DIN W48×H48mm, W72×H72mm LCD Display Counter/Timer

▣ Features

- Improved visibility with LCD display
- Input method: voltage input (PNP)/no-voltage input (NPN) selectable model (by parameter setting),
  Free voltage input model
- Setting range of one-shot output time: 0.01 sec to 99.99 sec by 0.01 sec unit
- Mounting space saving with compact design (back length: 64.5mm)

[Counter]

- Setting range of prescale value: 0.00001 to 99999.9
- Various input/output mode (input: 11 types, output: 11 types)
- Start point (counting value reset) setting
- TOTAL counter display mode
  : Displays the present value and the integrated value simultaneously.

[Timer]

- Various output mode (15 types)
- Wide time setting range: 0.001 sec to 99999.9 hour
- '0' time setting function

⚠ **Please read "Safety Considerations" in the instruction manual before using.**

CE

▣ Manual

For the detail information, please refer to user manual, and be sure to follow cautions written in the technical descriptions (catalog, website). Visit our website (www.autonics.com) to download manuals.

▣ Ordering Information

CX 6 S – 1P 4 F
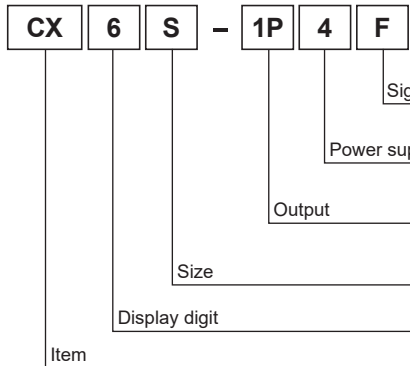
Signal input method	No mark	Voltage input (PNP)/no-voltage input (NPN) selectable type
	F	Free voltage input
Power supply	2	24VAC 50/60Hz, 24-48VDC
	4	100-240VAC 50/60Hz
Output	1P	1-stage setting
	2P	2-stage setting
Size	S	DIN W48×H48mm
	M	DIN W72×H72mm
Display digit	6	999999 (6-digit)
Item	CX	LCD Display counter/Timer

CX Series

■ Specifications

Model			CX6S-1P□□	CX6S-2P□□	CX6M-1P□□	CX6M-2P□□
Display digits			6-digit			
Display method			7-segment (1st, 2nd digits of counting value display: white, setting value display: green) LCD method, 11-segment (the other digits of counting value display: white) LCD method, Operation display part: yellow LCD method			
Character size (W×H)	Counting value		4.1×10.1mm		6.2×15.2mm	
	Setting value		3.3×8.1mm		5×12.3mm	
Power supply	AC voltage		100-240VAC～ 50/60Hz			
	AC/DC voltage		24VAC～ 50/60Hz, 24-48VDC⎓			
Permissible voltage range			90 to 110% of rated voltage			
Power consumption	AC voltage	CX6□-□□	Max. 6.4VA	Max. 6.7VA	Max. 7.1VA	Max. 7.5VA
		CX6□-□□F	Max. 4.2VA	Max. 4.9VA	Max. 4.7VA	Max. 5.4VA
	AC/DC voltage	CX6□-□□	AC: max. 5.5VA DC: max. 3.5W	AC: max. 5.6VA DC: max. 3.6W	AC: max. 6.2VA DC: max. 4W	AC: max. 6.3VA DC: max. 4.1W
		CX6□-□□F	AC: max. 3.6VA DC: max. 2.5W	AC: max. 4.0VA DC: max. 2.8W	AC: max. 3.9VA DC: max. 2.9W	AC: max. 4.5VA DC: max. 3.3W
Counter	Max. INA/INB counting speed	CX6□-□□	Selectable among 1cps/30cps/300cps/1kcps/5kcps			
		CX6□-□□F	20cps			
	Counting range		-99999 to 999999			
	Scale		Decimal point up to fifth digit			
	Min. signal width	CX6□-□□	RESET, TOTAL RESET signal: selectable among 1ms/20ms			
		CX6□-□□F	RESET signal: 25ms			
Timer	Time range		999.999s, 9999.99s, 99999.9s, 999999s, 99m 59.99s, 999m 59.9s, 9999m 59s, 99999.9m, 999999m, 99h 59m 59s, 9999h 59m, 99999.9h			
	Operation mode		Up, Down			
	Min. signal width	CX6□-□□	INA, INHIBIT, RESET, TOTAL RESET signal: selectable among 1ms/20ms			
		CX6□-□□F	INA, INH, RESET signal: 25ms			
	Repeat error		[CX6□ - □□]-In case of power ON start: max. ±0.01% ±0.05s In case of signal ON start: max. ±0.01% ±0.03s [CX6□ - □□F]-In case of power ON start: max. ±0.01% ±0.08s In case of signal ON start: max. ±0.01% ±0.06s			
	Set error					
	Voltage error					
	Temp. error					
Input method		CX6□-□□	Selectable among voltage input (PNP)/no-voltage input (NPN) [Voltage input (PNP)]-input impedance: 10.8kΩ, [H]: 5-30VDC⎓, [L]: 0-2VDC [No-voltage input (NPN)]-short-circuit impedance: max. 1kΩ, short-circuit residual voltage: max. 2VDC			
		CX6□-□□F	[Free voltage input]-INA (START) , INB (INHIBIT) input [H]: 24-240VDC⎓/24-240VAC～ 50/60Hz, [L]: 0-10VDC/VAC [No-voltage input]-RESET input, short-circuit impedance: max. 1kΩ, short-circuit residual voltage: max. 2V			
One-shot output time			0.01 to 99.99s setting			
Control output	Contact	Type	SPDT (1c): 1	SPST (1a): 2	SPDT (1c): 1	SPDT (1c): 2
		Capacity	Max. 250VAC～ 3A, 30VDC⎓ 3A resistive load			
	Solid state	Type			NPN open collector: 1	NPN open collector: 2
		Capacity			Max. 30VDC⎓ 100mA	
External power supply[※1]			Max. 12VDC⎓ ±10%, 100mA			
Memory retention			Approx. 10 years (non-volatile memory)			
Insulation resistance			Over 100MΩ (at 500VDC megger)			
Dielectric strength			3,000VAC 50/60Hz for 1 min			
Noise immunity	AC voltage		Square-wave noise by noise simulator (pulse width 1μs) ±2kV			
	AC/DC voltage		Square-wave noise by noise simulator (pulse width 1μs) ±500V			
Vibration	Mechanical		0.75mm amplitude at frequency 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour			
	Malfunction		0.5mm amplitude at frequency 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 min			
Shock	Mechanical		300m/s² (approx. 30G) in each X, Y, Z direction for 3 times			
	Malfunction		100m/s² (approx. 10G) in each X, Y, Z direction for 3 times			
Relay life cycle	Mechanical		Min. 5,000,000 operations			
	Malfunction		Min. 100,000 operations			
Protection structure			Front part: IP50 (IEC standard)			
Environment	Ambient temp.		-10 to 55℃, storage: -25 to 65℃			
	Ambient humi.		35 to 85%RH, storage: 35 to 85%RH			
Approval			C€			
Weight[※2]	AC voltage	CX6□-□□	Approx. 157g (approx. 112g)	Approx. 162g (approx. 117g)	Approx. 235g (approx. 170g)	Approx. 240g (approx. 175g)
		CX6□-□□F	Approx. 155g (approx. 110g)	Approx. 160g (approx. 115g)	Approx. 233g (approx. 168g)	Approx. 238g (approx. 173g)
	AC/DC voltage	CX6□-□□	Approx. 156g (approx. 111g)	Approx. 161g (approx. 116g)	Approx. 234g (approx. 169g)	Approx. 239g (approx. 174g)
		CX6□-□□F	Approx. 154g (approx. 109g)	Approx. 159g (approx. 114g)	Approx. 232g (approx. 167g)	Approx. 237g (approx. 172g)

※1: This is for the voltage input (PNP)/no-voltage input (NPN) selectable model (CX6□-□□).
※2: The weight includes packaging. The weight in parenthesis is for unit only.
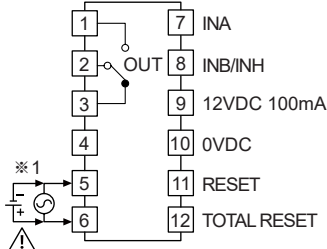※Environment resistance is rated at no freezing or condensation.

■ Connections

◎ CX6S Series

1. Voltage input (PNP), no-voltage input (NPN) selectable model

● CX6S-1P□

CONTACT OUT:
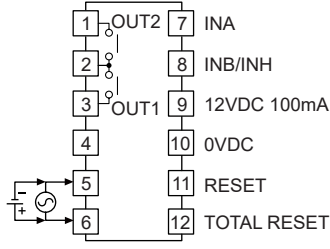250VAC 3A, 30VDC 3A
RESISTIVE LOAD

1	7 INA
2 OUT	8 INB/INH
3	9 12VDC 100mA
4	10 0VDC
※1 5	11 RESET
6	12 TOTAL RESET

SOURCE:
100-240VAC 50/60Hz 6.4VA
24VAC 50/60Hz 5.5VA
24-48VDC 3.5W

● CX6S-2P2

CONTACT OUT1/OUT2:
250VAC 3A, 30VDC 3A
RESISTIVE LOAD

1 OUT2	7 INA
2	8 INB/INH
3 OUT1	9 12VDC 100mA
4	10 0VDC
5	11 RESET
6	12 TOTAL RESET

SOURCE:
24VAC 50/60Hz 5.6VA
24-48VDC 3.6W

● CX6S-2P4

CONTACT OUT1/OUT2:
250VAC 3A, 30VDC 3A
RESISTIVE LOAD

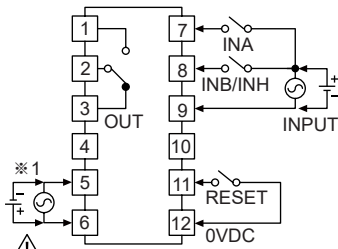|	
1	7 INA
2 OUT2	8 INB/INH
3	9 12VDC 100mA
4 OUT1	10 0VDC
5	11 RESET
6	12 TOTAL RESET
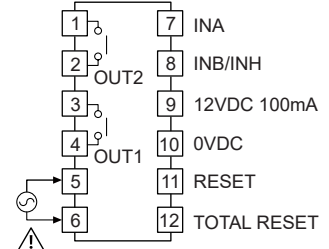
SOURCE:
100-240VAC 50/60Hz 6.7VA

2. Free voltage input model

● CX6S-1P□F

CONTACT OUT
: 250VAC 3A, 30VDC 3A
 RESISTIVE LOAD
SIGNAL INPUT
: 24-240VAC 50/60Hz, 24-240VDC

1	7 INA
2	8 INB/INH
3 OUT	9 INPUT
4	10
※1 5	11 RESET
6	12 0VDC

SOURCE: 100-240VAC 50/60Hz 4.2VA
24VAC 50/60Hz 3.6VA
24-48VDC 2.5W

● CX6S-2P2F

CONTACT OUT1/OUT2
: 250VAC 3A, 30VDC 3A
 RESISTIVE LOAD
SIGNAL INPUT
: 24-240VAC 50/60Hz, 24-240VDC

1 OUT2	7 INA
2	8 INB/INH
3 OUT1	9 INPUT
4	10
5	11 RESET
6	12 0VDC
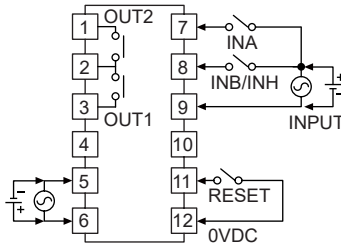
SOURCE: 24VAC 50/60Hz 4.0VA
24-48VDC 2.8W

● CX6S-2P4F

CONTACT OUT1/OUT2
: 250VAC 3A, 30VDC 3A
 RESISTIVE LOAD
SIGNAL INPUT
: 24-240VAC 50/60Hz, 24-240VDC

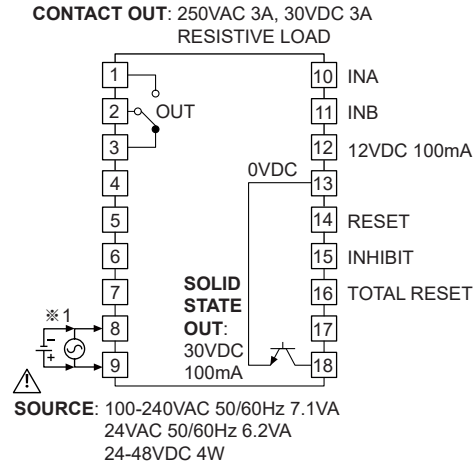|	
1	7 INA
2 OUT2	8 INB/INH
3	9 INPUT
4 OUT1	10
5	11 RESET
6	12 0VDC
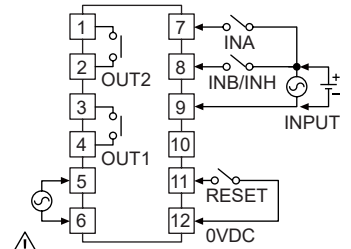
SOURCE: 100-240VAC 50/60Hz 4.9VA

CX Series

■ Connections

◎ CX6M Series

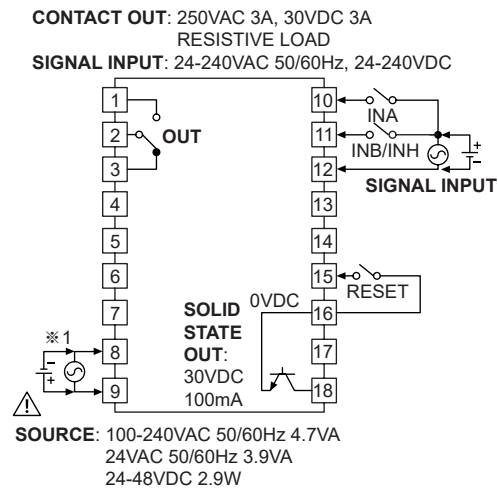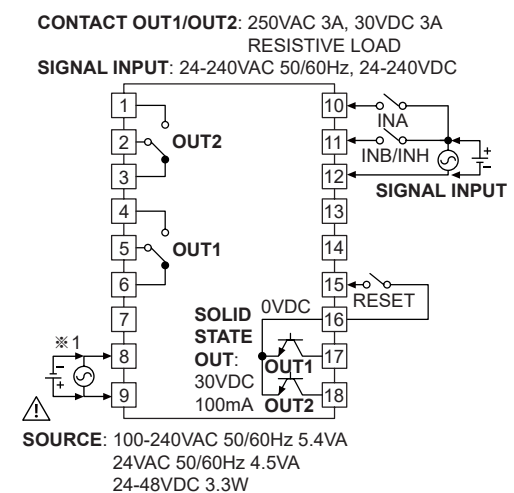#### 1. Voltage input (PNP), no-voltage input (NPN) selectable model

● CX6M-1P□

CONTACT OUT: 250VAC 3A, 30VDC 3A
RESISTIVE LOAD

SOURCE: 100-240VAC 50/60Hz 7.1VA
24VAC 50/60Hz 6.2VA
24-48VDC 4W

● CX6M-2P□

CONTACT OUT1/OUT2: 250VAC 3A, 30VDC 3A
RESISTIVE LOAD

SOURCE: 100-240VAC 50/60Hz 7.5VA
24VAC 50/60Hz 6.3VA
24-48VDC 4.1W

2. Free voltage input model

● CX6M-1P□F

CONTACT OUT: 250VAC 3A, 30VDC 3A
RESISTIVE LOAD
SIGNAL INPUT: 24-240VAC 50/60Hz, 24-240VDC

SOURCE: 100-240VAC 50/60Hz 4.7VA
24VAC 50/60Hz 3.9VA
24-48VDC 2.9W

● CX6M-2P□F

CONTACT OUT1/OUT2: 250VAC 3A, 30VDC 3A
RESISTIVE LOAD
SIGNAL INPUT: 24-240VAC 50/60Hz, 24-240VDC
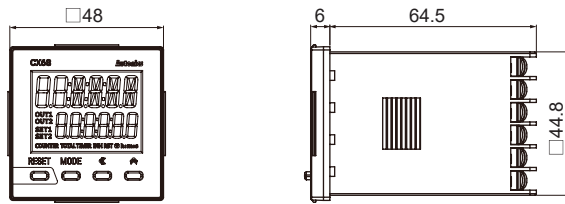

SOURCE: 100-240VAC 50/60Hz 5.4VA
24VAC 50/60Hz 4.5VA
24-48VDC 3.3W

※1: AC voltage type: 100-240VAC 50/60Hz
AC/DC voltage type: 24VAC 50/60Hz, 24-48VDC
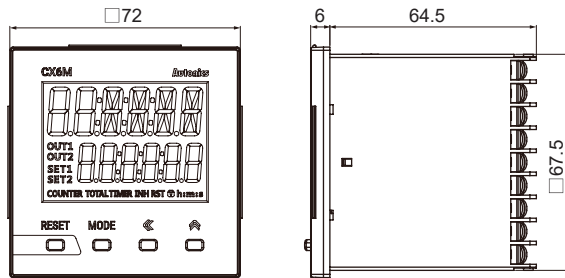
■ Dimensions

(unit: mm)

◎ CX6S Series

□48

6 64.5

□44.8

◎ CX6M Series

□72

6 64.5

67.5

□67.5

◎ Panel cut-out

● CX6S Series

Min. 65

Min. 65

$45^{+0.6}_{0}$

$45^{+0.6}_{0}$

● CX6M Series

Min. 91

Min. 91

$68^{+0.7}_{0}$

$68^{+0.7}_{0}$

◎ Bracket

● CX6S Series

□48.6$^{±0.2}$

$45^{+0.2}_{0}$

$44.9^{+0.2}_{-0.05}$

30.6

5 20

$16^{+0.3}_{0}$

36

15

21

55

56

● CX6M Series

3.3

4

46

37.5 40.5

12

23.9
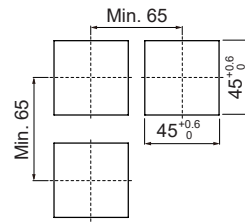
◎ Terminal cover (sold separately)

● CX6S Series
(RSA-COVER, 48×48mm)

3

□48.4

22

13

UP

41 45

DOWN

18

22
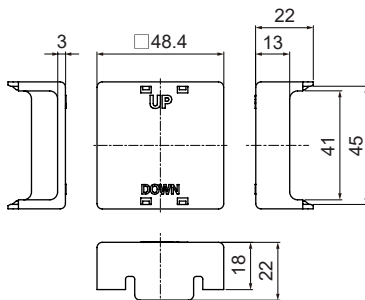
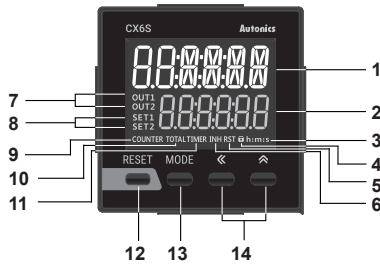● CX6M Series
(RMA-COVER, 72×72mm)
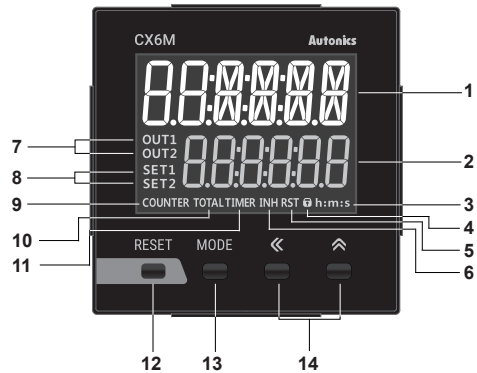

4

70

10

UP

68.5

64

DOWN

13
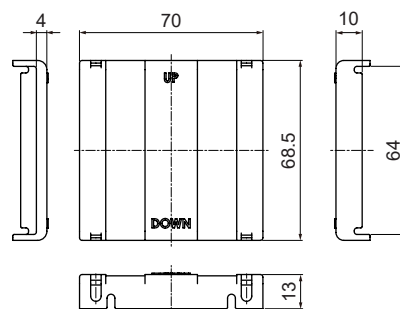
CX Series

▣ Unit Description

◎ CX6S Series

◎ CX6M Series

1. Counting value display component (white)
RUN mode: Displays counting value for counter operation or time progress value for timer operation.
Function setting mode: Displays parameter.

2. Setting value display component (green)
RUN mode: Displays setting value.
Function setting mode: Displays parameter setting value.

3. Time unit indicator (h:m:s): Turns ON for time unit for timer.

4. Key lock indicator (🔒): Turns ON for key lock setting.

5. Reset input indicator (RST): Turns ON for reset key input or reset signal input.

6. INH indicator (INH)
For the voltage input (PNP)/no-voltage input (NPN) selectable model (CX6□-□□), it turns ON for INHIBIT signal input.
(In case of CX6S Series and timer mode, it turns ON for INB/INH signal input.)
For free voltage input model (CX6□-□ □F), it turns ON for INB/INH signal input for timer.

7. Output indicator (OUT1, OUT2): Turns ON for the dedicated control output ON.

8. SV checking and changing indicator (SET, SET1, SET2) (green): Turns ON when checking and changing SV.

9. COUNTER indicator (COUNTER): Turns ON for counter operation.

10. TOTAL indicator[1] (TOTAL): In case of TOTAL counter display mode, it turns ON with the COUNTER indicator.

11. TIMER indicator (TIMER): Flashes (progressing time) or Turns ON (stopping time) for timer operation.

12. RESET key
RUN mode, Function setting mode: Press the RESET key to reset the counting value and turn OFF the output.
TOTAL counter display mode[1]: Press the RESET key to reset the counting value of TOTAL counter.

13. MODE key
RUN mode: Hold the MODE key over 3 sec to enter function setting mode.
      Press the MODE key to select SV2 (SET2)/SV1 (SET1)/TOTAL counter[1] display for counter operation.
Function setting mode: Hold the MODE key over 3 sec to return RUN mode.
      Press the MODE key to save the SV and enter the next setting.
Function setting check mode: Hold the MODE key over 1 sec to return RUN mode.
Changing SV mode: Press the MODE key to save SV and return RUN mode.

14. 《, 《 key
1) 《 key
RUN mode: Press the 《 key to change SV and move SV (SET, SET1, SET2) digits.
Changing SV mode: Press the 《 key to change digits.
2) 《 key
Changing SV mode: Increases SV.
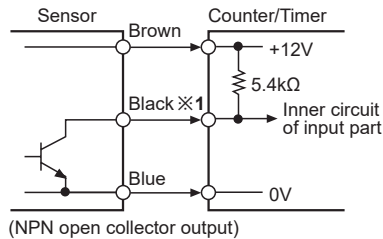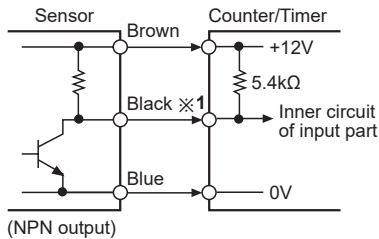Function setting mode: Changes the settings.

※1: This is for the voltage input (PNP)/no-voltage input (NPN) selectable model (CX6□-□□).
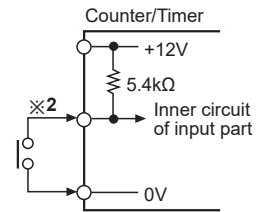
▣ Input Connections

◎ No-voltage input (NPN)

● **Solid-state input (standard sensor: NPN output type sensor)**   ● **Contact input**

Sensor | Counter/Timer | +12V | 5.4kΩ | Black ※1 | Inner circuit of input part | Blue | 0V | (NPN output)

Sensor | Counter/Timer | +12V | 5.4kΩ | Black ※1 | Inner circuit of input part | Blue | 0V | (NPN open collector output)

Counter/Timer | +12V | 5.4kΩ | ※2 | Inner circuit of input part | 0V

※1: CP1, CP2 (INHIBIT), SET input part
※2: Set counting speed as 1 or 30cps.

◎ Voltage input (PNP)

● **Solid-state input (standard sensor: PNP output type sensor)**   ● **Contact input**

Sensor | Counter/Timer | Brown | +12V | Black ※1 | Inner circuit of input part | 10.8kΩ | Blue | 0V | (PNP output)

Sensor | Counter/Timer | Brown | +12V | Black ※1 | Inner circuit of input part | 10.8kΩ | Blue | 0V | (PNP open collector output)

Counter/Timer | ※2 | +12V | Inner circuit of input part | 10.8kΩ | 0V
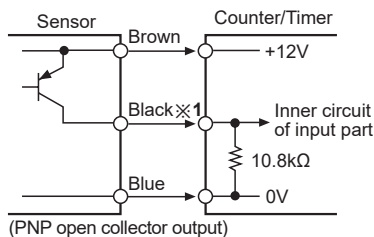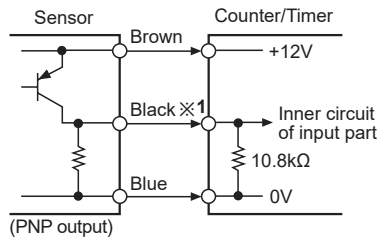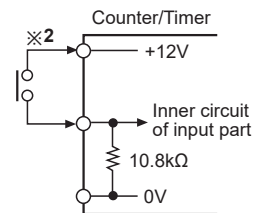
※1: CP1, CP2 (INHIBIT), SET input part
※2: Set counting speed as 1 or 30cps.

▣ Output Connections

◎ Contact output

Counter/Timer | (Power of load) | Load
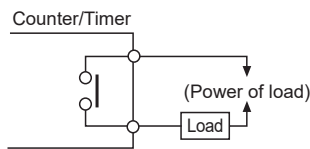
※Select the load which capacity is not over contact capacity.

◎ Solid-state output

Counter/Timer | ※1 | Load | (+) | Power for load (DC) | (−)
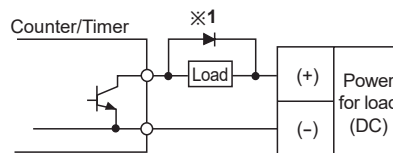
※For solid state output, select load power and load not to be over (max. 30VDC, 100mA), swithching capacity.
※Do not supply reverse polarity voltage.
※1: For using inductive load (relay, etc.), connect surge absorber (diode, varistor etc.) at the both ends of load.

CX Series

■ Operations and Functions (counter/timer)

■ Counter mode

● Changing SV mode

When input signal is ON during changing SV, it operates counting and output control.
It is available to set SV as '0' and the dedicated output for SV '0' occurs.
There are output mode which cannot set SV as '0'. (the setting value display component flashes three times when SV is set as '0')

Press the ⟪ key to enter changing SV mode in RUN mode.
When entering changing SV mode, the counting value display component displays the current value and the setting value display component displays SV.

After setting SV at each parameter, press the MODE key to save SV and it moves next parameter setting or returns to RUN mode.

● **Function setting mode**
　※1: In case of free voltage input model (CX6□-□□F), these parameters do not appear due to fixed setting.
　※2: This parameter is for the voltage input(PNP)/no-voltage input(NPN) selectable model (CX6□-□□).
　※▇: When changing the setting of shaded parameters, all output turn OFF.

Function setting mode

RUN mode

MODE 3 sec ↓　↑ MODE 3 sec

-Hold the MODE key over 3 sec in RUN mode and it enters function setting mode.
-Hold the MODE key over 3 sec in function setting mode and it returns to RUN mode.

Counter/Timer [C-t]
MODE ↓
Input mode [i N.M]
MODE ↓
Output mode [oUt.M]
MODE ↓
Max. counting speed※1 [CPS]
MODE ↓
OUT2 output time [oUt 2]
MODE ↓
OUT1 output time [oUt 1]
MODE ↓
Decimal point [dP]
MODE ↓
Min. reset time※1 [rESEt]
MODE ↓
Input logic※1 [Si G]
MODE ↓
Prescale decimal point [SCL.dP]
MODE ↓
Prescale value [SCL]
MODE ↓
TOTAL counter※2 [totAL]
MODE ↓
Start Point value [StARt]
MODE ↓
Memory protection [dAtA]
MODE ↓
Key lock [LoCK]

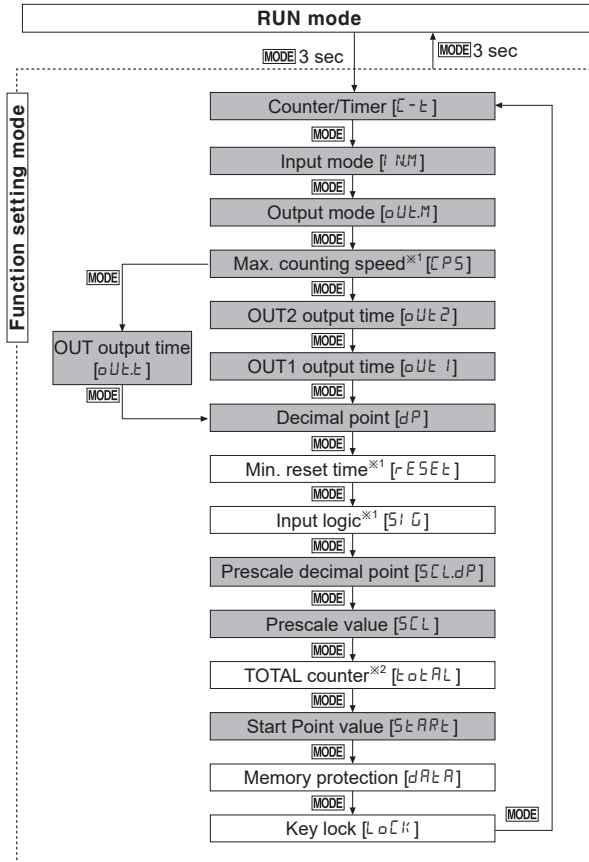OUT output time [oUt.t] — MODE

● **Function setting check mode** (only for free voltage input model (CX6□-□□F))
-When checking the saved parameters, press the MODE, ⌃ key to check next item.
-At function setting check mode, the counting value display component displays the parameters and the setting value display component displays the SV of the parameters.

● **Checking SV of TOTAL counter**
-At TOTAL counter operation, the counting value display component displays the current value and the setting value display component displays TOTAL counter counting value.
※When TOTAL counter counting value is over 999999, it counts from 0 again.

● **Switching display of the setting value display component**
(only for voltage input (PNP)/no-voltage input (NPN) selectable model (CX6□-□□)
-In case of 2-stage setting model(CX6□-2P□□), whenever pressing the MODE key, each SET2, SET1, TOTAL COUNTER value displays consecutively.

● **Display HOLD output mode for counter**
-It displays the over value of prescale value.
-When SV is n multiplied by prescale value and the display value after HOLD output mode and SV are different, the prescale value is not the 1/n time of SV.

● **RESET**
-In RUN mode, function setting mode, press the RESET key to reset the current value and the output turns OFF.
-At TOTAL counter display mode, press the RESET key to reset TOTAL counter counting value and the current counting value.

CX Series

▣ Parameter Setting (Counter)

(MODE key: moves parameters, ⊼ key: changes parameter setting value)

Parameter	Parameter setting value
Counter/Timer [C-t]	CoUnt ⟷ tı̄ ̄ɛ ※CoUnt: Counter tı̄ ̄ɛ: Timer
Input mode [I ̄.M]	UP → UP-1 → UP-2 → UP-3 → dn → dn-1 ⌐ ⌐ Ud-C※1 ← Ud-b※1 ← Ud-A ← dn-3 ← dn-2
Output mode [oUt.M]	• Input mode is UP, UP-1, UP-2, UP-3 or dn, dn-1, dn-2, dn-3, F → n → C → r → t' → P → q → A • Input mode is Ud-A, Ud-b※1, Ud-C※1 F → n → C → r → t' → P → q → A → 5 → t → d ※If max. counting speed is 5kcps, and output mode is d, max. counting speed is automatically changed as 30cps, factory default.
Max. counting speed※2 [CP5]	30 → 300 → 1t' → 5t' → 1 ※Max. counting speed is when duty ratio of INA or INB input signal is 1:1. It is applied for INA, or INB input as same. ※When output mode is d, set max. counting speed one among 1cps, 30cps, 300cps, or 1kcps.
OUT 2 output time※3 [oUt2]	※Set one-shot output time of OUT 2. ※Setting range: 00.01 to 99.99 sec ※When output mode is F, n, 5, t, d, this parameter does not appear. (fixed as HOLD)
OUT 1 output time※3 [oUt1]	※Set one-shot output time of OUT 1. ※Setting range: 00.01 to 99.99 sec, Hold ※When number of tens digit is flashing, press the ⟨ key once and HoLd appears. ※When output mode is 5, t, d, this parameter does not appear. (fixed as HOLD)
OUT output time※3 [oUt.t]	※Setting range: 00.01 to 99.99 sec ※When output mode is F, n, 5, t, d, this parameter does not appear. (fixed as HOLD)
Decimal point※4 [dP]	- - - - - → - - - - -.- → - - - - -.- - → - - - -.- - - → - - -.- - - - → - -.- - - - - ※Decimal point is applied to PV and SV.
Min. reset time※2 [rE5Et]	1 ⟷ 20, unit: ms ※Set min. width of external reset signal input.
Input logic※2 [5I ̄G]	nPn: No-voltage input, PnP: Voltage input
Prescale decimal point※4 [5CL.dP]	-.- - - - - → - - - - -.- → - - - -.- - → - - -.- - - → - -.- - - - ※Decimal point of prescale should not set smaller than decimal point [dP].
Prescale value [5CL]	※Setting range: 0.00001 to 99999.9 ※Setting range of prescale is linked with prescale decimal point [5CL.dP] setting.
TOTAL counter※1 [totAL]	on ⟷ oFF
Start point value [5tARt]	※Setting range of start point value is linked with decimal point [dP] setting. (0.00000 to 999999) ※When input mode is dn, dn-1, dn-2, this parameter does not appear. ※When total count function is ON, this parameter does not appear.※1
Memory protection [dAtA]	CLr ⟷ rEC ※CLr: Resets the counting value when power OFF. rEC: Maintains the counting value when power OFF. (memory protection)
Key lock [LoCk]	L.oFF → LoC.1 ⌐ ⌐ LoC.3 ← LoC.2 ※L.oFF: Unlock keys, key lock indicator turns OFF LoC.1: Locks RESET key, key lock indicator turns ON LoC.2: Locks ⟨, ⊼ keys, key lock indicator turns ON LoC.3: Locks RESET, ⟨, ⊼ keys, key lock indicator turns ON

※1: For voltage input (PNP), no-voltage input (NPN) model (CX6□-□□).
※2: For free voltage input model(CX6□-□□F), these parameters do not appear due to fixed setting.
※3: For 1-stage setting model (CX6□-1P□□), oUt1 does not appear.
    The oUt2 output time is displayed as oUt.t.
※4: Decimal point and prescale decimal point
    -Decimal point: Set the decimal point for display value regardless of prescale value.
    -Prescale decimal point: Set the decimal point for prescale value of counting value regardless of display value.

LCD Display Counter/Timer

■ Input Operation Mode (Counter)

Input mode	Counting chart	Operation
UP [UP]		※When INA is counting input, INB is no counting input. When INB is counting input, INA is no counting input.
UP-1 [UP-1]		※When INA input signal is rising (⌐), it counts. ※INA: Counting input ※INB: No counting input
UP-2 [UP-2]		※When INA input signal is falling (⌐), it counts. ※INA: Counting input ※INB: No counting input
UP-3 [UP-3]		※When INA or INB input signal is rising (⌐), it counts. ※INA: Counting input ※INB: Counting input
Down [dn]		※When INA is counting input, INB is no counting input. When INB is counting input, INA is no counting input.
Down-1 [dn-1]		※When INA input signal is rising (⌐), it counts. ※INA: Counting input ※INB: No counting input
Down-2 [dn-2]		※When INA input signal is falling (⌐), it counts. ※INA: Counting input ※INB: No counting input

CX Series

◼ Input Operation Mode (Counter)

Input mode	Counting chart	Operation
Down-3 [dn-3]		※When INA or INB input signal is rising (⌐), it counts. ※INA: Counting input ※INB: Counting input
Up/ Down-A [Ud-A]		※INA: Counting input INB: Counting command input ※When INB is "L", counting command is up. When INB is "H", counting command is down.
Up/ Down-B [Ud-b]		※INA: Up counting input INB: Down counting input ※When INA and INB input signals are rising (⌐) at the same time, it maintains previous value.
Up/ Down-C [Ud-C]		※When connecting encoder output A, B phase with counter input, INA, INB, set input mode [in.m] as phase different input [Ud-C] for counter operation.

※A: over min. signal width, B: over than 1/2 of min. signal width. If the signal is smaller than these width, it may cause counting error (±1).
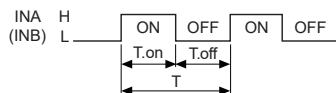
※T.on, T.off: Min. signal width

※The meaning of "H", "L"

Input method / Character	Voltage input (PNP)	No-voltage input (NPN)
H	5-30VDC	Short
L	0-2VDC	Open

※Min. signal width by counting speed

[CX6□-□□]

Counting speed	Min. signal width
1cps	500ms
30cps	16.7ms
300cps	1.67ms
1kcps	0.5ms
5kcps	0.1ms

[CX6□-□□F]

Counting speed	Min. signal width
20cps	25ms

■ Output Operation Mode (Counter)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

Output mode	Input mode			Operation
	Up, Up-1, 2, 3	Down, Down-1, 2, 3	Up/Down A, B, C	
F [F]				※After count-up, counting display value increases or decreases until reset signal is applied and retained output is maintained.
N [n]				※After count-up, counting display value and retained output are maintained until reset signal is applied.
C [C]				※When count-up, counting display value will be reset and count simultaneously. ※OUT1 retained output will be off after OUT2 one-shot time. ※The one-shot output time of OUT1 one-shot output time is operated regardless of OUT2 output.
R [r]				※After count-up, counting value display is reset after one-shot output time of OUT2 and it counts simultaneously. ※OUT1 retained output will be off after OUT2 one-shot time. ※OUT1 one-shot output time is operated regardless of OUT2 output.
K [k]				※After count-up, counting display value increases or decreases until RESET input is applied. ※OUT1 retained output is off after OUT2 one-shot time. ※OUT1 one-shot output time is operated regardless of OUT2 output.
P [P]				※After count-up, counting display value is maintained while OUT2 output is on. Counting value is internally reset and counts simultaneously. ※When OUT2 output is off, displays counting value while OUT2 is ON, and it increases or decreases. ※OUT1 retained output is off after OUT2 one-shot time. ※OUT1 one-shot output time is operated regardless of OUT2 output.
Q [q]				※After count-up, counting display value increases or decreases during OUT2 one-shot time. ※OUT1 retained output is off after OUT2 one-shot time. ※OUT1 one-shot output time is operated regardless of OUT2 output.
A [A]				※After count-up, counting display value and OUT1 retained output are maintained until RESET input is applied. ※OUT1 one-shot output time is operated regardless of OUT2 output.

※ oUt1 is available to set as '0' regardless of output mode. The output for '0' setting executes.
※ In case of C, r, P, q output mode for oUt2, setting '0' is not available.

CX Series

■ Output Operation Mode (Counter)

Retained output   Coincidence output

Output mode	Input mode	Operation
	Up/Down A, B, C	
S [5]		※OUT1 keeps ON status in following condition : Counting display value ≥ SET1 ※OUT2 keeps ON status in following condition : Counting display value ≥ SET2
T [t]		※OUT1 output is off : Counting display value ≥ SET1 (when SET1 is 0, OUT1 output maintains ON state.) ※OUT2 keeps ON status in following condition : Counting display value ≥ SET2
D [d]		※When counting display value is equal to setting value (SET1, SET2) only, OUT1 or OUT2 output keeps ON status. ※When setting 1kcps for counting speed, solid state contact output should be used. (when using contact output, it is difficult to execute normal output operation due to contact reaction time.)

※$out1$ is available to set as '0' regardless of output mode. The output for '0' setting executes.
※In case of C, r, P, q output mode for $out2$, setting '0' is not available.

■ Output Operation for Other Conditions

◎ When Start Point is larger or equal than setting value
(UP, $UP-1$, $UP-2$, $UP-3$, $Ud-A$, $Ud-b$, $Ud-C$ mode)

● **When setting SET2>Start Point>SET1**
-UP, $UP-1$, $UP-2$, $UP-3$ mode: Output of $out1$ does not execute. When PV is same as SET2, output of $out2$ turns ON.
-$Ud-A$, $Ud-b$[1], $Ud-C$[1] mode: When PV counts down and is same as SET1, output of $out1$ turns ON.

● **When setting SET2>Start Point=SET1**
-In case of UP, $UP-1$, $UP-2$, $UP-3$, $Ud-A$, $Ud-b$[1], $Ud-C$[1] mode, output of OUT1 turns ON when RESET ON to OFF.

※1: This is for the voltage input(PNP)/no-voltage input(NPN) selectable model (CX6□-□□).

◎ When SET1 is larger or equal than SET2 at down mode
● **When SET2>SET1**
-Output of $out1$ does not execute.

● **When SET2=SET1**
-Output of $out1$ turns ON for RESET OFF.

◼ Prescale Function (Counter)

This function is to set and display calculated unit for actual length, liquid, position, etc. It is called "prescale value" for measured length, liquid, or position, etc per 1 pulse. For example, when moving L, the desired length to be measured, and P, the number of pulses per 1 revolution of a rotary encoder, occurs, prescale value is L/P.

E.g.) Positioning control by counter and encoder
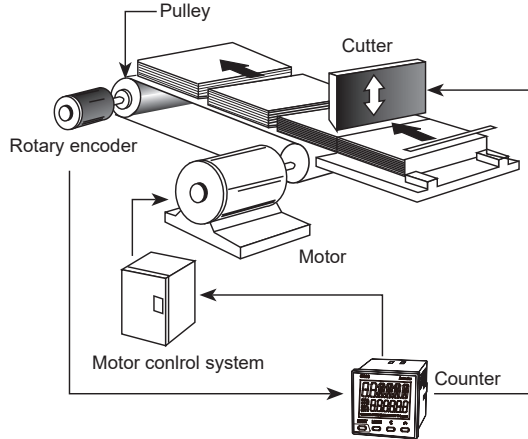
[Diameter (D) of pulley connected with encoder= 22mm, the number of pulses by 1 rotation of encoder=1,000]

●Prescale value

$$= \frac{\pi \times \text{Diameter (D) of pulley}}{\text{The number of pulses by 1 rotation of encoder}}$$

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

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

Set decimal point[dP] as [- - - - - .-], prescale decimal point [$5[L.dP]$] as [- - - .- - -], prescale value [$5[L]$] as [0.069] at function setting mode. It is available to control conveyer position by 0.1mm unit.

◼ Start Point Function (Counter)

In case of counter operation, set the start value for counting at Start point [$5tArt$].
● It is not available for $dn, dn-1, dn-2, dn-3$ input mode.
● When pressing the RESET key, PV is reset as the start point value.
● In case of $[, r, P, q]$ output mode, it counts up and PV starts from the start point value.

CX Series

◼ Timer mode

● Changing SV mode

When input signal is ON during changing SV, it operates counting and output control.
It is available to set SV as '0' and the dedicated output for SV '0' occurs.
There are output mode which cannot set SV as '0'. (the setting value display component flashes three times when SV is set as '0')

Press the ⟨⟨ key to enter changing SV mode in RUN mode.
When entering changing SV mode, the counting value display component displays the current value and the setting value display component displays SV.

After setting SV at each parameter, press the MODE key to save SV and it moves next parameter setting or returns to RUN mode.

● Function setting mode

※1: In case of free voltage input model (CX6□-□□F), these parameters do not appear due to fixed setting.
※2: This parameter is for the voltage input(PNP)/no-voltage input(NPN) selectable model (CX6□-□□).
※▨: When changing the setting of shaded parameters, all output turn OFF.

-Hold the MODE key over 3 sec in RUN mode and it enters function setting mode.
-Hold the MODE key over 3 sec in function setting mode and it returns to RUN mode.

● **Switching display of the setting value display component**

Select the display value at the setting value display component.
Depends on output mode, there are manual display switching and auto display switching.
-Manual display switching
  1) In case of 2-stage setting model (CX6□-2P□□) and oNd, oNd.1, oNd.2, oNd.3 output mode, it is available.
  2) In run mode, whenever pressing the MODE key, the setting value display component displays SET1, SET2 SV in turn.
     In case of 1-stage setting model (CX6□-1P□□), it is not available.
-Auto display switching
  1) When output mode is FLK, NFd, NFd.1 for 1-stage or 2-stage setting model (CX6□-1/2P□□) and INt.2 mode for 2-stage setting
     model (CX6□-2P□□), the setting value display component automatically displays the set times depends on the operation status.

● **RESET**

-In RUN mode, function setting mode, press the RESET key to reset the current value and the output is also reset.

● **Display type of the setting value display component by output mode**

-In case of 2-stage setting model (CX6□-2P□□) and oNd, oNd.1, oNd.2, oNd.3, INt.2 output mode, there are SET1 and SET2 setting.
 It displays the each SV and the SET1, SET2 indicator turns ON when displaying or setting the each SV.
-In case of 1-stage setting model (CX6□-1P□□), SET is available and there is one setting value.
-In case of 1-stage setting model (CX6□-1P□□), INt.2 output mode is not available.
-FLK output mode has t.oFF, t.oN setting values. In case of 2-stage setting model (CX6□-2P□□) and 1-stage setting model
 (CX6□-1P□□), each SET2, SET display is available.
 (t.oFF, t.oN setting value is for OUT2 output. It displays SET2 or SET.)
-The other output modes display SET2 or SET and have one setting value.
 (only for 1-stage setting model (CX6□-1P□□))

● **Zero blanking display**

PV is displayed with zero blanking for the highest unit.
E.g.)When time range is 99m59.99s and PV is 00m04.05s, zero blanking is applied to minute which is the highest unit.
     At the below digits of decimal point, it is not applied.
     It displays as "0:04.05".

CX Series

■ Parameter Setting (Timer)

(MODE key: moves parameters, ⌃ key: changes parameter setting value)

Parameter	Parameter setting value
Counter/Timer [C-t]	CoUnt ⟷ tImE ※CoUnt: Counter tImE: Timer
Up/Down mode [U-d]	UP ⟷ dn ※UP: Time progresses from '0' to the setting time. dn: Time progresses from the setting time to '0'.
Output mode [oUt.M]	ond→ond.1→ond.2→ond.3→FLK→FLK.1→FLK.2→Int ont.d←totAL※1←IntG←nFd.1←nFd←oFd←Int.2※2←Int.1
Time range [t.RNG]※3 output ON TIME range [oN.RNG]※4, output OFF TIME range [oFF.RNG]※4	999.999→9999.99→99999.9→999999→99:59.99→999:59.9 TIMER s 99999.9←9999:59←99:59:59←999999←99999.9←9999:59 TIMER h TIMER h:m TIMER h:m:s TIMER m TIMER m TIMER m:s
OUT 2 output time※5 [oUt2]	※Set one-shot output time of OUT 2. ※Setting range: 00.01 to 99.99 sec, Hold ※When number of tens digit is flashing, press the ⌃ key once and HoLd appears.
OUT 1 output time※5 [oUt1]	※Set one-shot output time of OUT 1. ※Setting range: 00.01 to 99.99 sec, Hold ※When number of tens digit is flashing, press the ⌃ key once and HoLd appears.
OUT output time※5 [oUt.t]	※Setting range: 00.01 to 99.99 sec, Hold ※When number of tens digit is flashing, press the ⌃ key once and HoLd appears.
Input logic※6 [SIG]	nPn: No-voltage input, PnP: Voltage input
Input signal time※6 [IN-t]	1 ⟷ 20, unit: ms ※Set min. width of INA, INHIBIT, RESET, TOTAL RESET signal
Memory protection [dAtA]	CLr ⟷ rEC ※CLr: Resets the counting value when power OFF. rEC: Maintains the counting value when power OFF. (memory protection)
Key lock [LoCK]	L.oFF→LoC.1 LoC.3←LoC.2 ※L.oFF: Unlock keys, key lock indicator turns OFF LoC.1: Locks RESET key, key lock indicator turns ON LoC.2: Locks ⌃, ⌃ keys, key lock indicator turns ON LoC.3: Locks RESET, ⌃, ⌃ keys, key lock indicator turns ON

※1: This is for the voltage input (PNP)/no-voltage input (NPN) selectable model (CX6□-□□).
※2: Int.2 mode is available only for 2-stage setting model(CX6□-2P□□).
※3: When output mode is OND, ONd1, ONd2, ONd3, FLk1, FLk2, INT, INt1, INt2, OFD, INTG, TOTAL, ONtD, set time range [t.RNG].
※4: When output mode is FLK, NFD, NFD.1, set output ON TIME range [oN.RNG] and output OFF TIME range [oFF.RNG].
※5: In case of 1-stage setting model (CX6□-1P□□), oUt1 output time does not appear.
　　oUt2 output time is displayed as oUt.t.
※6: In case of free voltage input model (CX6□-□□F), this parameter does not appear due to fixed setting.

LCD Display Counter/Timer

◼ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

Output mode	Time chart	Operation
OND [ond]	**Signal On Delay (Power RESET)** 	1)Time starts when INA signal turns ON. 2)When INA signal turns OFF, time resets. 3)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 4)Control output operates as retained (Hold) or one-shot output. T1: Setting time 1 T2: Setting time 2
OND.1 [ond.1]	**Signal On Delay 1 (Power RESET)** 	1)Time starts when INA signal turns ON. 2)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3)Control output operates as retained (Hold) or one-shot output. 4)Only first INA input signal is valid in case INA input signal is repeatedly applied. T1: Setting time 1 T2: Setting time 2
OND.2 [ond.2]	**Power On Delay 2 (Power Hold)** 	1)Power ON Time Start (there is no INA function) 2)RESET ON: Time RESET RESET ON→OFF: Time Start 3)Control output operates as retained (Hold) or one-shot output. 4)It memorizes display value at the moment of power OFF. T1: Setting time 1 T2: Setting time 2
OND.3 [ond.3]	**Power On Delay 3 (Power Hold/RESET)** 	1)Power ON Time Start (there is no INA function) 2)RESET ON: Time RESET RESET ON→OFF: Time Start 3)Control output operates as retained (Hold) or one-shot output. 4)If time reached setting time at the moment of power ON, it is automatically reset.

※Power RESET: There is no memory protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
  (memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)

CX Series

◼ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

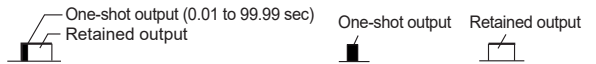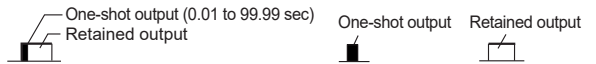| Output mode	Time chart	Operation
FLK [FLと]	**Flicker (Power RESET)** POWER INA(START) INH(INHIBIT) RESET T.off Setting time T.on Setting time 0 UP Display T.off Setting time Down T.on Setting time 0 T.off | T.on | Ta | Tb | Ton | T.off | Ton | T.off | Ton | T.off OUT2(OUT)	1) Time starts when INA signal turns ON. 2) When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3) Control output operates as retained output, output turns off for the T.off time and turns off for the T.off time and turns on for the T.on time repeatedly. Ta+Tb = T.off 4) The T.on time and T.off time must be set individually. 5) In case of using the contact output, min. setting time must be set over 100ms. POWER INA T.off | T.on | T.off OUT2 (OUT)
FLK.1 [FLと.1]	**Flicker 1 (Power Reset)** **Retained (Hold) output** POWER INA(START) INH(INHIBIT) RESET Setting time Up 0 Display Setting time Down 0 OUT2(OUT)	1) Time starts when INA signal turns ON. 2) When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3) Control output operates as retained (Hold) output. 4) 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(START) INH(INHIBIT) RESET Setting time Up 0 Display Setting time Down 0 t | t | t OUT2(OUT)	1) Time starts when INA signal turns ON. 2) When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3) Control output operates as one-shot output. 4) 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 protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
  (memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)

■ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output
One-shot output   Retained output

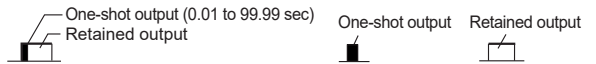| Output mode	Time chart	Operation
FLK.2 [FLK.2]	**Flicker 2 (Power Hold)** **Retained (Hold) output** POWER, INA(START), INH(INHIBIT), RESET, Setting time, Up, Display, 0, Setting time, Down, 0, OUT2(OUT) **One-shot output** POWER, INA(START), INH(INHIBIT), RESET, Setting time, Up, Display, 0, Setting time, Down, 0, t, t, t, a, t-a, t, OUT2(OUT)	1)Time starts when INA signal turns ON and the display value at the moment when power is off is memorized. 2)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3)Control output operates as retained (Hold) output. 4)Control output will be reversed when it reaches to setting time. (at the initial start, OUT2 control output is OFF). 5)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 1)Time starts when INA signal turns ON and the display value at the moment when power is off is memorized. 2)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3)Control output operates as one-shot output. 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)** POWER, INA(START), INH(INHIBIT), RESET, Setting time, Up, Display, 0, Setting time, Down, 0, OUT2(OUT)	1)Control output turns ON and time starts when INA signal turns ON. 2)When INA signal is OFF, time is reset. 3)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 4)When it reaches setting time, it is auto reset. 5)Control output is ON when the time is progressing. POWER, INA, T, T, OUT2 (OUT), T: Setting time
INT.1 [Int.1]	**Interval 1 (Power RESET)** POWER, INA(START), INH(INHIBIT), RESET, Setting time, Up, Display, 0, Setting time, Down, 0, OUT2(OUT)	1)Control output turns ON and time starts when INA signal turns ON. 2)When INA signal is ON : Power ON Time Start is operated. RESET OFF Time Start is operated. 3)When it reaches setting time, it is auto reset. 4)Control output is ON when the time is progressing. 5)Time is ignored while time is progressing. POWER, INA, T, OUT2 (OUT), T: Setting time

※Power RESET: There is no memory protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
 (memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)

CX Series

◼ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

Output mode	Time chart	Operation
INT.2 [ɪnt.2]	**Interval 2 (Power RESET)** POWER INA(START) INH(INHIBIT) RESET Setting time 1 Setting time 2 Up 0 Display Down Setting time 2 Setting time 1 0 OUT1 OUT2	1)Time starts when INA signal is ON, and resets when INA signal is OFF. 2)INA signal is ON, OUT1 output is ON during T1 (HOLD) or t1. 3)When it reaches setting time 1, display value resets and OUT2 output is ON during T2 (HOLD) or t2 output time. ※Output turns OFF when reaching the setting time even if one-shot is longer than setting time. INA T1 OUT1 t1 T2 OUT2 t2 T1: Setting time 1 T2: Setting time 2 t1: One-shot1 t1: One-shot2 (1-stage SET model has no ɪnt.2 mode)
OFD [ofd]	**Signal Off Delay (Power RESET)** POWER INA(START) INH(INHIBIT) RESET Setting time Up 0 Display Setting time Down 0 OUT2(OUT)	1)If INA is ON, control output remains ON. (except when power is off and reset is on) 2)When INA signal is OFF, time processes. When it reaches setting time, indication value and control output are auto reset automatically. POWER INA T OUT2 (OUT) T: Setting time
NFD [nfd]	**On-Off Delay (Power RESET)** POWER INA(START) INH(INHIBIT) RESET On_Delay Off_Delay Up 0 Display On_Delay Down Off_Delay 0 OUT2(OUT)	1)When INA input is ON, output is ON and time is progressing, then output is OFF after On_Delay time. 2)When INA input is OFF, output is ON and time is progressing, then output is OFF after Off_Delay time. 3)If INA input is OFF within On_Delay time, step 2 starts. 4)If INA input is ON within Off_Delay time, step 1 starts. INA T1 T2 OUT2 (OUT) T1: On_Delay T2: Off_Delay

※Power RESET: There is no memory protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
　(memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)

■ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

Output mode	Time chart	Operation
NFD.1 [nFd.1]	**On-Off Delay1 (Power RESET)** POWER / INA(START) / INH(INHIBIT) / RESET / On_Delay / Off_Delay / 0 / Up / Display / On_Delay / Off_Delay / Down / 0 / OUT2(OUT)	1) When INA input turns ON, time progresses and output turns ON after On_Delay time. 2) When INA input turns OFF, time progresses and output turns OFF after Off_Delay time. 3) If INA input turns OFF within On_Delay time, output will turn ON and step 2 operate. 4) If INA input turns ON within Off_Delay time, output will turn OFF and step 1 operate. INA / T1 / T2 / OUT2 (OUT) / T1: On_Delay / T2: Off_Delay
INTG [IntG]	**Integration Time (Power RESET)** POWER / INA(START) / INH(INHIBIT) / RESET / Setting time / Up / 0 / Display / Setting time / Down / 0 / OUT2(OUT)	1) Time is progressing while INA input is ON. 2) Time progress stops while INA input is OFF. 3) When it reaches the setting time, output is ON.
TOTAL [totAL]	**When memory protection setting is OFF** POWER / INA(START) / INH(INHIBIT) / RESET / Max. time range / Up / 0 / Display / Max. time range / Down / 0	1) Time starts when INA input is ON. 2) When RESET signal is ON, the display value is reset. 3) Time progress stops when INHIBIT signal is ON. 4) The progressed time is reset when power OFF.
	When memory protection setting is ON POWER / INA(START) / INH(INHIBIT) / RESET / Max. time range / Up / 0 / Display / Max. time range / Down / 0	1) Time starts when INA input is ON. 2) When RESET signal is ON, the display value is reset. 3) Time progress stops when INHIBIT signal is ON. 4) The progressed time at the moment of power OFF is memorized.

※Power RESET: There is no memory protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
  (memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)
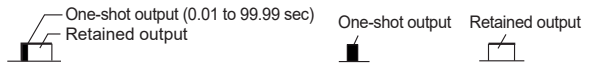※When memory protection setting is OFF, it does not memorize the display value when power turns OFF.
  (the display value is reset when power turns OFF)
※When memory protection setting is ON, it memorizes the display value when power turns OFF.
  When re-suppling the power, it displays the memorized value.

CX Series

■ Output Operation Mode (Timer)

One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

Output mode	Time chart	Operation
On Time Display [on t.d]	**When memory protection setting is OFF** POWER INA(START) INH(INHIBIT) RESET OUT2(OUT) Setting time Up 0 Display Setting time Down 0	※ON time indicate mode of INA signal. 1) Time reset start operates when INA signal turns ON. 2) Time progress stops while INA signal is OFF. 3) When INA signal is OFF, if INA input time is greater than the setting time, the display value flashes and the operation stops until RESET signal ON.※1 4) When time progress stops and power turns OFF, the progressed time is reset.
	When memory protection setting is ON POWER INA(START) INH(INHIBIT) RESET OUT2(OUT) Setting time Up 0 Display Setting time Down 0	※ON time indicate mode of INA signal. 1) Time reset start operates when INA signal turns ON. 2) Time progress stops while INA signal is OFF. 3) When time progress stops and power turns OFF, the progressed time at the moment of power OFF is memorized.

※1: For free voltage input model (CX6☐-☐☐F).
※Power RESET: There is no memory protection. (resets the display value when power is off)
※Power Hold: There is memory protection.
　(memorizes the display value at the moment of power off, indicates the memorized display value when power is resupplied.)
※When memory protection setting is OFF, it does not memorize the display value when power turns OFF.
　(the display value is reset when power turns OFF)
※When memory protection setting is ON, it memorizes the display value when power turns OFF.
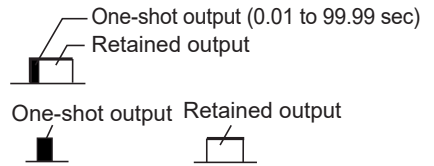　When re-suppling the power, it displays the memorized value.

■ Timer '0' Time Setting

◎ **Available output operation mode to set '0' time setting**

ond, ond.1, ond.2, ond.3, nFd, nFd.1
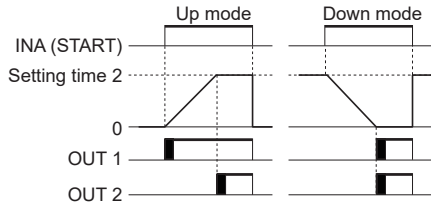
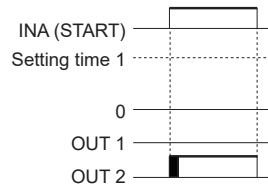One-shot output (0.01 to 99.99 sec)
Retained output

One-shot output   Retained output

◎ **Operation according to output mode (at 0 time setting)**

1) OND (Signal ON Delay) mode [ond]

● **Set '0' for setting time1 .**

Up mode   Down mode
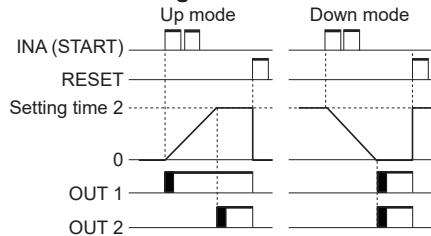
INA (START)
Setting time 2
0
OUT 1
OUT 2

● **Set '0' for setting time2 .**

INA (START)
Setting time 1
0
OUT 1
OUT 2

2) OND.1 (Signal ON Delay 1) mode [ond.1]

● **Set '0' for setting time1 .**

Up mode   Down mode

INA (START)
RESET
Setting time 2
0
OUT 1
OUT 2

● **Set '0' for setting time2 .**

INA (START)
RESET
Setting time 1
0
OUT 1
OUT 2

3) OND.2 (Power ON Delay 2) mode [ond.2]

● **Set '0' for setting time1 .**

Up mode   Down mode

POWER
RESET
Setting time 2
0
OUT 1
OUT 2

● **Set '0' for setting time2 .**

Up mode
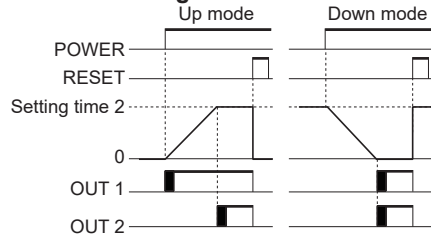
POWER
RESET
Setting time 1
0
OUT 1
OUT 2
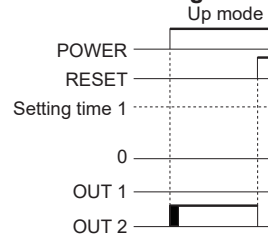
4) OND.3 (Power ON Delay 3) mode [ond.3]

● **Set '0' for setting time1 .**

Up mode   Down mode

POWER
RESET
Setting time 2
0
OUT1
OUT2

● **Set '0' for setting time2 .**

Up mode
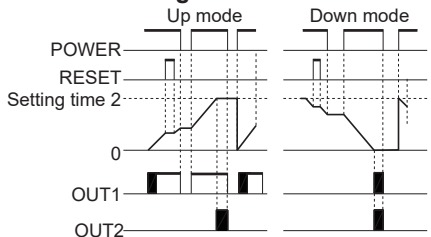
POWER
RESET
Setting time 1
0
OUT1
OUT2

5) NFD (ON-OFF Delay) mode [nFd]

● **Set '0' for Off_Delay setting time.**

INA (START)
RESET
UP   On_Delay
           0
DISPLAY
DOWN   On_Delay
           0
OUT 2
(OUT)

● **Set '0' for On_Delay setting time.**

INA (START)
RESET
UP   Off_Delay
           0
DISPLAY
DOWN   Off_Delay
           0
OUT 2
(OUT)
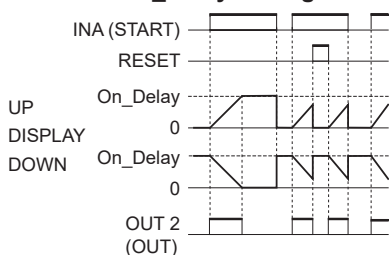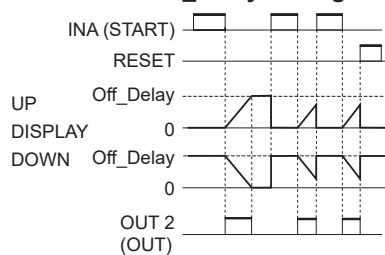
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6) NFD.1 (ON-OFF Delay1) mode [nFd.1]

● **Set '0' for Off_Delay setting time.**

INA (START)
RESET
Up Display — On_Delay / 0
Down — On_Delay / 0
OUT2 (OUT)

● **Set '0' for On_Delay setting time.**

INA (START)
RESET
Up Display — Off_Delay / 0
Down — Off_Delay / 0
OUT2 (OUT)
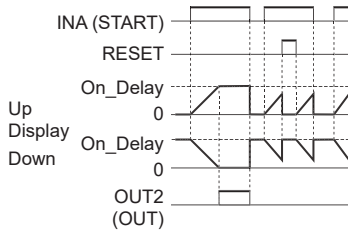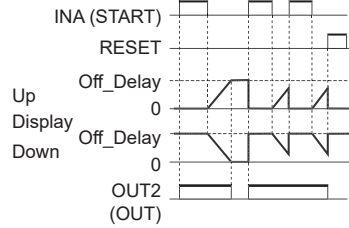
◎ When SET1 is greater than SET2

In case of OND[ond], OND.1[ond.1], OND.2[ond.2] , or OND.3[ond.3] output mode,
● UP mode: When timer setting value 1 (SET1) is greater than setting value 2 (SET2), oUt1 output does not turn ON.
● DOWN mode: When timer setting value 1 (SET1) is greater than setting value 2 (SET2), oUt1 output does not turn ON.
When timer setting value 1 (SET1) and setting value 2 (SET2) are same, oUt1 output turns ON when applied the start signal.

■ Factory Default

	Parameter	Factory default	
		CX6□-□□	CX6□-□□F
Counter	I N.M	Ud-C	Ud-A
	oUt.M	F	F
	CPS	30	—
	oUt2 (oUt.t [*1])	HoLd (fixed)	HoLd (fixed)
	oUt1 [*1]	00.10	00.10
	dP	- - - - - -	- - - - - -
	rESEt	20 ms	—
	SI G	nPn	—
	SCL.dP	-.- - - - - ‾	-.- - - - - ‾
	SCL	1.00000	1.00000
	totAL [*2]	oFF	—
	StARt	000000	000000
	dAtA	CLr	CLr
Timer	U-d	UP	UP
	oUt.M	ond	ond
	oUt2 (oUt.t [*1])	HoLd	HoLd
	oUt1 [*1]	00.10	00.10
	t.RNG	999.999 s	999.999 s
	SI G [*2]	nPn	—
	I N-t	20 ms	—
LoCK		L.oFF	L.oFF
SET1		1000	1000
SET2		5000	5000

※1: For 1-stage setting model (CX6□-1P□□), oUt1 does not appear.
The output time of oUt2 is displayed as oUt.t .
※2: This is for the voltage input (PNP)/no-voltage input (NPN) selectable model (CX□-□□).

■ Cautions during Use

● Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
● In case of 24-48VDC, 24VAC model, power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
● Use the product, 0.1 sec after supplying power.
● When supplying or turning off the power, use a switch or etc. to avoid chattering.
● Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
● Keep away from high voltage lines or power lines to prevent inductive noise.
In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.
Do not use near the equipment which generates strong magnetic force or high frequency noise.
● This unit may be used in the following environments.
①Indoors (in the environment condition rated in 'Specifications')
②Altitude max. 2,000m
③Pollution degree 2
④Installation category II