

# Programmable Digital Counters / Timers



## CT Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Features

- Communication function supported (communication model): RS485 (Modbus RTU)
- One-shot output time setting range: 0.01 sec to 99.99 sec by setting per 10ms

#### [Counter]

- Prescale value setting range: 6-digit model: 0.00001 to 99999.9 / 4-digit model: 0.001 to 999.9
- Various input / output modes (9 input / 11 output modes)
- BATCH counter, count Start Point (counting initial value) setting function

#### [Timer]

- Various output modes (13 modes)
- Various time setting range: 6-digit model: 0.001 sec to 99999.9 hour / 4-digit model: 0.001 sec to 9999 hour
- '0' time setting function
- Selectable timer memory retention function for indicator model.

### Ordering Information

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

CT ① ② - ③ ④ ⑤

#### ① Display digits

4: 4-digit  
6: 6-digit

#### ② Size

S: DIN W 48 × H 48 mm  
Y: DIN W 72 × H 36 mm  
M: DIN W 72 × H 72 mm

#### ③ Output

1P: 1-stage preset  
2P: 2-stage preset  
I: indicator

#### ④ Power supply

2: 24 VAC ~ ± 10 % 50 / 60 Hz,  
24 - 48 VDC ± 10 %  
4: 100 - 240 VAC ~ ± 10 % 50 / 60 Hz

#### ⑤ Communication

No mark: none  
T: RS485 communication output

### Software

Download the installation file and the manuals from the Autonics website.

#### ■ DAQMaster

It is the comprehensive device management program for Autonics' products, providing parameter setting, monitoring and data management.

## Specifications

Model	CTS □-□□□		CTY □-□□□		CTM □-□□□	
Display digits	4-digit	6-digit	6-digit	6-digit	6-digit	6-digit
Display method	7-segment (counting value: red, setting value: green) LED					
Character size	W × H (unit: mm)					
Counting value	6.5 × 10	4.5 × 10	4.2 × 9.5	6.6 × 13		
Setting value	4.5 × 8	3.5 × 7	3.5 × 7	5 × 9		
Counter	Count up, count down, count up / down					
Counting range <sup>(1)</sup>	-999 to 9999		-99999 to 999999			
Timer	Count up, count down					
Error	Repeat / SET / voltage / Temp. - Power ON Start: $\leq \pm 0.01\% \pm 0.05$ sec Signal ON Start: $\leq \pm 0.01\% \pm 0.03$ sec					
Input logic	Voltage input (PNP) - input impedance: 5.4 k $\Omega$ , [H]: 5 - 30 VDC $\equiv$ , [L]: 0 - 2 VDC $\equiv$ No-voltage input (NPN) - short-circuit impedance: $\leq 1$ k $\Omega$ , short-circuit residual voltage: $\leq 2$ VDC $\equiv$					
One-shot output time	0.01 to 99.99 s					
Product components	Product, instruction manual					
Bracket	Mounted	× 2		× 2		
Unit weight (packaged)	$\approx 159$ g ( $\approx 212$ g)		$\approx 140$ g ( $\approx 228$ g)		$\approx 252$ g ( $\approx 322$ g)	
Approval	CE, RoHS, ENEC					

(1) It varies depending on the setting of decimal points.

Model	CTS □-□□□		CTY □-□□□		CTM □-□□□	
Contact control output	Relay					
Type (1-stage)	SPDT (1c) × 1		SPDT (1c) × 1		SPDT (1c) × 1	
Type (2-stage)	SPST (1a) × 2		Standard: SPST (1a) × 1, SPDT (1c) × 1 Communication: SPST (1a) × 2		SPST (1a) × 1, SPDT (1c) × 1	
Capacity	250 VAC $\sim$ 5 A, 30 VDC $\equiv$ 5 A resistive load		250 VAC $\sim$ 3 A, 30 VDC $\equiv$ 3 A resistive load		250 VAC $\sim$ 5 A, 30 VDC $\equiv$ 5 A resistive load	
Solid-state control output	NPN open collector					
Type (1-stage)	Standard: × 1, Communication: -		Standard: × 1, Communication: × 1		Standard: × 2, Communication: × 2	
Type (2-stage)	Standard: × 1, Communication: -		Standard: × 1, Communication: -		Standard: × 3, Communication: × 2	
Capacity	$\leq 30$ VDC $\equiv$ , 100 mA		$\leq 30$ VDC $\equiv$ , 100 mA		$\leq 30$ VDC $\equiv$ , 100 mA	

Voltage	AC voltage type	AC / DC voltage type
Power supply	100 - 240 VAC $\pm$ 10% 50 / 60 Hz	24 VAC $\sim$ $\pm 10\%$ 50 / 60 Hz, 24 - 48 VDC $\equiv$ $\pm 10\%$
Power consumption	$\leq 12$ VA	AC: $\leq 10$ VA, DC: $\leq 8$ W
External power supply	$\leq 12$ VDC $\pm$ 10% 100 mA	
Memory retention	$\approx 10$ years (non-volatile semiconductor memory type)	
Insulation resistance	$\geq 100$ M $\Omega$ (500 VDC $\equiv$ megger)	
Dielectric strength	2,000 VAC $\sim$ 50 / 60 Hz for 1 minute	
Noise immunity	$\pm 2$ kV square wave noise (pulse width: 1 $\mu$ s) by the noise simulator	$\pm 500$ V square wave noise (pulse width: 1 $\mu$ s) by the noise simulator
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 1 hour	
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 10 min	
Shock	300 m/s <sup>2</sup> ( $\approx 30$ G) in each X, Y, Z direction for 3 times	
Shock (malfunction)	100 m/s <sup>2</sup> ( $\approx 10$ G) in each X, Y, Z direction for 3 times	
Relay life cycle	Mechanical: $\geq 1,000,000$ operations Electrical: $\geq 100,000$ operations	
Ambient temperature	-10 to 55 °C, storage: -25 to 65 °C (no freezing or condensation)	
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)	
Protection rating	IP65 (front part, IEC standard)	

## Communication Interface

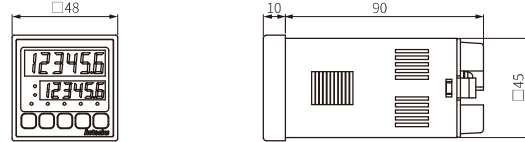
### RS485

Comm. protocol	Modbus RTU (16-bit CRC)
Application standard	Compliance with EIA RS485
Max. connection	31-unit (address: 1 to 127)
Comm. synchronous method	Asynchronous
Comm. method	2-wire half duplex
Comm. distance	$\leq 800$ m
Comm. speed	2,400 / 4,800 / 9,600 (default) / 19,200 / 38,400 bps
Comm. response time	5 to 99 ms (default: 20 ms)
Start bit	1-bit (fixed)
Data bit	8-bit (fixed)
Parity bit	None (default), Even, Odd
Stop bit	1-bit, 2-bit (default)
EEPROM life cycle	$\approx 1,000,000$ operations (Erase / Write)

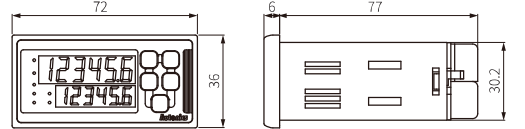
## Dimensions

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

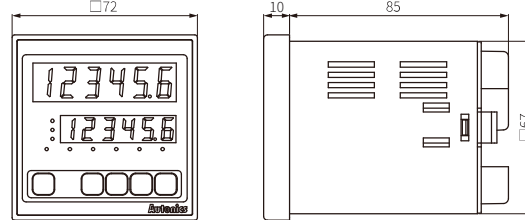
### CTS



### CTY

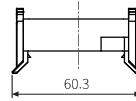
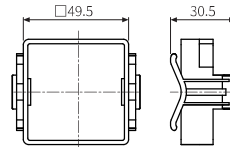


### CTM

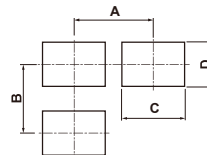


### Bracket

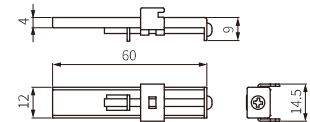
#### CTS



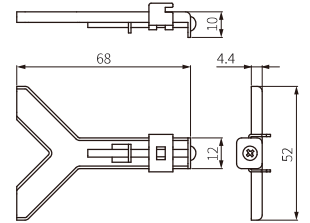
### Panel cut-out



#### CTY



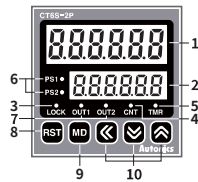
#### CTM



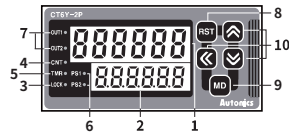
	A	B	C	D
CTS	$\geq 65$	$\geq 65$	45° <sup>±0.5°</sup>	45° <sup>±0.5°</sup>
CTY	$\geq 91$	$\geq 40$	68° <sup>±0.5°</sup>	31.5° <sup>±0.5°</sup>
CTM	$\geq 91$	$\geq 91$	68° <sup>±0.5°</sup>	68° <sup>±0.5°</sup>

## Unit Descriptions

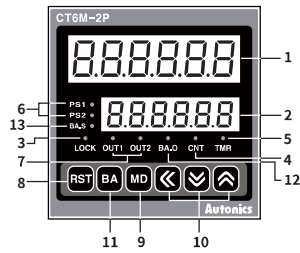
### • CTS



### • CTY



### • CTM



No.	Part name	Name plate	Function
1	Counting value display part (red)	-	RUN mode: Displays counting value, time progress value Parameter 1, 2 group: Displays setting item
2	Setting value display part (green)	-	RUN mode: Displays setting value Parameter 1, 2 group: Displays setting content
3	Key LOCK indicator	LOCK	Turns ON for key LOCK setting
4	Counter indicator	CNT	Turns ON for counter operation
5	Timer indicator	TMR	In timer operation - Flashes: time progress / turns ON: stopping time
6	Preset value checking, changing indicator	PS1, PS2	Turns ON when checking and changing preset value
7	Output indicator	OUT1, OUT2	Turns ON for the dedicated control output ON
8	RESET key	[RST]	Counting value RESET, BATCH counting value RESET
9	MODE key	[MD]	RUN mode ↔ Parameter 1, 2 group Move to the next when the parameter setting
10	Setting key	[◀]	Enter preset value change mode and move digits
		[▼], [▲]	Preset value of preset value change mode and setting content of parameter 1, 2 group Enter function setting check mod and move check items
11	BATCH key	[BA]	Enter BATCH counter indication mode
12	BATCH output indicator (red)	BA.O	Turns ON when BATCH output ON
13	BATCH setting value checking, changing indicator (green)	BA.S	Turns ON when checking and changing BATCH setting value