

- Low Cost Relay Card For Medium Power Switching Applications
- Up to 39 Electro-mechanical Relays Per Card
- Choice of SPST or SPDT Contact Configurations
- Maximum Current 2 A Hot or Cold Switching
- Switch up to 300 VDC/250 VAC and up to 60 W Max Power
- VISA, IVI & Kernel Drivers Supplied for Windows
- Based upon Established 40-131/132 PXI Switching Technology
- Supported by **eBIRST™**
- 3 Year Warranty



Pickering Interfaces 50-131/132 is a range of low cost, general purpose electro-mechanical relay cards. They are capable of switching voltages up to 300 VDC/250 VAC and current up to 2 A.

They are suitable for use where reed relay based switching cards do not have sufficient voltage or current carrying capability. Applications include the switching of medium power AC and DC loads, or for the switching of larger relays, contactors or solenoids.

Connections are made to the card via a front panel mounted 78-pin D-type connector plug.

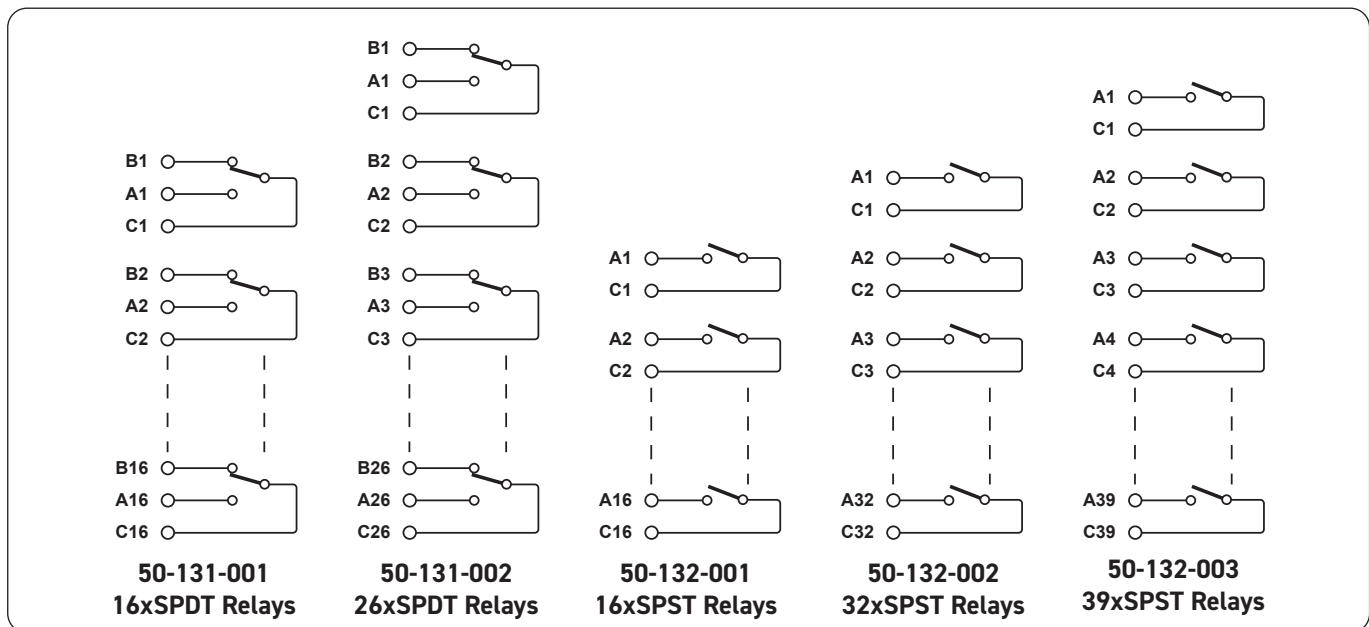
The 50-131/132 cards are available with SPST or SPDT contact configurations with up to 39 relays per card.

### Range Description:

- 50-131-001 16 SPDT Relays.
- 50-131-002 26 SPDT Relays.
- 50-132-001 16 SPST Relays.
- 50-132-002 32 SPST Relays.
- 50-132-003 39 SPST Relays.

### Supported by eBIRST

eBIRST test tools simplify switching fault-finding by quickly testing the system and graphically identifying the faulty relay. For more information go to: [pickeringtest.com/ebirst](http://pickeringtest.com/ebirst)



## Relay Type

The 50-131/132 are fitted with electro-mechanical 2 A relays, gold clad silver alloy. A Spare Relay is built onto the circuit board to facilitate easy maintenance with minimum downtime.

## Switching Specification

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

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

## Typical RF Specification

	50-131-002	50-132-003
Bandwidth (-3 dB):	51 MHz	54 MHz
Crosstalk:		
10 kHz:	-82 dB	-76 dB
100 kHz:	-81 dB	-73 dB
1 MHz:	-71 dB	-58 dB
10 MHz:	-48 dB	-42 dB
Isolation:		
10 kHz:	76 dB	88 dB
100 kHz:	71 dB	82 dB
1 MHz:	36 dB	49 dB
10 MHz:	16 dB	29 dB

## Power Requirements

+3.3 V	+5 V	+12 V	-12 V
200 mA	400 mA 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 78-pin male 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: 5000 m

### Storage and Transport Conditions

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

## PCI Compliance

The 50-131 and 50-132 comply with the PCI Specification 2.0 (issued Feb 2004).

Signalling Environment: 33 MHz, 32-bit Universal (+3.3 V or +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.

## Product Order Codes

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PCI 16 x SPDT Relay Card	50-131-001
PCI 26 x SPDT Relay Card	50-131-002
PCI 16 x SPST Relay Card	50-132-001
PCI 32 x SPST Relay Card	50-132-002
PCI 39 x SPST Relay Card	50-132-003

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## 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

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### *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](http://pickeringtest.com/ebirst)

Product	Test Tool	Adaptor
50-131/132	93-006-001	Not Required

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### 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
All Types	91-100-001

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

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## Mating Connectors & Cabling

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For connection accessories for the 50-131/132 series please refer to the [90-006D](#) 78-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.

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## 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](http://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](http://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](http://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:

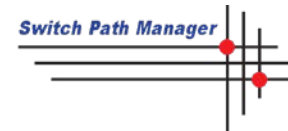
- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **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](http://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](http://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](http://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](http://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](http://pickeringtest.com/resources)

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