

CX Series

INSTRUCTION MANUAL

TCD230003AA

Autonics

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics webstie.

CX	6	①	-	②	③	④
----	---	---	---	---	---	---

- ① Size**
S: DIN W 48 × H 48 mm
M: DIN W 72 × H 72 mm
- ② Output**
1P: 1-stage preset
2P: 2-stage preset
- ③ Power supply**
2: 24 VAC ~ ± 10 % 50 / 60 Hz,
24 - 48 VDC ≒ ± 10 %
4: 100 - 240 VAC ~ ± 10 % 50 / 60 Hz
- ④ Signal input method**
No mark: voltage input (PNP), no-voltage
input (NPN) selectable type
F: free voltage input type

Product Components

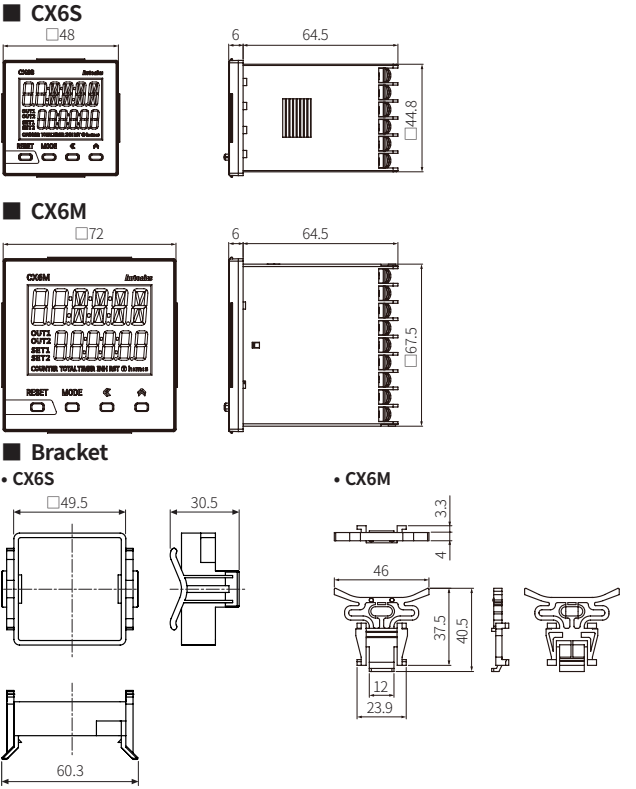
- Product (+ bracket)
- Instruction manual

Sold Separately

- Terminal cover: RSA-COVER, RMA-COVER

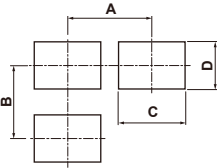
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.

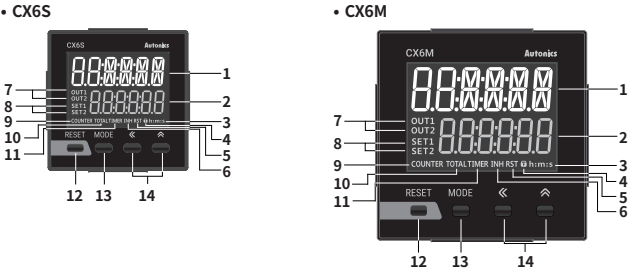


	A	B	C	D
CX6S	≥ 65	≥ 65	45 ^{+0.5} ₋₀	45 ^{+0.5} ₋₀
CX6M	≥ 91	≥ 91	68 ^{+0.7} ₋₀	68 ^{+0.7} ₋₀

Panel cut-out

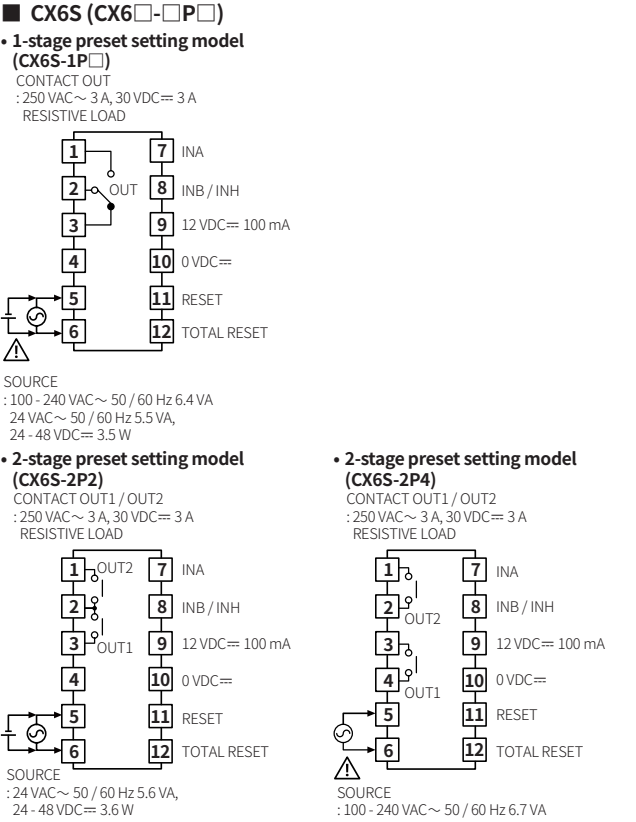


Unit Descriptions

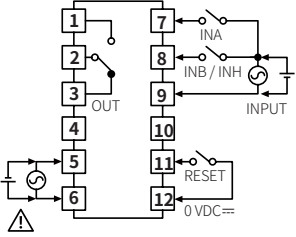


No.	Part name	Name plate	Function
1	Counting value display part (white)	-	RUN mode: Displays counting value, time progress value Counter / Timer parameter group : Displays setting item
2	Setting value display part (green)	-	RUN mode: Displays preset value Counter / Timer parameter group : Displays setting content
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	In timer operation - it turns ON for INB / INH or INHIBIT signal input
7	Output indicator	OUT1, OUT2	Turns ON for the dedicated control output ON
8	Preset value checking, changing indicator (green)	SET, SET1, SET2	Turns ON when checking and changing preset value
9	Counter indicator	COUNTER	Turns ON for ounter operation
10	Total indicator	TOTAL	[CX6□-□P□ model] In total counter display mode, it turns ON with the counter indicator
11	Timer indicator	TIMER	In timer operation - Flashes: time progress / turns ON: stopping time
12	RESET key	[RESET]	Reset the counting value, Reset the total counter counting value
13	MODE key	[MODE]	RUN mode ↔ Counter / Timer parameter group Move to the next when the parameter setting Return to run mode from function setting check mode or preset value change mode
14	Setting key	[◀] [▶]	Enter preset value change mode and move digits Preset value of preset value change mode and setting content of parameter group

Connections

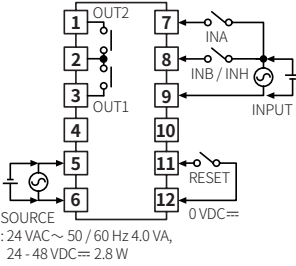


- CX6S (CX6□-□P□F)**
- 1-stage preset setting model (CX6S-1P□F)**
CONTACT OUT : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD
SIGNAL INPUT : 24 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC ≒

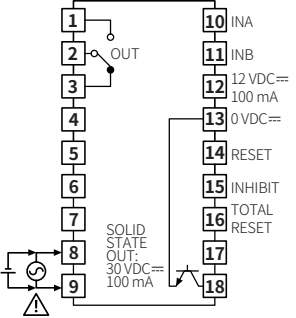


SOURCE : 100 - 240 VAC ~ 50 / 60 Hz 4.2 VA
24 VAC ~ 50 / 60 Hz 3.6 VA,
24 - 48 VDC ≒ 2.5 W

- 2-stage preset setting model (CX6S-2P2F)**
CONTACT OUT1 / OUT2 : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD
SIGNAL INPUT : 24 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC ≒

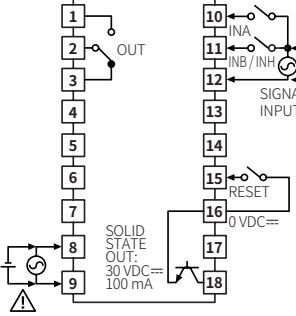


- CX6M (CX6□-□P□F)**
- 1-stage preset setting model (CX6M-1P□F)**
CONTACT OUT : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD



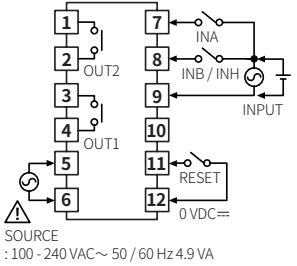
SOURCE : 100 - 240 VAC ~ 50 / 60 Hz 7.1 VA
24 VAC ~ 50 / 60 Hz 6.2 VA,
24 - 48 VDC ≒ 4 W

- CX6M (CX6□-□P□F)**
- 1-stage preset setting model (CX6M-1P□F)**
CONTACT OUT : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD
SIGNAL INPUT : 24 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC ≒

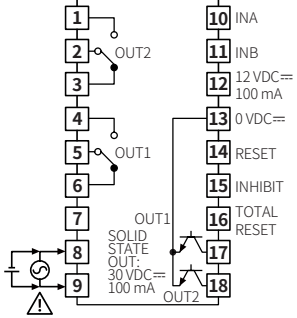


SOURCE : 100 - 240 VAC ~ 50 / 60 Hz 4.7 VA
24 VAC ~ 50 / 60 Hz 3.9 VA,
24 - 48 VDC ≒ 2.9 W

- 2-stage preset setting model (CX6S-2P4F)**
CONTACT OUT1 / OUT2 : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD
SIGNAL INPUT : 24 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC ≒

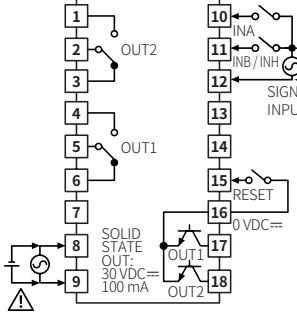


- 2-stage preset setting model (CX6M-2P□F)**
CONTACT OUT1 / OUT2 : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD



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

- 2-stage preset setting model (CX6M-2P□F)**
CONTACT OUT1 / OUT2 : 250 VAC ~ 3 A, 30 VDC ≒ 3 A
RESISTIVE LOAD
SIGNAL INPUT : 24 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC ≒



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

Safety Considerations

- Observe all ‘Safety Considerations’ for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime / disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use the unit in the place where flammable / explosive / corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel to use.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- 05. Check ‘Connections’ before wiring.**
Failure to follow this instruction may result in fire or electric shock.
- 06. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. When connecting the power input and relay output, use AWG 20 (0.50 mm²) cable or over, and tighten the terminal screw with a tightening torque of 0.74 to 0.90 N·m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- 02. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 03. Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in ‘Cautions during Use’.
Otherwise, it may cause unexpected accidents.
- 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.
- Indoors (in the environment condition rated in ‘Specifications’)
- Altitude max. 2,000 m
- Pollution degree 2
- Installation category II

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), 11-segment (the other digits of counting value display: white) LCD			
Character size	W × H (unit: mm)			
Counting value	4.1 × 10.1		6.2 × 15.2	
Setting value	3.3 × 8.1		5 × 12.3	
Counter	Count up, count down, count up / down			
Counting range ⁰¹⁾	-99999 to 999999			
Timer	Count up, count down			
Repeat / SET / voltage / Temp. Error	CX6□-□P□: Power ON Start: ≤ ± 0.01 % ± 0.05 sec Signal ON Start: ≤ ± 0.01 % ± 0.03 sec CX6□-□P□F: Power ON Start: ≤ ± 0.01 % ± 0.08 sec Signal ON Start: ≤ ± 0.01 % ± 0.06 sec			
Input logic (CX6□-□P□)	Voltage input (PNP) - input impedance: 10.8 kΩ, [H]: 5 - 30 VDC≡, [L]: 0 - 2 VDC≡ No-voltage input (NPN) - short-circuit impedance: ≤ 1 kΩ, short-circuit residual voltage: ≤ 2 VDC≡			
Input logic (CX6□-□P□F)	Free voltage input - INA (START), INB (INHIBIT) input, [H]: 24 - 240 VAC~ 50 / 60 Hz / 24 - 240 VDC≡ [L]: 0 - 10 VAC~ / VDC≡ No-voltage input - RESET input, short-circuit impedance: ≤ 1 kΩ, short-circuit residual voltage: ≤ 2 VDC≡			
One-shot output time	0.01 to 99.99 s			
Unit weight (packaged)	Dependent on the model			
CX6□-□P4	≈ 112 g (≈ 157 g)	≈ 117 g (≈ 162 g)	≈ 170 g (≈ 235 g)	≈ 175 g (≈ 240 g)
CX6□-□P4F	≈ 110 g (≈ 155 g)	≈ 115 g (≈ 160 g)	≈ 168 g (≈ 233 g)	≈ 173 g (≈ 238 g)
CX6□-□P2	≈ 111 g (≈ 156 g)	≈ 116 g (≈ 161 g)	≈ 169 g (≈ 234 g)	≈ 174 g (≈ 239 g)
CX6□-□P2F	≈ 109 g (≈ 154 g)	≈ 114 g (≈ 159 g)	≈ 167 g (≈ 232 g)	≈ 172 g (≈ 237 g)
Certification	CE  			

01) It varies depending on the setting of decimal points.

Model	CX6S-□P□□	CX6M-□P□□
Contact control output	Relay	
Type (1-stage)	SPDT (1c) × 1	SPDT (1c) × 1
Type (2-stage)	SPST (1a) × 2	SPDT (1c) × 2
Capacity	≤ 250 VAC~ 3 A, ≤ 30 VDC≡ 3 A resistive load	≤ 250 VAC~ 3 A, ≤ 30 VDC≡ 3 A resistive load
Solid-state control output	NPN open collector	
Type (1-stage)	-	× 1
Type (2-stage)	-	× 2
Capacity	-	≤ 30 VDC≡, 100 mA

Voltage	AC voltage type	AC / DC voltage type
Power supply	100 - 240 VAC~ 50 / 60 Hz	24 VAC~ 50 / 60 Hz, 24 - 48 VDC≡
Permissible voltage range	90 to 110 % of rated voltage	
Power consumption	Dependent on the model	
CX6S-1P□	≤ 6.4 VA	AC: ≤ 5.5 VA, DC: ≤ 3.5 W
CX6S-1P□F	≤ 4.2 VA	AC: ≤ 3.6 VA, DC: ≤ 2.5 W
CX6S-2P□	≤ 6.7 VA	AC: ≤ 5.6 VA, DC: ≤ 3.6 W
CX6S-2P□F	≤ 4.9 VA	AC: ≤ 4.0 VA, DC: ≤ 2.8 W
CX6M-1P□	≤ 7.1 VA	AC: ≤ 6.2 VA, DC: ≤ 4 W
CX6M-1P□F	≤ 4.7 VA	AC: ≤ 3.9 VA, DC: ≤ 2.9 W
CX6M-2P□	≤ 7.5 VA	AC: ≤ 6.3 VA, DC: ≤ 4.1 W
CX6M-2P□F	≤ 5.4 VA	AC: ≤ 4.5 VA, DC: ≤ 3.3 W
External power supply ⁰¹⁾	≤ 12 VDC≡ ± 10 % 100 mA	
Memory retention	≈ 10 years (non-volatile semiconductor memory type)	
Insulation resistance	≥ 100 MΩ (500 VDC≡ megger)	
Dielectric strength	Between the charging part and the case: 3,000 VAC~ 50 / 60 Hz for 1 minute	
Noise immunity	± 2 kV square wave noise (pulse width: 1 μs) by the noise simulator	± 500 V square wave noise (pulse width: 1 μs) by the noise simulator
Vibration	0.75 mm double amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 1 hour	
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 10 minute	
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times	
Shock (malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times	
Relay life cycle	Mechanical: ≥ 5,000,000 operations Electrical: ≥ 100,000 operations	
Ambient temp.	-10 to 55 °C, storage: -25 to 65 °C (no freezing or condensation)	
Ambient humi.	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)	
Protection rating	IP65 (front part, IEC standard)	

01) This is for the CX6□-□P□ model.

