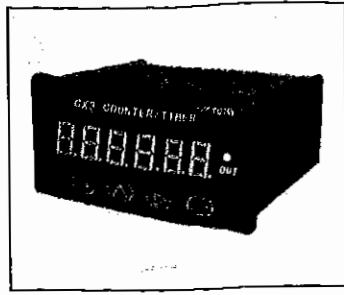


CX Series Intelligent Counter/Timer

Feature :

- ◆ Compact size, designed for easy operation
- ◆ Easy-to-read LED displays, choose 4 digits (CX2) or 6 digits (CX3, CX8)
- ◆ Reversible counting: square wave or sine wave signal input
- ◆ 1 stage preset, optional output mode: R, N, C, F
- ◆ Transistor output (CX2C, CX3C, CX8C) or relay output (CX3, CX8)
- ◆ Counting rate range: 0.001-9999; decimal point setting: 0-3 digits
- ◆ With power fail memory function, the information can keep 10 years
- ◆ Reset by press key or outer terminal; with pause function used as timer
- ◆ Four timer range optional: S/M.S/H.M.S/H.M
- ◆ Timer with double delay function, counter can increase/decrease count
- ◆ High anti-interference



I. MODEL AND SPECIFICATION

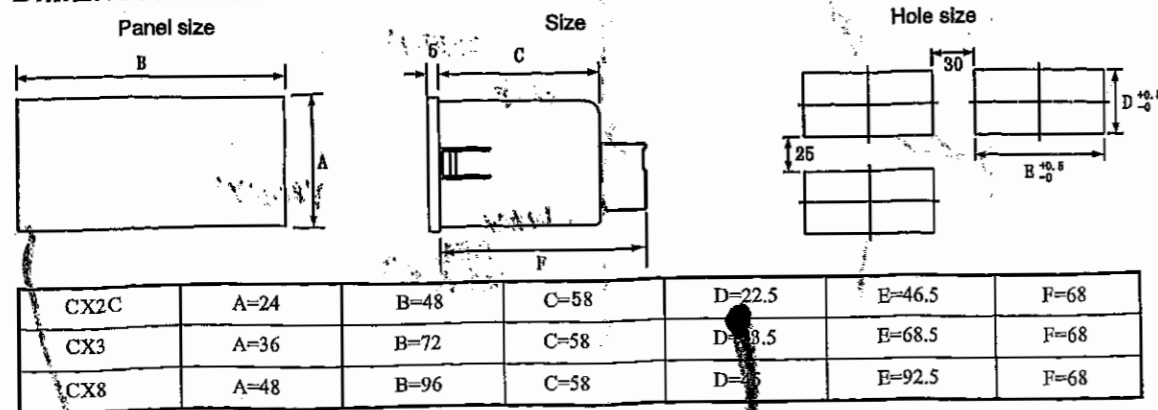
- CX□□-□□□□A - Code
- : 1:1 stage preset
 - : Display: 4:4 digits 6:6 digits
 - : S:Rate setting
 - : P:Preset function
 - : Power supply: AC:90-256V C:DC5V or DC10-30V
 - : Dimension: 2:24Hx48Wx58L 3:36Hx72Wx58L 8:48Hx96Wx58L
- CX series

| MODEL | POWER SUPPLY | DIGITS | OUTPUT | AUXILIARY POWER | TIMER RANGE | COUNTER RANGE |
|------------|---|--------|------------|-----------------|------------------|----------------|
| CX2C-PS41A | DC5V OR DC10-30V | 4 | TRANSISTOR | NONE | 0.01S~9999H | -1999~9999 |
| CX3C-PS61A | DC5V OR DC10-30V | 6 | TRANSISTOR | NONE | 0.01S~9999H. 59M | -199999~999999 |
| CX3-PS61A | AC 90-256V | 6 | RELAY | 12 V | 0.01S~9999H. 59M | -199999~999999 |
| CX8C-PS61A | DC5V OR DC10-30V | 6 | TRANSISTOR | NONE | 0.01S~9999H. 59M | -199999~999999 |
| CX8-PS61A | AC 90-256V | 6 | RELAY | 12 V | 0.01S~9999H. 59M | -199999~999999 |
| REMARK | For the model with DC5V / 10-30VAC/DC power supply, users can choose one of the power supply modes. | | | | | |

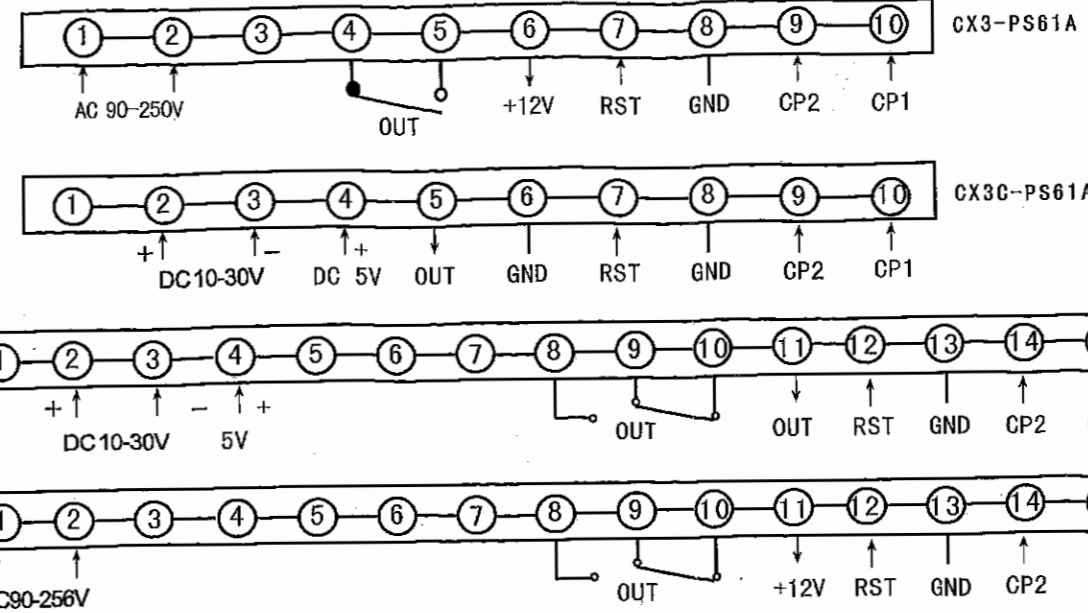
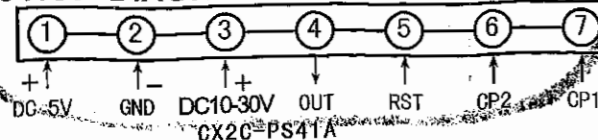
II. TECHNICAL PARAMETER

| | |
|------------------------------|------------------------------|
| Input Signal | Sine wave, square wave 5-30V |
| Input impedance | ≥ 10K Ω |
| Max. count speed | 3000cps Max |
| Data maintain period | ≥ 10 years |
| Transistor output capacity | DC 24V/30mA Max. |
| Relay output capacity | AC 250V/3A |
| Delay time | 0.01-99.99S |
| Count rate (P) setting range | 0.001-9999 |

III. DIMENSION AND CUT-OUT

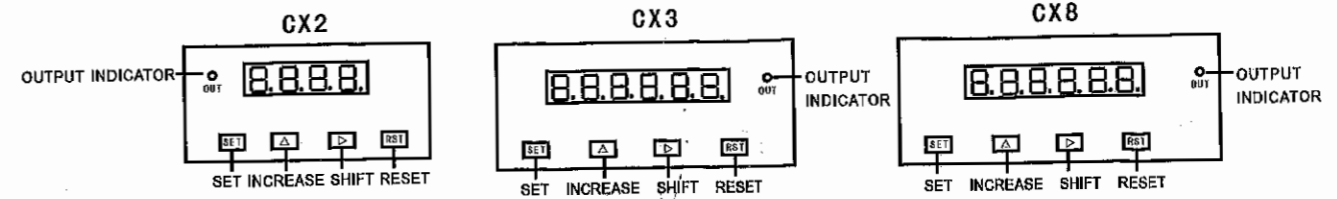


IV. CONNECTION DIAGRAM



NOTE: Please refer to the connection diagram stuck on the enclosure if there is any difference.

V. OUTSIDE PANEL



VI. OPERATION INSTRUCTION

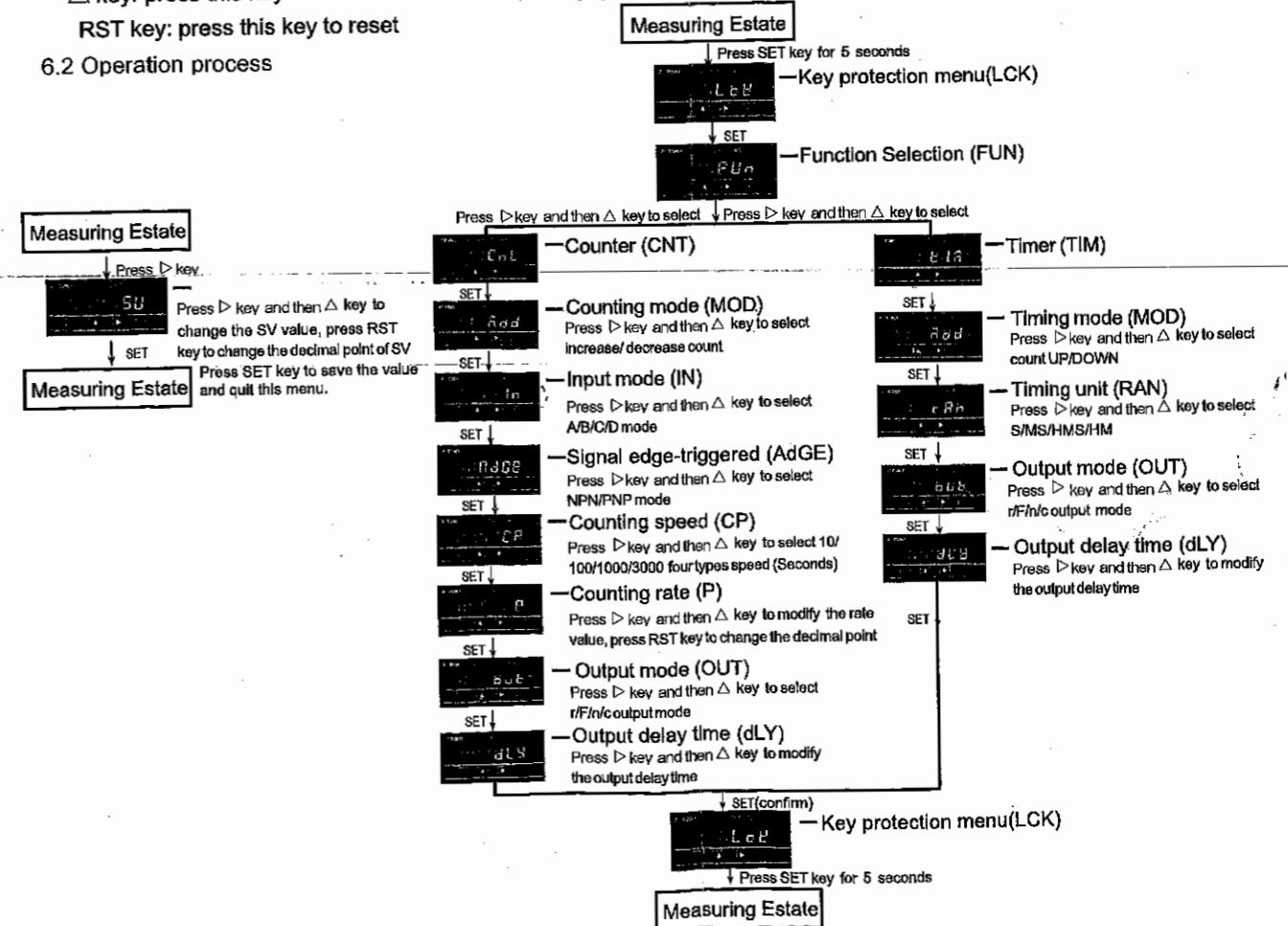
6.1 Operation key

SET key: set and confirm key, press this key to confirm the setting parameter.

△ key: press this key to increase the value ▷ key: press this key to shift the flash digit

RST key: press this key to reset

6.2 Operation process



VII. OPERATION INSTRUCTION

- 7.1 When used as timer, the outside terminal is with the pause function. When input high voltage (5-30V), the timing will stop and the output value will be hold.
- 7.2 The width of the input reset signal and pause signal should not be less than 20ms.
- 7.3 In case the instrument displays "ERRO", please check the SV and P value to see if "SV ≥ P > 0".
- 7.4 Input wire should be shield. And the instrument can not work in the environment of Humidity > 90RH% or high acidity and alkalinescence.
- 7.5 When the output mode set as C, if output delay value is larger than the next timer circle, the instrument will be enable to automatic reset.
- 7.6 Parameter illustration.

| MODE | CODE | MEANING | SETTING RANGE | SPECIFICATION | REMARK |
|------|------|-------------------------|--|--|--|
| 1 | Fun | Function Selection | Count timer | Press Δ and \triangleright key to select the function of measuring Count : counter timer | |
| 2 | Mod | Counting / timing mode | | Press Δ key to select U or D U : increase count or count up D : decrease count or count down | |
| 3 | In | Input mode | A b c d | Press Δ and \triangleright key to select input mode A mode: CP2 low voltage, CP1 increase counting CP2 high voltage, CP1 doesn't count b mode: CP2 low voltage, CP1 increase counting CP2 high voltage, CP1 decrease counting c mode: CP1 increase counting, CP2 decrease counting display value = CP1 - CP2 d mode: CP2 lag behind CP1, CP2 increase counting CP1 go beyond CP1, CP2 decrease counting | Refer to Diagram 2 |
| 4 | EDGE | Signal edge triggered | Up Down | Up: Up edge Down: Down edge | |
| 5 | CP | Counting speed | 10, 100, 1000, 3000 | Select the counting speed according to the input signal frequency. For example, if the counting speed is 100CPS, then the Max. frequency of the input signal is 1000Hz. Press Δ key to select | |
| 6 | P | Counting rate | 0.001 - 9999 | Press \triangleright and Δ key to modify the counting rate For example, set P=10.00, when input 1 impulse the meter will display 10; input 2 impulse the meter will display 20 | For counter only |
| 7 | rAn | Timing unit | S (S) M (S) H (M/S) H (H) (M) | Press \triangleright and Δ key to modify the counting rate S : timing range 0.01S-999999S (6 digits display) M : timing range 1S-9999M.59S (6 digits display) H : timing range 1S-99H.59M.59S (6 digits display) H : timing range 1M-9999H.59M (6 digits display) | For timer only |
| 8 | OUT | Output mode | N R C F | Press \triangleright and Δ key to select the output mode Refer to diagram 1: output mode (N/ R/ C/ F) | Refer to Diagram 1. |
| 9 | dLY | Output delay time | 0.01S - 99.99S | Press \triangleright and Δ key to modify output delay time | N/ F mode don't have this parameter |
| 10 | LCK | Key protection function | | LCK=0001, can not modify the SV value; LCK=0010, can not enter the menu LCK=0100, press SET + Δ key to recover the factory default value; LCK=1000, lock the reset key and outside reset terminal | |
| 11 | SU | Setting value | 0.01-99.99 (4 digit) 0.01-9999.99 (6 digit) 0.001-9999 (4 digit) 0.001-999999 (6 digit) | On-measuring state, press \triangleright key to enter SV modify-estate, then press Δ and \triangleright key to modify the value, press SET key to confirm and return. Press RST key to change the decimal point of SV value, but when used as timer the changing only available for the timing unit is "S" | 4 digits 6 digits (Set by the front press key) |

Diagram 1: output mode

| | N (Counter, Timer) | R (Timer) | F (Counter, Timer) |
|---|---|---|---|
| The relationship between output mode and process value. | | | |
| Specification | Display value and output will hold until input the reset signal | (Double delay time) the output will return to start estate, when delay time count down | Display value continue, output maintains until reset input. |
| The relationship between output mode and process value. | | | |
| Specification | Display value and output remain until delay time is up, then re-start counting. | Display returns to zero automatically when it reaches setting value. Output remains until delay time is up. (If delay time is not shorter than next counting/timing time, the output can't be reset automatically.) | |

Diagram 2: diagram for input mode A/B/C/D

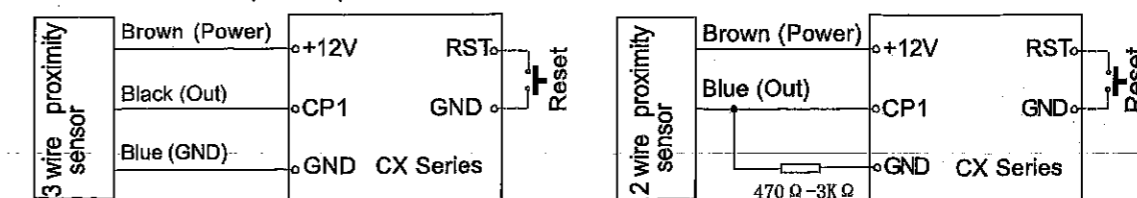
| Mode | UP | down | Specification |
|------|----|------|--|
| A | | | CP2 low voltage allow CP1 count CP2 high voltage don't allow CP1 count |
| B | | | Up: CP2 low voltage, CP1 increase count CP2 high voltage, CP1 decrease count Down: CP2 low voltage, CP2 decrease count CP2 high voltage, CP1 increase count |
| C | | | Up: CP1 increase CP2 decrease Display value = CP1 - CP2 Down: CP1 decrease CP2 increase Display value = CP2 - CP1 |
| D | | | UP: CP2 lag behind CP1, CP2 increase counting CP1 go beyond CP1 CP2 decrease counting Down: CP2 lag behind CP1, CP2 decrease counting CP1 go beyond CP1 CP2 increase counting |

Rate P illustration:

This parameter can translate the counter value into intuitionistic engineering value such as length, flow, weight and capacitance. For example, to measuring length, when the input pulse is N, setting a value for P according to the length, made length = N × P.

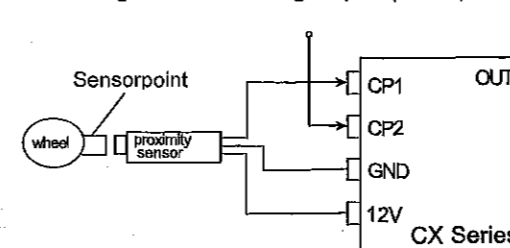
VIII. CONNECTION EXAMPLE

8.1 Connect with the proximity sensor



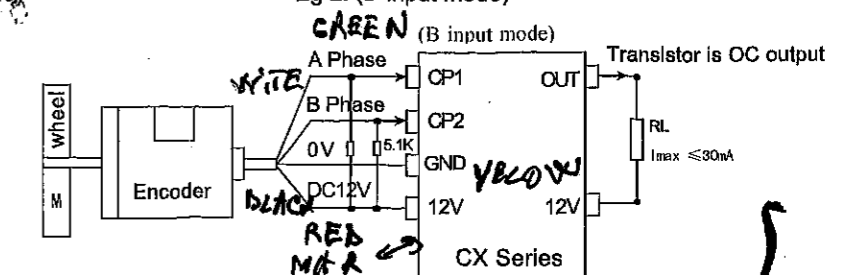
8.2 Application example

Eg 1: Control voltage input (A/B input mode)



Input mode: B (UP OR DOWN)
CP2 is low voltage, CP1 increase count
CP2 is high voltage, CP1 decrease count
(In case you have no high voltage, please short CP2 to terminal +12V or connect CP2 to terminal +5V).

Eg 2: (D input mode)



NOTE: If phase A and phase B is OC output, please add a resistance to the CP1 and CP2 output, the range of the resistance is depend on the parameter of encoder, the standard value is 5.1K Ω .