

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

## Dual 1x20 Channel Multiplexer Specifications

40 differential channels, automatic CJC w/3721-ST accessory

**MULTIPLEXER CONFIGURATION:** Two independent 1x 20 2-pole Multiplexers. Banks can be connected together via relay creating a single 1 x 40 Multiplexer. Banks can be isolated from the backplane by relays. Card can be configured for common side Ohm measurement via back plane relays.

**Channel (41-42):** Multiplex one of two 2-pole current signals into DMM

**CONTACT CONFIGURATION:** 2 pole form A.

**CONNECTOR TYPE:** Two 50 pin male D-shells. Removable screw terminal option.

**MAXIMUM SIGNAL LEVEL:**

**Channels (1-40):** 300V DC or RMS, 2A switched (3A carry), 60W, 125VA Maximum.

**Channels (41-42):** 60V DC or 30VRMS, 3A switched, 60W, 125VA Maximum. Fused 3A, 250V RMS

**COMMON MODE VOLTAGE:** 300V DC or RMS between any terminal and chassis. Channels (1-40)

**VOLT-HERTZ LIMIT:**  $8 \times 10^7$

**CONTACT LIFE:** >  $10^5$  operations at max signal level.  
 >  $10^8$  operations no load.<sup>1</sup>

	Dual 1x20 <sup>3</sup>	Single 1x40 <sup>2,3</sup>
Channel Resistance (end of contact life)	< 1.0 $\Omega$	< 1.5 $\Omega$
Contact Potential (differential)	< $\pm 1 \mu\text{V}$	< $\pm 3 \mu\text{V}$
Offset Current	< $\pm 250 \text{ pA}$	< $\pm 250 \text{ pA}$
Isolation		
Differential	$10^9 \Omega, 280 \text{ pF}$	$10^9 \Omega, 530 \text{ pF}$
Bank-Bank	$10^{11} \Omega, 60 \text{ pF}$	--
CH -CH	$10^9 \Omega, 50 \text{ pF}$	$10^9 \Omega, 50 \text{ pF}$
Common mode	$10^9 \Omega, 180 \text{ pF}$	$10^9 \Omega, 480 \text{ pF}$
Crosstalk CH-CH		
300KHz:	< -60dB	< -60dB
1MHz:	< -50dB	< -50dB
20MHz:	< -25dB	< -15dB
Bandwidth	28 MHz	9 MHz

<sup>1</sup> Open detector enabled during thermocouple measurements. Minimum signal level 10mV, 10uA

<sup>2</sup> 3706 mainframe with all DMM backplane relays disconnected. Maximum two card backplane relays closed.

<sup>3</sup> Connections made using 3721-ST accessory

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### GENERAL:

**ACTUATION TIME:** 4ms

**TEMPERATURE ACCURACY USING Automatic CJC with 3721-ST accessory:**

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

**RELAY TYPE:** Latching electromechanical

**RELAY DRIVE SCHEME:** Direct

**INTERLOCK:** Backplane relays are disabled when interlock connection is removed.

**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:** 2.25 lb

**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 only<sup>4</sup>

	Ch/Sec
Sequential scanning ,single channel, immediate trigger advance	>120

### Typical Scanning Speeds, with measurements into memory<sup>5</sup>

	Ch/Sec
DCV (10V range) or 2W Ohms (1KΩ range)	>110
Thermocouple	>110
3 or 4 Wire RTD	>100
4 Wire Ohms (1kΩ range)	>100
ACV (10V, 400Hz range) or ACI (1A, 400Hz range)	>110

<sup>4</sup> Scanning script local to 3706 mainframe, within same bank, and break before make switching.

<sup>5</sup> 3706 mainframe with autorange off, limits off, dmm.autozero=0, dmm.autodelay=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.

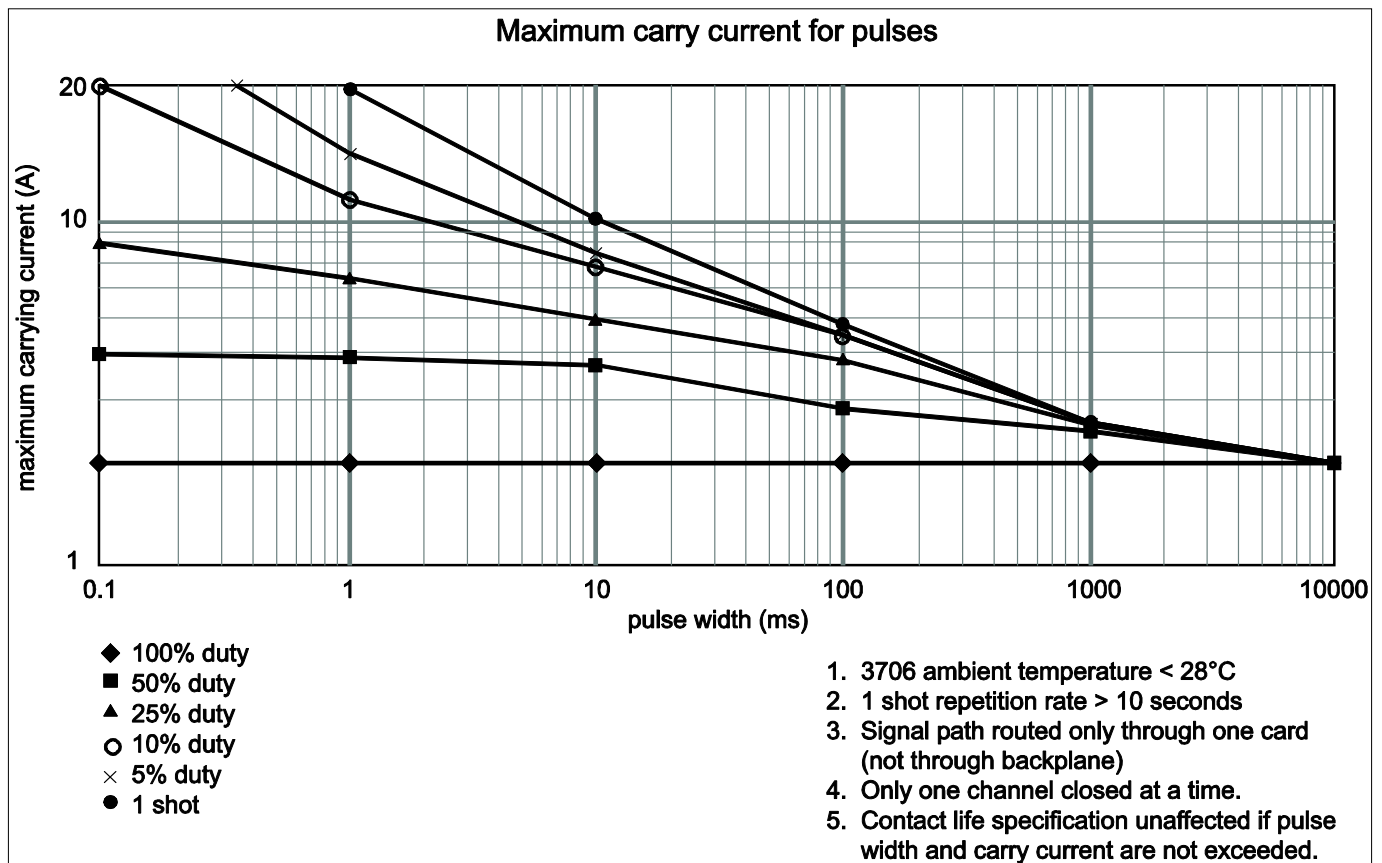
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#### ACCESSORIES AVAILABLE:

- 3790-KIT50R 50 pin female D-sub connector kit (contains 2 female D-sub connectors and 100 solder-cup)
- 3721-MTC-3 50 pin D-sub female to male cable, 3m
- 3721-MTC-1.5 50 pin D-sub female to male cable, 1.5m
- 3721-ST screw terminal block (Required for auto CJC thermocouple measurements)
- 7401 Type K Thermocouple Wire (100ft)



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