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PXI High Power Relay Module 40-170

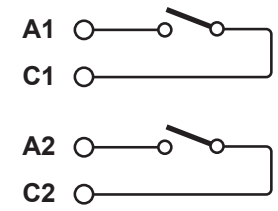
- 2 x SPST 30Amp Power Relays
- 2 x DPST 20Amp Power Relays
- Switch up to 30VDC/250VAC
- 2 Slot PXI Module
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty



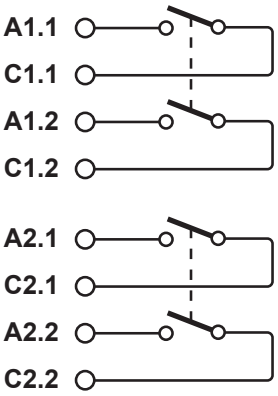
The 40-170 High Power Relay module is available in either a 2 x SPST configuration with a current rating of 30A, or a 2 x DPST configuration with a current rating of 20A. Both have a maximim voltage of 250VAC and are suitable for switching inductive/ capacitive loads.

These power relay modules are suitable for applications requiring the switching of either AC mains or DC voltages. They are intended for switching heavy loads or for slave switching large external relays, contactors or solenoids. User connection is via an 8-pin power D-type which is fully supported by our range of cabling and connector solutions.

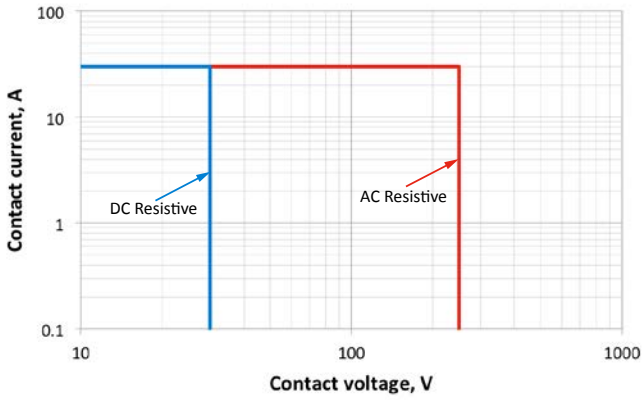
Pickering have ranges of other PXI power switching modules which include relay, matrix and multiplexer configurations.



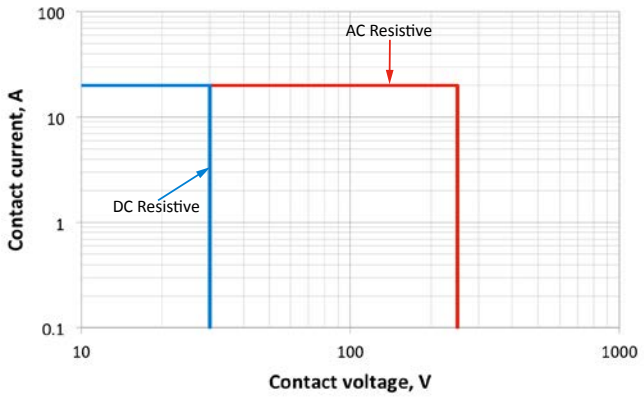
40-170-001 High Power Relay Module - 2 x SPST



40-170-002 High Power Relay Module - 2 x DPST



40-170-001 (SPST) Current/Voltage Curve



40-170-002 (DPST) Current/Voltage Curve

ISSUE 10.2 AUG 2019

Relay Type

The 40-170 is fitted with electro-mechanical power relays with silver alloy contacts.

Switching Specification - SPST (40-170-001)

Contact Type:	Silver Alloy
Cold Switching Capacity Maximum Current: Maximum Voltage:	 30A 30VDC/250VAC R.M.S.*
Hot Switching Capacity Maximum Current: Maximum Voltage: Maximum Power:† Minimum Switching Capacity:	 30A 30VDC/250VAC R.M.S.* 900W/7500VA 100mA, 5VDC
Maximum Standoff Voltage: Initial On Path Resistance: Off Path Resistance: Bandwidth (50Ω)	600VDC* 100mΩ >1x10^{8}Ω 10MHz
Operate Time:	30ms typical
Expected Life (operations) - resistive load Mechanical Life: At Maximum Switch Capacity:	 >1x10^7 (DC), >5x10^6 (AC) >1x10^5

* 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.

Switching Specification - DPST (40-170-002)

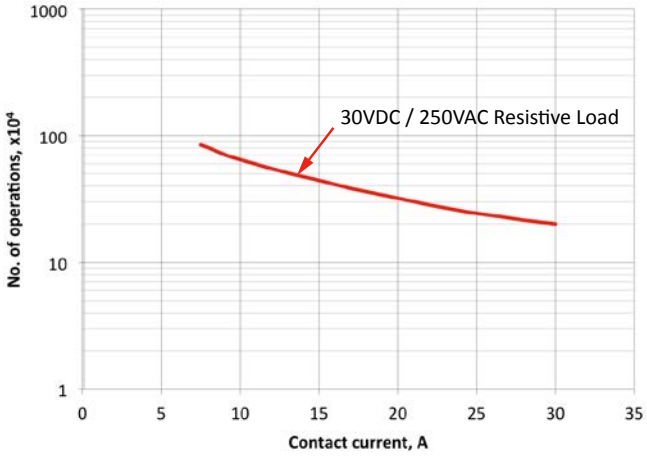
Contact Type:	Silver Alloy
Cold Switching Capacity Maximum Current: Maximum Voltage:	 20A 30VDC/250VAC R.M.S.*
Hot Switching Capacity Maximum Current: Maximum Voltage: Maximum Power:† Minimum Switching Capacity:	 20A 30VDC/250VAC R.M.S.* 600W/5000VA 100mA, 5VDC
Maximum Standoff Voltage: Initial On Path Resistance: Off Path Resistance: Bandwidth (50Ω)	600VDC* 100mΩ >1x10^{8}Ω 10MHz
Operate Time:	30ms typical
Expected Life (operations) - resistive load Mechanical Life: At Maximum Switch Capacity:	 >1x10^7 (DC), >5x10^6 (AC) >1x10^5

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

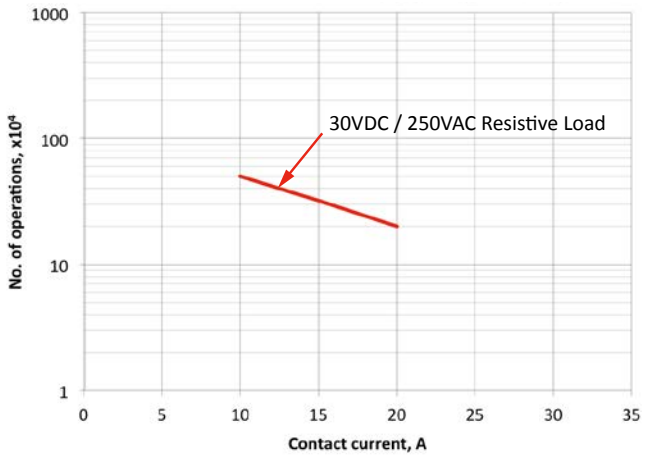
† For variation of maximum hot switching capacity of voltage with current refer to plot.

Power Requirements

+3.3V	+5V	+12V	-12V
0	200mA	340mA	0



40-170-001 (SPST) Current/Operating Life Curve



40-170-002 (DPST) Current/Operating Life Curve

Mechanical Characteristics

Double slot 3U PXI (CompactPCI card).
Module weight: 400g (40-170-001).
420g (40-170-002).

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 male 8-pin power D-Type connector, 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

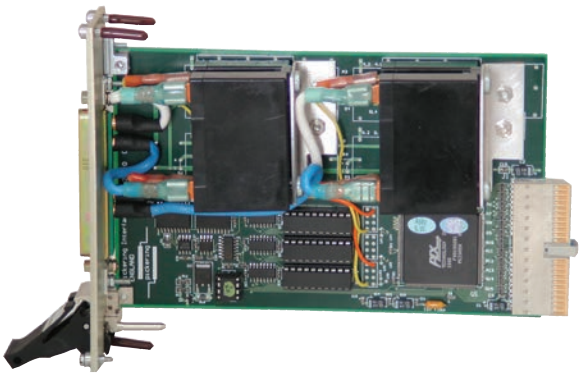
PXI & CompactPCI Compliance

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.



Side View Of 40-170 Power Relay Module

Product Order Codes

2 x SPST, 30A Power Relays	**40-170-001**
2 x DPST, 20A Power Relays	**40-170-002**

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.

Mating Connectors & Cabling

For connection accessories for the 40-170 series 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

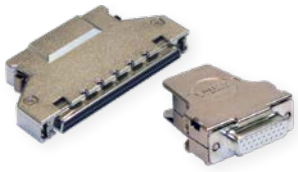


Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- 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

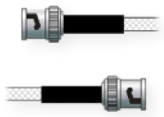
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



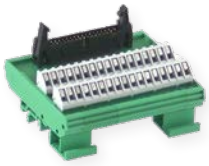
Connectors & Backshells



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.
Visit: pickeringtest.com/cdt to start your design.



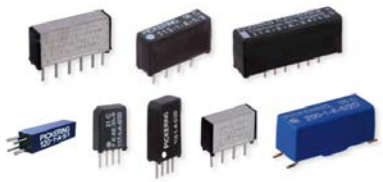
Mass Interconnect

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

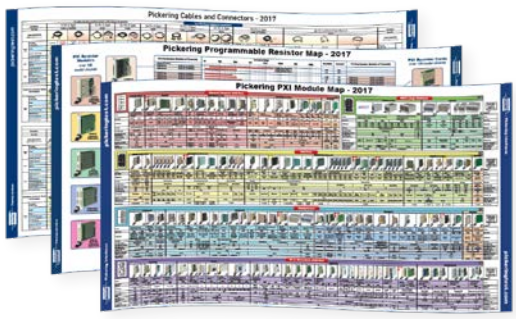
Three Year Warranty & Guaranteed Long-Term Support

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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