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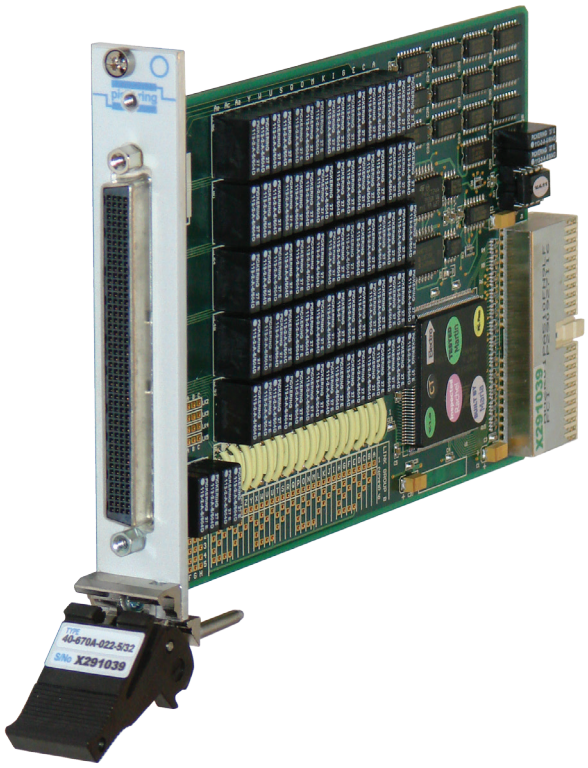
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Find the *Pickering 40-670A-022-198/1* at our website: *Click HERE*

40-670A
Very High Density Multiplexer Module

- Very High Density Multiplexer
- Up to 198 Switch Pins Available with 1, 2, 4, 8, 16 or 32-Pole Switching Formats
- All Versions Use High Reliability Pickering Reed Relays
- Fast Operating Speed <500µs
- Switch up to 150VDC/100VAC, 0.5A with 10W 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 40-670A series of very high density multiplexer modules feature a wide range of switching configurations. Typical applications include signal routing in ATE and data acquisition systems.

Each module is factory configured into one of the configuration modes *(refer to schematics overleaf)*. Connections are made via a front panel 200-pin connector. Available reed relay formats are:

198-Channel, 1-Pole (with isolation switching)
99-Channel, 2-Pole (with isolation switching)
49-Channel, 4-Pole (with isolation switching)
24-Channel, 8-Pole (with isolation switching)
10-Channel, 16-Pole (no isolation switching)
5-Channel, 32-Pole (no isolation switching)

99-Channel, 1-Pole (with isolation switching)
49-Channel, 2-Pole (with isolation switching)
24-Channel, 4-Pole (with isolation switching)
10-Channel, 8-Pole (no isolation switching)
5-Channel, 16-Pole (no isolation switching)

The 40-670A multiplexer may be operated as a conventional multiplexer with break-before-make action when a new channel is selected. In addition multiple channels may be simultaneously selected *(not available for 40-670A-022-198/1 version)*.

Built in Automatic Isolation Switching *(available in 1, 2 and 4-pole modes, and 24-channel 8-pole mode see diagrams overleaf)* connects only the currently active multiplexer bank on to the analogue common, thereby keeping capacitive loading and leakage currents in large multiplexer systems to a minimum. Larger multiplexers may be constructed by daisy chaining the common signals from multiple PXI modules.

Relay Type

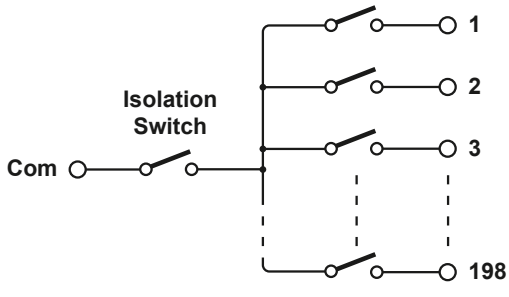
The 40-670A is fitted with Reed Relays (Ruthenium sputtered type), these offer very long life with good low level switching performance and excellent contact resistance stability.

Spare Reed Relays are built onto the circuit board to facilitate easy maintenance with minimum downtime.

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

Supported by eBIRST

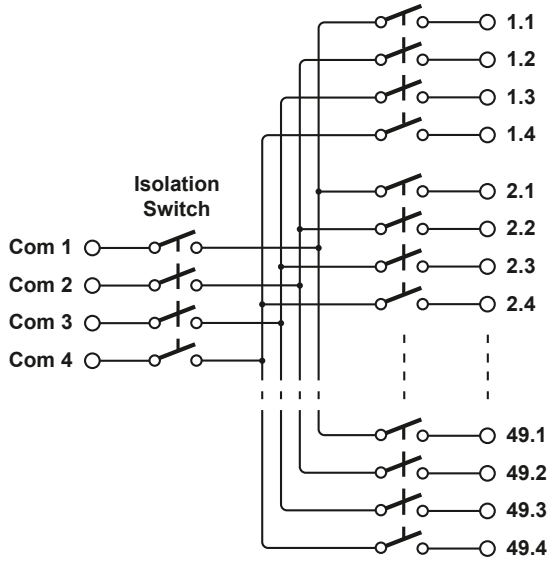
This product is supported by eBIRST which tests the switching system using an external tool. eBIRST provides a graphical output of its tests which includes an image showing the location of any defective relay. For more information on eBIRST see **93-000D.pdf**



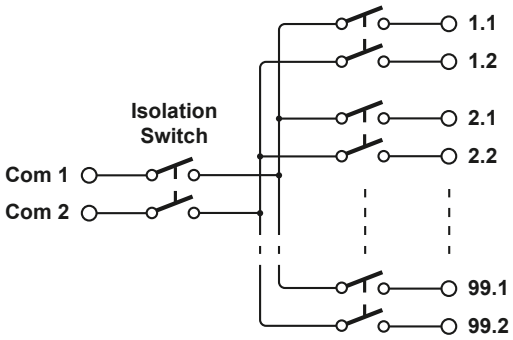
40-670A-022 198-Channel 1-Pole Multiplexer Mode
(40-670A-022-198/1 multiple channel selection not available)

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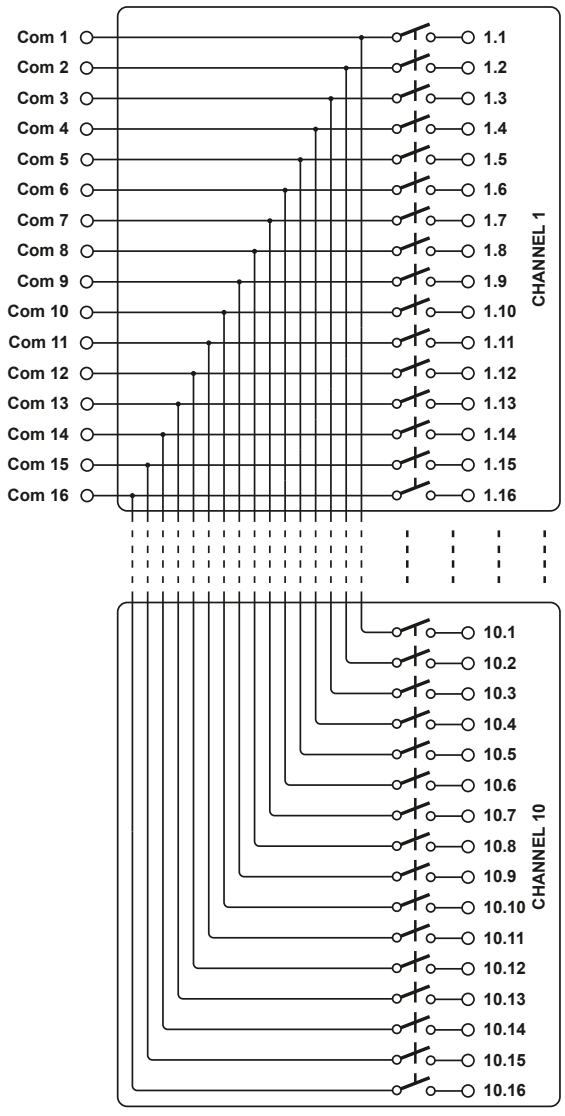
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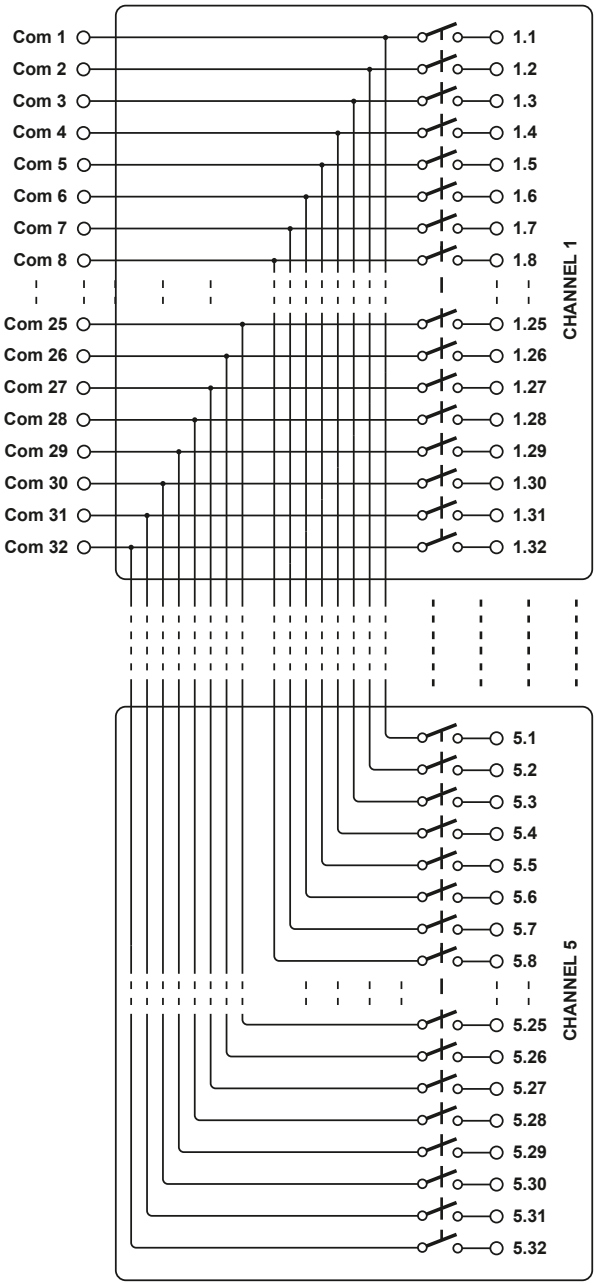
40-670A-022 49-Channel 4-Pole Multiplexer Mode



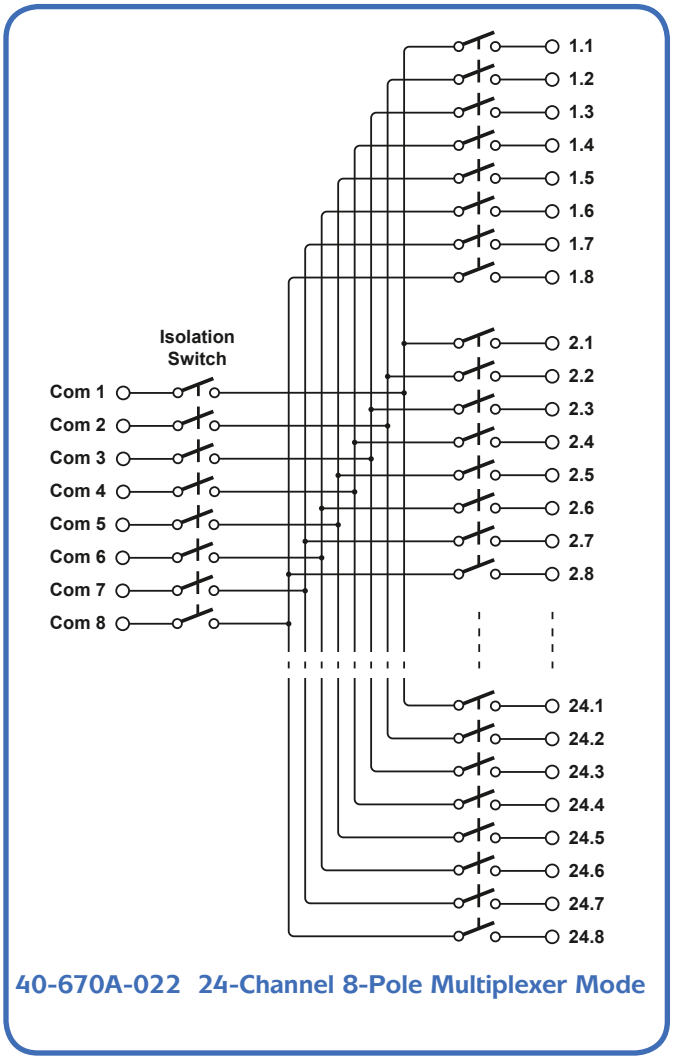
40-670A-022 99-Channel 2-Pole Multiplexer Mode



40-670A-022 10-Channel 16-Pole Multiplexer Mode



40-670A-022 5-Channel 32-Pole Multiplexer Mode



40-670A-022 24-Channel 8-Pole Multiplexer Mode

Switching Specification

Switch Type:	Ruthenium Reed
Max Switching Voltage:	150VDC/100VAC
Max Power: Max Switch Current: Max Carry Current:	10W 0.5A 0.5A
Initial Path Resistance On (Single Module): Off (Single Module): Differential Thermal Offset:	 <1200mΩ $>10^9$Ω <10µV
Bandwidth (3dB, 1 module)	>5MHz †
Operate Time: Release Time:	<0.5ms <0.5ms
Expected Life Low power load: Full power load:	 $1x10^9$ operations $>1x10^6$ operations

† Bandwidth is configuration dependent (please consult sales office for further information).

Power Requirements

+3.3V	+5V	+12V	-12V
0	1340mA (typ 300mA)	0	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).
Module weight: 200g (40-670A-022-99/2)
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 a front panel 200-pin female LFH connector.

Product Order Codes

HD MUX 99-Channel, 1-Pole	**40-670A-021-99/1**
HD MUX 49-Channel, 2-Pole	**40-670A-021-49/2**
HD MUX 24-Channel, 4-Pole	**40-670A-021-24/4**
HD MUX 10-Channel, 8-Pole	**40-670A-021-10/8**
HD MUX 5-Channel, 16-Pole	**40-670A-021-5/16**
VHD MUX 198-Channel, 1-Pole †	**40-670A-022-198/1**
VHD MUX 99-Channel, 2-Pole	**40-670A-022-99/2**
VHD MUX 49-Channel, 4-Pole	**40-670A-022-49/4**
VHD MUX 24-Channel, 8-Pole	**40-670A-022-24/8**
VHD MUX 10-Channel, 16-Pole	**40-670A-022-10/16**
VHD MUX 5-Channel, 32-Pole	**40-670A-022-5/32**

When ordering please specify which shipping configuration you would like the module set to.

† Multiple channel selection not available for 40-670A-022-198/1

Model 40-670A is a minor update to the original 40-670 model, for details refer to the 40-670A operating manual.

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 see **eBIRST**.

Product	Test Tool	Adapter
All Types	**93-002-001**	**Not Required**

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
40-670A-021	**91-100-018**
40-670A-022	**91-100-013**

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

Mating Connectors & Cabling

For connection accessories for the 40-670A range please refer to the **90-002D** 200-pin LFH 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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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: www.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**
- **MTQ Testsolutions** Tecap Test & Measurement Suite
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE • **Mathworks** Matlab • **Marvin** ATEasy

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

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 EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

PXI & LXI Chassis Compatibility

Compatible with all chassis conforming to the 3U PXI and 3U cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.
Compatible with Pickering Interfaces LXI Modular Chassis. For information on driving your switching solution in an LXI environment refer to the LXI Product Guide.



Latest Details

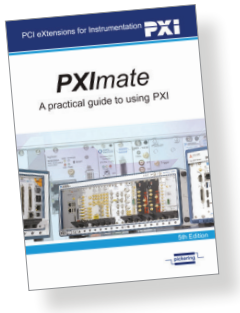
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com



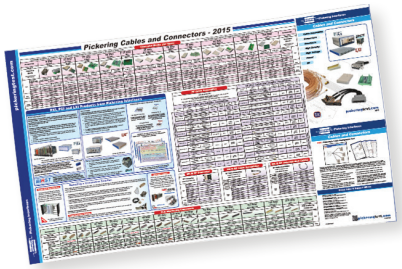
Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download.
Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering PXI modules.



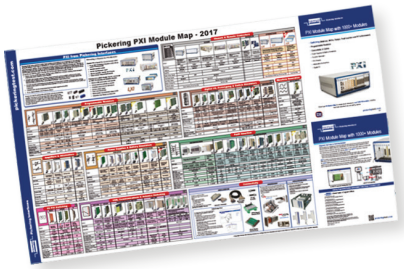
"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.



Ever wondered what PXI is all about?
Pickering Interfaces' "**PXImate**" explains the basics of PXI and provides useful data for engineers working on switch based test systems.
The PXImate is available free on request from the Pickering website.



The "**Cables & Connectors Map**" - outlines the cable and connector options available for all PXI Modules.



The "**PXI Module Map**" - a simple fold-out selection guide to all Pickering's 1000+ PXI Modules.

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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.

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