

Keithley Instruments, Inc.
 28775 Aurora Road
 Cleveland, Ohio 44139
 1-888-KEITHLEY
 www.keithley.com

Dual 1x30 FET Multiplexer Specifications

60 differential channels, Automatic CJC w/3724-ST

DUAL 1X30 MULTIPLEXER CARD

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

CONTACT CONFIGURATION: 2 pole form A.

CONNECTOR TYPE: Two 78 pin male D-shells.

MODEL 3724-ST SCREW TERMINAL OPTION:

#22AWG typical wire size with .062 inch O.D 124 conductors maximum. 16 AWG maximum wire size with .092 inch O.D. 36 conductor per card maximum.

MAXIMUM SIGNAL LEVEL: 200V DC or 141V RMS between any terminal, .1A switched (.1A carry), 800mW.

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

VOLT-HERTZ LIMIT : 10^7

CONTACT LIFE: Solid State > unlimited

EMR (Backplane) > 1×10^8 operations @5V, 10mA

1×10^5 operations @ max signal level

	Dual 1x30 ¹	Single 1x60 ^{1,2}
Channel Resistance (HI and LOW Path)	<62Ω (54Ω@23°C)	<64Ω (58Ω @23°C)
Contact Potential (differential)	<±2μV	<±2.5μV
Offset Current	<10nA (<±100pA@23°C/60% R.H.)	<10nA (<±100pA@23°C/60% R.H.)
Isolation		
Differential	10 ⁹ Ω, 500pF	10 ⁹ Ω, 1100pF
Bank-Bank	10 ⁹ Ω, 100pF	—
CH –CH	10 ⁹ Ω, 125pF	10 ⁹ Ω, 125pF
Common mode	10 ⁹ Ω, 150pF	10 ⁹ Ω, 700pF
Crosstalk CH-CH (50Ω Source, 50 Ω Load)		
300KHz:	-40 dB	-40 dB
1MHz:	-30 dB	-30 dB
Bandwidth (50Ω Source, 50 Ω Load)	2MHz	1MHz

¹ Connections made using 3724-ST

² 3706 mainframe with all DMM backplane relays disconnected. Maximum two card backplane relays closed.

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GENERAL:

ACTUATION TIME: <0.2ms

TEMPERATURE ACCURACY USING Automatic CJC with 3724-ST accessory:

1°C for J, K, T and E type (see mainframe specification for details)

RELAY TYPE: Optically isolated FET

RELAY DRIVE SCHEME: Direct

INTERLOCK: Backplane relays disabled when interlock connection removed.

RELAY DRIVE CURRENT: 4mA

OPERATING ENVIRONMENT:

Specified for 0°C to 50°C.

Specified to 70% R.H. at 35°C

STORAGE ENVIRONMENT: -25°C to 65°C

WEIGHT: 2.5lb

FIRMWARE: Requires main revision to be 1.20 or above (Applies to all 3706 series mainframes)

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

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

TYPICAL SCANNING SPEEDS, SWITCH ONLY³

	Ch/Sec
Sequential scanning, single channel, Immediate Trigger Advance	> 1250

TYPICAL SCANNING SPEEDS, WITH MEASUREMENTS INTO MEMORY⁴

	Ch/Sec
DCV (10V range) or 2W Ohms (1KΩ range)	>1000
Thermocouple	>1000
3 or 4 Wire RTD	>450
4 Wire Ohms1KΩ range)	>450
ACV (10V, 400Hz range)	>1000

³ Scanning script local to mainframe, within same bank, break before make.

⁴ 3706 mainframe with autorange off, limits off, dmm.autodelay=0, dmm.autozero=0, 4½ digits (NPLC=.006), for ACV dmm.detectorbandwidth=300,for OHMs dmm.offsetcompensation=off, dmm.opendetector=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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Power Budget Information:

Quiescent Power (milliwatts): 1150

Channel Relay Power (milliwatts) each: 20

Backplane Relay Power Consumption (milliwatts) each: 100

See Chapter 8 of the series 3700 user's manual for more detailed information.

ACCESSORIES AVAILABLE:

3791-KIT78-R 78 pin female D-sub connector kit (Contains 2 female D-sub connectors and 156 solder cups)

3720-MTC-3 78 pin D-sub female to male cable, 3m.

3720-MTC-1.5 78 pin D-sub female to male cable, 1.5m.

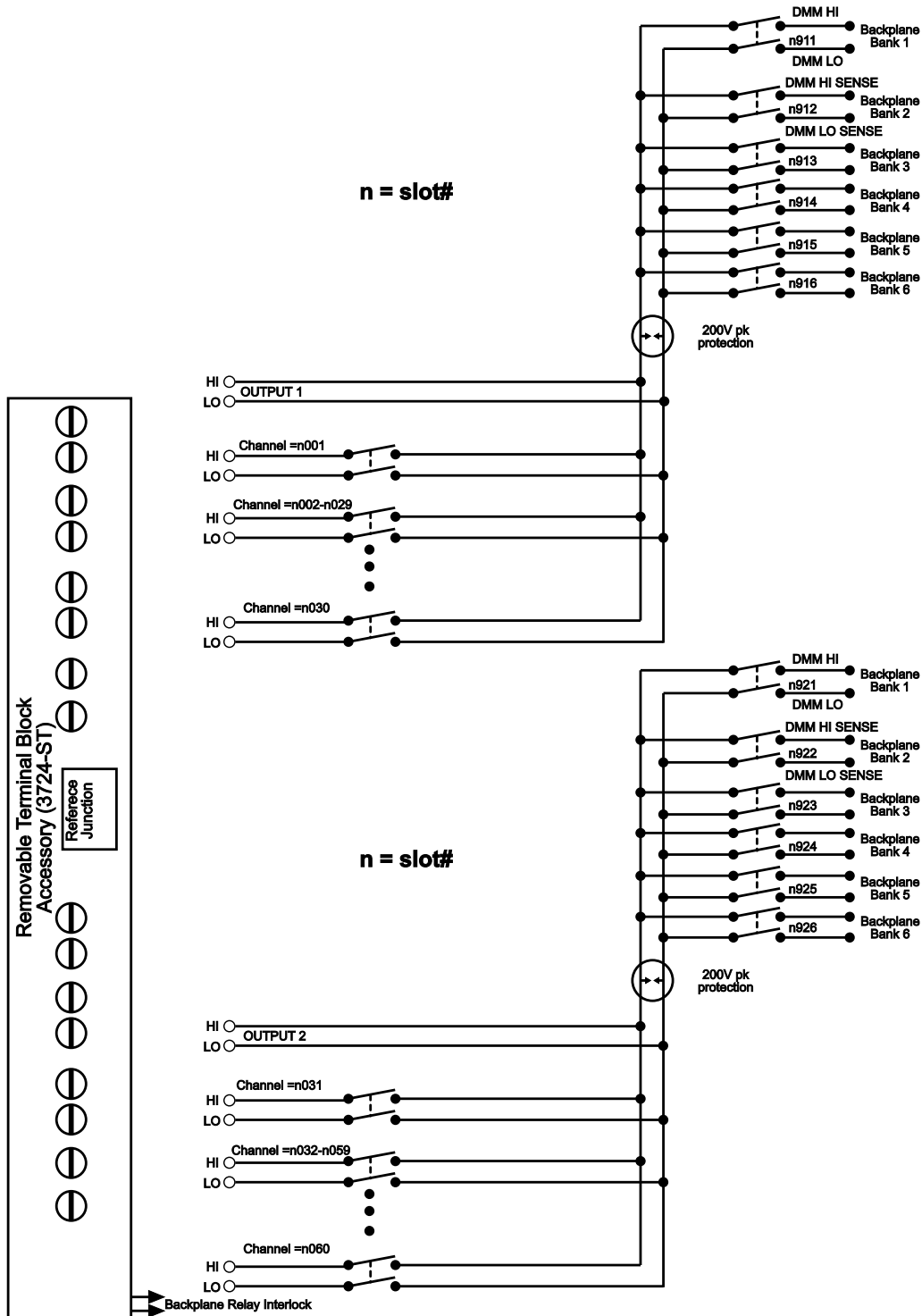
3724-ST screw terminal block

3791-CIT Contact insertion and extraction tool.

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Specifications are subject to change without notice.