

- High Density PCI 2A Matrix Cards With Up To 128 Crosspoints
- 32x2, 32x4, 16x4, 16x8 and 8x8 Options
- Maximum Current 2A Hot or Cold Switching
- Switch up to 300VDC/250VAC and up to 60W Max Power
- Uses Gold-Plated Contact Electro-mechanical 1-Pole Relays
- Based Upon 40-527/528A/529A PXI Switching Technology
- VISA/IVI Drivers Supplied for Windows
- Supported by eBIRST™
- 3 Year Warranty



The 50-527, 50-528 and 50-529 are a range of PCI single pole matrix cards with either 64 or 128 crosspoints using electro-mechanical relays.

The matrix configurations are as follows:

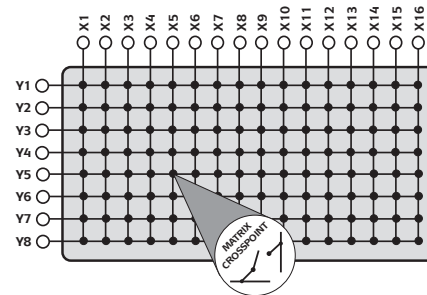
- **50-527-001** 32x2 1-Pole Matrix
- **50-528-001** 32x4 1-Pole Matrix
- **50-528-002** 16x4 1-Pole Matrix
- **50-529-001** 16x8 1-Pole Matrix
- **50-529-002** 8x8 1-Pole Matrix

The cards are designed for switching medium voltage and power signals. The user signal connection is via a robust 37-pin D-type connector that is fully supported by the wide range of Pickering Interfaces' cable and connector accessories.

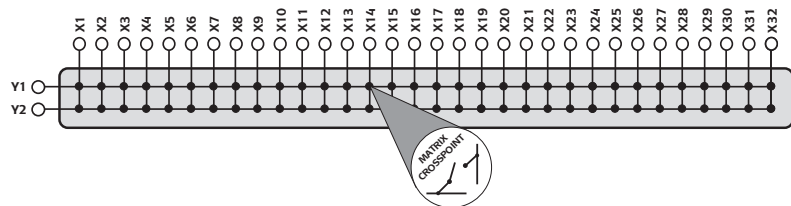
Supported by eBIRST

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

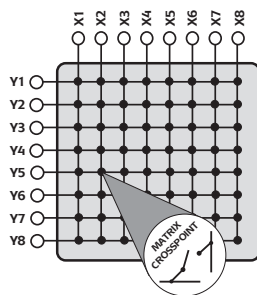
For more information go to: pickeringtest.com/ebirst



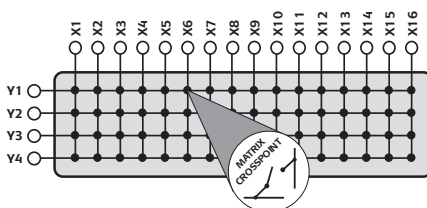
50-529-001 2 Amp 1-Pole 16x8 Matrix



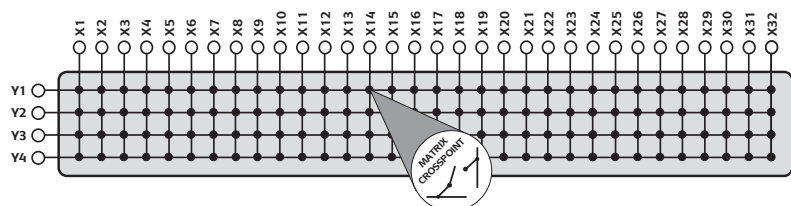
50-527-001 2 Amp 1-Pole 32x2 Matrix



50-529-002 2 Amp 1-Pole 8x8 Matrix



50-528-002 2 Amp 1-Pole 16x4 Matrix



50-528-001 2 Amp 1-Pole 32x4 Matrix

Relay Type

The 50-527/528/529 are fitted with electro-mechanical 2A relays, gold clad silver alloy. A spare relay is built onto the circuit board to allow easy maintenance with minimum downtime.

Switching Specification

Relay Type	Electro-mechanical
Contact Type:	Palladium-Ruthenium, Gold plated, bifurcated
Max Switch Voltage:	300 VDC/250 VAC*
Max Power:	62.5 VA, 60 W from 30 V to 220 VDC, 30 W to 300 VDC (resistive load)
Max Switch Current:	2 A
Max Continuous Carry Current:	2 A
Max Pulsed Carry Current	
Example (single switch path):	6 A for 100 ms (up to 10% duty cycle)
Initial On Path Resistance:	500 mΩ
Off Path Resistance:	>10 ⁹ Ω
Thermal Offset:	<25 μV
Max Number of Simultaneously Closed Crosspoints:	100
Typical Operate Time:	3 ms
Expected Life (Operations)	
Very low power load:	>1x10 ⁸
Low power load:	>1.5x10 ⁷ (0.1 A 20 VDC)
Medium power load:	>5x10 ⁶ (1 A 30 VDC)
Full power load:	>1x10 ⁵ (2 A 30 VDC) >1x10 ⁵ (0.1 A 300 VDC)

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

RF Specification

Bandwidth (-3 dB):	10 MHz	(50-527-001)
	10 MHz	(50-528-001)
	15 MHz	(50-529-001)
Crosstalk (typical):	10 kHz:	-80 dB
	100 kHz:	-65 dB
	1 MHz	-40 dB
	10 MHz:	-25 dB
Isolation (typical):	10 kHz:	80 dB
	100 kHz:	65 dB
	1 MHz	40 dB
	10 MHz:	25 dB

Power Requirements

+3.3V	+5V	+12V	-12V
220 mA	1.4 A Max	0	0

Mechanical Characteristics

Single slot short PCI format.

3D models for all versions in a variety of popular file formats are available on request.

Connectors

Signals via a 37-pin male D-type connector, for pin outs please refer to the operating manual.

PCI Compliance

The 50-527, 528 and 529 comply with the PCI Specification 2.0 (issued Feb 2004).

Signalling Environment: 33 MHz, 32-bit Universal (+3.3 V & +5 V).

Safety & CE Compliance

All cards 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.

Operating/Storage Conditions

Operating Conditions

Operating Temperature: 0°C to +55°C
 Humidity: Up to 90% non-condensing
 Altitude: 5000 m

Storage and Transport Conditions

Storage Temperature: -20°C to +75°C
 Humidity: Up to 90% non-condensing
 Altitude: 15000 m

Product Order Codes

PCI 32x2 Matrix Card, 1-Pole, 2 A 60 W	50-527-001
PCI 32x4 Matrix Card, 1-Pole, 2 A 60 W	50-528-001
PCI 16x4 Matrix Card, 1-Pole, 2 A 60 W	50-528-002
PCI 16x8 Matrix Card, 1-Pole, 2 A 60 W	50-529-001
PCI 8x8 Matrix Card, 1-Pole, 2 A 60 W	50-529-002

Product Customization

Pickering PCI cards 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. For more information go to:

pickeringtest.com/ebirst

Product	Test Tool	Adaptor
50-527/528/529	93-005-001	93-005-418

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
50-527/528/529	91-100-001

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

Mating Connectors & Cabling

For connection accessories for the 50-527/528/529 series please refer to the [90-007D](#) 37-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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 Relay Division. 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:

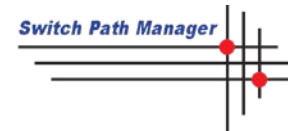
- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **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 and white papers as well as application specific product brochures to assist when looking for the switching, simulation and connection 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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