

40-584/585/586A/587A

2 Amp 1-Pole VHD Matrix Modules

- **HIGH DENSITY SINGLE-SLOT 3U PXI 2A MATRICES WITH 256 CROSSPOINTS**
- 128x2, 64x4, 32x8 and 16x16 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 Relays
- VISA/IVI Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- Built-In Diagnostics - **BIRST™**
- Supported by **eBIRST**
- 3 Year Warranty



The 40-584, 40-585, 40-586A and 40-587A are PXI single pole matrices each supporting 256 crosspoints. All models use electromechanical relays.

The matrix configuration is dependent on model as follows:

40-584	128x2 1-Pole Matrix
40-585	64x4 1-Pole Matrix
40-586A	32x8 1-Pole Matrix
40-587A	16x16 1-Pole Matrix

The modules are designed for switching medium voltage and power signals. The user signal connection is via a robust 78, 50 or 37-pin D-type or 160-pin DIN 41612 connector that is fully supported by the wide range of Pickering Interfaces cable and connector accessories.

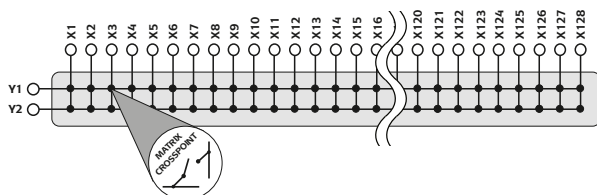
Built-In-Relay-Self-Test **BIRST™**

The BIRST facility provides a quick and simple way of finding relay failures within the module. No supporting test equipment is required to run a BIRST test, simply disconnect the UUT from the module's user connector, launch the supplied BIRST application software and the tool will run a diagnostic test that will find all relays with contacts welded closed or with high (open) contact resistance. It makes it simple for systems integrators to diagnose the cause of switching failures in a system.

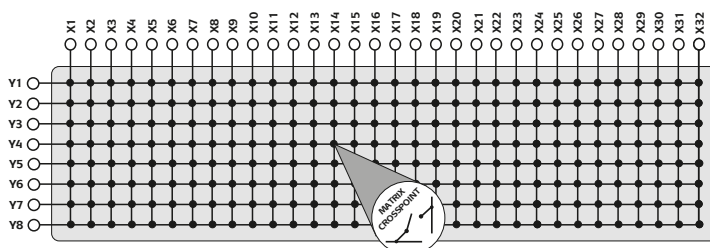
If a relay failure is detected by BIRST the user can quickly identify the failed relay, locate the cause of the failure and replace the failed device. More information on the use of the BIRST tool is contained within the module's operating manual. For general information see **BIRST**.

Supported by **eBIRST**

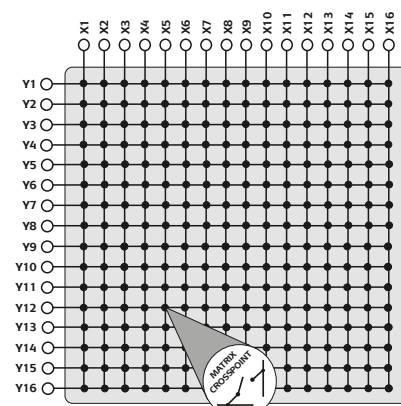
As an alternative to BIRST this product is also supported by eBIRST which tests the switching system using an external tool. eBIRST provides a graphical output of its tests which includes an image showing the location of any defective relay. For more information on eBIRST see [93-000D.pdf](#)



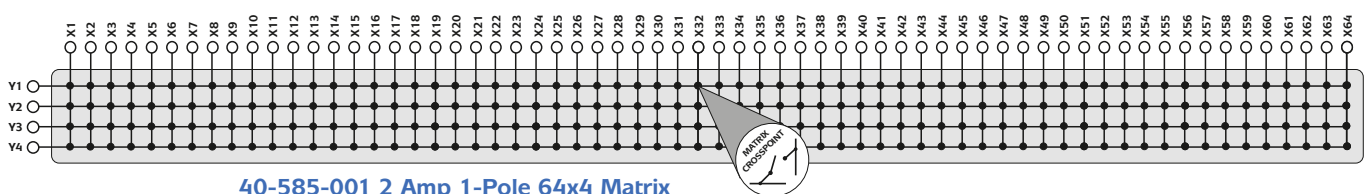
40-584-001 2 Amp 1-Pole 128x2 Matrix



40-586A-001 2 Amp 1-Pole 32x8 Matrix



40-587A-001 2 Amp 1-Pole 16x16 Matrix



40-585-001 2 Amp 1-Pole 64x4 Matrix

Switching Specification

Switch Type:	Electro-mechanical
Contact Type:	Palladium-Ruthenium, Gold plated, bifurcated
Max Switch Voltage:	300VDC/250VAC
Max Power:	62.5VA, 60W from 30V to 220VDC, 30W to 300VDC (resistive load)
Max Switch Current:	2A
Max Continuous Carry Current:	2A
Max Pulsed Carry Current Example (for a single switch path):	6A for 100ms (up to 10% duty cycle)
Initial On Path Resistance:	500mΩ
Off Path Resistance:	>10 ⁹ Ω
Thermal Offset:	<5μV
Max Number of Simultaneously Closed Crosspoints:	129 (40-584) 100 (40-585/586A/587A)
Operate Time:	<3ms
Expected Life (Operations)	
Very low power load:	>1x10 ⁸
Low power load:	>1.5x10 ⁷ (0.1A 20VDC)
Medium power load:	>5x10 ⁶ (1A 30VDC)
Full power load:	>1x10 ⁵ (2A 30VDC) >1x10 ⁵ (0.1A 300VDC)

Bandwidth

Bandwidth:	4MHz (40-584-001) 15MHz (40-587A-001)
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Power Requirements

+3.3V	+5V	+12V	-12V
130mA (typical)	500mA (typical) 1.3A (max)	70mA (typical)	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).

Module weight: 340g (40-586A-001)

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

Connectors

PXI bus: 32-bit P1/J1 backplane connector

Front panel connector: 160-pin male DIN 41612 (40-584-001)
78-pin male D-type (40-585-001)
50-pin male D-type (40-586A-001)
37-pin male D-type (40-587A-001)

Product Order Codes

128x2 Matrix Module, 1-pole (2A, 60W)	40-584-001
64x4 Matrix Module, 1-pole (2A, 60W)	40-585-001
32x8 Matrix Module, 1-pole (2A, 60W)	40-586A-001
16x16 Matrix Module, 1-pole (2A, 60W)	40-587A-001

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 see [eBIRST](#).

Product	Test Tool	Adaptor
40-584	93-002-001	93-002-410
40-585	93-006-001	Not Required
40-586A	93-005-001	Not Required
40-587A	93-005-001	93-005-418

Spare Relay Kits

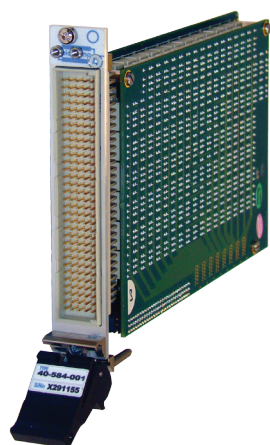
Kits of replacement relays are available for the majority of Pickering's PXI switching modules, simplifying servicing and reducing down-time.

Product	Relay Kit
All Types	91-100-001

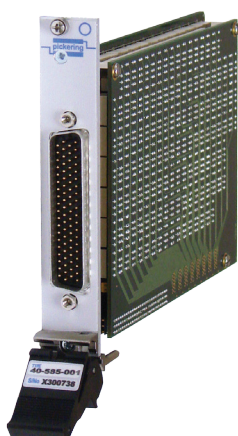
For further assistance, please contact your local Pickering sales office.

Mating Connectors & Cabling

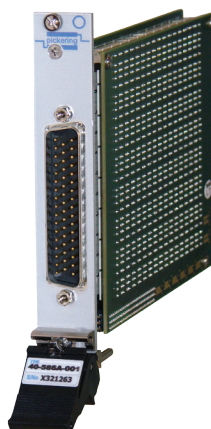
For connection accessories for the 40-584/585/586A/587A modules please refer to the [90-001D](#) 160-pin DIN 41612, [90-006D](#) 78-pin D-type, [90-005D](#) 50-pin D-type and [90-007D](#) 37-pin D-type Connector Accessories data sheets where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.



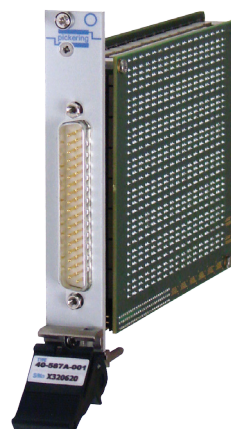
40-584-001
128x2 Matrix



40-585-001
64x4 Matrix



40-586A-001
32x8 Matrix



40-587A-001
16x16 Matrix

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: www.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**
- **MTQ Testsolutions** Tecap Test & Measurement Suite
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C++)
- **Keysight VEE** • **Mathworks Matlab** • **Marvin ATEasy**

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

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

PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented.
Uses a 33MHz 32-bit backplane interface.

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.

PXI & LXI 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 Chassis. For information on driving your switching solution in an LXI environment refer to the LXI Product Guide.



Latest Details

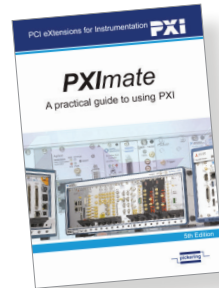
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com



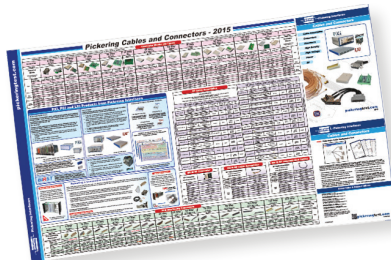
Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download.
Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering PXI modules.



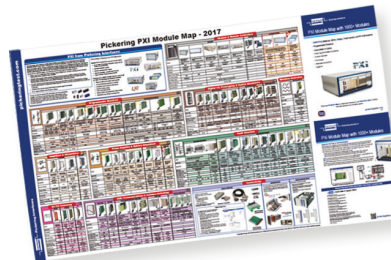
"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.



Ever wondered what PXI is all about?
Pickering Interfaces' "**PXImate**" explains the basics of PXI and provides useful data for engineers working on switch based test systems.
The PXImate is available free on request from the Pickering website.



The "**Cables & Connectors Map**" - outlines the cable and connector options available for all PXI Modules.



The "**PXI Module Map**" - a simple fold-out selection guide to all Pickering's 1000+ PXI Modules.

