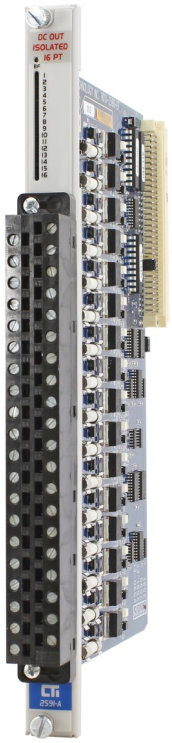
2500 Series® PLC System
Product Bulletin

# 2591-A 16-Point Isolated Discrete Output Module

Classic



## Description

The 2591-A 16-point Isolated Discrete Output Module provides sixteen discrete isolated outputs from the CTI 2500 Series® or Simatic® 505 I/O base. The module uses solid- state output circuits to switch on or off external devices such as pilot lamps, motor starters, or solenoids. The 2591-A is designed to switch externally supplied 11 to 146 VDC. The internal logic signals are isolated from the external outputs to 1500 VDC.

## Features

- CTI 2500 Series® or Simatic® 505 I/O base format
- 1.5 Amps per output (no derating)
- Isolated 1500 VDC channel-to-channel
- Blown fuse reporting (per channel) to the PLC
- Blown fuse indicator
- Logs in as a 16Y or 16X/16Y (jumper selectable)
- Individual fuse for each output channel
- Single-wide module

## Specifications

**Outputs:** 16
**Logon:** 16Y or 16Y/16X (Jumper Selectable)
**Isolation:**
1500 VDC channel-to-channel
1500 VDC channel-to-backplane
**Blown fuse reporting per channel:**
Reported to the PLC as an X input (jumper selectable)
**Output voltage:** 11 to 146 VDC
**Output source current per circuit:** 1.5 A max
**"ON" state voltage drop:** 0.3V @ 2.0 Amps
**"OFF" state leakage:** 135uA max @ 125VDC
**Turn ON time:** 1.5msec nominal
**Turn OFF time:** 7.2msec nominal
**Maximum surge current:** 3 A for 15 seconds
**Total module output current:** 24 Amps
**Connector:** Removable 40 Pin Connector
(ordered separately CTI Part # 2500-40F)
**Wire gauge:** 14 to 22 AWG
**Backplane power:** 2.5 watts max
**Module size:** Single wide

⚠ **Fuses:** 16, 1.6 Amp, 250V
LITTELFUSE 021501.6HXP or
SCHURTER, INC. 0034.2518 or
CTI Part Number #80-79 (Field Replaceable)
**Shipping Weight:** 1.5 lbs (0.68Kg)

### Additional Product Information:

**On CTI's Website you will find links to the 2500 Series Std Environmental Specifications and the UL Agency Certificates of Compliance.**

ROCK SOLID PERFORMANCE. TIMELESS COMPATIBILITY.

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# 2591-A 16-Point Isolated Discrete Output Module

## Module Configuration

The 2591-A is capable of logging in as a 16Y or a 16X/16y. Changing the addressing of the module is done by moving a jumper located near the rear backplane connector as shown in Figure 2 below. In Figure 2, the 2591-A module is inserted in slot 1 in the I/O base 0. Data appears as 16 "Y" locations starting at "Y1". **The 2591-A ships with a login of 16Y.** In this configuration blown fuse reporting is disabled. By moving the jumper to the REPORTS 16X INPUTS the module logs in as a 16X/16Y. The X addresses are used to report the Blown Fuse Indication and the 16Y addresses are used as any other normal output would be used.

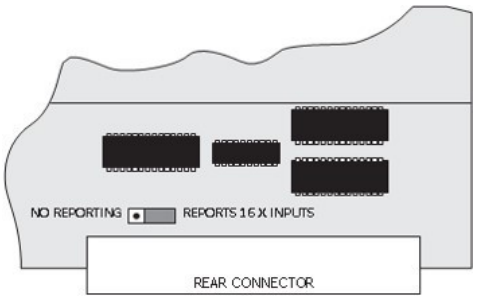


*Figure 2. 2591-A Blown Fuse Reporting Selection*

### 2591-A I/O Configuration Chart with Blown Fuse Disabled

In the example in Figure 3 is an I/O Configuration Chart showing a 2591-A plugged in the first slot with Blown Fuse Reporting Disabled. The Y addresses are the outputs under PLC ladder logic control.

I/O MODULE DEFINITION FOR CHANNEL . . . 1 BASE…...00

NUMBER OF BIT AND WORD I/O

| I/O SLOT | ADDRESS | X | Y | WX | WY | SPECIAL FUNCTION |
|---|---|---|---|---|---|---|
| 01 | 0001 | 00 | **16** | 00 | 00 | NO |
| 02 | 0000 | 00 | 00 | 00 | 00 | NO |
| 15 | 0000 | 00 | 00 | 00 | 00 | NO |
| 16 | 0000 | 00 | 00 | 00 | 00 | NO |

*Figure 3. I/O Configuration Chart without Blown Fuse Reporting*

### 2591-A I/O Configuration Chart with Blown Fuse Reporting Enabled

In the example in Figure 4 is an I/O Configuration Chart showing a 2591-A plugged in the first slot with Blown Fuse Reporting Enabled. X1-X16 are the Blown Fuse Reporting inputs and Y17-Y32 are the outputs under PLC ladder logic control.

I/O MODULE DEFINITION FOR CHANNEL . . . 1 BASE…...00

NUMBER OF BIT AND WORD I/O

| I/O SLOT | ADDRESS | X | Y | WX | WY | SPECIAL FUNCTION |
|---|---|---|---|---|---|---|
| 01 | 0001 | 16 | **16** | 00 | 00 | NO |
| 02 | 0000 | 00 | 00 | 00 | 00 | NO |
| 15 | 0000 | 00 | 00 | 00 | 00 | NO |
| 16 | 0000 | 00 | 00 | 00 | 00 | NO |

*Figure 4. I/O Configuration Chart with Blown Fuse Reporting*

Note:1 In both examples, only one address is needed to log in the module. The PLC will automatically assign the first 16 locations as inputs (X) and the next 16 locations as outputs( Y).

Note2: If the line is blank or erroneous, re-check the module to ensure that it is firmly seated in the slot. Generate the PLC I/O configuration chart again. If the line is incorrect, contact your distributor or CTI for support.

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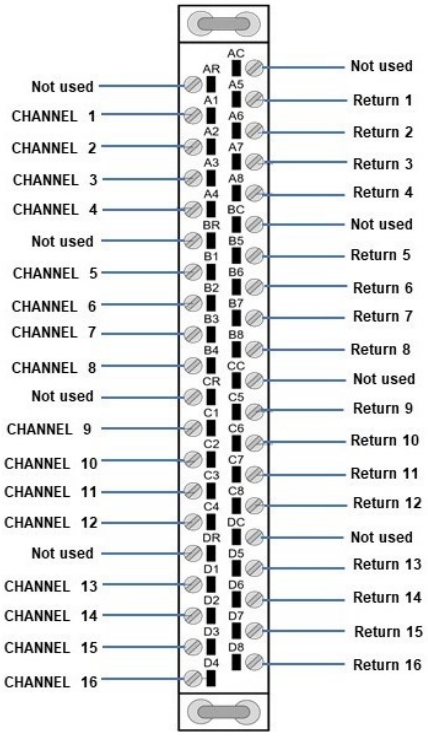
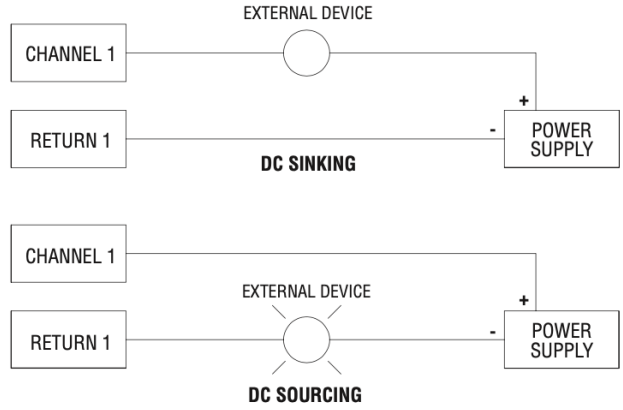
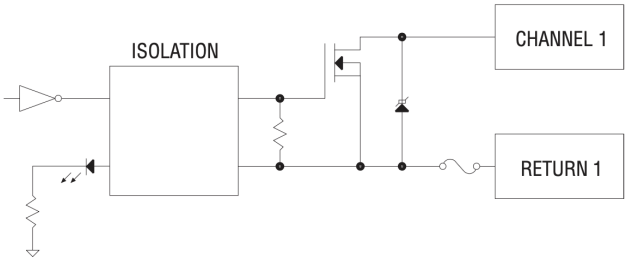



## 2591-A Wiring Diagram




*2591-A Typical External Wiring Application*




*2591-A Typical Internal Circuit*

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 ENER-GIZED. | 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.