

# TB-2606 TERMINAL BLOCK

This installation guide describes how to install and connect signals to the TB-2606 terminal block for use with the NI 2501 and NI 2503 PXI switch cards.

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## Introduction

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The TB-2606 consists of a printed circuit board with screw terminals. The terminal block connects directly to the front panel I/O connector of the NI 2501 or NI 2503.

The TB-2606 provides the necessary routing to configure the NI 2501 or NI 2503 as a  $6 \times 4$  two-wire matrix. The NI 2501 and NI 2503 have four  $6 \times 1$  two-wire multiplexers. The modules can internally connect the four  $6 \times 1$  multiplexers to create a  $24 \times 1$  two-wire multiplexer. However, the TB-2606 is needed to provide the necessary wiring so the four  $6 \times 1$  multiplexers are configured as a  $6 \times 4$  two-wire crosspoint matrix.

The TB-2606 provides screw terminal connections to the column and row inputs of the matrix. The front side of the terminal block has two additional connectors for connecting to the analog bus. You can use the low-voltage AB plug to connect the analog bus of adjacent switch cards.

# What You Need to Get Started

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You need the following to set up and use your terminal block:

- One of the following PXI switch cards:
  - NI 2501
  - NI 2503
- NI 2501/2503 User Manual*
- TB-2606 terminal block
- 0.10 in. slotted screwdriver
- No. 1 Phillips screwdriver
- Wire cutters
- Wire insulation stripper
- Analog bus connectors (to connect to multiple cards)

## Signal Names

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The TB-2606 provides the following screw terminal connections.

Name	Pin Number
R0-	27
R0+	61
R1-	26
R1+	60
R2-	10
R2+	44
R3-	9
R3+	43
C0-	33, 25, 16, 6
C0+	67, 59, 50, 40
C1-	32, 24, 15, 5
C1+	66, 58, 49, 39
C2-	31, 23, 14, 4
C2+	65, 57, 48, 38

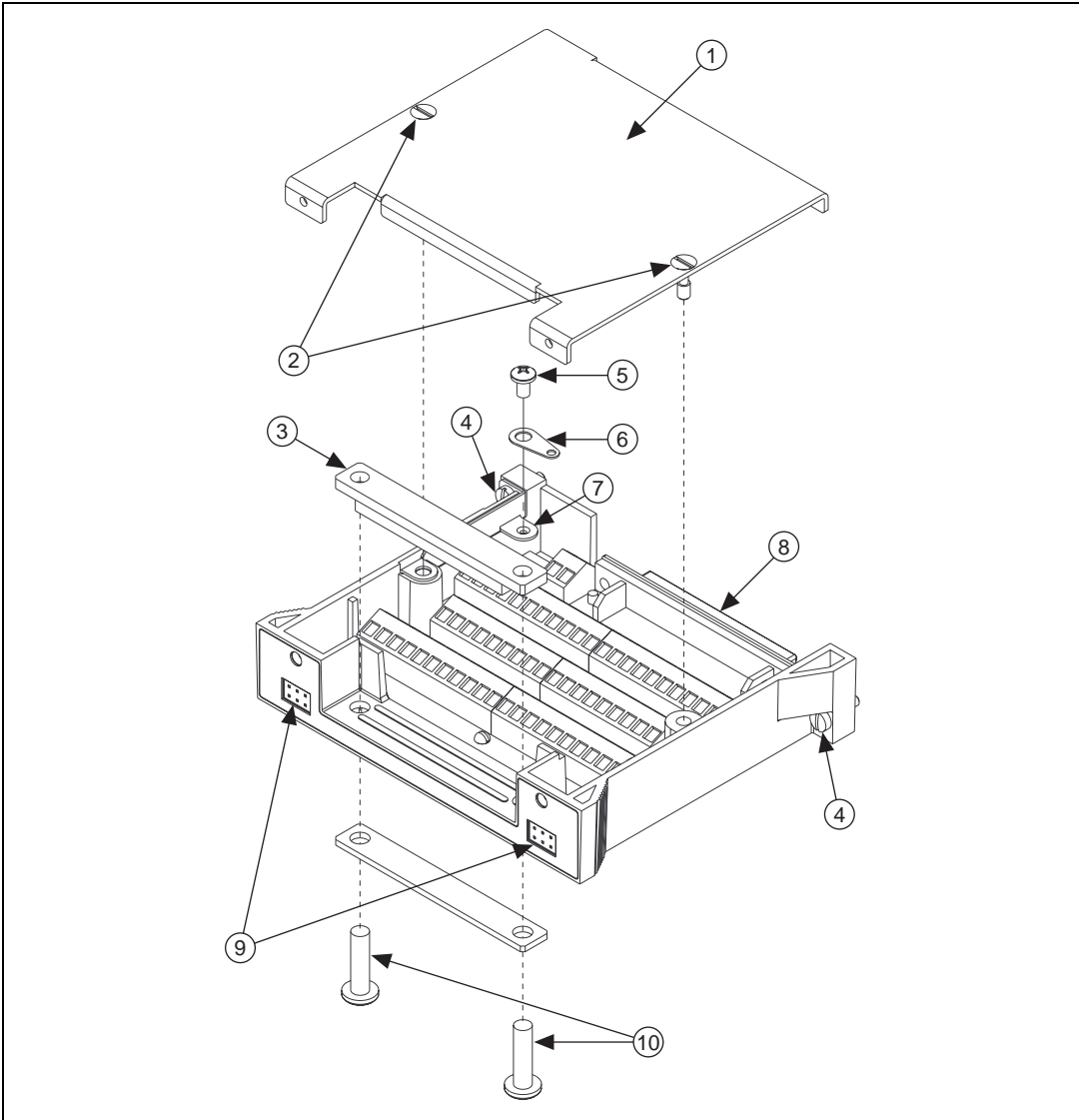
Name	Pin Number
C3-	30, 21, 13, 3
C3+	64, 55, 47, 37
C4-	29, 20, 12, 2
C4+	63, 54, 46, 36
C5-	28, 19, 11, 1
C5+	62, 53, 45, 35
AB0-	18
AB0+	52
AB1-	17
AB1+	51
EXTERNAL TRIGGER	41
SCAN ADVANCED	42
GND	7, 56
CHSGND	CONNECTOR SHELL

# Signal Connection

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See your *NI 2501/2503 User Manual* for examples of how to connect your signals. Refer to Figure 1 as you perform the following steps to connect your signals to your terminal block (the numbers in parentheses refer to items in Figure 1).

1. Remove the terminal block cover (1) by unscrewing the two cover screws (2) using the 0.10 in. slotted screwdriver.
2. Loosen or remove the strain relief bar (3) by loosening the two strain relief screws (10).
3. Use wire cutters and wire insulation strippers to strip the wire ends as necessary to connect them to screw terminals.
4. Loosen the screws in the screw terminals with the 0.10 in. slotted screwdriver.
5. Insert the stripped wires into the screw terminals. Tighten the screws with the 0.10 in. slotted screwdriver.
6. Connect safety ground or shield wires to the chassis ground connection tab (7) using the provided solder lug (6).
7. Tighten or replace the strain relief screws (10).
8. Replace the terminal block cover (1) and tighten the cover screws (2).



- |                             |                      |                             |
|-----------------------------|----------------------|-----------------------------|
| 1 Cover                     | 5 Ground Lug Screw   | 8 Connection to Switch Card |
| 2 Cover Screws (captive)    | 6 Ground Solder Lug  | 9 Analog Bus Connectors     |
| 3 Strain Relief Bar         | 7 Chassis Ground Tab | 10 Strain Relief Screws     |
| 4 Chassis Connection Screws |                      |                             |

**Figure 1.** TB-2606 Parts Locator Diagram

# Installing Your Terminal Block

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Refer to Figure 2 as you perform the following steps to connect the terminal block to the NI 2501 or NI 2503 connector (the numbers in parentheses refer to items in Figure 2).

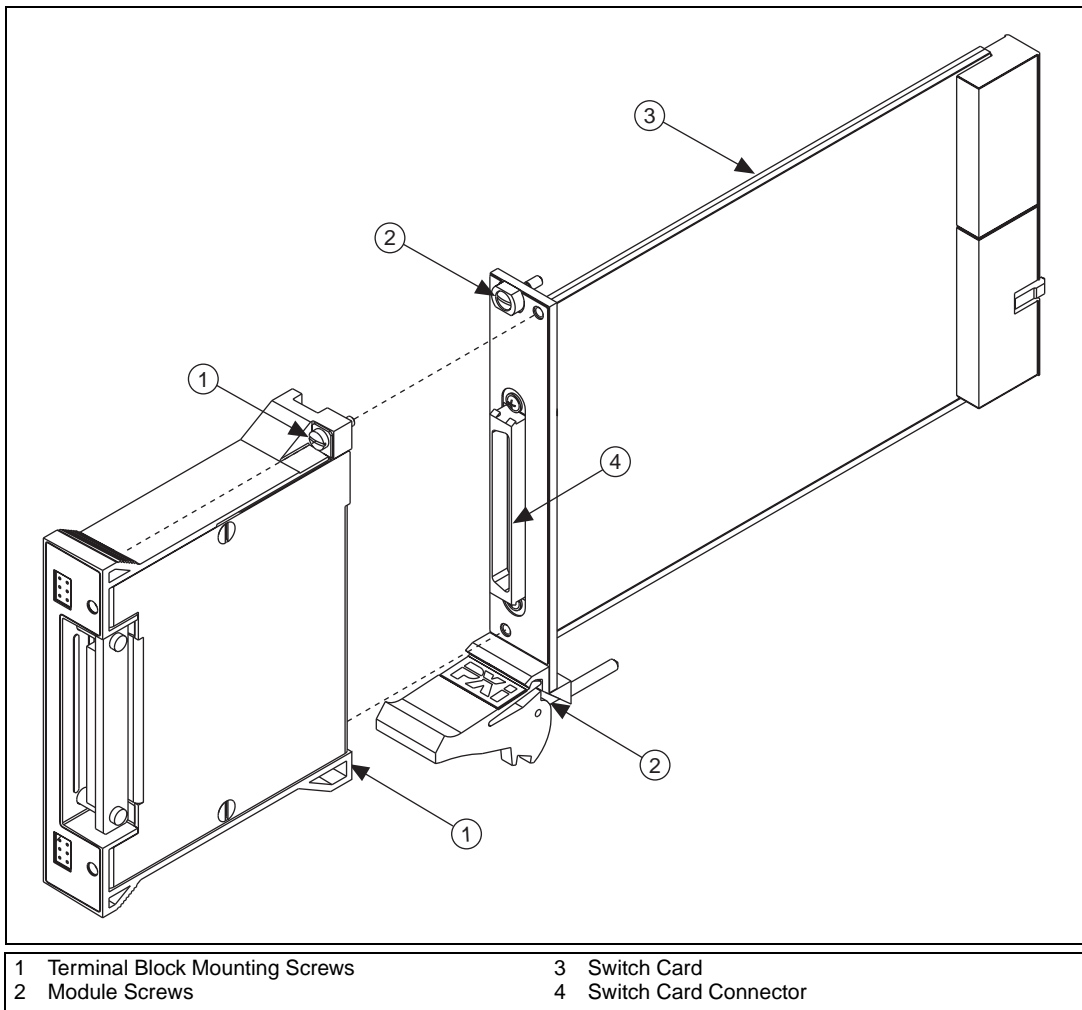


**Note** The TB-2606 terminal block must be installed on the NI 2501/2503 switch card after the card is installed in the chassis.

1. Install the switch card (3) into the chassis and tighten the two module screws (2).
2. Guide the terminal block onto the switch card connector (4).
3. Tighten the two terminal block mounting screws (1).



**Caution** The connectors of both the switch card and the terminal block are polarized. You can attach them in only one way. Do *not* force the terminal block when inserting it into or removing it from the NI 2501 or NI 2503 connector.

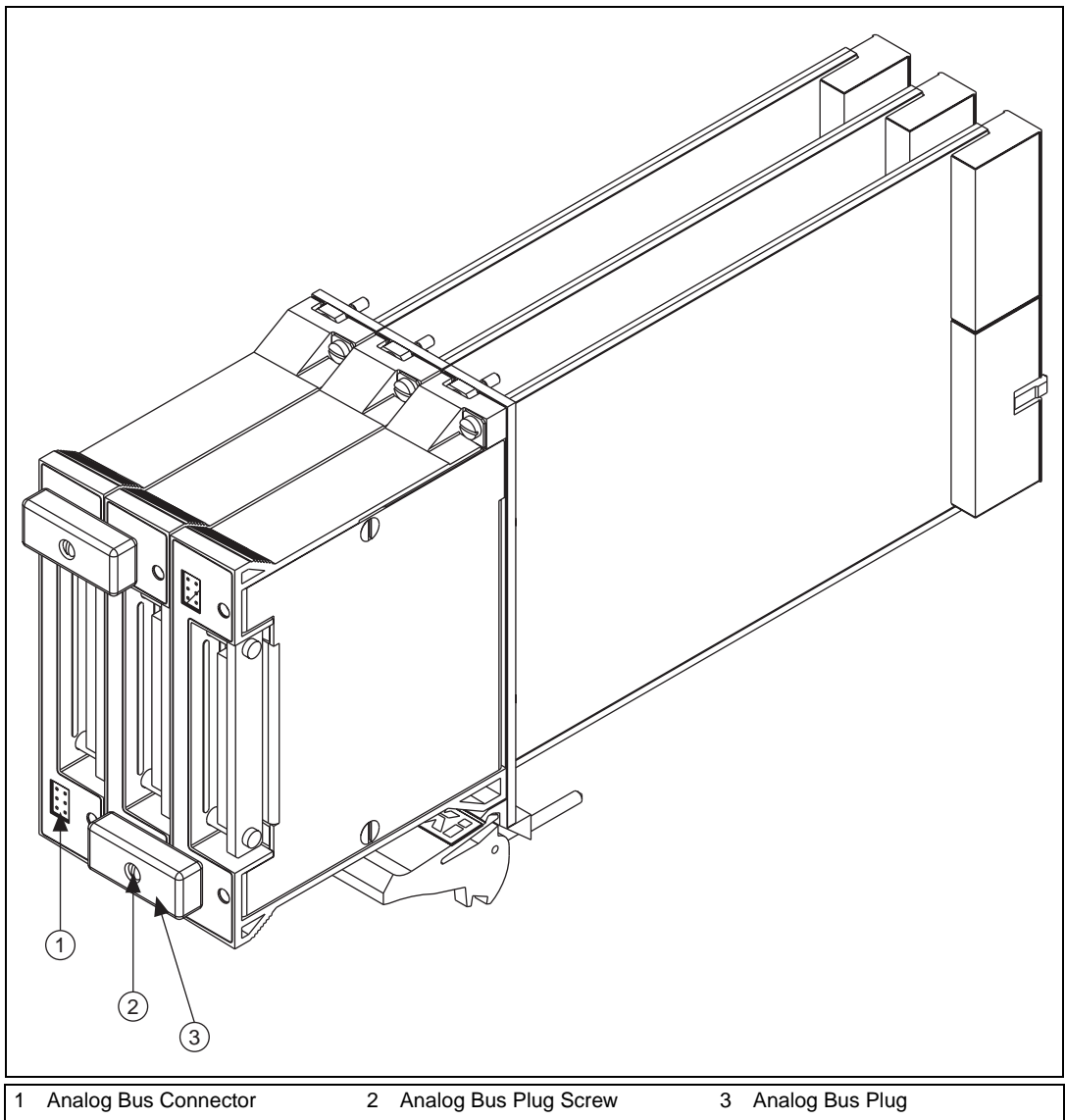


**Figure 2.** Connecting the TB-2606 to the Switch Card

## Installing the Analog Bus Plug

Refer to Figure 3 as you perform the following steps to install the analog bus plug. The cover should be attached to the terminal block before you connect the analog bus plug because the plug screws into the cover (the numbers in parentheses refer to items in Figure 3).

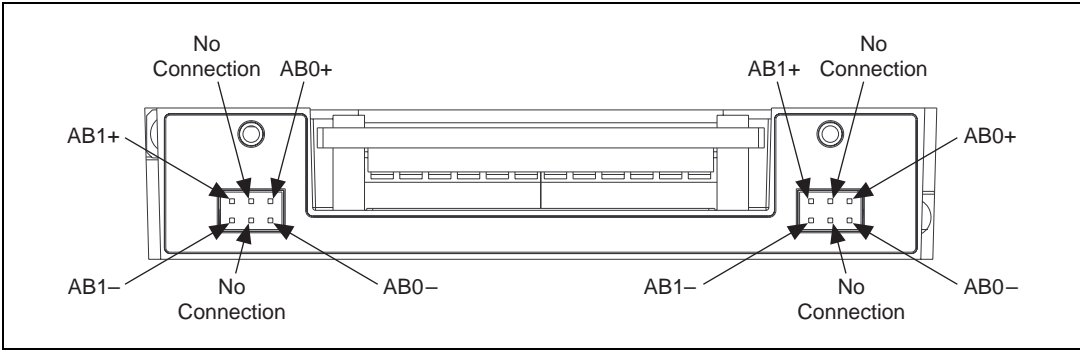
1. With two terminal blocks connected to boards in adjacent slots, connect the analog bus plug (3) into the analog bus connector (1) of each terminal block.
2. Tighten the screw (2) on the analog bus plug using the 0.10 in. slotted screwdriver.



**Figure 3.** Installing the Analog Bus Plug

## Analog Bus Connector

The front side of the terminal block has two connectors for connecting to the analog bus. The low-voltage analog bus plug can be used to connect the analog buses of adjacent switch cards, as shown in Figure 3. The signal connections for the analog bus are shown in Figure 4.



**Figure 4.** Analog Bus Connector

## Specifications

Dimensions .....8.4 by 10.7 by 2.0 cm  
(3.3 by 4.2 by 0.80 in.)

Max voltage  
(signal + common mode) .....Each input should remain within  
30 V<sub>rms</sub> or 60 VDC of ground and  
all other channels to eliminate the  
possibility of hazardous shock.

