PXI-2565 Features

2025-03-20

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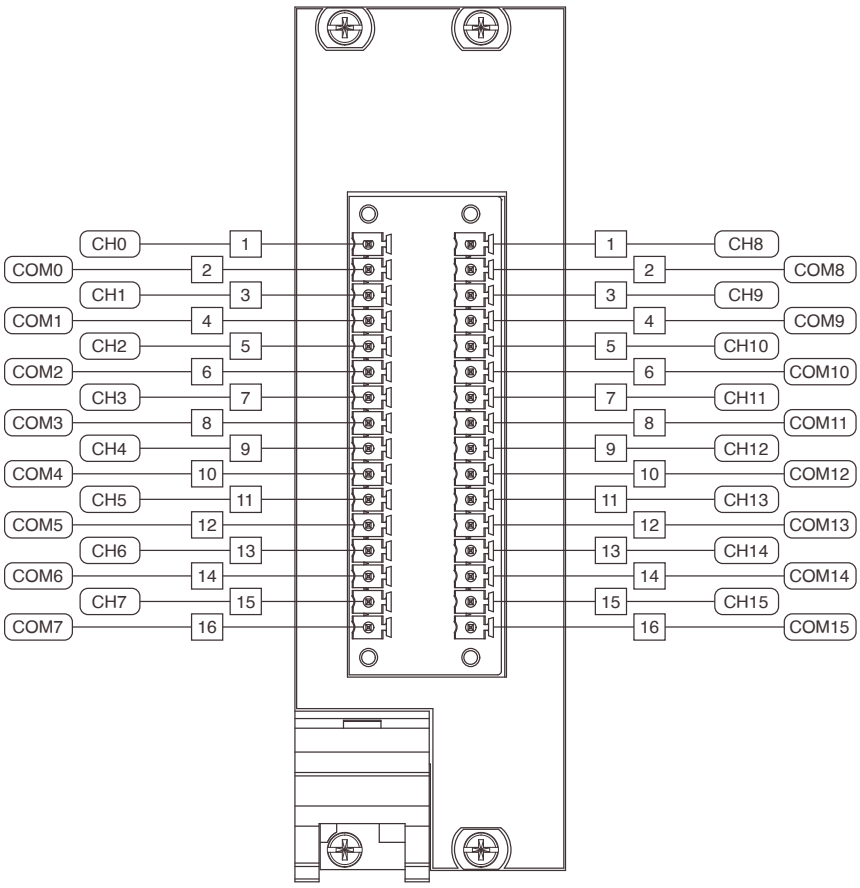
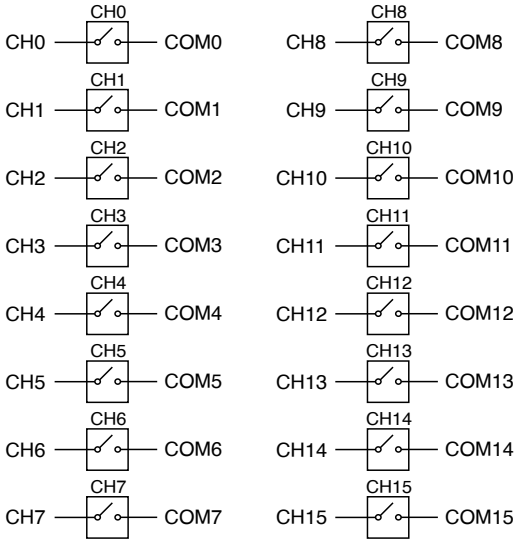


Table 1. Signal Descriptions

Signal	Description
CH***x***	Signal connection
COM***x***	Routing destination for the corresponding channel

PXI-2565 Hardware Diagram

This figure shows the hardware diagram of the module.



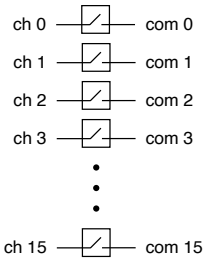
PXI-2565 Topology

Module software name: 2565/16-SPST (NISWITCH_TOPOLOGY_2565_16_SPST)

The module is composed of 16 SPST relays.

Note Switching inductive loads (for example, motors and solenoids) can produce high voltage transients in excess of the module's rated voltage. Without additional protection, these transients can interfere with module operation and impact relay life.

16-SPST Topology



Making a Connection

You can control the channels using the niSwitch Connect Channels VI or the `niSwitch_Connect` function.

For example, to close the relay of channel 2, call `niSwitch_Connect(vi, "ch2", "com2")`. To open the relay of channel 2, call `niSwitch_Disconnect(vi, "ch2", "com2")`.

When scanning the module, a typical scan list entry could be `ch2->com2;`. This entry routes the signal connected to CH2 to COM2.

PXI-2565 Flyback Voltage Protection

When inductive loads are connected to the relays, a large counter electromotive force may occur at relay switching time because of the energy stored in the inductive load. These flyback voltages can severely damage the relay contacts and significantly shorten the life of the relay.

You can limit flyback voltages at your inductive load by installing a flyback diode for DC loads or a varistor for AC loads. The module has solder connections for a diode or varistor. With this diode/varistor installed, you can limit flyback voltages when switching inductive loads.

> **Notice** Before installing the diode or varistor in your module, ensure that no signals are connected to your module front connector.

Before installing your switch module in the PXI chassis, install the diode/varistor by performing the steps described in the following sections.

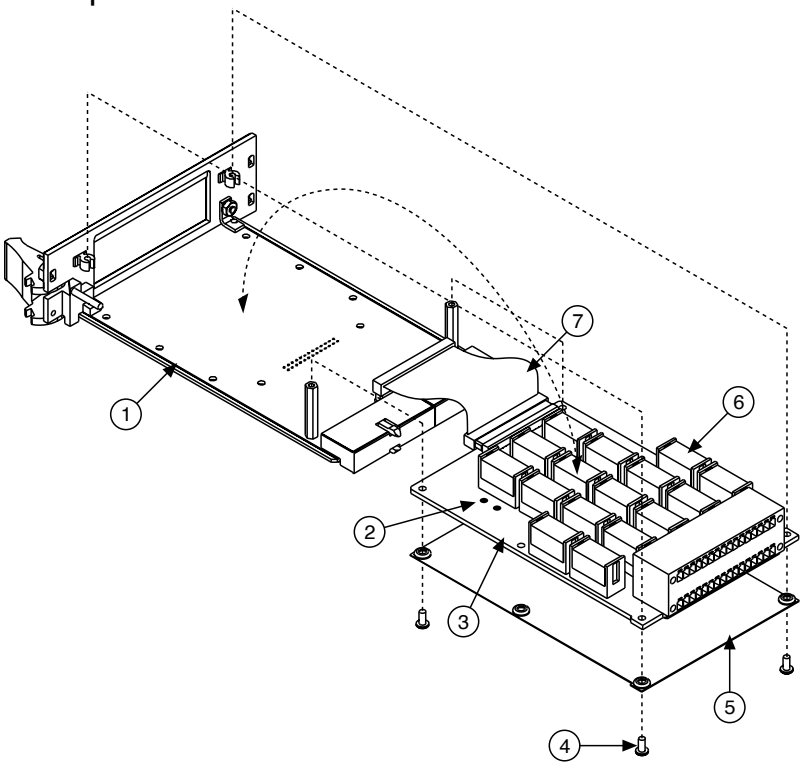
Disassemble the Module

To disassemble the module, complete the following steps, referring to the parts locator diagram as needed.

1. Ground yourself using a grounding strap or a ground connected to your PXI chassis.

> **Note** Properly grounding yourself prevents damage to your module from electrostatic discharge.

2. Loosen the four screws that fasten the relay module to the carrier module and front panel.



1. Carrier Module
2. Solder Location for Flyback Voltage Protection Device
3. Relay Module
4. Screws
5. Plastic Insulator Cover
6. Relay and Socket
7. Ribbon Cable

3. Remove the plastic insulator cover.

4. Lift up the card and disconnect the ribbon cable from the relay module.

Install the Diode/Varistor

Complete the following steps to install the diode/varistor.

1. Remove solder, as necessary, from the diode/varistor locations.
2. Insert the diode/varistor into the appropriate location, labeled RVx, where x corresponds to the channel number.
3. Solder and trim the leads.
4. Reassemble the module by completing the ***Disassemble the Module*** steps in reverse order.

PXI-2565 Relay Replacement

The module uses socketed electromechanical relays.

Refer to the following table for information about ordering replacement relays.

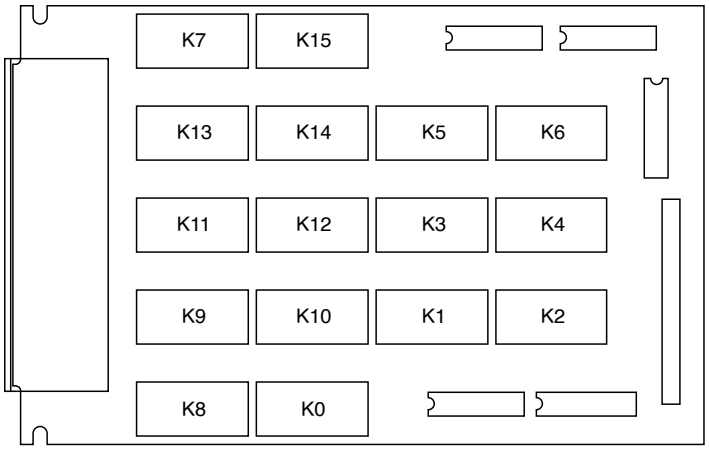
Replacement Relay	Part Number
Aromat (NAiS) (relay manufacturer)	DSP1a-DC5V
NI relay kit (16 relays)	777880-01

Complete the following steps to disassemble your module and replace a failed relay.

1. Ground yourself using a grounding strap or a ground connected to your PXI chassis.

   Note Properly grounding yourself prevents damage to your module from electrostatic discharge.

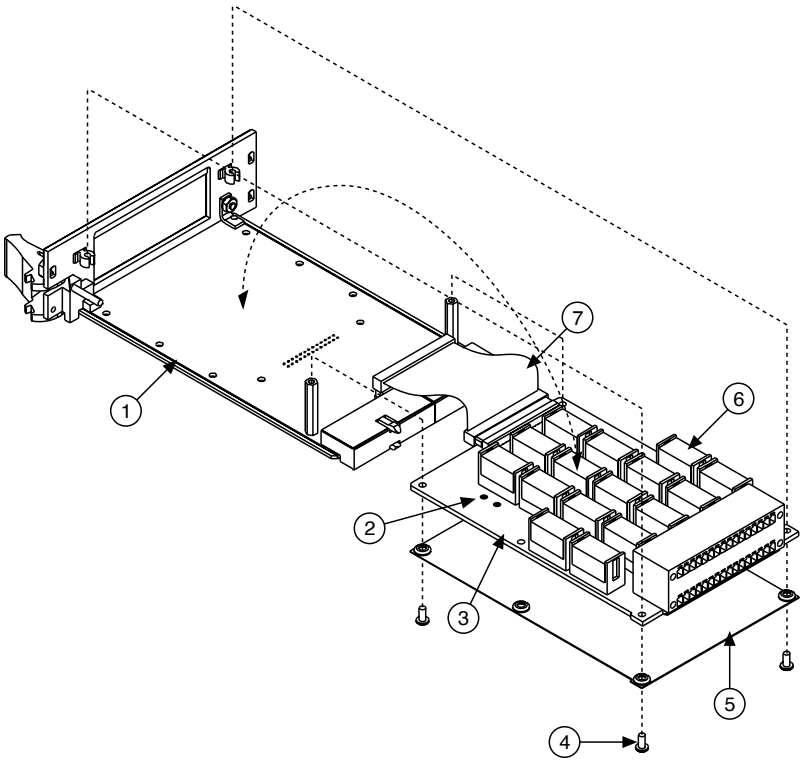
2. Locate the relay you want to replace. Refer to the following figure and table for relay locations.



Channel Name	Relay Name	Channel Name	Relay Name	Channel Name	Relay Name	Channel Name	Relay Name
CH0	K0	CH4	K4	CH8	K8	CH12	K12
CH1	K1	CH5	K5	CH9	K9	CH13	K13
CH2	K2	CH6	K6	ch10	K10	CH14	K14
CH3	K3	CH7	K7	CH11	K11	CH15	K15

3. Remove the four screws that fasten the daughtercard to the main board.
4. Lift up the card as shown in the following figure.

Figure 1. Disassembling the Module



1. Carrier Module
2. Solder Location for Flyback Voltage Protection Device
3. Relay Module
4. Screws
5. Insulator
6. Relay and Socket
7. Ribbon Cable

5. Remove the relay by gently applying force.
6. Before inserting the new relay, match the direction of the relay and the socket.
7. Insert the relay, making sure the relay is properly seated and the socket hooks the top of the relay.