

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

- Versatile Multiplexer With Single & Dual Operation
- 40-630 Dual 16-Channel 2-Pole Multiplexer, Available In 4 Other Configurations
- 40-632 Dual 24-Channel 1-Pole Multiplexer, Available In 2 Other Configurations
- 1, 2 & 4-Pole Switching Formats
- Uses High Reliability Pickering Reed Relays
- Fast Operating Speed 500µs Typical per Relay
- Switch up to 150V, 1.2A with 20W Max Power
- Automatic Isolation Switches Reduce Capacitive Loading in Large Systems
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- Supported by *eBIRST* ™
- 3 Year Warranty



The 40-630/632 general purpose multiplexer modules feature a wide range of switching configurations. They are based on 1-pole or 2-pole reed relays and typical applications include signal routing in ATE and data acquisition systems. User connections are made via a front panel 68-pin socket.

The majority of 40-630/632 models (see order codes) allow multiple channels to be simultaneously selected. Alternatively, product variants can be supplied that operate as a conventional multiplexer with break-before-make action when a new channel is selected.

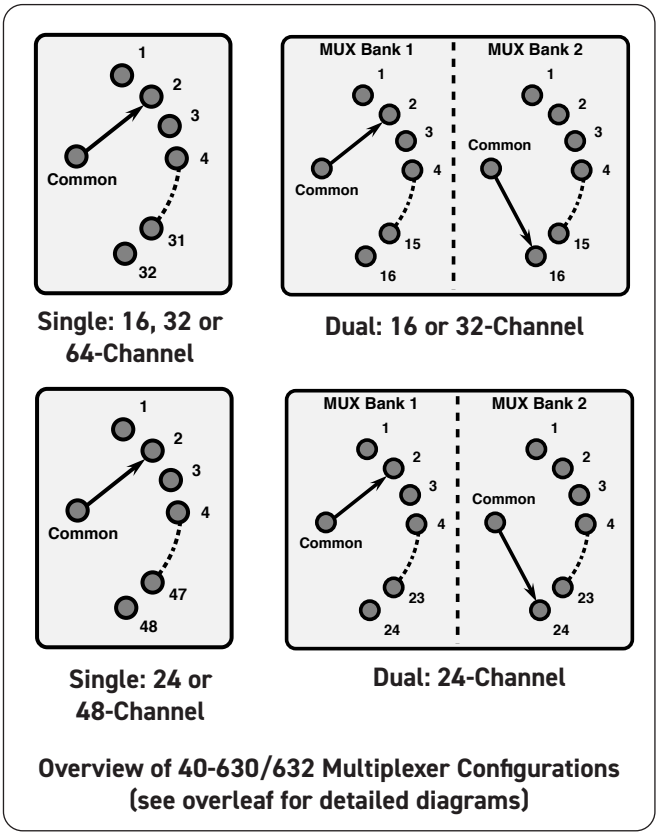
Note: The multiple channel selection option is not available for the 40-630-022-64/1 and 40-630-D/32/1 multiplexers.

Automatic isolation switching (see diagrams overleaf) connects only the currently active multiplexer bank to the common terminal. This minimizes capacitive loading and leakage current in large multiplexer systems. Larger multiplexers may be constructed by daisy chaining the common signals from multiple modules.

Supported by *eBIRST*

eBIRST switching system test tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

For more information go to: pickeringtest.com/ebirst



Single: 16, 32 or 64-Channel

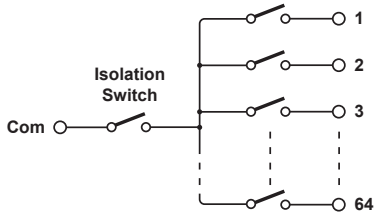
Dual: 16 or 32-Channel

Single: 24 or 48-Channel

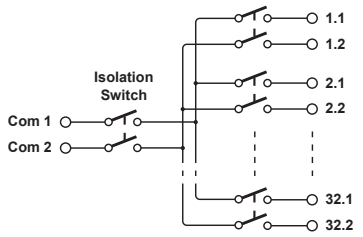
Dual: 24-Channel

Overview of 40-630/632 Multiplexer Configurations (see overleaf for detailed diagrams)

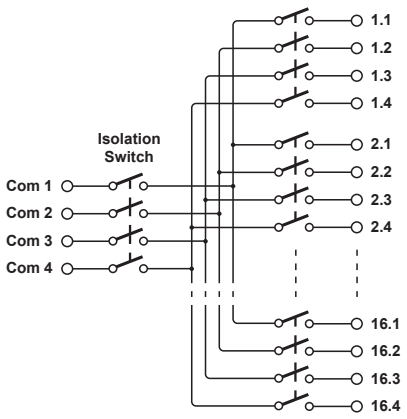
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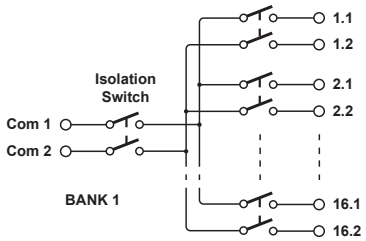
40-630-022-64/1
Single 64-Channel 1-Pole MUX

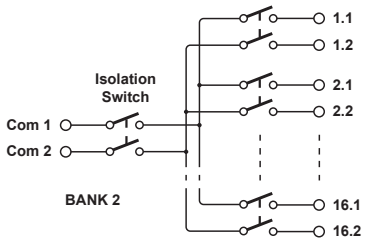


40-630-022-32/2
Single 32-Channel 2-Pole MUX

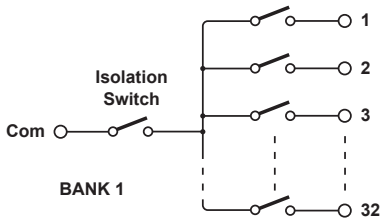


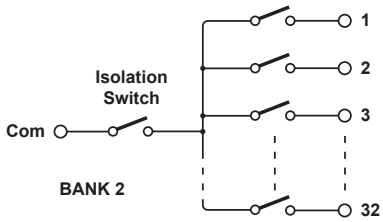
40-630-022-16/4
Single 16-Channel 4-Pole MUX





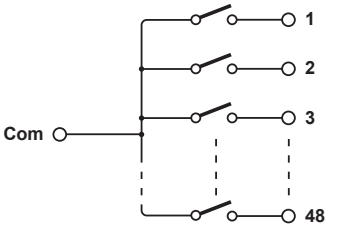
40-630-022-D/16/2
Dual 16-Channel 2-Pole MUX



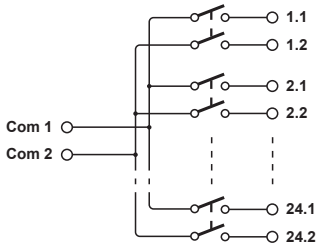


40-630-022-D/32/1
Dual 32-Channel 1-Pole MUX

40-630-022 Multiplexer Configuration Schematics

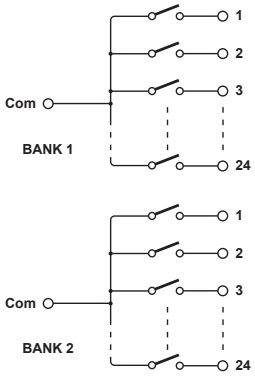


40-632-021-48/1
Single 48-Channel 1-Pole MUX



40-632-021-24/2
Single 24-Channel 2-Pole MUX

40-632-021 Multiplexer Configuration Schematics



40-632-021-D/24/1
Dual 24-Channel 1-Pole MUX

Relay Type

The 40-630 is fitted with ruthenium sputtered reed relays, these offer very long life with good low level switching performance and excellent contact resistance stability. Spare reed relays are built onto the circuit board to allow easy maintenance with minimum downtime.

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

Switching Specification

Switch Type:	Ruthenium Reed
Max Switching Voltage: †	150VDC/100VAC*
Max Power:	20W
Max Switch Current:	1.0A
Max Carry Current:	1.2A
Initial On Path Resistance:	<750mΩ (single module)
Off Path Resistance:	$>10^9$Ω (single module)
Thermal Offset:	<10µV
Bandwidth (3dB, 1 module)	>10MHz
Operate Time:	1ms typical, 500µs for multichannel mode
Expected Life, low power load:	$1x10^9$ operations
Expected Life, full power load:	$>1x10^6$ operations

* For full voltage rating, signal sources to be switched must be fully isolated from mains supply and safety earth.

† Higher switching voltages may be available.

Power Requirements

+3.3V	+5V	+12V	-12V
0	280mA (typ 220mA)	0	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).

Module weight: 200g (40-630-022-32/2)
180g (40-630-022-D/32/1)
180g (40-632-021-D/24/1)

3D models for all versions in a variety of popular file formats are available on request.

Connectors

PXI bus via 32-bit P1/J1 backplane connector.
Signals via front panel 68-pin female micro-D connector, for pin outs please refer to the operating manual.

Optional Limiting Resistors

Modules may be fitted with limiting resistors, these are fitted in series with the analogue common. These are very useful if over-current signals may be encountered, thus extending the life and reliability of the reed relays.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 90% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 90% non-condensing
Altitude:	15000m

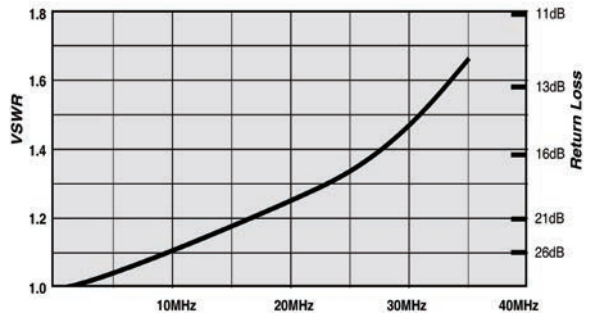
PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented.

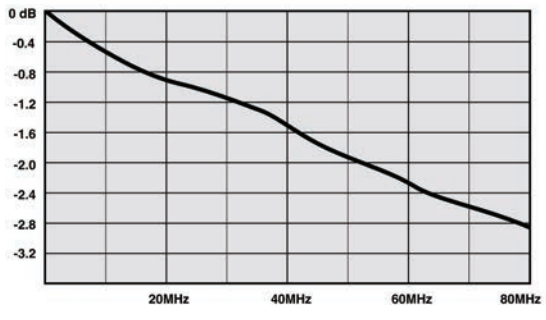
Uses a 33MHz 32-bit backplane interface.

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.



40-630 16-Channel MUX Typical VSWR/Return Loss



40-630 16-Channel MUX Typical Insertion Loss

40-630-022 MUX Shipping Configurations

Multiplexer Mode	Dual		Single		
Number of Channels	16	†32	16	32	†64
Number of Poles	2	1	4	2	1

† Dual 32 channel 1 pole and Single 64 channel 1 pole configurations are NOT capable of switching multiple channels simultaneously.

Note: When ordering you may specify that the multiplexer is configured into any of the Shipping Configuration modes shown, this saves having to alter internal jumpers yourself upon receipt of the unit.

For example, to ship a 40-630-022 multiplexer set up as Single 64 Channel 1 Pole then order: "**40-630-022** Configuration **S/64/1**"

40-632-021 MUX Shipping Configurations

Multiplexer Mode	Dual	Single	
Number of Channels	24	24	48
Number of Poles	1	2	1

Product Order Codes - Multiplexer

Channel Selection	Model Variant	Order Code
Single	**Single 64-Channel 1-Pole**	**40-630-022-64/1**
Single	**Dual 32-Channel 1-Pole**	**40-630-022-D/32/1**

Note: The above modules can only select a single channel.

Channel Selection	Model Variant	Order Code
Single	**Dual 16-Channel 2-Pole**	**40-630-022-D/16/2-SM**

Note: The above module is available to select a single channel.

Channel Selection	Model Variant	Order Code
Multiple	**Single 32-Channel 2-Pole**	**40-630-022-32/2**
Multiple	**Single 16-Channel 4-Pole**	**40-630-022-16/4**
Multiple	**Dual 16-Channel 2-Pole**	**40-630-022-D/16/2**
Multiple	**Single 48-Channel 1-Pole**	**40-632-021-48/1**
Multiple	**Single 24-Channel 2-Pole**	**40-632-021-24/2**
Multiple	**Dual 24-Channel 1-Pole**	**40-632-021-D/24/1**

Note: Contact factory if the above modules are required in single channel selection mode.

Support Products

eBIRST Switching System Test Tool

This product is supported by the *eBIRST* test tools which simplify the identification of failed relays, the required *eBIRST* tools are below. For more information go to: pickeringtest.com/ebirst

Product	Test Tool	Adaptor
40-630/632	**93-006-001**	**93-006-401**

Spare Relay Kits

Kits of replacement relays are available for the majority of Pickering's PXI switching products, simplifying servicing and reducing down-time.

Product	Relay Kit
40-630-022	**91-100-003 & 91-100-005**
40-632-021	**91-100-003**

For further assistance, please contact your local Pickering sales office.

Mating Connectors & Cabling

For connection accessories for the 40-630/632 series please refer to the 90-015D 68-pin micro-D Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

Product Customization

Pickering PXI 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 reed relay types
- Mixture of reed 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.

Chassis Compatibility

This PXI module must be used in a suitable chassis. It is compatible with the following chassis types:

- All chassis conforming to the 3U PXI and 3U Compact PCI (cPCI) specification
- Legacy and Hybrid Peripheral slots in a 3U PXI Express (PXIe) chassis
- Pickering Interfaces LXI or LXI/USB Modular Chassis



Chassis Selection Guide

Standard PXI or hybrid PXIe Chassis from any Vendor:

- Mix our 1000+ PXI switching & simulation modules with any vendor's PXI instrumentation
- Embedded or remote Windows PC control
- Real-time Operating System Support
- High data bandwidths, especially with PXI Express
- Integrated module timing and synchronization

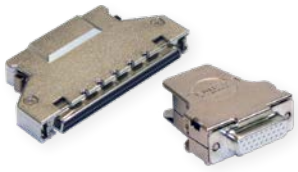


Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- Ethernet or USB control enables remote operation
- Low-cost control from practically any controller
- LXI provides manual control via Web browsers
- Driverless software support
- Power sequencing immunity
- Ethernet provides chassis/controller voltage isolation
- Independence from Windows operating system

Connectivity Solutions

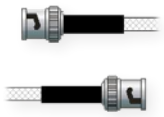
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules.



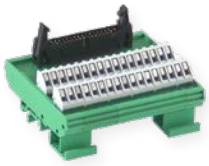
Connectors & Backshells



Multiway Cable Assemblies



RF Cable Assemblies



Connector Blocks

We also offer customized cabling and have a free online **Cable Design Tool** that can be used to create custom cable solutions for many applications.
Visit: pickeringtest.com/cdt to start your design.



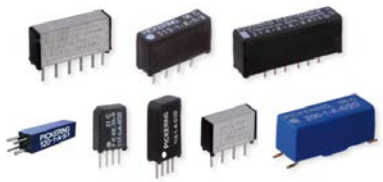
Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for a PXI or LXI based test system. Our modules are fully supported by both Virginia Panel and MacPanel.

Pickering Reed Relays

We are the only switch provider with in-house reed relay manufacturing capability via our sister company, Pickering Electronics. These instrument grade reed relays feature ***SoftCenter***® technology, ensuring long service life and repeatable contact performance.

To learn more, please go to: pickeringrelay.com



Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions. For a list of all supporting operating systems, please see: pickeringtest.com/os

The VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW RT. For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.
To learn more about software drivers and development environments, please go to: pickeringtest.com/software

Signal Routing Software

Our signal routing software, Switch Path Manager, automatically selects and energizes switch paths through Pickering switching systems. Signal routing is performed by simply defining test system endpoints to be connected together, greatly accelerating Test System software development. To learn more, please go to: pickeringtest.com/spm



Diagnostic Relay Test Tools

eBIRST Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.
To learn more, please go to: pickeringtest.com/ebirst



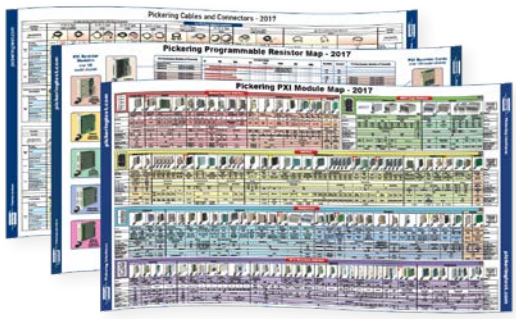
Three Year Warranty & Guaranteed Long-Term Support

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for a period of three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available for all our modules and systems with various levels to suit your requirements. Although we offer a 3-year warranty as standard, we also include guaranteed long-term support—with a history of supporting our products for typically 15-20 years. To learn more, please go to: pickeringtest.com/support

Available Product Resources

We have a large library of product resources including success stories, product and support videos, articles, as well as complete product catalogs and product reference maps to assist when looking for the switching, simulation and cable and connector solutions you need. We have also published handy reference books on Switching Technology and for the PXI and LXI standards.







To view, download or request any of our product resources, please visit: pickeringtest.com/resources

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Pickering Interfaces maintains a commitment to continuous product development, consequently we reserve the right to vary from the description given in this data sheet.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

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We're here to make your life easier. How can we help you today?

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