

# 3731

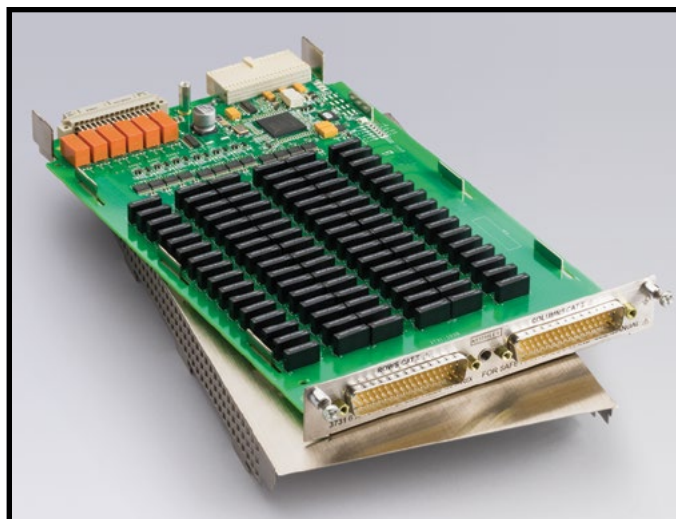
- 6 row by 16 column matrix (2-pole) using high speed, long life reed relays
- Analog backplane connection relays provide easy column expansion
- 200V, 1A switched or 2A carry signal capacity; 10W, 10VA
- Screw terminal connections provided on removable 3731-ST accessory
- Relay actuation time of 0.5ms
- Ideal for multi-channel I-V testing with Series 2600B Systems
- Long life dry reed relays (>10<sup>9</sup> operations)

## Ordering Information

**3731 6×16 High Speed, Reed Relay, 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 3700A 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 3706A 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

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[www.keithley.com](http://www.keithley.com)

**KEITHLEY**

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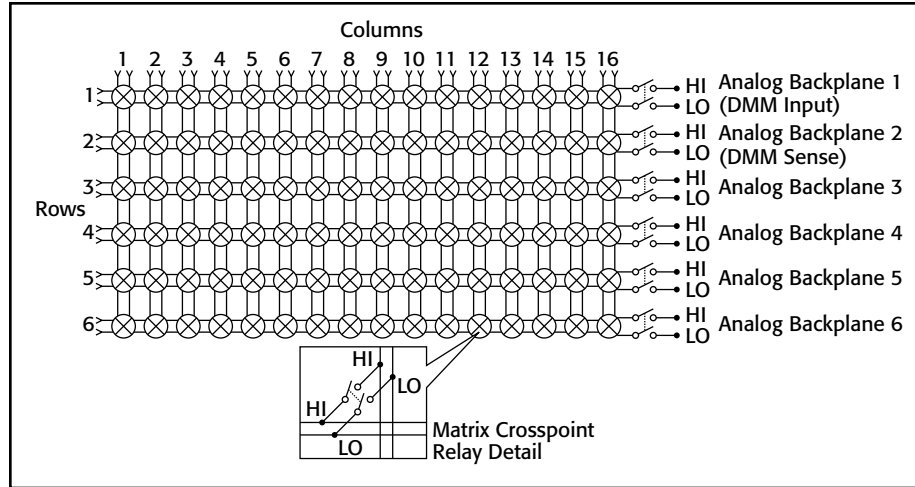
High speed 6×16 reed matrix card

SWITCHING AND CONTROL

**3731**

# 6×16 High Speed, Reed Relay, Matrix Card

96 two-pole crosspoints with column expansion relays



## 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:** 8×10<sup>7</sup>.

**CONTACT LIFE:**

Reed: >10<sup>9</sup> operations no load. >8×10<sup>6</sup> operations @ 100V, 10mA.

EMR (Backplane): >10<sup>8</sup> operations @ 5V, 10mA and 10<sup>5</sup> operations @ maximum signal level.

6×16 <sup>1,2</sup>	
Channel Resistance (end of contact life)	<1.5 Ω
Contact Potential (differential)	<±80 μV
Offset Current	<±500 pA
<b>Isolation</b>	
Differential	3×10 <sup>9</sup> Ω, 300 pF
Channel-channel	3×10 <sup>9</sup> Ω, 100 pF
Common Mode	3×10 <sup>9</sup> Ω, 150 pF
<b>Crosstalk Channel-channel</b>	
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

**EMC:** Compliant with European Union EMC Directive 2004/108/EC, EN61326-1.

## NOTES

1. Connections made using 3731-ST.

2. 3706A mainframe with all DMM backplane relays disconnected.

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