2022

CTI 2500 Series® System Product Guide

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

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

2500-C400
"Original" CPU

2500P-J750
"Janus" CPU

Control Technology, Inc.

ROCK SOLID PERFORMANCE. TIMELESS COMPATIBILITY.

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ROCK SOLID PERFORMANCE. TIMELESS COMPATIBILITY.

2500 Series® Compact

2500C-J750 Compact Janus PAC w/ 3MB Project Memory and New IEC 61131 Standards-Based Programming Package

Our new family of Janus PACs brings new capabilities to the CTI 2500 Series® System. Designed to work seamlessly with existing Siemens/TI 505® and CTI 2500 Series® (Classic and Compact) 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 PACs include integrated drivers to a wide variety of protocols, allowing communications with best-in-class I/O, drives, and HMI/SCADA no matter the manufacturer. They also utilize CTI's budget– and user-friendly new Janus Workbench Software programming package that includes all IEC programming languages. The Compact Family will include additional modules in the future.

Features:

- Programming is done using Janus Workbench Software (JSoft) which allows use of SFC, FBD, LD, ST, & IL in programs
- Up to 10x execution speed compared to current 2500 Series® CPUs
- 3MB Project Memory and 15MB Data Storage
- 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
  - Profinet controller and device (available soon)

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 120VAC 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 79-132VAC
- 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
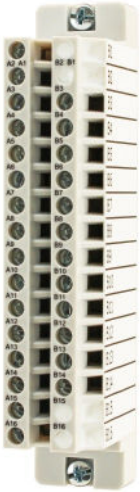
The 2500C-32F 32-pin Field Wiring Connector is designed for CTI's 2500 Series® Compact I/O system and provides a termination point for field wiring at the 2500C I/O module. The connector is removable and 2500C I/O modules can be hot-swapped, allowing modules to be changed under power.

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 thermcouple 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 4A 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
- 85-240VAC, 47-63Hz input
- Maximum 35 watts backplane power
- 100mSec 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.

Photo Coming Soon

075-00008 Battery for Cxxx Processor
075-00019 Battery for Jxxx Processor

Replacement batteries for Janus Jxxx Processors and for Cxxx Processors

IMPORTANT NOTE: International aviation laws regulate the transportation of lithium batteries by airplane which impacts our ability to ship spare CPU batteries by aircraft to many countries.

We therefore recommend purchasing spare CPU batteries locally based on the specifications listed in the Installation and Operating Guides for the respective processors:

- Appendix F on p. 107 for the 2500-Cxxx Processors which is available on our website at https://controltechnology.com/Files/Products/2500-Classic/2500-Cxxx/manuals/CTI-2500-IOG-(62-370)
- Appendix D on page 79 for the 2500P-Jxxx Processors available on our website at https://controltechnology.com/Files/Products/2500-Classic/2500-Jxxx/manuals-(restricted)/Janus-Controller-Installation-and-Operation-Guide.

Contact us if you need further assistance.

050-00066   Battery Cap for Cxxx Processors
050-00066-MOD Battery Cap for Jxxx Processors

Battery cap replacement for Cxxx and Jxxx Processor batteries

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