

40-330

24 x SPST Power Relay Module

POWER RELAY MODULE
40-330

- SPST Switch Configuration
- 1000VDC/1000VAC peak Cold Switching
- 110VDC/250VAC Hot Switching
- 4A Hot Switching Current
- Maximum Power 120W/1000VA
- VISA, IVI and Kernel Drivers
- Supported by PXI or LXI Chassis
- 2 Year Warranty

The Pickering Interfaces 40-330 Power Relay Module is suitable for applications requiring power relay switching with high density.

It features current handling up to 4A, 1000VAC peak or DC cold switching and 250VAC/110VDC hot switching. It is configured as a bank of 24 separate Single Pole Single Throw (SPST) relays. Connections are made via a front panel mounted 50 pin high voltage D-Type connector.

Typical applications will be found in Automotive, Aerospace and Power Cell Testing applications.

Power Relay Type

The 40-330 is fitted with electro-mechanical power relays with gold clad silver alloy contacts. A **Spare Relay** is built onto the circuit board to facilitate easy maintenance with minimum downtime.

Programming

Pickering provide kernel, VISA and IVI drivers which are compatible with Windows 2000/XP operating systems, the VISA driver is also compatible with the LabVIEW RT operating system.

These drivers may be used with a variety of programming environments and applications including:

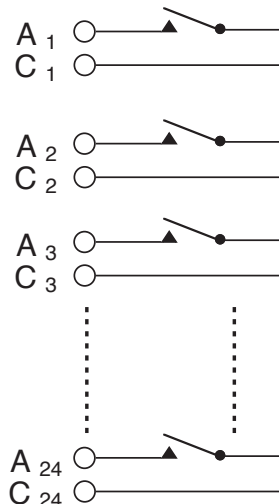
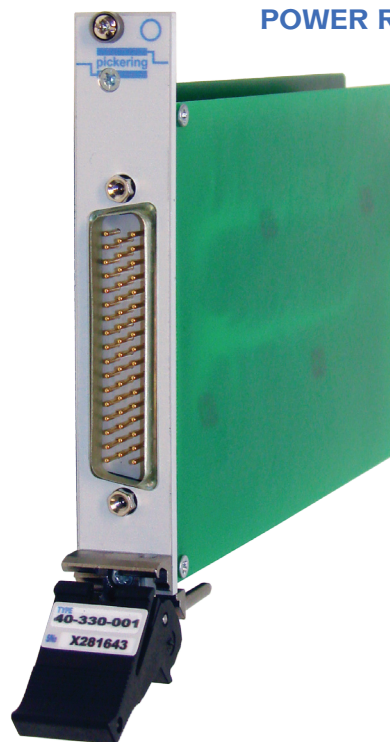
National Instruments products (LabVIEW/LabWindows/CVI/Switch Executive/MAX/TestStand etc.)

Microsoft Visual Studio products (Visual Basic/Visual C+)

Agilent VEE

Mathworks Matlab

Other environments are also supported, please contact Pickering with specific enquiries.



Switching Diagram for the 40-330-001
Power Relay Module (24 x SPST Relays)

Overview of “Hot” & “Cold” Switching Techniques

“Hot” Switching is used to switch the load with the high voltage source applied. Hot Switching may generate considerable RFI, both within the switching module and on all interconnection wiring. Care must be taken to suppress or shield all cabling.

Note that any precaution which adds extra capacitance to an incoming cable should be taken with great care, even a very small capacitance at high voltages can cause very large current inrushes to the switch resulting in possible switch weld and excessive RFI.

The 40-330 module include extensive built-in RFI suppression circuits that minimize RFI and surge problems.

“Cold” Switching – The Preferred Option for Reliability & Long Life.

With cold switching, the relay is operated before the high voltage source is connected. The maximum carry current is then much greater and there will also be much less stress on the reed relays, resulting in improved reliability and life.

Most high voltage sources include a soft start facility which will reduce the likelihood of generating RFI or temporary over-voltages.

High voltage switching modules are often used for isolation testing applications (e.g. cable, transformer or semiconductor isolation tests), here cold switching is nearly always the preferred option in order to reduce the risk of high voltage transients that may cause premature breakdown.

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Switching Specification

Max Cold Switch Voltage:	1000V DC/1000V AC peak
Max Hot Switch Voltage:	110V DC/250V AC
Max Switch Current:	4A
Max Carry Current:	4A
Max Power:	120W/1000VA
Max Combined Switch Path Power Dissipation:	21W
Initial On Path Resistance:	<50mΩ
Off Path Resistance:	>10 ⁹ Ω
Bandwidth:	5MHz
Operate Time:	<10ms
Expected Life (operations)	
Low power load:	>2x10 ⁷
Full power load:	>1x10 ⁵

Power Requirements

+3.3V	+5V	+12V	-12V
0	0.75A	0	0

Width and Dimensions

Single slot 3U PXI (CompactPCI card).

Connectors

Signals via front panel 50 Way male D-type, high voltage connector.

PXI & CompactPCI Characteristics

All Pickering Interfaces PXI modules comply with the PXI Specification 2.2. Local Bus, Interrupts, Trigger Bus and Star Trigger are not implemented.

Uses 33MHz 32-bit backplane interface.

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 Switching chassis. For information on driving your switching solution in a LXI environment refer to the 60-100A data sheet.



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

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.

Product Order Codes

24 x SPST Power Relays	40-330-001
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Mating Connectors & Cabling

Examples of connectors and cabling for the 40-330 are:

40-960-050-HV-F Connector, 50 way 5A D subminiature Female, High Voltage.

40-972-050-1M-HV Cableform, 50 way D subminiature Female to unterminated, 5A, 1m Length, High Voltage.

Please refer to the Pickering Interfaces "Interconnection Solutions" catalog for the full list of connector/cabling options, including drawings, photos and specifications. This is 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.

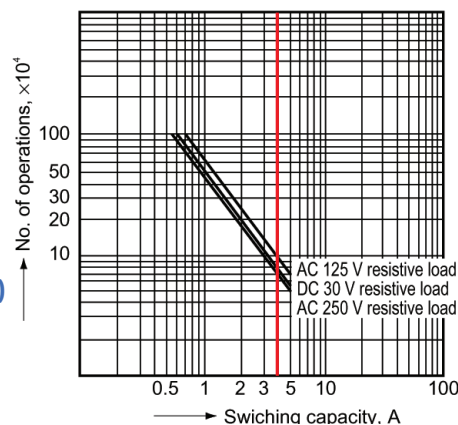


Latest Details

Please refer to our Web Site for Latest Product Details.

www.pickeringtest.com

Current/ Operating Life Curve (X40-330-001 is limited to 4A)



Current/ Voltage Curve (X40-330-001 is limited to 4A)

