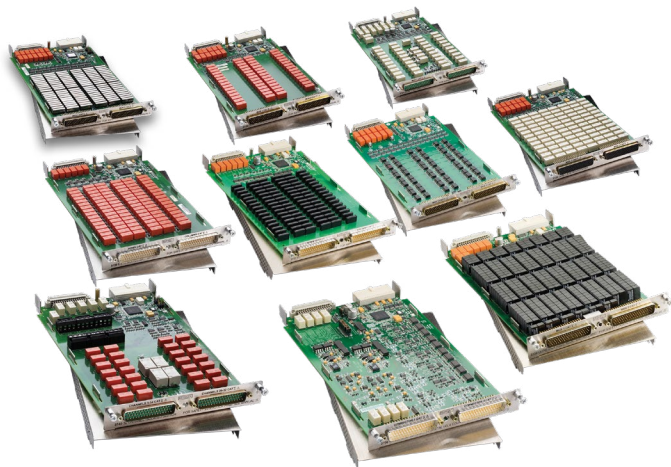


PLUG-IN MODULE GUIDE

Selecting a Switch Card



KEITHLEY
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The following document is intended to assist users in selecting the correct control module. In order to find a suitable switching module for your needs, you must properly assess the needs of your test system. Please consider the following factors as you plan.

Function: First, consider the function of the card. Is the card capable of performing the desired operation? (For example: does the card make current or voltage measurements, route signals, control I/O, etc.?)

Configuration: Next, think through the switching configuration of your test structure. What is best for this application? Here are some of the available configurations: scanner, matrix, multiplexer, isolated, and RF switching.

Quantity: How many instruments and device-under-test (DUT) terminals are involved? Are you switching between multiple instruments?

Signal Requirements: Is the card capable of properly recognizing and handling the signals? (For example: are the signals high/low current, high/low voltage, high frequency, high impedance, etc.)

Speed: What is the required operating speed? What is the timing between measurements?

Compatibility: Is the switch card compatible with other devices in the system? Can the equipment be connected properly? What communications interface will be used?

Other: What relays are needed for optimal performance?

Using the gathered information from the table above, draw a schematic of your test system. Define all DUT terminals and instrument connections. Include as much detail as possible. Now, refer to the tables below to select all compatible switch cards and compare your options to find the best fit. Note that:

- Multiple switch cards may be necessary for higher channel setups
- A limited number of cards have current measurement available

Additional information can be found in the [Switching Handbook](#).

DAQ6510 Switch Cards

Module	Function	Configuration	# Analog Inputs	Max. Voltage	Max. Switched Current	Switch Speed	Relay Type	Type of Connector	Other
7700	Measurement	MUX w/ CJC	20	300 V	1 A	3 ms	Latching electromechanical	Screw Terminals	General measurement, automatic CJC, and two current measurement channels. Maximum power = 125 VA.
7701	Measurement	MUX	32	150 V	1 A	3 ms	Latching electromechanical	D-sub	General measurement. Maximum power = 125 VA.
7702	Measurement	MUX	40	300 V	1 A	3 ms	Latching electromechanical	Screw Terminals	General measurement and two current measurement channels. Maximum power = 125 VA.
7703	Measurement	MUX	32	300 V	500 mA	1 ms	Reed	D-sub	General measurement.
7705	Controlling a Circuit	Independent SPST	40	300 V	2 A	3 ms	Latching electromechanical	D-sub	Single-pole control module. Max. power = 125 VA.
7706	All-in-One	MUX w/ CJC	20	300 V	1 A	3 ms	Latching electromechanical	Screw Terminals	All-in-one I/O Module. (2) $\pm 12V$ analog output channels and 100 kHz event counter/totalizer. Maximum power = 125 VA.
7707	Digital I/O	MUX w/ Digital I/O	10	300 V	1 A	3 ms	Latching electromechanical	D-sub	Maximum power = 125 VA. (4) eight-bit word I/O
7708	Measurement	MUX w/ CJC	40	300 V	1 A	3 ms	Latching electromechanical	Screw Terminals	General measurement and automatic CJC. Maximum power = 125 VA.
7709	Measurement	6x8 Matrix	48	300 V	1 A	3 ms	Latching electromechanical	D-sub	General measurement. Can daisy chain with other cards.
7710	Measurement	MUX w/ CJC	20	60 V	100 mA	0.5 ms	Solid state opto-coupled FET	Screw Terminals	General measurement. Maximum power = 4.2 VA.
7711	RF Switching	MUX	8	30 Vrms / 60 VDC	500 mA	10 ms	High frequency electromechanical	SMA	2 GHz, maximum power = 20 W per module
7712	RF Switching	MUX	8	30 Vrms / 42 VDC	500 mA	10 ms	High frequency electromechanical	SMA	3.5 GHz, maximum power = 20 W per module

3700A Switch Cards

Module	Function	Configuration	No. of Channels	Max. Voltage	Max. Switched Current	Switch Speed	Relay Type	Type of Connector	Other
3720	Measurement	MUX (CJC w/ accessory)	60 (dual 1x30)	300 V	1 A	4 ms	Latching electro-mechanical	D-sub *	Two independent 1x30 multiplexers. Automatic temperature reference when used with screw terminal accessory (3720-ST)
3721	Measurement	MUX (CJC w/ accessory)	40 (dual 1x20)	300 V (ch 1-40) 60 V (ch 41-42)	2 A (ch 1-40) 3 A (ch 41-42)	4 ms	Latching electro-mechanical	D-sub *	Two independent 1x20 multiplexers. Automatic temperature reference when used with screw terminal accessory (3720-ST)
3722	Measurement	MUX	96 (dual 1x48)	300 V	1 A	4 ms	Latching electro-mechanical	D-sub	Two independent 1x48 multiplexers. (Ideal for high channel count)
3723	Measurement	MUX	60 (dual 1x30) or 120 single pole (dual 1x60)	200 V	1 A	< 0.5 ms	Reed	D-sub *	Two independent 1x30 multiplexers. (Ideal for highspeed scanning applications)
3724	Measurement	MUX (CJC w/ accessory)	60 (dual 1x30)	200 V	100 mA	< 0.2 ms	FET solid-state	D-sub *	Two independent 1x30 multiplexers. Automatic temperature reference when used with screw terminal accessory (3720-ST)
3730	Measurement	Matrix	6x16	300 V	1 A	4 ms	Latching electro-mechanical	D-sub *	Columns can be expanded through the backplane or isolated by relays.
3731	Measurement	Matrix	6x16	200 V	1 A	0.5 ms	Reed	D-sub *	Columns can be expanded through the backplane or isolated by relays. (Ideal for high-speed scanning applications.)
3732	Measurement	Matrix	448 cross points (Quad 4x28)	200 V	750 mA	0.6 ms	Reed	D-sub *	Columns and rows can be expanded through the backplane and accessories. (Ideal for high channel applications)
3740	Controlling a Circuit	Independent	32	300 VDC / 250 VAC (A)	2 A (C) 7 A (A)	4 ms (C) 10 ms (A)	Latching electro-mechanical	D-sub *	32 general purpose independent channels. (Ideal for higher power/high current applications.)
3760	Measurement	MUX	10	500 V	5 A	< 15 ms	Nonlatching electro-mechanical	Screw terminals	Single 1x10 high current multiplexer.
3761	Measurement	MUX	10	30 V	100 mA	< 1 ms	Reed	SMA	Single 1x10 low current multiplexer.
3762	Measurement	MUX	10	1000 V	0.5 A	< 2 ms	Reed	Screw terminals	Single 1x10 high voltage multiplexer.
3765	Hall Effect Measurements	Matrix	4x5	-8 V to 8 V	100 mA	N/A	Nonlatching electromechanical and dry reed	Accessories included	Specialty 4x5 matrix for Hall Effect and van der Pauw measurements.

*Optional screw terminal module available



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