PXI 30A Solid State Multiplexer 40-667

- Available as a Dual 3-Channel or Single 6-Channel Multiplexer
- 30 Amp Rating at 40 Volts
- 40 Amp With Single Relay Closure
- Very High Hot Switch Capacity
- Very High Inrush Current Rating
- Fast Operating Speed
- Long Service Life
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- Supported by *eBIRST* ™
- 3 Year Warranty

The 40-667 is a high current multiplexer available in dual 3-channel or single 6-channel configurations occupying two PXI slots. The multiplexer switches are fully isolated solid state relays which offer fast operation under hot switching conditions and high inrush current with no operational life degradation.

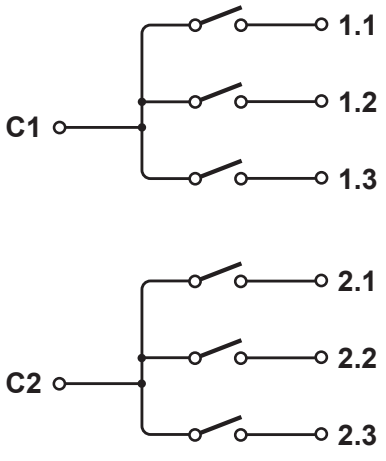
Each multiplexer channel can support 30A of continuous current and can switch signals up to 40V. The multiplexer can support 40A continuous operation for a single relay closure. The channels can also sustain inrush current in excess of 120A and, because the switches are polarity insensitive, can handle AC or DC signals.

The 40-667 allows 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.

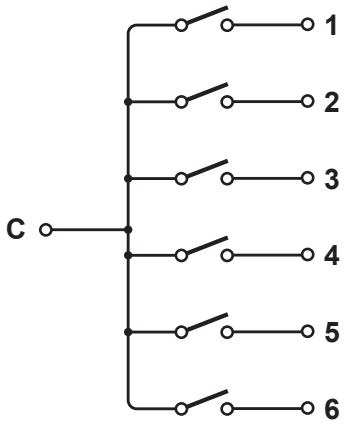
The 40-667 is particularly suited to automotive and aerospace applications where the switching of high capacity loads is required. The module is supplied with a comprehensive package of drivers, including support for selected RT operating systems.

Supported by *eBIRST*

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



40-667-011 Dual 3-Channel Solid State Multiplexer Schematic Diagram.



40-667-012 Single 6-Channel Solid State Multiplexer Schematic Diagram.

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Relay Type

The 40-667 is fitted with solid state MOSFET switches.

Switching Specification

Switch Type:	Solid State MOSFET
Max Switch Voltage:	±40V (DC or AC peak)*
Continuous Switch Current:	30A continuous, 40A continuous with single relay per module closed
Peak Current:	120A for 200µs
Max Common Current:	40A
Path Resistance - On:	6mΩ at 25˚C typical
Leakage Current (at ±40V):	<1µA at 25˚C and switch cold, <250µA at max temperature immediately after switch has carried maximum current for >10 minutes.
Rise/Fall Time:	40µs/140µs (typical)
Operate Time:	250µs
Max Operating Speed at nominal load:	60 operations/sec
Expected Life (operations):	Indefinite when used within ratings

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

Power Requirements

+3.3V	+5V	+12V	-12V
100mA	350mA	0	0

Mechanical Characteristics

Dual slot 3U PXI (CompactPCI card).
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.

Front panel signal connectors:

- 40-667-011 - 2 x 8-pin male power D-type
- 40-667-012 - 8-pin male power D-type

For pin outs please refer to the operating manual.

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.

Ordering Information

Product Order Codes - Solid State Multiplexer

Channel Selection	Model Variant	Order Code
Multiple	**Dual 3-Channel 30A MUX**	**40-667-011**
Multiple	**Single 6-Channel 30A MUX**	**40-667-012**

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

Note: The 40-667-011 supersedes the 40-667-001 and the 40-667-012 supersedes the 40-667-002. The new and old versions are functionally the same.

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

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

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. The 40-667-011 requires a single tool, the 40-667-012 requires master slave testing and two sets of tools are required together with the master slave cable **93-970-301**.

Product	Test Tool	Adaptor	Termination
40-667	**93-005-001**	**93-005-236**	**93-012-103**

Mating Connectors & Cabling

For connection accessories for the 40-667 module please refer to the 90-012D 8-pin power D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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:

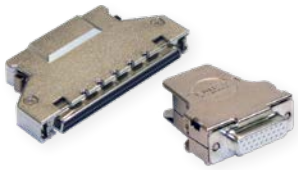
- Mix our 1000+ PXI switching & simulation modules with any vendor's PXI instrumentation
- Embedded or remote Windows PC control
- Real-time Operating System Support
- High data bandwidths, especially with PXI Express
- Integrated module timing and synchronization

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

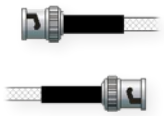
Connectivity Solutions

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.

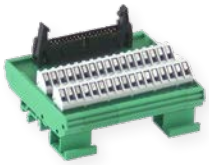


Connectors & Backshells

Multiway Cable Assemblies



RF Cable Assemblies



Connector Blocks

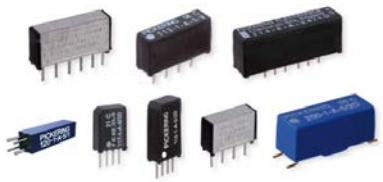
We also offer customized cabling and have a free online Cable Design Tool that can be used to create custom cable solutions for many applications.

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



Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions.

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
- **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.

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.

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.

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.

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 for the PXI and LXI standards.