7709 6×8 Matrix Module

Datasheet

KEITHLEY
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The 7709 plug-in module is a two-pole, 6×8 matrix module. It can connect any combination of six differential channels of instrumentation to any combination of eight differential device-under-test channels. The instrumentation can be AC and DC sources, internal or external meters, oscilloscopes, etc. This matrix configuration allows wide flexibility for complex test systems.
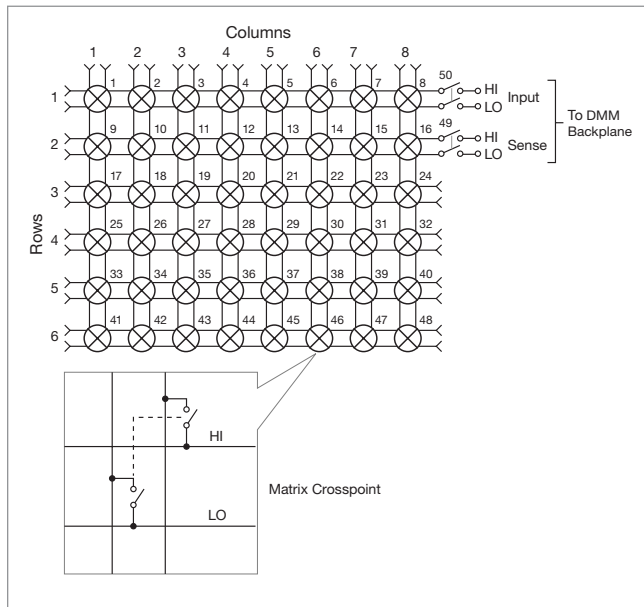
Key Features

- Automatic two- or four-wire connection to DMM
- 6 row × 8 column matrix
- Expandable to larger switch configurations by daisy-chaining or cascading multiple modules
- Two female D-sub connectors are standard for secure hook-up and quick teardown
- 300 V, 1 A capacity
- Relay closures stored in onboard memory

Ordering Information

7709	6×8 Matrix Module
Warranty	1 year

Matrix Crosspoint

Specifications

Capabilities

DMM Connection

2-Wire Functions	Row 1, channels 1–8, through channel 50.
4-Wire Functions	Row 1, channels 1–4 (Source to Input) through channel 50 and Row 2, channels 13–16 (Sense), through channel 49.
Close Channel	CLOSE command connects channels 1–8 to DMM. For 4-wire, channels 1–4 are automatically paired with channels 13–16. ROUTe:MULTiple allows any combination of rows and columns to be connected at the same time.

Inputs

Maximum Signal Level

Any Channel to Any Channel (1–48): 300 VDC or 300 Vrms (425 V peak) for AC waveforms, 1 A switched, 60 W, 125 VA maximum.

Contact Life (typ.)	>10^5 operations at max. signal level. >10^8 operations no load [1].

1. Minimum signal level 10 mV, 10 µA.

Contact Resistance	<1 Ω any path and additional 1 Ω at end of contact life.
Contact Potential	<3 µV per contact pair.
Offset Current	<100 pA.
Connector Type	50-pin female D-shell for rows and columns. 25-pin female D-shell for "daisy-chain" rows. Supplied with male IDC ribbon cable connectors.

Isolation Between Any Two Terminals
>10^9 Ω, <200 F.

Isolation Between Any Terminal and Earth
>10^9 Ω, <400 pF.

Cross Talk (1 MHz, 50 Ω Load)
<−35 dB.

Insertion Loss (50 Ω Source, 50 Ω Load)
<0.35 dB below 1 MHz. <3 dB below 2 MHz.

Common Mode Voltage
300 VDC or 300 Vrms (425 V peak) for AC waveforms between any terminal and chassis.

General

Matrix Configuration	6 rows × 8 columns.
Contact Configuration	2 pole Form A.
Relay Type	Latching electromechanical.
Actuation Time	<3 ms.

Environmental and Safety

Operating Environment: Specified for 0° to 50°C. Specified to 80% R.H. at 35°C.

Storage Environment: –25° to 65°C.

EMC: Conforms to European Union EMC Directive.

Safety: Conforms to European Union Low Voltage Directive

RoHS: Conforms to European Union RoHS Directive

Weight	0.52 kg (1.16 lb).

Supplied Accessories

7709-306A	50-pin D-Sub Male IDC Connector Kit
7709-307A	25-pin D-Sub Male IDC Connector Kit

Available Accessories

7789	50/25 Pin Male D-Shell Solder Cup Connectors
7790	50/50/25 Pin Female/Male D-Shell IDC Connectors
7705-MTC-2	50 Pin Male to Female D-sub Cable, 2m (6.6 ft).
7707-MTC-2	25 Pin Male to Female D-sub Cable, 2m (6.6 ft).

Available Services

7709-3Y-EW	1-year factory warranty extended to 3 years from date of shipment

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