
PXI-2522

Features

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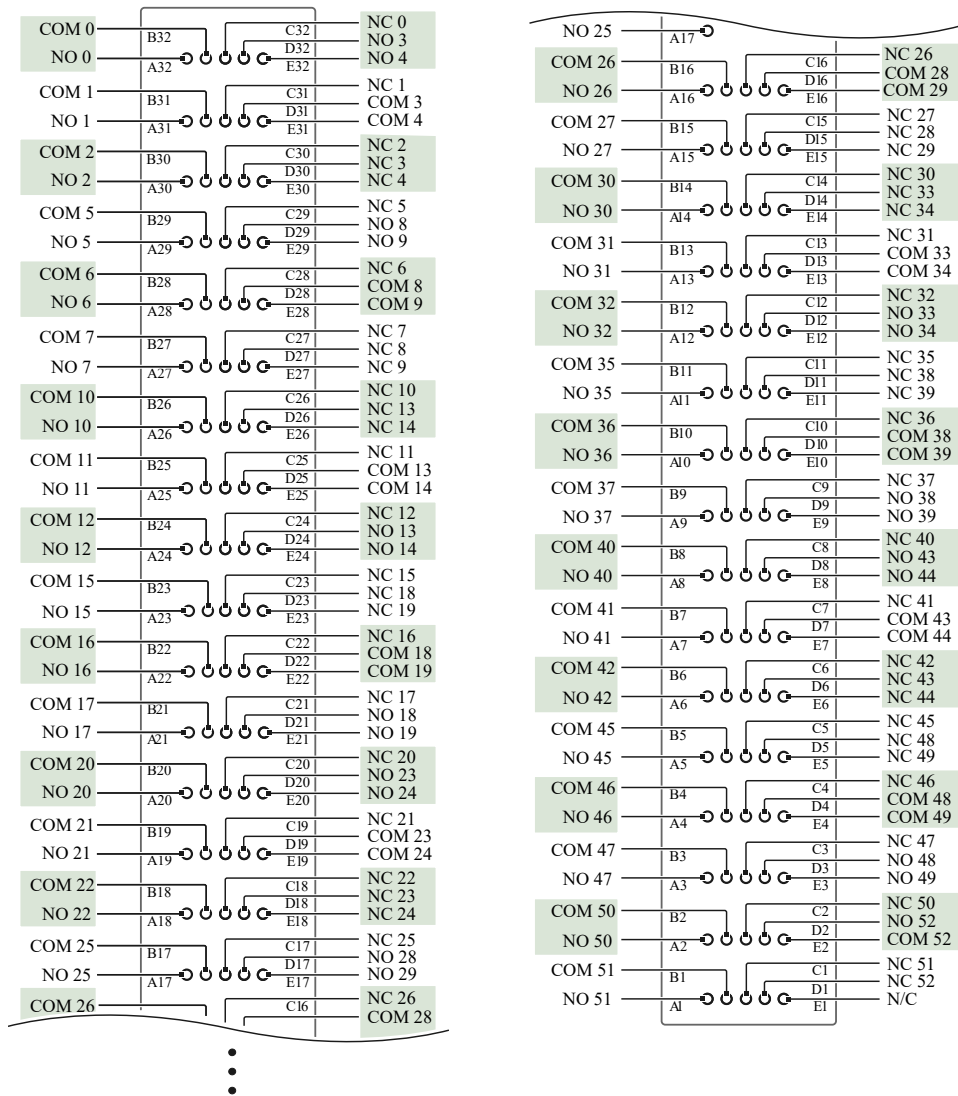


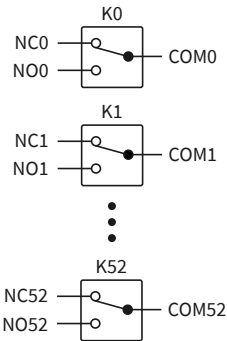
Table 1. Signal Descriptions

Signal	Description
COMx	Routing destination for corresponding signal connections

Signal	Description
NCx	Normally closed signal connection
NOx	Normally open signal connection
N/C	No connection

PXI-2522 Hardware Diagram

This figure shows the hardware diagram of the module.



Refer to the following list for relay names on the module.

k0...k52

PXI-2522 Topology

Module software name: 2522/53-SPDT (NISWITCH_TOPOLOGY_2522_53_SPDT)

The module is composed of 53 armature non-latching SPDT relays.

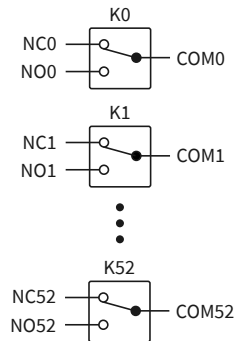
For certain applications, you may need to increase the default settling time.



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.

53-SPDT Topology



Making a Connection

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

To connect the NO terminal to the COM terminal of that channel, disconnect the NC terminal from the COM of that channel.

For example, to connect NO2 to COM2, use the following code:

```
niSwitch_Disconnect(vi, "nc2", "com2")
```

```
niSwitch_Connect(vi, "no2", "com2")
```



Note To connect NO to COM you do not need to disconnect NC from COM after the module has been reset or a call to the `niSwitch Disconnect All Channels VI` or the `niSwitch_DisconnectAll` function has been made.



Note `niSwitch_Disconnect(vi, "nc2", "com2")` does not activate the relay until `niSwitch_Connect(vi, "no2", "com2")` is executed.

To connect the NC terminal to the COM terminal of that channel, disconnect the NO terminal from the COM of that channel.

For example, to connect NC2 to COM2, use the following code:

```
niSwitch_Disconnect(vi, "no2", "com2")
```

```
niSwitch_Connect(vi, "nc2", "com2")
```

When scanning the module, a typical scan list entry could be `nc2->com2`; . This entry routes the signal connected to NC2 to COM2.

PXI-2522 Relay Replacement

The module uses electromechanical armature relays.



Note The module uses a custom lead length to meet safety standards. Trim leads to no more than 1 mm (0.04 in.) from the PCB. You also can use the spare relay included with the module at location K53.

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

Replacement Relay	Part Number
Tyco Electronics (relay manufacturer)	5-1462039-8
NI relay kit (10 relays)	781089-10

Ensure you have the following:

- Temperature-regulated soldering iron set to 371 °C (700 °F) for lead-free solder rework
- 96.5/3.0/0.5 Tin/Silver/Copper solder (flux core) for lead-free solder rework
- Solder wick
- Fine pick
- Isopropyl alcohol
- Cotton swabs



Note The module uses lead-free assemblies. NI recommends using lead-free solder for relay replacement on lead-free assemblies.



Notice Do not rework lead assemblies using a lead-free work station. Lead solder from the unit could contaminate the station.



Notice If a lead-free assembly is reworked with lead solder, label the assembly to indicate this. This can prevent the same unit from being reworked later on a lead-free solder station, which could contaminate the station.

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. Relay names are labeled on the front of the module. The following table maps the relay names to the channel names.

Channel Name	Relay Name	Channel Name	Relay Name	Channel Name	Relay Name
ch0	K0	ch20	K20	ch40	K40
ch1	K1	ch21	K21	ch41	K41
ch2	K2	ch22	K22	ch42	K42
ch3	K3	ch23	K23	ch43	K43
ch4	K4	ch24	K24	ch44	K44
ch5	K5	ch25	K25	ch45	K45
ch6	K6	ch26	K26	ch46	K46
ch7	K7	ch27	K27	ch47	K47
ch8	K8	ch28	K28	ch48	K48

Channel Name	Relay Name	Channel Name	Relay Name	Channel Name	Relay Name
ch9	K9	ch29	K29	ch49	K49
ch10	K10	ch30	K30	ch50	K50
ch11	K11	ch31	K31	ch51	K51
ch12	K12	ch32	K32	ch52	K52
ch13	K13	ch33	K33	—	—
ch14	K14	ch34	K34	—	—
ch15	K15	ch35	K35	—	—
ch16	K16	ch36	K36	—	—
ch17	K17	ch37	K37	—	—
ch18	K18	ch38	K38	—	—
ch19	K19	ch39	K39	—	—

3. Replace the relay as you would any other through-hole part. Trim the replaced relay leads to no more than 1 mm (0.04 in.) from the PCB.



Tip Use the NI-SWITCH Switch Soft Front Panel to reset the relay count after you have replaced a failed relay. Refer to the ***Switch Soft Front Panel Help*** for more information.