

Autonics CT Series Programmable Digital Counters / Timers

Part No. [CT4S-1P2](#)Part No. [CT6S-2P2T](#)Part No. [CT6M-1P2T](#)

Features

- Display Options: 4-digit or 6-digit LED displays (red for counting value, green for setting value) with 7-segment format
- CTS Character Size: 4-digit (counting value 6.5mm, setting value 4.5mm), 6-digit (counting value 4.5mm, setting value 3.5mm)
- CTM Character Size: 6-digit (counting value 6.6mm, setting value 5mm)
- Counter Modes: Count up, count down, count up/down with counting range from -999 to 9999 (4-digit) or -99999 to 999999 (6-digit)
- Timer Ranges: 0.001 seconds to 9999 hours (4-digit) or up to 0.001 seconds to 99999.9 hours (6-digit) depending on time base selection
- Counting Speed: Selectable 1, 30, 1k, 5k, or 10k counts per second (cps) with PNP or NPN input logic
- Output Configurations: Relay outputs (SPDT or SPST) and solid-state NPN open collector outputs; 1-stage or 2-stage preset models available
- Communication: RS485 Modbus RTU models enable multi-device networking (up to 31 units on a single bus), allowing remote monitoring, parameter configuration, data reading/writing, and control from a PC, PLC, SCADA, or DAQMaster Software
- Power Supply: Dual voltage options - AC type (100–240 VAC 50/60 Hz) or AC/DC type (24 VAC 50/60 Hz, 24–48 VDC)
- Special Functions: Prescale calculation for length/position measurement, Start Point initialization, one-shot output timing (0.01–99.99 sec), and BATCH counting (CTM models only)
- Programming Features: 16 counter parameters, 12 timer parameters, 6 communication parameters, with key lock and memory retention options
- Operating temperature: -10 to +55 °C [14 to 131 °F]

Overview

The Autonics CT Series programmable digital counters/timers come in two DIN panel sizes: CTS (48 × 48mm) and CTM (72 × 72mm). Available configurations include 4-digit and 6-digit displays with 1-stage or 2-stage preset outputs, and select models with RS485 communication. These units support both counter operations (count up/down with prescale values from 0.00001 to 99999.9) and timer functions (ranging from 0.001 seconds to 99999.9 hours) with multiple input/output operation modes. Power supply options include 100–240 VAC

or 24 VAC/24–48 VDC, with relay outputs rated at 250 VAC, 5A and solid-state NPN outputs up to 30 VDC, 100 mA. The CTM models feature a BATCH counter function for tracking production runs. All models offer IP65 front panel protection, non-volatile memory retention, and configurable parameters including decimal points, prescale values, key lock functions, and various output timing modes.



Autonics CT Series Programmable Digital Counters / Timers

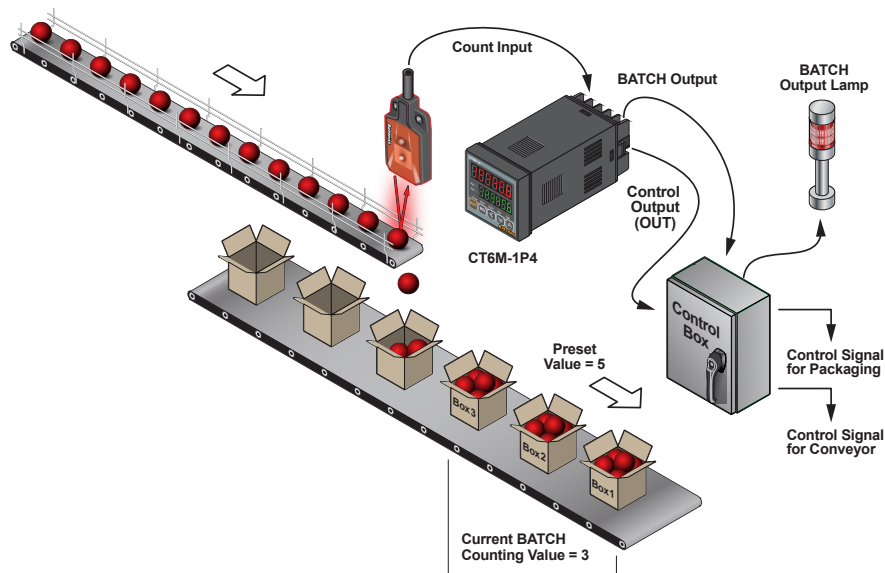
CT Series Programmable Digital Counters / Timers Selection											
Part Number	Display Type	Timing Range	Operating Voltage	Stage Output Types	Batch Output Types	Mounting	Port Protocols	Connector Type	Wt (lb)	Price	
CT4S-1P2	Two-line, 4-digit, two-color LCD	0.001 seconds to 9,999 hours selectable	24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPDT relay	N/A	1/16 DIN	N/A		0.46	\$125.00	
CT4S-1P4			100-240 VAC						0.45	\$125.00	
CT4S-2P2			24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPST relay					0.46	\$154.00	
CT4S-2P4			100-240 VAC	(1) SPST relay					0.45	\$154.00	
CT6S-1P2	Two-line, 6-digit, two-color LCD	0.001 seconds to 99,999.9 hours selectable	24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPDT relay	(1) NPN transistor	9/64 DIN		Screw terminal(s)	0.46	\$140.00	
CT6S-1P4			100-240 VAC						0.45	\$140.00	
CT6S-2P2			24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPST relay (1) SPST relay					0.46	\$166.00	
CT6S-2P2T			24 VAC/24-48 VDC	(2) SPST relays					0.47	\$222.00	
CT6S-2P4			100-240 VAC	(1) Concurrent NPN transistor and SPST relay (1) SPST relay					0.46	\$166.00	
CT6S-2P4T			100-240 VAC	(2) SPST relays					0.46	\$222.00	
CT6M-1P2			24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPDT relay					N/A	0.77	\$169.00
CT6M-1P2T			Modbus RTU Slave						0.78	\$225.00	
CT6M-1P4			N/A						0.76	\$169.00	
CT6M-1P4T			Modbus RTU Slave						0.77	\$225.00	
CT6M-2P2			24 VAC/24-48 VDC	(1) Concurrent NPN transistor and SPST relay (1) Concurrent NPN transistor and SPDT relay					N/A	0.81	\$195.00
CT6M-2P2T			(1) Concurrent NPN transistor and SPDT relay (1) SPST relay	Modbus RTU Slave					0.79	\$251.00	
CT6M-2P4	100-240 VAC	(1) Concurrent NPN transistor and SPST relay (1) Concurrent NPN transistor and SPDT relay	N/A	0.78	\$195.00						
CT6M-2P4T		(1) Concurrent NPN transistor and SPDT relay (1) SPST relay	Modbus RTU Slave	0.78	\$251.00						

Note: For additional specification information, refer to the manufacturer product and instruction manuals. For Modbus RTU information refer to the manufacturer's communication and software user manuals.

Autonics CT Series Programmable Digital Counters / Timers

CT Series Programmable Digital Counters / Timers Resources							
Part Number	Drawing Links	Manufacturer Product Manual	Manufacturer Instruction Manual	Manufacturer Communication User Manual	Manufacturer Software User Manual		
CT4S-1P2	PDF	PDF	PDF	N/A	N/A		
CT4S-1P4	PDF						
CT4S-2P2	PDF						
CT4S-2P4	PDF						
CT6S-1P2	PDF						
CT6S-1P4	PDF						
CT6S-2P2	PDF						
CT6S-2P2T	PDF					PDF	PDF
CT6S-2P4	PDF					N/A	N/A
CT6S-2P4T	PDF					PDF	PDF
CT6M-1P2	PDF					N/A	N/A
CT6M-1P2T	PDF					PDF	PDF
CT6M-1P4	PDF					N/A	N/A
CT6M-1P4T	PDF			PDF	PDF		
CT6M-2P2	PDF			N/A	N/A		
CT6M-2P2T	PDF			PDF	PDF		
CT6M-2P4	PDF			N/A	N/A		
CT6M-2P4T	PDF			PDF	PDF		

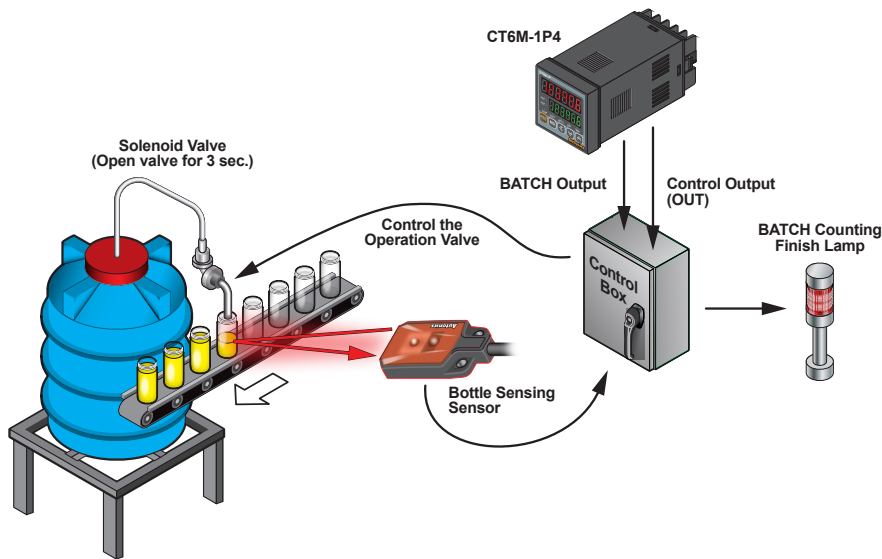
Note: For additional specification information, refer to the manufacturer product and instruction manuals. For Modbus RTU information refer to the manufacturer's communication and software user manuals.



Application 1 — BATCH Counter: Product Packing on a Conveyor Line

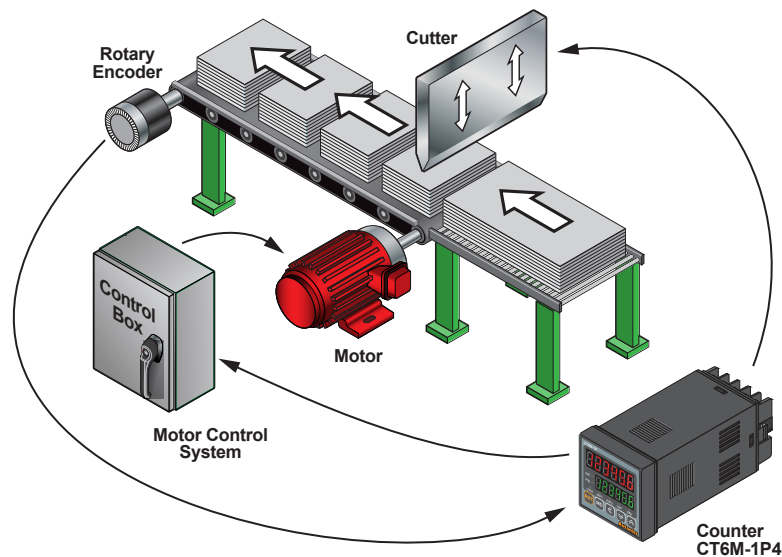
This diagram shows a conveyor belt moving individual products (depicted as circles/spheres) into boxes. A CT6M-1P4 counter is connected to the line via a count input sensor detecting each item. The preset value is set to 5, meaning every time 5 products are counted into a box, the counter fires a control output (OUT) to the control box, which signals the conveyor to move the filled box away and position the next empty one. Simultaneously, the BATCH counter increments by 1. Once the BATCH counter reaches its target of 200 (meaning 200 full boxes have been packed), the BATCH output triggers a control signal for packaging — essentially telling the system it's time to wrap up that production run. The diagram shows three boxes already on the line (Box 1, Box 2, Box 3) with the current BATCH counting value at 3.

Autonics CT Series Programmable Digital Counters / Timers



Application 2 — BATCH Counter: Timed Liquid Filling into Bottles

This diagram shows a bottling line with bottles moving along a conveyor. A bottle sensing sensor detects when each bottle is in position, triggering the CT6M-1P4 to activate a solenoid valve that opens for exactly 3 seconds to fill the bottle with liquid. Each fill cycle increments the BATCH counter by 1. When the BATCH count hits the target (500 bottles in the manual's example), the BATCH output fires to illuminate a "BATCH counting finish lamp," signaling the operator or system that the target production quantity has been met. This is a classic timed-dispensing application pairing the timer function with the BATCH counter.



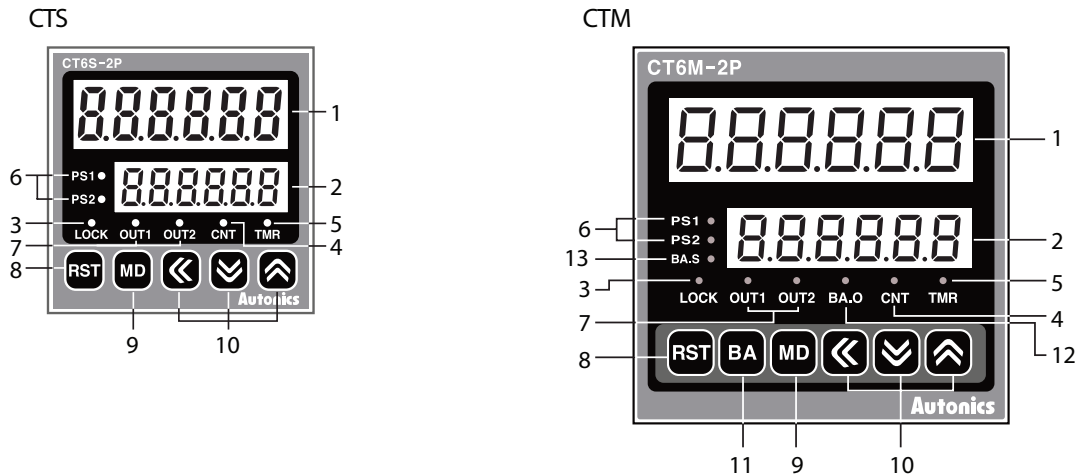
Application 3 — Prescale Function: Conveyor Position Control with a Rotary Encoder

This diagram shows a material cutting setup — a length of material (like sheet or cable) is being fed along a surface by a motor-driven pulley, with a cutter positioned above it. A rotary encoder is mounted on the pulley shaft and feeds pulse signals into the CT Series counter. Because the counter natively counts pulses, the Prescale function is used to convert those raw pulses into a meaningful real-world unit (millimeters in this case). The prescale value is calculated as $\pi \times \text{pulley diameter (22mm)} \div \text{pulses per revolution (1,000)}$, yielding 0.069mm per pulse. This allows the counter display to show actual material length in millimeters rather than raw pulse counts, and the preset can be set to trigger the cutter at a precise length — enabling accurate, repeatable cuts controlled by the motor control system.

Note: For additional specification information, refer to the manufacturer product and instruction manuals. For Modbus RTU information refer to the manufacturer's communication and software user manuals.

Autonics CT Series Programmable Digital Counters / Timers

Display, Indicators & Keys



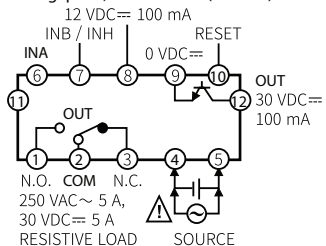
No.	Part name	Name plate	Function
1	Counting value display part (red)	-	RUN mode: Displays counting value, time progress value Parameter 1, 2 group: Displays setting item
2	Setting value display part (green)	-	RUN mode: Displays setting value Parameter 1, 2 group: Displays setting content
3	Key LOCK 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 mode 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

Autonics CT Series Programmable Digital Counters / Timers

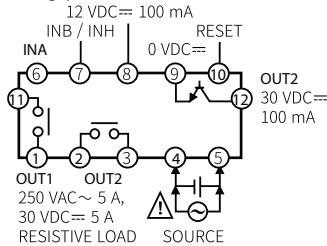
CTS Connections

CTS

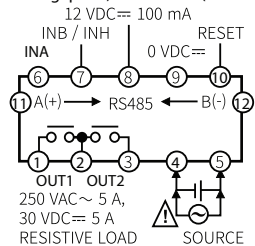
- 1-stage preset, standard model (CTxS-1Px)



- 2-stage preset, standard model (CTxS-2Px)



- 2-stage preset, comm. model (CTxS-2PxT)

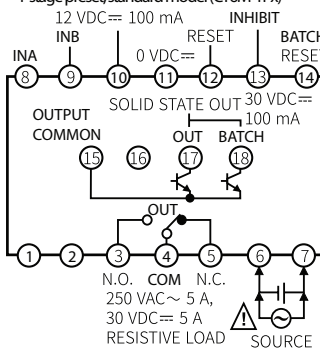


- Counter operation: If INHIBIT signal is applied, count input will be prohibited.
- Timer operation: If INHIBIT signal is applied, time progressing will stop.(HOLD)
- SOURCE: 100 - 240 VAC ~ 50 / 60 Hz 12 VA
24 VAC ~ 50 / 60 Hz 10 VA, 24 - 48 VDC = 8 W

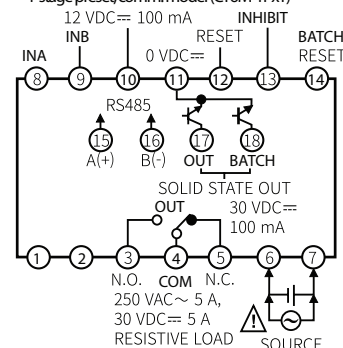
CTM Connections

CTM

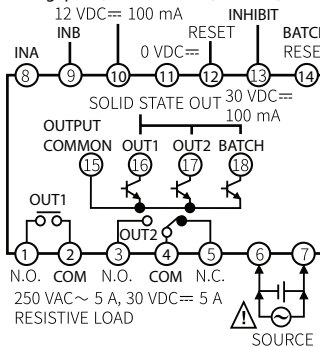
- 1-stage preset, standard model (CT6M-1Px)



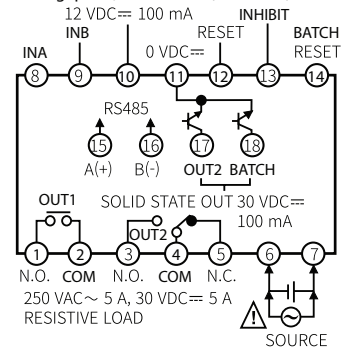
- 1-stage preset, comm. model (CT6M-1PxT)



- 2-stage preset, standard model (CT6M-2Px)



- 2-stage preset, comm. model (CT6M-2PxT)



Note: For additional specification information, refer to the manufacturer product and instruction manuals. For Modbus RTU information refer to the manufacturer's communication and software user manuals.

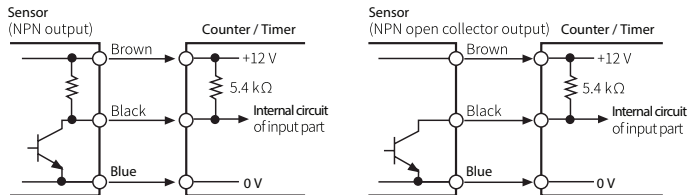
Autonics CT Series Programmable Digital Counters / Timers

Input Wiring

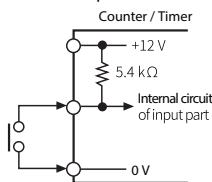
- Input: INA, INB / INH, RESET, INHIBIT, BATCH RESET
- Max. counting speed in the contact input: 1 or 30 cps setting (counter)

NPN input

- Solid-state input

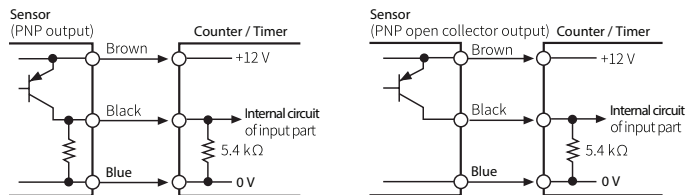


- Contact input

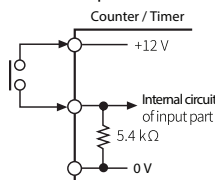


PNP input

- Solid-state input

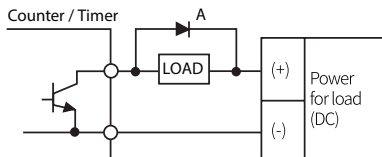


- Contact input



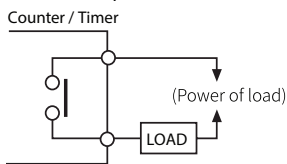
Output Wiring

- Solid-state output



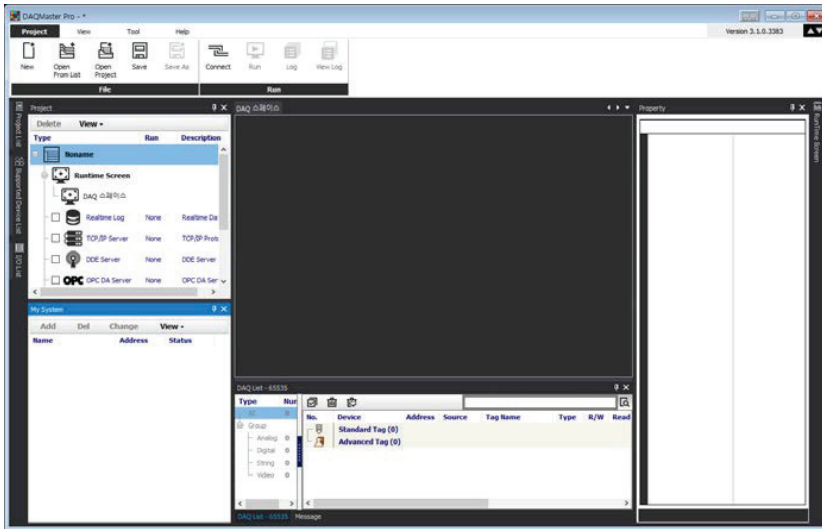
A: When using inductive load (relay etc.), surge absorber (diode, varistor etc.) must be connected between both sides of the load.

- Contact output



Note: For additional specification information, refer to the manufacturer product and instruction manuals. For Modbus RTU information refer to the manufacturer's communication and software user manuals.

Autonics DAQMaster™ Software



Overview

DAQMaster is comprehensive GUI-based device management software developed by Autonics for monitoring and configuring multiple industrial devices simultaneously. The software supports data logging, graphical data analysis, and flexible project management, allowing users to save screen layouts and device configurations together in a project file.

Features

- Multiple device support: DAQMaster can simultaneously connect, monitor, and configure multiple devices, with an auto-scan function that detects units across different network addresses
- Data logging and analysis: Monitoring data can be logged in DAQMaster's native .duf format or CSV, and the built-in Data Analysis tool supports grid and graph views with export to .rtf, .txt, .html, or .csv
- Output of Modbus addresses and descriptions for supported Autonics devices makes connecting and commissioning easy

DAQMaster Software			
Part Number	Description	Manufacturer Manual	Price
<u>AUTONICS-DAQMASTER</u>	Autonics Windows configuration and monitoring software, free download only. For use with Autonics CT series counter timers with RS-485 communication port. Requires USB-485M USB to RS-485 communication adapter.	PDF	\$0.00
<u>USB-485M</u>	AutomationDirect PC adapter, USB A to RS-485 (RJ45/RJ12). For use with GS series AC drives, Toshiba AS3 series AC drives, SureServo servo drives, SOLO and ProSense process controllers, CLICK PLCs and P3-550 PLC.	N/A	\$70.00