PXI-2576 Features

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PXI-2576 Overview

PXI-2576 Pinout

Left label	Pin	Pin	Right label
COM1+	81	80	COM2+
COM0+	160	1	COM3+
COM1−	82	79	COM2−
COM0−	159	2	COM3−
CH4+	83	78	CH8+
CH0+	158	3	CH12+
CH4−	84	77	CH8−
CH0−	157	4	CH12−
CH5+	85	76	CH9+
CtH1+	156	5	CH13+
COM5−	86	75	CH9−
CH1−	155	6	CH13−
CH6+	87	74	CH10+
CH2+	154	7	CH14+
CH6−	88	73	CH10−
CH2−	153	8	CH14−
CH7+	89	72	CH11+
CH3+	152	9	CH15+
CH7−	90	71	CH11−
CH3−	151	10	CH15−
COM5+	91	70	COM6+
COM4+	150	11	COM7+
COM5−	92	69	COM6−
COM4−	149	12	COM7−
CH20+	93	68	CH24+
CH16+	148	13	CH28+
CH20−	94	67	CH24−
CH16−	147	14	CH28−
CH21+	95	66	CH25+
CH17+	146	15	CH29+
CH21−	96	65	CH25−
CH17−	145	16	CH29−
CH22+	97	64	CH26+
CH18+	144	17	CH30+
CH22−	98	63	CH26−
CH18−	143	18	CH30−
CH23+	99	62	CH27+
CH19+	142	19	CH31+
CH23−	100	61	CH27−
CH19−	141	20	CH31−
COM9+	101	60	COM10+
COM8+	140	21	COM11+
COM9−	102	59	COM10−
COM8−	139	22	COM11−
CH36+	103	58	CH40+
CH32+	138	23	CH44+
CH36−	104	57	CH40−
CH32−	137	24	CH44−
CH37+	105	56	CH41+
CH33+	136	25	CH45+
CH37−	106	55	CH41−
CH33−	135	26	CH45−
CH38+	107	54	CH42+
CH34	134	27	CH46+
CH38−	108	53	CH42−
CH34−	133	28	CH46−
CH39+	109	52	CH43+
CH35+	132	29	CH47+
CH39−	110	51	CH43−
CH35−	131	30	CH47−
COM13+	111	50	COM14+
COM12+	130	31	COM15+
COM13−	112	49	COM14−
COM12−	129	32	COM15−
CH52+	113	48	CH56+
CH48+	128	33	CH60+
CH52−	114	47	CH56−
CH48−	127	34	CH60−
CH53+	115	46	CH57+
CH49+	126	35	CH61+
CH53−	116	45	CH57−
CH49−	125	36	CH61−
CH54+	117	44	CH58+
CH50+	124	37	CH62+
CH54−	118	43	CH58−
CH50−	123	38	CH62−
CH55+	119	42	CH59+
CH51+	122	39	CH63+
CH55−	120	41	CH59−
CH51−	121	40	CH63−

Table 1. Signal Descriptions

Signal	Description
CHx+	Positive signal connection
CHx-	Negative signal connection
COMx+	Routing destination for corresponding positive signal connections
COMx-	Routing destination for corresponding negative signal connections

PXI-2576 Topology

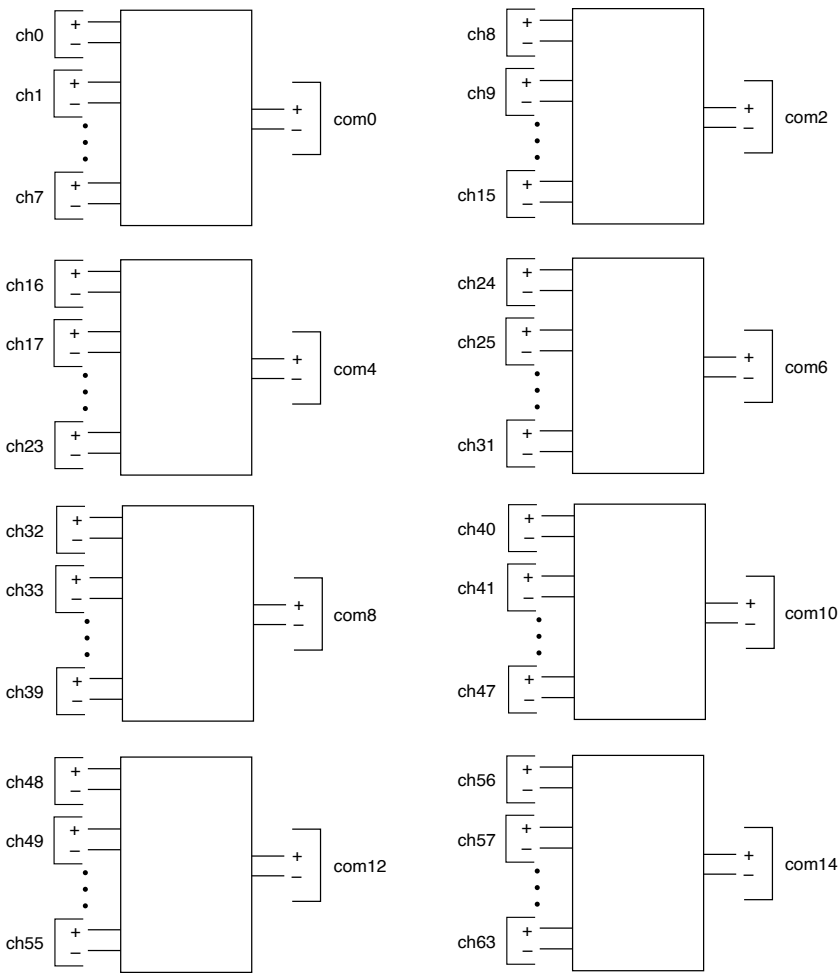Each topology supports immediate and scanning operation modes.

2-Wire Sixteen 4×1 Multiplexer

Software name: 2576/2-Wire Sixteen 4x1 Mux
(NISWITCH_TOPOLOGY_2576_2_WIRE_SIXTEEN_4X1_MUX)
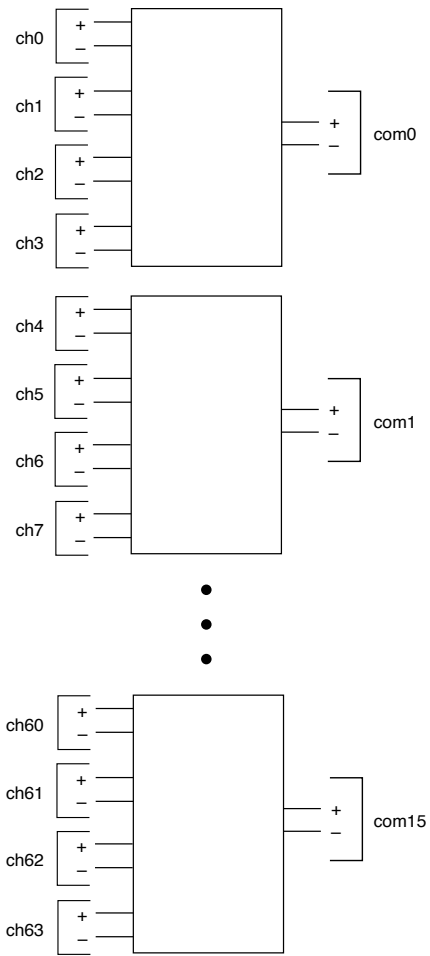
2-Wire Octal 8×1 Multiplexer

Software name: 2576/2-Wire Octal 8x1 Mux
(NISWITCH_TOPOLOGY_2576_2_WIRE_OCTAL_8X1_MUX)

ch0 + −
ch1 + −
ch7 + −
+ − com0

ch8 + −
ch9 + −
ch15 + −
+ − com2

ch16 + −
ch17 + −
ch23 + −
+ − com4

ch24 + −
ch25 + −
ch31 + −
+ − com6

ch32 + −
ch33 + −
ch39 + −
+ − com8

ch40 + −
ch41 + −
ch47 + −
+ − com10

ch48 + −
ch49 + −
ch55 + −
+ − com12

ch56 + −
ch57 + −
ch63 + −
+ − com14

2-Wire Quad 16×1 Multiplexer

Software name: 2576/2-Wire Quad 16x1 Mux
(NISWITCH_TOPOLOGY_2576_2_WIRE_QUAD_16X1_MUX)
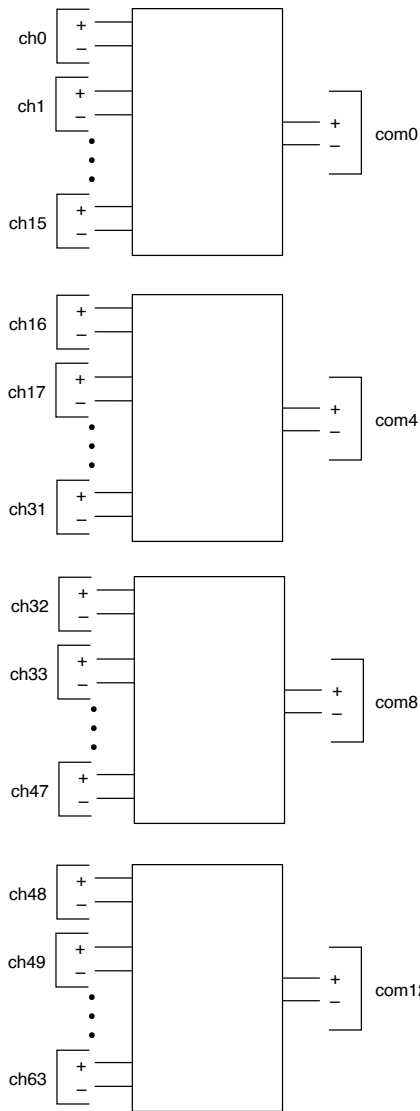
2-Wire Dual 32×1 Multiplexer

Software name: 2576/2-Wire Dual 32x1 Mux
(NISWITCH_TOPOLOGY_2576_2_WIRE_DUAL_32X1_MUX)
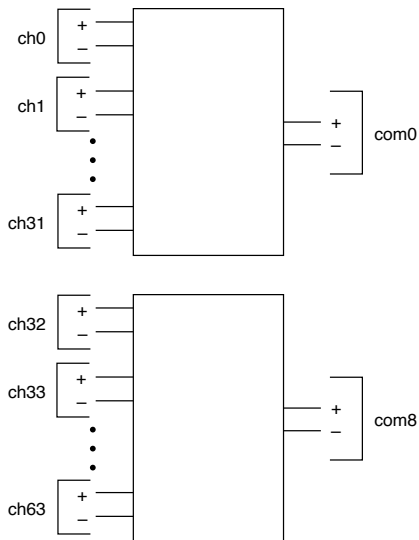
2-Wire 64×1 Multiplexer

Software name: 2576/2-Wire 64x1 Mux
(NISWITCH_TOPOLOGY_2576_2_WIRE_64X1_MUX)
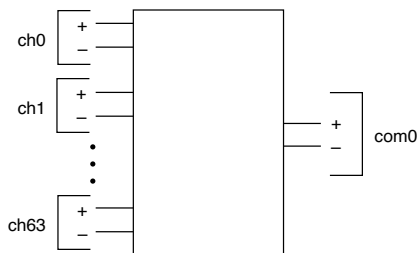
Independent

Software name: 2576/Independent (NISWITCH_TOPOLOGY_2576_INDEPENDENT)

When using the module in the independent topology, connect the signals using the NI TB-2676 terminal block.
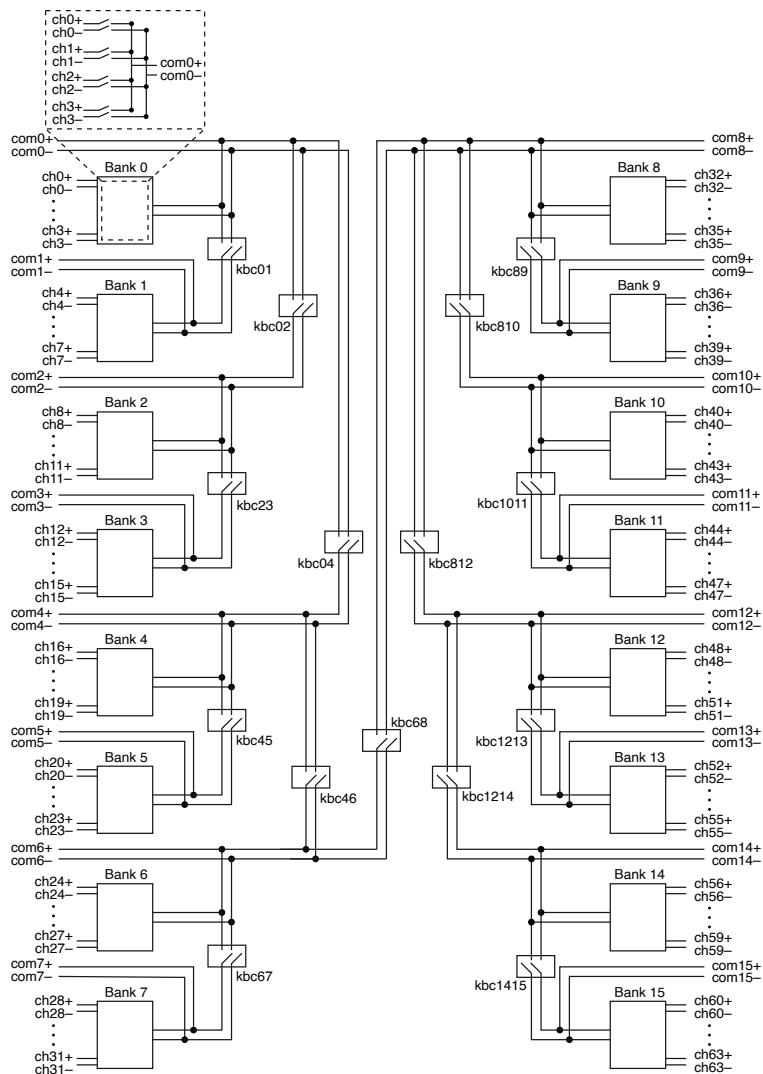
Making a Connection

Positive leads (ch0+ through chx+) route to com0+, and negative leads (ch0– through chx–) route to com0–. The pair com0+ and com0– is addressed collectively as com0 in software.

Both the scanning command, `ch2->com0;`, and the immediate operation, niSwitch Connect Channels VI or the `niSwitch_Connect` function with parameters ch2 and com0, result in the following connections:

- signal connected to ch2+ is routed to com0+
- signal connected to ch2– is routed to com0–

With the independent topology, you can let NI-SWITCH determine the path between two specified channels by setting the intermediate channels as reserved for routing and using the niSwitch Connect Channels VI or the`niSwitch_Connect` function, or you can control individual relays using the niSwitch Relay Control VI or the `niSwitch_RelayControl` function.

PXI-2576 Relay Replacement

The module uses electromechanical armature relays.

Replacement Relay	Part Number
OMRON	G6JU-2P-Y DC4.5
National Instruments (10 relays)	780383-01

Complete the following steps to replace a failed relay.
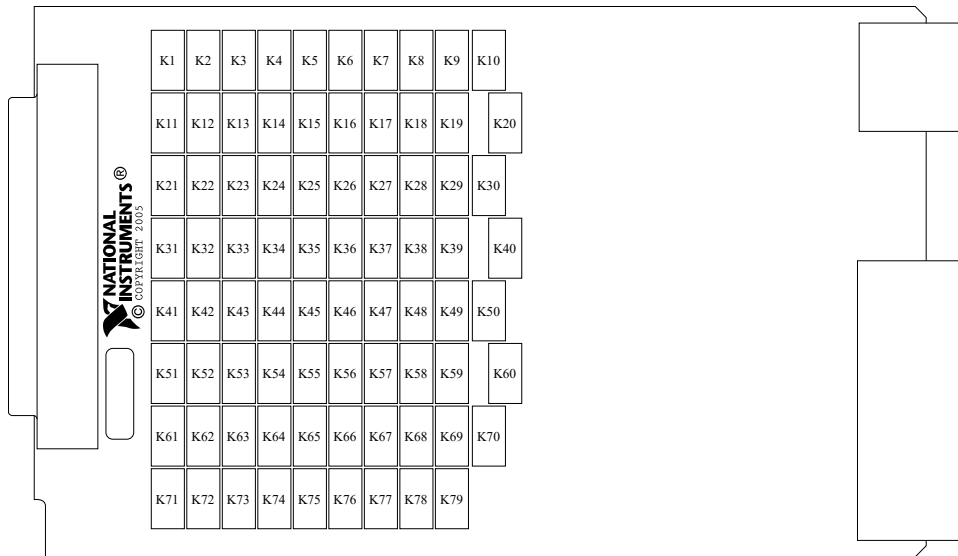
Locate the Relay

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. Refer to the following figure and table to locate the relay you want to replace.

K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
K11	K12	K13	K14	K15	K16	K17	K18	K19	K20
K21	K22	K23	K24	K25	K26	K27	K28	K29	K30
K31	K32	K33	K34	K35	K36	K37	K38	K39	K40
K41	K42	K43	K44	K45	K46	K47	K48	K49	K50
K51	K52	K53	K54	K55	K56	K57	K58	K59	K60
K61	K62	K63	K64	K65	K66	K67	K68	K69	K70
K71	K72	K73	K74	K75	K76	K77	K78	K79	

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Relay Name	Reference Designator	Relay Name	Reference Designator
k0	K6	k40	K56
k1	K7	k41	K57
k2	K8	k42	K58
k3	K9	k43	K59
k4	K1	k44	K51
k5	K2	k45	K52
k6	K3	k46	K53
k7	K4	k47	K54
k8	K16	k48	K66
k9	K17	k49	K67
k10	K18	k50	K68
k11	K19	k51	K69
k12	K11	k52	K61
k13	K12	k53	K62
k14	K13	k54	K63
k15	K14	k55	K64
k16	K26	k56	K76

Relay Name	Reference Designator	Relay Name	Reference Designator
k17	K27	k57	K77
k18	K28	k58	K78
k19	K29	k59	K79
k20	K21	k60	K71
k21	K22	k61	K72
k22	K23	k62	K73
k23	K24	k63	K74
k24	K36	kbc01	K5
k25	K37	kbc23	K15
k26	K38	kbc45	K25
k27	K39	kbc67	K35
k28	K31	kbc89	K45
k29	K32	kbc1011	K55
k30	K33	kbc1213	K65
k31	K34	kbc1415	K75
k32	K46	kbc02	K10
k33	K47	kbc46	K30
k34	K48	kbc810	K50
k35	K49	kbc1214	K70
k36	K41	kbc04	K20
k37	K42	kbc812	K60
k38	K43	kbc68	K40
k39	K44		—

3. Locate the assembly and serial number labels on the board with the relay you want to replace. White labels indicate the board was assembled using lead solder (Sn 63 Pb 37). Green labels indicate the board was assembled using lead-free solder (Sn 96.5 Ag 3.0 Cu 0.5). Lead-free assemblies have assembly numbers

ending in L

Replace the Relay

Ensure you have the following:

- Temperature-regulated soldering iron
  - Set to 371 °C (700 °F) for lead-free solder rework
  - Set to 316 °C (600 °F) for lead solder rework
- Solder
  - 96.5/3.0/0.5 Tin/Silver/Copper solder (flux core) for lead-free solder rework
  - 63/37 Tin/Lead solder (flux core) for lead solder rework
- Solder wick
- Fine pick
- Isopropyl alcohol
- Cotton swabs

Note NI recommends using lead-free solder for relay replacement on lead-free assemblies, and lead solder for relay replacement on lead 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.

Replace the relay as you would any other through-hole part.

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.