

CTI 2500 Series[®] System Product Guide

Introducing our all-new Janus family of PACs: feature-rich, with IEC61131-compliant programming, yet backwards compatible



2500-C400
"Original" CPU



*CTI Janus PACs look from the past
to the future to ensure seamless
control for life*



2500P-J400
"Janus" CPU



Control Technology, Inc.

ROCK SOLID PERFORMANCE. TIMELESS COMPATIBILITY.

How to order CTI products:

CTI products are marketed through a world-wide network of CTI Industrial Distributors. Contact CTI for the name and location of the CTI Industrial Distributor in your area or find it on our website at:
www.controltechnology.com/purchase

Telecommunications and Website:

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Fax: +1.865.584.5720

Web Home Page: <http://www.controltechnology.com>

Contains descriptions, User Manuals, Application Notes, software downloads, & specifications on our products.

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Missy Johnson - Inside Sales Manager ext 1934

July 2019

Limited Product Warranty

1. Warranty. Control Technology Inc. ("CTI") warrants that this CTI Industrial Product (the Product") shall be free from defects in material and workmanship for a period of one year (2500 Series® Programmable Controller Products) or two years (2500 Series® Touch Panels) from the date of purchase from CTI or from an authorized CTI Industrial Distributor, as the case may be. Repaired or replacement CTI products provided under this warranty are similarly warranted for a period of 6 months from the date of shipment to the customer or the remainder of the original warranty term, whichever is longer. This Product and any repaired or replacement products will be manufactured from new and/or serviceable used parts which are equal to new in the Product. This warranty is limited to the initial purchaser of the Product from CTI or from an authorized CTI Industrial Distributor and may not be transferred or assigned.

2. Remedies. Remedies under this warranty shall be limited, at CTI's option, to the replacement or repair of this Product, or the parts thereof, only after shipment by the customer at the customer's expense to a designated CTI service location along with proof of purchase date and an associated serial number. Repair parts and replacement products furnished under this warranty will be on an exchange basis and all exchanged parts or products become the property of CTI. Should any product or part returned to CTI hereunder be found by CTI to be without defect, CTI will return such product or part to the customer. The foregoing will be the exclusive remedies for any breach of warranty or breach of contract arising therefrom.

3. General. This warranty is only available if (a) the customer provides CTI with written notice of a warranty claim within the warranty period set forth above in Section 1 and (b) CTI's examination of the Product or the parts thereof discloses that any alleged defect has not been caused by a failure to provide a suitable environment as specified in the CTI Standard Environmental Specification and applicable Product specifications, or damage caused by accident, disaster, acts of God, neglect, abuse, misuse, transportation, alterations, attachments, accessories, supplies, non-CTI parts, non-CTI repairs or activities, or to any damage whose proximate cause was utilities or utility-like services, or faulty installation or maintenance done by someone other than CTI.

4. Product Improvement. CTI reserves the right to make changes to the Product in order to improve reliability, function or design in the pursuit of providing the best possible products.

5. Exclusive Warranty. THE WARRANTIES SET FORTH HEREIN ARE CUSTOMER'S EXCLUSIVE WARRANTIES. CTI HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. WITHOUT LIMITING THE FOREGOING, CTI SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, COURSE OF DEALING AND USAGE OF TRADE

6. Disclaimer and Limitation of Liability. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, CTI WILL NOT BE LIABLE FOR ANY BUSINESS INTERRUPTION OR LOSS OF PROFIT, REVENUE, MATERIALS, ANTICIPATED SAVINGS, DATA, CONTRACT, GOODWILL OR THE LIKE (WHETHER DIRECT OR INDIRECT IN NATURE) OR FOR ANY OTHER FORM OF INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND. CTI'S MAXIMUM CUMULATIVE LIABILITY RELATIVE TO ALL OTHER CLAIMS AND LIABILITIES, INCLUDING OBLIGATIONS UNDER ANY INDEMNITY, WHETHER OR NOT INSURED, WILL NOT EXCEED THE COST OF THE PRODUCT(S) GIVING RISE TO THE CLAIM OR LIABILITY. CTI DISCLAIMS ALL LIABILITY RELATIVE TO GRATUITOUS INFORMATION OR ASSISTANCE PROVIDED BY, BUT NOT REQUIRED OF CTI HEREUNDER. ANY ACTION AGAINST CTI MUST BE BROUGHT WITHIN EIGHTEEN (18) MONTHS AFTER THE CAUSE OF ACTION ACCRUES. THESE DISCLAIMERS AND LIMITATIONS OF LIABILITY WILL APPLY REGARDLESS OF ANY OTHER CONTRARY PROVISION HEREOF AND REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHERWISE, AND FURTHER WILL EXTEND TO THE BENEFIT OF CTI'S VENDORS, APPOINTED DISTRIBUTORS AND OTHER AUTHORIZED RESELLERS AS THIRD-PARTY BENEFICIARIES. EACH PROVISION HEREOF WHICH PROVIDES FOR A LIMITATION OF LIABILITY, DISCLAIMER OF WARRANTY OR CONDITION OR EXCLUSION OF DAMAGES IS SEVERABLE AND INDEPENDENT OF ANY OTHER PROVISION AND IS TO BE

Limited Product Warranty

ENFORCED AS SUCH.

7. Adequate Remedy. The customer is limited to the remedies specified herein and shall have no others for a nonconformity in the Product. The customer agrees that these remedies provide the customer with a minimum adequate remedy and are its exclusive remedies, whether based on contract, warranty, tort (including negligence), strict liability, indemnity, or any other legal theory, and whether arising out of warranties, representations, instructions, installations, or non-conformities from any cause. The customer further acknowledges that the purchase price of the Product reflects these warranty terms and remedies.

8. Force Majeure. CTI will not be liable for any loss, damage or delay arising out of its failure (or that of its subcontractors) to perform hereunder due to causes beyond its reasonable control, including without limitation, acts of God, acts or omissions of the customer, acts of civil or military authority, fires, strikes, floods, epidemics, quarantine restrictions, war, riots, acts of terrorism, delays in transportation, or transportation embargoes. In the event of such delay, CTI's performance date(s) will be extended for such length of time as may be reasonably necessary to compensate for the delay.

9. Governing Law. The laws of the State of Tennessee shall govern the validity, interpretation and enforcement of this warranty, without regard to its conflicts of law principles. The application of the United Nations Convention on Contracts for the International Sale of Goods shall be excluded.

REPAIR POLICY

In the event that the Product should fail during or after the warranty period, a Return Material Authorization (RMA) number can be requested verbally or in writing from CTI. Whether this equipment is in or out of warranty, a Purchase Order number will aid in expediting the repair process. The RMA number that is issued and your Purchase Order number should be referenced on the returning equipment's shipping documentation. Additionally, if under warranty, proof of purchase date and serial number must accompany the returned equipment. The current repair and/or exchange rates can be obtained by contacting CTI at 1-800-537-8398.

When returning any module to CTI, follow proper static control precautions. Keep the module away from polyethylene products, polystyrene products and all other static producing materials. Packing the module in its original conductive bag is the preferred way to control static problems during shipment. **Failure to observe static control precautions may void the warranty.** For additional information on static control precautions, contact CTI at 1-800-537-8398.

INTERNATIONAL SHIPMENTS

International shipments are F.O.B. Knoxville, TN. Air freight carrier is specified at time of order.

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2500 Series® System

When it absolutely, positively has to work.™

2500 Series® System

SUPERVISORY LAYER

- SCADA servers in standard and redundant configurations
- Connection to MES and ERP systems
- SCADA clients
- Engineering workstations for SCADA, HMI, and Control Logic development
- Connection to other SCADA systems via OPC

Engineering Workstation for Process Logic, SCADA, and HMI Development



SCADA Servers

single



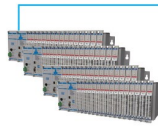
redundant



CONTROL LAYER

- 2500 Series® PLCs in standard and redundant configurations
- 2500 Series® Touch-Panel PCs

Up to 15 Classic or Compact bases on RS485 Remote I/O



2500 Series® PLC System

RS485 REMOTE I/O



DEVICE LAYER

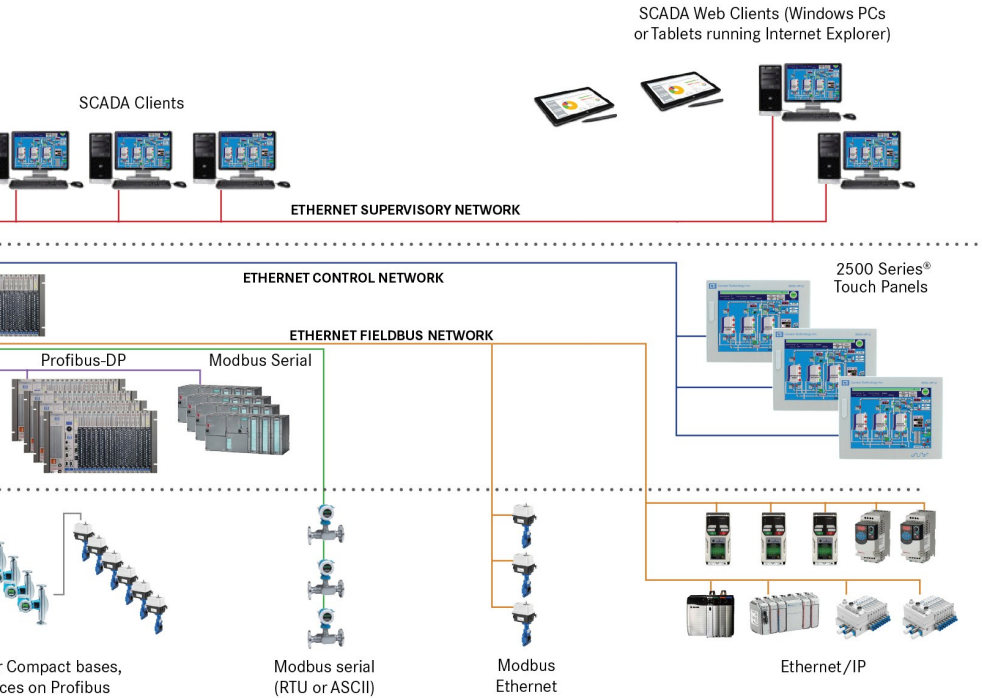
- 2500 Series® Classic and Compact I/O bases on Remote I/O and Profibus
- Connection to third-party valves, flowmeters, VSDs, and other devices on Profibus, Ethernet/IP and Modbus (serial and Ethernet)

Up to 512 points (Classic) or 256 points (Compact) per base for attachment of discrete and analog I/O devices



Up to 112 Classic or third party devi

2500 Series® System Diagram



2500 Series® Classic System

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Coming Soon (Products Expected in 2020)

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CTI Replacement Model Numbers For Siemens® Products

Siemens® Model #	CTI Replace- ment Model #	Siemens® Model #	CTI Replace- ment Model #
505-CP2572	2572-B	505-4716	2596/2597
505-2555	2555-A	505-4732	2597
505-2556	2556	505-4808	2598/2598-8/2599
505-2557	2557	505-4816	2598/2599
505-2571	2573-MOD	505-4832	2599
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505-4216-A	2589-B	505-6508	2500P-R8
505-4232-A	2589-B	505-6516	2500P-R16
505-4308	2588-8 / 2589-B	505-6511	2500-R11-A
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505-4332	2589-B	505-6660-A ¹	2512/2512A/2515A
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505-4532	2597	505-7002	2502
505-4608	2598/2598-8/2599	505-7003	N/A
505-4616	2598/2599	505-7012	2501
505-4632	2599	505-7016	2501
505-4708	2596, 2596-8, 2597	505-7028, 7028-A	2559-TC

CTI Replacement Model Numbers For Siemens® Products

Siemens® Model #	CTI Replace- ment Model #	Siemens® Model #	CTI Replace- ment Model #
505-7038	2559-RTD		
545-1101 ²	2500-C200		
545-1102	2500-C200		
545-1103 ³	2500-C100		
545-1104	2500-C200		
545-1105 ³	2500-C100		
545-1106	2500-C200		
555-1101	2500-C300		
555-1102	2500-C400		
555-1103	2500-C300		
555-1104	2500-C400		
555-1105	2500-C300		
555-1106	2500-C400		

NOTES

¹ if 505-6660-A/B is used in redundant mode, CTI 2512-A or 2515-A must be used for replacement

² if memory extension card is used with 545-1101, then 2500-C300 must be used for replacement

³ if a Profibus-DP annex card is installed, 2500-C200 must be used for replacement

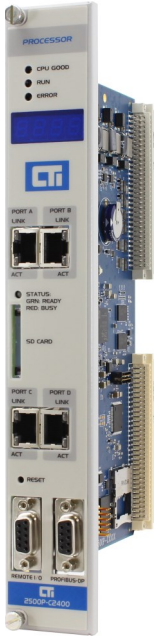
CTI Replacement Model Numbers For Siemens® Products

Siemens® Model #	CTI Replacement Model #	Siemens® Model #	CTI Replacement Model #
500-5001	2588-8, 2589-B	500-5056	2599
500-5002	2588-8, 2589-B	500-5061	2534, 2530
500-5005	2588-8, 2589-B	500-5062	2534, 2530
500-5006	2588-8, 2589-B	500-5187	2589-B
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500-5032	2580		
500-5033	2590-A		
500-5037A	2558, 2550-A		
500-5047A	2562, 2560-A		
500-5048	2581		
500-5049	2591-A		
500-5051	2559-TC		
500-5052	2557		
500-5055	2589-B		

We offer very similar fully compatible solutions for Series 500 CPU's like 520, 525, 530, 535, 560, 575. If you need replacements for these products, please refer to our Replacement Guide at <http://www.controltechnology.com> or contact us.



2500 Series® Classic



2500P-J200 / -J300 / -J400 Janus PACs w/ New IEC 61131 Standards-Based Programming Package

Our new family of Janus PACs will bring completely new capabilities to the CTI 2500 Series® System. Designed to work seamlessly with existing Siemens/TI 505® and CTI 2500 Series® Systems as well as to look to the future with state-of-the-art programming, protocols and capabilities, including direct access to the Industrial Internet of Things (IIoT) using MQTT, these PACs are fast, agile and optimized for quick, easy and cost-effective communications. Our new Janus PAC includes integrated drivers to a wide variety of protocols, allowing communications with best-in-class I/O, drives, and HMI/SCADA no matter the manufacturer. It also utilizes CTI's budget- and user-friendly new Janus Workbench Software programming package that includes all IEC programming languages. Initially available in our Classic size, this family will also include fully featured Compact versions as well.

Features:

- Programming is done using the Janus Workbench Software development package (currently used for programming 2500P-ACP1) which allows use of SFC, FBD, LD, ST, & IL in programs
- Up to 10x execution speed compared to current 2500 Series® CPUs
- Built-in Remote I/O and Profibus interfaces with support for all existing 2500 Series® discrete/analog modules
- External SD card for user backup and file transfer while in RUN mode
- Four Ethernet ports with internal switch that supports simultaneous connection to four different Ethernet networks.
- Embedded HMI function to easily create and view graphics screens directly from the PAC for local operator interface
- Extensive built-in communications capabilities:
 - Optimized peer-to-peer communications with all CTI CPUs and IEC-based products
 - CAMP server for HMI/SCADA access
 - CAMP client for communicating with 2572/2572-x products and Cxxx processors
 - Open Modbus client and server
 - EtherNet/IP Scanner/Adapter/Tag Client/Server
 - MQTT client for direct access to the IIoT
 - OPC-UA server (available shortly after initial product release)
 - Profinet controller and device (available shortly after release)

Coming soon!



2500-C100 CPU with 128K User Memory

The 2500-C100 CPU provides discrete, analog, loop, advanced mathematical and high-speed sequential control capability for your CTI 2500 Series® or Simatic® 505® control system.

Features:

- Replaces Siemens® 545-1103, 1105 (NOTE: If Profibus Annex card is used, 2500-C200 must be used for replacement.)
- 128K user memory
- 1024 digital / 1024 analog I/O
- 16 loops / 32 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Built-in SD flash card slot for firmware upgrade



2500-C200 CPU with 256K User Memory

The 2500-C200 CPU provides discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500 Series® or Simatic® 505® control system.

Features:

- Replaces Siemens® 545-1101, 1102, 1104, 1106. (NOTE: If memory expansion card is used with 545-1101, then 2500-C300 must be used for replacement.)
- 256K user memory
- 2048 digital / 1024 analog I/O
- 64 loops / 128 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Profibus-DP master and RS485 Remote I/O ports
- Built-in SD flash card slot for firmware upgrade



2500-C300 CPU with 512K User Memory

The 2500-C300 CPU provides discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500 Series® or Simatic® 505® control system.

Features:

- Replaces Siemens® 555-1101, 1103, 1105
- 512K user memory
- 8192 digital / 8192 analog I/O
- 512 loops / 512 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Profibus-DP master and RS485 Remote I/O ports
- Built-in SD flash card slot for firmware upgrade



2500-C400 CPU with 3072K User Memory

The 2500-C400 CPU provides discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500 Series® or Simatic® 505® control system.

Features:

- Replaces Siemens® 555-1102, 1104, 1106
- 3072K user memory
- 8192 digital / 8192 analog I/O
- 512 loops / 512 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Profibus-DP master and RS485 Remote I/O ports
- Built-in SD flash card slot for firmware upgrade



2500-40F 40-Position Standard Screw-Terminal Connector

The 2500-40F is a 40-position standard screw-terminal connector for terminating field I/O wiring at the 2500 Series® Programmable controller.

NOTE: Connectors are not included with CTI 2500 Series® I/O modules and must be ordered separately as needed.

Features:

- Replaces Siemens® 2587705-8011
- Front access to screws and wires
- 14-22 AWG
- 15A, 300V rating



2500P-ACP1 Application Coprocessor

The 2500P-ACP1 Application Coprocessor module provides a high performance platform for computing or communications applications which need additional power beyond the main CPU. Up to 4 modules can be connected to one processor. Applications on the 2500P-ACP1 are programmed using CTI Workbench Integrated Development Environment for IEC 61131-3 (2500P-WB-USB). **IMPORTANT NOTE:** Because 2500P-ACP1 employs an advanced dynamic cache communications engine, a CTI 2500 Series® processor is recommended for operation.

Features:

- Programs using open-standards IEC-61131 languages
- Exchanges data between RLL program on host PLC and IEC -61131 program
- Supports Modbus server & client (serial and ethernet)
- Supports EtherNet/IP Adapter/Scanner/Tag Client
- Network Data Exchange with other CTI processors
- Optimized for high-speed communications with 2500P Series® CPUs
- Ability to log data in real time to on-board SD card



2500P-ECC1 Ethernet Communications Coprocessor

The 2500P-ECC1 Ethernet Communications Coprocessor module provides a high performance multi-protocol networking solution for CTI 2500 Series® processors. Up to 4 modules can be connected to one processor.

IMPORTANT NOTE: Because 2500P-ECC1 employs an advanced dynamic cache communications engine, it requires a CTI 2500 Series® processor for operation.

Features:

- Extremely high performance when attaching multiple HMI clients to CTI processors
- CAMP server & client
- Open Modbus server & client
- Network Data Exchange with other CTI processors
- Optimized for high-speed communications with 2500P Series® CPUs



2500P-R4 / -R8 / -R16, 2500-R11-A I/O Bases

I/O bases provide four, eight or sixteen slots for industrial I/O for your CTI 2500 Series® or Simatic® 505® system. The bases provide space for a power supply and Processor or Remote Base Controller (RBC), and slots for up to 16 I/O modules. R11- bases allow for two power supplies and two RBCs in a redundant configuration. 2500P bases include a high-speed channel for use with Advanced Function Modules and 2500P Series CPUs.

Features:

- 2500P-R4 replaces Siemens® 505-6504
- 2500P-R8 replaces Siemens® 505-6508
- 2500-R11-A replaces Siemens® 505-6511
- 2500P-R16 replaces Siemens® 505-6516



2500-RBC Profibus Remote Base Controller

The 2500-RBC Profibus Remote Base Controller (RBC) allows a CTI 2500 Series® or Simatic® 505® I/O base to function as a slave node on a PROFIBUS-DP I/O channel.

Features:

- Replaces Siemens® 505-6870; compatible with Siemens® S5 and S7, as well as Siemens® 505 masters
- Can be used in all currently available CTI and Siemens® 4, 8, and 16 slot bases
- Supports communication speeds from 9.6 Kbaud (maximum cable distance per segment: 1200 m) up to 12 Mbaud (maximum cable distance per segment: 100m)



2500-RFC CPU to RF Modem Cable

The 2500-RFC is a specially constructed cable used to connect the Simatic® 505-6860 RS-485/RF I/O Channel Converter to CTI 2500 Series® Processors. The cable uses special shielding and terminations to provide the best possible communications performance with RF networks.

Features:

- Short 16" length to attach to adjacent RF converter
- Shielded cable for maximum noise immunity
- RS485 terminations on both ends for maximum communications performance



2500-RIO-B RS485 Remote Base Controller

The 2500-RIO-B RS485 Remote Base Controller allows control of a remotely-located CTI 2500 Series® or Simatic® 505® I/O base over a twisted-pair RS485 cable up to 1000m from the CPU.

Features:

- Replaces Siemens® 505-6851-A and 505-6851-B with no rewiring
- Can be used in all currently available CTI and Siemens® 4, 8, 11 and 16-slot bases
- Up to 15 remote bases can be attached to a CPU
- Maximum cable distance between CPU and remote base is 1000m



2500-SSB Single Slot Blank Front Panel

The 2500-SSB is used to cover unused slots in the I/O base, keep out debris, and maintain proper airflow.



2500-TAP RS485 Network Tap

The 2500-TAP Remote I/O Network Tap is specially designed for attaching trunkline and dropline sections to create 2500 Series® remote I/O networks. These taps use an impedance-controlled design for highest noise immunity and include built-in termination resistance which can be easily switched in- or out- of the circuit using a toggle switch. They also include an electrical noise bleed path to chassis ground which can improve the noise immunity of your network.

Features:

- Dust and water resistant installation
- Impedance controlled design
- Built-in terminating resistance
- Electrical noise bleed system for improved noise immunity

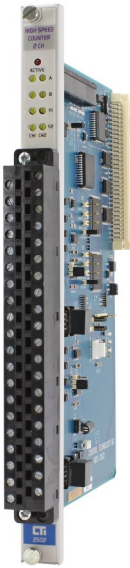


2501 8in/4out Analog Module

The 2501 module provides eight channels of analog input and four channels of analog output in a compact, single-wide module to fit in the CTI 2500 Series® or Simatic® 505® I/O base.

Features:

- Replaces Siemens® 505-7012 and 505-7016 with no rewiring
- Fast 6mSec update time for all channels
- Selectable input/output or input-only operating modes
- Bipolar or unipolar inputs per channel
- Inputs: 1500V channel-to-backplane isolation
- Outputs:
 - 1500V channel-to-channel isolation
 - Voltage and current outputs available simultaneously
 - Bipolar or unipolar outputs per channel



2502 High Speed Counter Module

The 2502 is a high-speed counter module designed to count incoming pulses from external sensors and provide process control outputs based on count status.

Features:

- Replaces Siemens® 505-7002 with no rewiring
- Two independent high-speed counter channels
 - pulse counter mode
 - 1X, 2X, 4X quadrature counter modes
 - 10 KHz count rate with minimum pulse width of 25us
 - two count inputs
 - reset input, inhibit input
 - two outputs
 - LED indicators



2505 Vibration Sensor Interface Module

The 2505 Vibration Sensor Interface Module provides four vibration inputs to the CTI 2500 Series® or Simatic® 505® I/O base. The module is configurable to interface to accelerometers, velocity probes, or proximity probes plus a tachometer input. The module calculates the RMS value of the overall vibration on each channel and passes this value to the controller via the I/O backplane.

Features:

- Four channels to interface to any vibration sensor plus a tach input
- Buffered BNC outputs for external analysis equipment
- Overall RMS and true peak vibration levels computed with high speed ADC
- Alert and Danger alarm levels with program-specified setpoints, time delays, and Trip Multipliers



2512 75-Watt AC/DC Power Supply

The 2512 120/240VAC/VDC Power Supply is designed for CTI 2500 Series® or Simatic® 505® Programmable Controllers. It provides up to 75 watts of power for use by the CPU and I/O modules. The 2512 also provides power using 125VDC from battery backup systems like those found in utility applications.

Features:

- Replaces Siemens® 505-6660, 505-6660-A, and 505-6660-B (if 505-6660-A/B is in redundancy mode, 2512-A must be used)
- 90-264VAC, 47-63Hz single phase, or 125VDC input power
- Up to 75 watts @ +5VDC to CPU and I/O modules
- 125 VDC input power for utility applications



2512-A 75-Watt AC Power Supply with Redundancy Support

The 2512-A 120/240VAC Power Supplies are designed for CTI 2500 Series® or Simatic® 505® Programmable Controllers. They provide up to 75 watts of power for use by the CPU and I/O modules.

Features:

- Replaces Siemens® 505-6660, 505-6660-A, and 505-6660-B
- Works in all CTI 2500 Series® or Simatic® 505® base formats
- 90-264VAC, 47-63 Hz single phase input power
- Up to 75 watts @ +5VDC to CPU and I/O modules
- 2512-A provides power redundancy when used in a dual configuration with 2500-R11-A



2513 24VDC Power Supply

The 2513 is a 24VDC Power Supply designed for CTI 2500 Series® or Simatic® 505® Programmable Controllers. It provides up to 75 watts of power for use by the CPU and I/O modules.

Features:

- Replaces Siemens® 505-6663
- 20-30 VDC input power
- Up to 75 watts @ +5VDC to CPU and I/O modules



2513-A 24VDC Power Supply with Redundancy Support

The 2513-A is a 24VDC Power Supply designed for CTI 2500 Series® or Simatic® 505® Programmable Controllers. The triple-wide module provides up to 75 watts at +5VDC for use by the CPU and I/O modules. Provides backplane power redundancy when operated in a dual configuration in a 2500-R11-A base.

Features:

- Replaces Siemens® 505-6663-A
- Works in all CTI 2500 Series® or Simatic® 505® base formats
- 20-30VDC input power
- Up to 75 watts @ +5VDC to CPU and I/O modules



2515-A 100-Watt Power Supply with Redundancy Support

The 2515-A is a 120 VAC AC power supply for CTI 2500 Series® or Simatic® 505® Programmable Controllers. The 2515-A provides up to 100 watts of power for use by the CPU and I/O modules.

Features:

- Replaces Siemens® 505-6660, 505-6660-A, and 505-6660-B
- Works in all CTI 2500 Series® or Simatic® 505® base formats
- 90-264 VAC, 47-63 Hz single phase input power
- 100 Watts @ +5 VDC to CPU and I/O modules
- 2515-A provides power redundancy when used in a dual configuration with 2500-R11-A

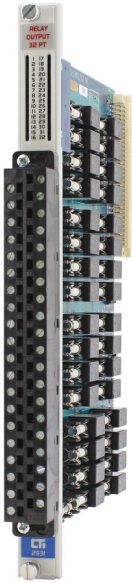


2530 8-Point Form-C Relay Output Module

The 2530 module provides eight isolated Form-C relay outputs for the CTI 2500 Series® or Simatic® 505® I/O base. The 2530 is designed for high-current applications such as switching motor starters. It is also designed for 125 VDC (nominal) low-level current applications and is especially suited for applications in power utility substations.

Features:

- 8 Form-C relay outputs
- 1500V channel-to-backplane isolation
- 6.0 Amps per output
- Individually fused outputs

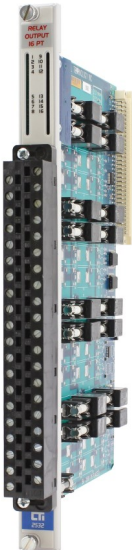


2531 32-Point Form-A Relay Output Module

The 2531 module provides 32 Form-A relay outputs for the CTI 2500 Series® or Simatic® 505® I/O base. The module uses relay output circuits to switch on or off external devices such as pilot lamps, motor starters, or solenoids. The 2531 is designed to switch externally supplied 15 to 240 VAC and 15 to 30 VDC.

Features:

- Replaces Siemens® 505-4932-A with no rewiring
- 32 Form-A relay outputs
- Isolated 1500V group-to-group
- Isolated 1500V channel-backplane
- Isolation in groups of 8
- Individually fused outputs
- 4.0 Amps per output



2532 16-Point Form-A Relay Output Module

The 2532 module provides 16 Form-A relay outputs isolated in groups of four for the CTI 2500 Series® or Simatic® 505® I/O base. The module uses relay output circuits to switch on or off external devices such as pilot lamps, motor starters, or solenoids. The 2532 is designed to switch externally supplied 15 to 240 VAC and 15 to 30 VDC.

Features:

- Replaces Siemens® 505-4916-A with no rewiring
- 16 Form-A relay outputs
- Isolated 1500V group-to-group
- Isolated 1500V channel-backplane
- Individually fused outputs
- 4.0 Amps per output



2534 8-Point Form C Relay Output Module

The 2534 module provides 8 isolated Form C relay outputs for the CTI 2500 Series® or Simatic® 505® I/O base. The 2534 is designed for high-current applications such as switching motor starters. It is also designed for 125 VDC (nominal) low-level current applications and is especially suited for applications in power utility substations.

Features:

- Replaces Siemens® 505-4908 with no rewiring
- 8 Form C relay outputs
- Isolated 1500V channel-to-backplane
- Wide 15-240 VAC, 15-150 VDC output range
- Individually fused outputs
- 4.0 Amps per output



2541 Redundant Processor Manager Module

The 2541 Redundant Processor Manager (RPM) provides an automatic backup solution for CTI 2500 Series® or Simatic® 505® Programmable Controllers. If the active PLC fails, the RPM will automatically switch the remote I/O to the standby PLC. Transfer to the standby processor is bumpless. All remote I/O updates are mirrored to the standby PLC. In addition, up to 4096 words of user-defined critical data can be transferred from the active PLC to the standby PLC every scan. Other non-critical data can be transferred over several scans. The RPM can also switch up to two serially attached operator interface devices.

Features:

- Automatically transfers control to standby PLC upon loss of I/O scan or "heartbeat" pulse from the active PLC
- Switches both remote I/O and serially attached operator interface devices
- Enables PLC logic to monitor status and control switchover
- Allows optional manual switchover capability

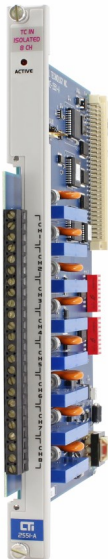


2550-A 8-Channel Isolated Analog Input Module

The 2550-A is a high-speed 8-channel isolated analog input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2550-A translates analog input signals into an equivalent digital word.

Features:

- Fast 4 mSec update time for all 8 channels
- External isolators not required
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- No external power supply required for module
- No external current resistor required
- On-board calculations for 4-20 mA offset inputs

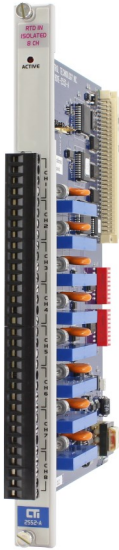


2551-A 8-Channel Isolated Thermocouple Input Module

The 2551-A is a high-speed 8-channel isolated thermocouple input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2551-A translates thermocouple input signals into scaled temperature values and millivolt input signals into equivalent digital words.

Features:

- Fast 2 mSec update time per channel
- Each input configurable for Type J, Type K, or millivolts
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Digital filtering circuit for increased noise immunity



2552-A 8-Channel Isolated RTD Input Module

The 2552-A is a high-speed 8-channel isolated RTD input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2552-A translates RTD input signals into scaled temperature values and millivolt input signals into equivalent digital words.

Features:

- Fast 2 mSec update time per channel
- Supports 100W platinum and 120W nickel RTDs
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- User selectable digital filtering

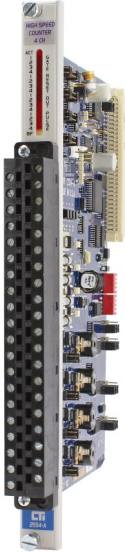


2553-A 2-Channel Mag Meter Input Module

The 2553-A is designed for precise measurement of mag meter or turbine meter pulses both at low speeds and high speeds (Reflex Counter Mode). The 2553-A can also be used to compensate for measurement errors due to wheel wobble (N-tooth counting mode).

Features:

- Reflex counter
- N-tooth mode counting
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Reports measurement in frequency or period

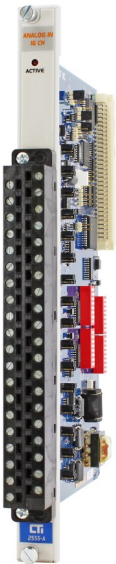


2554-A 4-Channel Isolated High-Speed Counter Module

The 2554-A is an isolated 4-channel high-speed counter input module. Each channel can operate in one of three selectable modes: frequency, period, or general counter. In addition, two channels may be configured together for quadrature mode operation.

Features:

- Single-wide 4-channel high-speed counter
- Operates in frequency, period, or counter mode
- External gate and reset inputs on each channel
- External 1.5A sourcing output per channel
- Auto-reset option for rapid or random asynchronous events

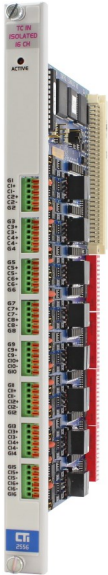


2555-A 16-Channel Analog Input Module

The 2555-A is a high-speed 16-channel differential analog input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2555-A translates analog input signals into an equivalent digital word.

Features:

- Replaces Siemens® 505-2555
- Fast 6 mSec update time per channel
- No external power supply required for module
- 1500V channel-to-backplane isolation
- 140Vrms channel-to-channel isolation
- Accepts voltage or current input signals



2556 16-Channel Isolated Thermocouple Input Module

The 2556 is a high-speed 16-channel isolated thermocouple input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2556 translates millivolt-level signals from the thermocouple element into a scaled temperature value. Multiple thermocouple types are supported as well as millivolt inputs.

Features:

- Replaces Siemens® 505-2556
- 16 bit ADC for each channel
- Supports J, K, R, S, T, E, and L thermocouples and millivolt inputs
- Advanced preprocessing with on-board scaling, alarm detection, filtering and averaging
- Fast 20 mSec update time, open thermocouple detection

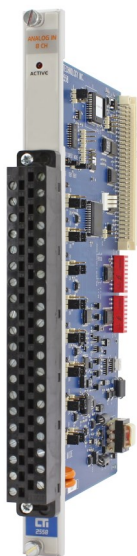


2557 16-Channel RTD Input Module

The 2557 is a high-speed 16-channel isolated RTD input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2557 translates millivolt-level signals from the RTD element into a scaled temperature value.

Features:

- Replaces Siemens® 505-2557
- 16 bit ADC for each channel
- Supports 10W Cu, 100W Pt, and 120W Ni RTDs and millivolt inputs
- Advanced preprocessing with on-board scaling, alarm detection, filtering and averaging
- Fast 20 mSec update time, open RTD detection and lead resistance compensation
- Support for 2, 3, or 4 wire RTD elements



2558 8-Channel Analog Input Module

The 2558 is an 8-channel analog input module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2558 translates analog input signals into equivalent digital words. It is fully compatible with all versions of the Siemens® 545 and 555 Programmable Controllers.

Features:

- Replaces Siemens® 505-6108-A and 505-6108-B with no rewiring
- 8 analog input channels
- 140Vrms isolation between channels
- 1500V channel-to-backplane isolation
- Supports 16-bit and 13-bit resolution
- Fast 5 mSec update time for all 8 channels
- On-board calculations for 4-20 mA offset inputs



2559-FPC 36-Position Screw-Terminal Connector

The 2559-FPC is a 36-position screw-terminal connector with built-in cold junction compensation for the 2559-TC Thermocouple Input Module.

FPC Features:

- Front access to screws and wires
- 14-22 AWG

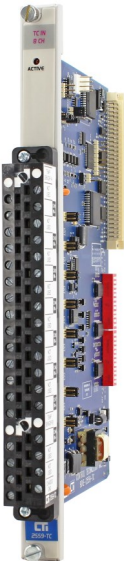


2559-RTD 8-Channel RTD Input Module

The 2559-RTD is a high-speed 8-channel RTD input module which translates RTD input signals into scaled temperature values in a CTI 2500 Series® or Simatic® 505® I/O base.

Features:

- Replaces Siemens® 505-7038 with no rewiring
- 1500V channel-to-backplane isolation
- Supports 7 RTD probe types in Pt, Cu and Ni.
- Configurable for 8 resistive values for RTD probe types
- Supports 2-, 3-, and 4-wire probes
- Data formats in °F, °C and scaled integer
- Error reporting and digital filtering



2559-TC 8-Channel Thermocouple Input Module

The 2559-TC is a high-speed, 8-point thermocouple input module which translates millivolt-level signals from the thermocouple element into a scaled temperature value in a CTI 2500 Series® or Simatic® 505® I/O base. Thermocouple types J, K, T, E, R, S, N, and millivolts are supported.

Features:

- Replaces Siemens® 505-7028 (requires special I/O connector)
- 1500V channel-to-backplane isolation
- Fast 9 mSec update time for all channels
- No CJC calibration necessary
- Microprocessor self-diagnostics
- Requires 2559-FPC connector

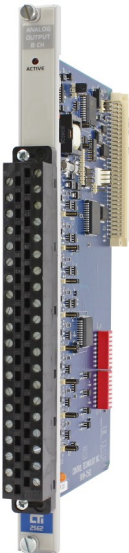


2560-A 8-Channel Isolated Analog Output Module

The 2560-A is a high-speed 8-channel isolated analog output module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2560-A translates a digital word from the controller into equivalent analog outputs.

Features:

- Voltage and current outputs available simultaneously
- Fast 0.25 mSec update time per channel
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Unipolar or bipolar applications supported



2562 8-Channel Analog Output Module

The 2562 is a low-cost, high-speed, 8-channel analog output module compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2562 translates digital words from the controller into equivalent analog outputs.

Features:

- Replaces Siemens® 505-6208-A and 505-6208-B with no rewiring
- 8 analog output channels
- 1500V channel-to-backplane isolation
- Fast 4 mSec update time for all channels
- Voltage and current outputs available simultaneously
- Bipolar or unipolar outputs per channel



2572-B Fast Ethernet TCP/IP Adapter

The 2572-B Ethernet TCP/IP Adapter is the next generation Ethernet interface module for CTI 2500 Series® or Simatic® 505® controllers. The 2572-B provides connectivity to networks using IEEE 802.3, Ethernet II and Transmission Control/Internet Protocol standards, at 10M or 100M speeds.

Features:

- Compatible with Siemens® 505-CP2572 and CTI 2572
- Auto-sensing for 10/100Mbps networks
- TCP/IP support includes UDP and TCP
- Supported protocols include: Camp Client and Server, Modbus TCP Server, Ethernet/IP Server
- Remote programming over Ethernet
- HMI connectivity
- DDE and OPC support available
- DHCP configuration option



2573-MOD Serial Interface Adapter with MODBUS

The 2573-MOD is a microprocessor-based communications adapter for CTI 2500 Series® or Simatic® 505® controllers. The 2573-MOD provides support for communicating with plant-floor devices such as modems, barcode readers, scales, displays, printers, and other controllers.

Features:

- Provides 4 serial ports, each providing RS-422, RS-485, and RS-232 electrical interfaces. All ports operate concurrently and independently.
- Enables the CPU to act as a master or slave for devices which use Modbus RTU or ASCII protocols
- Task Code Master support allows the local CPU to access memory in other SIMATIC® 505® or 500 series systems.



2576 DeviceNet™ Scanner Module

The 2576 interfaces a CTI 2500 Series® or Simatic® 505® system to a DeviceNet™ network. The module provides one DeviceNet™ channel which can attach up to 63 network devices. Multiple modules can reside in the same I/O chassis.

Features:

- DeviceNet™ points appear as a standard I/O
- RS-232 serial port enables configuration of module and network devices
- Front-panel LEDs allow monitoring of module and network devices
- Built-in power tap can be used to power DeviceNet™ network



2577 Profibus DP Slave Adapter

The 2577 provides the ability to read any V, WX, X, and C memory location over Profibus.

Features:

- No changes required to existing program configuration and I/O
- Allows transfer of up to 110 words of data in and 110 words of data out to Profibus Master
- Maintains statistics and diagnostic information for the Profibus network
- Auto-senses Profibus baud rate



2580 16-Point Isolated 95-132 VAC Input Module

The 2580 16-point discrete input module accepts sixteen discrete isolated 95-132 VAC inputs to the CTI 2500 Series® or Simatic® 505® I/O base.

Features:

- Replaces Siemens® 505-2580
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Sourcing and sinking applications
- Indicator LEDs for each channel



2581 16-Point Isolated 12-56 VDC Input Module

The 2581 16-point discrete input module accepts sixteen discrete isolated 12-56 VDC inputs to the CTI 2500 Series® or Simatic® 505® I/O base.

Features:

- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Sourcing and sinking applications
- Indicator LEDs for each channel

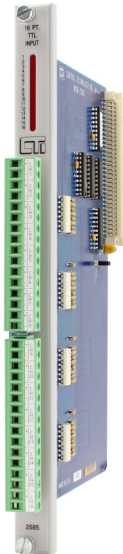


2582 16-Point Isolated 125 VDC Input Module

The 2582 16-point discrete input module accepts sixteen 125 VDC discrete isolated inputs to the CTI 2500 Series® or Simatic® 505® I/O base.

Features:

- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Sourcing and sinking applications
- Indicator LEDs for each channel



2585 16-Point TTL / Word Input Module

The 2585 16-point TTL input module accepts sixteen TTL inputs to the CTI 2500 Series® or Simatic® 505 I/O base. Note that the 2585 is available by special order only. A minimum quantity purchase is required.

Features:

- Selectable discrete (X) or word (WX) format
- 1500V channel-to-backplane isolation
- Sourcing and sinking applications
- Indicator LEDs for each channel



Universal Discrete Input Module

2588-8 8-Point
2589-B 8/16/32-Point

The 2588-8 and 2589-B accept both AC and DC voltage inputs and are compatible with the CTI 2500 Series® or Simatic® 505® I/O base. The 2589-B can be configured to login as 8, 16 or 32-points.

Features:

- 2588-8 replaces Siemens® 505-4008, 4208, 4308, 4408 with no rewiring
- 2589-B replaces Siemens® 505-4008, 4016, 4032, 4116, 4132, 4208, 4216, 4232, 4308, 4316-A, 4332, 4408, 4416-A, 4432-A with no rewiring
- 11V to 250V AC/DC range (NOTE: 2589-A supports max 16 inputs on 250 VAC, 2589-B supports 32 inputs on 250 VAC)



2590-A 16-Point Isolated Discrete 20-132 VAC Output Module

The 2590-A 16-point discrete output module provides sixteen isolated outputs from the CTI 2500 Series® or Simatic® 505® I/O base. The 2590-A is designed to switch externally supplied 20 to 132 VAC.

Features:

- Replaces Siemens® 505-2590-A
- Supports sourcing and sinking applications
- 2.0 Amps per output with no derating
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Outputs individually fused
- Blown fuse indicator
- Blown fuse reporting

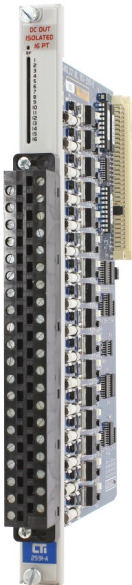


2590-EF 16-Point Isolated 20-132 VAC Output with Front-Panel-Accessible Fuses

The 2590-EF 16-point discrete output module provides sixteen isolated outputs from the CTI 2500 Series® or Simatic® 505® I/O base with front-panel-accessible fuses.

Features:

- Supports sourcing and sinking applications
- Front-panel-accessible fuses for easier maintenance
- 2.0 Amps per output with no derating
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Outputs individually fused
- Blown fuse indicator
- Blown fuse reporting



2591-A 16-Point Isolated 11-146 VDC Output Module

The 2591-A 16-point discrete output module provides sixteen isolated outputs from the CTI 2500 Series® or Simatic® 505® I/O base. The 2591-A is designed to switch externally supplied 11 to 146 VDC.

Features:

- Supports sourcing and sinking applications
- 1.5 Amps per output with no derating
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Outputs individually fused
- Blown fuse indicator
- Blown fuse reporting

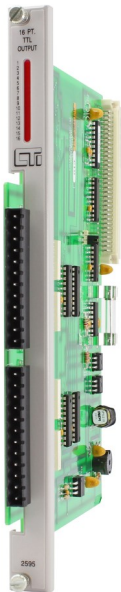


2591-EF 16-Point Isolated 11-146 VDC Output with Front-Panel-Accessible Fuses

The 2591-EF 16-point discrete output module provides sixteen isolated outputs from the CTI 2500 Series® or Simatic® 505® I/O base with front-panel-accessible fuses.

Features:

- Supports sourcing and sinking applications
- Front-panel-accessible fuses for easier maintenance
- 1.5 Amps per output with no derating
- 1500V channel-to-channel isolation
- 1500V channel-to-backplane isolation
- Outputs individually fused
- Blown fuse indicator
- Blown fuse reporting

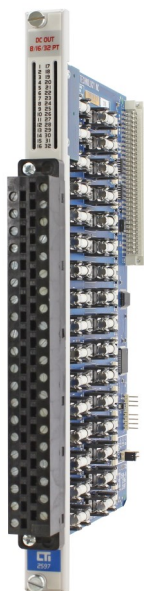


2595 16-Point TTL / Word Output Module

The 2595 16-point TTL output module provides sixteen TTL driven outputs from the CTI 2500 Series® or Simatic® 505® I/O base. Note that the 2595 is available by special order only. A minimum quantity purchase is required.

Features:

- Selectable discrete (Y) or word (WY) format
- Sourcing and sinking applications
- 1500V channel-to-backplane isolation
- Indicator LEDs for each channel



2596-8 8-Point DC Output Module
2596 8/16-Point DC Output Module
2597 8/16/32-Point DC Output Module

These modules provide 8, 16, and 32 11-125 VDC outputs from the CTI 2500 Series® or Simatic® 505® I/O base. The solid-state outputs can be used to switch on or off external devices such as pilot lamps, motor starters, or solenoids.

Features:

- 2596-8 replaces Siemens® 505-4508, 4708
- 2596 replaces Siemens® 505-4508, 4516, 4708, 4716
- 2597 replaces Siemens® 505-4508, 4516, 4532, 4708, 4716, 4732
- Individually fused sourcing outputs
- Wide 11-125 VDC output range
- 2.0 Amps per output



2598-8 8-Point AC Output Module
2598 8/16-Point AC Output Module
2599 8/16/32-Point AC Output Module

These modules provide 8, 16 or 32 11-240 VAC outputs from the CTI 2500 Series® or Simatic® 505® I/O base. The solid-state output circuits can be used to switch on or off external devices such as pilot lamps, motor starters, or solenoids.

Features:

- 2598-8 replaces Siemens® 505-4608, 4808
- 2598 replaces Siemens® 505-4608, 4616, 4808, 4816
- 2599 replaces Siemens® 505-4608, 4616, 4632, 4808, 4816, 4832
- Individually fused sourcing outputs
- Wide 11-240 VAC output range
- 2.0 Amps per output



2500 Series[®] Compact





2500C-C100 CPU with 128K User Memory

The 2500C-C100 CPU provides the same discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500C Series® or Simatic® 505® control system as the 2500-C100 in a smaller form factor.

Features:

- Compatible with programs written for Siemens® 545-1103, 545-1105, and CTI 2500-C100
- Small form factor
- 1024 digital / 1024 analog I/O
- 16 loops / 32 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Built-in SD flash card slot for firmware update



2500C-C200 CPU with 256K User Memory

The 2500C-C200 CPU provides the same discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500C Series® or Simatic® 505® control system as the 2500-C200 in a smaller form factor.

Features:

- Replaces Siemens® 545-1101, 1102, 1104, 1106. (NOTE: If memory expansion card is used with 545-1101, then 2500C-C300 must be used for replacement.)
- Small form factor
- 2048 digital / 1024 analog I/O
- 64 loops / 128 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Profibus-DP master and RS485 Remote I/O ports
- Built-in SD flash card slot for firmware update



2500C-C300 CPU with 512K User Memory

The 2500C-C300 CPU provides the same discrete, analog, loop, advanced mathematical, and high-speed sequential control capability for your CTI 2500C Series® or Simatic 505® control system as the 2500-C300 in a smaller form factor.

Features:

- Replaces Siemens® 555-1101, 1103, 1105
- Small form factor
- 8192 digital / 8192 analog I/O
- 512 loops / 512 alarms
- Built-in Ethernet for HMI and programming
- Built-in USB for programming
- Profibus-DP master and RS485 Remote I/O ports
- Built-in SD flash card slot for firmware update



2500C-2572-B Fast Ethernet TCP/IP Adapter

The 2500C-2572-B Ethernet TCP/IP Adapter is the same as the 2572-B Ethernet interface module but in a smaller form factor. The 2500C-2572-B provides connectivity to networks using IEEE 802.3, Ethernet II and Transmission Control/Internet Protocol standards, at 10M or 100M speeds.

Features:

- Small form factor
- Auto-sensing for 10/100Mbps networks
- TCP/IP support includes UDP and TCP
- Remote programming over Ethernet
- HMI connectivity
- DDE and OPC support available
- DHCP configuration option



2500C-8-IDO-24V 8 Isolated 24VDC Outputs

The 2500C-8-IDO-24V is designed for CTI's 2500 Series® Compact I/O system and outputs a wide range of DC voltage signals. It is designed to provide 8 solid state output circuits to switch on or off external devices such as pilot lamps, motor starters or solenoids using an externally supplied 24VDC. Front panel LEDs provide visual indication for output and fuse status.

Features:

- Single-wide module
- 8 channels isolated channel-to-channel
- Output voltage 11-30VDC
- Output current 0.5A max
- Each channel is individually fused
- Sourcing or sinking outputs
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each channel
- Uses 2500C-32F Connector
- Module supports hot swapping



2500C-8-IDO-120V 8 Isolated 120/240VAC Outputs

The 2500C-8-IDO-120V is designed for CTI's 2500 Series® Compact I/O system and outputs a wide range of AC voltage signals. It is designed to provide 8 solid state output circuits to switch on or off external devices such as pilot lamps, motor starters or solenoids using an externally supplied 120VAC. Front panel LEDs provide visual indication for output and fuse status.

Features:

- Single-wide module
- 8 channels isolated channel-to-channel
- Output voltages 79-265VAC
- Output current 1A max
- Each channel is individually fused
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each channel
- Uses 2500C-32F Connector
- Module supports hot swapping

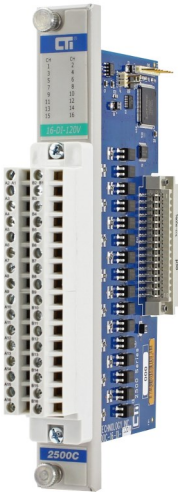


2500C-16-DI-24V 16 Non-Isolated 24V AC/DC Digital Inputs

The 2500C-16-DI-24V module is designed for CTI's 2500 Series® Compact I/O system and accepts a wide range of voltage signals. It is designed to accept both AC and DC voltage allowing the user to pick and choose ranges on a single module. Motor centers, optical sensors, limit switches and utility control are excellent examples of applications for this product.

Features:

- Single-wide module
- 16 inputs
- Supports 10-30V AC/DC voltage inputs
- Channel On/Off Status Indication
- Uses 2500C-32F Connector
- Module supports hot swapping



2500C-16-DI-120V 16 Non-Isolated 120V AC/DC Digital Inputs

The 2500C-16-DI-120V is designed for CTI's 2500 Series® Compact I/O system and accepts a wide range of voltage signals. It is designed to accept both AC and DC voltage allowing the user to pick and choose ranges on a single module. Motor centers, optical sensors, limit switches and utility control are excellent examples of applications for this product.

Features:

- Single-wide module
- 16 inputs
- Supports 79-132V AC/DC voltage inputs
- Channel On/Off Status Indication
- Uses 2500C-32F Connector
- Module supports hot swapping



2500C-16-IDI-24V 16 Isolated 24V AC/DC Digital Inputs

The 2500C-16-IDI-24V is designed for CTI's 2500 Series® Compact I/O system and accepts a wide range of voltage signals. It is designed to accept both AC and DC voltage allowing the user to pick and choose ranges on a single module. Motor centers, optical sensors, limit switches and utility control are excellent examples of applications for this product.

Features:

- Single-wide module
- 16 Isolated channel-to-channel inputs
- Supports 10-30V AC/DC voltage inputs
- Sourcing or sinking Inputs
- Channel On/Off Status Indication
- Uses 2500C-32F Connector
- Module supports hot swapping



2500C-16-IDI-120V 16 Isolated 120V AC/DC Digital Inputs

The 2500C-16-IDI-120V is designed for CTI's 2500 Series® Compact I/O system and accepts a wide range of voltage signals. It is designed to accept both AC and DC voltage allowing the user to pick and choose ranges on a single module. Motor centers, optical sensors, limit switches and utility control are excellent examples of applications for this product.

Features:

- Single-wide module
- 16 Isolated channel-to-channel inputs
- Supports 79-132V AC/DC voltage inputs
- Sourcing or sinking Inputs
- Channel On/Off Status Indication
- Uses 2500C-32F Connector
- Module supports hot swapping



2500C-16-DO-24V Sixteen 24VDC Digital Outputs

The 2500C-16-DO-24V is designed for CTI's 2500 Series® Compact I/O system and outputs a wide range of DC voltage signals. It is designed to provide 16 solid state output circuits to switch on or off external devices such as pilot lamps, motor starters or solenoids using an externally supplied 24VDC. Front panel LEDs provide visual indication for output and fuse status.

Features:

- Single-wide module
- 16 channels isolated in 2 groups of 8
- Output voltages 11-30VDC
- Output current 0.5A max
- Each group of 8 channels are fused
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each group
- Uses 2500C-32F Connector
- Module supports hot swapping

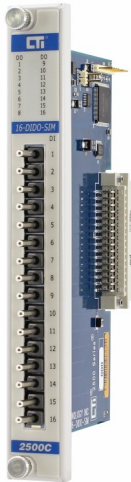


2500C-16-DO-120V Sixteen 120VAC Digital Outputs

The 2500C-16-DO-120V is designed for CTI's 2500 Series® Compact I/O system and outputs a wide range of AC voltage signals. It is designed to provide 16 solid state output circuits to switch on or off external devices such as pilot lamps, motor starters or solenoids using an externally supplied 120VAC. Front panel LEDs provide visual indication for output and fuse status.

Features:

- Single-wide module
- 16 channels isolated in 2 groups of 8
- Output voltages 79-132VAC
- Output current 0.5A max
- Each group of 8 channels are fused
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each group
- Uses 2500C-32F Connector
- Module supports hot swapping

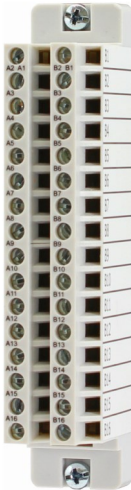


2500C-16-DIDO-SIM 16 Digital Input and Output Simulator

The 2500C-16-DIDO-SIM is designed for CTI's 2500 Series® Compact I/O system and allows the user to simulate discrete inputs and outputs. Switches are used to simulate discrete inputs and the LEDs on the front of the module indicates the status of the assigned outputs. This module is an excellent debugging tool for any application development.

Features:

- Single-wide module
- 16 inputs simulated by front panel switches
- 16 outputs simulated by the front panel LEDs
- Logs on as a standard discrete module
- Supports Classic and Classic Plus operation modes

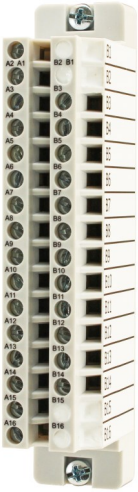


2500C-32F 32-Pin Field Wiring Connector

The 2500C-32F 32-pin Field Wiring Connector is designed for CTI's 2500 Series® Compact I/O system and provides a termination point for field wiring at the 2500C I/O module. The connector is removable and 2500C I/O modules can be hot-swapped, allowing modules to be changed under power.

Features:

- 32 wiring connections
- Accepts 14-22 AWG wires
- Current rating up to 6A @ 300VAC



2500C-32F-CJC 32-Pin Field Wiring Connector with Cold Junction Compensation

The 2500C-32F-CJC 32-pin Field Wiring Connector is designed for CTI's 2500 Series® Compact I/O system and provides a termination point for field wiring at the 2500C-8-TC I/O module. The connector is removable and includes built-in cold junction compensation to allow wiring thermocouple wire directly to the connector.

Features:

- 32 wiring connections
- Accepts 14-22 AWG wires
- Current rating up to 6A @ 300VAC

2500C-4-HSC 4-Channel High Speed Counter Module

The 2500C-4-HSC is an isolated 4-channel high-speed counter input module designed for use with CTI's 2500 Series® Compact system. Each channel can operate in one of three selectable modes: frequency, period, or general counter. In addition, two channels may be used together to provide 1X, 2X or 4X Quadrature mode operation.

Features:

- Single-wide 4-channel high-speed counter
- Small form factor
- Operates in frequency, period, or counter mode
- External gate and reset inputs on each channel
- External 1.5A sourcing output per channel
- Auto-reset option for rapid or random asynchronous events

Coming soon!



2500C-8-AI 8 Analog Inputs

The 2500C-8-AI is designed for CTI's 2500 Series® Compact I/O system and provides 8 analog inputs that can be configured for voltage or current signals on a channel-by-channel basis.

Features:

- 8 analog inputs
- Input ranges 0-5V, 0-10V, 0-20mA, +/-5V, +/-10V, +/-20mA
- 7-segment display for Module Status indication
- No user calibration
- Software Configurable Range Selection
- Uses 2500C-32F removable wiring connector
- Module supports hot swapping



2500C-8-AO 8 Analog Outputs

The 2500C-8-AO is designed for CTI's 2500 Series® Compact I/O system and provides 8 outputs that can be configured for voltage or current signals on a channel-by-channel basis.

Features:

- 8 analog outputs
- Output ranges 0-5V, 0-10V, 0-20mA, +/-5V, +/-10V, +/-20mA
- 7-segment display for Module Status indication
- No user calibration
- Software Configurable Range Selection
- Uses 2500C-32F removable wiring connector
- Module supports hot swapping

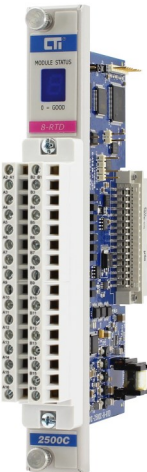


2500C-8-RL-FC 8 Form C Relay Outputs

The 2500C-8-RL-FC is designed for CTI's 2500 Series® Compact I/O system and provides 8 isolated Form C relay outputs. This module is designed for high-current application such as switching motor starters. Because this is dry contact output, there is no leakage current. Front panel LEDs provide visual indication for output and fuse status.

Features:

- Single-wide module
- 8 individually isolated and fused channels
- Form C relays
- Up to 5A output current per channel
- No leakage current
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each channel
- Uses 2500C-32F connector
- Module supports hot swapping

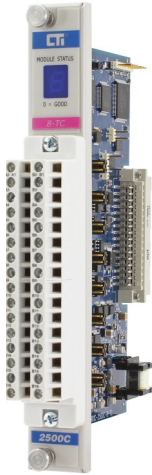


2500C-8-RTD 8 RTD Inputs

The 2500C-8-RTD is designed for CTI's 2500 Series® Compact I/O system and provides 8 RTD inputs to translate RTD signals into a scaled temperature value. This module is designed to work in a CTI 2500 Series® Compact I/O base.

Features:

- 8 RTD inputs
- Supports Classic and Classic Plus modes
- 7-segment display for Module Status indication
- No user calibration
- Supports 2-, 3- and 4-wire RTDs
- Software Configurable Range Selection
- Uses 2500C-32F removable wiring connector



2500C-8-TC 8 Thermocouple Inputs

The 2500C-8-TC is designed for CTI's 2500 Series® Compact I/O system and provides 8 thermocouple inputs to translate millivolt-level signals from the thermocouple element into a scaled temperature value in a CTI 2500 Series Compact I/O base.

Features:

- 8 Thermocouple inputs
- Supports Classic and Classic Plus modes
- 7-segment display for Module Status indication
- No user calibration
- Supports J, K, T, E, R, S, & N thermocouples and millivolt inputs
- Software Configurable Range Selection
- Uses 2500C-32F-CJC removable wiring connector



2500C-PS-120V-35 35-Watt AC Power Supply

The 2500C-PS-120V-35 is designed for CTI's 2500 Series® Compact I/O system. The module accepts input voltages of 120 or 240 VAC and provides 35 watts of power for the RBC and I/O modules.

Features:

- Triple-wide module, plugs into the power supply slot on 2500C-Rxx bases
- 85-264VAC, 47-63Hz input
- Maximum 35 watts backplane power
- 100mSec holdup time



2500C-PS-125V-35 35-Watt DC Power Supply

The 2500C-PS-125V-35 is designed for CTI's 2500 Series® Compact I/O System. This power supply is designed specifically for 125VDC Battery Back-up Systems and accepts input voltages of 85 to 125VDC and provides 35 watts of power.

Features:

- Triple-wide module, plugs into the power supply slot on 2500C-Rxx bases
- 85-125VDC input
- Maximum 35 watts backplane power
- 83mSec holdup time



2500C-PS-24V-35 35-Watt DC Power Supply

The 2500C-PS-24V-35 is designed for CTI's 2500 Series® Compact I/O system. The module accepts 24VDC input voltage and provides 35 watts of power for the RBC and I/O modules.

Features:

- Triple-wide module, plugs into the power supply slot on 2500C-Rxx bases
- 20-30VDC input
- Maximum 35 watts backplane power
- 100mSec holdup time

2500C-R16 / R8 / R4 Compact I/O Bases

2500C-R16 / R8 / R4 bases provide slots for a Power Supply and CPU or Remote Base Controller (RBC), and up to sixteen I/O slots for Compact I/O modules. The chassis design allows for rear panel or subpanel mounting.

The backplane provides power to all the modules and communications between the CPU or RBC and I/O slots. In addition, it provides a high-speed data exchange bus which supports all the Compact System's advanced modules and coprocessor modules. A high-speed data bus is provided to the first 8 (R16 or R8) or 4 (R4) I/O slots and is integrated into the connector on each slot.

Features:

- 16, 8, or 4 I/O slots
- Subpanel mount
- Passive backplane design for reliability
- High-speed data channel transfer supported
- Aluminum construction protects against corrosion and keeps chassis weight at a minimum



2500C-RBC-PRF Profibus Remote Base Controller

The 2500C-RBC-PRF Profibus Remote Base Controller is designed for CTI's 2500 Series® Compact I/O system and allows a CTI 2500 Series® Compact I/O base to function as a slave node on a DP I/O channel that complies with the PROFIBUS standard.

Features:

- Compatible with CTI 2500 Series® and Simatic® 505® CPUs, as well as other Profibus Master devices
- Can be used in all 2500C I/O bases
- Supports communication speeds from 9.6 Kbaud (maximum cable distance per segment: 1200 m) up to 12 Mbaud (maximum cable distance per segment: 100m)
- Supports all CTI and 2500C discrete and analog I/O modules
- GSD file allows configuration
- LED display for error codes and station address





2500C-RBC-RS485 RS485 Remote Base Controller

The 2500C-RBC-RS485 Remote Base Controller is designed for CTI's 2500 Series® Compact I/O system and allows a CTI 2500 Series® Compact I/O base to function as a slave node on an RS485 Remote I/O channel attached to a CTI 2500 Series® or Simatic® 505® CPU.

Features:

- Compatible with CTI 2500 Series® and Simatic® 505® CPUs
- Can be used in all 2500C I/O bases
- Supports all 2500C discrete and analog I/O modules
- LED display for error codes and station address
- Up to 15 remote bases can be attached to a CPU
- Maximum cable distance between CPU and remote base is 1000m

2500C-SSB Single Slot Blank Front Panel

The 2500C-SSB is used to cover unused slots in the I/O base, keep out debris, and maintain proper airflow.





2500 Series[®] Touch Panels & Software



2500-VP15A-N4-W7 (15-inch) Touch-Panel PC with Windows® 7 Embedded, NEMA4

2500 Series® Touch-Panel PCs make a good platform for integrating your own Windows® 7 Embedded HMI applications into 2500 Series® Systems. The panels are based on Intel Atom processor technology and feature a high-brightness LCD panel for easy readability under industrial conditions. The Windows® 7 Embedded operating system allows installation and operation of any compatible application.

Features:

- CPU Intel® Atom™ N2600 1.6GHz
- Memory 2GB DDR2 SDRAM
- LCD Display 15" TFT LCD Resolution 1024 x 768
- Touch Screen 8-wire, resistive
- Operating temperature 0C to +55C
- Windows® 7 Embedded

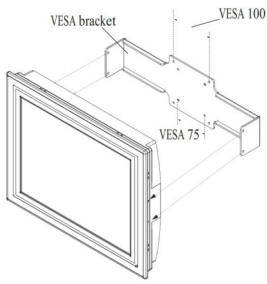


2500-VP-PS 65W 110/220VAC Panel Power Supply

65W 110/220VAC power supply for CTI Touch-Panel PCs.

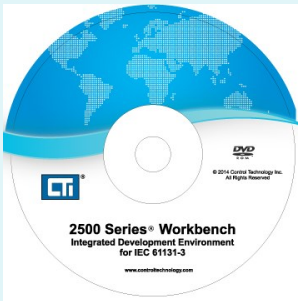
Features:

- Includes "USA style" plug for 110 VAC
- Input 100-240VAC, 47-63Hz
- Output 19VDC @3.4A



2500-VP-VESA-ADPT-KIT VESA Mount Bracket Kit

Adapts CTI HMI Panels and Touch-Panel PCs for standard VESA mount

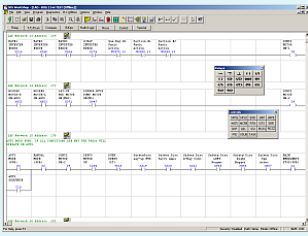


2500P-WB-USB Janus Workbench Software Integrated Development Environment for IEC-61131

The CTI Janus Workbench Software Integrated Development Environment allows development of programs for the 2500P-ACP1 Application Coprocessor module and for the new 2500P-J200, -J300 and -J400 CPUs to be released in 2019. Programs can be developed in any of the five supported IEC-61131 languages—or a combination of multiple languages.

Features:

- Compatible with Windows® 7, 8, 8.1, and 10
- Programs are developed on a PC and downloaded to the 2500P-ACP1
- Functions are included to allow exchange of data with host CPU
- Programming languages include: Function Block Diagram (FBD), Structured Text (ST), Instruction List (IL), Relay Ladder (LD), Sequential Function Chart (SFC)



2500-FASTRAK-S PLC WorkShop Suite by FASTRAK

Programming software designed for CTI 2500 Series® and Simatic/TI® 505 PLCs. WorkShop offers complete support of relay ladder logic, Special Function programs and subroutines, analog alarms and PID loops, and PowerMath functions. It supports the expanded functionality of the CTI 2500 Series processors, including

MegaEDRUM, Floating Point Compare, On Delay Coil, and Off Delay Coil. This suite also includes VersionTrak™ which allows you to incorporate version control practices into your programming environment and Simulator™ utility software which allows you to program, run and test your WorkShop program in a timely fashion without additional hardware.

Features

- TISOFT import/convert utility
- TISOFT hotkey compatible
- Contains built-in data acquisition capabilities
- Integrated PROFIBUS-DP configurator
- VersionTrak and Simulator included



2572-DDS2 Ethernet DDE Server

The 2572-DDS2 DDE Server provides data exchange between DDE client applications and CTI 2500 Series® or Simatic® 505® Programmable Controllers using the CTI 2572 or 2572-B Ethernet module.

NOTE: 2572-DDS2 IS NOT SUPPORTED FOR WINDOWS® VERSIONS AFTER WINDOWS® XP, AND IS NOT SUPPORTED FOR WONDERWARE VERSIONS ABOVE V8.0. FOR COMMUNICATIONS SERVERS FOR WINDOWS® 7 AND WONDERWARE 9 OR ABOVE, WE RECOMMEND CHANGING TO CTI 2500-

OPC KEPSERVEREX OPC AND COMMUNICATIONS SERVER.

Features:

- Communicates with multiple 2572 / 2572-A / 2572-B/ 2500-Cx00
- Supports multiple topics per module
- Supports high-speed "Fast DDE" when used with Wonderware InTouch



3102 APTnet 3110 3M Processor Object for APT

With CTI extensions for APT, you can get more from your existing APT installations. NOTE: 3102 APTnet is not compatible with Windows® 7, and can only be installed on ENGLISH versions of Windows®.

Features:

- APTnet allows APT® to communicate with any CTI 2500 Series® or Simatic® 505® system in your plant using Ethernet and the CTI 2572-B.
- The 3M Processor Object allows use by APT of extended memory available in CTI 2500-C400 Processors.



Series 500[®] System Support Products



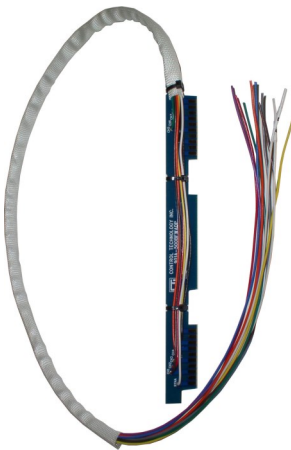
2500-ADP1 Analog Wiring Adapter for Series 500

The 2500-ADP1 is a wiring adapter which converts analog field wiring from Series 500 base format to the 40-pin connector used on CTI 2500 Series® analog I/O modules. This allows rapid upgrade of existing Series 500 systems to newer and more supportable 2500 Series®.

Features:

The 2500-ADP1 cable converts the following Field wiring:

- 500-5037A (8ch Analog In) to CTI 2558 (8ch Analog In) 2500-40F connector.
- 500-5047A (8ch Analog Out) to CTI 2562 (8ch Analog Out) 2500-40F connector



2500-ADP2-DISC Discrete Wiring Adapter for Series 500

The 2500-ADP2-DISC is a wiring adapter which converts discrete I/O field wiring from the Series 500 base to the 40-pin connector used on CTI 2500 Series® I/O modules. This allows rapid upgrade of existing Series 500 systems to newer and more supportable 2500 Series®.

Features:

- Adapter card to plug into Series 500 base (picks up I/O signals from base wiring)
- 1 meter cable ready for termination to 2500- 40F connector on CTI I/O modules

2500-IADP I/O Adapter for Series 500

The 2500-IADP is an I/O Adapter which allows the use of CTI 2500 Series® I/O modules in Texas Instruments Series 500 I/O bases. It provides a transparent path for upgrading old Series 500 systems without the requirement to completely replace the system.



Features:

- Provides mechanical and electrical adaptation of CTI 2500 Series® I/O modules to operate in a Series 500 base
- Compatible with all CTI 2500 Series® discrete and analog I/O modules
- Allows replacement of failed Series 500 I/O modules with inexpensive and widely available CTI 2500 Series® modules

2500-PADP Power Supply Adapter for Series 500

The 2500-PADP is a Power Supply Adapter which allows the use of CTI 2500 Series® Power Supplies in Texas Instruments Series 500 I/O bases. It provides a transparent path for upgrading old Series 500 systems without the requirement to completely replace the system.



Features:

- Provides mechanical and electrical adaptation of CTI 2500 Series® power supplies to operate in a Series 500 base
- Compatible with all CTI 2500 Series® power supplies
- Allows replacement of failed Series 500 power supplies with inexpensive and widely available CTI 2500 Series® modules



2500-R4500 520/530/DBC Adapter for Series 500

The 2500-R4500 is designed to replace various older styles of Texas Instruments Programmable Controllers (520/530/530C/530T) and/or Distributed Base Controllers. The 520/530/ DBC units are commonly referred to as "oil pan" or "sump" units due to their boxy shape with ribbed fins. The 520C/530C/530T programmable controllers (520C-1101/1102, 530C-1102/1104/1108/ 1112, 530T-1104/1112) attached to the I/O base through the 500-5840 adapter base.

Features

- Connects to existing 500-5864/5828 I/O base (8-slot or 16 -slot)
- Use C100 for local-base only, or C200 for local and remote I/O
- Download existing program
- Re-use CTI products when remainder of Series 500 is changed out



2500-RADP RBC Adapter for Series 500

The 2500-RADP is an RBC Adapter which allows the use of CTI 2500 Series® Remote Base Controllers in Texas Instruments Series 500 I/O bases. It provides a transparent path for upgrading old Series 500 systems without the requirement to completely replace the system.

Features:

- Provides mechanical and electrical adaptation of CTI 2500 Series® RBCs to operate in a Series 500 base
- Includes an integrated 2500C-RBC-RS485 Remote Base Controller
- Compatible with all CTI 2500 Series® RBCs
- Allows replacement of failed Series 500 RBCs with inexpensive and widely available CTI 2500 Series® RBCs



2500C-PADP-120V 120VAC 50W Power Supply for Series 500

The 2500-PADP-120V has been designed to replace the Siemens/TI 500 Series Power Supply. It plugs directly into the base using the original 500 mounting design and requires no wiring changes. This power supply provides power for the CPU and all I/O modules plugged into the 500 Chassis.

Features:

- Series 500 base format
- Direct replacement for Siemens/TI 110/220 VAC 50/60Hz power supply
- Maximum 50watts backplane power
- 100mSec holdup time
- No wiring changes
- Allows replacement of failed Series 500 power supplies with inexpensive and widely available CTI 2500 Series® modules



2500C-RADP-RBC Compact Profibus Remote Base Controller Adapter

The 2500C-RADP-RBC is a Compact Profibus RBC Adapter which allows Texas Instruments Series 500 I/O bases to operate on Profibus. It provides a transparent path for upgrading old Series 500 systems without the requirement to completely replace the system.

Features:

- Series 500 base format
- Provides mechanical and electrical adaptation of CTI 2500 Series® Compact RBCs to operate in a Series 500 base
- Includes an integrated 2500C-RBC-PRF Profibus Remote Base Controller
- Allows you to plan system upgrades according to your budget
- Preserves your investment in replacement modules

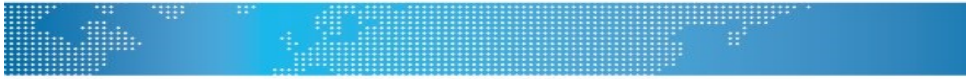


2500C-RADP-RS485 Remote Base Controller Adapter

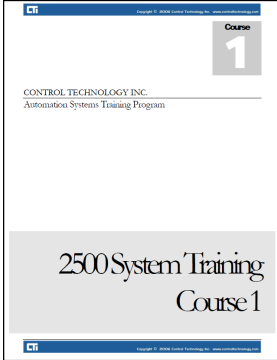
The 2500C-RADP-RS485 is a Compact RS485 RBC Adapter which allows a Texas Instruments Series 500 I/O base to function as a slave node on an RS-485 Remote I/O channel. It provides a transparent path for upgrading old Series 500 systems without the requirement to completely replace the system.

Features:

- Compatible with Series 500 I/O chassis
- Communication to a 2500 CPU at 2Mbit/second
- Maximum cable distance from CPU to RBC 1000m
- Supports discrete and analog I/O
- LED display for error codes and station address
- Includes RS232C port for remote programming of PLC from the RBC
- Allows you to plan system upgrades according to your budget
- Preserves your investment in replacement modules



Training

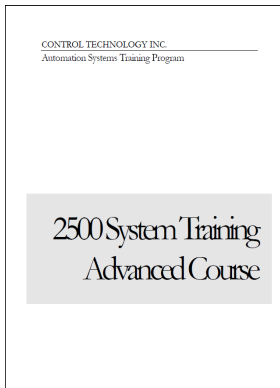


2500-TR-S1 Course 1: Basic System Architecture and Application Development

This entry-level training course is intended for students that have experience with automation and control systems including control devices and Programmable Controllers. The student should also have some basic knowledge of RLL or control programming and be competent using a PC with Windows® 10 operating system.

Topics:

- Basic Programmable Controller concepts
- Basic system architecture and hardware description
- Use of Workshop programming package
- Description and use of common instructions
- Description and use of program control instructions



2500-TR-S2 Course 2: Advanced System Architecture and Application Development

This course is intended for students that have basic experience with Automation and Control Systems including control devices and Programmable Controllers. Course 1: Basic System Architecture and Application Development is a prerequisite.

Topics:

- Advanced system architecture
- CPU scan cycle analysis and tuning
- Configuration of 2500 Series® Processors
- Setup and operation of Profibus-DP networks
- Programming of analog alarms
- Theory and programming of PID loops
- SF programming
- Advanced RLL programming
- Optimizing CPU performance

SIEMENS

SIMATIC APT
Applications Manual

Order Number: 6PPK-APT-1-103-0
Last Issuance Number: 2502843-0008
Eighth Edition

2500-TR-S3 Course 3: APT Maintenance and Troubleshooting

This course is intended for students that have experience with automation and control systems including control devices and Programmable Controllers. The student should also have some basic knowledge of RLL or control programming and be competent using a PC with XP Pro operating system.

Topics:

- Overview of APT
- Overview of APT and program architecture
- Basic use of APT
- Quickstart compile, download, and troubleshooting programs

2500-TR-S4 Course 4: Custom Training Course

This custom training course can be taught at CTI or onsite at your plant. The course can be structured to meet the needs of the designated attendees and can include material from both of CTI's training courses on maintaining and programming CTI 2500 Series® and Simatic®/TI 505 PLCs as well as additional topics that may be of interest.

Possible Topics:

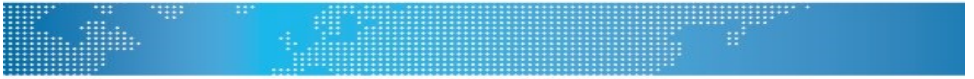
- Basic and advanced system architecture
- PLC setup, configuration, operation and monitoring
- Basic and advanced RLL programming, including writing, editing, monitoring, cyclic RLL task, fast loop PID, etc.
- Special function, alarm and loop programming
- Status words
- Optimizing CPU performance and troubleshooting

 Control Technology Inc.

Automation Systems Training Program

2500 Series Training
Custom Course

Rev 01 | April 2017



Coming Soon

(Products Expected in 2020)

2500CP-ACP1 Application Coprocessor

The 2500CP-ACP1 Application Coprocessor module provides the same high performance platform for computing or communications applications which need additional power beyond the main CPU as the 2500P-ACP1, but in a smaller form factor. Up to 4 modules can be connected to one processor. Applications on the 2500CP-ACP1 are programmed using CTI Workbench for IEC 61131-3.

IMPORTANT NOTE: Because 2500CP-ACP1 employs an advanced dynamic cache communications engine, a CTI 2500 Series® processor is recommended for operation.

Features:

- Programs using open-standards IEC-61131 development system
- Small form factor
- Exchanges data between RLL program on host PLC and IEC-61131 program
- Supports Modbus server & client (serial and ethernet)
- Network data exchange with other CTI processors

Coming soon!

2500CP-ECC1 Ethernet Communications Coprocessor

The 2500CP-ECC1 Ethernet Communications Coprocessor module provides the same high performance multi-protocol networking solution for CTI 2500 Series® processors as the 2500P-ECC1, but in a smaller form factor. Up to 4 modules can be connected to one processor.

IMPORTANT NOTE: Because the 2500CP-ECC1 employs an advanced dynamic cache communications engine, it requires a CTI 2500 Series® processor for operation.

Features:

- Extremely high performance when attaching multiple HMI clients to CTI processors
- Small form factor
- CAMP Server & Client
- Open Modbus server & client
- Network Data Exchange with other CTI processors

Coming soon!