

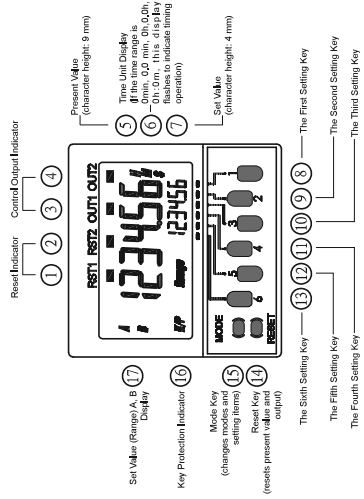
TC-Pro482

Timer/Counter/Tachometer operation manual.

1、 Safety Precautions

- Do not use the product where corrosive or volatile gases are present, there may occasionally be a risk of explosion.
- Useable life of output relay is determined by switch condition. According to the actual usage, use product within its rated load and electrical life expectancy. If using product beyond its life expectancy, the contacts may become fused or there may be a risk of fire.
- This may occasionally cause electric shock, fire or malfunction. Never disassemble, repair or modify the product.
- This may occasionally cause electric shock, fire or malfunction. Do not allow metal fragments or lead wire scraps to fall inside this product.
- Make sure that the supply voltage and signal connection is correct before power is supplied, otherwise the product may be damaged.
- Do not touch the input terminals or repair the product while power is supplied. This may cause electric shock.

2、 Nomenclature



3、 Model Number Legend

TC-Pro482 1 2 3 4

- Communication
S: Standard (no communication)
C: Communication
- Output type
R: Contact
T: Transistor
- Supply voltage
A: 100V - 240V AC
D: 24V DC, 24V AC

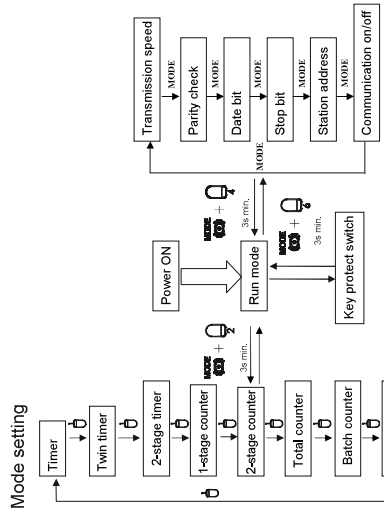
- Installs the pattern
None, Inserting Mounting

4、 Electric Specifications

Parameter name	Timer	Counter/Tachometer
Rated supply voltage	100-240VAC(50/60HZ), 24VAC(50/60HZ), 24VDC(permissible ripple: 20%(pp)/max.)	24VDC(permissible ripple: 20%(pp)/max.)
Operating voltage range	85% to 110% rated supply voltage(24VDC: 90% to 110%)	
Power consumption	Approx. 6.2VA at 264VAC, Approx. 5.1VA at 26.4VAC.	
Input signals	Signal, reset, gate	CP1, CP2, Reset 1, Reset 2
Input method	◆ Non-voltage input ◆ ON impedance: 1kΩ max. (leakage current: 5-20 mA when 0V) ◆ OFF impedance: 3V max. ◆ Voltage input ◆ High(logic) level: 4.5 to 30 VDC ◆ Low(logic) level: 0 to 2 VDC (Input resistance: approx. 4.7 kΩ)	
Reset input	Minimum input signal width: 1/20 ms(selectable, same for all input)	
Sensor waiting time	250 ms max. (control output is turned OFF and no input is accepted during sensor waiting time)	
Output method	Relay/transistor output	
Control output	SPDT contact output: 3A at 250 VAC, resistive load(cosφ=1) Minimum applied load: 10 mA at 5 VDC(failure level: P, reference value) Resistor output: NPN open collector, max. 100mA at 30 VDC Residual voltage: 1.5 VDC max.(approx. 1V) Output category according to EN60947-5-1 for timers with Contact outputs (AC-15; 250V 3A / AC-13; 250V 5A / DC-13; 30V 0.5A) Output category according to IEC60947-5-2 for timers with Relays (DC-13; 30V 0.5A) NEMA B300 PkE Dly. 1/4 HP 5-A resistive load at 120 VAC, 1/3 HP 5-A resistive load at 240 VAC	

External power supply	12VDC(15%), 80mA
Memory backup	EEPROM(overwrites: 100,000 times min.)that can store data for 10 years min.
Ambient temperature	Operating: -10 to 55°C(with no icing or condensation) Storage: -25 to 85°C(with no icing or condensation)
Ambient humidity	25% to 85%

5、 Function parameter setting



★ Timer/Counter/Tachometer Selection Mode

Parameter name	Parameter	Setting range	Default value
Timer/Twin Timer/2-Stage Timer Selection Mode	FUN	0 to 9	tim
1-stage /2-stage /Total /Batch /Dual counter / Tachometer Selection Mode	FUN	0 to 9	1ont

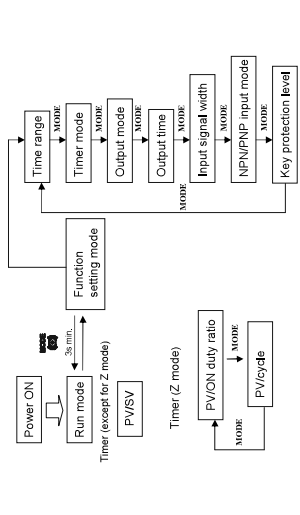
★ Communication Format Function Selection Mode

Parameter name	Parameter	Setting range (use key to select)	Default value
Transmission speed	BRID	1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600bps	9600
Parity check	PR-L	NONE/ODD/EVEN	none
Date bit	DR-R	8-bit/7-bit	8-bit
Stop bit	ST-OP	1-bit/2-bit	1-bit
Station address	RD-R	01~FF (HEX)	01
Communication on/off	CO-SH	ON/OFF	on

★ Key Protection Setting Mode

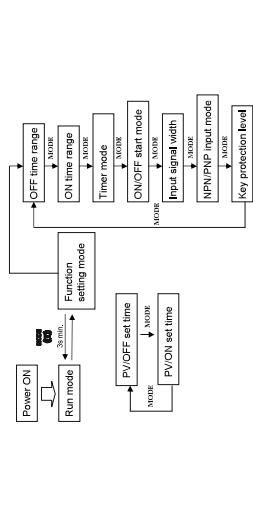
Parameter name	Parameter	Setting range (use key to select)	Default value
Key protection switch	PP	on/off	off

Timer parameter setting



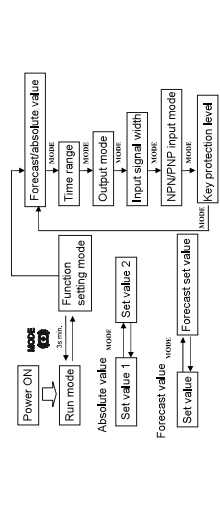
Parameter name	Parameter	Setting range (use key to select)	Default value
Time range	L-T	--S/---S/---S/---S/---S/---S/---S/---S	--:--S
Timer mode	L-T	up/down	up
Output mode	OUT	a/a-1/a-2/a-3/b/b-1/d/d-1/z	a
Output time	OT-L	hold/0000.01~9999.99	hold
Input signal width	L-FLT	20ms/1ms	20ms
NPN/PNP input mode	L-NO	npi/npn	npi
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

Twin Timer parameter setting



Parameter name	Parameter	Setting range (use key to select)	Default value
OFF time range	OFF-T	--S/---S/---S/---S/---S/---S/---S/---S	--:--S
ON time range	ON-T	--S/---S/---S/---S/---S/---S/---S/---S	--:--S
Timer mode	L-T	up/down	up
ON/OFF start mode	TOFF	toff/on	toff
Input signal width	L-FLT	20ms/1ms	20ms
NPN/PNP input mode	L-NO	npi/npn	npi
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

2-Stage Timer parameter setting



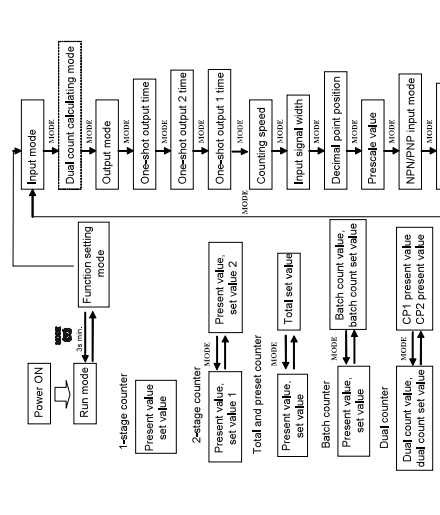
Parameter name	Parameter	Setting range (use key to select)	Default value
Forecast/absolute value	SET	ois/sbs	ois
Time range	L-T	--S/---S/---S/---S/---S/---S/---S/---S	--:--S
Output mode	OUT	a/a-1/a-2/a-3/b/b-1/d/d-1/z	a
Input signal width	L-FLT	20ms/1ms	20ms
NPN/PNP input mode	L-NO	npi/npn	npi
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

Time parameter setting

Parameter name	Parameter	Setting range	Unit	Default value
Measurement value OUT1 set value	MEAS1	0000.00~9999.99 (Time range: --:--S)	s	0000.00
Measurement value OUT2 set value	MEAS2	0000.00~9999.99 (Time range: --:--S)	s	0000.00
Auto-zero time	AUTO-Z	0000.00~9999.99 (Time range: --:--S)	min:s	0000.00
Startup time	START-UP	0000.00~9999.99 (Time range: --:--min)	min	0000.00
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	min	0000.00

Parameter name	Parameter	Setting range (use key to select)	Default value
Input mode	IN	up/down/uc-aub/b-ud-c	up
Calculating mode	CAL	add/sub (See note 1.)	add
Output mode	OUT	n/fr/k-1/p/q/k-2/d/llh (See note 2.)	n
One-shot output time	OS-T	000.001~999.999	000.500
One-shot output 2 time	OS-T2	000.001~999.999	000.500
One-shot output 1 time	OS-T1	hold/000.001~999.99 (See note 3.)	hold
Counting speed	CS	30Hz/5KHz	30Hz
Input signal width	L-FLT	20ms/1ms	20ms
Decimal point position	DP	---	---
Prescale value	PSCL	000.001~999.999	001.000
NPN/PNP input mode	L-NO	NPN/PNP	NPN
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

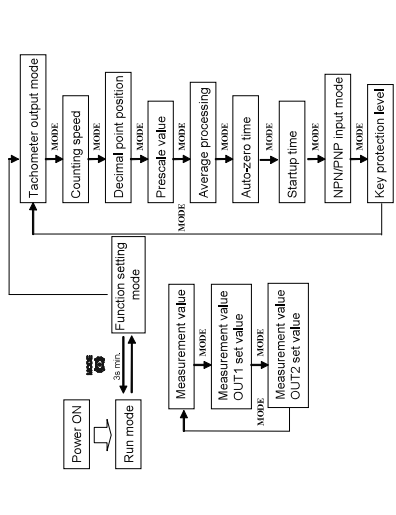
Counter parameter setting



Parameter name	Parameter	Setting range (use key to select)	Default value
Input mode	IN	up/down/uc-aub/b-ud-c (See note 1.)	up
Dual count calculating mode	CAL	add/sub (See note 1.)	add
Output mode	OUT	n/fr/k-1/p/q/k-2/d/llh (See note 2.)	n
One-shot output time	OS-T	000.001~999.999	000.500
One-shot output 2 time	OS-T2	000.001~999.999	000.500
One-shot output 1 time	OS-T1	hold/000.001~999.99 (See note 3.)	hold
Counting speed	CS	30Hz/5KHz	30Hz
Input signal width	L-FLT	20ms/1ms	20ms
Decimal point position	DP	---	---
Prescale value	PSCL	000.001~999.999	001.000
NPN/PNP input mode	L-NO	NPN/PNP	NPN
Key protection level	PYPT	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

- The setting range varies with the output mode.
- The setting range varies with the mode and the input mode.
- HOLD can not be set when the output mode is k-2.

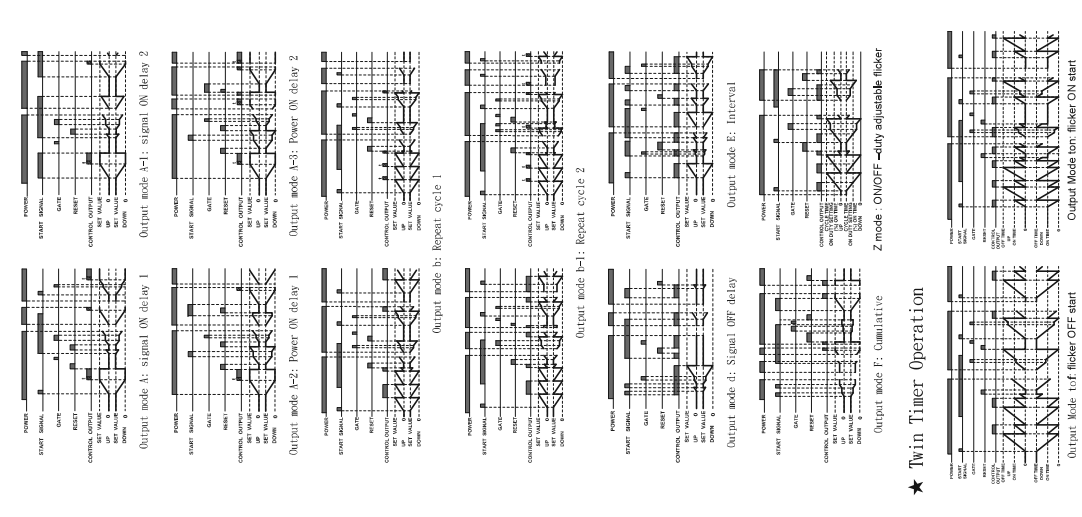
Tachometer parameter setting



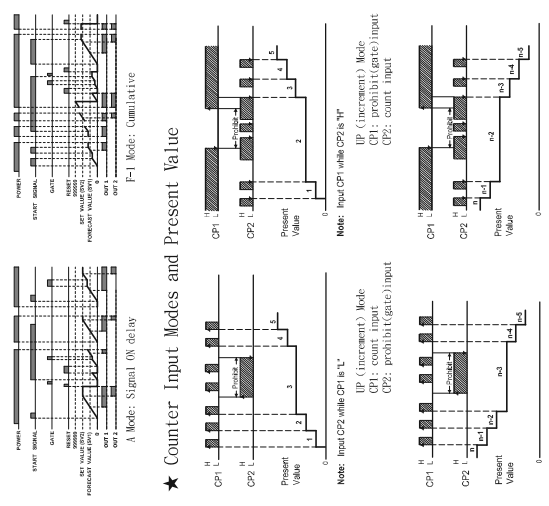
Parameter name	Parameter	Setting range (use key to select)	Default value
Tachometer output mode	to _{tn}	hi/lo/ave/hir/lo/lo	hi/lo
Counting speed	cnt5	30Hz/10Hz	30Hz
Decimal point position	dp		
Prescale value	ps _{ll}	000,001-999,999	001,000
Average processing	avg	off/2/4/8	off
Auto-zero time	aut=	00,01-99,99	99,99
Startup time	st _{nr}	00,01-99,99	00,00
NPV/PNP	l _{nod}	NPV/PNP	NPV
Input time	l _{inp}		
Key protect level	pu _{pl}	kp-1/kp-2/kp-3/kp-4/kp-5	kp-1

6、Sequence Charts

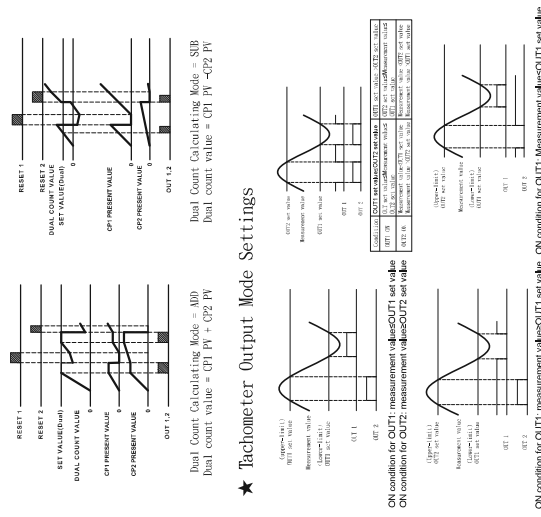
★ Timer Operation



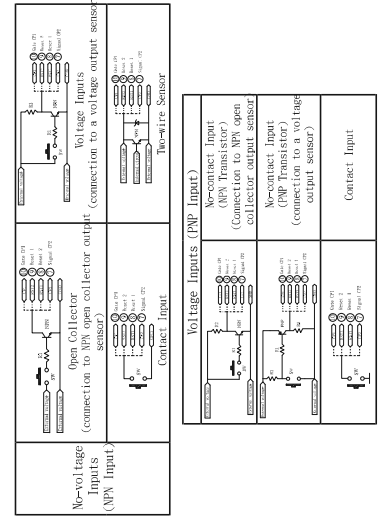
★ 2-Stage Timer Operation



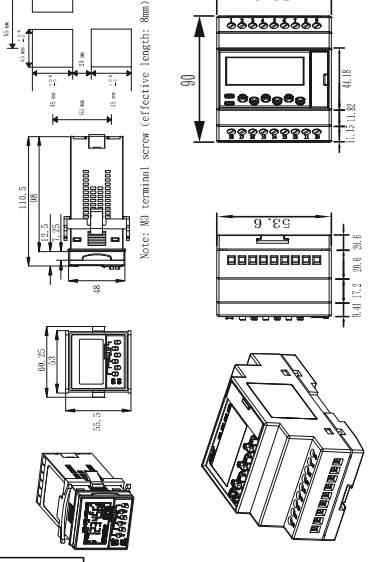
★ Dual Counter Operation



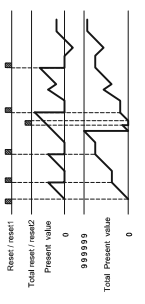
7、Input Connections



8、Dimensions and Panel Cutouts



★ Total and Preset Counter Operation



★ Batch Counter Operation

