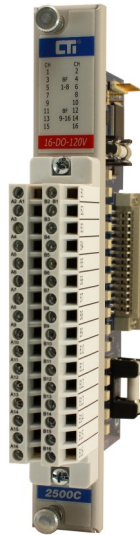




## 2500C-16-DO-120V Discrete Output Module



### DESCRIPTION

The 2500C-16-DO-120V Module 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 a 120VAC external source. Front panel LEDs provide visual indication for output and fuse status.


### FEATURES

- Single wide module
- 16 channels isolated in groups of 8 channels
- Each group of 8 is individually fused
- Sourcing or sinking Outputs
- Channel On/Off Status Indication
- Blown fuse indication and reporting for each group in Classic Plus Mode
- Module supports Classic Plus and Classic Mode Logon. Ships in default Classic Plus Mode.
- Uses CTI's 2500C-32F Connector

#### 2500C-16-DO-120V Default Shipment Settings

Operation Mode	CP
Logon	8X /16Y
Signal Range	79-132VAC

#### Output Specifications

Outputs per module	16
Module Logon Classic Plus Mode selected with JP2.	8X /16Y
Module Logon Classic Mode selected with JP2.	16Y
Output Voltage Range	79-132 VAC
Maximum Output current	.5 A @ 25° .25A @ 60°C
Maximum Surge Current	6.5A for 15 sec
“ON” State Voltage Drop	NA
“OFF” State Leakage Current	750µA @ 120VAC
Turn ON Time	1/2 AC cycle
Turn OFF Time	1/2 AC cycle
Fusing 	Groups of 8
Fuses: 2 Field Replaceable Fuses	4.0 AAC, 250V Type Littlefuse #0216004.HXP

Module Size	Single wide module
Connector	2500C-32F
Backplane Power (MAX)	1.25 watt (all Channels ON)
Input ESD Protection	IEC 1000-4-2 Level 4
Isolation (2 groups of 8 channels)	300VAC Group to Group 1500VDC channel to backplane
Shipping Dimensions and Weight	223.84mm x 109.86mm x 34.93mm, 0.234kg
Operating Temperature Range	0°C to 60°C (32°F to 140°F)
Storage Temperature Range	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	5% to 95% (non-condensing)
Agency Approvals Pending	UL, ULC, UL Class 1, Div 2, CE



### Control Technology Inc.

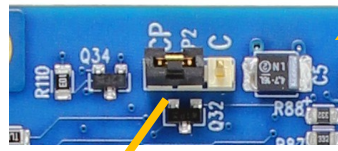
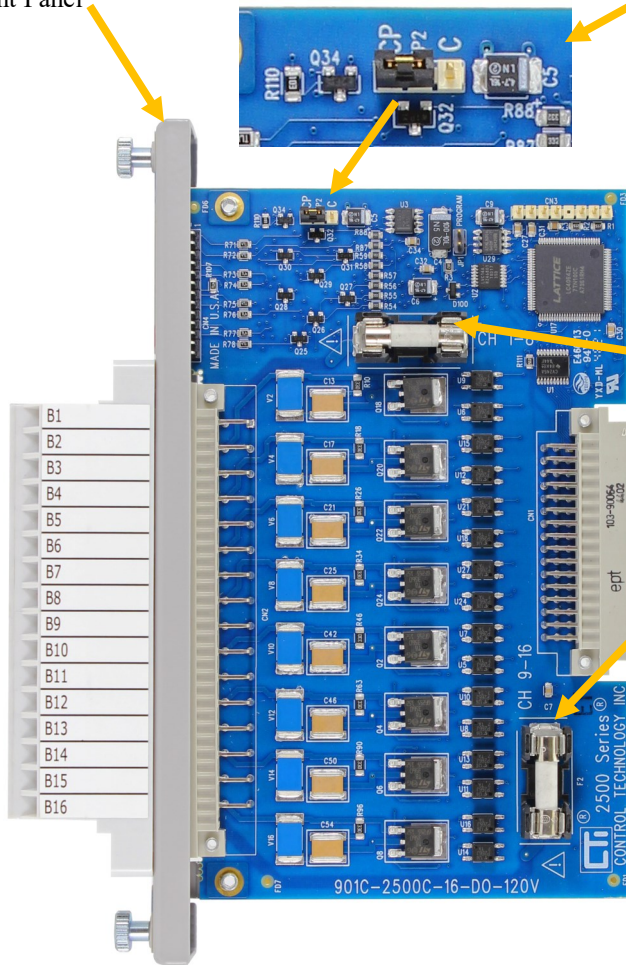
5734 Middlebrook Pike, Knoxville, TN 37921-5914  
Phone: +1.865.584.0440 Fax: +1.865.584.5720  
www.controltechnology.com





## 2500C-16-DO-120V Discrete Output Module

Front Panel



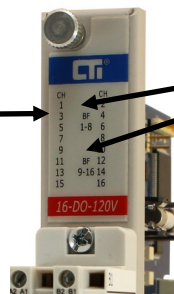
Module Logon Selection Jumpers. CP or Classic Plus mode is the default shipping configuration. In CP mode the module logs in as a 8X/16Y for blown fuse reporting. In C or Classic Mode the module logs in as a 16Y and does not provide blown fuse reporting. This allows customers to modify the module logon based on their application requirements. JP2 is available only on 901C Rev boards or higher. This replaces SPQ-16Y.

Channel 1 thru 8 Group A Fuse ⚠

Channel 9 thru 16 Group B Fuse ⚠

**Blown Fuse Operation Overview..**  
Blown Fuse detection works when the Output Channel is wired and the output is turned on. If the fuse is blown the LED will turn ON and the associated X address will equal 1. If the Output Channel is turned off the LED indicator will turn OFF and the associated Blown Fuse Bit will equal 0. The module does not Latch the Blown Fuse Input so the user application should trap for the reported Blown Fuse Bit while the Output is turned ON. This will allow logging and notification of the blown fuse event to your HMI stations and other reporting devices. Blown Fuse reporting on this module is for each Group of 8 channels.

**Channel ON/OFF Status LED**  
LED is illuminated BLUE when the output is turned ON.



**Blown Fuse LED**

The Blown Fuse LED is illuminated when the Module detects a Blown Fuse. There is one LED per Group.



**Control Technology Inc.**

5734 Middlebrook Pike, Knoxville, TN 37921-5914  
Phone: +1.865.584.0440 Fax: +1.865.584.5720  
www.controltechnology.com





## 2500C-16-DO-120V Discrete Output Module

Channel	Output	Terminal	Terminal	Terminal	Terminal	Terminal
Channel 1	Output	A1	A2	B1	B2	B1 120VAC Group A
Channel 2	Output	A2	A3	B2	B3	
Channel 3	Output	A3	A4	B3	B4	
Channel 4	Output	A4	A5	B4	B5	
Channel 5	Output	A5	A6	B5	B6	
Channel 6	Output	A6	A7	B6	B7	
Channel 7	Output	A7	A8	B7	B8	
Channel 8	Output	A8	A9	B8	B9	
Channel 9	Output	A9	A10	B9	B10	B9 120 VAC Group B
Channel 10	Output	A10	A11	B10	B11	
Channel 11	Output	A11	A12	B11	B12	
Channel 12	Output	A12	A13	B12	B13	
Channel 13	Output	A13	A14	B13	B14	
Channel 14	Output	A14	A15	B14	B15	
Channel 15	Output	A15	A16	B15	B16	
Channel 16	Output	A16		B16		

**2500C-16-DO-120V Wiring Connector**

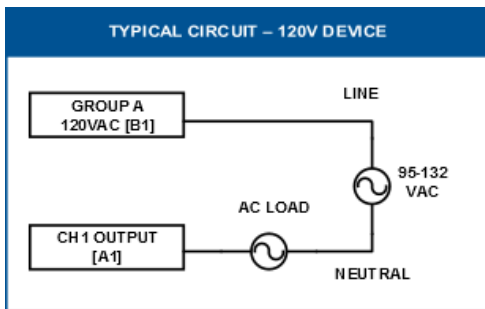
**Note:**

The 2500C-16-DO-120V Discrete Output Modules use CTI Wiring Connector 2500C-32F. Please see the wiring connector specification table below. This connector is ordered separately from the module.

2500C-32F Specifications	
Connector Style	Removable
Number of Wiring Connections	32 point
Wire Gauge Use Copper Conductors Only	14 to 22AWG
Screw Torque Value	5.22 lb-in
Current Rating	6A @ 300VAC
Insulation Stripping Length	0.24" 6mm

Connector Material	
Body:	Polycarbonate UL 94V0
Screw :	M3 Zinc plated Steel
Cage Clamp	Nickel Plated Brass
Socket Contact Spring:	Tin Plated Bronze
Retaining Screw:	M3 Zinc Plated Steel



**Application Note:** If you are replacing a larger 2500 Classic System with a 2500 Compact System you must verify the configuration requirements for each module, due to the potential differences in log-in memory addresses and configuration requirements.

2500C-16-DO-120V PLC Log on 8X/16Y															
Blown Fuse Reporting 8X								Blown Fuse = 1							
X1 Blown Fuse Group A Channels 1 through 8								X2 Blown Fuse Group B Channels 9 through 16							
X3 through X8 are unused															
Output Channel 16Y OFF = 0 ON = 1															
CH 1	CH 2	CH 3	CH 4	CH 5	CH 6	CH 7	CH 8	CH 9	CH 10	CH 11	CH 12	CH 13	CH 14	CH 15	CH 16
Y9	Y10	11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24



**Control Technology Inc.**  
 5734 Middlebrook Pike, Knoxville, TN 37921-5914  
 Phone: +1.865.584.0440 Fax: +1.865.584.5720  
 www.controltechnology.com





## 2500C-16-DO-120V Discrete Output Module



CAUTION – Non-Hazardous Areas/Hazardous Areas

<p>WARNING – EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE WHILE CIRCUIT IS LIVE UNLESS THE AREA IS FREE OF IGNITIBLE CONCENTRATIONS.</p>	<p>AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER PENDANT QUE LE CIRCUIT EST SOUS TENSION À MOINS QUE L'EMPLACEMENT NE SOIT EXEMPT DE CONCENTRATIONS INFLAMMABLES.</p>
<p>WARNING – EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE FUSE WHEN ENERGIZED.</p>	<p>AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER UN FUSIBLE SI L'APPAREILLAGE EST SOUS TENSION.</p>

Turn off power to the system before replacing fuses either in power supplies or IO modules. Refer to Product Bulletin or Installation and Operation Guide for specific information on the correct fuse for replacement. If there are any questions please contact CTI support. Fuses should only be replaced by qualified technicians.



**Control Technology Inc.**

5734 Middlebrook Pike, Knoxville, TN 37921-5914  
Phone: +1.865.584.0440 Fax: +1.865.584.5720  
[www.controltechnology.com](http://www.controltechnology.com)





## 2500C-16-DO-120V Discrete Output Module

### Physical Installation



### **Physical Installation Picture**

Remove power from the rack. Align the circuit board with the card guide and backplane connector. Slide the controller into the rack until the connector seats. Use the thumbscrews to secure the controller in the rack. Once the module is secured to the rack you may install the wiring connector.



### **CAUTION REGARDING HOT SWAPPING:**

The 2500C-16-DO-120V is designed to allow “hot-swapping” the module under power in the event that a replacement is needed. However, you must be aware that hot-swapping does not meet UL Safety requirements and is not recommended. If you must “hot-swap” the module, use the following procedure:

- Make sure all field devices connected to the module are placed into a “safe” state
- Remove the I/O connector from the front of the module
- Loosen the module retaining screws and remove it from the base
- Ensure the jumper configuration of the replacement module matches the one just removed
- Install the replacement module and tighten the retaining screws. The replacement module must be the same model number as the one removed.
- Reattach the I/O connector to the module
- Ensure the replacement module and all other components are operating properly
- Remove the field devices from “safe” state
- Return to NORMAL RUN mode

**You are responsible for any results in your application control. DO NOT ATTEMPT TO HOT-SWAP A MODULE IN A HAZARDOUS LOCATION!**



**Control Technology Inc.**

5734 Middlebrook Pike, Knoxville, TN 37921-5914  
Phone: +1.865.584.0440 Fax: +1.865.584.5720  
www.controltechnology.com

