

The following pages are extracts from the manual for the 7011-S and 7011-C switch cards. The complete manual is available by download from the document center.

3.3.4 Multi-pin (mass termination) connector card

Since connections to external circuitry are made at the 96-pin male DIN bulkhead connector, there is no need to separate the connector card from the relay card. If the connector card is separated from the relay card, carefully mate them together and install the supplied 4-40 mounting screw. Make sure to handle the cards by the edges and shields to avoid contamination.

Terminal identification for the DIN connector of the multi-pin connector card is provided by Figure 3-8. This connector will mate to a 96-pin female DIN connector.

Keithley has a variety of cable and connector accessories available to accommodate connections from the

connector card to test instrumentation and DUT (devices under test). In general, these accessories, which are summarized in Table 3-2, utilize a round cable assembly for connections.

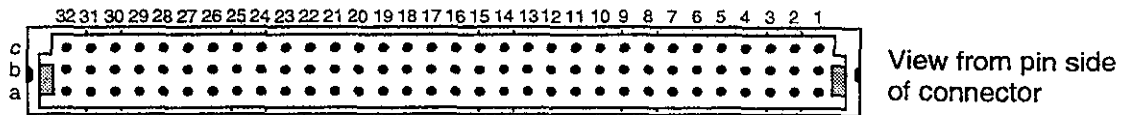
Table 3-2
Mass termination accessories

Model	Description
7011-KIT-R	96-pin female DIN connector and housing for round cable.
7011-MTC-2	Two-meter round cable assembly terminated with a 96-pin female DIN connector on each end.
7011-MTR	96-pin male DIN bulkhead connector.

Pins of the Model 7011-C mass termination connector can be identified in one of three ways:

1. Mux terminal, consisting of banks A-D and inputs 1-10.
2. Connector description, consisting of rows a-c and columns 1-32.
3. Schematic and component layout designation (1-96).

The following pinout diagrams show the correspondence between these arrangements:



Mux Terminal	Connector Desig. 1a-32c	Schem. Desig. 1-96	Mux Terminal	Connector Desig. 1a-32c	Schem. Desig. 1-96	Mux Terminal	Connector Desig. 1a-32c	Schem. Desig. 1-96	Mux Terminal	Connector Desig. 1a-32c	Schem. Desig. 1-96
Bank A			Bank B			Bank C			Bank D		
Input 1	HI 32c	96	Input 1	HI 24c	88	Input 1	HI 16c	80	Input 1	HI 8c	72
	LO 32b	64	Input 1	LO 24b	56		LO 16b	48	Input 1	LO 8b	40
Input 2	HI 32a	32	Input 2	HI 24a	24	Input 2	HI 16a	16	Input 2	HI 8a	8
	LO 31c	95	Input 2	LO 23c	87		LO 15c	79	Input 2	LO 7c	71
input 3	HI 31b	63	Input 3	HI 23b	55	Input 3	HI 15b	47	Input 3	HI 7b	39
	LO 31a	31	Input 3	LO 23a	23		LO 15a	15	Input 3	LO 7a	7
Input 4	HI 30c	94	Input 4	HI 22c	86	Input 4	HI 14c	78	Input 4	HI 6c	70
	LO 30b	62	Input 4	LO 22b	54		LO 14b	46	Input 4	LO 6b	38
input 5	HI 30a	30	Input 5	HI 22a	22	Input 5	HI 14a	14	Input 5	HI 6a	6
	LO 29c	93	Input 5	LO 21c	85		LO 13c	77	Input 5	LO 5c	69
Input 6	HI 29b	61	Input 6	HI 21b	53	Input 6	HI 13b	45	Input 6	HI 5b	37
	LO 29a	29	Input 6	LO 21a	21		LO 13a	13	Input 6	LO 5a	5
Input 7	HI 28c	92	Input 7	HI 20c	84	Input 7	HI 12c	76	Input 7	HI 4c	68
	LO 28b	60	Input 7	LO 20b	52		LO 12b	44	Input 7	LO 4b	36
Input 8	HI 28a	28	Input 8	HI 20a	20	Input 8	HI 12a	12	Input 8	HI 4a	4
	LO 27c	91	Input 8	LO 19c	83		LO 11c	75	Input 8	LO 3c	67
input 9	HI 27b	59	Input 9	HI 19b	51	Input 9	HI 11b	43	Input 9	HI 3b	35
	LO 27a	27	Input 9	LO 19a	19		LO 11a	11	Input 9	LO 3a	3
Input 10	HI 26c	90	Input 10	HI 18c	82	Input 10	HI 10c	74	Input 10	HI 2c	66
	LO 26b	58	Input 10	LO 18b	50		LO 10b	42	Input 10	LO 2b	34
Output	HI 26a	26	Output	HI 18a	18	Output	HI 10a	10	Output	HI 2a	2
	LO 25c	89	Output	LO 17c	81		LO 9c	73	Output	LO 1c	65

- Notes: 1. Pins 9a and 9b (pins 9 and 41 on schematic) are shield.
 2. Short pins 1a to 1b on the mating connector (pins 1 and 33 on schematic) to allow the output relays on the connector card to close.

Figure 3-8
 Multi-pin card terminal identification

Typical connection techniques

All external circuitry, such as instrumentation and DUTs, that you wish to connect to the multiplexer card must be terminated with a single 96-pin female DIN connector. The following connection techniques provide some guidelines and suggestions for wiring your circuitry.

WARNING

Before beginning any wiring procedures, make sure all power is off and any stored energy in external circuitry is discharged.

NOTE

External circuitry should be connected (if needed) only with the 7001's power after the Model 7011 assembly is installed in the Model 7001 mainframe. Installation is covered in paragraph 3.5.

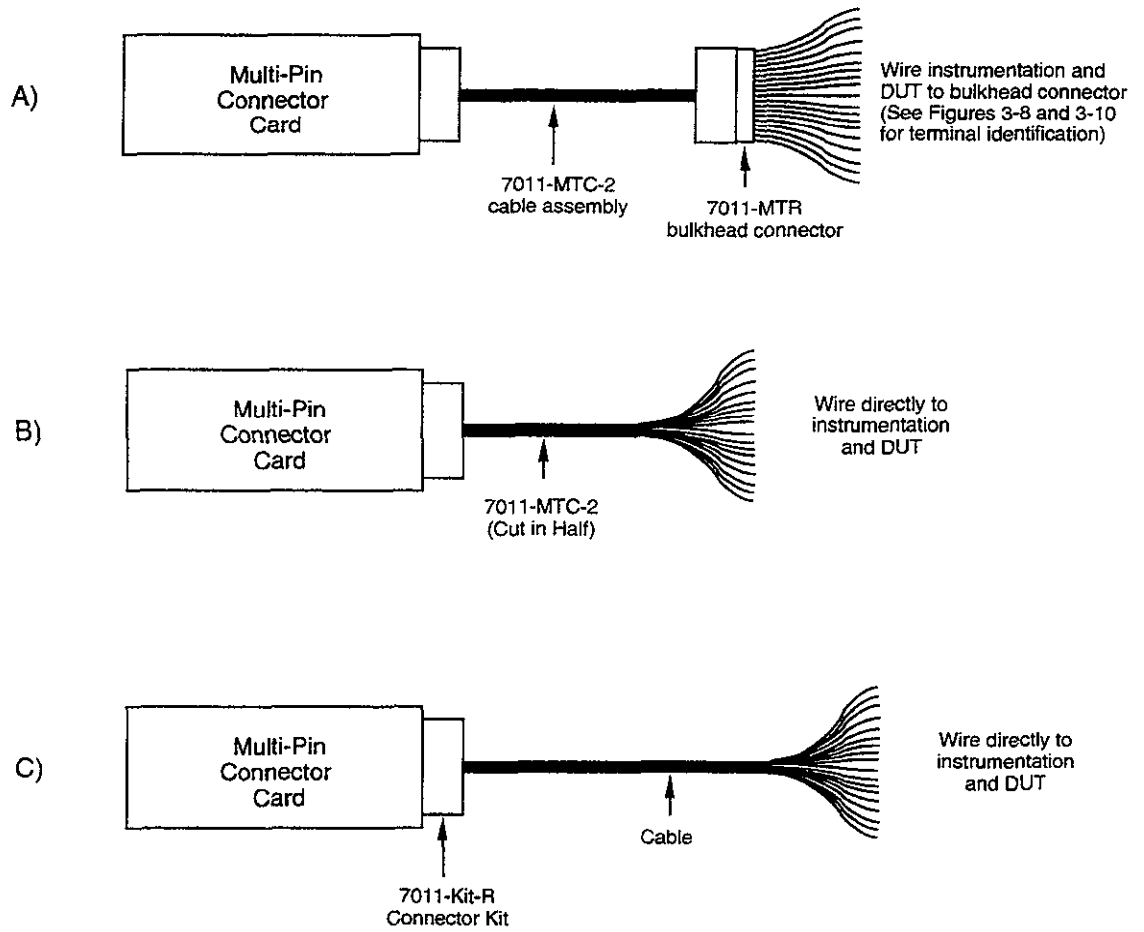
Output relays— The multi-pin connector card uses a relay for each of the four output banks. These output relays are normally open to prevent any hazardous voltages (via the mainframe backplane) from appearing on the pins of the male DIN connector. The output relays will only close when the Model 7011-MTC-2 cable assembly is connected to card. If building your own cable assembly, you must make sure that it shorts pins 1a to 1b of the card connector (Figure 3-8) when it is mated to the card. Shorting pins 1a to 1b allows the output relays to close.

Round cable assemblies — Figure 3-9 shows typical round cable connection techniques using accessories available from Keithley.

In Figure 3-9A, connections are accomplished using a Model 7011 MTC-2 cable and a Model 7011-MTR bulkhead connector. The two-meter round cable is terminated with a 96-pin female DIN connector at each end. This cable mates directly to the multi-pin connector card and to the bulkhead connector. The bulkhead connector has solder cups to allow direct connection to instrumentation and DUT. Figure 3-10 provides the pinout for the bulkhead connector.

In Figure 3-9B, connections are accomplished using a Model 7011 MTC-2 cable assembly that is cut in half. The 96-pin female DIN connector on one end of the cable mates directly to the multi-pin connector card. The unterminated end of the cable is wired directly to instrumentation and DUT. The other half of the cable assembly could be used for a second switching card.

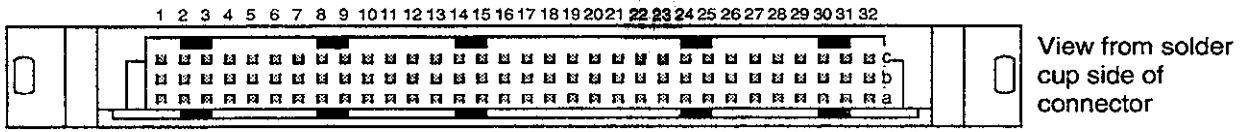
In Figure 3-9C, connections are accomplished using a custom-built cable assembly that consists of a Model 7011-KIT-R connector and a suitable round cable. Hitachi cable part number N2807-P/D-50TAB is a 50-conductor cable. Two of these cables can be used to supply 100 conductors. The connector has solder cups to accommodate the individual wires of the unterminated cable. Figure 3-11 provides an exploded view of the connector assembly and shows how the cable is connected. The connector end of the resultant cable assembly mates directly to the multi-pin connector card. The unterminated end of the cable assembly is wired directly to instrumentation and DUT.



Notes : Figure 3-11 provides an exploded view showing how the connector (with cable) is assembled.

Cable Hitachi p/n N2807-P/D-50TAB is a 50-conductor round cable. Two of these cables can be used to supply 100 conductors.

Figure 3-9
Typical round cable connection techniques



View from solder cup side of connector

Note : See Figure 3-8 for terminal identification.

Figure 3-10
Model 7011-MTR connector pinout

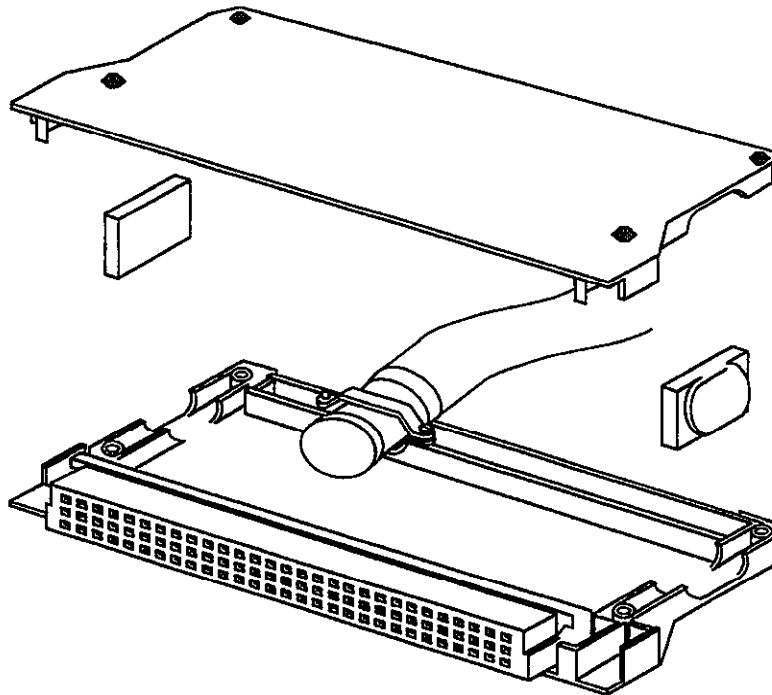


Figure 3-11
Model 7011-KIT-R (with/cable) assembly