

Series 3700A

Plug-in Cards for Series 3700A Mainframes

Series 3700A

Plug-in Cards for Series 3700A Mainframes

- Multiplexer, matrix, and I/O cards
- Relay closures automatically counted and stored in each card's onboard memory
- Unlimited contact life with solid-state relay (Model 3724)
- Automatic CJC for temperature measurements when used with screw terminal accessory (Models 3720, 3721, 3724)

Ordering Information

- 3720** Dual 1×30 Multiplexer Card
- 3721** Dual 1×20 Multiplexer Card
- 3722** Dual 1×48, High Density, Multiplexer Card
- 3723** Dual 1×30, High Speed, Reed Relay, Multiplexer Card
- 3724** Dual 1×30 FET Multiplexer Card
- 3730** 6×16, High Density, Matrix Card
- 3731** 6×16, High Speed, Reed Relay, Matrix Card
- 3732** Quad 4×28, Ultra-High Density, Reed Relay, Matrix Card
- 3740** General Purpose Card with 32 Independent Channels
- 3750** Multifunction Control Card

Specifications for Plug-In Cards

Additional Series 3700A cards are currently in development. For a current list of cards and specifications, visit www.keithley.com.

	3720	3721	3722	3723	3724	3730	3731	3732	3740	3750
No. of Channels	60 (Dual 1×30)	40 (dual 1×20)	96 (dual 1×48)	60 (dual 1×30) or 120 single pole (dual 1×60)	60 (dual 1×30)	6×16	6×16	448 crosspoints (Quad 4×28)	32	40 digital I/O, 4 counter/totalizers, and 2 isolated analog outputs
Card Config.	Multiplexer	Multiplexer	Multiplexer	Multiplexer	Multiplexer	Matrix	Matrix	Matrix	Independent	Independent
Type of Relay	Latching electromechanical	Latching electromechanical	Latching electromechanical	Dry reed	FET solid-state	Latching electromechanical	Dry reed	Dry reed	Latching electromechanical	N/A
Contact Configuration	2 Form A	2 Form A	2 Form A	1 Form A	2 Form A	2 Form A	2 Form A	1 Form A	28 Form C, 4 Form A	N/A
Max. Voltage	300 V	300 V (ch 1–40), 60 V (ch 41–42)	300 V	200 V	200 V	300 V	200 V	200 V	300 VDC/250 VAC (Form A)	N/A
Max. Current Switched	1 A	2 A (ch 1–40), 3 A (ch 41–42)	1 A	1 A	0.1 A	1 A	1 A	0.75 A	2 A (Form C), 7 A (Form A)	N/A
Comments	2 independent 1×30 multiplexers. Automatic temperature reference when used with screw terminal accessory (Model 3720-ST)	2 independent 1×20 multiplexers. Automatic temperature reference when used with screw terminal accessory (Model 3721-ST)	2 independent 1×48 multiplexers	2 independent 1×30 multiplexers	2 independent 1×30 multiplexers. Automatic temperature reference when used with screw terminal accessory (Model 3724-ST)	Columns can be expanded through the backplane or isolated by relays	Relay actuation time of 0.5ms. Columns can be expanded through the backplane or isolated by relays	Banks can be connected together via bank configuration relays to create a single 4×112 or dual 4×56 matrix. Analog backplane relays also included for card to card expansion. Row expansion with 3732-ST-R accessory to create a dual 8×28 or single 16×28 matrix.	32 general purpose independent channels.	All-in-one card design. 40 bidirectional I/O. Four 32-bit counter/totalizers. 2 programmable analog (V or I) outputs.

Plug-in Card Accessories

	3720	3721	3722	3723	3724	3730	3731	3732	3740	3750
Cables	3720-MTC-1.5, 3720-MTC-3	3721-MTC-1.5, 3721-MTC-3	3722-MTC-1.5, 3722-MTC-1.5/MM, 3722-MTC-3, 3722-MTC-3/MM	3720-MTC-1.5, 3720-MTC-3	3720-MTC-1.5, 3720-MTC-3	3721-MTC-1.5, 3721-MTC-3	3721-MTC-1.5, 3721-MTC-3	3732-MTC-1.5, 3732-MTC-3	3721-MTC-1.5, 3721-MTC-3	3721-MTC-1.5, 3721-MTC-3
Screw Terminal Block	3720-ST	3721-ST		3723-ST, 3723-ST-1	3724-ST	3730-ST	3731-ST	3732-ST-C, 3732-ST-R	3740-ST	3750-ST
Connector Kits	3791-KIT78-R	3790-KIT50-R	3792-KIT104-R, 3792-KIT104-R/F	3791-KIT78-R	3791-KIT78-R	3790-KIT50-R	3790-KIT50-R	3791-KIT78-R	3790-KIT50-R	3790-KIT50-R
Tools	3791-CIT		3791-CIT	3791-CIT	3791-CIT			3791-CIT		

Selector Guide

Switch Cards for 7001, 7002

No. of Channels	Card Config.	Contact Config.	Max. Voltage	Max. Current	Max. Power	Contact Potential	Max. Offset Current	Recomm. Frequency	Connection Type	CE	Comments	
HIGH DENSITY												
7011-C	40	Multiplexer	2 form A	110V	1A	60VA	<1 μ V	<100pA	2MHz	Connector	Yes	Four independent 1 \times 10 multiplexers, connection to backplane
7011-S	40	Multiplexer	2 form A	110V	1A	60VA	<500nV	<100pA	2MHz	Screw term.	Yes	Four independent 1 \times 10 multiplexers, connection to backplane
7012-C	4 \times 10	Matrix	2 form A	110V	1A	60VA	<1 μ V	<100pA	2MHz	Connector	Yes	Rows connect to analog backplane
7012-S	4 \times 10	Matrix	2 form A	110V	1A	60VA	<500nV	<100pA	2MHz	Screw term.	Yes	Rows connect to analog backplane
7013-C	20	Isolated Switch	2 form A	110V	1A	60VA	<1 μ V	<100pA	10MHz	Connector	Yes	
7013-S	20	Isolated Switch	2 form A	110V	1A	60VA	<500nV	<100pA	10MHz	Screw term.	Yes	
7015-C	40	Multiplexer	2 form A	175V	34mA	0.3VA	<5 μ V	<1nA	500kHz	Connector	Yes	Solid state switch for high reliability
7015-S	40	Multiplexer	2 form A	175V	34mA	0.3VA	<5 μ V	<1nA	500kHz	Screw term.	Yes	Solid state switch for high reliability
7018-C	28	Multiplexer	3 form A	110V	1A	60VA	<5 μ V	<100pA	2MHz	Connector	Yes	3 pole switching
7018-S	28	Multiplexer	3 form A	110V	1A	60VA	<5 μ V	<100pA	2MHz	Screw term.	Yes	3 pole switching
7035	36	Multiplexer	2 form A	60V	1A	30VA	<1 μ V	<100pA	10MHz	Connector	Yes	9 independent 1 \times 4 multiplexers
7036	40	Isolated Switch	1 form A	60V	1A	30VA	<4 μ V	<100pA	10MHz	Connector	Yes	40 independent channels of 1-pole switching
7111-S	40	Multiplexer	1 form C	110V	1A	60VA	<500nV	<100pA	2MHz	Screw term.	Yes	Four independent 1 \times 10 multiplexers, connection to backplane
Control												
7020	80	Digital I/O								Connector	Yes	40 inputs/40 outputs
7020-D*												
7037-D*	30/20	Isolated/ Digital I/O	1 form A	110V	1A	30VA	<4 μ V	<100pA	10MHz	Connector	Yes	30 independent channels of 1-pole switching, 10 digital inputs, 10 digital outputs
7065												Hall Effect measurement buffer card
See page 211 for details.												
HIGH CURRENT												
7053	10	Multiplexer	2 form A	300V	5A	100VA	<1mV		1MHz	Screw term.		
HIGH VOLTAGE												
7154	10	Multiplexer	2 form A	1100V	500mA	10VA	<35 μ V		1MHz	Screw term.	Yes	
LOW CURRENT												
7152	4 \times 5	Matrix	2 form A	200V	500mA	10VA	<20 μ V	<1pA	60MHz	Connector	Yes	
7153	4 \times 5	Matrix	2 form A	1300V	500mA	10VA	<50 μ V	<1pA	60MHz	Connector	Yes	
7158	10	Multiplexer	1 form C	30V	100mA		<200 μ V	<1pA	1MHz	BNC	Yes	
LOW VOLTAGE												
7168	8	Multiplexer	2 form A	10V	50mA		<30nV		1kHz	Screw term.	Yes	

Selector Guide

Switch Card Accessories

7001, 7002, 705, 706 Switch Card Accessories

	Cables			Connectors	Adapters	Tools	
7011-C	7011-MTC-1	7011-MTC-2		7011-KIT-R			
7011-S				7011-ST			
7111-S							
7012-C	7011-MTC-1	7011-MTC-2		7011-KIT-R			
7012-S				7012-ST			
7013-C	7011-MTC-1	7011-MTC-2		7011-KIT-R			
7013-S				7013-ST			
7015-C	7011-MTC-1	7011-MTC-2		7011-KIT-R			
7015-S				7015-ST			
7018-C	7011-MTC-1	7011-MTC-2		7011-KIT-R			
7018-S				7018-ST			
7020	7020-MTC-2			7011-KIT-R (incl.)			
7020-D				7020-DT			
7035	7035-MTC-2			7011-KIT-R (incl.)			
7036	7036-MTC-2			7011-KIT-R (incl.)			
7037-D				7037-DT			
7152	7152-MTC-2, -10	7152-TRX-10		7152-KIT 7152-MTR		7152-HCT 7074-HCT	7074-CIT
7153	7153-TRX						
7158	4801	4802-10	4803		4804		

Selector guide: Switch cards for 7001, 7002

SWITCHING AND CONTROL

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Selector Guide

Switch Cards and Accessories for 707B, 708B, 707A, 708A

New Models 707B and 708B replace Models 707A and 708A

Keithley Instruments recently introduced two new semiconductor switch matrix mainframes: the Model 707B six-slot mainframe and the Model 708B one-slot mainframe. The two

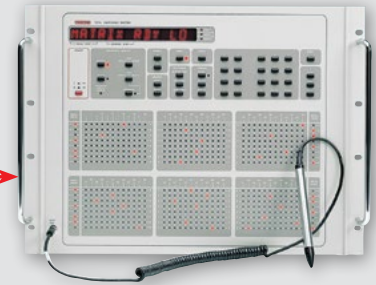
new mainframes replace the Models 707A and 708A that were introduced more than 20 years ago. The new models provide important new capabilities and are compatible with the most

popular switch cards. The table shows the important differences between the new and old models.

	New 707/8B	Legacy 707/8A
GPIO/DDC	✓	✓
GPIO/ICL	✓	
Ethernet (LXI)	✓	
TSP/TSP-Link	✓	
Webpage (LXI)	✓	
Light Pen		✓
Compatible with 7174A, 7072, 7072-HV, 7173-50 switch cards	✓	✓
Compatible with 7071, 7071-4 switch cards		✓



← NEW Model 707B Replaces Model 707A →



← NEW Model 708B Replaces Model 708A →



	LOW CURRENT			HIGH FREQUENCY	
	7072	7072-HV	7174A	7073	7173-50
Number of Channels	8×12	8×12	8×12	8×12	4×12
Card Configuration	Matrix	Matrix	Matrix	Matrix	Matrix
Contact Configuration	2 form A	2 form A	2 form A	1 form A	2 form C
Max. Voltage	200 V	1300 V	200 V	200 V	30 V
Max. Current	1 A	1 A	2 A	1 A	0.5 A
Max. Power	10 VA	10 VA		30 VA	10 VA
Contact Potential	<20 μV	<20 μV		<2 μV	<15 μV
Max. Offset Current	<1 pA	<1 pA	<100 fA	<200 pA	<200 pA
Recommended Frequency	15 MHz	4 MHz	30 MHz	30 MHz	200 MHz
Connection Type	3-lug triax	3-lug triax	3-lug triax	BNC	BNC
CE	Yes		Yes	Yes	Yes
Comments	Optimized for semiconductor applications.				
707B-708B Compatible	Yes	Yes	Yes	Yes	Yes
707A-708A Compatible	Yes	Yes	Yes	Yes	Yes

707B, 708B, 707A, 708A Switch Card Accessories

	Cables		Adapters	
	7072	7078-TRX-3	7078-TRX-10	237-TRX-T
7174A	7078-TRX-3	7078-TRX-10	237-TRX-T	7078-TRX-BNC
7072-HV	7078-TRX-3	7078-TRX-10	7078-TRX-BNC 7078-TRX-GND	237-TRX-T 237-TRX-TBC
7073	4801			
7173-50	7173-50-CSEP			

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Selector guides: Switch cards and accessories for 707B, 708B, 707A, 708A

SWITCHING AND CONTROL