

- 6 x SPST Switches in 2 PXI Slots
- 3 x SPST Switches in 1 PXI Slot
- 1.5 A Rating at 400 V
- Very High Hot Switch Capacity
- Very High Inrush Current Rating
- Fast Operating Speed
- Long Service Life
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- Supported by *eBIRST*™
- 3 Year Warranty

The 40-185 has 6 off high current SPST switches in two PXI slots or 3 off high current SPST switches in one PXI slot. Each SPST switch uses a fully isolated solid state relay which offers fast operation under hot switching conditions and high inrush current with no operational life degradation.

The SPST switches can carry 1.5 A of continuous current and switch up to 400 V. They can sustain inrush currents in excess of 20 A. Since the switch is polarity insensitive, AC or DC signals can be switched.

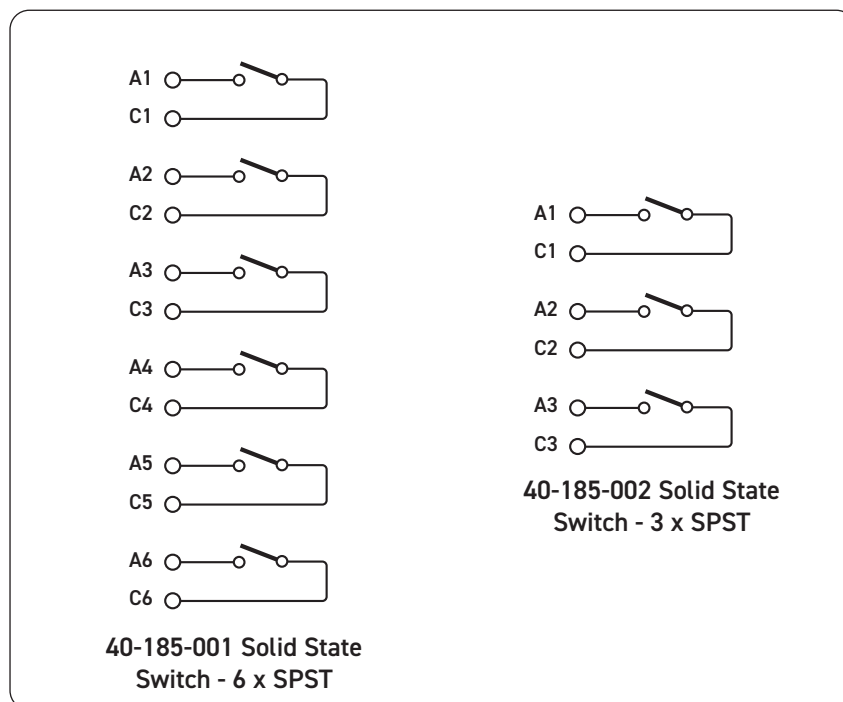
The 40-185 is particularly suited to automotive and aerospace applications where the switching of high capacity loads is required. The module is supplied with a comprehensive package of drivers, including support for selected RT operating systems.



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



### Relay Type

The 40-185 is fitted with solid state MOSFET switches.

### Switching Specification

Switch Type	Solid State MOSFET
Max Switch Voltage:	±400 V* (DC or AC peak)†
Continuous Switch Current:	1.5 A
Peak Current:	20 A for 200 µs
Max Total Module Current:	6 channels each carrying 1.5 A
Initial On Path Resistance:	1.8 Ω at 25 °C typical
Rise/Fall Time:	<5 µs typical
Operate Time:	20 µs
Recommended Maximum Cycle Rate (on, then off):	10 operations/sec
Expected Life (operations):	Indefinite when used within ratings

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

† Differential voltage between channels must not exceed rated voltage, additional caution should be used when applying AC voltages as multiple asynchronous supplies can create high differential voltages between channels.

### Power Requirements

+3.3 V	+5 V	+12 V	-12 V
100 mA	560 mA	0	0

### Mechanical Characteristics

40-185-001: Double slot 3U PXI (CompactPCI card).

40-185-002: Single slot 3U PXI (CompactPCI card).

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 connectors, for pin outs please refer to the operating manual.

- 40-185-001: 2 x male 8-pin power D-Type connectors.
- 40-185-002: 1 x male 8-pin power D-Type connector.

### 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

### PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2.

Local Bus, Trigger Bus & Star Trigger are not implemented.

Uses a 33 MHz 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.

### Product Order Codes

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6-Channel 1.5 A 400 V Solid State SPST	40-185-001
3-Channel 1.5 A 400 V Solid State SPST	40-185-002

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### Product Customization

Pickering 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 reed types
- Mixture of reed 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](http://pickeringtest.com/ebirst)

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Product	Test Tool	Adaptor	Termination
40-185	93-005-001	93-005-236	93-012-103

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### Mating Connectors & Cabling

For connection accessories for the 40-185 modules 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.



40-185-002 3-Channel SPST Switch

## 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



Multiwire 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:

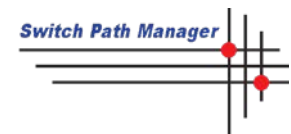
- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
-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