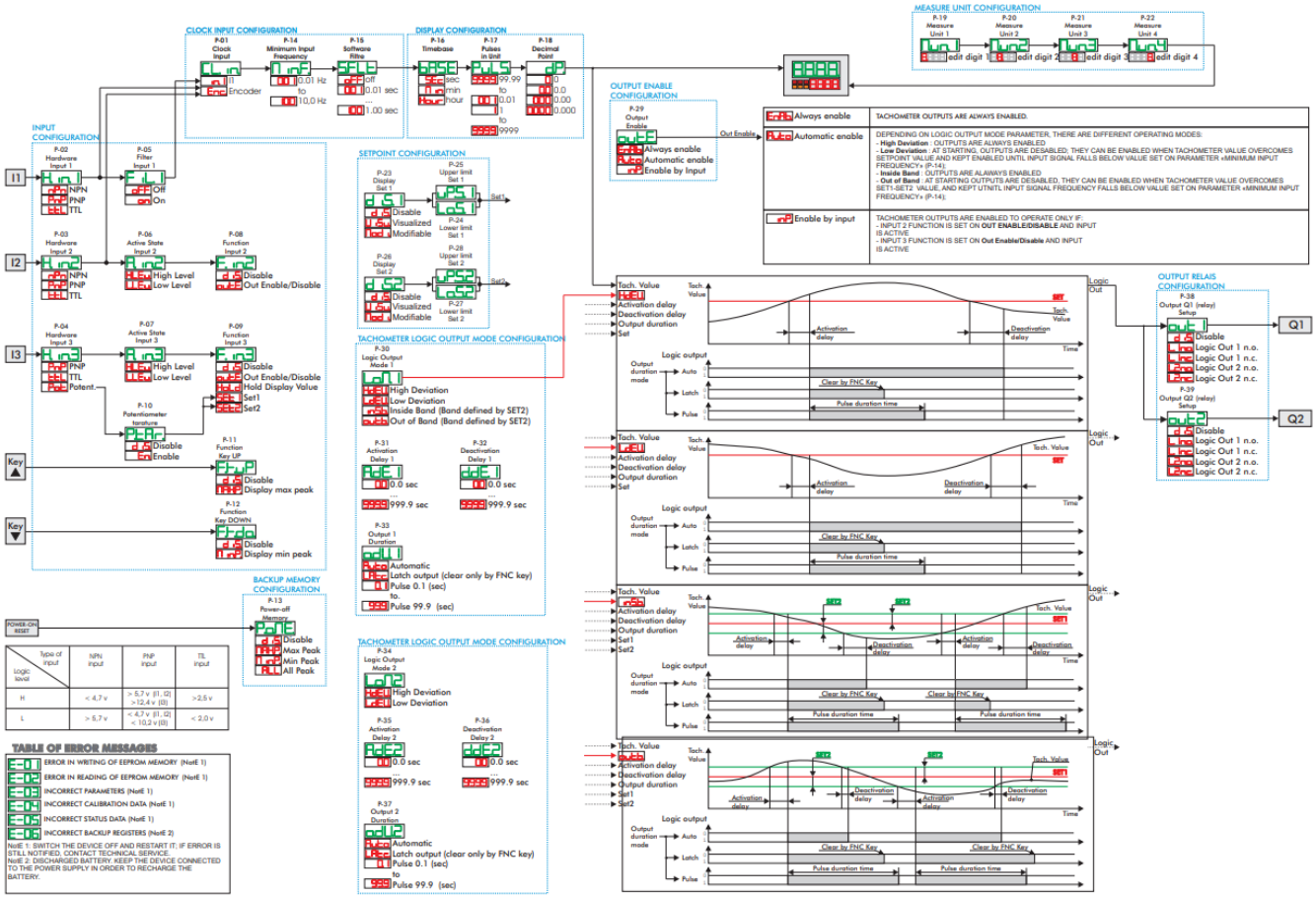
Mun1	**P-19 Measure Unit 1**	Setting digit 1 of displayed measuring unit	
Mun2	**P-20 Measure Unit 2**	Setting digit 2 of displayed measuring unit	
Mun3	**P-21 Measure Unit 3**	Setting digit 3 of displayed measuring unit	
Mun4	**P-22 Measure Unit 4**	Setting digit 4 of displayed measuring unit	
AAAA	Edit digits	*Set each of 4 digits as chosen*	Default ----

SETPOINT CONFIGURATION

dSP1	**P-23 Display Set 1**	Setpoint 1 display selection	
dSP2	**P-26 Display Set 2**	Setpoint 2 display selection	
diS	Disable	*Setpoint value not visualized*	Default Set2
viSu	Visualized	*Setpoint value visualized*	
Mod	Modifiable	*Setpoint value visualized and modifiable*	Default Set1
LoS1	**P-24 Lower Limit Set 1**	Set 1 minimum value (0...9999)	Default 0
LoS2	**P-27 Lower Limit Set 2**	Set 2 minimum value (0...9999)	Default 0
uPS1	**P-25 Upper Limit Set 1**	Set 1 maximum value (0...9999)	Default 999
uPS2	**P-28 Upper Limit Set 2**	Set 2 maximum value(0...9999)	Default 999

OUTPUT ENABLE CONFIGURATION			
outE	**P-29 Output Enable**	Outputs enabled	
EnAb	Always enable	*Tachometer outputs always enabled*	Default
Auto	Automati enable	*Outputs enabled automatically*	
inP	Enable by input	*Tachometer outputs enabled by digital inputs*	
TACHOMETER LOGIC OUTPUT MODE CONFIGURATION			
LoN1	**P-30 Logic Output Mode1**	Tachometer logic output mode 1	
LoN2	**P-34 Logic Output Mode2**	Tachometer logic output mode 2	
HdEU	High Deviation	*Active output with high deviation*	Default
LdEU	Low Deviation	*Active output with low deviation*	
inSb	Inside Band	*Active output inside band*	
outb	Out of Band	*Active output out of band*	
AdE1	**P-31 Activation Delay 1**	Logic output 1 activation delay	
AdE2	**P-35 Activation Delay 2**	Logic output 2 activation delay	
00	0.0 sec	*Defines logic output activation delay.*	Default
	to	*Setting range from 0.0 sec*	
9999	999.9 sec	*to 999.9 sec.*	
ddE1	**P-32 Deactivation Delay 1**	Logic output 1 deactivation delay	
ddE2	**P-36 Deactivation Delay 2**	Logic output 2 deactivation delay	
00	0.0 sec	*Defines logic output deactivation delay.*	Default
	to	*Setting range from 0.0 sec*	
9999	999.9 sec	*to 999.9 sec.*	
odU1	**P-33 Output 1 Duration**	Tachometer logic output 1 duration	
odU2	**P-37 Output 2 Duration**	Tachometer logic output 2 duration	
Auto	Automatic	*Automatic output duration*	Default
LAtc	Latch output (clear by FNC key)	*Latch output, reset by FNC*	
0.1	Pulse 0.1 sec	*0,1 sec output inpulse duration*	
	to		
99.9	Pulse 99.9 sec	*99,9 sec output inpulse duration*	
OUTPUT CONFIGURATION			
out1	**P-38 Output Q1 Setup**	Relay Q1 output setting	
out2	**P-39 Output Q2 Setup**	Relay Q2 output setting	
diS	Disable	*Desabled output*	Default 2
L1no	Logic Out 1 n.o.	*Logic output 1 on n.o. contact*	Default 1
L1nc	Logic Out 1 n.c.	*Logic output 1 on n.c. contact*	
L2no	Logic Out 2 n.o.	*Logic output 2 on n.o. contact*	
L2nc	Logic Out 2 n.c.	*Logic output 2 on n.c. contact*	

ERROR MESSAGES



Frequently Asked Questions

Q: How do I calibrate the potentiometer scale?

A: To calibrate the potentiometer scale, enter the configuration mode and select Hin.3 as Pot, Fin.3 as Set1 or Set2, and P.tAr as Enable. Exit configuration mode, set the potentiometer at the minimum level, and press a key.

Q: What is the maximum frequency reading capability of the device?

A: The device can read frequencies up to 100KHz.

Documents / Resources

	PIXSYS TCT101-3ABC Timer Counter Tachometer [pdf] User Manual TCT101-3ABC Timer Counter Tachometer, TCT101-3ABC, Timer Counter Tachometer, Counter Tachometer, Tachometer

References

- User Manual

Pixsys

Counter Tachometer, Pixsys, Tachometer, TCT101-3ABC, TCT101-3ABC Timer Counter Tachometer, Timer Counter Tachometer

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