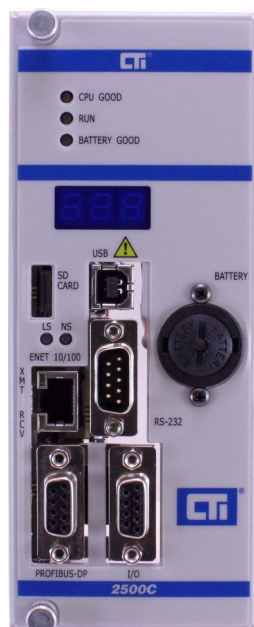


# CTI 2500 Series® Compact Programmable Controllers

Compact



## DESCRIPTION

The 2500 Series® Compact Controllers bring exciting new features and a new level of process performance to CTI's 2500 Series® Control Systems. The Compact Controller easily handles small to large discrete and process applications. Compact processors have the same features and performance as our Classic processors, and include PID loops, alarms and special mathematical functions to make them perfect for process applications.

The controllers are supported by a complete range of digital, analog, and specialized I/O modules, power supplies, and I/O bases, all available from CTI.

## FEATURES

- Executes the same application programs that were developed for the CTI 2500 Series® or Simatic® 545 / 555 CPUs
- Built-in Ethernet and USB ports for programming
- Built-in micro-SD Flash card for firmware update from flash
- Built-in Profibus and RS485 Remote I/O on C200 and C300 models
- Up to 512K bytes memory, 8192 I/O points, 512 PID loops & 512 alarms, depending on model

- Programmable using Workshop or FTSolution for APT®
- Also supports programming serially using TISoft, and APT

## SPECIFICATIONS

### Ports:

Ethernet, 100Mbit, RJ45  
 RS232C: DB9 male  
 Profibus: 12Mbit, DB9 female  
 Remote I/O: DB9 male  
 microSD Flash card: up to 32G bytes  
 Expansion port: future use

### User Memory:

2500C-C100: 128K  
 2500C-C200: 256K  
 2500C-C300: 512K

### Loops / Alarms:

2500C-C100: 16 / 32  
 2500C-C200: 64 / 128  
 2500C-C300: 512 / 512

**Status Display:** 3-Digit LED display for system status, error reporting and IP address

**Backplane Power:** 7 Watts (maximum)

**Operating Temperature:** 0° to 60°C

**Storage Temperature:** -40° to 85°C

**Relative Humidity:** 5% to 95%

**Agency Approvals (pending):** CE, UL UL-C, Class 1 Div 2

**Shipping Weight:** 1.5 lb. (0.68 Kg)



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ROCK SOLID PERFORMANCE. TIMELESS COMPATIBILITY.

**IMPORTANT NOTE:** This product includes a lithium battery for backing up the user program, retentive variables, and system diagnostics. For safety in transportation, the battery is installed but disabled. Prior to putting this product into service, you **MUST** move dipswitch SW1 to the CLOSED position to enable the battery.

## COMPATIBILITY OVERVIEW

The CTI 2500 Series® Compact Processor is designed to be compatible with customer applications that use the Simatic® 545 and 555 controllers. While the CTI 2500 Series® matches or exceeds the capabilities of these processors in most aspects, there are a few areas in which the CTI 2500 Series® operates differently.

## Relay Ladder Logic

The RLL used in the controller provides equivalent instructions for all Simatic® 555 instructions except the XSUB instruction. External subroutines are not supported. If you download a program containing the XSUB instruction, it will be ignored. In many cases XSUB is used for communications with Siemens® Profibus HMI panels. For these installations we have a CTI program free on our website which replaces the XSUB. For XSUB uses other than Siemens® HMI panels, CTI and our partners can develop XSUB replacement software using SF programming. Please contact us.

## Special Function Programs

The controller compiles all SF programs and subroutines. They are compiled in the following situations:

- When a user program is downloaded to the PLC, if the SF Program or subroutine is enabled,
- When the SF program or subroutine is enabled, if the SF program has been modified,
- During a Power Up start (following the application of power).

Programs that contain errors will not be enabled. During a program download, Workshop will display a message indicating the error. Once you acknowledge the message, the download will continue, leaving the program disabled. You must correct the programming error before the program or subroutine can be enabled. User Programs originally written for the Simatic® 505 PLC may contain undetected errors, if the programs were not originally compiled. This can occur because the SF interpreter never attempts to execute the instruction due to the branching logic. A common problem is that additional ENDIF statements are included or the correct number of ENDIF statements is not present.

Unlike the Simatic® 555, there are no restrictions regarding the instructions that can be used in a compiled program.

## User Configuration

The following differences in the user configuration should be noted:

1. Allocation of CS memory is not supported. The CTI 2500 Series® controller uses high speed DRAM to store and execute compiled SF programs and subroutines. Consequently, CS memory is not required.
2. User allocation of User Subroutine memory is not supported. The CTI 2500 controller does not support user subroutines (XSUB). See XSUB description above.
3. A time slice for Report by Exception (RBE) is not supported. Some alternative solutions exist. Please consult us with your exact configuration.
4. A new time slice, Network Communications, has been added to support the local Ethernet port.

## I/O Support

All 2500 Series® Compact I/O modules are supported

## Ethernet and Communications Protocol Support

All 2500 Series® Compact Processor models include a built-in Ethernet port which is compatible with the protocol and ports on the CTI 2572, 2572-A, and 2572-B Ethernet Adapters and the 2500P-ECC1 Ethernet Communications Coprocessor. The capabilities of the Ethernet port on the processor differs slightly from those of the ports on the Ethernet Adapters. The table below summarizes the features included on each product.

Feature	2500C-Cxxx Pro- cessor	2500C-2572-B	2500P-ECC1	2572-A/2572-B
100Mbit ethernet	yes	yes	yes	yes
TCP communications	yes	yes	yes	yes
UDP communications	no	yes	yes	yes
DHCP for IP address assign- ment	no	no	no	yes (2572-A) no (2572-B)
Modbus-TCP	no	server	Client /Server	server
Ethernet-IP (communicate to ControlLogix®)	no	server	no	server
Send/Receive (communicate to S7®)	no	no	no	no
Multicast	no	yes	no	yes
Datashare	no	no	no	no
Peer-Peer communications	server only	client/server	client/server	client/server
Communicates with CTI OPC/ DDE servers	yes	yes	yes	yes
Port configuration using PLC logic	no	Yes	no	yes
Email	no	no	yes	no
Webserver for diagnostics	yes	yes	yes	yes
Number of TCP connections	Programming: 1 HMI: 3	see note 2 below		see note 2 below
Compatible with Siemens® CPUs	N/A	yes	no	yes

### Note 1—2500P-ECC1 Maximum Ethernet Connections

CAMP Server—16 TCP + UDP

CAMP Client—16 (total of TCP and UDP)

Modbus Server—16 TCP only

Modbus Client/Master—64 (total of TCP and UDP)

Network Data Exchange Publisher—20 TCP

Network Data Exchange Subscriber—20 TCP

### Note 2—2572A & 2572-B Maximum Ethernet Connections

CAMP Server—24 TCP + UDP

CAMP Client—8 (total of TCP and UDP)

Ethernet/IP Server—8 connections

Modbus Server—8 connections

## 2500C-Cxxx Programmable Controllers Model Comparison

Feature	2500C-C100	2500C-C200	2500C-C300
<i>User Program RAM</i>	128K	256K	512K
<i>Discrete I/O Points</i>	1024	2048	8192
<i>Word I/O Points</i>	1024	1024	8192
<i>Control Relays</i>	4096	32,768	32,768
<i>Retentive Control Relays</i>	1024	4096	4096
<i>Timers/Counters</i>	1024	20,480	20,480
<i>Compiled SF</i>	Yes	Yes	Yes
<i>Cyclic PID Loops</i>	16	64	128
<i>RLL PID Loops (Fast Loops)</i>	0	0	384
<i>Analog Alarms</i>	32	128	512
<i>Special Function Programs</i>	64	1023	1023
<i>Special Function Subroutines</i>	64	1023	1023
<i>Remote I/O</i>	None	Up to 15 bases	Up to 15 bases
<i>Profibus I/O</i>	None	Up to 112 bases	Up to 112 Bases
<i>Maximum Serial Port Data Rate</i>	115.2K	115.2K	115.2K
<i>On-board User Flash</i>	Yes	Yes	Yes
<i>Local Ethernet Port</i>	Yes	Yes	Yes
<i>USB Port</i>	Yes	Yes	Yes
<i>Battery</i>	5yr storage (0-60C), 3yr continuous@25C, 6mos@60C		