2500 Series™ Compact System

2500C-16-DO-24V Discrete Output Module

DESCRIPTION

The 2500C-16-DO-24V Module 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. The 2500C-16-DO-24V is designed to switch an externally supplied 24VDC. LEDs provide visual indication for output and fuse status.

FEATURES

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

Output Specifications	
Outputs per module	16
Module Logon	8X /16Y
Output Voltage Range	11 to 30 VDC
Module Logon Classic Plus Mode selected with JP2.	8X /16Y
Module Logon Classic Mode selected with JP2.	16Y
Maximum Output current per Channel - Preliminary	.5 A @ 25ºC .25 @ 60ºC
Maximum Output current per Group	4A at 25ºC
Maximum Surge Current	3A for 15 sec
"ON" State Voltage Drop	83 mV
"OFF" State Leakage Current	0.05 µA
Turn ON Time	.5 mS
Turn OFF Time	10 mS
Fusing	Groups of 8
Fuses: 2 Field Replaceable Fuses	6.3 amp, 250V Type Littlefuse #23016300021 Schurter 0034.0909

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

2500C-16-DO-24V Default Shipment Settings	
Operation Mode	CP
Logon	8X /16Y
Output Range	11-30VDC

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

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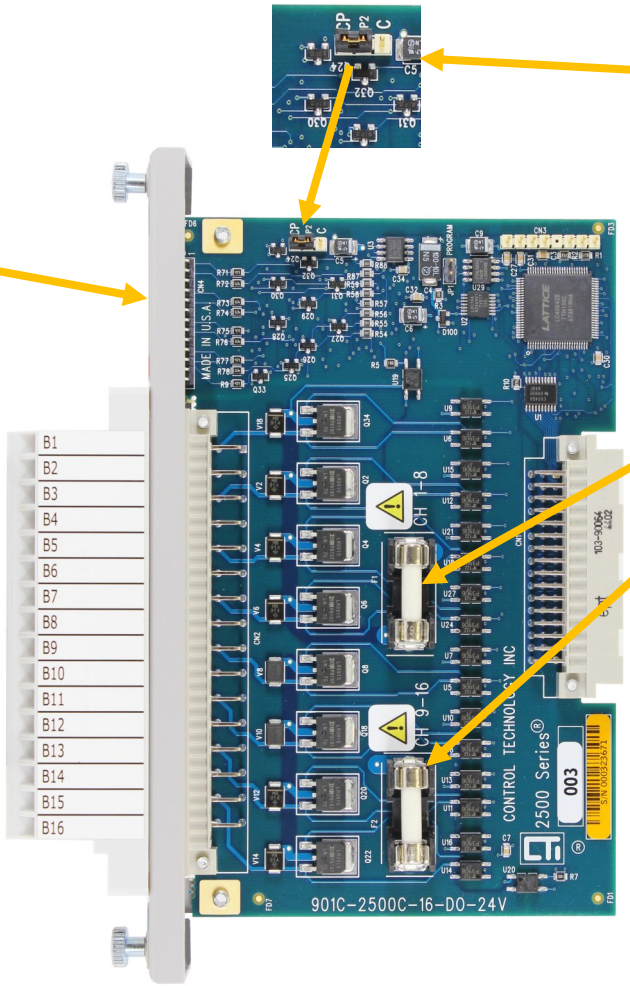


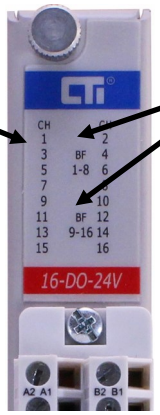
Module Logon Selection Jumpers. CP or Classic Plus mode is the default shipping configuration. In CP mode the module logs in as a 8X/16Y for blown fuse reporting. In C or Classic Mode the module logs in as a 16Y and does not provide blown fuse reporting. This allows customers to modify the module logon 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.

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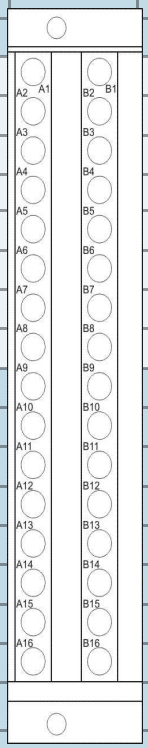
Channel 1	Output	A1	B1	+24 VDC	Group A
Channel 2	Output	A2	B2		
Channel 3	Output	A3	B3		
Channel 4	Output	A4	B4		
Channel 5	Output	A5	B5		
Channel 6	Output	A6	B6		
Channel 7	Output	A7	B7		
Channel 8	Output	A8	B8		
Channel 9	Output	A9	B9	+24 VDC	Group B
Channel 10	Output	A10	B10		
Channel 11	Output	A11	B11		
Channel 12	Output	A12	B12		
Channel 13	Output	A13	B13		
Channel 14	Output	A14	B14		
Channel 15	Output	A15	B15		
Channel 16	Output	A16	B16		



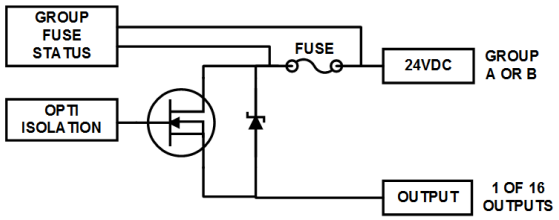
2500C-16-DO-24V Wiring Connector

Note:
The 2500C-16-DO-24V Discrete Output Module uses 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	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

TYPICAL INTERNAL CIRCUIT



2500C-16-DO-24V 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 not used															
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	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24

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CAUTION – Non-Hazardous Areas/Hazardous Areas

WARNING – EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE WHILE CIRCUIT IS LIVE UNLESS THE AREA IS FREE OF IGNITIBLE CONCENTRATIONS.	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.
WARNING – EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE FUSE WHEN ENERGIZED.	AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER UN FUSIBLE SI L'APPAREILLAGE EST SOUS TENSION.

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.

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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-24V 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!

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