

# 7709 6x8 Matrix Module

## Datasheet



**KEITHLEY**  
A Tektronix Company

The 7709 plug-in module is a two-pole, 6x8 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.

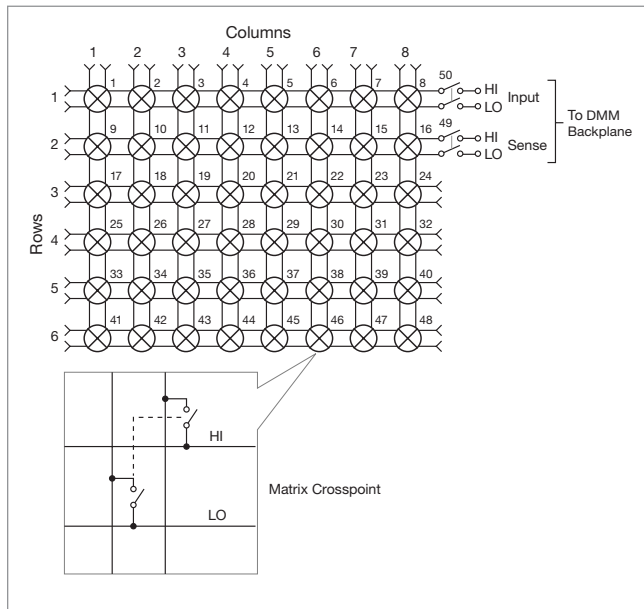
### Key Features

- Automatic two- or four-wire connection to DMM
- 6 row x 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 6x8 Matrix Module

Warranty 1 year



### 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<sup>9</sup> operations at max. signal level.  
>10<sup>8</sup> operations no load <sup>1</sup>.

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<sup>9</sup> Ω, <200 F.

##### Isolation Between Any Terminal and Earth

>10<sup>9</sup> 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 x 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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