- 8 or 16 Channels per Module
- 2, 3, 4 & 5 Pole Switching Formats
- Easy Expansion allowing additional Channels using external cabling.
- Switch up to 100Volts, 0.5A (1A Carry) with 20W Max Power
- Single or Multiple Channel Operation
- Uses High Reliability Pickering Ruthenium Reed Relays For Maximum Performance

***Please contact Pickering for alternative PXI/LXI/USB solutions**

The 8 and 16-Channel Multiplexer Modules are available with up to 5-pole switching and are fitted with Ruthenium Reed relays.

The 10-610A/620A range of general purpose 8 and 16-channel multiplexer modules are available in a variety of configurations to suit many switching requirements. Typical applications include signal routing in ATE and data acquisition systems.

Connections are made via two 37-pin D-type male connectors. Larger multiplexers may be constructed by cascading modules, with selected signals routed via the front panel connectors.

The 10-610A/620A multiplexer may be operated as a conventional multiplexer with break-before-make action enforced when a new channel is selected. In addition multiple channels may be simultaneously selected (i.e. no break-before-make).

Available in 2, 3, 4, & 5-pole switching formats, the modules are fitted with instrument grade sputtered Ruthenium Reed Relays which have high reliability and are excellent for switching very low level signals. Mercury wetted reed switches may be available to special order.
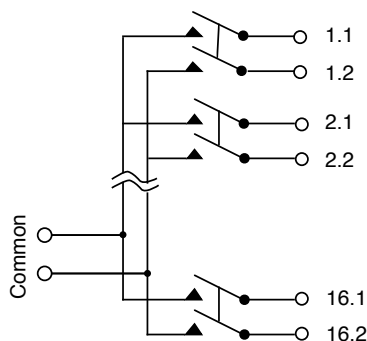
16-Channel 2-Pole Multiplexer (10-620A-xx2)
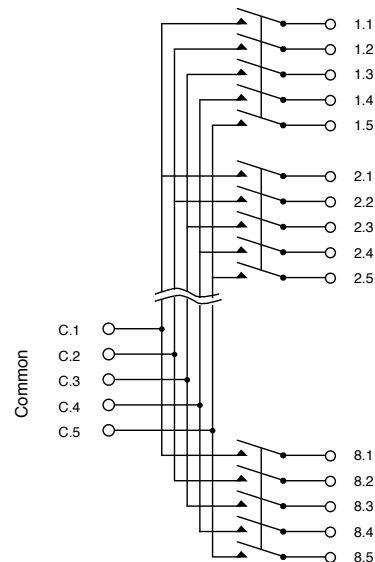
8-Channel 5-Pole Multiplexer (10-610A-xx5)

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Relay Type

The module uses Ruthenium Reed Switches. Mercury Wetted Reed Switches may be available to special order.

All reed relays are manufactured by our sister company Pickering Electronics: pickeringrelay.com

Switching Specification

Switch Type:	Ruthenium	Mercury wet †
Max Standoff Voltage:	100V	100V
Max Power:	20W	50W
Max Switch Current:	0.5A	2.0A
Max Carry Current:	1.0A	4.0A
Contact Resistance		
On:	200mΩ	200mΩ
Off:	$>10^9\Omega$	$>10^9\Omega$
Differential Thermal Offset:	<5µV	<10µV
Capacitance:		
Open Switch:	<6pF	<6pF
Switch-Switch:	<20pF	<20pF
Bandwidth (50Ω):	>15MHz	>15MHz
Max Operate Time:	7ms	9ms
Max Release Time:	6ms	8ms
Expected Life		
Low power load:	$>1\times10^8$	$>1\times10^9$
Full power load:	$>1\times10^6$	$>1\times10^8$

† Mercury wet versions may be available to special order.

Mechanical Characteristics

All models conform to the 3U height (128mm) Eurocard standard and are housed in a 160mm deep screened plug-in module. Panel width for all versions is 2.4 Inches.

Connectors

Connections are for all modules are made via two front panel mounted 37-pin D-type plugs.

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2010, EMC Immunity EN61326-1:2013, Emissions EN55011:2009+A1:2010.

Common

The common signal(s) are brought out from the module onto the Front panel connectors. This has the additional features of keeping the signal(s) isolated, improving crosstalk, DC leakage and low thermal emf performance.

Creating Larger Multiplexers

When more than one module is used to make up a multiplexer, ie. where five modules are used to make up a 80 channel multiplexer – then all multiplexer units must have the same internal address, the location of each module within the multiplexer is given by its own bank address. Bank addresses must start at 0 and should be contiguous.

If there is a problem with any of the modules used to make up a large multiplexer then an error will be detected (use the REPORT? query to discover the cause).

Additional Notes

Mercury wetted reed relay modules must always be mounted to within 30° of vertical.

Programming

The Multiplexer module is simple to program:

ARESET a	Open all channels on device **a**
DELAY t	Force a minimum delay of **t** milliseconds between two instructions
RESET	Open all switches on all modules
VIEW? a	View status of device **a**
CHAN a,c	Select channel **c** on multiplexer **a** Automatically clears previous channel (if set) before selecting new channel.
CHAN a,c,s	Multi-channel selection argument **s** allows opening/closing of any combination of channels.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 95% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 95% non-condensing
Altitude:	15000m

Product Order Codes - Ruthenium Reed

Common Brought onto Front Panel Connector:	
4-Pole, 8-Channel MUX	10-610A-124
5-Pole, 8-Channel MUX	10-610A-125
Common Brought onto Front Panel Connector:	
2-Pole, 16-Channel MUX	10-620A-122
3-Pole, 16-Channel MUX	10-620A-123
4-Pole, 16-Channel MUX	10-620A-124

Product Customization

Pickering System 10 modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

Customization can include:

• Alternative relay types
• Mixture of relay types
• Alternative number of relays
• Different performance specifications

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

37-Pin D-type Socket with Crimp Pins	10-960-037

For other 37-pin connection accessories for the 10-610A series modules please refer to the 90-007D 37-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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