Multi-Functional Counter/Timer

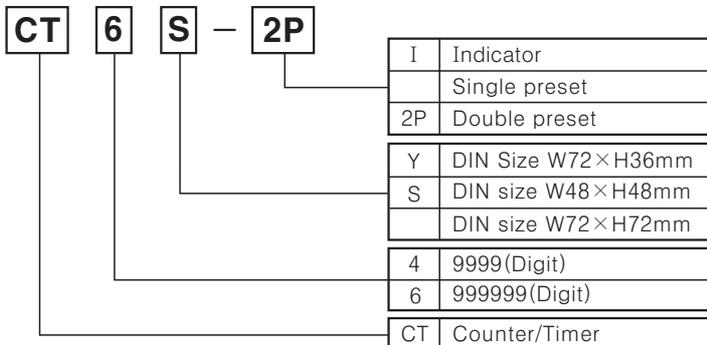## DIN size W72×H36mm, W48×H48mm, W72×H72mm Counter/Timer

▣Features

- ●Selectable Counter or Timer function
- ●The most various function
- ●Prescale function
- ●Programmable count speed to 10kcps
- ●Batch counter function for CT6, CT6-2P only
- ●Selectable Voltage input(PNP) or No voltage input(NPN)
- ●Ability to set ON/OFF time individually in Flicker (FLK) mode
- ●Key Lock function

> ⚠ **Please read "Caution for your safety" in operation manual before using.**

CE c ᴙᵁ us

▣Ordering information

| CT | 6 | S | – | 2P |

I	Indicator
	Single preset
2P	Double preset

Y	DIN Size W72×H36mm
S	DIN size W48×H48mm
	DIN size W72×H72mm

| 4 | 9999(Digit) |
| 6 | 999999(Digit) |

| CT | Counter/Timer |

※When using double preset type as timer mode, setting time is limited in one preset time.

▣Specifications

Model		Single preset	CT6Y	CT4S	CT6S	CT6
		Double preset	CT6Y-2P	CT4S-2P	CT6S-2P	CT6-2P
		Indicator	CT6Y-I	———	CT6S-I	CT6-I
Digit			6	4	6	6
Digit size			Counting part:W4.5×H10mm Setting part:W3.5×H7mm	Counting part:W7×H11mm Setting part:W5×H8mm	Counting part:W4.5×H10mm Setting part:W3.5×H7mm	Counting part:W7×H13mm Setting part:W5×H9mm
Power supply	AC power		100–240VAC 50/60Hz			
	DC power		24–60VDC			
Allowable voltage range			90 ~ 110% of rated voltage(AC power)			
Power consumption	AC power		Indicator : Approx. 9VA, Single & Double preset : Approx. 10VA			
	DC power		Indicator & Single preset : Approx. 5W, Double preset : Approx. 6W			
Count speed of INA, INB			Selectable 1 / 30 / 1k / 5k / 10kcps			
Prescale range			0.001 ~ 99.999(6digits), 0.01 ~ 9.99(4digits)			
Min. input signal width	Counter		Reset input : Selectable 1ms or 2ms			
	Timer		INA, INHIBIT, RESET : Selectable 1ms or 20ms			INA, RESET, INHIBIT, BATCH RESET (except CT6-I) : Selectable 1ms or 20ms
Input			Selectable voltage input or No-voltage input [Voltage input] Input impedance : 5.4kΩ, "H" level : 5–30VDC, "L" level : 0–2VDC [No-voltage input] Short-circuit impedance : Max. 1kΩ, Residual voltage : Max. 2VDC, Open-circuit impedance : Min. 100kΩ			
One-shot output			10 / 50 / 100 / 200 / 500 / 1000 / 2000 / 5000ms			
Control output	Contact	Type	Single preset type : SPDT(1c) Double preset type : SPST(1a) for first output SPDT(1c) for second output	Single preset type : SPDT(1c), Double preset type : SPST(1a) for first/second output		
		Capacity	NO : 250VAC 3A at resistive load, NC : 250VAC 2A at resistive load			
	Solid-state	Type	Single preset type : 1 NPN open collector Double preset type : 1 NPN open collector			Single preset type : 2 NPN open collectors Double preset type : 3 NPN open collectors
		Capacity	Max. 30VDC, Max. 100mA			
Memory retention			10 years(When using non-volatile semiconductor memory)			
External sensor power			12VDC ±10%, Max. 100mA			

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/ Speed/ Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor

(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder
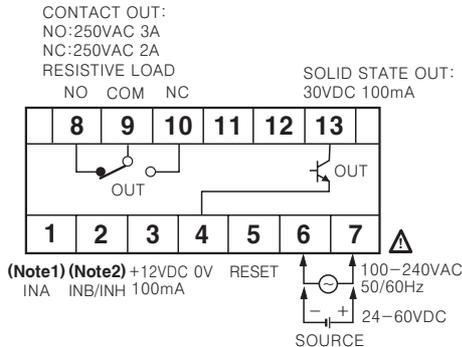
(M) 5-Phase stepping motor & Driver & Controller

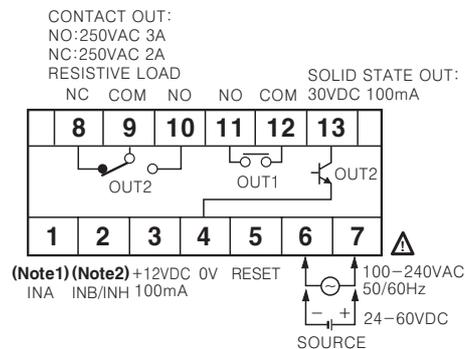# CTY/CTS/CT Series

■Specifications

Time accurancy	Repeat error	Power ON start : Max. ±0.01% ±0.05sec Signal start : Max. ±0.01% ±0.03sec			
	Set error				
	Voltage error				
	Temperature error				
Insulation resistance		Min. 100MΩ (at 500VDC)			
Dielectric strength		2000VAC 50/60Hz for 1 minute			
Noise strength		±2kV the square wave noise(pulse width:1μs) by the noise simulator			
Vibration	Mechanical	0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1 hour			
	Malfunction	0.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 10 minutes			
Shock	Mechanical	300m/s² (Approx. 30G) in X,Y,Z directions for 3 times			
	Malfunction	100m/s² (Approx. 10G) in X,Y,Z directions for 3 times			
Relay life cycle	Mechanical	Min. 10,000,000 times			
	Electrical	Min. 100,000 times(NO : 250VAC 3A at resistive load, NC : 250VAC 2A at resistive load)			
Protection		IP65(Front panel only)			
Ambient temperature		−10 ~ +55℃ (at non−freezing status)			
Storage temperature		−25 ~ +65℃ (at non−freezing status)□			
Ambient humidity		35 ~ 85%RH			
Weight	AC power	CT6Y:Approx. 160g CT6Y−2P:Approx. 163g CT6Y−I:Approx. 127g	CT4S:Approx. 155g, CT4S−2P:Approx. 162g	CT6S:Approx. 155g CT6S−2P:Approx. 162g CT6S−I:Approx. 136g	CT6:Approx. 264g CT6−2P:Approx. 271g CT6−I:Approx. 244g
	DC power	CT6Y:Approx. 164g CT6Y−2P:Approx. 167g CT6Y−I:Approx. 130g	CT4S:Approx. 152g CT4S−2P:Approx. 159g	CT6S:Approx. 152g CT6S−2P:Approx. 159g CT6S−I:Approx. 133g	CT6:Approx. 263g CT6−2P:Approx. 270g CT6−I:Approx. 243g
Approval		————	CE c℞us		

■Connections

◎ CT6Y

CONTACT OUT:
NO:250VAC 3A
NC:250VAC 2A
RESISTIVE LOAD

SOLID STATE OUT:
30VDC 100mA

◎ CT6Y−2P

CONTACT OUT:
NO:250VAC 3A
NC:250VAC 2A
RESISTIVE LOAD

SOLID STATE OUT:
30VDC 100mA
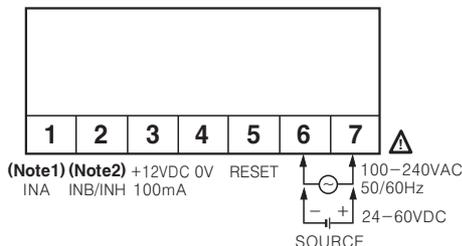
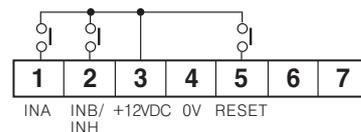※(Note1)INA terminal
• Operation of Counter : Operating as INA signal or INH signal
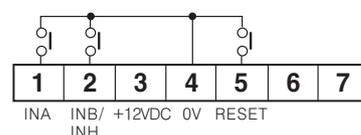• Operation of Timer : Operating as "START"

※(Note2)INB/INH terminal
• Operation of Counter : Operating as INB signal
• Operation of Timer : Operating as INH signal
  If the INH signal applied when it is used as Timer, the processing time stops.(Hold)

◎ CT6Y−I

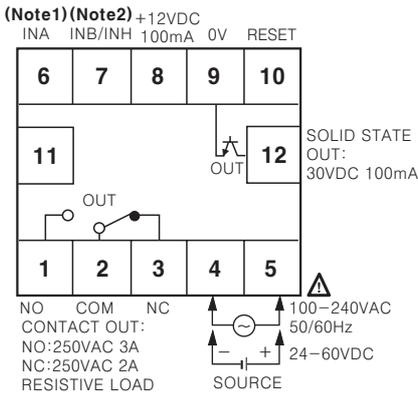※Connection of relay contact input when voltage input(PNP) is selected

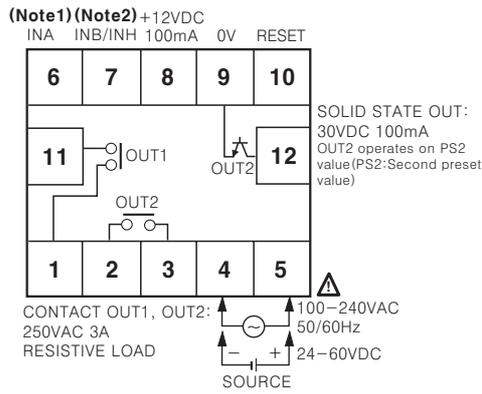※Connection of relay contact input when No−voltage input(NPN) is selected
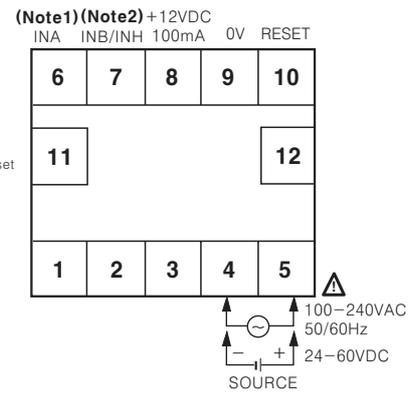
Multi-Functional Counter/Timer

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5-Phase
stepping
motor &
Driver &
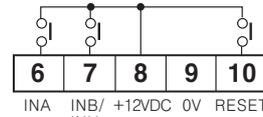Controller

◎ CT4S, CT6S

(Note1) INA terminal
- Counter : It will be as input terminal of counting input or counting no input signal.
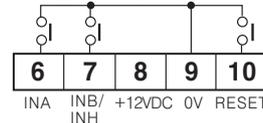- Timer : It will be input terminal of START signal.

(Note2) INB/INH terminal
- Operation of Counter : Operating as INB signal
- Operation of Timer : Operating as INH signal
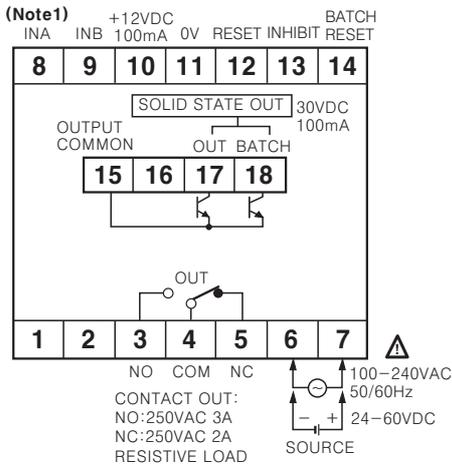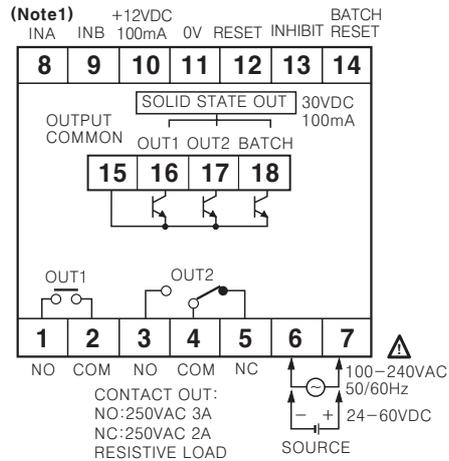 If the INH signal applied when it is used as Timer, the processing time stops. (Time Hold)

◎ CT4S-2P, CT6S-2P

◎ CT6S-I

- Connection of relay contact input when voltage input (PNP) is selected
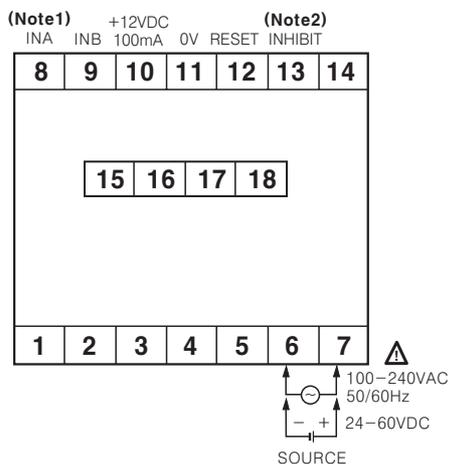- Connection of relay contact input when No-voltage input (NPN) is selected
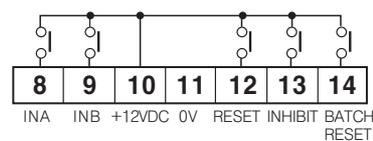
◎ CT6

◎ CT6-2P

※ **(Note1)** INA terminal
- Counter : It will be as input terminal of counting input or counting no input signal.
- Timer : It will be input terminal of START signal.
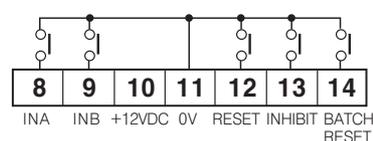
※ **(Note2)** INHIBIT signal
- When INHIBIT signal is applied at Timer operation: Processing time stops

※ Solid state output is insulated from inner circuit by photocoupler. (Time Hold)
(Power supply : 5-30VDC Max.)

- Connection of contact input in state of selected voltage input (PNP)
- Connection of contact input in state of selected No-voltage input

◎ CT6-I

Autonics

CTY/CTS/CT Series

■Dimensions

◎ CTY Series

●CT6Y

●CT6Y－2P

●CT6Y－I

COUNTER / TIMER CT6Y

COUNTER / TIMER CT6Y-2P

COUNTER / TIMER CT6Y-I

●Panel cut－out

85
72
36

83
6 65 12
30

Min.91
Min.40
$33^{+0.6}_{-0}$
$68^{+0.7}_{-0}$
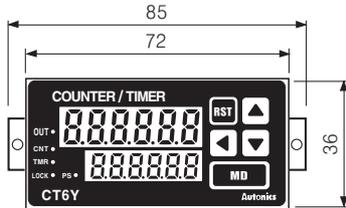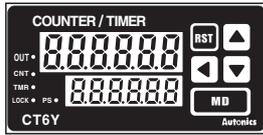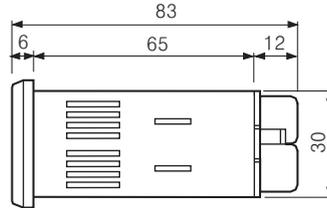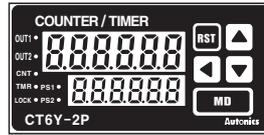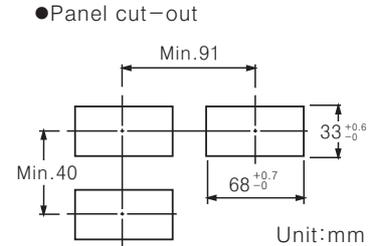
Unit:mm

◎ CTS Series

●CT4S

●CT4S－2P

●CT6S

●CT6S－2P

●CT6S－I

COUNTER/TIMER CT4S

COUNTER/TIMER CT4S-2P

COUNTER/TIMER CT6S

COUNTER/TIMER CT6S-2P

COUNTER/TIMER CT6S-I

●Panel cut－out

48
60
48

100
10 78 12
45

Min.55
Min.62
$45^{+0.6}_{-0}$
$45^{+0.6}_{-0}$
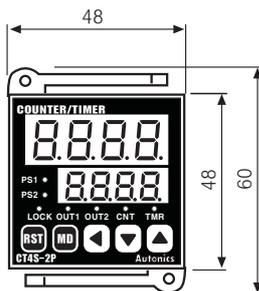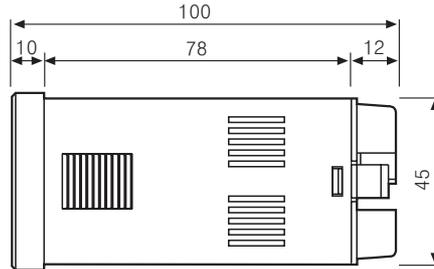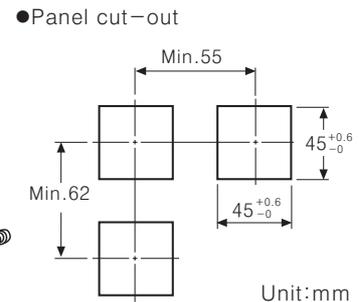
Unit:mm

◎ CT Series

●CT6

●CT6－2P

●CT6－I

COUNTER/TIMER CT6

COUNTER/TIMER CT6-2P

COUNTER/TIMER CT6-I

●Panel cut－out

86
72
72

95
10 73 12

Min.91
Min.91
$68^{+0.7}_{-0}$
$68^{+0.7}_{-0}$

Unit:mm

Autonics
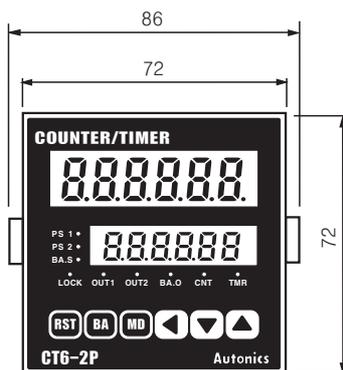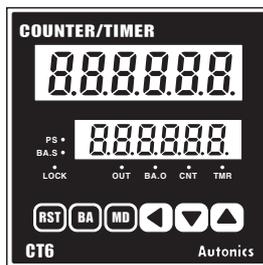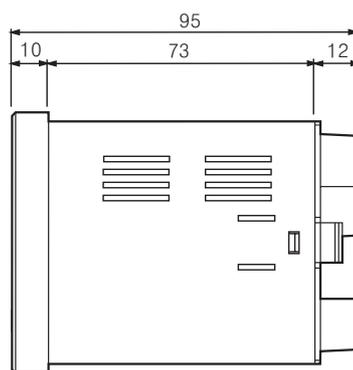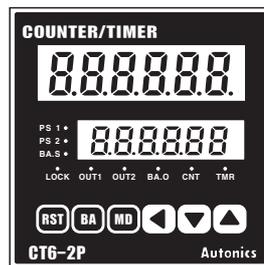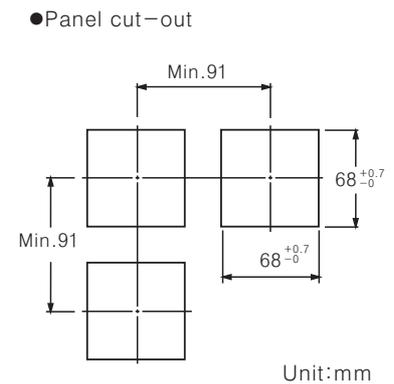
Multi-Functional Counter/Timer

▪Front panel identification

◎ CTY series
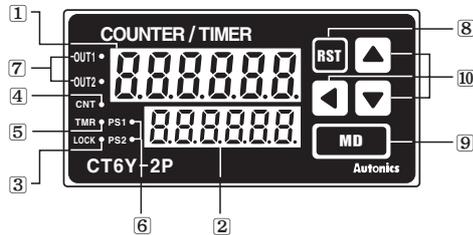
◎ CTS series

● 4 Digit

● 6 Digit

1 Display for processing value(Red LED)
   Counting value(Counter) / Processing time(Timer) /
   Setting symbols
   LED height : 11mm for 4digit, 10mm for 6digit
2 Preset value display(Yellow-Green LED)
   Preset value(Counter)/Preset time(Timer) and
   setting symbols.
   LED height : 8mm for 4digit, 7mm for 6digit
3 LOCK : Key Lock indication
   LOCK OFF: Light OFF
   LOCK O N: Light ON
4 CNT : Indicates operation as a counter

   ※There is no 6, 7 LED in CT6Y-I, CT6S-I.
   ※In CT4S, CT6S, CT6Y, PS2 will be changed to PS and OUT2 is OUT and there is no PS1, OUT1 LED.
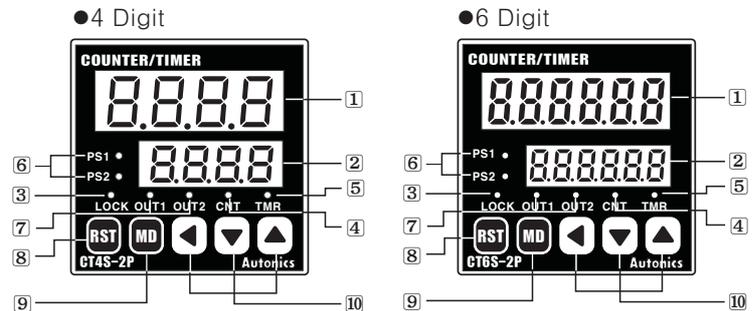
5 TMR : Indicates operation as a timer
   −LED flickers when the timer is processing
   −LED turns on when the processing time stops
6 PS1, PS2 : Indicates that preset is being displayed
                      or changed.
7 OUT1, OUT2 : Indicating the operation of output
8 [RST] : Reset key
9 [MD] : Mode key
10 ◀, ▼, ▲ : Set key

◎ CT Series
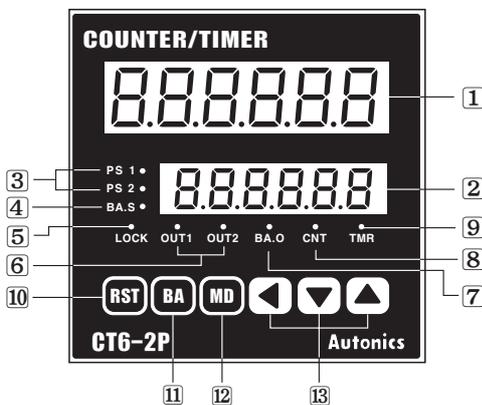
1 Display for processing value(Red LED)
   Counting value(Counter)/Processing time(Timer)/Setting symbols
   LED height : 13mm
2 Preset value display(Yellow-Green LED)
   Preset value(Counter)/Preset time(Timer) and setting symbols
   LED height : 9mm
3 PS1, PS2 : Indicates which preset is being displayed or changed
4 BA.S : Indicates a batch value has been preset
5 LOCK : Key lock display
6 OUT1, OUT2 : Preset the operation of output(Single & Double)
7 BA.O : Indication the operation of BATCH output
8 CNT : Indication the operation of counter
9 TMR : Indication the operation of timer
   −LED flickers when the timer is operating
   −LED turns off when the operating time stops
10 [RST] : Reset key
11 [BA] : Batch key
12 [MD] : Mode key
13 ◀, ▼, ▲ : Set key

   ※In CT6, PS2 will be changed to PS and OUT2
   to OUT, since there is no PS1, OUT1 LED.
   ※There is no PS1, PS2, BA.S, OUT1, OUT2,
   BA.0 LED in CT6-I.
   ※There are no [BA] key in CT6-I.

CTY/CTS/CT Series

▣Input connections

◎Input logic : No-voltage input(NPN)

●Solid state input(Standard sensor : NPN output type sensor)

●Contact input

Sensor	CTY/CTS/CT Series
	+12V
	5.4kΩ
	Inner circuit
	0V

(NPN voltage output)

Sensor	CTY/CTS/CT Series
	+12V
	5.4kΩ
	Inner circuit
	0V

(NPN open collector output)

	CTY/CTS/CT Series
	+12V
	5.4kΩ
	Inner circuit
	0V

※Counting speed:
1 or 30cps setting
(Counter)

※INPUT circuit of INA, INB, INH(INHIBIT), BATCH RESET, RESET are the same.
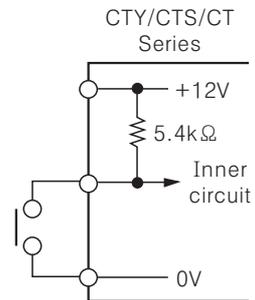
◎Input logic : Voltage input(PNP)

●Solid state input(Standard sensor : PNP output type sensor)
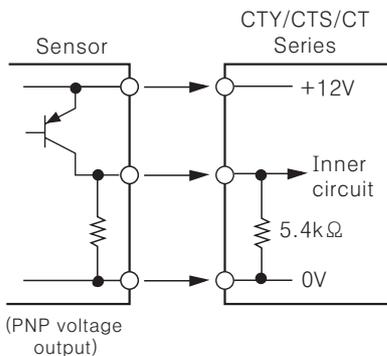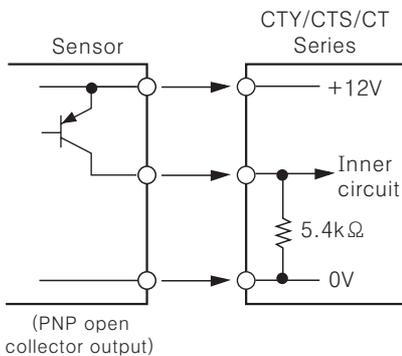
●Contact input

Sensor	CTY/CTS/CT Series
	+12V
	Inner circuit
	5.4kΩ
	0V

(PNP voltage output)

Sensor	CTY/CTS/CT Series
	+12V
	Inner circuit
	5.4kΩ
	0V

(PNP open collector output)

	CTY/CTS/CT Series
⑧	+12V
	Inner circuit
	5.4kΩ
⑨	0V

※Counting speed:
1 or 30cps setting
(Counter)

※INPUT circuit of INA, INB, INH(INHIBIT), BATCH RESET, RESET are the same.
※INA is input terminal when it is used for Counter and can be START signal input terminal when it used for Timer.
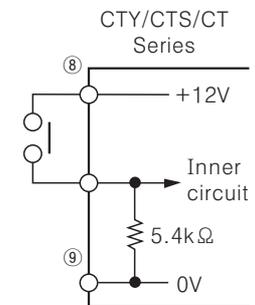
▣Input logic selection

◎CTY/CTS Series

1. The power must be cut off.
2. Detach the case from body.
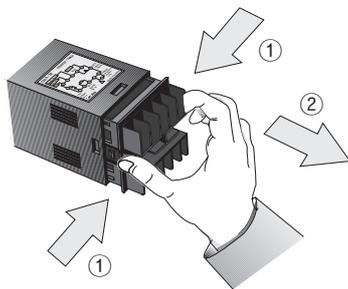
*Case detachment
Squeeze toward ① and pull toward ② as shown in picture.

** Please check if the power is cut off!! **

3. Select input logic by using input logic S/W inside Counter/Timer.

●Select No-voltage input(NPN) ●Select voltage input(PNP)

SW1
CTY Series

SW1
CTS Series
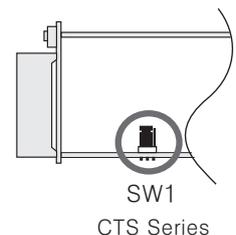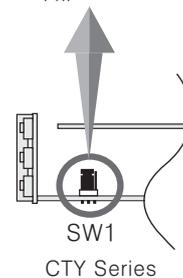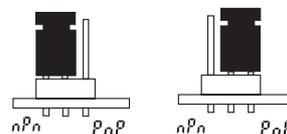
4. Please assemble opposite way of the case detachment.
5. Then apply the power to Counter/Timer.

Autonics

Multi-Functional Counter/Timer

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
sensor

(J)
Photo
electric
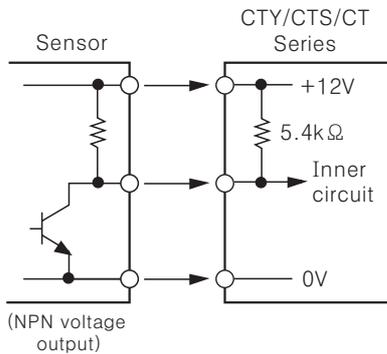sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

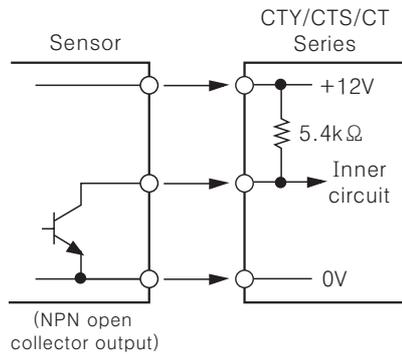(M)
5-Phase
stepping
motor &
Driver &
Controller

◎CT Series

It is easy to change input logic by S/W for input logic conversion.

●Select PNP(Voltage input)   ●Select NPN(No-Voltage input)

PNP NPN   **PNP NPN**
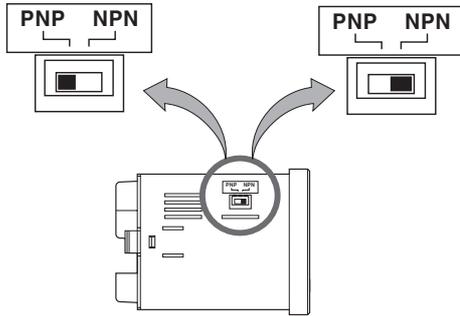
▣Output connections

◎Contact output

Counter/Timer

(Power of load)

Load

(CT/CTS/CTY Series)
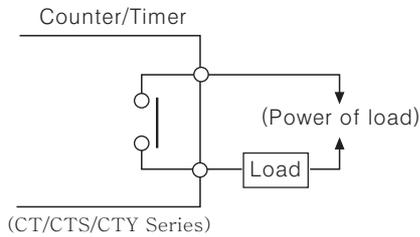
※Relay contact is 250VAC 3A Max.
※Use proper load not to exceed relay contact.

◎Solid state output

Counter/Timer   Counter/Timer   ※

Load   (+) Power
             for
         (−) load
             (DC)

[CT6,
  CT6-2P]

[CT4S, CT4S-2P
  CT6S, CT6S-2P
  CT6Y, CT6Y-2P]
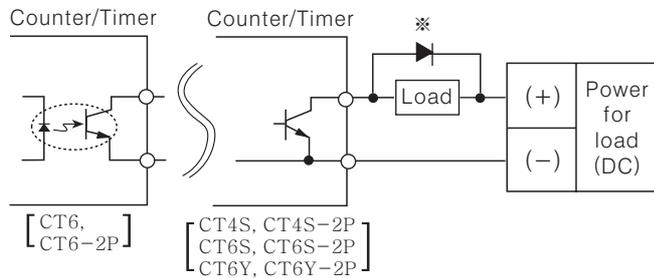
※When using inductive load(Relay etc), surge absorber(Diode, Varistor etc.) must
  be connected across the load.
※Use proper load and power for load not to exceed ON/OFF capacity(30VDC Max.
  100mA max.) of solid state output.
※Be sure not to apply reverse polarity of power.

▣Factory Default settings

Set item	Model	CT6-2P CT6S-2P CT4S-2P CT6Y-2P	CT6 CT6S CT4S CT6Y	CT6-I CT6S-I CT6Y-I
COUNTER	Input mode	Up/Down-C(U/D-C)		
	Output mode	F	——	
	OUT1	100ms	——	
	OUT2(OUT)	Hold	——	
	CPS	30cps		
	Min. reset time	20ms		
	Decimal point	No decimal point		
	Prescale value	6digit : 1.000, 4digit : 1.00		
	Memory retention	CLEr(Power reset)		
TIMER	Time range	6digit : 0.01s ~ 9999.99s 4digit : 0.01s ~ 99.99s		
	Up/Down mode	U(UP)		
	Output mode	OND(ON Delay)	——	
	Output time	Hold	——	
	Input signal mode	20ms		
Input logic		No-voltage input(NPN)		
Lock key		L.oFF(Lock OFF)		
Counter / Timer		Counter		

▣Error code display

Error display	Errors	Output status	How to return
Err1	CPU error	OFF	RST key, RESET input

CTY/CTS/CT Series

■Counter mode

◎Operation mode in Counter

RUN mode(Counter)

MD Key for 3seconds | MD Key for 3seconds

Function setting mode(Counter)

Input mode(in)

↓ MD

Maximum counting speed(CPS)

↓ MD

Output mode(out)

↓ MD

OUT2 output time($out2$)

↓ MD

OUT1 output time($out1$)

↓ MD

Input logic($S.iG$)

↓ MD

Minimum reset time(rSt)

↓ MD

Decimal point(dP)

↓ MD

Prescale value(SCL)

↓ MD

Memory retention($dAtA$)

↓ MD

Lock key($LoCk$)

↓ MD

Counter/Timer($C-t$)

↓ MD

● Pressing MD for over 3sec., it will enter into Counter function setting mode.
● Pressing MD for over 3sec.,it will return to Counter RUN mode.
● If no keys are touched for over 60sec., it will return to Counter RUN mode.
● When using this is unit as a counter, please change to Timer(t) in Counter/Timer setting.
Then press MD for over 3sec. to move to counter RUN mode and change the setting value.
(See A-23page for the specific description of Timer.)

■Change of preset value in Counter operation

◎Change the preset value in the single preset type(CT6)

RUN mode → ◀ → Change preset value → MD
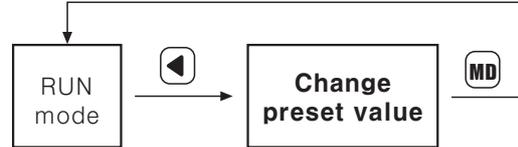
◎Change the preset value in the double preset type(CT6Y-2P)

RUN mode → ◀ → Change single preset value → MD → Change double preset value → MD
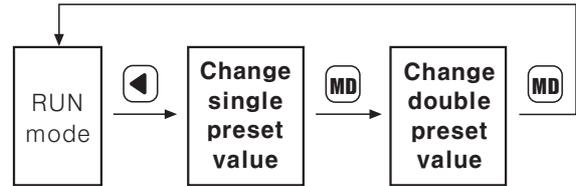
※ While changing preset value,input counter signals are still accepted.
When changing preset value, if no key is touched for 60 sec., the counter will return to RUN mode.
After changing the preset value as "0", there is RST key input or RESET input at RUN mode, the output will be maintained as OFF. (But in state of the output mode is "T", if changing single preset value as "0", the single output will be maintained as ON.)

◎Change of Batch preset value
Batch counter function is only available in CT6, CT6-2P type.

RUN mode → BA → Change of batch preset value → MD
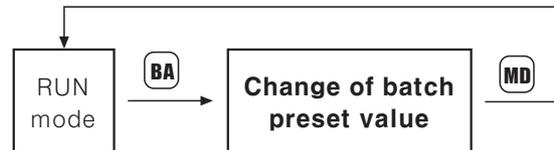
● If you press BA key in RUN mode, it will allow you to make change to the batch preset value.
After changing the batch preset value using same method as the method of Counter preset value changes by ◀,▼, ▲ keys, it will return to RUN mode by pressing MD key.
When proceeding to change the batch preset value, the current batch counting value is also displayed.

■How to set Lock key

Be sure to set the lock mode in order to protect against accidental or unauthorized key operation.

$LoFF$ (LOCK OFF) : Cancellation of the lock mode

$LoC.1$ (LOCK LEVEL 1) : Lock RST key

$LoC2$ (LOCK LEVEL 2) : Lock ◀ & ▼ & ▲ key

$LoC3$ (LOCK LEVEL 3) : Lock RST & ◀ & ▼ & ▲ key

Autonics

Multi-Functional Counter/Timer

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
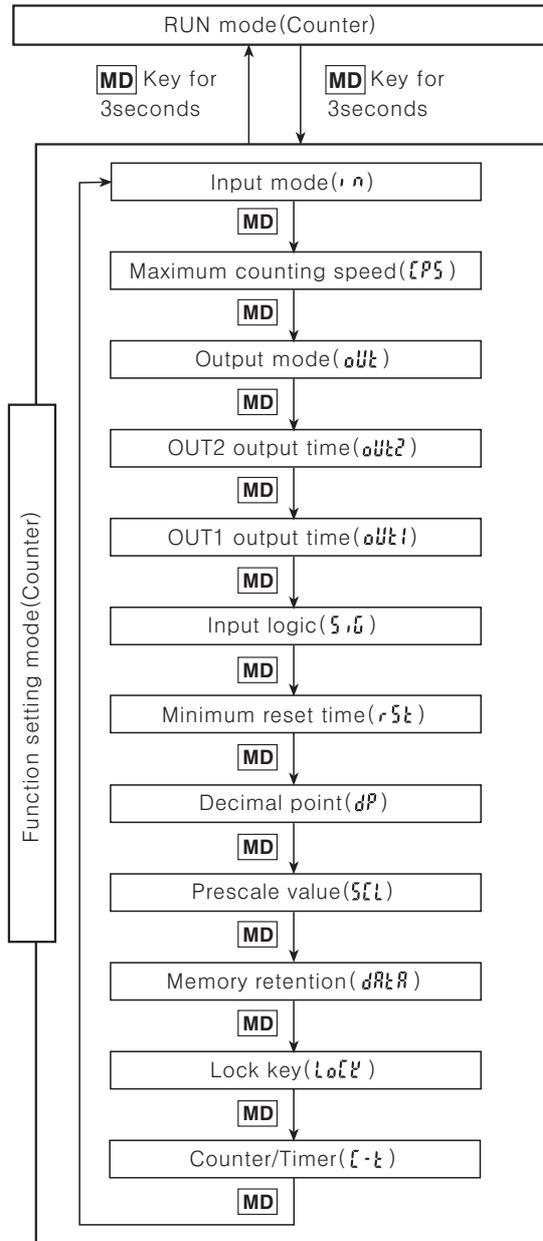sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5-Phase
stepping
motor &
Driver &
Controller

▪Setting of Counter function modes

(MD key : Use the ▲ or ▼ key to change the setting)

Setting mode	How to set(▲ , ▼)	
Input mode (in)	U → d → Ud-A → Ud-b → Ud-C	※When " U " or " d " of input mode is set, " 5, t, d " of output mode will not be displayed.
Maximum counting speed (CPS)	1 → 30 → 1k → 5k → 10k	※Counting speed is determinded by one by one(1:1) duty ratio of INA or INB input signal, and it is applied to both INA or INB. ※When using setting " d " in output mode, 5kcps and 10kcps are not indicated in the display.
Output mode (oUt)	●Up or Down input mode F → n → C → r → k → P → q → A ●Up/Down-A, B, C input mode F → n → C → r → k → P → q → A → 5 → t → d	※When setting output mode as " F, n ", if counting value reaches the preset value, output will be held. So there is no "OUT2 output time" in function setting mode. ※If the maximum counting speed is 5kcps or 10kcps, when you change output mode to " d ", the maximum counting speed will be changed to 1cps.
OUT2 output time(oUt2)	10 → 50 → 100 → 200 → 500 → 1000 → 2000 → 5000 Unit:ms	※There is no "OUT1 output time" in single preset model, "OUT2 output time" will be shown as "OUT output time(oUt t)".
OUT1 output time(oUt1)	10 → 50 → 100 → 200 → 500 → 1000 → 2000 → 5000 → Hold Unit:ms	
Input logic (5, G)	nPn : Voltage input PnP : No-voltage input	※It indicates according to internal position, and it can't be set by ▲ & ▼ key.
Min. reset time (rSt)	1 ⇌ 20 Unit:ms	※Min. external RESET signal width
Decimal point (dP)	● 6 Digit ● 4 Digit	※Decimal point setting is applied to counting value and setting value at the same.
Prescale value (SCL)	※ ◄key : Shift the flickering digit ※ ▲, ▼key : Change the prescale value ※Prescale value : It is actual value of length and position, liquid measure from counting input of 1pulse.	※Set range of prescale value 6Digit : 0.001 ~ 99.999 4Digit : 0.01 ~ 9.99
Memory retention (dAtA)	CLEr ⇌ rEC	※ CLEr : Power reset for counting value. (Reset counting value when power off) rEC : Memorize counting value (Memorize counting value when power off)
Lock key (LoCk)	L.oFF → LoC.1 → LoC.2 → LoC.3	
Counter/Timer (C-t)	CoUn ⇌ tinE	※ CoUn : Counter tinE : Timer

※When selecting the " d " output mode and if 1kcps is used, the output may not operate normally because of response time of the contact. Therefore, in this case be sure to use the solid state output.
※When it is in function setting mode, no external input signal will be accepted and the output will stay in the OFF state.
※There are no output mode and output time setting mode(OUT1, OUT2) of function setting mode in CT6Y-I, CT6S-I, CT6-I models.

CTY/CTS/CT Series

■Change of Counter preset value

◎Change the set preset value of single preset type(CT6)

● How to change in the single preset type : To change the preset value from **175 to 180.**

1

COUNTER/TIMER
```
  100
000175
```
PS• BA.S•
LOCK   OUT BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6   Autonics

Press ◀ key to enter in state of changing preset value. The prior preset value is indicated and the first digit "5" flashes. (PS LED ON)

2

COUNTER/TIMER
```
  100
000170
```
PS• BA.S•
LOCK   OUT BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6   Autonics
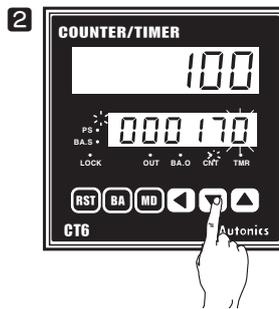
Change "5" to "0" by pressing ▼ key 5 times, and shift the flickering to the second digit by ◀ key once.

3

COUNTER/TIMER
```
  100
000180
```
PS• BA.S•
LOCK   OUT BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6   Autonics
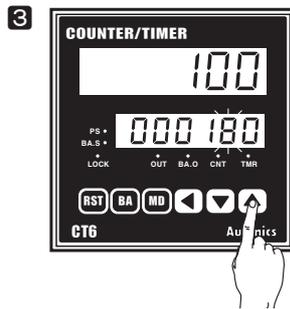
Change "7" to "8" by pressing ▲ key once.

4

COUNTER/TIMER
```
  100
   180
```
PS• BA.S•
LOCK   OUT BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6   Autonics
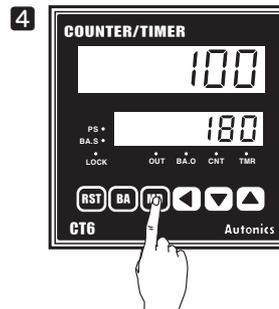
The change to the preset value is completed.
To return to RUN mode, press MD key. (PS LED OFF)

◎Change the preset value of double preset type(CT6-2P)

● How to change in the double preset type : To change the double preset value **from 500 to 1000** when the single preset value is **250** and the double preset value is 500.

1

COUNTER/TIMER
```
  100
000250
```
PS 1• PS 2• BA.S•
LOCK OUT1 OUT2 BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6-2P   Autonics
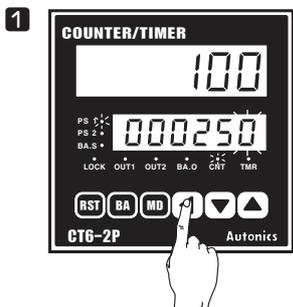
Pressing ◀ key, it will enter into the change of single preset. The previous setting value will be displayed and "0" will flickers.
(PS1 LED ON, PS2 LED OFF)

2

COUNTER/TIMER
```
  100
000250
```
PS 1• PS 2• BA.S•
LOCK OUT1 OUT2 BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6-2P   Autonics
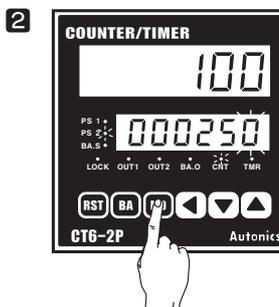
The single preset value is not changed. Move to the change of double preset value by pressing MD key.
The previous double preset value "500" is displayed and the "0" will flicker.
(PS1 LED OFF, PS2 LED OFF)

3

COUNTER/TIMER
```
  100
 001000
```
PS 1• PS 2• BA.S•
LOCK OUT1 OUT2 BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6-2P   Autonics
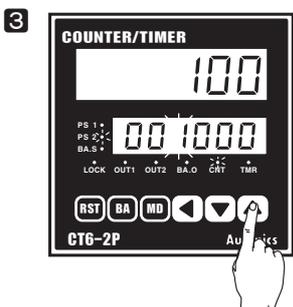
Change "500" to "1000" with ◀ , ▼ , ▲ .
(The change method is the same as Single preset type Counter)

4

COUNTER/TIMER
```
  100
 001000
```
PS 1• PS 2• BA.S•
LOCK OUT1 OUT2 BA.O CNT TMR
RST BA MD ◀ ▼ ▲
CT6-2P   Autonics
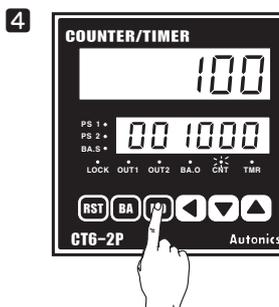
Press MD key to complete the setting and return to RUN mode.
(PS1 LED OFF, PS2 LED ON)

※ When changing preset value, if no key is touched for 60 sec., the counter will return to RUN mode.
※ After changing the preset value to "0", it RST key input or RESET input si applied at RUN mode, the output will be maintained as OFF. (But if state of the output mode is "T", when single preset value is set to "0", the single output will be maintained as ON.)
※ Whenever ◀ key is pressed in the state of changing preset value, the flickering digit shifts from the right to the left.

Autonics

Multi-Functional Counter/Timer

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5-Phase
stepping
motor &
Driver &
Controller

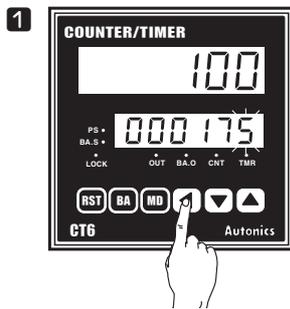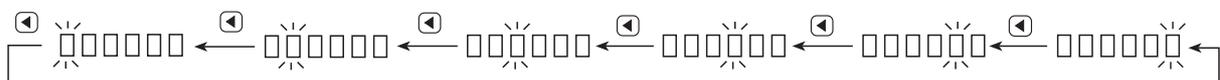## ▣Batch Counter function(Counter)

◎Change the setting value of Batch counter

● In case of setting Batch setting value as "**50**"
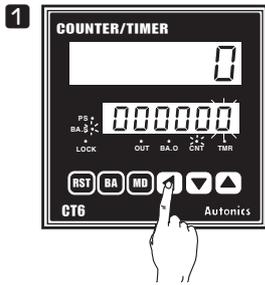
1 Press [BA] key in RUN mode, it will enter into the program state of Batch setting value. (BA.S LED ON display) After entering into the state of setting the first "0" will flicker and the remaining digits will be on steady.
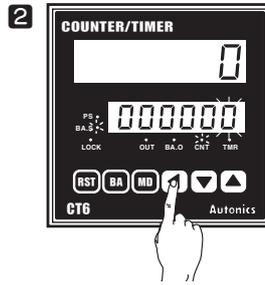
2 Move to the second position by pressing [◀] key one time. The second "0" will flicker.
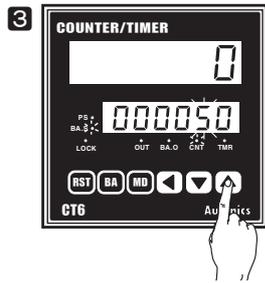
3 Change "0" to "5" by pressing [▲] 5times.
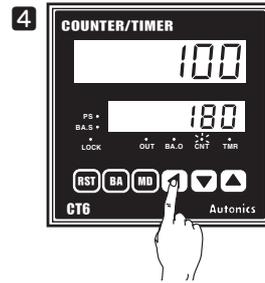
4 Pressing [MD] key to complete the Batch setting will return Counter to the RUN mode. (BA.S LED OFF display)

※Batch Counter function is only in CT6 and CT6-2P.
※When entering into Batch setting, if no key is touched for 60sec., it will return to Counter operation mode.

◎Batch Counter function
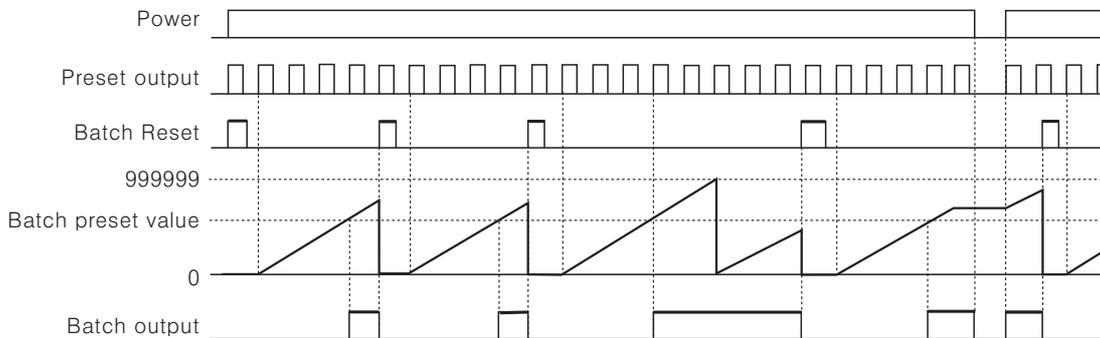
※When the Batch counting value reaches to the Batch set value, the Batch count value is coutinuously increased and the Batch output remains in the ON state until the Batch reset is applied.
※When the Batch output turns on and if the power turns off and then turns on again, the Batch output remains in the ON state until the Batch reset signal is applied.
※When the Batch counting value counts over 999999, it resets to "0", and it counts up again.
※If the Batch set value is "0(ZERO)", the Batch counting value counts up, but output remains in the OFF state.
※The Batch counting value is not changed by front [RST] key or external reset signal.
※In the CT6-2P, "Count-up" refers to reacting the second set value.

◎Reset the Batch counting value

When the terminal of Batch RESET is externally short-circuited, the BATCH counting value will be reset.
But the Batch RESET is different dependent on the input logic setting.
: When Voltage input type(PNP) is selected, please make terminal numbers **10** and **14** short-circuited.
And when No-voltage input type(NPN) is selected, please make terminal number of **11** and **14** short-circuited.

◎Check the Batch counting value

In order to check the Batch counting value during the Counter operation, press the [BA] key to display both the Batch counting value and setting value.
After checking Batch counting value, it will return to RUN mode by pressing [MD] key.
※There is no [BA] key lock function for Batch function.

CTY/CTS/CT Series

▣Input operation mode for counter

Input mode	Counting chart	Notice
U (UP)		※INA : Counting input ※INB : Inhibit input 　(Limit counting input of INA) ※When INB changes from L to H, up count signals on INA will not be accepted.
		※INA : Inhibit input 　(Limit counting input of INB) ※INB : Counting input ※When INA changes from H to L, up count signals on INB will not be accepted.
d (DOWN)		※INA : Counting input ※INB : Inhibit input 　(Limit counting input of INA) ※When INB changes from L to H, down count signals on INA will not be accepted. ※n=Preset value
		※INB : Counting value input ※INA : Inhibit input 　(Limit counting input of INB) ※n=Preset value ※When INA changes H to L, down count signals on INB will not be accepted.
Ud-A (Up/Down−A) Command input		※INA : Counting input ※INB : Command input for Up/Down counting ※When INB is L, count increases. 　When INB is H, count decreases.
Ud-b (Up/Down−B) Individual input		※INA : Up count input ※INB : Down count input ※When INA and INB are applied L to H at same time, the count remains unchanged.
Ud-C (Up/Down−C) Phase difference input		※When using A, B phase of encoder and connecting to INA, INB, Please set counter input mode(ın) as phase difference input(Ud-C).

※Ⓐ : Over Min. signal width, Ⓑ : Over 1/2 of Min. signal width.
　Counting miss by one(±) is occurred if the signal width of Ⓐ or Ⓑ is less than Min. signal width.

※"H" and "L"

	Voltage input (PNP)	Contact input (NPN)
H	5−30VDC	Short circuit
L	0−2VDC	Open

※Min. signal width by counting speed

Counting speed	Min. signal width
1cps	500ms
30cps	16.7ms
1kcps	0.5ms
5kcps	0.1ms
10kcps	0.05ms
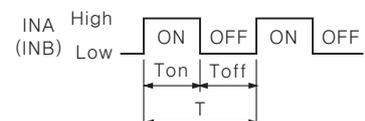
※Ton, Toff : Min. signal width

Multi-Functional Counter/Timer

▣Application of Prescale function

This function is to set and indicate calculated unit for actual length, liquid measure, position, etc.

It is called "Prescale value" for measured length, measured liquid, measured position per 1 pulse.

Ex1)Counting control by Counter(CT6) and Limit Switch

: As below application, when the cutter operates 1 time, 10 sheets of paper are produced. In this case, if we set 10 as prescale setting value of function mode, Counter indicates 10, 20, 30.....whenever limit switch operates 1st time, 2nd time, 3rd time....(no need to set decimal point)

Ex2)Length control by Counter(CT6) and Encoder

: In case of cutting paper each 300mm using a 50mm diameter(D) roller connected with Encoder of 1000 pulse.

● Set decimal point 3 digit at decimal set mode of function set mode. Set 0.157 of prescale value at prescale value set mode.

● If set preset value 300.000 at RUN mode, Counter will count each 0.157 per 1 input signal.

● Prescale value $= \dfrac{\pi \times \text{Diameter of the roller(D)}}{\text{Pulse numbers per 1 revolution of the encoder}}$

$= \dfrac{3.1416 \times 50}{1000}$

$= 0.157\text{mm/pulse}$

● Counting input value $\times$ Prescale value = Display value

$1911 \times 0.157 = 300.027$

Limit switch

Cutter

Roller

Motor

Rotary encoder

CT6 Counter (Quantity control)

CT6 Counter (Length control)

Motor controlling system

Cutter control signal

Control box
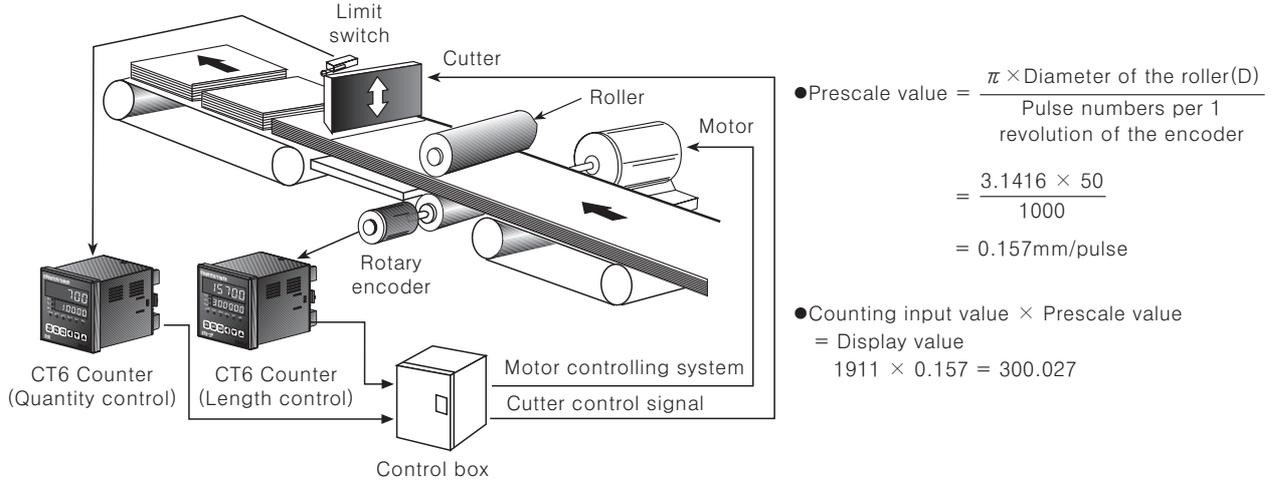
▣Application of Batch Counter function

◎Put 5pieces of product in a box then pack the boxes together when the number of boxes reaches to 200pieces.

● Counter preset value : PRESET value(setting value)="5", Batch setting value = "200"

● When the counting value of Counter reaches to the preset value"5", the counting value of Batch Counter will be increased by "1" and the control output(OUT) will be on. When the control box receives the control output(OUT), it moves the conveyor so the next empty box can be filled.

When the counting value of Batch reaches to "200", Batch output will be ON.

Then the control box stops conveyor and provides a control signal for packing.
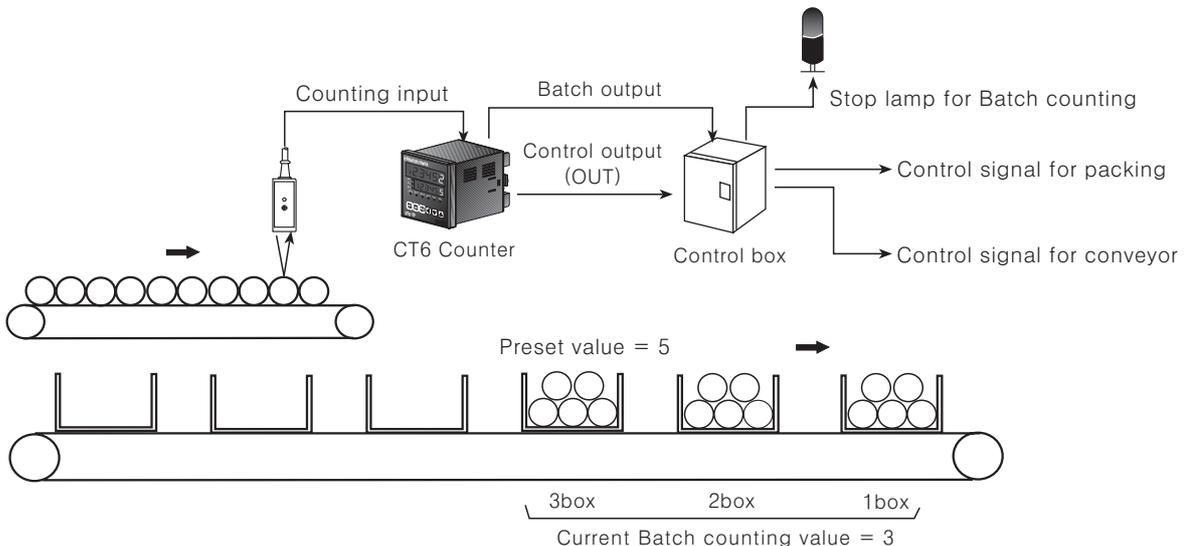
Counting input

Batch output

Stop lamp for Batch counting

Control output (OUT)

CT6 Counter

Control box

Control signal for packing

Control signal for conveyor

Preset value = 5

3box   2box   1box

Current Batch counting value = 3

CTY/CTS/CT Series

▣ Output operation mode(Counter)

One-shot output (OUT1 output) / Self holding output
One-shot output (OUT2 output)
Self holding output
Coincidence output

Output mode	Input mode			Operation
	Up	Down	Up/Down A, B, C	
F (F)				※After Counting up, the display value increases or decreases until the reset signal is applied, and hold outputs will be held.
n (N)				※After counting up, display value and hold output will be held until reset signal is applied.
C (C)				※The display value will be Reset Start at the same time counting up. ※The hold output of OUT1 turns off after one-shot time of OUT2. ※The one-shot output of OUT1 operates regardless to OUT2.
r (R)				※After one shot Time of OUT2, display value will be Reset start counting operation starts again. ※The hold output of OUT1 turns off after one-shot time of OUT2. ※The one-shot output of OUT1 operates regardless to OUT2.
K (K)				※After counting up, the display value increases or decreases until the reset signal is applied. ※The hold output of OUT1 turns off after one-shot time of OUT2. ※The one-shot output of OUT1 operates regardless to OUT2.
P (P)				※After counting up, display value is held for the one-shot time of OUT2, Counter operation starts again at the same time of OUT2 output is ON and count value will be Reset start. ※The hold output of OUT1 turns off after one-shot time of OUT2. ※The one-shot output of OUT1 operates regardless to OUT2.
q (Q)				※After counting up, display value increases or decreases for the one-shot time of OUT2. ※The hold output of OUT1 turns off after one-shot time of OUT2. ※The one-shot output of OUT1 operates regardless to OUT2.
A (A)				※After counting up, display value and the hold output of OUT1 is held until applying the reset signal. ※The one-shot output of OUT1 operates regardless to OUT2. ※OUT2 returns automatically after one shot time.

Each input-mode cell contains timing diagrams with the signal labels: RESET, 999999, PRESET2, PRESET1, 0, OUT1, OUT2 (OUT).

※The output of single preset type is operating the same as OUT2 of double preset type.

Autonics

Multi-Functional Counter/Timer

Self-holding output   Coincidence output
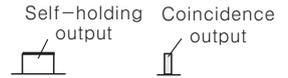
Output mode	Up/Down − A, B, C	Operation
5 **(S)**	RESET 999999 PRESET2 PRESET1 0 −999999 OUT1 OUT2 (OUT)	※OUT1 and OUT2 keeps ON state in following condition ; Display value ≧ Preset 1 Display value ≧ Preset 2
t **(T)**	RESET 999999 PRESET2 PRESET1 0 −999999 OUT1 OUT2 (OUT)	※OUT1 keeps OFF state when display value is smaller than Preset 1 value, but if Preset 2 is "0", OUT1 keeps ON state. ※OUT2 keeps ON state when display value is equal or larger than Preset 2.
d **(D)**	RESET 999999 PRESET2 PRESET1 0 −999999 OUT1 OUT2 (OUT)	※When display value is equal to set value(Preset 1, Preset 2) only, OUT1 or OUT2 output keeps ON state. ※When set 1kcps for counting speed, solid state contact output should be used.

※The output of single preset operates of double preset type.

■Counter operation of Indication model(CT6Y-I, CT6S-I, CT6-I)

● In case of input mode is Up(U)

RESET
INHIBIT
999999
0

● In case of input mode is Down(d)

RESET
INHIBIT
999999
0
−99999
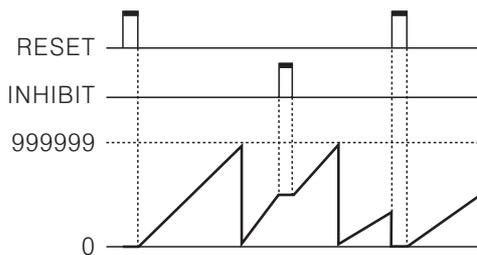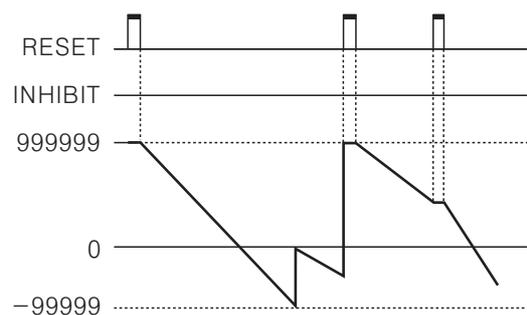
● In case of the input mode is command input(Ud-A), Individual input(Ud-b), Phase difference input(Ud-C)
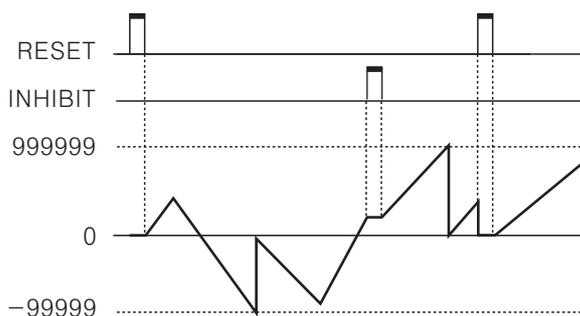
RESET
INHIBIT
999999
0
−99999

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/ Speed/ Pulse meter

(G) Display unit

(H) Sensor controller
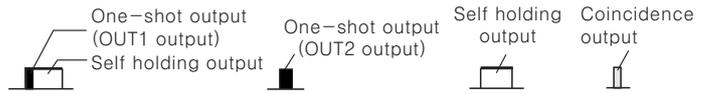
(I) Proximity sensor

(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

(M) 5-Phase stepping motor & Driver & Controller

CTY/CTS/CT Series

▣ Timer mode
◎ Operation mode in Timer

RUN mode(Timer)

MD Key for 3seconds ↑ ↓ **MD** Key for 3seconds

Function setting mode(Timer)

Time range

MD ↓

Up/Down mode(U-d)

MD ↓

Output mode(oUt)

MD ↓

Output time(oUt.t)

MD ↓

Input logic(S.I.G)

MD ↓

Input signal time(in-t)

MD ↓

Lock key(Lo.CY)

MD ↓

Counter/Timer(C-t)

MD

- Pressing **MD** for over 3sec., it will enter into Timer function setting mode
- Pressing **MD** for over 3sec.,it will return to Timer RUN mode.
- When using this unit as a Timer, please change to Timer(t) in Counter/Timer setting.
  Then press **MD** for over 3sec. to move to Timer RUN mode and change the setting value.
- If no keys are touched for over 60sec.,it will return to Timer RUN mode.

▣ Change of preset value in Timer operation
◎ To change preset time in case of the output is not FLK
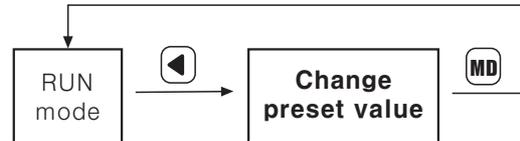
RUN mode	◀ →	Change preset value	**MD**

- In state of changing preset value, if no key is touched for 60sec., the timer will return to RUN mode.

◎ To change preset time in case of the output is FLK
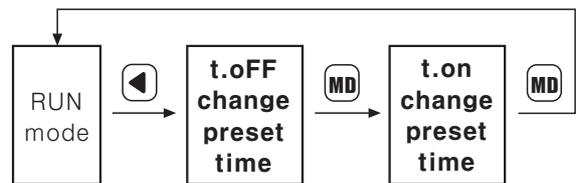
RUN mode	◀ →	t.oFF change preset time	**MD** →	t.on change preset time	**MD**

- In state of changing preset value, if no key is touched for 60sec., the timer will return to RUN mode.

◎ Change of Batch preset value

RUN mode	**BA** →	Change of batch preset value	**MD**
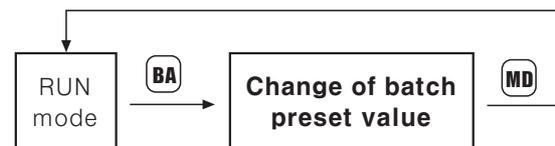
- If press **BA** key at RUN mode, it will move to the state of batch preset value changes. After change the batch preset value same as the method of Counter preset value changes by ◀ , ▼ , ▲ keys, it will move to RUN mode by pressing **MD** key.
  When it moves to the state of batch preset value, the previous batch counting value will be displayed.

▣ Time range

1)6 Digit type Time range

Time range	Function setting mode	
	Timing display	Preset display
0.01s to 9999.99s	SEC	999999
0.1s to 99999.9s	SEC	999999
1s to 999999s	SEC	999999
0.01s to 99m 59.99s	m S	995999
0.1s to 999m 59.9s	m S	999599
0.1m to 99999.9m	m	999999
1m to 999999m	m	999999
1s to 99h 59m 59s	H m S	995959
1m to 9999h 59m	H m	999959

※ Model : CT6Y-2P, CT6Y, CT6Y-I,
　　　　　CT6S-2P, CT6S, CT6S-I,
　　　　　CT6-2P, CT6, CT6-I

2)4 Digit type Time range

Time range	Function setting mode	
	Timing display	Preset display
0.01s to 99.99s	SEC	9999
0.1s to 999.9s	SCC	9999
1s to 9999s	SEC	9999
1s to 99m 59s	m S	9959
0.1m to 999.9m	m	9999
1m to 9999m	m	9999
1m to 99h 59m	H m	9959
1h to 9999h	H	9999

※ Model : CT4S-2P, CT4S

Multi-Functional Counter/Timer

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
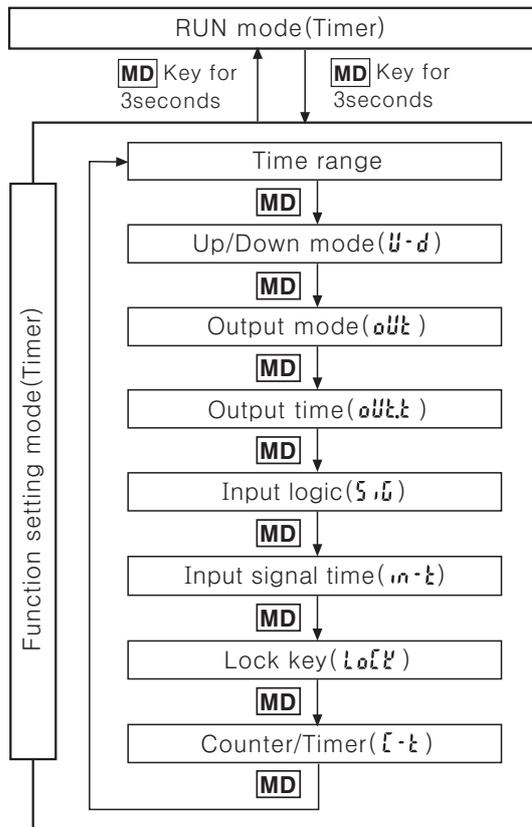sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5-Phase
stepping
motor &
Driver &
Controller

■ Setting of Timer function modes

(MD key : Use the ▲ or ▼ key to Change the setting)

Setting mode	How to set
Time range (SEC /M, n /HoUr)	※The time range for 6digit type SEC 999999 → SEC 999999 → SEC 999999 → M S 9959.59 → M S 999959 → M 999999 H M 999959 ← H M S 995959 ← M 999999 ※The time range for 4digit type SEC 99.99 → SEC 999.9 → SEC 9999 → M S 9959 → M 999.9 → M 9999 → H M 9959 → H 9999
UP/DOWN mode (U-d)	U ⇌ d　　※Up : Time proceeds from 0(zero) to the set value Down : Time proceeds from the set value to 0(zero)
Output mode (oUt)	ond → ond.1 → ond.2 → FLU → FLU.1 → FLU.2 → int → int.1 → oFd
Output time (oUt.t)	10 → 50 → 100 → 200 → 500 HoLd ← 5000 ← 2000 ← 1000 Unit: ms　　※It is operation time of control output according to output mode.
Input logic (S.G)	nPn : Voltage input　PnP : No-voltage input　※It indicates according to internal position, and it can't be set by ▲ & ▼ key.
Input signal time (in-t)	1 ⇌ 20 Unit: ms　　※CTS series : Min. external INA, INH, RESET signal width CT series : Min. external INA, INHIBIT, RESET, BATCH, RESET signal width
Lock key(Lock) (LoCY)	LoFF → LoC.1 → LoC.2 → LoC.3
Counter/Timer (C-t)	CoUn ⇌ tiME　　※ CoUn : Counter tiME : Timer

※When it is in the function setting mode, no external input signal will be accepted and the output will stay in the OFF status.
※In case of output mode is FKL, INT, INT1, OFD, there is no output time setting in the function setting mode.
※In the indicator type(CT6Y-I, CT6S-I, CT6-I), there are no output modes or output times in the function setting mode.
※Control output operates as OUT2 in the double preset type(CT6Y-2P, CT6S-2P, CT4S-2P, CT6-2P), and OUT1 always remains in "OFF" status.
※When in the function setting mode, if no key is touched for 60 sec., the timer will return to RUN mode.

■ How to set Lock key

Be sure to set the lock mode in order to protect against accidental or unauthorized key operation.

LoFF (LOCK OFF) : Cancellation of the lock mode

LoC.1 (LOCK LEVEL 1) : Lock RST key

LoC.2 (LOCK LEVEL 2) : Lock ◄ & ▼ & ▲ key

LoC.3 (LOCK LEVEL 3) : Lock RST & ◄ & ▼ & ▲ key

CTY/CTS/CT Series

■Change of the setting time of Timer

◎Change of the setting time in FLK output mode(CT6S)

: Change t.oFF time from 30sec. to 50sec., t.on setting from 40sec. to 20sec.
(Output mode:FLK, Time range:tr-2)

1

Pressing ◄ key to enter into the state of changing preset time.
Shift the flickering digit to "3" position by pressing ◄ key twice.

2

Change "3" to "5" by pressing ▲ twice.

3

Pressing MD key to complete t.oFF time then enter into the state of changing t.on time.

4

Pressing ◄ key twice to move to the "4" position.

5

Pressing ▼ key twice to change "4" to "2".

6

Pressing MD key to complete the setting time then return to RUN mode.
(PS LED OFF)

◎Change of the preset time when output mode is not FLK(CT6S)

: Change time from 15.0sec. to 20.0sec.(Output mode : OND, Time range : tr-2)

1

Pressing ◄ key to enter into the state of changing preset time.
Pressing ◄ key once to move to the "5" position.

2

Pressing ▼ key 5times to change "5" to "0".

3

Pressing ◄ key once to move to "1" position.

4

Pressing ▲ key once to change "1" to "2".

5

Pressing MD key to complete the change of preset time then return to RUN mode of Timer.(PS LED OFF)

※When entering into the state of changing preset time, the time will progress continously.
※When changing preset value, if no key is touched for 60sec., the timer will return to RUN mode.
※Whenever ◄ key is pressed in the state of changing preset value, the flickering digit shifts from the right to the left.

Autonics

Multi-Functional Counter/Timer

■Batch Counter function(Timer)

: When it reaches the Batch setting value to count the number of Time-ups, Batch output will be ON.
But when the output mode is "FLK", the number of Time-ups will be 2 times because it will count both Toff, and Ton time-ups.
☞ When time reaches the Toff setting time, Batch counting value will be increasd.
And when it reaches the Ton time, Batch counting value will be increased.

◎How to set the Batch setting value

: Batch setting value is not for setting the time, it sets the counting value like a Counter.
When using it as Timer, the method of Batch setting is the same as Batch setting method of Counter.
Please see A-18page.

◎Batch Counter function
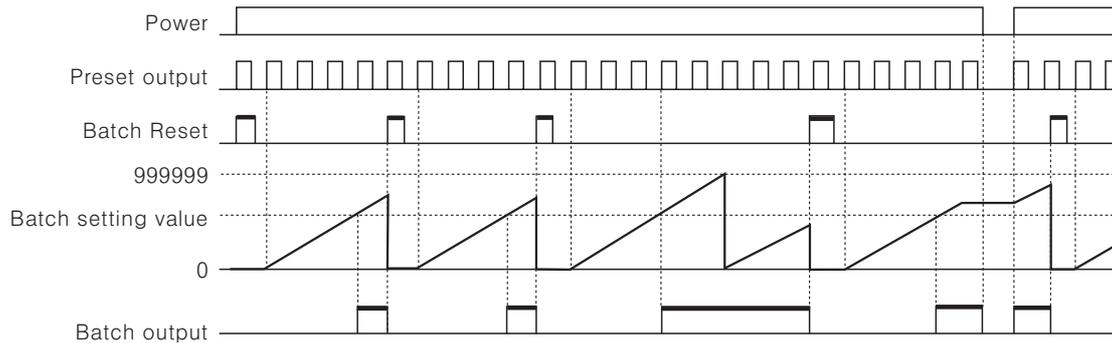
※When the batch counting value reaches the batch set value, the batch reset signal is applied and the batch output returns to the OFF state.
※When the batch output turns on and if the power turns off and then turns on again, the batch output remains in the ON state until the batch reset signal is applied.
※When the batch counting value counts over 999999, it resets to 0(ZERO), and it counts up again.
※If batch set value is 0(ZERO), the batch counting value counts up, but the batch output remains OFF state.
※The batch counting value is not changed by front [RST] key or external reset signal.

◎Reset the Batch counting value

When the terminal of Batch RESET is externally short-circuited, the BATCH counting value will be reset.
But the Batch RESET is different dependent on the input logic setting.
: When Voltage input type(PNP) is selected, please make terminal numbers **10** and **14** short-circuited.
And when No-voltage input type(NPN) is selected, please make terminal number of **11** and **14** short-circuited.

◎Check the Batch counting value

In order to check the Batch counting value during the Timer operation, press the [BA] key to display both the Batch counting value and setting value. After checking Batch counting value, it will return to RUN mode by pressing [MD] key.
※There is no [BA] key lock function for Batch function.

◎Application of Batch counter

: Fill milk into the bottle for 30sec.(Setting time), then when 500 bottles are completed, turn Batch counting finish lamp on. (Setting time : 30sec., Batch setting value : 500)

▣Output operation mode(Timer)

One−shot output ——————— Self−holding
(t=One−shot output time) output

Output mode	Time chart	Operation
ond (OND)	SIGNAL ON DELAY(POWER RESET) POWER INA INH(INHIBIT) RESET t OUT2(OUT) Setting time Up Display 0 Setting time Down 0	1) Time starts when INA signal turns on. When INA signal turns off, time resets. 2) Time starts when power turns on and when reset turns off during INA signal on. 3) Control output operates as hold or one−shot time. POWER INA T OUT2 (OUT) T=Preset time
ond.1 (OND.1)	SIGNAL ON DELAY 1(POWER RESET) POWER INA INH(INHIBIT) RESET t t t OUT2(OUT) Setting time Up Display 0 Setting time Down 0	1) Time starts when INA signal turns on, if INA signal is applied repeatedly, only initial signal is recognized. 2) Time starts when power turns on and when reset turns off during INA signal on. 3) Control output operates as hold or one−shot time. POWER INA T OUT2 (OUT) T=Preset time
ond.2 (OND.2)	POWER ON DELAY(POWER HOLD) POWER INA INH(INHIBIT) RESET t t a t−a OUT2(OUT) Setting time Up Display 0 Setting time Down 0	1) Time starts when power turns on. (There is no INA function) 2) Time resets when reset turns on. Time starts when reset turns off. 3) Control output operates as hold output or one−shot output. 4) It memorizes display value when power turns off. HOLD POWER T (Setting time) OUT2 (OUT)

※POWER RESET : There is no memory retention. (Timer resets to initial value)
※POWER HOLD : There is memory retention. (It memorizes the indicating value when power is cut off and displays the same value when power returns)

Multi-Functional Counter/Timer

▣Output operation mode(Timer)

One-shot output
(t=One-shot output time)

Self-holding output

Output mode	Time chart	Operation
FLⅨ **(FLK)**	**FLICKER(POWER RESET)** POWER INA INH(INHIBIT) RESET Toff Ton Ta Tb Ton Toff Ton Toff Ton Toff OUT2(OUT) Toff setting time Ton setting time Up 0 Display Down Toff setting time Ton setting time 0	1)Time starts when INA signal turns on. If INA signal is applied repeatedly, only initial signal is recognized. 2)Time starts when power turns on and when reset turns off during INA signal on. 3)Control output operates as hold output, output turns off for the Toff time and turns on for the Ton time repeatedly. 4)The Ton time and the Toff time must be set individually. 5)In case of using the contact output, min. setting time must be set over 100ms. POWER INA Toff Ton Toff OUT2 (OUT)
FLⅨ.1 **(FLK.1)**	**FLICKER 1(POWER RESET)** **Hold output** POWER INA INH(INHIBIT) RESET OUT2(OUT) Setting time Up 0 Setting time Display Down 0	1)Time starts when INA signal turns on. If INA signal is applied, repeatedly only initial signal is recognized. 2)Time starts when power turns on and when reset turns off during INA signal on. 3)Control output operates as hold output. In case of using the contact output, min. setting time must be set over 100ms. POWER INA T T T OUT2 (OUT) T:Setting time
	One-shot output POWER INA INH(INHIBIT) RESET t t t OUT2(OUT) Setting time Up 0 Setting time Display Down 0	1)Time starts when INA signal turns on, if INA signal is applied repeatedly, only initial signal is applied. 2)Time starts when power turns on and when reset turns off during INA signal on. 3)Control output operates as one-shot. In case of using the contact output, min. setting time must be set over 100ms. POWER INA T T T OUT2 (OUT) T:Setting time

※POWER RESET : There is no memory retention. (Timer resets to initial value)

※POWER HOLD : There is memory retention. (It memorizes the indicating value when power is cut off and displays the same value when power returns)

(A) Counter
(B) Timer
(C) Temp. controller
(D) Power controller
(E) Panel meter
(F) Tacho/ Speed/ Pulse meter
(G) Display unit
(H) Sensor controller
(I) Proximity sensor
(J) Photo electric sensor
(K) Pressure sensor
(L) Rotary encoder
(M) 5-Phase stepping motor & Driver & Controller

▣Output operation mode(Timer)

One-shot output
(t=One-shot output time)　　　Self-holding output

Output mode	Time chart	Operation
FLK.2 (FLK.2)	**FLICKER 2(POWER HOLD)** — **Hold output** — POWER, INA, INH(INHIBIT), RESET, OUT2(OUT), Setting time, Up 0, Setting time, Display Down 0 — ※EEPROM:10 years	1)Time starts when INA signal turns ON. If INA signal is applied repeatedly, only initial signal is recognized. 2)Control output operates as hold output when reaches to the set time. 3)Time starts when power turns ON and when reset turns OFF during INA signal on. 4)In case of using the contact output, min. setting time must be set over 100ms. — POWER, INA, T T−c c T, OUT2(OUT), Hold — T:Setting time
	One-shot output — POWER, INA, INH(INHIBIT), RESET, OUT2(OUT) t t a t−a t, Setting time, Up 0, Setting time, Display Down 0 — ※EEPROM:10 years	1)Time starts when INA signal turns ON. If INA signal is applied repeatedly, only initial signal is recognized. 2)Control output operates as one−shot output when reaches to the set time. 3)Time starts when power turns ON and when reset turns OFF during INA signal on. 4)In case of using the contact output, min. setting time must be set over 100ms. — POWER, INA, T T−c c T, OUT2(OUT), Hold — T:Setting time
int (INT)	**INTERVAL(POWER RESET / SIGNAL RESET)** — POWER, INA, INH(INHIBIT), RESET, OUT2(OUT), Setting time, Up 0, Setting time, Display Down 0	1)During INA is ON, time starts and control output turns on. When time reaches to set value, display value and control output will be reset automatically. 2)When INA is OFF, time resets. 3)During INA signal on Power OFF:Processing time and control output Reset Power ON:Time Reset Reset ON:Processing time and control output Reset Rset OFF:Time Reset — POWER, INA, T T, OUT2(OUT) — T:Setting time

※POWER RESET : There is no memory retention. (Timer resets to initial value)
※POWER HOLD : There is memory retention. (It memorizes the indicating value when power is cut off and displays the same value when power returns)
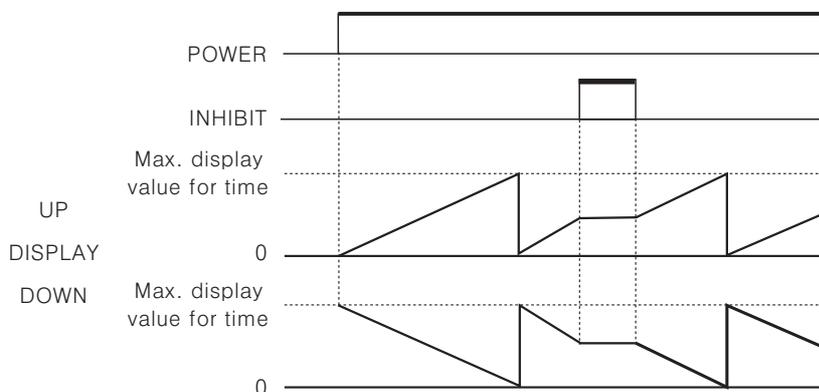
▣ Output operation mode(Timer)

One−shot output ————┐   ┌———— Self−holding
(t=One−shot output time)   output

Output mode	Time chart	Operation
, nt.1 (INT.1)	**INTERVAL 1(POWER RESET)** POWER INA INH(INHIBIT) RESET OUT2(OUT) Setting time Up — 0 Setting time Display Down — 0	1)Control output turns ON and time starts when INA signal turns ON. 2)If INA signal is applied repeatedly, only initial signal is recognized. 3)When reaches to set value, display value and control output are reset automatically. 4)Time starts when power turns ON and when reset turns OFF during INA signal on. 5)Time processes normally while INA signal keeps ON status. POWER INA OUT2 (OUT) T:Setting time
oFd (OFD)	**SIGNAL OFF DELAY(POWER RESET)** POWER INA INH(INHIBIT) RESET OUT2(OUT) Setting time Up — 0 Setting time Display Down — 0	1)If INA is ON, control output remains ON. 2)When INA signal is OFF, time processes. 3)When time reaches to set value, display value and control output will be reset automatically. POWER INA OUT2 (OUT) T:Setting time

※POWER RESET : There is no memory retention. (Timer resets to initial value)

▣ Timer operation of Indication model(CT6-I, CT6S-I)

POWER

INHIBIT

Max. display value for time

UP

DISPLAY — 0

DOWN — Max. display value for time

0

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/ Speed/ Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor
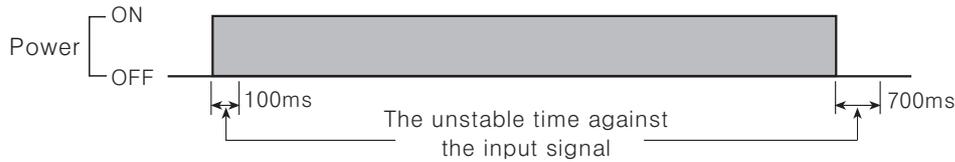
(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

(M) 5−Phase stepping motor & Driver & Controller

CTY/CTS/CT Series

▣Proper usage

◎Turning power ON/OFF

- Power voltage rises for 100ms after power on and falls for 700ms after power off.
  Therefore do not apply any input signal during these times.
- When applying the power into CT series, please apply the power quickly by using Switch or Relay.

◎Input signal line
- Use as short a cable from the sensor to this unit as possible.
- Use shielded cable for long input line.
- Keep input cables separate from power cables.

◎Input logic selection
  When selecting or changing the input logic, the power source must be cut off.
  Then select the input logic according to the method of changing input logic.

◎Contact counting input
  If applying contact input at high speed mode(1k,5k,10k), it may miscount by chattering.
  Therefore, set low speed mode. (1 or 30cps)

◎When testing dielectric voltage and insulation resistance of the control panel with this unit installed.
- Please isolate this unit from the circuit of control panel.

◎Do not use this unit in the following places
- A Place where ambient temperature is over 55℃ or less than −10℃.
- A Place where ambient humidity is over 85%RH or where condensation occurs by temperature changes.
- A Place where there is severe vibration or impact.
- A Place where strong magnetic field or electric noise is generated.
- A Place where strong alkalis or acids are used.
- A Place where there are direct rays of the sun.

◎Use under these conditions
- Indoors
- Maximnm height 2000m
- Pollution Degree 2
- Iustallation category II

※**Above cautions must be kept because malfuction or failure of unit can be occured.**

Autonics