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LXI – SYSTEM 60
SHORTFORM CATALOG



Detailed Price and Technical Information On-Line

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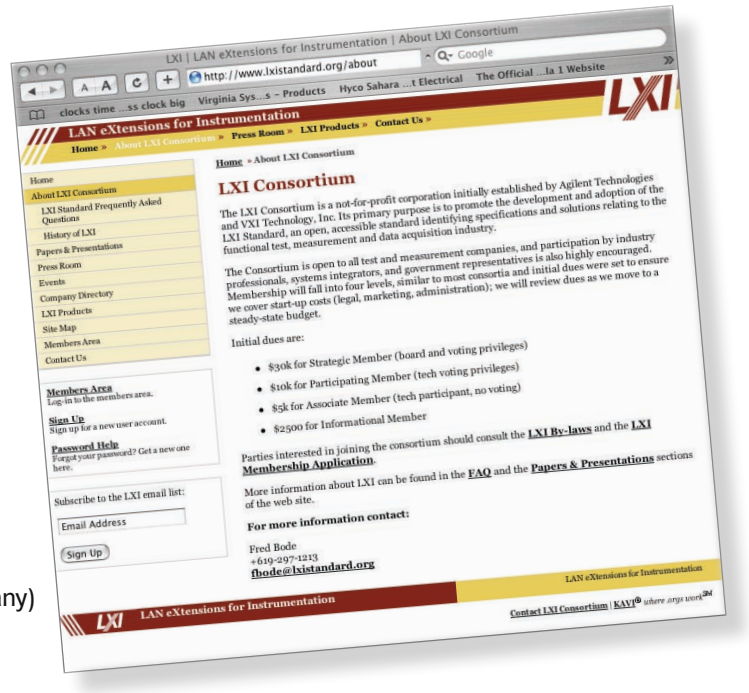
pickering

Innovative Modular Test
from Pickering Interfaces

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NEED TO KNOW MORE ABOUT LXI?

- LXI is an acronym for LAN eXtensions for Instrumentation, a standard that has been created by the leading test and measurement companies to provide control of instrumentation products.
- The standard has been created by the members of the LXI Consortium and is published as a publicly available standard accessible through the consortium's web site at www.lxistandard.org
- Membership of the LXI consortium is open to all companies that wish to support the aims of the consortium. As of September 2005 the membership includes:

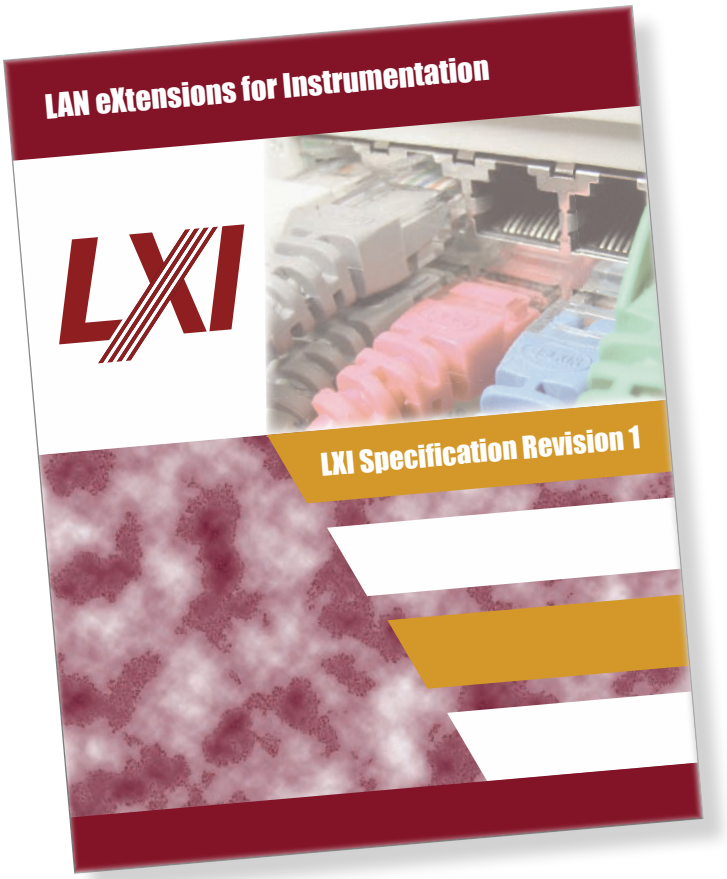


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- Aeroflex, Inc.
- Agilent Technologies
- Keithley Instruments, Inc.
- MCC (a National Instruments company)
- **Pickering Interfaces**
- Racal Instruments (an EADS North America company)
- Rohde & Schwarz GmbH & Co KG
- VXI Technology, Inc.

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60-100/101
LXI Modular Switching Chassis

- Fully Compliant LXI Interface
- Ethernet 100base T Interface
- Accepts Any Pickering Interfaces PXI 3U Switching Module
- More Than 500 Switching Module Configurations Available
- Applications From Simple Switching to RF and Optical
- Supports 7 or 13 User Slots
- Support For Selected Instrument Modules



The 60-100 and 60-101 chassis are fully compliant with Functional Class C of the LXI standard. They allow 3U PXI switching modules to be supported in a LXI compliant environment. The 60-100 is suitable for modules occupying 7 or less slots and the 60-101 can support up to 13 slots.

The chassis allows any of the large number of 3U PXI modules from Pickering Interfaces to be installed and controlled through a standardized Ethernet interface. The chassis are supplied with a generic IVI driver to control the PXI modules in accordance with the LXI specification, but can also be controlled through a kernel driver.

Modules available for installation in the 60-100/101 chassis cover a large variety of switching functions. They include simple switches, matrices and multiplexers based on reed relay and electromechanical technology which can switch from micro Amps to 40 Amps. A range of RF, microwave and optical switching functions are supported as well as some instrument functions such as variable resistor cards. This makes the 60-100 and 60-101 chassis into universal switching platforms.

The LXI compliant Ethernet interface enables the chassis to be controlled through standard LAN interfaces found on all controllers. It allows the remote operation of switching products with simple cabling over long distances, even permitting a chassis to be controlled over world wide networks. The separation of the chassis from the controller's PCI bus simplifies power-on sequencing of systems and provides a high degree of independence from the migration of the Windows and VISA environment

Availability of the 60-100/101 chassis permit users to choose Pickering PXI switching products regardless of whether the test system is working in a PXI or LXI environment.

The 60-100 and 60-101 are ideal for operation in environments where high acoustic noise levels cannot be accepted through the use of low noise temperature controlled fans.

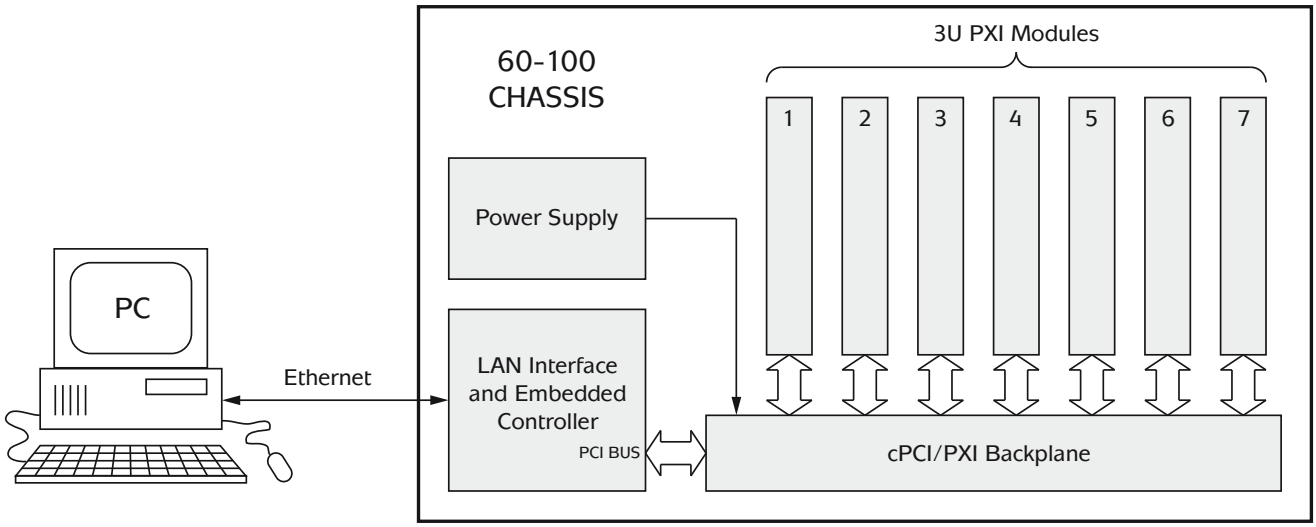


Diagram showing how plugging Pickering Interfaces PXI modules into the 60-100 LXI Modular Switching Chassis provides an LXI compliant switching platform. A simple Ethernet lead is the only physical control connection required.

Specification

Chassis Backplane:	32/64 bit backplane, compliant with cPCI/PXI specification. Provides trigger, local bus support (subject to module support).
Chassis Capacity	
60-100:	7 off 3U user slots available.
60-101:	13 off 3U user slots available.

PXI Module compatibility

Support of PXI modules requires availability of the correct software driver. Chassis is supplied with drivers for all Pickering sysem 40 switching modules.

Switching Support:	Any 3U Pickering Interface's PXI switching modules. Includes (but not limited to): All 4 slot 3U BRIC matrices, featuring up to 2208 crosspoints. Additionally, the 60-101 can support any 8 slot 3U BRIC matrix with up to 4416 crosspoints.
Instrumentation support:	Programmable resistor and potentiometer cards.

For a selection guide on the range of modules available please see the LXI/PXI Module Selection Guide in this data sheet.

Power Supply

AC Input:	90 to 264V, 50/60Hz universal input, rear panel with on/off switch.
Cooling:	Front and side selectable air intake, rear exhaust, variable speed low noise fans.

Monitoring

Front panel monitoring LEDs:

- Power
- Ready
- Error
- LAN
- Active

LAN Interface

Connector:	RJ45 Connector.
Connection Speed:	100baseT interface.

Designed to comply with the LXI Standard Version 1.0 Class C

Supporting Documentation

Manuals, drivers and a copy of this data sheet are accessible through any browser compliant with W3C standards.

Width and Dimensions

Dimensions:	H: 179mm W: 246mm D: 321mm 4U rack mountable
Weight:	4kg

Safety & CE Compliance

All systems/modules meet applicable EU directives. Low-voltage safety EN 61010-1:1993. EMC Immunity EN 50082-1:1992, Emissions EN 55011:1991. For full safety, compliance and environmental specifications refer to Operating Manual.

Product Order Codes

LXI Chassis, 7-Slot	**60-100-001**
LXI Chassis, 13-Slot	**60-101-001**

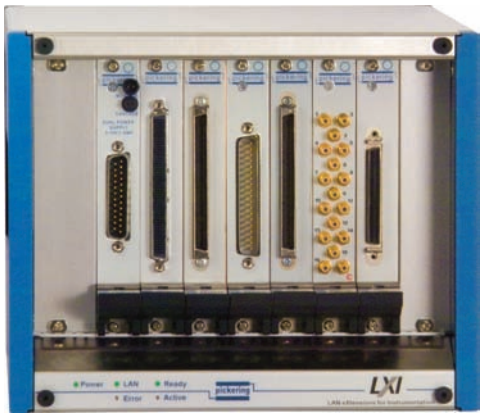
Mating Connectors & Cabling

Please refer to the Pickering Interfaces "**Interconnection Solutions**" catalog for a full list of connector/cabling options, including drawings, photos and specifications. This is available in either print or as a download.

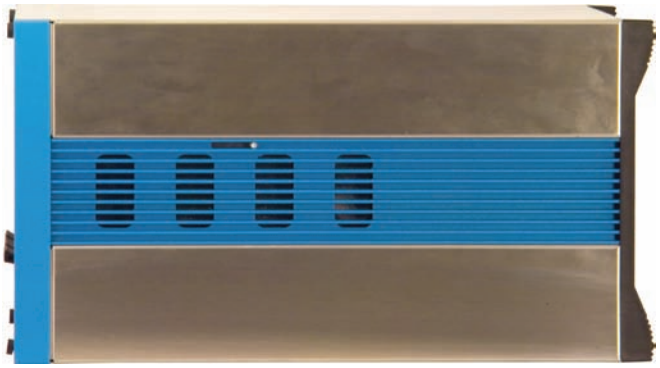
Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering modules.

Latest Details

Please refer to our Web Site for Latest Product Details.
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60-100 LXI Chassis Front View



60-100 LXI Chassis Side View

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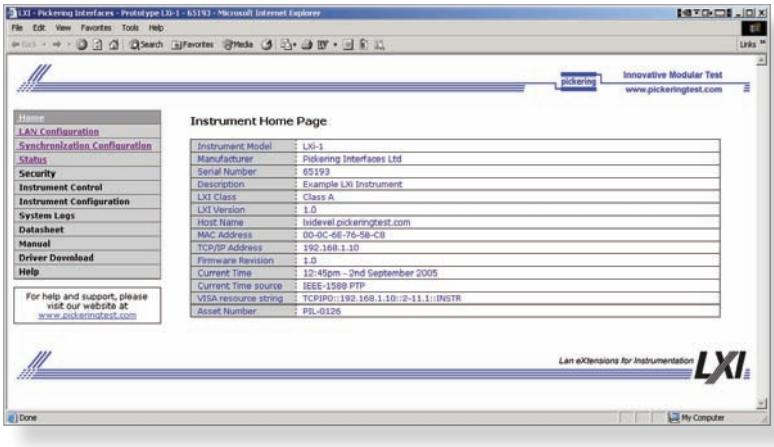
GETTING STARTED WITH LXI

New to LXI and concerned it might be hard to get started? What about all the drivers you need and setting up the LAN connection?

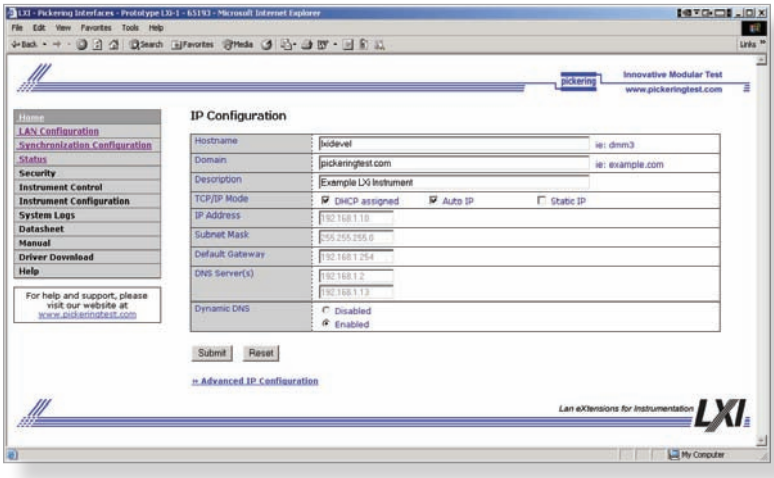
Well in practice there is no need for concern, LXI is very simple to use. First simply connect the LXI chassis to your PC with a standard Cat5 Ethernet lead. The PC and the chassis can be switched on before or after you make the connection – no need to keep re-booting the system each time you make a change.



Locate the chassis IP address, since LXI instruments support DHCP (default start up), Auto IP or Static IP they behave in the same way as other modern LAN products do – they are easy to find and identify. You can then connect to the LXI chassis home page.



Use your favorite web browser to control the chassis, download copies of the manual or data sheet. Better still, download from the chassis the driver that supports all the modules that have been loaded into the chassis and immediately start controlling the modules that are fitted. No need to worry about trying to find those lost installation CD's or searching the web for replacement software, the supporting documentation is instantly available when you need it.



LXI/PXI MODULE SELECTION GUIDE

The 60-100 and 60-101 chassis are capable of supporting a large variety of 3U PXI modules from Pickering Interfaces. The modules are the same design as those used in a PXI chassis. The following information provides a convenient way of selecting from the large number of modules available the product most suited for your application. From the table below select the short form data sheet that best describes your requirements. Full data sheets are available for each module from our web site. Please note that some overlap exists between module complexity (relay count), so for some applications it is worth checking short form data sheets that cover higher or lower complexity modules.

Short Form Data Sheet	Configurations Covered	Max Relay Count (up to)	Max Current or Voltage	Page
Low Density General Purpose Relay Modules	• Uncommitted	32	1.25 Amps	7
High Density General Purpose Relay Modules	• Uncommitted	100	1.25 Amps	8
General Purpose Power Relay Modules	• Uncommitted	39	3 Amps	9
General Purpose High Power Relay Modules	• Uncommitted	12	40 Amps	10
High Voltage Switch Modules	• Uncommitted • Multiplexer	24	500Vd.c.	11
Low Density Matrix Modules	• Matrix	128	2A/250V	12
Medium Density Matrix Modules	• Matrix	184	1A/150V	13
High Density Matrix Modules	• Matrix	440	1A/150V	14
Power Matrix Modules	• Matrix	80	5A/250V	15
Large Scale Matrix Modules	• Matrix	4416	2A	16
Fault Insertion Modules	• Fault Insertion Matrix	2384	10A/250V	18
Low Density MUX Modules	• Multiplexer • Low Thermal Switch MUX	48 to 1 MUX	1.2A/150V	19
High Density MUX Modules	• Multiplexer	198 to 1 MUX	1.2A/150V	20
Power MUX Modules	• Multiplexer	64 to 1 MUX	5A/250V	21
RF Switching Modules	• Uncommitted • Multiplexer • Matrix	96	—	22
Microwave Switching Modules	• Uncommitted • Multiplexer • Matrix	36 i/p MUX	—	23
Optical Switching Modules	• Multiplexer • Insert/bypass Switch	8 to 1 MUX	—	24
Telecoms Switching Modules	• Daisy chain tributary switch • Datacoms MUX	16 channel 2 pole switch or 36 to 1 MUX	1A/100V	25
Programmable Resistor Modules	• Selectable resistor • Programmable Resistor	48 Channels or 24 bit resolution	—	26
Digital Input/Output Cards and Prototyping Modules	• TTL or Open Collector • Optically Isolated	32 bit in, 32 bit out	—	27

Definition of terms

Uncommitted Relays. Relays that are not connected together inside the module.
MUX. Relays arranged to connect one terminal with one of a number of other terminals.
Matrix. Array of relays, typically arranged as a crosspoint switch, where a number of input terminals can be connected to a number of output terminals
Two Pole. An arrangement that has two physical switches which operate from the same control. This is usually implemented in the same relay, so a two pole arrangement results in two identical switches that are logically programmed to the same condition.
Dual or Multi Channel. Where an arrangement is repeated a number of times in the same module. Each channel can be independently programmed.

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Low Density General Purpose Reed Relay Modules

- 16, 24 or 32 Reed Relays Per Module
- SPST, DPST, SPDT and Shielded Configurations
- Ruthenium Reed Relays Suitable For Low Level Signals
- Uses High Reliability Pickering Reed Relays For Maximum Performance
- Fast Operating Speed 250µs Typical
- Switch up to 150Volts, 1.25A with 20W Max Power
- Occupies a Single 3U PXI Slot
- 96-Pin Front Panel Connector
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-110 General Purpose Reed Relay Module

Pickering Interfaces range of low density general purpose reed relay modules provide a cost effective solution for applications where high density relays are not required. All these modules use a 96 pin male connector that is supported by a comprehensive range of cable and connector accessories, ensuring they can be quickly integrated into the user's test system with a minimum of effort.

The relays are not committed to a particular configuration and are available in changeover and normally open configurations. Modules are available that use shielded reed relays to minimize crosstalk and maximize bandwidth.

The use of sputtered ruthenium reed relays allows the modules to be used for low and medium level switching with minimal level dependent characteristics. This provides enhanced reliability for low level switching compared to electromechanical or rhodium reed relays.

For more detailed information on each module please refer to the individual data sheets or visit our web sit at:
www.pickeringtest.com

Configuration	Description	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Order Code
x16	Single Pole, Double Throw	Sputtered Ruthenium Reed	150Vd.c. / 100Va.c.	3W	0.25A	1A	40-110-021
x32							40-110-121
x16	Single Pole, Single Throw (normally open)			20W	1A	1.2A	40-115-021
x32							40-115-121
x16	Double Pole, Single Throw (normally open)						40-115-022
x32							40-115-122
x16	Single Pole, Double Throw	Shielded Sputtered Ruthenium Reed		3W	0.25A	1A	40-120-021
x16	Single Pole, Single Throw (normally open)			20W	1A	1.2A	40-125-021
x24							40-125-121

High Density General Purpose Relay Modules

- Up to 100 Relays Per Module
- SPST, DPST, and Shielded Configurations
- Ruthenium Reed Relays Suitable For Maximum Signal Performance
- Electromechanical Relays For Higher Power Applications
- Occupy Single 3U PXI Slot
- 200-Pin Front Panel Connector
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-148 High Density General Purpose Relay Module

Pickering Interfaces range of high density general purpose relay modules provide an ideal solution for applications requiring dense arrays of uncommitted relays. The range includes both electromechanical and reed relay solutions in a variety of configurations.

All reed relay versions use high quality sputtered ruthenium relays that exhibit excellent contact performance under low and medium level switching conditions. For general purpose applications that also require higher power handling, the range of electromechanical relays provides an ideal solution.

All these modules use a 200 way connectors that is supported by a comprehensive range of cable and connector accessories, ensuring they can be quickly integrated into the user's test system with a minimum of effort.
For more detailed information on each module please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

Configuration		Description	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Order Code
	x50	SPST (normally open)	Sputtered Ruthenium Reed	100Vd.c./ 100Va.c.	20W	1A	1A	40-140A-021
	x75							40-140A-121
	x100							40-140A-221
	x50	DPST (normally open)						40-141-022
	x50	Shielded SPST (normally open)						40-142-021
	x48	SPDT			3W	0.25A		40-143-121
	x64							40-143-221
	x50	SPST (normally open)	Electro-mechanical		60W/ 62.5VA	1A		40-145-001
	x75							40-145-101
	x100							40-145-201
	x50	SPST)(normally closed)						40-145-001-NC
	x75							40-145-101-NC
	x100							40-145-201-NC
	x25	DPST (normally open)						40-146-002
	x50							40-146-202
	x32	SPDT						40-148-001
	x48							40-148-101
	x64							40-148-201

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General Purpose Power Relay Modules

- Reed Relay Solutions up to 3A
- Electromechanical Relays up to 5A
- SPST, DPST and DPDT Versions
- Easy to Use D-Type Connectors
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

This range of Pickering Interfaces relay modules offers higher current ratings in a single 3U slot. Relays are available in SPST, DPST and DPDT configurations. The relay solutions have been carefully chosen to ensure a long service life. All the D-type connectors used are fully supported by the range of Pickering Interfaces cable and connector accessories to simplify system integration.

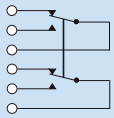
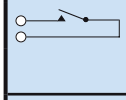
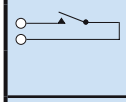
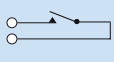
Reed relay versions use high quality sputtered ruthenium relays that exhibit excellent contact performance under low and medium level switching conditions. Mercury wetted relays reed relay versions are available that are suitable for high reliability applications with minimal contact bounce, but users should ensure that local regulations allow their use



40-130 General Purpose Power Relay Module

For general purpose applications that also require higher power handling, the range of electromechanical relays provides an ideal solution.

For more detailed information on each module please refer to the individual data sheets or visit our web sit at:
www.pickeringtest.com

Configuration		Description	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Front Panel D-type Connector	Order Code
	x8	DPDT	Electro-mechanical	220Vd.c./ 125Va.c.	60W	2A d.c. 1A a.c. (resistive)	2A	50-way	**40-130-002**
	x13							78-way	**40-130-102**
	x16	SPST (normally open)	Mercury Wetted Reed	200V	50W	2A	3A	50-way	**40-135-011**
	x25								**40-135-111**
	x32						2A	78-way	**40-135-211**
	x12	DPST (normally open)						50-way	**40-135-012**
	x16							78-way	**40-135-112**
	x19								**40-135-212**
	x16	SPST (normally open)	Sputtered Ruthenium Reed		40W	1A	2A	50-way	**40-136-011**
	x25								**40-136-111**
	x32						2.5A	78-way	**40-136-211**
	x12	DPST (normally open)						50-way	**40-136-012**
	x16							78-way	**40-136-112**
	x19								**40-136-212**
	x16	SPST (normally open)	Electro-mechanical	250Va.c./ 110Vd.c.	90W	5A	5A	37-way	**40-137-001**
	x32					2A	2A	78-way	**40-137-101**
	x39								**40-137-201**

General Purpose High Power Relay Modules

- Current Ratings From 5A to 40A
- Electromechanical Relays
- SPST, DPST and SPDT Versions
- High Capacity Connectors
- One or Two 3U PXI Slot Modules
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

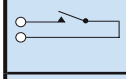
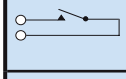
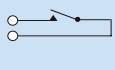


40-170 General Purpose High Power Relay Module

Pickering's high power switching modules provide a range of high current handling relays suited for high power applications. Each module uses a connector that has been carefully suited for the intended application and is fully supported by Pickering Interfaces range of cable and connector accessories.

Lower current versions require one 3U PXI slot, but the highest current versions occupy two slots. The modules can be used to switch heavy AC or DC loads, and the highest current versions are particularly suitable for automotive test. High power switches are also available in multiplexer and matrix configurations.

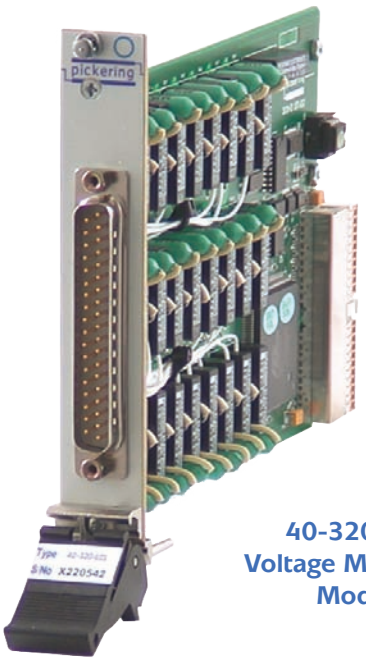
For more detailed information on each module please refer to the individual data sheets or visit our web sit at:
www.pickeringtest.com

Configuration		Description	Relay Type	Max Switch Voltage	Max Switch Current	Max Carry Current	Module Width	Front Panel Connector	Order Code
	x8	DPST	Electro-mechanical Power Relay	250Va.c./ 35Vd.c.	5A	5A	1 PXI Slot	37-way D	**40-150-002**
	x12							50-way D	**40-151-002**
	x8	SPDT						37-way D	**40-155-001**
	x16							50-way D	**40-156-001**
	x10	SPST			10A	10A		10-way MS-M	**40-160-001**
	x10	DPST			8A	8A		2 x 10-way MS-M	**40-160-002**
	x2	SPST	Electro-mechanical High Power Relay	270Va.c./ 30Vd.c.	30A	30A	2 PXI Slot	High Power 8-way D-type	**40-170-001**
	x2	DPST			20A	20A			**40-170-002**
	x2	SPST	Electro-mechanical Automotive Power Relay	16Vd.c.	40A	40A			**40-180-001**
	x4								**40-180-101**
	x2			28Vd.c.	20A	20A			**40-180-011**
	x4								**40-180-111**

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High Voltage Switching Modules

- Switch Up To 500V d.c.
- Very High Switch Isolation of 1000V d.c.
- Reed Relay Contacts Ensure Long Operational Life
- 37-Way High Voltage D-Type Connector
- Fast Operation
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

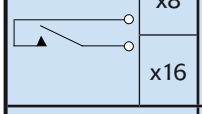
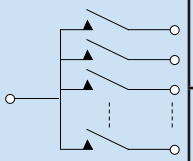


40-320 High Voltage Multiplexer Module

The high voltage range of switching modules provides solutions for uncommitted relay and multiplexer applications that need to switch voltages up to 500V d.c. They are suited for hot or cold switching applications up to 10W and 0.5A with a rating of 20mA at their maximum operating voltage. The modules use 37-way D-Type high voltage connectors that are fully supported by Pickering Interfaces cable and connector accessory range.

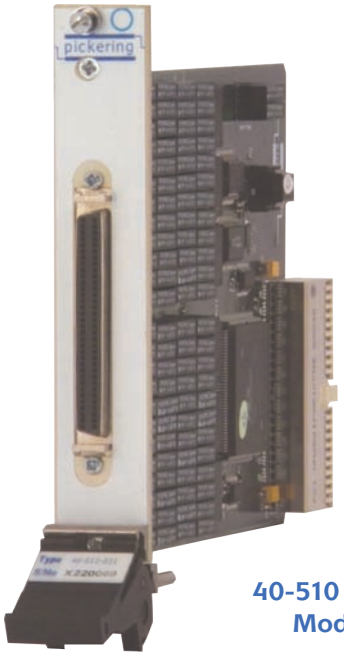
The design ensures the modules can withstand high common mode voltages and a protective safety cover is used to shield the switching components.

For more detailed information on each module please refer to the individual data sheets or visit our web sit at:
www.pickeringtest.com

Configuration	Description	Relay Type	Maximum Standoff Voltage	Maximum Switching Voltage	Maximum Power	Maximum Switching Current	Maximum Carry Current	Order Code
 x8	SPDT (normally open)	High Voltage Rhodium Reed	1000Vd.c./ 600Va.c.	500Vd.c./ 300Va.c.	10W	0.5A (20mA at max switch voltage)	0.5A	40-310-001
x16								40-310-101
	12-Channel Multiplexer							40-320-001
	24-Channel Multiplexer							40-320-101

Low Density Matrix Modules

- Ruthenium Reed Relay Versions For Maximum Signal Performance.
- Electro-mechanical Relay Versions For Current Handling up to 2 Amps
- Single and Dual Matrix Configurations
- 50Ω, 50MHz Screened Reed Versions
- Expansion Capability Across Multiple Cards
- Fast Operating Speed <500µs for Reed Versions, <3ms for Electromechanical Versions
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-510 Matrix Module

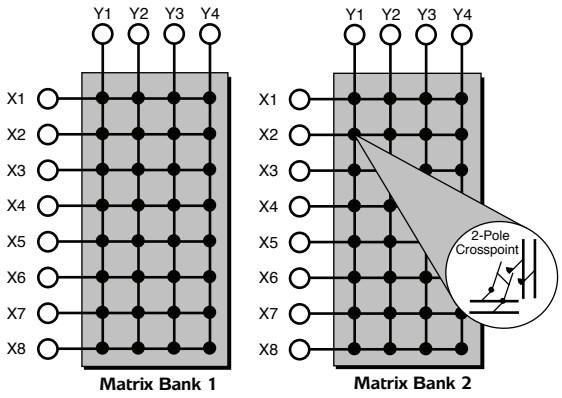
Pickering Interfaces offers a comprehensive range of low density matrix modules that use either ruthenium reed relays or electromechanical relays. They are a cost effective solution for applications that require relatively small matrices in the PXI format.

The matrices can be expanded by connecting together multiple modules, but Pickering recommend that users look at the higher density modules that involve less user configuration.

All the reed relay versions use high quality sputtered ruthenium relays that exhibit excellent contact performance under low and medium level switching conditions. For general purpose applications that also require higher power handling, the range of electromechanical relays provides an ideal solution.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com



Example Matrix Configuration:
Dual 8 x 4 with 2-pole contacts (40-515)

Matrix Configuration	Number of Poles	Front Panel Connector	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Order Code
Single 12 x 4	1-Pole	68-pin "SCSI" type	Sputtered Ruthenium Reed (screened reed option available for 1-pole matrices)	150Vd.c./ 100Va.c.	20W	1A	1.2A	40-510-021 †
	2-Pole							40-510-022
Dual 12 x 4	1-Pole							40-511-021 †
	2-Pole							40-511-022
Single 12 x 8	1-Pole							40-512-021 †
	2-Pole							40-512-022
Single 24 x 4	1-Pole							40-513-021 †
	2-Pole							40-513-022
Dual 8 x 4	2-Pole	50-way D-type	Electro-Mechanical	220Vd.c./ 250Va.c.	60W/ 62.5VA	2A	2A	40-515-002
Single 8 x 8								40-516-002
Single 16 x 4								40-517-002
Single16 x 8		78-way D-type						40-518-002
Single 32 x 4								40-519-002

† To order the screened reed relay version of a 1-pole matrix, please add **-S** suffix

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Medium Density Matrix Modules

- Ruthenium Reed Relay Versions For Maximum Signal Performance.
- Single and Dual Matrix Configurations
- 50Ω, 50MHz Screened Reed Versions
- Expansion Capability Across Multiple Cards
- Fast Operating Speed <500µs
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-523 Matrix Module

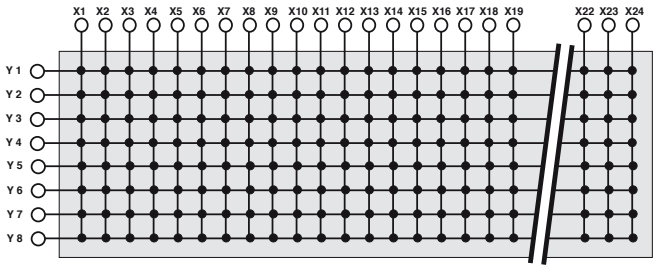
Pickering Interfaces offers a comprehensive range of medium density matrix modules that use ruthenium reed relays. They are a cost effective solution for applications that require mid range matrices in the PXI format.

The matrices can be expanded by connecting together multiple modules, but Pickering recommend that users look at the higher density modules that involve less user configuration.

All versions use high quality sputtered ruthenium reed relays that exhibit excellent contact performance under low and medium level switching conditions.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com



Example Matrix Configuration:
Single 24 x 8 with 1 pole contacts (40-521)

Matrix Configuration	Number of Poles	Front Panel Connector	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Order Code
Single 24 x 8	1-Pole	96-pin	Sputtered Ruthenium Reed (screened reed option available for 1-pole matrices)	150Vd.c./ 100Va.c.	10W	0.5A	1.0A	40-521-021†
	2-Pole							40-521-022
Dual 12 x 8	1-Pole				20W	1.0A	1.2A	40-522-021†
	2-Pole							40-522-022
Single 44 x 4	1-Pole							40-523-021†
	2-Pole							40-523-022
Single 46 x 4	1-Pole							40-524-021

† To order the screened reed relay version of a 1-pole matrix, please add **-S** suffix

High Density Matrix Modules

- Ruthenium Reed Relay Versions For Maximum Signal Performance.
- Single and Dual Matrix Configurations
- 50Ω, 50MHz Screened Reed Versions
- Expansion Capability Across Multiple Cards
- Fast Operating Speed <500µs
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-538 High Density Matrix Module

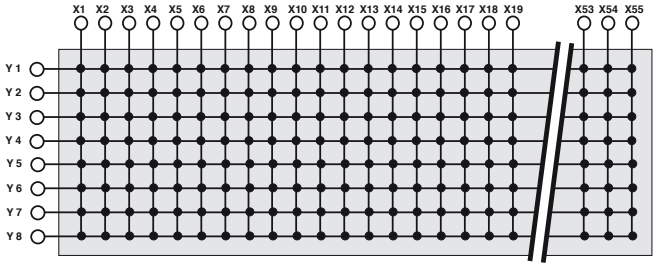
Pickering Interfaces offers a comprehensive range of high density matrix modules that use ruthenium reed relays. They are a cost effective solution for applications that require high density matrices in the PXI format.

Expansion to even larger matrices is possible by connecting together multiple modules.

All versions use high quality sputtered ruthenium reed relays that exhibit excellent contact performance under low and medium level switching conditions.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com



Example Matrix Configuration:
Single 55 x 8 with 1 pole contacts (40-538)

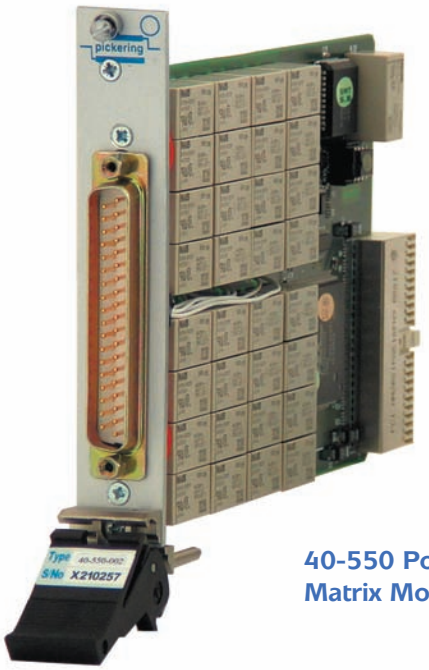
Matrix Configuration	Number of Poles	Front Panel Connector	Relay Type	Max Standoff Voltage	Max Power	Max Switch Current	Max Carry Current	Order Code
Single 32 x 8	1-Pole	96-pin	Sputtered Ruthenium Reed (screened reed option available for 1-pole matrices)	150Vd.c./ 100Va.c.	10W	0.5A	1.0A	40-531-021†
	2-Pole							40-531-022
Dual 16 x 8	1-Pole							40-532-021†
	2-Pole							40-532-022
Single 64 x 4	1-Pole			100V		0.5A	0.5A	40-533-021†
	2-Pole							40-533-022
Dual 32 x 4	1-Pole							40-534-021†
	2-Pole							40-534-021
Single 92 x 4	1-Pole							40-535-021
Dual 44 x 4								40-536-021†
Single 44 x 8								40-537-021
Single 55 x 8								40-538-021†

† To order the screened reed relay version of a 1-pole matrix, please add **-S** suffix

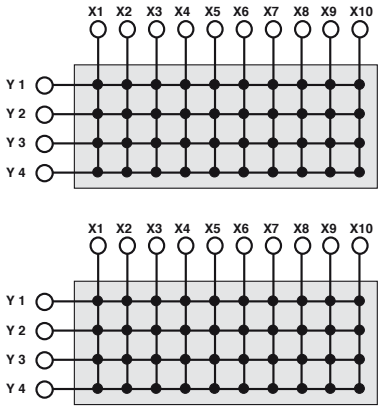
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Power Matrix Modules

- Current Ratings of 2A and 5A
- Switch Up To 250V a.c.
- Electro-mechanical Relays
- Single and Dual Matrix Configurations
- 1 or 2 Pole Switching Configurations
- Expansion Capability Across Multiple Cards
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-550 Power Matrix Module



Example Matrix Configuration: Dual 10 x 4 (40-546)

These power matrix modules provide matrices with higher current and power ratings than the high density versions. They are designed for the switching of AC or DC loads or for controlling large relay or solenoid systems. With ratings from 2A to 5A and occupying only a single slot these modules are ideal for power applications.

Each module uses connectors supported by the Pickering cable accessory range and relays have been carefully selected to ensure long service life under demanding load conditions.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

Matrix Configuration	Number of Poles	Front Panel Connector	Relay Type	Max Standoff Voltage	Maximum Current	Order Code
Single 10 x 4	1-Pole	37-way D-type	Electro-Mechanical	110Vd.c./ 250Va.c.	2A	40-545-001
Dual 10 x 4						40-546-001
Single 10 x 8						40-547-001
Single 20 x 4						40-548-001
Single 8 x 4	2-Pole			35Vd.c./ 250Va.c.	5A	40-550-002
		2 x 20-way MSN				40-550-902

Large Scale Matrix Modules

- Integrated Large Size Matrices
- Require No User Configuration
- Pickering BRIC™ Modules Offer a Scalable Solution With Upgrade Paths
- Wide Range of Matrix Sizes and Y Dimensions
- Ruthenium Reed Relay Versions For Maximum Signal Performance.
- Electro-mechanical Relay Versions For Current Handling up to 2 Amps
- High Bandwidth - up to 50MHz
- Fast Operating Speed <800µs for Reed Versions, <3ms for Electromechanical Versions
- Occupy 4 or 8 3U PXI Slots
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

Pickering Interfaces range of Large Scale Matrix Modules offers integrated solutions for large matrix assemblies. The use of high density packaging and integrated backplanes enables a large matrix to be implemented with no user configuration or special matrix expansion kits. The high density approach used ensures the matrix has a large bandwidth and low through path resistance. Fault diagnosis can be carried out through the use of the 90-100 MXT tool and the matrices can be serviced using standard de-soldering tools.

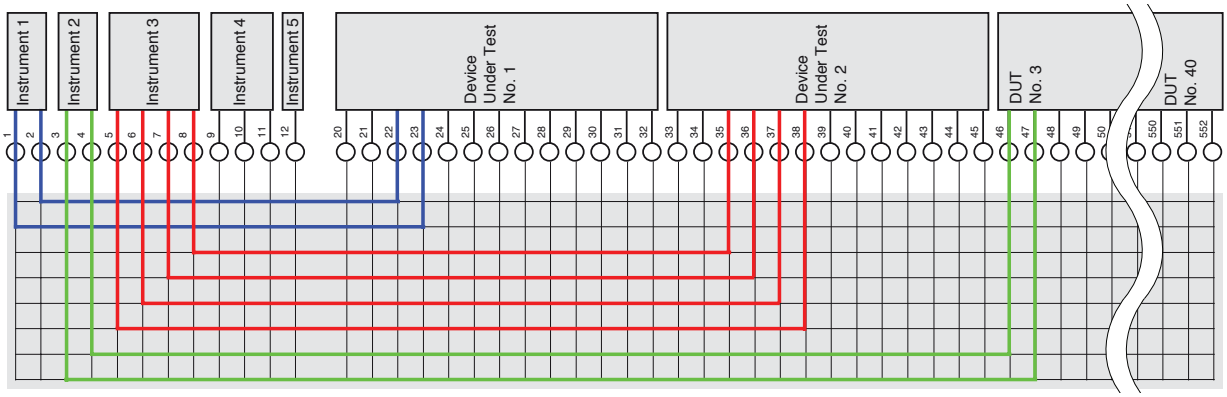


40-560 BRIC4 Matrix Module

All reed relay matrices use high quality sputtered ruthenium relays that exhibit excellent contact performance under low and medium level switching conditions. For applications that require 2-pole switching and current handling up to 2A, the range of matrices based on electromechanical relays provides an ideal solution.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules and the Pickering BRIC system, please refer to the individual data sheets. Alternatively, visit our web site at: www.pickeringtest.com to access the on-line configuration tool and select the correct BRIC for your application.



Schematic diagram showing a 552 x 8 BRIC Matrix being used to parallel test multiple DUTs. The BRIC Matrix allows tremendous test system flexibility.



40-561 BRIC8 Matrix Module



40-565 BRIC4 2Amp Matrix Module

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Y Size	Minimum X Size	Maximum X Size	Matrix Configuration (except where stated, all relays are ruthenium reed)	Maximum Switch Voltage	Maximum Power	Max Switch /Carry Current	Number of Slots	Order Code †
4	184	552	single pole	150Vd.c. /100Va.c.	10W	0.25A /0.5A	4	40-560-021
		1104					8	40-560-121
	88	264	single pole		20W	1.0A /1.2A	4	40-562-021
			two pole					40-562-022
			screened single pole					40-562-021-S
		528	single pole				8	40-562-121
			two pole					40-562-122
			screened single pole					40-562-121-S
8	24	96	two pole (electromechanical relay)	220Vd.c. /250Va.c.	60W	2A /2A	4	40-565-002
		192					8	40-565-102
	92	276	single pole	150Vd.c. /100Va.c.	10W	0.25A /0.5A	4	40-560-021
			dual analog bus (8-wire)					40-560-021-M
		552	single pole				8	40-560-121
			dual analog bus (8-wire)					40-560-121-M
	60	180	single pole				4	40-561-021
			two pole					40-561-022
			screened single pole					40-561-021-S
		360	single pole				8	40-561-121
			two pole					40-561-122
			screened single pole					40-561-121-S
	44	132	single pole		20W	1.0A /1.2A	4	40-562-021
			two pole					40-562-022
			screened single pole					40-562-021-S
		264	single pole				8	40-562-121
			two pole					40-562-122
			screened single pole					40-562-121-S
16	46	138	single pole		10W	0.25A /0.5A	4	40-560-021
		267					8	40-560-121
	30	90	single pole				4	40-561-021
			two pole					40-561-022
			screened single pole					40-561-021-S
		180	single pole				8	40-561-121
			two pole					40-561-122
			screened single pole					40-561-121-S
	22	66	single pole		20W	1.0A /1.2A	4	40-562-021
			two pole					40-562-022
			screened single pole					40-562-021-S
		132	single pole				8	40-562-121
			two pole					40-562-122
			screened single pole					40-562-121-S
32	10	30	single pole				4	40-562-021
		60					8	40-562-121

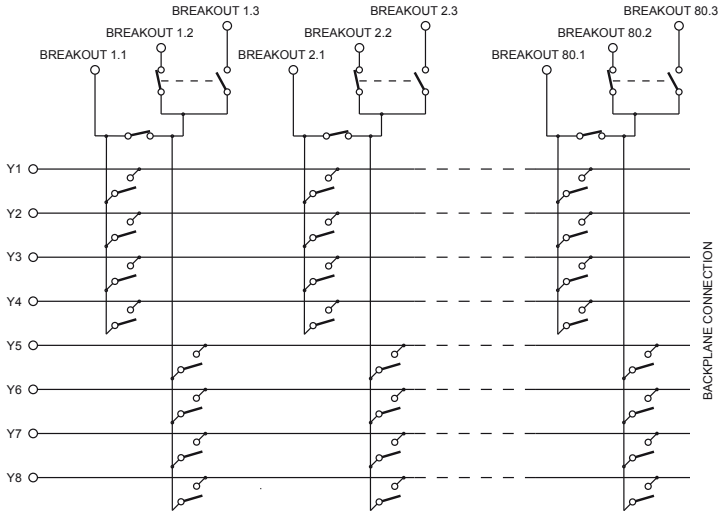
† For the full order codes and all the available matrix sizes for each variant please refer to the data sheet.or web based configurator

Fault Insertion Matrix Modules

- Designed For Fault Insertion Applications
- Breakout Connections For Wiring to Sensors
- Pickering BRIC™ Architecture Provides Scalable Matrix Size
- Wide Range of Matrix Sizes
- Ruthenium Reed Relay Versions For Maximum Signal Performance.
- Electro-mechanical Relay Versions For Current Handling up to 10 Amps
- Occupy 4 or 8 3U PXI Slots
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-592 BRIC8 FIBO Matrix Module



Schematic Diagram for the 40-592 80 x 8 FIBO Matrix

The Fault Insertion matrices are designed specifically for safety critical applications where the response of a control system is required to be evaluated when sensor connections behave in unexpected ways. This is particularly important in safety critical applications, such as automotive and aeronautical systems, where unexpected controller behaviour could result in loss of life or substantial asset loss.

All these matrices feature a breakout arrangement that allows faults to be attached to the sensor lines via the Y axis. This includes the breaking of a connection or the adding of a series defect – all of which can simulate connectivity problems in the system. The three pin breakout versions allow the connection to swapped for a "bad" sensor simulation.

The use of a programmable matrix for fault insertion ensures testing is fast to perform and can be reproduced on subsequent test cycles in the event of corrective action or a system upgrade.

All reed relay matrices use high quality sputtered ruthenium relays that exhibit excellent contact performance under low and medium level switching conditions. For applications that require fault insertion in power circuits and current handling up to 10A, Pickering's matrices based on electromechanical relays provide an ideal solution.

The matrix design is based on Pickering's proven BRIC architecture that allows the matrix size required for an application to be selected from the many versions available. Connectors used are fully supported by Pickering's accessory range of cables.

For more detailed information on each module please refer to the individual data sheets or visit our web site at: www.pickeringtest.com

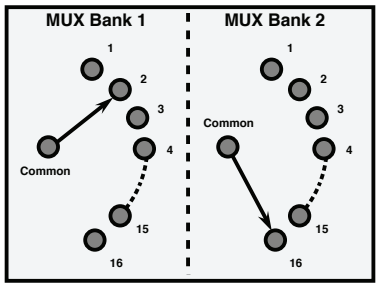
Minimum Matrix Size	Maximum Matrix Size	Matrix Configuration	Relay Type	Maximum Switch Voltage	Maximum Power	Max Switch /Carry Current	Number of Slots	Order Code
20 x 8	80 x 8	2-Pin Breakout	Sputtered Ruthenium Reed	150Vd.c./ 100Va.c.	20W	1.0A/1.2A	4	40-592-021-2P
	160 x 8						8	40-592-121-2P
31 x 8	124 x 8	3-Pin Breakout					4	40-592-021-3P
	248 x 8						8	40-592-122-3P
6 x 8	30 x 8	2-Pin Breakout	Electro-mechanical	125Vd.c./ 250Va.c.	300W (240W)†	10A/10A (8A/8A)†		40-595-101-3P

† The current and power figures shown are for the matrix crosspoints, the figures shown in brackets are for the breakout contacts

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Low Density Multiplexer Modules

- Versatile Multiplexer Range With Single & Dual Operation
- Configurable Versions Can be Set With Different Bank Sizes and Pole Count
- Low Thermal EMF Version
- Screened 50Ω Option with 50MHz Bandwidth
- All Versions Use High Reliability Pickering Ruthenium Reed Relays
- Fast Operating Speed <500µs
- Switch up to 150Volts, 1.2A with 20W Max Power
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



Example Multiplexer Configuration: Dual 1 to 16 (40-630)



40-630 General Purpose Multiplexer Module

The range of low density multiplexer solutions are ideal for applications requiring a lower number of channels and poles. All modules are based on high quality ruthenium reed relays that provide a very long service life and consistent contact operations at all rated switching levels.

The range includes a low thermal offset multiplexer that is suitable for connecting to thermocouples and other sensors that requires the use of contacts with low offset errors and consistent contact performance.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

Multiplexer Configuration	Number of Poles	Relay Type	Max Standoff Voltage	Maximum Power	Switch/ Carry Current	Front Panel Connector	Order Code †
Dual 16 to 1	2-Pole	Sputtered Ruthenium Reed	150Vd.c./ 100Va.c.	20W	0.5A/1.2A	68-way	**40-630-022**
Dual 32 to 1	1-Pole						**40-630-022**
Single 16 to 1	4-Pole						**40-630-022**
Single 32 to 1	2-Pole						**40-630-022**
Single 64 to 1	1-Pole						**40-630-022**
Screened Dual 16 to 1		Screened Ruthenium Reed					**40-630-021-S**
Screened Single 32 to 1							**40-630-021-S**
Dual 24 to 1		Sputtered Ruthenium Reed					**40-630-021**
Single 24 to 1	2-Pole						**40-630-021**
Single 48 to 1	1-Pole						**40-630-021**
Low thermal EMF Single 23 to 1	2-Pole	Low thermal Ruthenium Reed	100Vd.c.		0.5A/0.5A	96-way	**40-620-022**

† For the full order number and configuration codes for each variant, please refer to the data sheet.

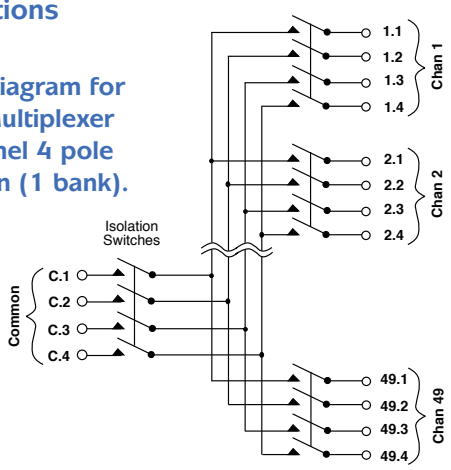
High Density Multiplexer Modules

- Versatile Multiplexer Range With Sizes From 4 to 1, Up To 198 to 1
- Versions Available With Between 1 and 20 Separate Banks
- Pole Count From 1 Up To 32
- All Versions Use High Quality Sputtered Ruthenium Reed Relays
- Screened 50Ω Option with 50MHz Bandwidth
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-670A Very High Density Multiplexer Module

Schematic Diagram for 40-670A Multiplexer in 49 Channel 4 pole Configuration (1 bank).



The range of High Density Multiplexers provide a compact array of MUX solutions with differing combinations of channel counts and poles. Most high density solution include isolation relays that allows the MUX to be disconnected from the single input/output port, allowing the MUX to conveniently connect other channels together. All modules are contained within a single slot of the chassis.

The modules use high density connectors that are fully supported by the Pickering Interfaces range of connector and cable accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:

www.pickeringtest.com

Maximum Multiplexer Channel Configuration			Minimum Multiplexer Channel Configuration			Switching Voltage	Switch/ Carry Current	Front Panel Connector	Order Code †
Channels	Banks	Poles	Channels	Banks	Poles				
128	1	1	16	8	1	100Vd.c.	1.0A/1.2A	200-Way	40-610-022
64		2	8		2				
		1			1				40-610-021
		1 screened			1 screened				40-610-021-S
160		1	8	20	1				40-615-022
80		2	4		2				
		1			1				40-615-021
		1 screened			1 screened				40-615-021-S
5	16	1	—	—	—		1.0A/1.0A	96-Way	40-616-001
94	1					150Vd.c.	0.5A/1.2A		40-640-022
47		2							
		1 screened							40-640-021-S
99		1	5	1	16	100Vd.c.	0.5A/0.5A	200-Way	40-670A-021
198					32				40-670A-022
99		1 screened			16 screened				40-670A-021-S

† For the full order codes and all the available multiplexer sizes for each variant please refer to the data sheet.

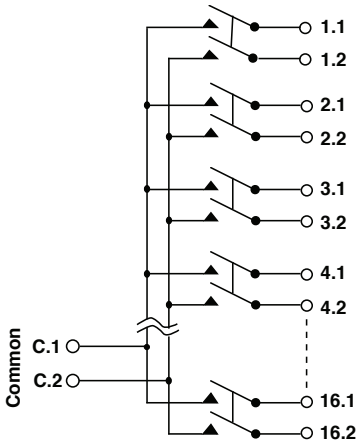
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Power Multiplexer Modules

- Versatile Multiplexer Range With Sizes From 4 to 1, Up To 64 to 1
- Versions Available With Between 1 and 8 Separate Banks
- One or Two Pole Versions Available
- Electromechanical Relay Versions Capable of Switching Up To 5 Amps
- Power And Sense MUX Version Suitable For Power Distribution and Regulation Circuits
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-656 38 Channel 2 Amp Multiplexer Module



Schematic of 40-650 Power Multiplexer Module (two pole single bank 16 to 1)

The power MUX range provide a selection of switching modules based on electromagnetic and reed relays capable of switching currents of up to 5 Amps. Each module supports one or more multiplexer channels between one input/output terminal and a selection of output/input terminals. To reduce through path resistance most of these multiplexers do not include isolation relays.

Each module uses connectors supported by the Pickering cable accessory range and relays have been carefully selected to ensure long service life under demanding load conditions.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

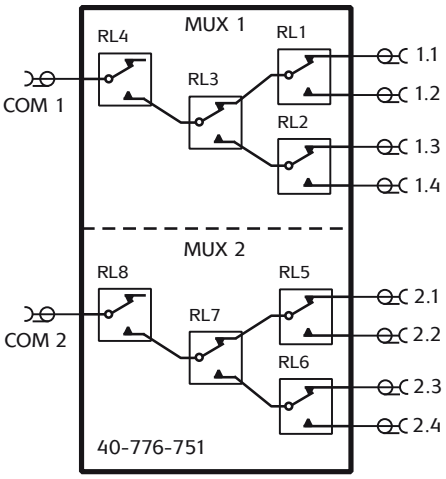
Multiplexer Configuration	Number of Poles	Relay Type	Max Standoff Voltage	Switch/Carry Current	Front Panel D-type Connector	Order Code
Single 16 to 1	2-Pole	Electro-mechanical	35Vd.c./ 250Va.c.	5A/5A	37-way	**40-650-002**
7 Bank 4 to 1			220Vd.c./ 125Va.c.	2A/2A	78-way	**40-655-002**
Single 38 to 1						**40-656-002**
8 Bank 8 to 1	1-Pole		110Vd.c./ 250Va.c.			**40-657-001-8/8/1**
4 Bank 16 to 1						**40-657-001-4/16/1**
2 Bank 32 to 1						**40-657-001-2/32/1**
Single 64 to 1						**40-657-001-1/64/1**
Single 18 to 1 with 18 to 1 sense MUX	2-Pole (power and sense MUX)	Ruthenium Reed	200Vd.c./ 240Va.c.	1A/2A		**40-658-002**

RF Switch Modules

- Comprehensive Range of RF Switch Modules Including Relays, Matrices and Multiplexers
- 50Ω and 75Ω Versions Available
- Bandwidths Up To 3500MHz
- Wide Range of Signal Connectors Including BNC, SMB, SMA, SMZ, 1.0/2.3 and Mini SMB
- Power Handling Up To 15 Watts
- 75 Ohm Version Suitable for Telecoms and High Quality Video Switching
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-725 8 x 9 RF Coaxial Matrix Module



Schematic Diagam for the 40-776 Dual 4 to 1 RF Multiplexer Module

Pickering has a range RF switches capable of providing economic switching for frequencies up to 3.5GHz. For higher frequency applications, or applications requiring high performance levels, Pickering also offer a variety of microwave switching modules.

The modules offer a range of relay, multiplexer and matrix functions. Some matrices include the facility for externally cabled expansion by providing a loop-through facility.

The modules can be provided with a variety of output connectors to suit the application, they are also supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

RF Switch Configuration	Maximum Frequency	Available 50Ω Connectors	Available 75Ω Connectors	Maximum Power	Order Code†
4 x SPDT relays	2500Mhz	BNC, SMB, SMA	BNC, SMZ, 1.0/2.3, miniSMB	15W	**40-710**
8 x 9 Matrix	500MHz	SMB	SMZ, 1.0/2.3, miniSMB	3W	**40-725**
12 x 8 Matrix	300MHz		miniSMB		**40-726A**
4 to 1 Multiplexer with automatic termination	2000Mhz	SMB, SMA	SMZ, 1.0/2.3, miniSMB	15W	**40-740**
4 to 1 Multiplexer		BNC, SMB	BNC		**40-745**
8 to 1 Multiplexer		SMB, SMA	SMZ, 1.0/2.3, miniSMB		
Dual 4 to 1 Multiplexer					**40-746**
16 to 1 Multiplexer			1.0/2.3, miniSMB		**40-747**
Dual 8 to 1 Multiplexer					**40-748**
Quad 4 to 1 Multiplexer					**40-749**
4 to 1 Multiplexer	3500Mhz		SMZ, 1.0/2.3, miniSMB		**40-770**
8 to 1 Multiplexer					**40-775**
Dual 4 to 1 Multiplexer					**40-776**

† For the full specification and corresponding order codes for each variant, please refer to the data sheet

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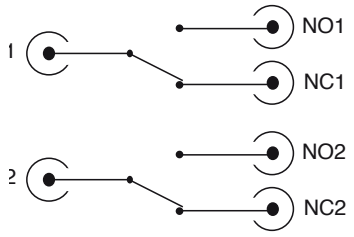
Microwave Switch Modules

- Comprehensive Range of Microwave Switch Modules Including Relays, Matrices and Multiplexers
- 50Ω and 75Ω Versions Available
- Bandwidths Up To 65GHz
- Range of Signal Connectors Including SMA, SMZ and Mini SMB
- Power Handling Up To 100 Watts
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

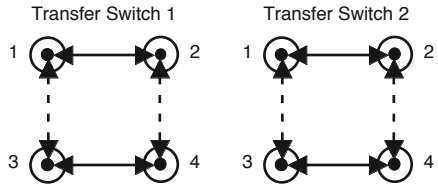


40-786 Triple 6 Channel Microwave Multiplexer Module

Schematic Diagram for the 40-780 2 x SPDT Microwave Relay Module



Schematic Diagram for the 40-782 2 x Microwave Transfer Switch Module



The Pickering Interfaces range of microwave modules provide high performance switching that features low insertion loss and very high isolation. The range varies from simple multiplexer and switch configurations to integrated matrices and large multiplexers.

Most products are characterized for 50Ω operation but some 75Ω versions are supplied either as standard products or as custom units.

The modules use high quality RF connectors that are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at: www.pickeringtest.com

Microwave Switch Configuration	Maximum Frequency	Available 50Ω Connectors	Available 75Ω Connectors	Maximum Power		Number of Slots Used	Order Code†
				at low frequency	at max. frequency		
1 x Changeover (SPDT)	65GHz	SMA, SMA-2.9, SMA-2.4, SMA 1.8	SMZ, mini SMB	100W	30W	1	40-780
2 x Changeover (SPDT)							
1 x Transfer Switch	18GHz	SMA	—			2	40-782
2 x Transfer Switch							
Single 4 to 1 Multiplexer	4GHz			20W	20W	1	40-783
Dual 4 to 1 Multiplexer							
Single 6 to 1 Multiplexer	40GHz	SMA, SMA-2.9,	1.6/5.6	100W	30W	3	40-785
Dual 6 to 1 Multiplexer							
Single 6 to 1 Multiplexer	20GHz	SMA	—			2	40-786
Dual 6 to 1 Multiplexer							
Triple 6 to 1 Multiplexer							
3 x 3 Matrix						10	40-787
4 x 3 Matrix							
4 x 4 Matrix							
Configurable 36 i/p mux	12GHz			80W	25W		40-789

† For the full specification and corresponding order codes for each variant, please refer to the data sheet

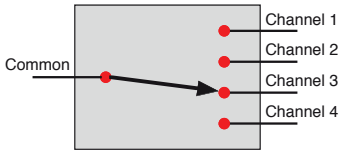
Optical Switching Modules

- Comprehensive Range of Optical Multiplexers and Insert/Bypass Switches
- MEMS Switching Technology Offers High Reliability and Fast Operating Speed
- Single and Multi Mode Versions
- FC/APC, FC/PC, SC/PC, MU (mini SC) or LC Connectors (Single Mode Versions)
- SC or ST Connectors (Multi Mode Versions)
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications

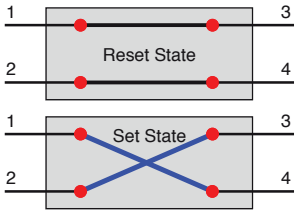


40-852
8 Channel
Fiber Optic
Multiplexer
Module

Schematic Diagram for Single 4 to 1 Multiplexer



Schematic Diagram for Insert/Bypass Switch



The Pickering Interfaces range of optical switching modules include high performance multiplexers and insert/bypass switches. MEMS (Micro Electro-Mechanical Systems) switch technology offers higher performance and longer operational life compared to conventional prism based optical switching.

All modules use high quality optical connectors that are supported by a comprehensive range of fiber and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at: www.pickeringtest.com

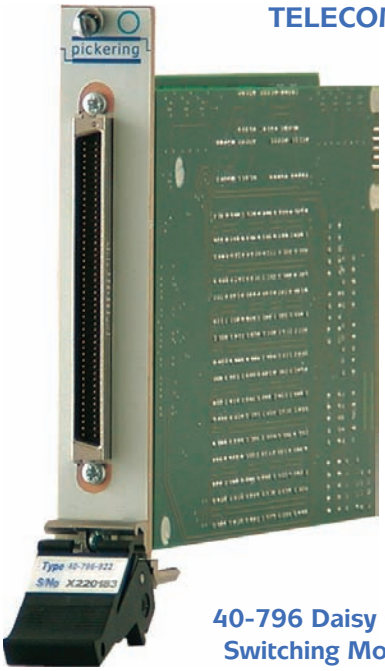
Optical Switch Configuration	Switch Technology	Fiber/Wavelength Support	Connector Options	Order Code†
Single 4 to 1 Multiplexer	Prism	Single Mode/1300 to 1550nm	FC/APC, FC/PC, SC/PC	40-810
Dual 4 to 1 Multiplexer				
Single 2 to 1 Multiplexer				40-815
Dual 2 to 1 Multiplexer				
Single Insert/Bypass Switch				40-820
Dual Insert/Bypass Switch				
Single 4 to 1 Multiplexer	MEMS	Single Mode/1200 to 1600nm Multi Mode/700 to 1700nm	FC/APC, FC/PC, SC/PC, MU (mini SC), LC, SC, ST	40-850
Dual 4 to 1 Multiplexer				
Single 8 to 1 Multiplexer				40-852
Single 2 to 1 Multiplexer				40-855
Dual 2 to 1 Multiplexer				
Triple 2 to 1 Multiplexer		Single Mode/1200 to 1600nm	FC/APC, FC/PC, SC/PC, MU (mini SC), LC	
Quad 2 to 1 Multiplexer				
Single Insert/Bypass Switch		Single Mode/1200 to 1600nm Multi Mode/700 to 1700nm	FC/APC, FC/PC, SC/PC, MU (mini SC), LC, SC, ST	40-860
Dual Insert/Bypass Switch				
Triple Insert/Bypass Switch		Single Mode/1200 to 1600nm	FC/APC, FC/PC, SC/PC, MU (mini SC), LC	
Quad Insert/Bypass Switch				

† For the full specification and corresponding order codes for each variant, please refer to the data sheet

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Telecoms Switching Modules

- A Range of Switching Modules Suitable For Telecoms Switching and Datacoms Test Applications
- Daisy Chain Switching Modules Suitable For Testing SONET/SDH Transmission Multiplexers
- Daisy Chain Switching Modules Available in Unbalanced 75Ω and Balanced 120Ω Versions With 8 or 16 Channels
- 2-Pole Datacoms MUX Suitable For Bulk Testing Serial Interfaces Such As RS232 or USB
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-796 Daisy Chain Switching Module

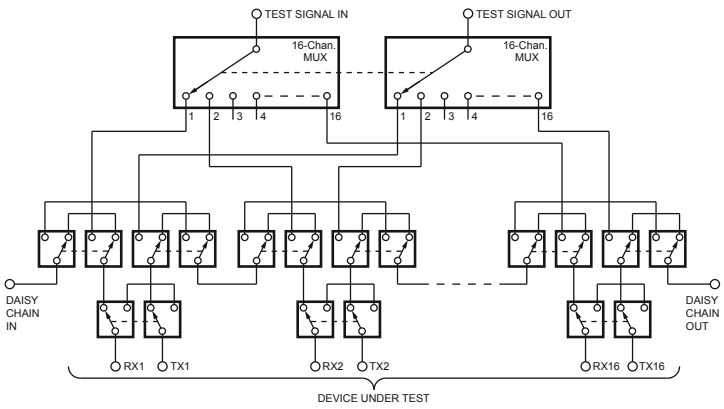
This range of switching modules are ideal for applications requiring the bulk testing of telecoms and datacoms systems.

The daisy chain switching modules are specifically designed for production or verification testing of SONET/SDH transmission multiplexers switching 2MBit/s or 1.5MBIt/s data. Versions are available for 75Ω or 120Ω balanced systems with either 8 or 16 tributary channels. The modules incorporate switches that allow data to be fed sequentially through selected tributaries, and multiplexers enable test equipment to break into selected channels.

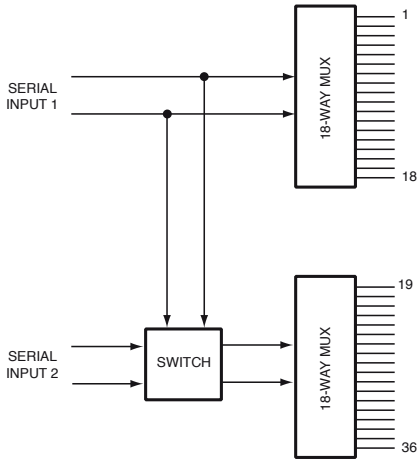
The range includes a 2-pole datacoms MUX which can be configured as a single 36 to 1 or a dual 18 to 1 multiplexer. It is ideal for switching high speed serial data such as USB or RS232.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com



16 Channel Daisy Chain Switching Module 40-793



Configurable 2-Pole Datacoms MUX 40-735

Card Configuration	Number of Channels	Impedance	Bandwidth	Maximum Voltage	Maximum Current	Order Code
Daisy Chain Tributary Switch (1-pole)	8	75Ω	100MHz	100Vd.c./ 100Va.c.	1.0A	**40-792-701**
	16					**40-793-701**
Daisy Chain Tributary Switch Balanced (2-pole)	8	100/120Ω				**40-795-922**
	16					**40-796-922**
Configurable 2-pole Datacoms MUX	36 to 1 or 2 x 18 to 1	90Ω	>200MHz	150Vd.c./ 100Va.c.	0.5A	**40-735-912**

Programmable Resistor Modules

- Versatile Range of Resistor Cards Including Programmable Resistors and Potentiometers
- Fully Programmable Versions With Resolution of Up to 24-bit
- Resistance Range From 0 to 16MΩ
- Low Cost Fixed Value Selectable Resistor Versions With User Defined Values
- All Versions Use High Reliability Pickering Ruthenium Reed Relays
- Occupy Single 3U PXI Slot
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



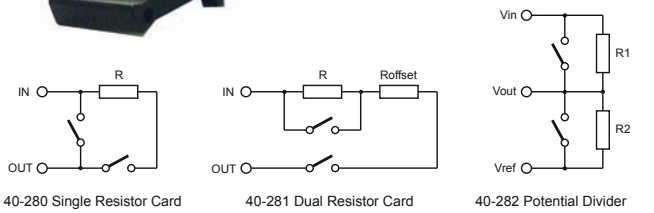
40-280 Selectable Resistor Card

The range of programmable resistor modules includes fully programmable resistor and potentiometer cards for applications that require fine adjustment with a resolution of up to 24-bit. Also in the range are selectable resistor and potentiometer cards. These consist of fixed resistor values pre-defined by the user which can be switched in and out of circuit with reed relays.

All modules are based on high quality ruthenium reed relays that provide a very long service life and consistent contact operations at all rated switching levels.

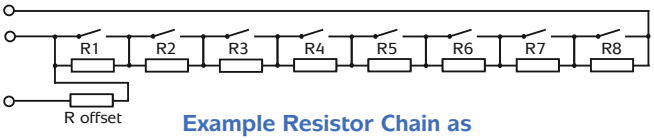
All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com



40-280 Single Resistor Card | 40-281 Dual Resistor Card | 40-282 Potential Divider

Fixed Value Resistor Configurations as used on Selectable Resistor Cards



Example Resistor Chain as used on Programmable Resistor Cards (8-bit chain shown)

Resistor Card Configuration	Number of Channels	Resolution	Resistance Range ‡	Max Resistor Power	Front Panel Connector	Order Code †
Fixed Value Selectable Resistors	24 or 48	—	User Specified	0.5W	96-way SCSI plug	**40-280**
Dual Selectable Resistors	12 or 24					**40-281**
Fixed Value Potential Dividers	12 or 24					**40-282**
Programmable Resistors	Dual	16-bit	0.5Ω to 32kΩ	1W	68-way SCSI plug	**40-290**
Programmable Resistors + SPDT Relays						
Programmable Resistors	Quad	8-bit	0.5Ω to 128Ω			**40-291**
Programmable Resistors + SPDT Relays						
Programmable Resistors	10 or 18		0 to 255Ω	0.5W	37-way D-type	**40-295**
	5 or 10	12-bit	0 to 4kΩ			
		16-bit	0 to 65kΩ			
	3 or 6	24-bit	0 to 16MΩ			
Programmable Potentiometers	5 or 9	8-bit	0 to 255Ω			**40-296**
	2 or 4	12-bit	0 to 4kΩ			
		16-bit	0 to 65kΩ			
	1 or 3	24-bit	0 to 16MΩ			

‡ Most modules can be offered with alternative resistance range, for more information contact Pickering Interfaces
† For the full order number and configuration codes for each variant, please refer to the data sheet.

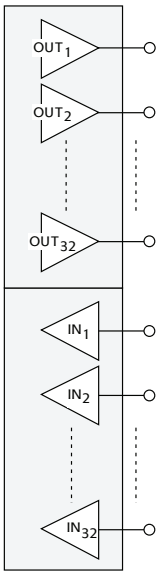
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Digital Input Output & Prototyping Modules

- Versatile Range of Modules Incorporating Digital Input/Output Functions
- Versions With Breadboard Area for Prototyping
- Versions With Optically Isolated Input/Output For Interfacing to Electrically Noisy Environments
- TTL Inputs and Outputs Suitable for Interfacing to External Logic
- Open Collector Transistor Output Versions Suitable for Driving Internal or External Relay Coils
- IVI, VISA and Kernel Support For LXI and PXI Environments
- Complies with PXI and CompactPCI Specifications



40-220 Digital I/O Module with Prototyping Area



Digital I/O Module with 32-bit Input and 32-bit Output (40-220)

The range of Digital I/O Modules are suitable for operating external devices, or for interfacing with external logic. Two choices of output driver are available: TTL for interacting with external logic and Open Collector Transistor for operating external devices with voltages to 50V d.c. and currents to 500mA.

The versions that incorporate a breadboard area allow the user to construct their own circuits for applications where a standard module is not available.

Optically isolated versions are intended for input-output functions in electrically noisy environments. All inputs and outputs share a common ground and have an isolation barrier of 500V DC. Power for the isolated input/output circuit can be supplied by the user or supplied by an optional on-board DC-DC converter.

All the connectors used by these modules are supported by a comprehensive range of cable and connector accessories.

For more information on these modules please refer to the individual data sheets or visit our web site at:
www.pickeringtest.com

Card Configuration	Input Channels	Output Channels	Prototyping Area	Number of Slots	Front Panel Connector	Order Code
Breadboard Card with I/O	32 TTL	32 TTL	65²cm 0.1" grid	1	96-way	40-220-001
Breadboard Card without I/O	–	–			–	40-225-001
				2		40-225-002
Digital Input/Output Card	32 TTL	32 TTL	–	1	96-way	40-410-001
		32 o/c				40-410-002
Optically Isolated Digital I/O Card With on board DC-DC converter	16	32			68-way	40-490-001
	16 TTL					40-491-001
Optically Isolated Digital I/O Card No DC-DC converter	16					40-490-002
	16 TTL					40-491-002

Pickering Interfaces understands that just providing the switching modules is not enough, users need to be provided with fast and effective ways of connecting their investment to the device under test.

The modules in the Pickering Interfaces 60-100 series LXI chassis are fully supported by a comprehensive range of connector and cable accessories. The accessories are detailed in the 64 page Interconnection Solutions Catalog available in paper or downloadable format. The catalog is cross referenced to the system 40 PXI modules supported by the 60-100 series LXI chassis, making it easy for the user to find the perfect accessories to compliment their chosen module.



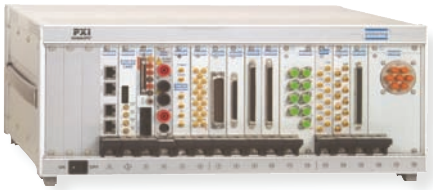
- **Connectors & Prototyping Cables For Pickering LXI and PXI Modules.**
  Comprehensive range of mating connectors for all Pickering LXI and PXI modules, including suggestions for suitable wire types.
- **Cable assemblies For Pickering Interfaces LXI and PXI**
  Pickering Interfaces offer a range of standard cables, providing a means of connecting your D.U.T. to any Pickering Interfaces LXI or PXI module.
- **Connector Blocks & Breakouts For Pickering LXI and PXI Modules**
  Pickering have a good selection of Connector Blocks and Breakouts for most LXI and PXI modules.
- **Fuse Holders and Terminals For LXI and PXI**
  We offer a range of DIN rail mounted Fuse Holders and Terminals, providing a means of building and protecting your test system.
- **Custom Connectors & Cabling** can be made to special order, please contact Pickering sales office to discuss your application.

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OVERVIEW OF SWITCH AND INSTRUMENT SYSTEMS FROM PICKERING INTERFACES

Pickering have been manufacturing Modular Switching & Instrumentation systems since 1988. Our sister company Pickering Electronics have manufactured instrumentation quality reed relays since the late 1960's. Pickering Interfaces design & manufacture solutions for all major modular Test platforms including PXI, GPIB, PCI, VXI and now LXI, we also manufacture many customer solutions and have a wide range of connector/cabling designed for the demanding Functional Test Developer.

PXI Switch, Instrument & Systems – SYSTEM 40



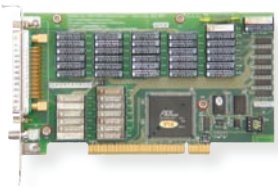
Pickering have a full range of competitively priced 3U & 6U PXI (CompactPCI) Switch Cards, including Relay, Digital I/O, Matrix, Multiplexer, RF, Microwave, Optical and Telecom, our 3U PXI matrix modules offer up to 4400 crosspoints per module.

Pickering PXI Instruments include Arbs, Amplifiers, Digitizers, Automotive Serial Protocol Communications, 5½, 6½ & 7½ DMMs, Power Supplies, RF Power Meters, RF Attenuators, Programmable Resistor/Potentiometers, Avionics Bus Analyzers, Breadboards & Digital I/O. We are continually adding to our PXI range (over 500 models), so if the product you require is not listed please ask.

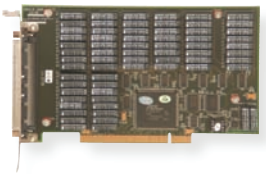
LXI Instruments (LAN eXtensions for Instrumentation), LXI – SYSTEM 60



Pickering Interfaces are Strategic members of the LXI Consortium, www.lxistandard.org. LXI is the next generation of test instrumentation combining state-of-the-art measurements in a small package at a cost-effective price using enhanced Ethernet connectivity and built in Triggering. Pickering along with other vendors will release products late in 2005.



PCI Switch Cards – SYSTEM 50



Pickering Interfaces have a range of competitively priced PCI switch cards, including General Purpose Reed Relay, Matrix, Multiplexer, RF & Programmable Resistor. Pickering Interfaces PCI cards share the same software environment as our extensive PXI range.



VXI Switching System Modules – SYSTEM 30

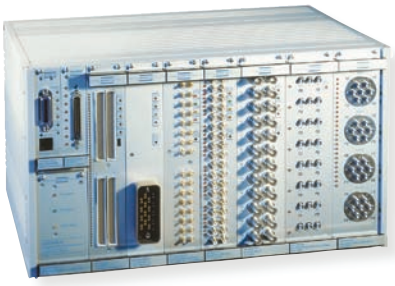


Pickering Interfaces have a range of high density VXI switching modules, System 30, containing up to 2340 relays per module. These are C sized modules with a SCPI message based interface, VXI Plug/Play & IVI Drivers, offering up to 10 times density advantage over competing VXI switching products.

IEEE-488.2 & RS-232 Controlled Switching Systems – SYSTEM 10/20

Pickering Interfaces' System 10 and System 20 Programmable Relay Switching Systems now offer the most comprehensive range of switching modules currently available. Our switching systems will switch from nanoVolts to 7.5 kiloVolts, D.C. to 26.5GHz and picoAmps to 30Amps. Models are programmable using a wide range of interfaces: IEEE 488, Ethernet, USB or RS-232.

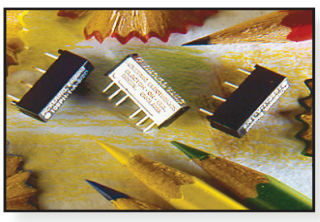




Custom Switching Solutions

Pickering Interfaces are able to meet your exact custom switching needs. With extensive experience in PXI, PCI, VXI, IEEE-488, and Ethernet architectures, we can develop a switching solution that matches your exact needs. For further information please visit the Custom Design area of the "Sales" section of our web site or call your local Pickering Sales office.

"A Switching Module Is Only As Good As The Relays Used"



Ruthenium Sputtered Reed Relays offer maximum performance, are hermetically sealed and offer a very stable, long life relay contact (>10^9 operations) with fast operate time. Alternative cheaper types such as electro-mechanical armature relays or non-instrumentation grade reed relays (Rhodium plated) don't offer the consistent contact resistance, long life, fast switching speed and low level switching capability of an instrumentation reed relay. All reed relays used in our switch modules are manufactured by our sister company Pickering Electronics. www.pickeringrelay.com.



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