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High speed, dual 1×30 multiplexer card

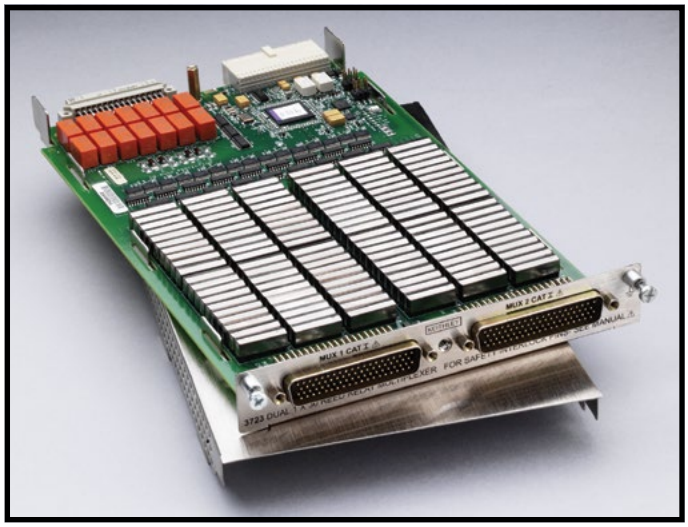
SWITCHING AND CONTROL

3723

Dual 1×30, High Speed, Multiplexer Card

60 differential channels, long life reed relays

- 60 two-pole or 30 four-pole channels for high speed scanning
- 120 channel single-pole mode for one-wire (common side) measurements
- Analog backplane connection relays provide easy bank and card interconnections
- 200V, 1A switched or 1.25A carry signal capacity; 15W
- Relay actuation time <0.5ms
- 20MHz bandwidth
- Ideal for multi-channel I-V testing with Series 2600B SourceMeter® SMU instruments
- Long life dry reed relays (>10^9 operations)



The Model 3723 offers two independent banks of high speed 1×30 two-pole multiplexers that are ideal for high speed scanning applications. The two banks can automatically be connected to the Series 3700A mainframe backplane and optional DMM through the analog backplane connection relays. This connection allows the mainframe to reconfigure the Model 3723 as a single 1×60 two-pole multiplexer or as a single 1×120 single-pole multiplexer. It also enables card-to-card expansion for even larger configurations.

By using high speed reed relays with actuation times of less than 0.5ms, this card can meet demanding throughput applications. Another feature of the Model 3723 is its single-ended, one-pole mode, which supports up to 120 channels of single-wire measurements.

The Model 3723 uses two 78-pin D-sub connectors for signal connections. For screw terminal connections, use the Model 3723-ST for two- and four-pole configurations or the Model 3723-ST-1 for single-wire applications.

Ordering Information

3723 Dual 1×30, High Speed, Reed Relay, Multiplexer Card

ACCESSORIES AVAILABLE

3720-MTC-1.5	78 Pin D-sub Female to Male Cable, 1.5m (5 ft.)
3720-MTC-3	78 Pin D-sub Female to Male Cable, 3m (10 ft.)
3723-ST	Screw Terminal Block
3723-ST-1	Screw Terminal Block for single-pole applications
3791-CIT	Contact Insertion and Extraction Tool
3791-KIT78-R	78 Pin Female D-sub Connector Kit (contains 2 female D-sub connectors and 156 solder-cup contacts)

SERVICES AVAILABLE

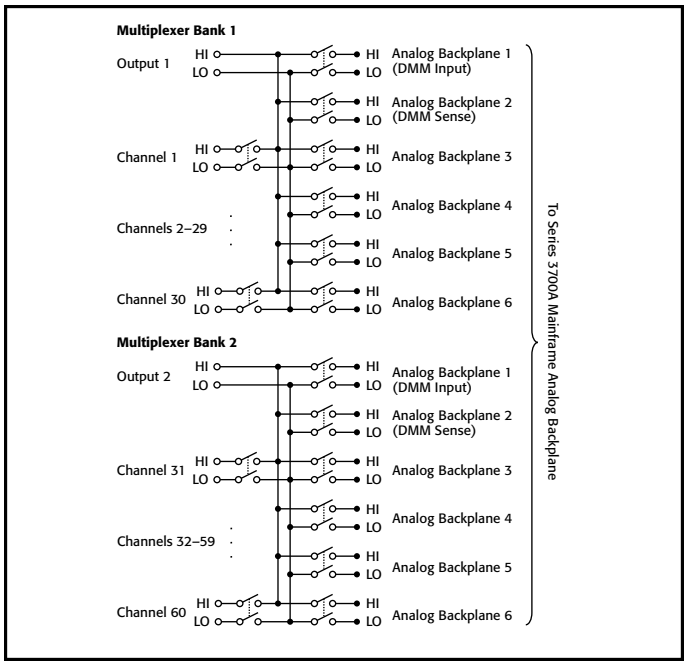
3723-3Y-EW-STD	1-year factory warranty extended to 3 years from date of shipment
3723-5Y-EW-STD	1-year factory warranty extended to 5 years from date of shipment
C/3723-3Y-STD	3 (Z540-1 compliant) calibrations within 3 years of purchase*

*Not available in all countries

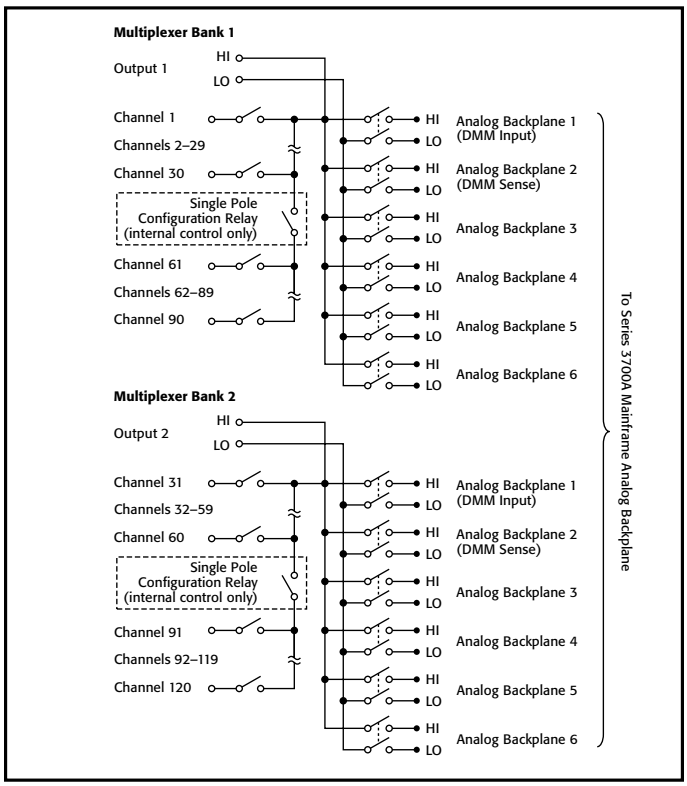
3723

Dual 1×30, High Speed, Multiplexer Card

60 differential channels, long life reed relays



Two-pole mode



Single-pole mode

MULTIPLEXER CONFIGURATION: Two independent 1×30 2-pole multiplexers. Banks can be connected together via relay creating a single 1×60 multiplexer. Banks can be isolated from the backplane by relays. Card can be configured for 1-, 2-, and 4-wire.

CONTACT CONFIGURATION: 2 pole form A.

CONNECTOR TYPE: Two 78-pin male D-shells.

MODEL 3723-ST SCREW TERMINAL OPTION: #22 AWG typical wire size with 0.062 inch O.D. 124 conductors maximum. #16 AWG maximum wire size with 0.092 inch O.D. 36 conductor per card maximum.

MAXIMUM SIGNAL LEVEL: 200V DC or RMS, 1A switched (1.25A carry), 15W.

COMMON MODE VOLTAGE: 300V DC or RMS between any terminal and chassis.

VOLT-HERTZ LIMIT: 8×10^7.

CONTACT LIFE: **Reed:** $>10^9$ operations, no load. 10^7 operations @100V, 10mA.
EMR: $>10^8$ operations @ 5V, 10mA. 10^5 operations @ maximuum signal level.

	Dual 1×30 [1]	Single 1×60 [1, 2]
Channel Resistance (end of contact life)	<1.5 Ω	<2.0 Ω
Contact Potential: Differential	<±6 μV	<±6 μV
Single-Ended	<±12 μV	<±12 μV
Offset Current	<250 pA	<250 pA
Isolation		
Differential	10^{10} Ω, 260 pF	10^{10} Ω, 500 pF
Bank-Bank	10^{10} Ω, 75 pF	—
Channel-channel	10^{10} Ω, 75 pF	10^{10} Ω, 75 pF
Common Mode	10^{10} Ω, 280 pF	10^9 Ω, 625 pF
Crosstalk Channel-channel		
300kHz	<–55 dB	<–55 dB
1MHz	<–50 dB	<–45 dB
20MHz	<–20 dB	<–20 dB
Bandwidth	20 MHz	10 MHz

TYPICAL SCANNING SPEEDS:

Switch Only [3]: Sequential scanning, single channel, immediate trigger advance: >1000 ch/s.

With Measurements Into Memory [4]:
DCV (10V range) or 2W Ohms (1kΩ range): >800 ch/s.
3- or 4-Wire RTD: >450 ch/s.
4-Wire Ohms (1kΩ range): >450 ch/s.
ACV (10V, 400Hz range): >800 ch/s.

GENERAL

ACTUATION TIME: <0.5ms.

RELAY TYPE: Dry reed.

RELAY DRIVE SCHEME: Direct.

RELAY DRIVE CURRENT: 10mA.

INTERLOCK: Backplane relays disabled when interlock connection 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: 3.0 lbs.

SAFETY: Conforms to European Union Directive 73/23/EEC, EN61010-1.

EMC: Conforms to European Union Directive 2004/108/EC, EN61326-1.

NOTES

1. Connections made using 3723-ST accessory.
2. 3706A mainframe with all DMM backplane relays disconnected. Maximum two card backplane relays closed.
3. Scanning script local to 3706A mainframe, within same bank, and break before make switching.
4. 3706A mainframe with autorange off, limits off, dmm.autozero=0, dmm.autodelay=0, 4½ digits (NPLC=0.006), for ACV dmm.detectorbandwidth=300, for OHMs dmm.offsetcompensation=off. Scanning script local to mainframe, sequential scan within same bank (2 pole) or card (4 pole), and break before make switching.

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