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TECHNOLOGY GROUP

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

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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.

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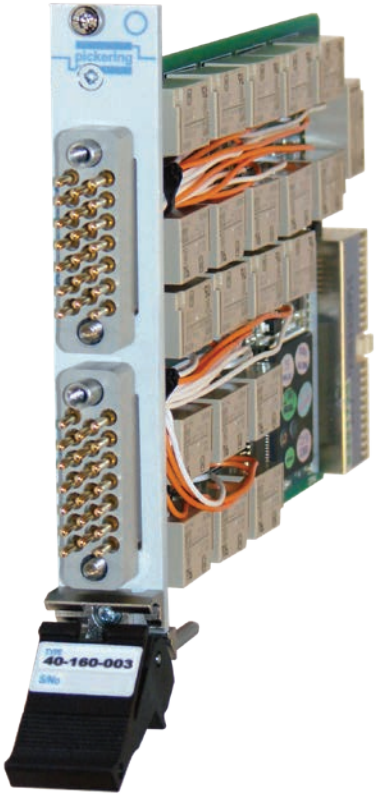
Expert team | Trust guarantee | 100% satisfaction

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Find the *Pickering 40-160-003* at our website: ***Click HERE***

PXI Power Relay Module 40-160

- 10 x SPST, 20 x SPST & 10 x DPST Options
- Hot Switch up to 125VDC/250VAC
- Cold Switch up to 400VDC/250VAC
- SPST Version: Switch 10A with 300W/2500VA Maximum Power
- DPST Version: Switch 8A with 240W/2000VA Maximum Power
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty



Pickering Interfaces range of power relay modules are suitable for applications requiring switching of either mains voltage or DC current.

The 40-160 module has a choice of SPST relays capable of switching 10A at 250VAC or DPST relays capable of switching 8A at 250VAC. All versions are suitable for inductive/capacitive loads.

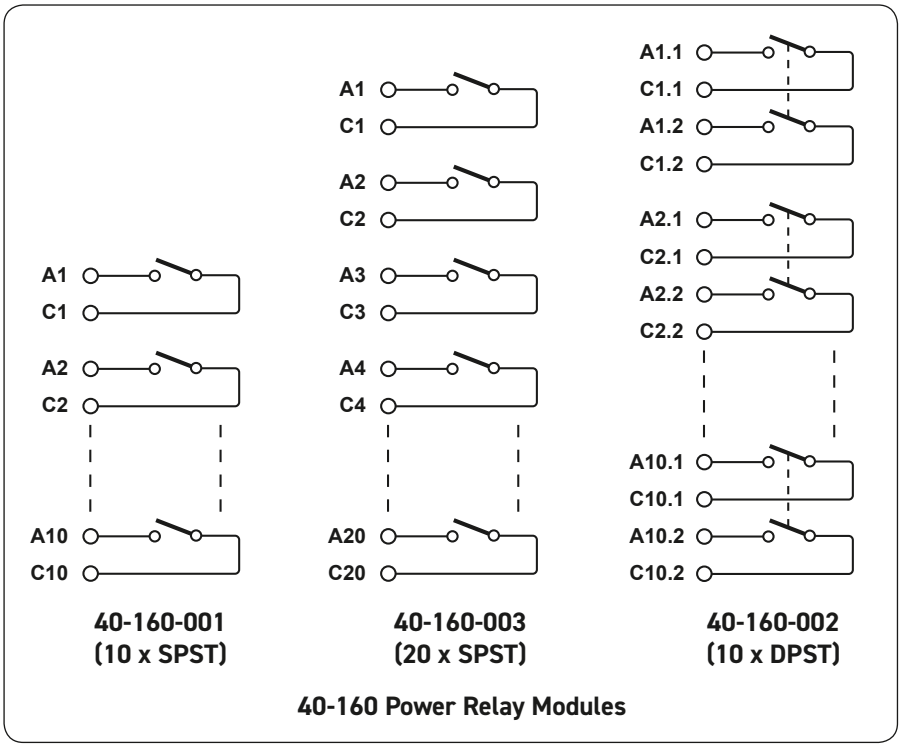
Power relay modules are intended for switching heavy AC or DC loads or for slave switching large external relays, contactors and solenoids.

Range Description:

- 40-160-001 10 x SPST Power Relays.
- 40-160-002 10 x DPST Power Relays.
- 40-160-003 20 x SPST Power Relays.



20-pin Power Connector for 40-160 Power Relay Modules



40-160 Power Relay Modules

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Relay Type

The 40-160 is fitted with electro-mechanical power relays with gold-flash over silver alloy contacts. A spare relay is built onto the circuit board to allow easy maintenance with minimum downtime.

Switching Specification - SPST (40-160-001 & 40-160-003)

Contact Type:	Gold flash over silver alloy
Cold Switching Capacity	
Maximum Current:	10A
Maximum Voltage:	400VDC/250VAC*
Hot Switching Capacity	
Maximum Current:	10A
Maximum Voltage:	125VDC/250VAC*
Maximum Power:†	300W/2500VA
Min. Switching Capacity:	10mA, 5VDC
Maximum Continuous Switch Path Loading:	500A² (Example allowed conditions – 5 Channels at 10A or 20 Channels at 5A, please contact sales office for any further advice)
Max Standoff Voltage:	400VDC
Initial On Path Resistance:	<50mΩ
Off Path Resistance:	$>10^9\Omega$
Bandwidth:	>20MHz
Operate Time:	10ms typical
Expected Life - resistive load †	
Mechanical Life:	$>5x10^7$ operations
At Max. Switch Capacity:	$>1x10^5$ operations

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

† For variation of maximum hot switching capacity of voltage with current refer to plot.

† As switch life deteriorates rapidly when hot switching signals above 30VDC, it is advisable to only cold switch above this level.

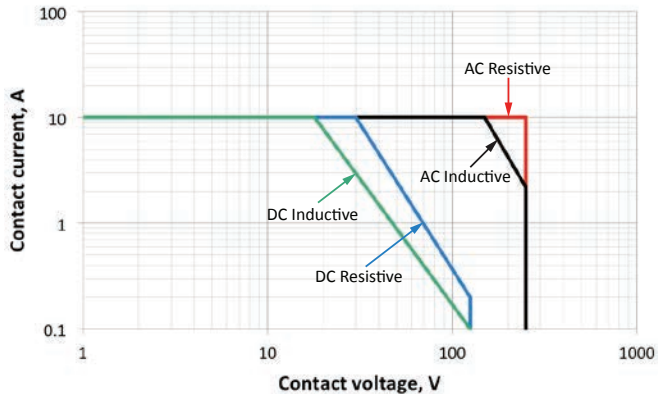
Switching Specification - DPST (40-160-002)

Contact Type:	Gold flash over silver alloy
Cold Switching Capacity	
Maximum Current:	8A
Maximum Voltage:	400VDC/250VAC*
Hot Switching Capacity	
Maximum Current:	8A
Maximum Voltage:	125VDC/250VAC*
Maximum Power:†	240W/2000VA
Min. Switching Capacity:	10mA, 5VDC
Maximum Continuous Switch Path Loading:	500A² (Example allowed conditions – 5 Channels at 10A or 20 Channels at 5A, please contact sales office for any further advice)
Max Standoff Voltage:	400VDC
Initial On Path Resistance:	<50mΩ
Off Path Resistance:	$>10^9\Omega$
Bandwidth:	>20MHz
Operate Time:	10ms typical
Expected Life - resistive load †	
Mechanical Life:	$>5x10^7$ operations
At Max. Switch Capacity:	$>1x10^5$ operations

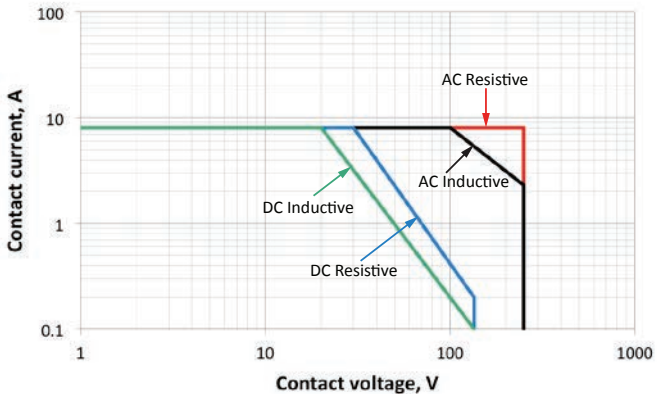
* For full voltage rating, signal sources to be switched must be fully isolated from mains supply and safety earth.

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† As switch life deteriorates rapidly when hot switching signals above 30VDC, it is advisable to only cold switch above this level.

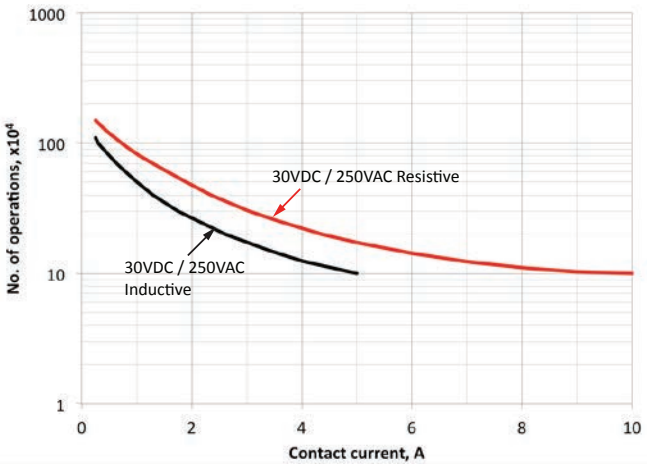


40-160-001/003 (SPST) Current/Voltage Curve

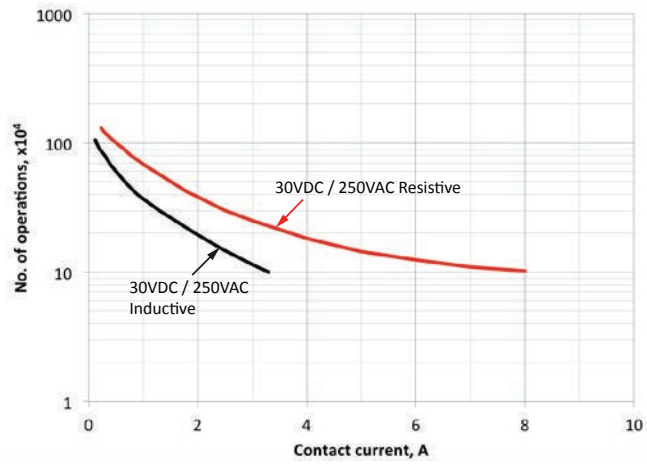


40-160-002 (DPST) Current/Voltage Curve

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40-160-001/003 (SPST) Current/Operating Life Curve



40-160-002 (DPST) Current/Operating Life Curve

Power Requirements

+3.3V	+5V	+12V	-12V
0	0.2A	16.6mA per relay	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).
Module weight: 240g (40-160-001).
280g (40-160-002)
300g (40-160-003)

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 connectors, for pin outs please refer to the operating manual.

- 40-160-001 1 x 20-pin male GMCT connector.
- 40-160-002 2 x 20-pin male GMCT connectors.
- 40-160-003 2 x 20-pin male GMCT connectors.

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.

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Product Order Codes

10 x SPST, 10A Power Relay Module	40-160-001
20 x SPST, 10A Power Relay Module	40-160-003
10 x DPST, 8A Power Relay Module	40-160-002

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

Spare Relay Kits

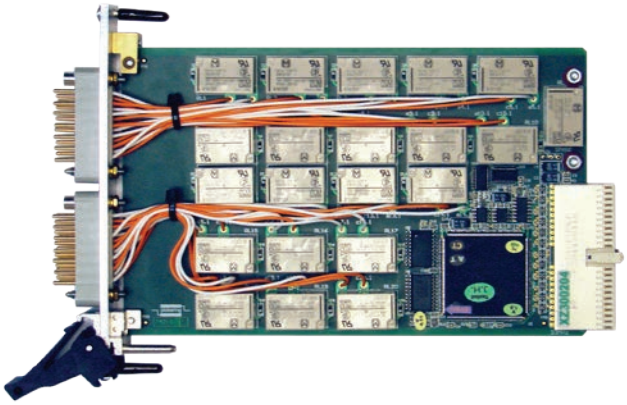
Kits of replacement relays are available for the majority of Pickering's PXI switching products, simplifying servicing and reducing down-time.

Product	Relay Kit
40-160-001	91-100-071
40-160-002	91-100-052
40-160-003	91-100-071

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

Mating Connectors & Cabling

For connection accessories for the 40-160 modules please refer to the 90-014D 20-pin GMCT Connector Accessories data sheets where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.



Side View of 40-160-003
20 x SPST Power Relay Module

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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

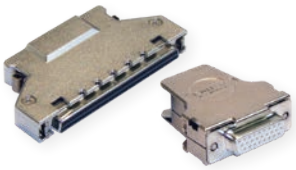
Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- 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

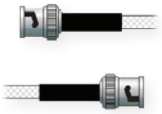
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



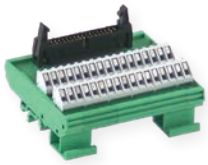
Connectors & Backshells



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.



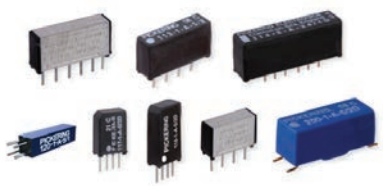
Mass Interconnect

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



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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: 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
- **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

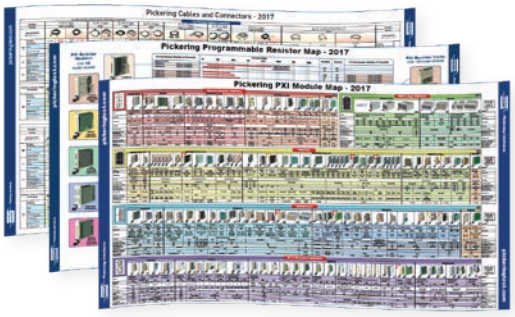
Three Year Warranty & Guaranteed Long-Term Support

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 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.

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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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