

Autonics

COUNTER/TIMER CTS/CTY SERIES

M A N U A L



CTS Series



CTY Series



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

*Please keep these instructions and review them before using this unit.

*Please observe the cautions that follow;

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

*The following is an explanation of the symbols used in the operation manual.

Caution: Injury or danger may occur under special conditions.

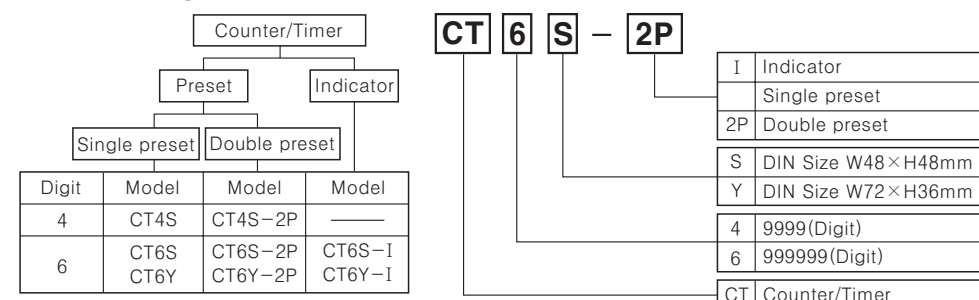
Warning

- In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information required.**
It may result in fatal damage, fire or human injury
- This unit must be mounted on Panel.**
It may give an electric shock.
- Do not connect terminals when it is power on.**
It may give an electric shock.
- Do not disassemble and modify this unit, when it requires. If needs, please contact us.**
It may give an electric shock and cause a fire.

Caution

- This unit shall not be used outdoors.**
It might shorten the life cycle of the product or give an electric shock.
- When wire connection, No.20AWG(0.50mm²) should be used and screw bolt on terminal block with 0.74N · m to 0.90N · m strength.**
It may result in malfunction or fire due to contact failure.
- Please observe specification rating.**
It might shorten the life cycle of the product and cause a fire.
- Do not use the load beyond rated switching capacity of Relay contact.**
It may cause insulation failure, contact melt, contact failure, relay broken, fire etc.
- In cleaning the unit, do not use water or an organic solvents.**
It might cause an electric shock or fire that will result in damage to the product.
- Do not use this unit at place where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration, impact etc.**
It may cause explosion.
- Do not inflow dust or wire dregs into inside of this unit.**
It may cause a fire or mechanical trouble.

Ordering information



*When use CT4S-2P/CT6S-2P, CT6Y-2P as Timer, unable to use it as double preset.

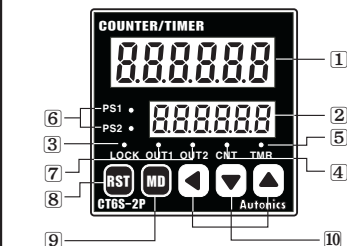
*The above specifications are changeable at anytime without notice.

Specifications

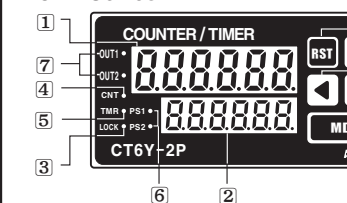
Series	CTS		CTY
Digit	4	6	6
Model	Single preset	CT4S	CT6S
	Double preset	CT4S-2P	CT6S-2P
	Indicator	—	CT6S-I
Power supply	AC power	100-240VAC 50/60Hz	
	AC/DC power	24-60VDC, 24VAC 50/60Hz	
Allowable voltage range	90 to 110% of rated voltage(AC power type)		
Power consumption	AC power	CT4S:Approx. 4.6VA, CT4S-2P:Approx. 5.5VA, CT6S-I:Approx. 4.3VA, CT6S:Approx. 5.2VA, CT6S-2P:Approx. 6VA, CT6Y-I:Approx. 5VA, CT6Y:Approx. 6.5VA, CT6Y-2P:Approx. 7VA(240VAC 50/60Hz)	
	AC/DC power	CT4S:Approx. 3W, CT4S-2P:Approx. 3.5W, CT6S-I:Approx. 2.7W, CT6S:Approx. 3.4W, CT6S-2P:Approx. 4W, CT6Y-I:Approx. 3W, CT6Y:Approx. 4W, CT6Y-2P:Approx. 4W (24VDC) CT4S:Approx. 6VA, CT4S-2P:Approx. 7VA, CT6S-I:Approx. 5.4VA, CT6S:Approx. 6.8VA, CT6S-2P:Approx. 7VA, CT6Y-I:Approx. 6VA, CT6Y:Approx. 7VA, CT6Y-2P:Approx. 7VA (24VAC 50/60Hz)	
CPS of INA, INB	Selectable 1 / 30 / 1k / 5k / 10kcps		
Min. input signal width	Counter	Reset input : Selectable 1ms or 20ms	
	Timer	INA, INH, Reset signal : 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 volatge : Max. 2VDC, Open-circuit impedance : Min. 100kΩ		
One-shot output	10 / 50 / 100 / 200 / 500 / 1000 / 2000 / 5000ms		
Control output	Con-tact	Type	Single preset type : SPDT(1c) Double preset type : SPST(1a) for First & second output
		Capacity	NO : 250VAC 3A resistive load, NC : 250VAC 2A resistive load
	Solid-state	Type	Single preset type : 1NPN open collector(OUT) Double preset type : 1NPN open collector(OUT2)
	Capacity	30VDC Max. 100mA Max.	
Memory retention	10 years		
External sensor power	12VDC ±10%, 100mA Max.		
Timer	Repeat error	—	
	Set error	Power ON start : ±0.01% ±0.05sec	
	Voltage error	Signal start : ±0.01% ±0.03sec	
	Temperature error	—	
Insulation resistance	Min. 100MΩ(at 500VDC)		
Dielectric strength	2000VAC 50/60Hz for 1 minute		
Noise strength(AC power)	±2kV the square wave noise(pulse width:1μs) by the noise simulator		
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hour	
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes	
Shock	Mechanical	300m/s ² (Approx. 30G) 3 times at X, Y, Z direction	
	Malfunction	100m/s ² (Approx. 10G) 3 times at X, Y, Z direction	
Relay life cycle	Mechanical	Min.10,000,000 times	
	Electrical	Min.100,000 times(NO:250VAC 3A resistive load, NC:250VAC 2A resistive load)	
Ambient temperature	-10 to 55°C (at non-freezing status)		
Storage temperature	-25 to 65°C (at non-freezing status)		
Ambient humidity	35 to 85%RH		
Protection	IP65(Front panel only)		
Weight	AC power	CT4S : Approx. 155g CT4S-2P : Approx. 162g	CT6S : Approx. 155g CT6S-2P : Approx. 162g CT6S-I : Approx. 136g
	AC/DC power	CT4S : Approx. 152g CT4S-2P : Approx. 159g	CT6Y : Approx. 160g CT6Y-2P : Approx. 163g CT6Y-I : Approx. 127g
Approval	UL, CE		

Front panel identification

CTS Series



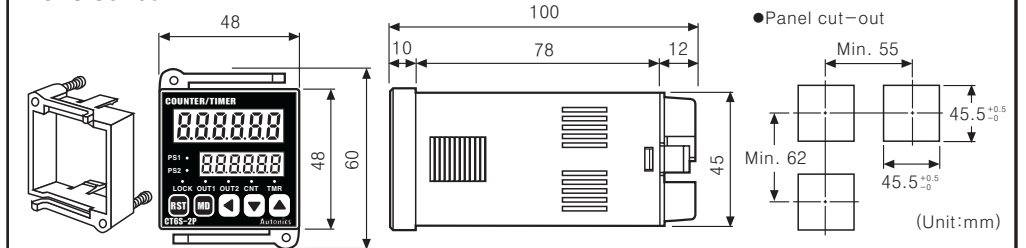
CTY Series



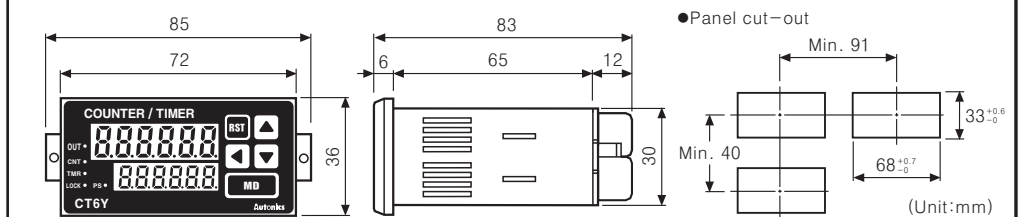
- Display for processing value(Red LED)
Counting value(Counter)/Processing time(Timer) / Setting symbols
-LED height:11mm for 4digit, 10mm for 6digit
 - Preset value display(Yellow-Green LED)
Preset value(Counter)/Preset time(Timer) and setting symbols
-LED height:8mm for 4digit, 7mm for 6digit
 - LOCK : Key lock indication
 - CNT : Indication the operation of counter
 - TMR : Indication the operation of timer
-LED flickers when the timer is processing
-LED turns on when the processing time stops
 - PS1, PS2 : Check preset value and display change of it
 - OUT1, OUT2 : Indicating operation of output
 - RST : Reset key
 - MD : Mode key
 - Set key
- * There is no [6], [7] LED in CT6S-I, CT6Y-I.
PS2 will be changed to PS and OUT2 is OUT.
There is no PS1, OUT1 LED in CT4S, CT6S, CT6Y.

Dimensions

CTS Series

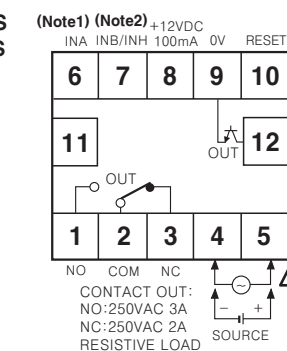


CTY Series

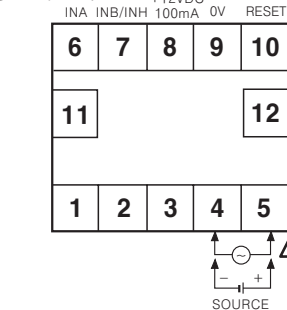


Connections

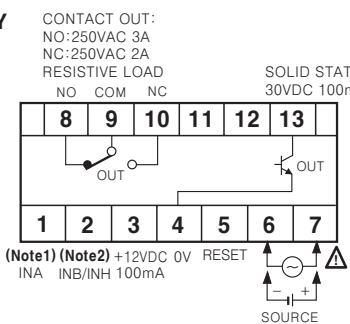
CT4S CT6S



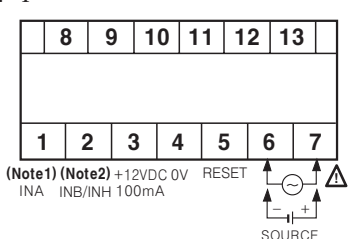
CT4S-2P CT6S-2P



CT6Y

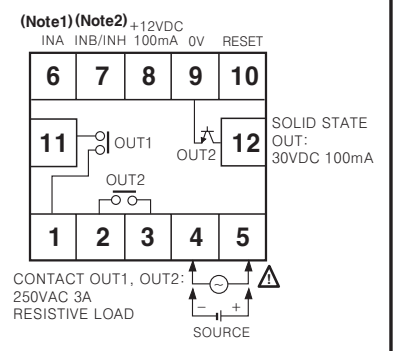


CT6Y-I

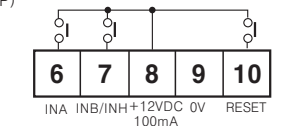


- * (Note1) INA Signal
• Operation of Counter : Operating as Counting input or No counting input signal.
• Operation of Timer : Operating as START signal

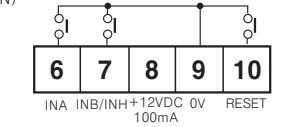
CT4S-2P CT6S-2P



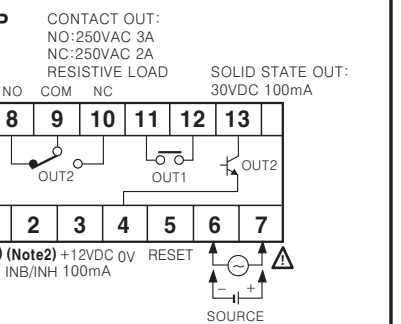
*Connection of contact input in state of select voltaged input(PNP)



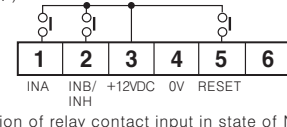
*Connection of relay contact input in state of No-voltage input(NPN)



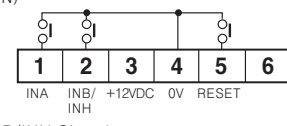
CT6Y-2P



*Connection of contact input in state of select voltaged input(PNP)



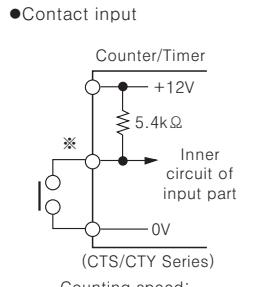
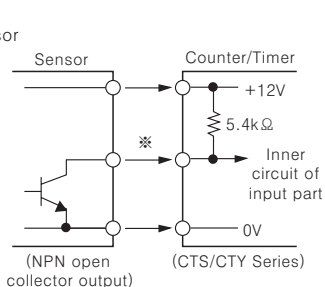
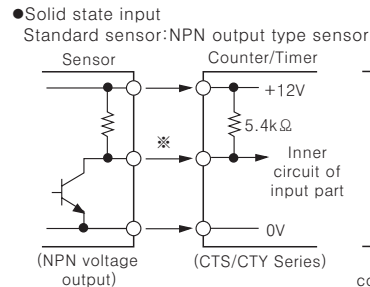
*Connection of relay contact input in state of No-voltage input(NPN)



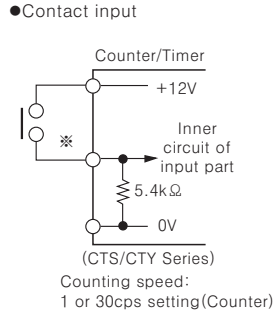
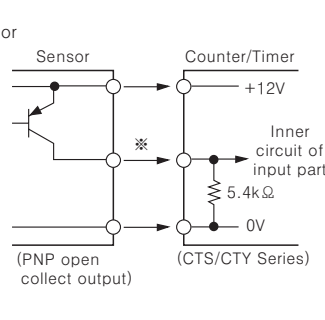
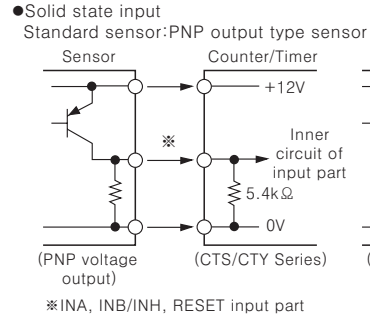
- * (Note2) INB/INH Signal
• Operation of Counter : Operating as INB signal
• Operation of Timer : Operating as INH signal
If the INH signal applied during it is used as Timer, the processing time stops. (Hold)

Input connection

Input logic : No-voltage input(NPN)



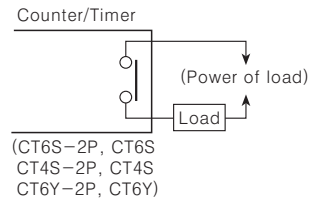
Input logic : Voltage input(PNP)



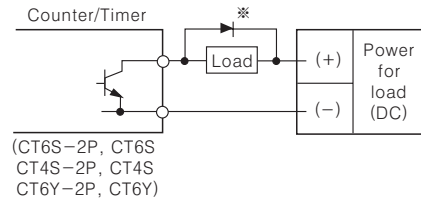
※INA, INB/INH, RESET input part

Output connection

Contact output



Solid state output

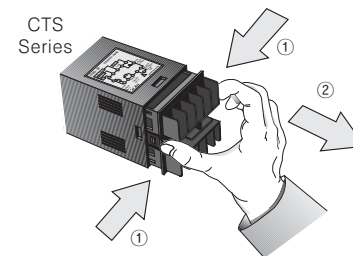


Solid state output connection

- Use proper load and power for load not to exceed ON/OFF capacity(30VDC Max. 100mA max.) of solid state output.
- Be sure not apply reverse polarity of power.
- ※When use inductive load(Relay etc), surge absorber(Diode, Varistor etc) must be connected between both side of the load.

Input logic selection

1. The power must be cut off.
2. Detach the case from body.



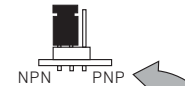
*Case detachment of CTS series and CTY series.
After push toward ① and pull toward ② as like picture.

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

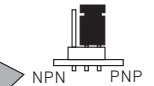
3. Select input logic by using input logic S/W inside of Counter/Timer.

<CTS Series >

- Select No-voltage input(NPN)



- Select voltage input(PNP)



<CTY Series >

- Select No-voltage input(NPN)



- Select voltage input(PNP)



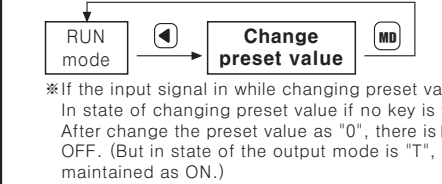
4. Please assemble opposite way of the case detachment.
5. Then apply the power to Counter/Timer.

Error code display

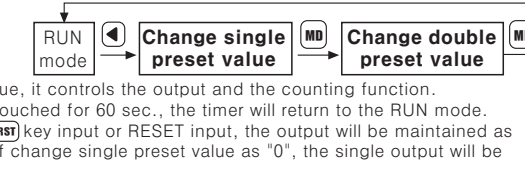
Error display	Errors	Output status	How to return
Err 1	CPU error	Double preset type : OUT1, OUT2 are OFF Single preset type : OUT is OFF	RS key, RESET input

Change of preset value in Counter operation

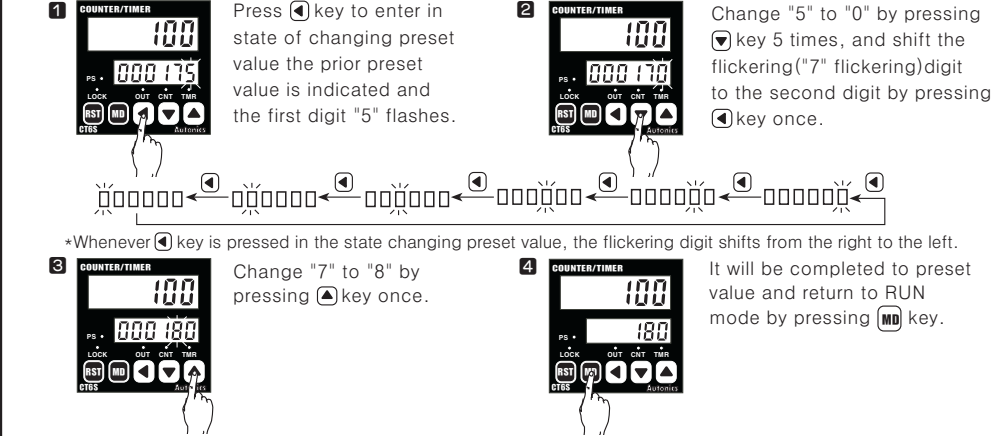
Change the preset value in the single preset type(CT6S, CT4S, CT6Y)



Change the preset value in the double preset type(CT6S-2P, CT4S-2P, CT6Y-2P)

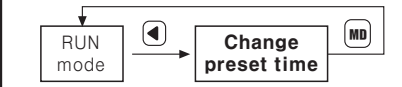


How to change in the single preset type(CT6S, CT6Y):To change the set value from 175 to 180

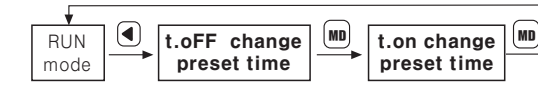


Change of preset value in Timer operation

Change preset time in case of the output mode is not FLK

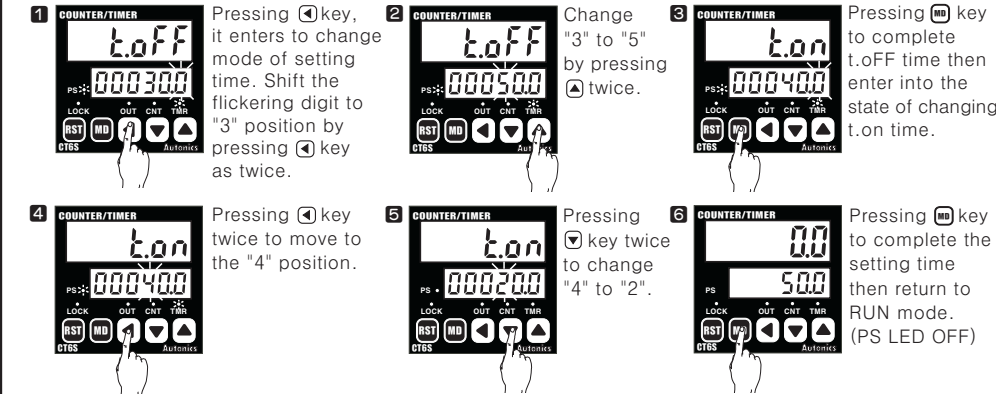


Change preset time in case of the output mode is FLK



Change of setting time in case of the output is FLK(CT6S)

Change t.oFF time from 30sec. to 50sec., t.on setting from 40sec. to 20sec.
(Output mode : FLK, Time range : 9999.9)

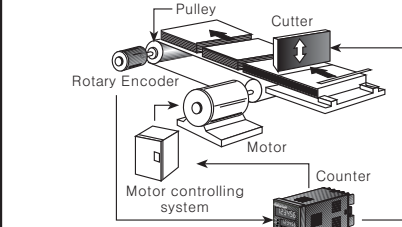


- ※When entering into the status of changing setting time, the time will progress continuously.
- ※When changing setting value, if no key is touched for 60 sec., the counter will return to RUN mode. Please cautious not to press Run key, the output is not operated. After entering changing mode, the same result is occurred when power is applied again after cut off the power. (It is only for OND.2, FLK.2 output operation mode.)
- ※Whenever Run key is pressed in the status of changing setting value, the flickering digit shifts from the right to the left.

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, etc per 1 pulse.
For example)Pulse number P is revolution of rotary encoder.
L is the desired length to be measured. Prescale value is desired length L/pulse number P generated by the rotary encoder. It is the length measured per 1 pulse.

- Control length by the counter and the rotary encoder



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

$$= \frac{3.1416 \times 22}{1000}$$

$$= 0.069\text{mm/Pulse}$$

[Diameter of the Pulley connected with the encoder is 22mm, pulse number of encoder per 1revolution:1000]

It is possible to control conveyor as 0.1mm unit to set 0.069 for Prescale value by pressing setting key in state of prescale value setting in function setting mode. Decimal point should be set the first decimal place in function setting mode.

How to set Lock key

Be sure to set the lock mode in order to protect malfunction by unauthorized keypad.

LoFF (Lock OFF) : Cancellatation of the lock mode

LoL1 (Lock Level 1) : Lock RS key

LoL2 (Lock Level 2) : Lock Run & Run & Run key

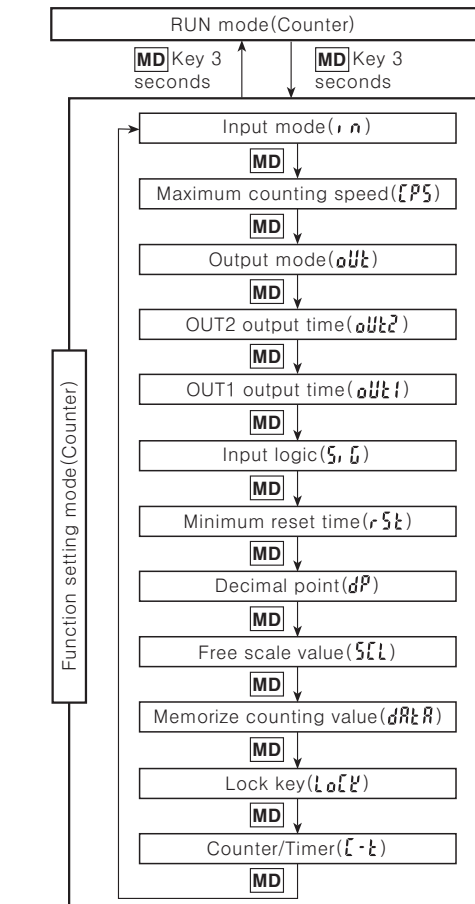
LoL3 (Lock Level 3) : Lock RS & Run & Run & Run key

Factory specification

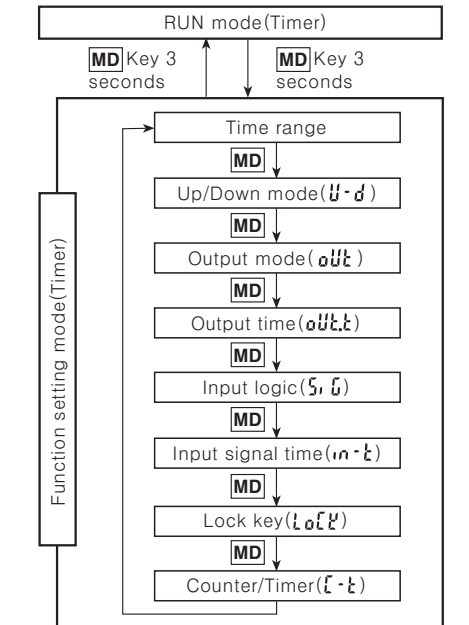
Set item	Model	Double preset model (CT6S-2P, CT4S-2P, CT6Y-2P)	Single preset model (CT6S, CT4S, CT6Y)	Indicator model (CT6S-1, CT6Y-1)
Input mode	Up/Down=C(U/D-C)			
Output mode	F			
OUT1	100ms			
OUT2(OUT)	Hold			
CPS	30cps			
Min. reset time	20ms			
Decimal point	Non decimal point			
Prescale value	6 digit indication model(CT6S-2P, CT6S, CT6S-1, CT6Y-2P, CT6Y, CT6Y-1) : 1.000 4 digit indication model(CT4S-2P, CT4S) : 1.00			
Counting memory	CLer(Power reset)			
Time range	6 digit indication model(CT6S-2P, CT6S, CT6S-1, CT6Y-2P, CT6Y, CT6Y-1) : 0.01s-9999.99s 4 digit indication model(CT4S-2P, CT4S) : 0.01s-99.99s			
Up/Down mode	U(Up)			
Output mode	OND(ON Delay)			
Output time	Hold			
Input signal mode	20ms			
Input method	No-voltage input(NPN)			
Lock key	L.oFF(Lock Off)			
Counter/Timer	Counter			

Change operation mode(Counter/Timer)

Operation in Counter



Operation in Timer



- ※After selecting Timer in Counter/Timer of Counter function setting mode, if press MD for more than 3sec., it will move to Timer RUN mode. After select Counter in Counter/Timer of Timer function setting mode, if press MD for more than 3sec., it will move to Counter RUN mode.
- ※If press MD for more than 3sec. in RUN mode, it will move to function setting mode. If press MD for more than 3sec. in function setting mode, it will move to RUN mode. If no key touched more than 60sec., it will move to RUN mode.

Setting of counter function modes

Setting mode	How to set (▲, ▼)
Input mode (r n)	U → d → Ud-A → Ud-b → Ud-C Ud-A, B, C will be fixed in the input mode, if output mode is S, T, D.
Maximum counting speed (CP5)	1 → 30 → 1K → 5K → 10K Counting speed is that of one by one(1:1) duty ratio of INA or INB input signal, and it is applied in INA or INB at the same time. In case of 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 → U → P → Q → A *Up / Down-A, B, C input mode F → n → C → r → U → P → Q → A → S → t → d
OUT2 output time (OUT2t)	10 → 50 → 100 → 200 → 500 → 1000 → 2000 → 5000 Unit:ms
OUT1 output time (OUT1t)	10 → 50 → 100 → 200 → 500 → 1000 → 2000 → 5000 → Hold Unit:ms
Input logic (S, G)	It indicates according to position, and it can't set by ▲ & ▼ key. Voltage input : P n P No-voltage input : n P n
Min. reset time (rSt)	1 → 20 Min. external RESET signal width(Unit:ms)
Decimal point (dP)	*In case of CT6S-2P, CT6S, CT6S-I, CT6Y-2P, CT6Y, CT6Y-I *In case of CT4S-2P, CT4S
Prescale value (SC)	☑ Key : Shift the flickering digit ▲, ▼ Key : Change the prescale value Set range of prescale value : 0.001 to 99.999(CT6S-2P, CT6S, CT6S-I, CT6Y-2P, CT6Y, CT6Y-I), 0.01 to 9.99(CT4S-2P, CT4S) Prescale value : It is actual value of length and position, liquid measure from counting input of 1pulse
Memorize counting value (dRtA)	CLER : Power reset for counting value. (Reset counting value when power off) CLER ↔ rEC rEC : Memory for counting value (Memory of counting value when power off)
Lock key (LoLk)	L.off → LoL.1 → LoL.2 → LoL.3
Counter/Timer (C-t)	LoUn ↔ t.nE LoUn : Counter t.nE : Timer

- *There is no "OUT1 output time" in single preset model(CT6S, CT4S, CT6Y), "OUT2 output time" will be replaced as "OUT output time(OUTt)".
- *In case of setting output mode as "F, N", if counting value reach at preset value. Output will be held. So there is no "OUT2 output time" in function setting mode.
- *If set "S, T, D" as the output mode, input will fixed one from Ud-A, Ud-B, Ud-C. If change input mode to Up/Down, it needs to change an other mode, not S, T, D.
- *When it is in function setting mode, no external input signal will be accepted and the output will stay in the OFF state.
- *When selecting the "D" output mode and if 1kcps is used, the output may not operate normally because of respond time of the contact. Therefore, in this case be sure to use the solid state output.
- * In state of maximum counting speed is 5kcps or 10kcps, if change output mode to "D", the maximum counting speed will be changed to 1cps.
- *There are no output mode and output time setting mode of function setting mode in CT6S-I, CT6Y-I series.

Input operation mode for counter

*▲:Over Min. signal width, ②:Over 1/2 of Min. signal width

Input mode	Counting chart	Notice
U (Up)		INA : Counting input INB : No counting input (Limit counting input of INA) *When INA is L, please set no counting (INA:H → L) or turn off no counting (INB:L → H)
d (Down)		INA : No counting input (Limit counting input of INB) INB : Counting input
d (Up/Down-A) Command input		When INB is H, please set no counting (INA:H → L) or turn off no counting (INB:L → H)
d (Up/Down-B) Individual input		INA : Counting value input INB : Up/Down counting command input When INB is L, counting Up When INB is H, counting Down
d (Up/Down-C) Phase difference input		INA : Counting Up input INB : Counting Down input When INA and INB applied L → H, it will remain previous counting value.

*When use A,B phase of encoder with connecting to INA, INB, please set counter input mode as phase different input(Ud-C).

Symbol	Input type	Voltage input (PNP)	Contact input (NPN)
H		5-30VDC	Short circuit
L		0-2VDC	Open

Counter operation of CT6S-I, CT6Y-I(Indication only)

<p>●In case of input mode is Up</p>	<p>●In case of input mode is Down</p>
<p>●In case of the input mode is command input(Ud-A), Individual input(Ud-b), Phase difference input(Ud-C)</p>	

Output operation mode for counter

Output mode	Input mode	Operation
F (F)	Up	After counting up, the display value increases or decreases until the reset signal is applied, and OUT1 and OUT2 holds "on" state. One-shot output of OUT1 operates regardless to OUT2.
	Down	After counting up, the display value increases or decreases until the reset signal is applied. One-shot output of OUT1 operates regardless to OUT2.
	Up/Down A, B, C	After counting up, the display value increases or decreases until the reset signal is applied. One-shot output of OUT1 operates regardless to OUT2.
N (N)	Up	The display value resets at the same time counting up. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
	Down	After counting up, display value resets after one shot time of OUT2. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
	Up/Down A, B, C	After counting up, display value is held for One-shot time of OUT2 counting operation starts again when OUT2 turns off, display value indicates counted value for ON time of OUT2 and increases or decreases. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
C (C)	Up	After counting up, display value increases or decreases until the reset signal is applied. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
	Down	After counting up, display value is held for One-shot time of OUT2 counting operation starts again when OUT2 turns off, display value indicates counted value for ON time of OUT2 and increases or decreases. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
	Up/Down A, B, C	After counting up, display value increases or decreases for One-shot time of OUT2. Hold output of OUT1 turns off after One-shot time of OUT2. One-shot output of OUT1 operates regardless to OUT2.
R (R)	Up	After counting up, display value is held until applying the reset signal. One-shot output of OUT1 operates automatically after One-shot time.
	Down	After counting up, display value is held until applying the reset signal. One-shot output of OUT1 operates automatically after One-shot time.
	Up/Down A, B, C	After counting up, display value is held until applying the reset signal. One-shot output of OUT1 operates automatically after One-shot time.
U (U)	Up	OUT1 and OUT2 keeps ON state in following condition: Display value ≥ Preset 1 Display value ≥ Preset 2
	Down	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.
	Up/Down A, B, C	When display value is equal to set value(Preset 1 or Preset 2) only, OUT1 or OUT2 output keeps ON state.
P (P)	Up	
	Down	
	Up/Down A, B, C	
Q (Q)	Up	
	Down	
	Up/Down A, B, C	
A (A)	Up	
	Down	
	Up/Down A, B, C	
S (S)	Up	
	Down	
	Up/Down A, B, C	
t (t)	Up	
	Down	
	Up/Down A, B, C	
d (D)	Up	
	Down	
	Up/Down A, B, C	

*Output of single preset type is operating the same as OUT2 of double preset type.

Setting of timer function modes

Set menu	How to set(▲, ▼)
Time range	<p>●CT6S-2P, CT6S, CT6S-I, CT6Y-2P, CT6Y, CT6Y-I</p> <p>●CT4S-2P, CT4S</p>
UP/DOWN mode (U-d)	<p>U ← d Up: Time proceeds from 0(zero) to the set value (Up) (Down) Down: Time proceeds from the set value to 0(zero)</p>
Output mode (OUT)	<p>ond → ond.1 → ond.2 → FLK → FLK.1 ofd ← int.1 ← int ← FLK.2</p>
Output time (OUT.t)	<p>10 → 50 → 100 → 200 → 500 → 1000 Hold ← 5000 ← 2000 (Unit:ms)</p> <p>It is operation time of control output according to output mode.</p>
Input logic (S, G)	<p>It indicates according to position, and it can't set by (▲) & (▼) key. Voltage input: PnP No-voltage input: nPn</p>
Input signal time (in-t)	<p>1 → 20 (Unit:ms) Selection of Min. signal width of INA, INHIBIT, RESET signal</p>
Lock key(Lock) (LoLk)	<p>LoFF → LoC.1 → LoC.2 → LoC.3</p>
COUNTER/TIMER (C-t)	<p>CoUn ↔ t, nE CoUn: COUNTER t, nE: TIMER</p>

When setting the function mode, no external input signal will be accepted and the output will stay in the OFF state.
 *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 (CT6S-I, CT6Y-I), there are no the output mode and the output time setting mode(OUT1, OUT2) in the function setting mode.
 *Control output operates as OUT2 in the double preset type (CT6S-2P, CT4S-2P, CT6Y-2P), and OUT1 always keeps "OFF" status.
 *When in the function setting mode, if no key is touched for 60 sec. the timer will return to RUN mode.

Timer range

Time range	Function setting mode		Time range	Function setting mode	
	Counting display	Preset display		Counting display	Preset display
0.01s - 9999.99s	SEC	999999	0.01s - 99.99s	SEC	9999
0.1s - 99999.9s	SEC	999999	0.1s - 999.9s	SEC	9999
1s - 999999s	SEC	999999	1s - 9999s	SEC	9999
0.01s - 99m59.99s	n S	995999	1s - 99m59s	n S	9959
0.1s - 99m59.9s	n S	995999	0.1m - 999.9m	n	9999
0.1m - 99999.9m	n	999999	1m - 9999m	n	9999
1m - 999999m	n	999999	1m - 99h59m	H n	9959
1s - 99h59m59s	H n S	995959	1h - 9999h	H	9999
1m - 9999h59m	H n	999959			

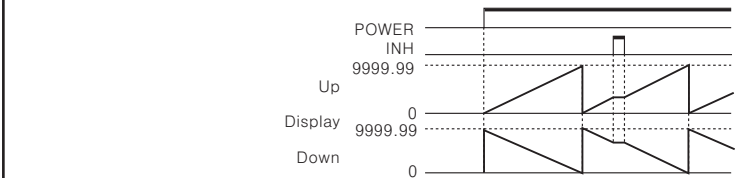
Timer output operation mode

Output mode	Time chart	Operation
ond (OND)	<p>SIGNAL ON DELAY (POWER RESET)</p>	<p>1)Time starts when INA signal turns on, if INA signal turns off, time resets. 2)Time starts when power turns on and when reset turns off during INA signal turns on. 3)Control output operates as hold or One-shot time.</p>
	<p>Interval (POWER/SIGNAL RESET)</p>	<p>1)When INA is ON, time starts. 2)When INA is OFF, time resets. 3)Time starts when power turns on and when reset turns off during INA signal turns on. 4)When time reaches to set value, display value and control output will be reset automatically. 5)Control output turns ON, during time processes.</p>

ond.1 (OND.1)	<p>SIGNAL ON DELAY 1 (POWER RESET)</p>	<p>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 memories display value when power turns off.</p>
	<p>POWER ON DELAY (POWER HOLD)</p>	<p>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 hold or One-shot time.</p>
FLK (FLK)	<p>FLICKER (POWER RESET)</p>	<p>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 hold output, output turns on for the Toff time and turns on for the Ton time repeatedly. (There is no One-shot output) 4)Each 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.</p>
	<p>FLICKER 1 (POWER RESET): Hold output</p>	<p>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 turns on. 3)Control output operates as hold output, in case of using the contact output Min. setting time must be set over 100ms.</p>
FLK.1 (FLK.1)	<p>FLICKER 1 (POWER RESET): One-shot output</p>	<p>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.</p>
	<p>FLICKER 2 (POWER HOLD): Hold output</p>	<p>1)Time starts when INA signal turns on, if INA signal is applied repeatedly, only initial signal is applied. 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 turns on. 4)In case of using the contact output, Min. setting time must be set over 100ms.</p>
FLK.2 (FLK.2)	<p>FLICKER 2 (POWER HOLD): One-shot output</p>	<p>1)Time starts when INA signal turns on, if INA signal is applied, only initial signal is applied. 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 turns on. 4)In case of using the contact signal, Min. setting time must be set over 100ms.</p>
	<p>FLICKER 2 (POWER HOLD): One-shot output</p>	<p>1)Time starts when INA signal turns on, if INA signal is applied, only initial signal is applied. 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 turns on. 4)In case of using the contact signal, Min. setting time must be set over 100ms.</p>

int (INT)	<p>Interval (POWER/SIGNAL RESET)</p>	<p>1)When INA is ON, time starts. 2)When INA is OFF, time resets. 3)Time starts when power turns on and when reset turns off during INA signal turns on. 4)When time reaches to set value, display value and control output will be reset automatically. 5)Control output turns ON, during time processes.</p>
	<p>Interval 1 (POWER RESET)</p>	<p>1)Control output turns on and time starts when INA signal turns on. 2)If INA signal is applied repeatedly, only initial signal is applied. 3)When reaches to set value, display value and control output is reset automatically. 4)Time starts when power turns on and when reset turns off during INA signal turns on. 5)Time processes normally while INA signal keeps ON status.</p>
ofd (OFD)	<p>SIGNAL OFF DELAY (POWER RESET)</p>	<p>1)If power is on and reset is off, control output keeps on state during INA signal is ON. 2)When time reaches to set value, display value and control output will be reset automatically.</p>
	<p>SIGNAL OFF DELAY (POWER RESET)</p>	<p>1)If power is on and reset is off, control output keeps on state during INA signal is ON. 2)When time reaches to set value, display value and control output will be reset automatically.</p>

Timer operation of CT6S-I, CT6Y-I (Indication only)



Caution for using

- The power ON/OFF
 - Power voltage rises for 100ms after power on and falls for 700ms after power off. Therefore be sure to apply input signal after 100ms and power turns on again after 700ms when power turns off.
 - When apply the power into CTS series, please apply the power in an instant 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.
 - Wire as separating input line from the power line.
 - Selection of input method

Be sure to change the input method after power off.
 - Contact count input (When it is used as Counter)

If apply contact input at high speed mode (1k, 5k, 10k), it may miscount by chattering. Therefore set low speed mode (1 or 30cps) at contact input.
 - When test dielectric voltage and insulation resistance of the control panel with this unit installed.
 - Please isolate this unit from the circuit of control panel.
 - Please make all terminals of this unit short-circuited.
 - Do not use this unit at below places.
 - Place where there are severe vibration or impact.
 - Place where strong alkalis or acids are used.
 - Place where there are direct ray of the sun
 - Place where strong magnetic field or electric noise are generated.
 - Installation environment
 - It shall be used indoor
 - Altitude Max. 2000m
 - Pollution Degree 2
 - Installation Category II
- *It may cause malfunction if above instructions are not followed.**

Major products

- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- AREA SENSOR
- FIBER OPTIC SENSOR
- DOOR/DOOR SIDE SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- SWITCHING POWER SUPPLY
- TEMPERATURE CONTROLLER
- TEMPERATURE/HUMIDITY TRANSDUCER
- POWER CONTROLLER
- RECORDER
- TACHOMETER/PULSE(RATE) METER
- PANEL METER
- INDICATOR
- SIGNAL CONVERTER
- COUNTER
- TIMER
- DISPLAY UNIT
- GRAPHIC PANEL
- STEPPING MOTOR & DRIVER & MOTION CONTROLLER

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