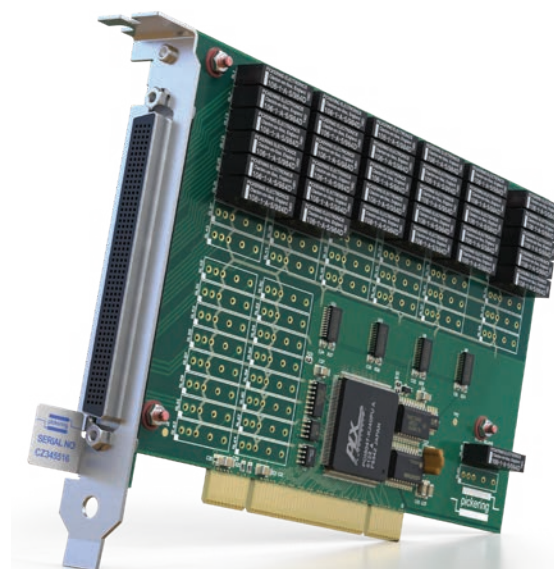


- 25, 32, 50 or 64 Reed Relays Per Card
- SPST, DPST and SPDT Configurations
- Ruthenium Reed Relays Suitable For Low Level Signals
- Uses High Reliability Pickering Reed Relays For Maximum Performance
- Fast Operating Speed 500 μ s Typical
- Switch up to 150 VDC/100 VAC, 1 A with 10 W Max Power
- Drivers Supplied for Windows & Linux, Plus Support for Real-time Systems
- Supported by *eBIRST*™
- 3 Year Warranty



The 50-110A/115A range of switching cards is available in both Changeover (SPDT) and Normally Open (SPST & DPST) configurations. Connections are made via a front panel 200-pin female connector.

General purpose reed relays are suitable for the construction of small switching networks, for switching larger relays or for operating external devices (e.g. lamps, solenoids etc.).

All of the reed relays used in our PCI cards are manufactured by our Relay Division. Pickering reed relays offer very high reliability (over 10^8 operations) with maximum switching performance, especially for low level signals.

Range Description:

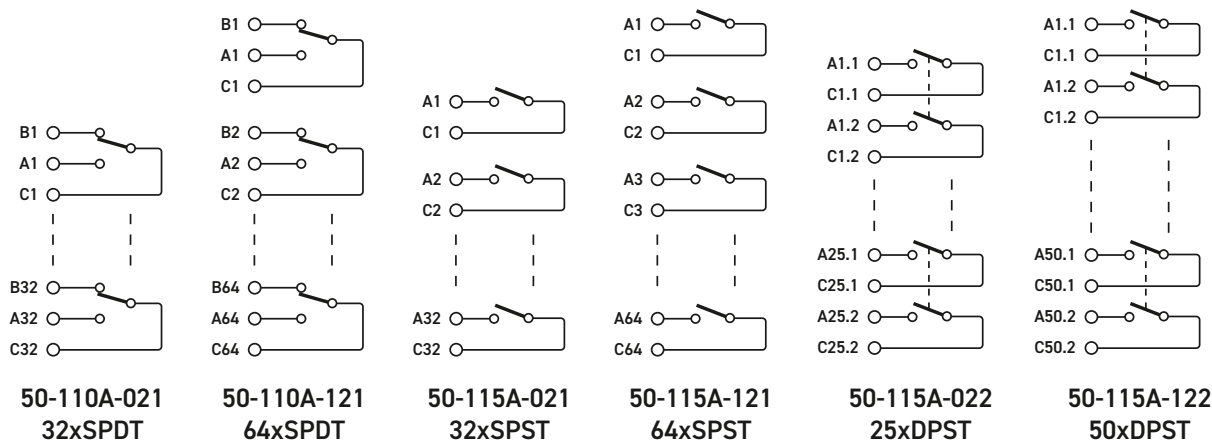
- 50-110A-x21 32 or 64 SPDT Reed Relays.
- 50-115A-x21 32 or 64 SPST Reed Relays.
- 50-115A-x22 25 or 50 DPST Reed Relays.

Front Panel Connector

This product is based on the obsolete Molex LFH series connector that has been superseded by a Pickering commissioned form, fit, function equivalent. The new connector series is 100% compatible with the Molex connectors allowing either gender of Pickering connector to mate with the corresponding Molex part without issue.

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



Relay Type

The 50-110A & 50-115A are fitted with high quality ruthenium reed relays. These offer very long life with good low level switching performance and excellent contact resistance stability. Spare reed relays are built onto the circuit board to allow easy maintenance with minimum downtime.

All reed relays are manufactured by our Relay Division, for more information visit: pickeringrelay.com

Switching Specification

Switch Type:	Ruthenium Reed
Max Switching Voltage:	150 VDC/100 VAC (50-110A)* 100 VDC/70 VAC (50-115A)*
Max Power:	3 W (50-110A) 10 W (50-115A)
Max Switch Current:	0.25 A (50-110A) 1 A (50-115A)
Max Carry Current:	1 A
On Path Resistance:	<800 mΩ (400 mΩ typical)
Off Path Resistance:	>10 ⁹ Ω
Thermal Offset:	<20 μV (50-110A) <30 μV (50-115A)
Typical Operate Time:	0.5 ms
Expected Life, low power:	>1x10 ⁸ operations
Expected Life, full power:	>1x10 ⁶ operations

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

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 200-pin female LFH* connector, for pin outs please refer to the operating manual.

* LFH relates to the obsolete Molex connector series and is retained for continuity, products will be fitted with a form, fit, function Pickering equivalent connector that is intermateable with the original Molex parts.

Operating/Storage Conditions

Operating Temperature:	0 °C to +55 °C
Humidity:	Up to 90 % non-condensing
Altitude:	5000 m
Storage Temperature:	-20 °C to +75 °C
Humidity:	Up to 90 % non-condensing
Altitude:	15000 m

PCI Compliance

The 50-110A/115A range complies 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

32 x SPDT, Ruthenium Reed Relays	50-110A-021
64 x SPDT, Ruthenium Reed Relays	50-110A-121
32 x SPST, Ruthenium Reed Relays	50-115A-021
64 x SPST, Ruthenium Reed Relays	50-115A-121
25 x DPST, Ruthenium Reed Relays	50-115A-022
50 x DPST, Ruthenium Reed Relays	50-115A-122

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 reed relay types
- Mixture of reed 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
50-110A/115A	93-002-001	Not Required

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
50-110A-021/121	91-100-026
50-115A-021/121	91-100-048
50-115A-022/122	91-100-062

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

Mating Connectors & Cabling

For connection accessories for the 50-110A/115A range please refer to the [90-002D](#) 200-pin LFH Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.



Pickering can supply mating 200-pin connectors and cable assemblies to enable easy integration of the 50-110A & 50-115A series of relay cards

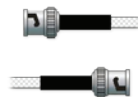
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with **1200+** products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules. These accessories are detailed in Connector Accessories data sheets, where a complete list and documentation can be found for each accessory.



Connectors & Backshells



Multi-way Cable Assemblies



RF Cable Assemblies

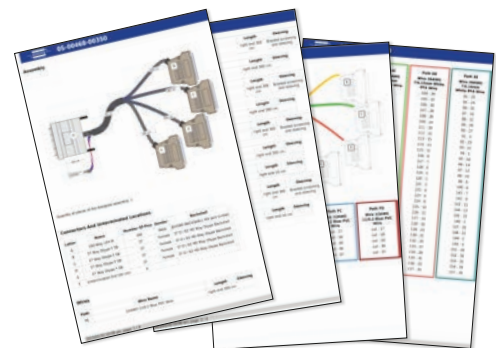


Breakouts



Connector Blocks

- Fully supported on modern browsers and tablet operating systems.
- Built-in tutorials and videos allow you to get quickly up to speed.
- Store cable assemblies in the Cloud and develop over time.
- Each cable design has a downloadable PDF documentation file detailing all specifications

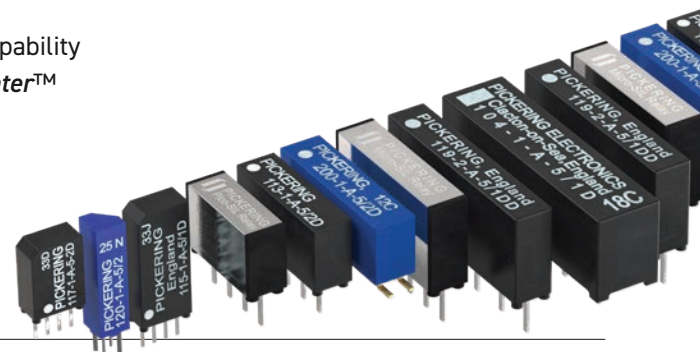


Start designing your custom cabling, go to pickeringtest.com/cdt

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for PXI/LXI based test systems. Our modules are fully supported by Virginia Panel and MacPanel.

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 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 more information go to pickeringtest.com/os

The VISA driver support is provided for LabVIEW Real Time Operating Systems (Pharlap and Linux-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++)
- **Programming Languages** C, C++, C#, Python
- **Keysight** VEE and OpenTAP
- **Mathworks MATLAB, Simulink**
- **Marvin ATEasy**
- **MTQ Testsolutions** Tecap Test & Measurement Suite

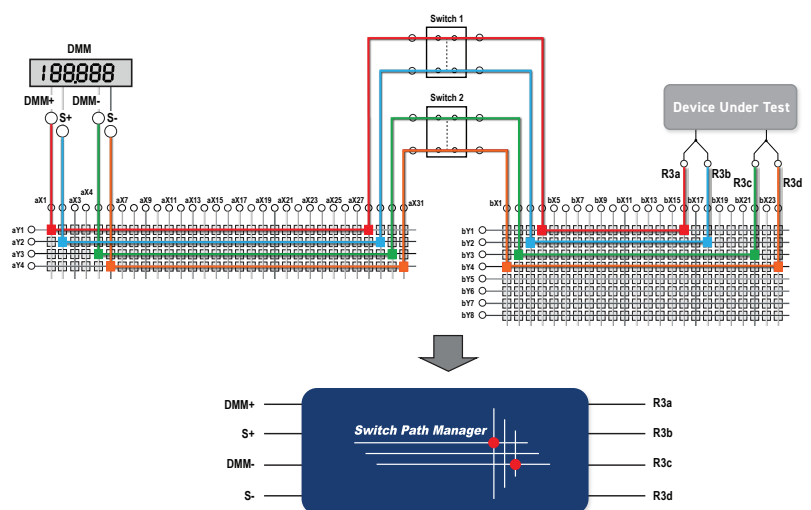
Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments 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 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 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 three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available with various levels for 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 go to pickeringtest.com/support

Available Product Resources

We have a library of resources including success stories, product and support videos, articles and white papers as well as application-specific brochures to assist you. We have also published reference books on switching technology and the PXI and LXI standards.

To view, download or request any of our product resources go to pickeringtest.com/resources

