

3731

- 6 row by 16 column matrix (2-pole) using high speed, long life reed relays
- Analog backplane connection relays provide easy column expansion
- 200V, 1A switched or 2A carry signal capacity; 10W, 10VA
- Screw terminal connections provided on removable 3731-ST accessory
- Relay actuation time of 0.5ms
- Ideal for multi-channel I-V testing with Series 2600/2600A System SourceMeter® Instruments
- Long life dry reed relays (>10⁹ operations)

Ordering Information

3731 **6×16 High Speed Reed Matrix Card**

6×16 High Speed, Reed Relay, Matrix Card

96 two-pole crosspoints with column expansion relays



The Model 3731 is a two-pole, 6 row by 16 column reed relay matrix card. By using high speed reed relays with actuation times of 0.5ms, this card meets the requirements of demanding throughput applications while offering users the additional benefit of long life, exceeding one billion operations. The card can connect up to six differential instrument channels to any combination of 16 DUTs (devices under test). Any row can be connected to the Series 3700 mainframe backplane by using the analog backplane connection relays. This allows for easy matrix column expansion. A matrix of up to 6 rows by 96 columns can be supported within a single Model 3706 mainframe (with six Model 3731 cards).

The Model 3731 uses two 50-pin male D-sub connectors for signal connections. For screw terminal connections, use the detachable Model 3731-ST accessory.

ACCESSORIES AVAILABLE

3721-MTC-1.5	50-Pin D-sub Female to Male Cable, 1.5m (5 ft.)
3721-MTC-3	50-Pin D-sub Female to Male Cable, 3m (10 ft.)
3731-ST	Screw Terminal Block
3790-KIT50-R	50-Pin Female D-sub Connector Kit (contains 2 female D-sub connectors and 100 solder-cup contacts)

SERVICES AVAILABLE

3731-3Y-EW-STD	1-year factory warranty extended to 3 years from date of shipment
3731-5Y-EW-STD	1-year factory warranty extended to 5 years from date of shipment
C/3731-3Y-STD	3 (Z540-1 compliant) calibrations within 3 years of purchase*

*Not available in all countries

High speed 6×16 reed matrix card

SWITCHING AND CONTROL

1.888.KEITHLEY (U.S. only)

www.keithley.com

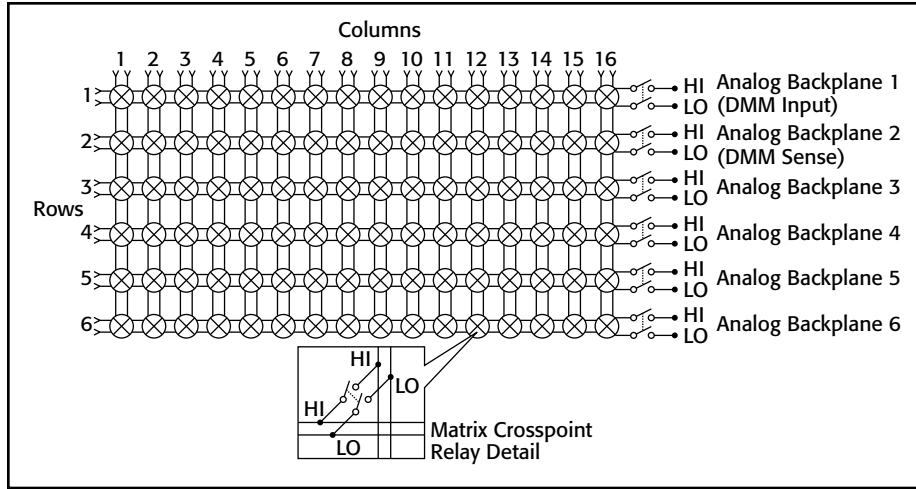
KEITHLEY

A GREATER MEASURE OF CONFIDENCE

3731

6×16 High Speed, Reed Relay, Matrix Card 96 two-pole crosspoints with column expansion relays

Model 3731 specifications



96 Two-Pole Crosspoints with Column Expansion Relays

MATRIX CONFIGURATION: 6 row by 16 column matrix. Columns can be expanded using the backplane or isolated by relays.

CONTACT CONFIGURATION: 2-pole form A.

CONNECTOR TYPE: Two 50-pin male D-shells.

MODEL 3731-ST SCREW TERMINAL OPTION:

Typical wire size: #22 AWG with .062 inch O.D.;

88 conductors maximum

Maximum wire size: #16 AWG with .092 inch O.D.;

44 conductors per card maximum.

MAXIMUM SIGNAL LEVEL: 200V DC or peak AC, 1A switched (2A carry), 10W, 10VA.

COMMON MODE VOLTAGE: 200V DC or peak AC between any signal path to a signal path or ground.

VOLT-HERTZ LIMIT: 8×10⁷.

CONTACT LIFE:

Reed: >10⁹ operations no load. >8×10⁶ operations @ 100V, 10mA.

EMR (Backplane): >10⁸ operations @ 5V, 10mA and 10⁵ operations @ maximum signal level.

6×16^{1,2}

Channel Resistance (end of contact life)	<1.5 Ω
Contact Potential (differential)	<±80 μV
Offset Current	<±500 pA
Isolation	
Differential	3×10 ⁹ Ω, 300 pF
Channel-Channel	3×10 ⁹ Ω, 100 pF
Common Mode	3×10 ⁹ Ω, 150 pF
Crosstalk Channel-Channel	
300kHz	<-60 dB
1MHz	<-50 dB
15MHz	<-20 dB
Bandwidth	19 MHz

GENERAL

ACTUATION TIME: 0.5ms.

RELAY TYPE: Reed.

RELAY DRIVE SCHEME: Direct drive.

INTERLOCK: Backplane relays disabled when terminal assembly is removed.

OPERATING ENVIRONMENT: Specified for 0° to 50°C. Specified to 70% R.H. at 35°C.

STORAGE ENVIRONMENT: -25° to 65°C.

WEIGHT: 2.2 lbs.

SAFETY: Compliant with European Union Low Voltage Directive

FIRMWARE: Requires Series 3700 firmware revision 1.30 or later (applies to all Series 3700 mainframes)

SYSTEM SPECIFICATIONS: Refer to the Keithley Instruments Model 3700 System Switch/Multimeter Specifications Rev. C or later

EMC: Compliant with European Union EMC Directive

1. Connections made using 3731-ST.

2. 3706 mainframe with all DMM backplane relays disconnected.

Specifications are subject to change without notice.

All Keithley trademarks and trade names are the property of Keithley Instruments, Inc. All other trademarks and trade names are the property of their respective companies.

KEITHLEY

A GREATER MEASURE OF CONFIDENCE

KEITHLEY INSTRUMENTS, INC. ■ 28775 AURORA ROAD ■ CLEVELAND, OHIO 44139-1891 ■ 440-248-0400 ■ Fax: 440-248-6168 ■ 1-888-KEITHLEY ■ www.keithley.com



SWITCHING AND CONTROL