



TCT101-3ABC USER MANUAL

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 Software V 2.06
 2300.10.139-RevH 060513



INTRODUCTION

Thanks for choosing a Pixsys device.

Tachometer 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

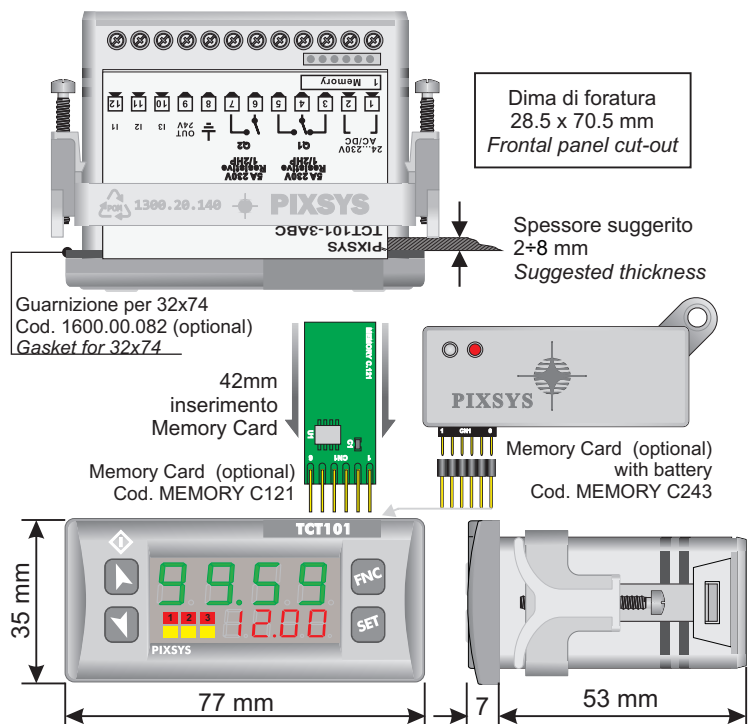
Programming Software Labsoftview 2.6 or later

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



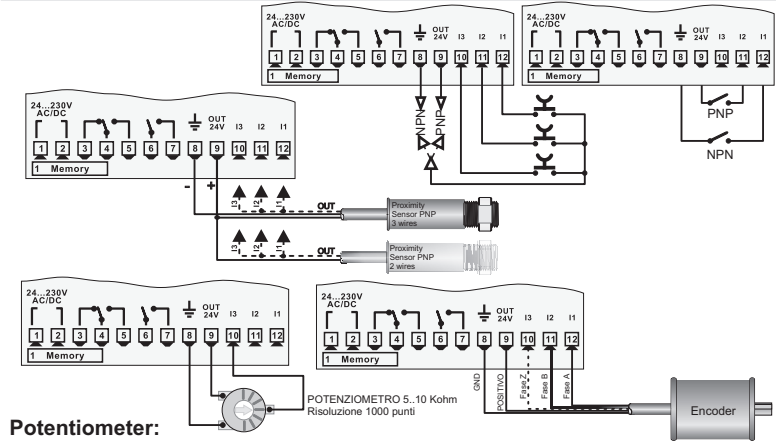
Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device.

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 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 card.

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
	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
	TTL	TTL
	Potent.	Potentiometer (available only for input 3)
	P-05 Filtre Input 1	Input 1 hardware filter configuration
	Off	Input hardware filter disabled
	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
	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
	Out Enable/Disable	Enable / Disable 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
	Enable	Enabled
	P-11 Function Key UP	Function associated to key UP (up arrow)
	Disable	Disabled
	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
	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
	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		
	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	
	0.1 Hz	Default
	10.0Hz	

P-15 Software Filter		
	off	No software filter on reading
	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		
	sec	Visualization time base
	min	Visualized value referred to the second
	hour	Visualized value referred to the minute
	hour	Visualized value referred to the hour

P-17 Pulse in Unit		
	99.99 pulse	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		
	0	Tachometer value visualization format
	0.0	No decimal digit visualization
	0.00	1 decimal digit visualization
	0.000	2 decimal digits visualization
	0.0000	3 decimal digits visualization

MEASURE UNIT CONFIGURATION

P-19 Measure Unit 1		
		Setting digit 1 of displayed measuring unit
		Setting digit 2 of displayed measuring unit
		Setting digit 3 of displayed measuring unit
		Setting digit 4 of displayed measuring unit
	Edit digits	Set each of 4 digits as chosen
		Default ---

SETPOINT CONFIGURATION

P-23 Display Set 1		
	Disable	Setpoint value not visualized
	Visualized	Setpoint value visualized
	Modifiable	Setpoint value visualized and modifiable
		Default Set1

P-24 Lower Limit Set 1		
		Set 1 minimum value (0...9999)
		Set 2 minimum value (0...9999)
		Set 1 maximum value (0...9999)
		Set 2 maximum value(0...9999)
		Default 999

OUTPUT ENABLE CONFIGURATION

P-29 Output Enable		
		Outputs enabled
	Always enable	Tachometer outputs always enabled
	Automatic enable	Outputs enabled automatically
	Enable by input	Tachometer outputs enabled by digital inputs
		Default

TACHOMETER LOGIC OUTPUT MODE CONFIGURATION

P-30 Logic Output Mode1		
		Tachometer logic output mode 1
		Tachometer logic output mode 2
	High Deviation	Active output with high deviation
	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
		Logic output 2 activation delay
	0.0 sec	Defines logic output activation delay.
	to	Setting range from 0.0 sec
	999.9 sec	to 999.9 sec.

P-32 Deactivation Delay 1		
		Logic output 1 deactivation delay
		Logic output 2 deactivation delay
	0.0 sec	Defines logic output deactivation delay.
	to	Setting range from 0.0 sec
	999.9 sec	to 999.9 sec.

P-33 Output 1 Duration		
		Tachometer logic output 1 duration
		Tachometer logic output 2 duration
	Automatic	Automatic output duration
	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
		Relay Q2 output setting
	Disable	Disabled output
	Logic Out 1 n.o.	Logic output 1 on n.o. contact
	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
		Default 2
		Default 1

TCT101-3ABC "TACHOMETER"

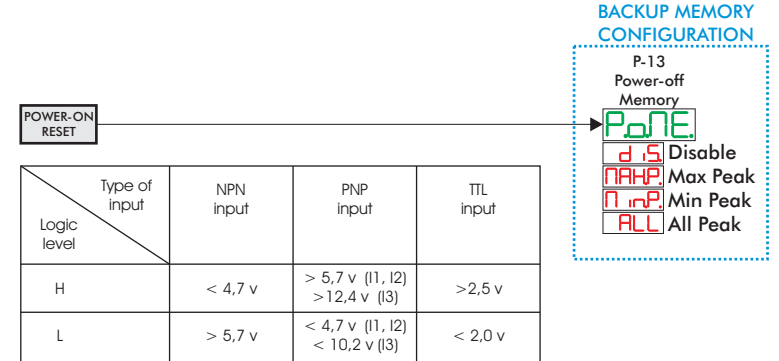
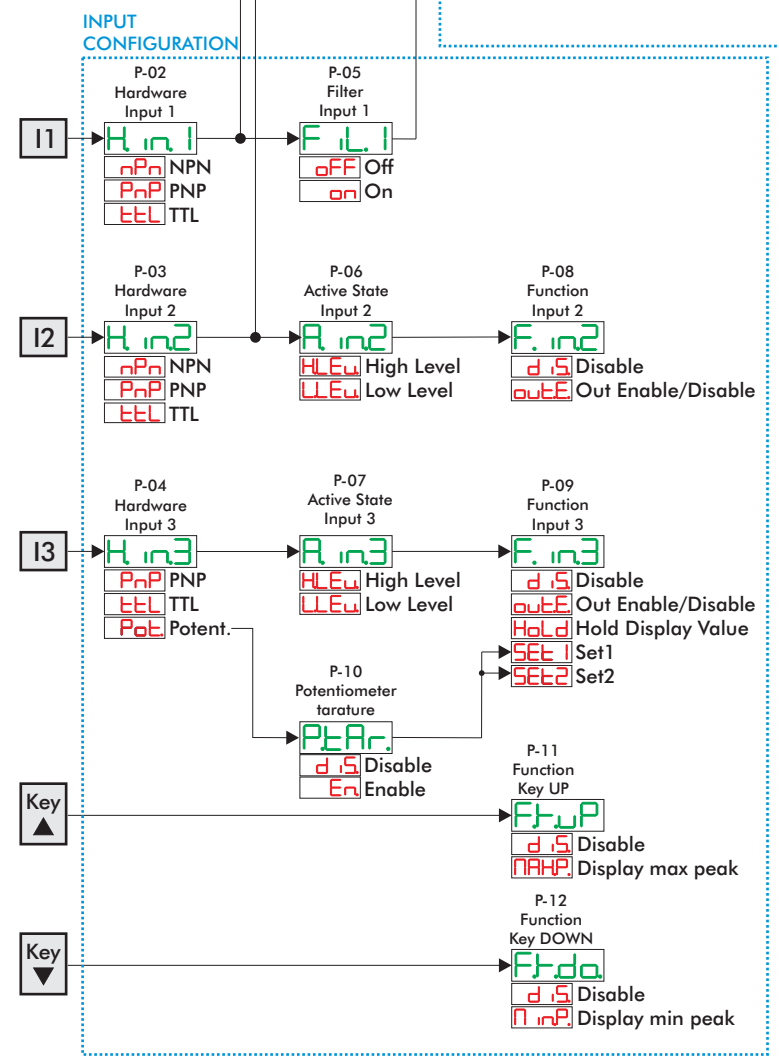
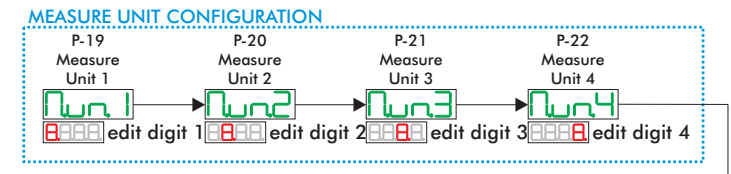
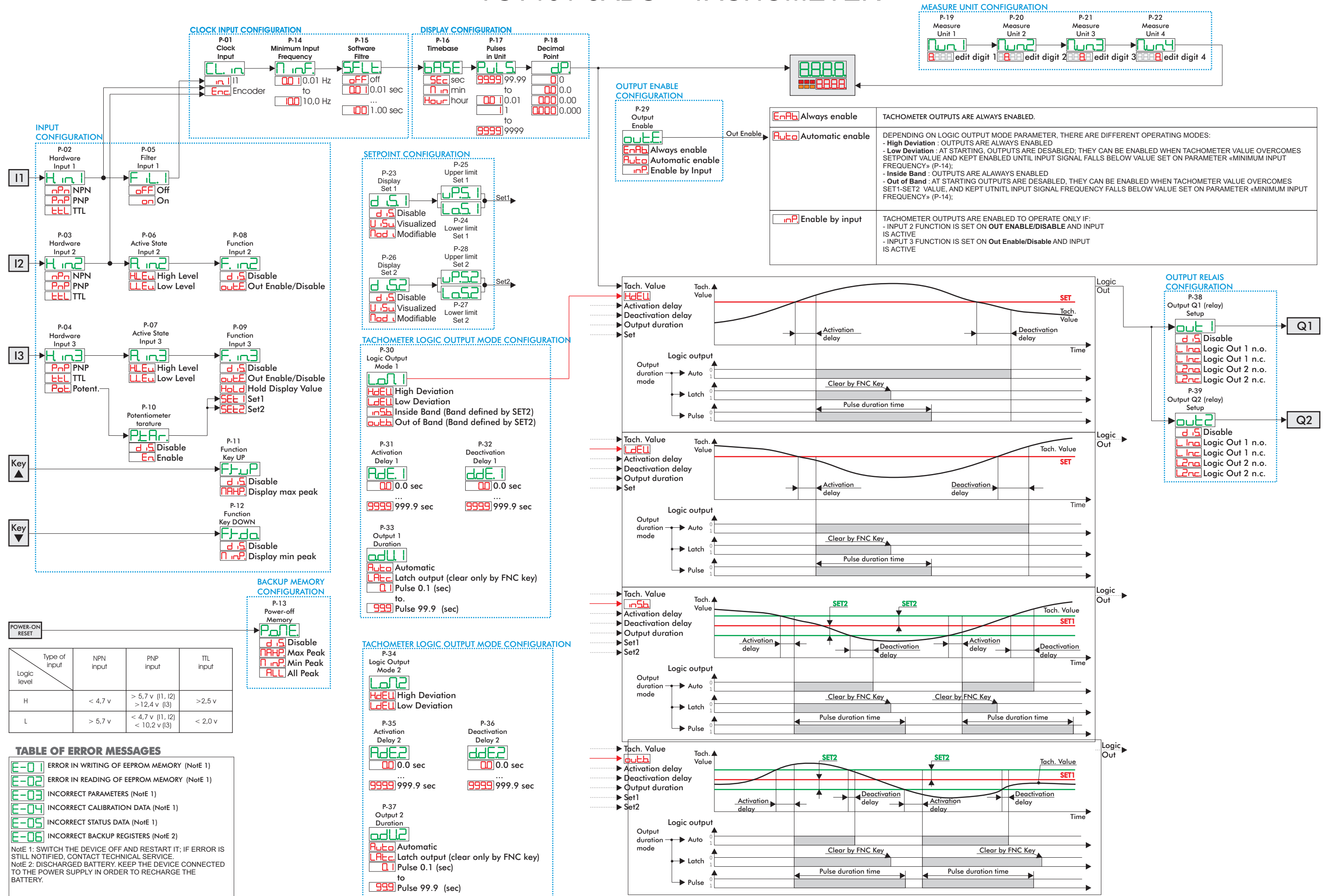


TABLE OF ERROR MESSAGES

E-01 ERROR IN WRITING OF EEPROM MEMORY (NotE 1)

E-02 ERROR IN READING OF EEPROM MEMORY (NotE 1)

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.

