

NOTE:
Use caution when wiring with mixed voltages (i.e., 5VDC next to 110VAC).

Low Range and High Range Selection

The 2589 will handle a wide range of AC and DC signals, and has incorporated the ability to select either Low Range or High Range on a per channel basis using jumper selection. The selections are made individually for each of the 32 channels using jumpers J9-J16.

Low Range selection allows the user to configure each individual channel to accept any voltage from 11V to 250V AC/DC. The user must keep voltage types (i.e., AC or DC) common to each group as described in the Isolation Configuration Sections above.

High Range selection allows the user to configure the module channels to accept any voltage from 80 VAC/70 VDC to 250 VAC/VDC. This feature keeps the module from turning on from noise or low voltage spikes.

NOTE:
For maximum protection against ESD damage, unused inputs should be tied back to chassis ground. When using the module with 250VAC/VDC inputs, minimize the number of inputs used at this voltage to reduce power dissipation of the module. Contact CTI for exact power calculations that may be used for numerous upper end input voltages.

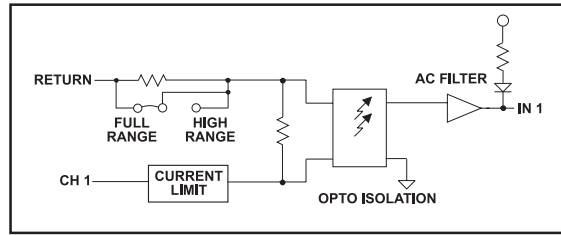


Figure 6. Typical Internal Circuit

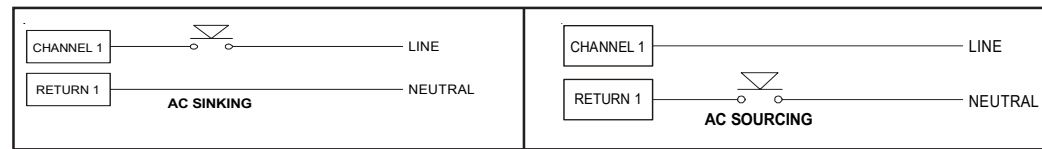


Figure 7. Typical External Wiring Application for the Model 2589

32/16 Point Configuration Explanation

The 2589 may be configured from its default "32 Point Login" setting to the "16 Point Login" setting by moving jumper JP100. Following the addition of two 18 or 20 ga. jumper wires from AR to BR and CR to DR on the front panel connector (see Figure 4), connector then would be wired as its Siemens® counterpart, down the left side with the right side being unused. Also, note that many of the printed channels (CH 1-CH 32) on the PC board are no longer valid, nor are the front panel connector labels. (You may find it helpful to manually relabel the connector in the space provided for the 16 Point Login option. See Figures 3 & 4.) If 16 Point is enabled, following is the new correlation of PC board and connector label printing:

PCB/Front Connector Label Channel Printing

CH:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
CH:	1	2	3	4	-	-	-	-	5	6	7	8	-	-	-	-	9	10	11	12	-	-	-	-	13	14	15	16	-	-	-	-

16-Point Login Configuration Channel

For example, in 16 Point Login Configuration, the board marking for channel 10 (CH 10) would be the input channel 6. Likewise, the PC board marking for CH 28 would correlate to input channel 16.



Control Technology Inc.

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The 2589 32-Point Universal Discrete Input Module



Specifications

Inputs per Module: 32

Isolation: 3000 VDC channel-to-backplane
3000 VDC group-to-group

Input Voltage:

Hi Range: 80 VAC/70 VDC to 250 VAC/VDC
Low Range: 9 VAC/11 VDC to 250 VAC/VDC

Input Current: AC: 2.1 - 3.6 mA
DC: 2.5 - 4.3 mA

Operating Characteristics for Typical Input:

AC Voltage Input:

Turn ON Time: 4.0mS
Turn OFF Time: 15.0mS

DC Voltage Input:

Turn ON Time: 1.0mS
Turn OFF Time: 15.0mS

Connector: Removable

Wire Gauge: 14 - 22 AWG

Backplane Power: 1.8 Watts max.

Module Size: Single-wide

Operating Temperature: 0° to 60°C
(32° to 140°F)

Storage Temperature: -40° to 85°C
(-40° to 185°F)

Relative Humidity: 5% to 95%
(non-condensing)

Agency Approvals: UL, ULC

Agency Approvals Pending:
FM (Class 1, Div.2), CE

Shipping Weight: 1.5 lb. (0.68 Kg)

Description

The 2589 32-Point Universal Discrete Input Module accepts a wide range of voltage signals. It is designed to accept both AC and DC voltage allowing the customer to pick and choose ranges on a single module. The 2589 can also be configured as a 16-point or 32-point module and can replace many Siemens® input products with no rewiring. Motor centers, optical sensors, limit switches and utility control are excellent examples of applications for this product.

Features

- Simatic® 505 base format
- 16 or 32 universal input points
- Replaces Siemens® 505-4016-A, 505-4032-A, 505-4216-A, 505-4232-A, 505-4316, 505-4316-A, 505-4332, 505-4416-A, 505-4432-A with no rewiring
- 3000V channel-to-PLC backplane and group-to-group isolation
- Wide 11V to 250V AC/DC range (selectable by group)
- Isolation in groups of 4 or 8 (selectable)
- Sourcing or sinking inputs
- Single-wide module



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505 SuperSavers
Product Bulletin

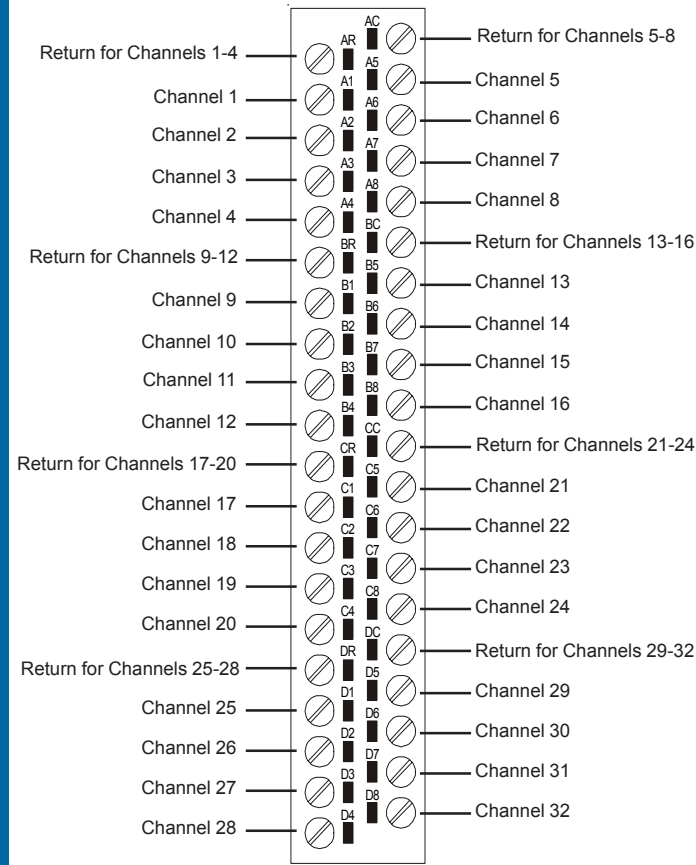


Figure 1. 2589 32-Point Mode 4 Inputs Per Common Wiring Connector

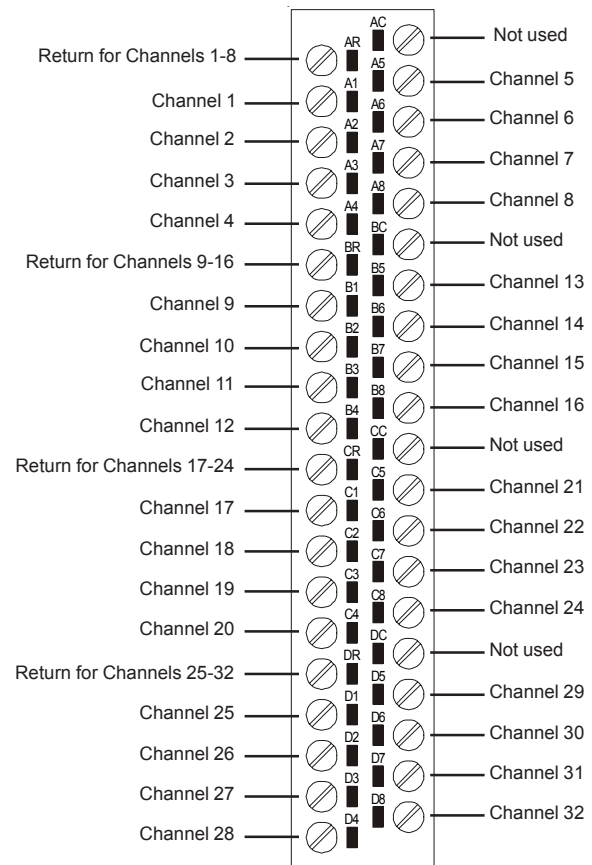


Figure 2. 2589 32-Point Mode 8 Inputs Per Common Wiring Connector

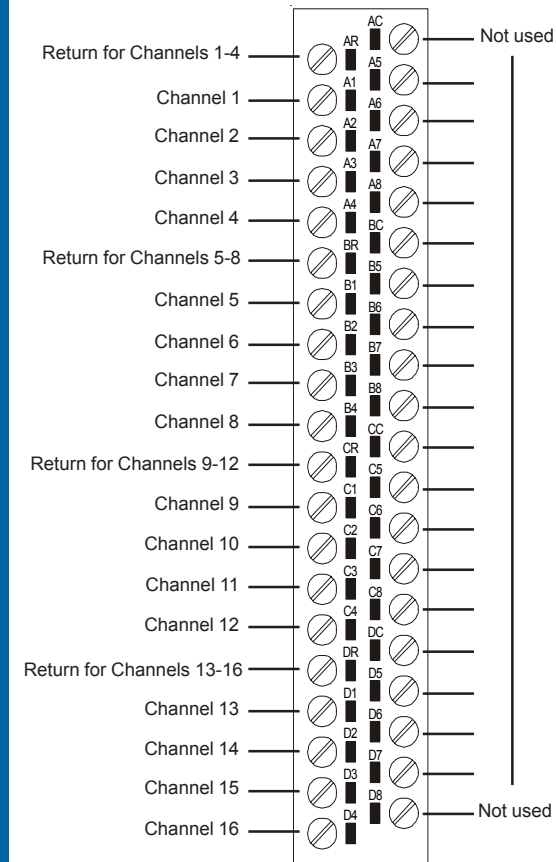


Figure 3. 2589 16-Point Mode 4 Inputs Per Common Wiring Connector

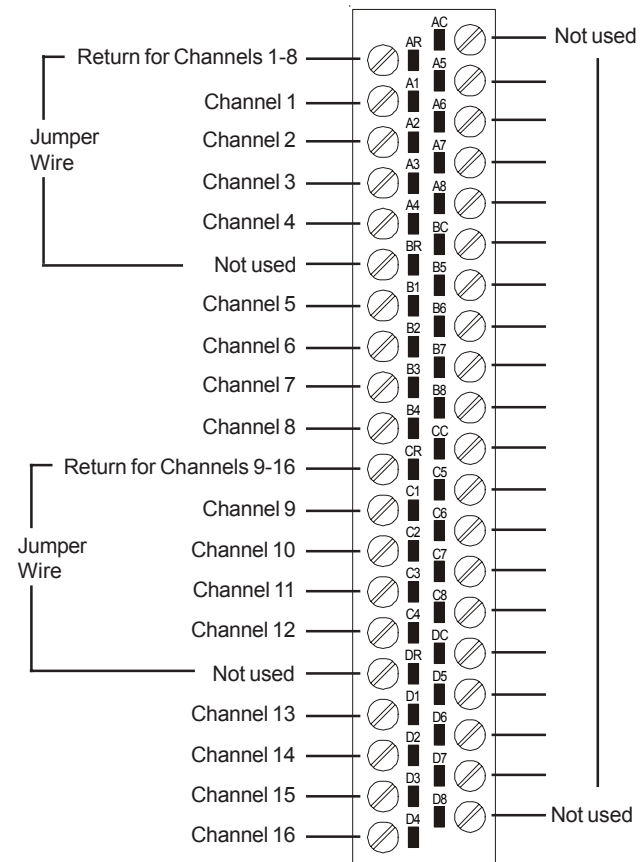


Figure 4. 2589 16-Point Mode 8 Inputs Per Common Wiring Connector

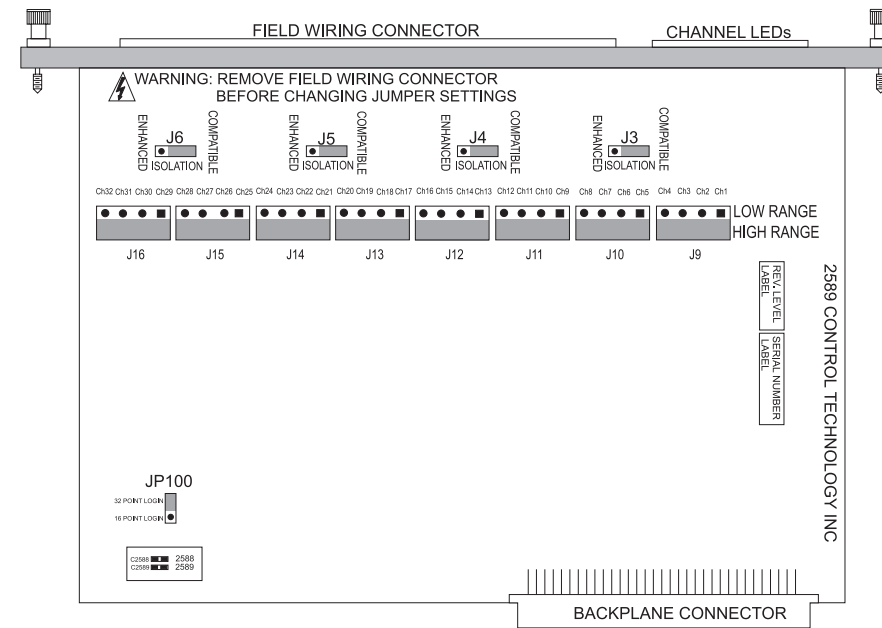


Figure 5. Jumper Configuration Location

Standard Shipping Configuration

Jumper Configuration	
Jumper	Selection
J3, J4, J5, J6	Compatible
Ch. 1 through Ch. 32 J9 through J16	High Range
JP100	32 Point Login

Table 1. Jumper Configuration Table

WARNING:
Remove field wiring connector before changing jumper settings.

Isolation Configuration: Compatible Mode

The module is shipped in “Compatible” mode so that eight channels share a common return path. Jumpers J3-J6 are used to configure this selection.

For example, if jumper J3 was placed in the “Compatible” position, then Channels 1-8 would share the same common return path and only one voltage type could be used on these eight channels. With this selection each group of eight channels is isolated from the other, allowing up to four different voltage types to be accommodated per module.

Isolation Configuration: Enhanced Mode

The user may also configure the module to “Enhanced” mode to allow four channels to share a common return, thereby allowing different input voltages to exist within a common grouping. Jumpers J3-J6 are also used to configure this selection.

For example, if the user places the J3 jumper in the “Enhanced” position, Channels 1-4 will share a common return path and Channels 5-8 will share another common return path. In this example each group of four channels is isolated from the other group of four channels. Because each group of four is isolated, the user may use one voltage type at different voltage levels in each group. So, in this example, Channels 1-4 could be 24VDC inputs and Channels 5-8 could be 110VAC inputs. Furthermore, the user may select a different configuration for J4, J5, or J6, allowing for further combinations of four or eight channels that share a common.