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90-100
PI-MXT Pickering Interfaces PXI Switching Test Tool

- Minimizes Switching System Downtime and Repair Costs
- Designed to Verify Relay Operation in PXI Switching Modules
- Simplifies System Calibration/Verification
- Diagnosis of Faulty Switch Modules
- Utilizes a DMM for Accurate Measurements
- Executable Code Eliminates Accidental Modification
- Assures Reliable and Accurate Testing
- Can be Executed by a Technician or Test Operator

It can be hard to confirm or identify faulty relays on complex switching systems. The user may be aware that the test system is not behaving as expected but may be unsure if it is a cabling fault, a software problem or a faulty relay. Discovering the source of the problem takes time and effort users may not have when working to tight schedules.

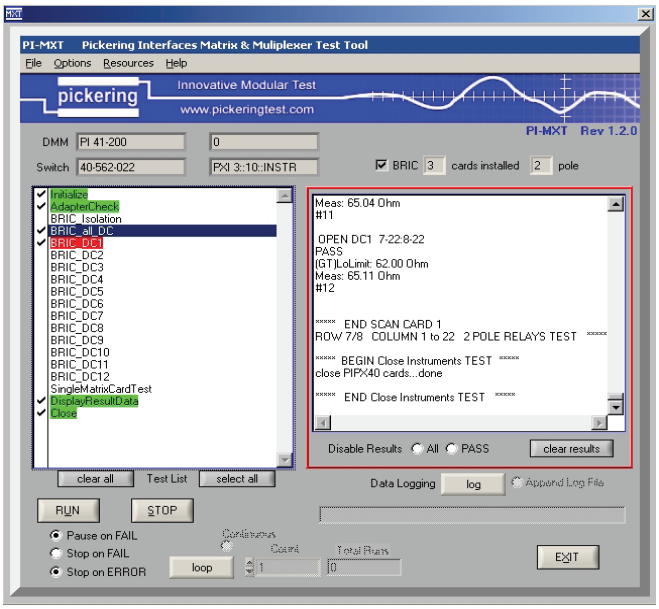
The 90-100 is a simple test tool that can be used to verify path resistance on a matrix to check for open circuit, short circuit and high resistance relays on matrices or for open and short circuits on multiplexers and general purpose relays. The user simply connects the test tool for the target PXI module, connects one of the supported DMMs to the test tool and runs the supplied executable program. The tool will identify the presence of faults in the switch module from which the user can deduce which relay(s) are faulty and need replacing by cross referencing the architectural location to the physical location on the module using the module manual.

Use of the 90-100 can save time and effort in correctly locating the failed relay, and in many cases make returning the module to Pickering Interfaces unnecessary. It eliminates shipping costs and time delays in getting the system up and running again. If repeated failures are experienced because of software or system design issues it helps users identify the issues involved and take corrective action to avoid future failures.

PI-MXT Capability

The 90-100 permits the complete functional testing of PXI high density matrices such as the BRIC family. Relay faults that can be identified on matrices are short circuit relays (welded contacts), open circuit relays and relays with higher than expected contact resistance. The tool explores all the supported matrix paths and either identifies the specific relay that has failed or narrows down the failure to a very few relays based on the results. The relay position within the architecture is identified (by crosspoint or isolation relay) and the user manual can then be used deduce the relay ID and physical location.

For multiplexers and general purpose relay modules the 90-100 will identify relays with either short circuit (welded) contacts or open contacts. The module's user manual can be used with the test results from the 90-100 to identify the defective relay.



Test Sequencer Front Panel for the PI-MXT. This allows any combination of tests to be run in either single or multiple sequences. All test data is displayed in the results window and can be written to a data file.

Since the 90-100 is connected to the user connector it also tests the PCB track and connector integrity.

System Support

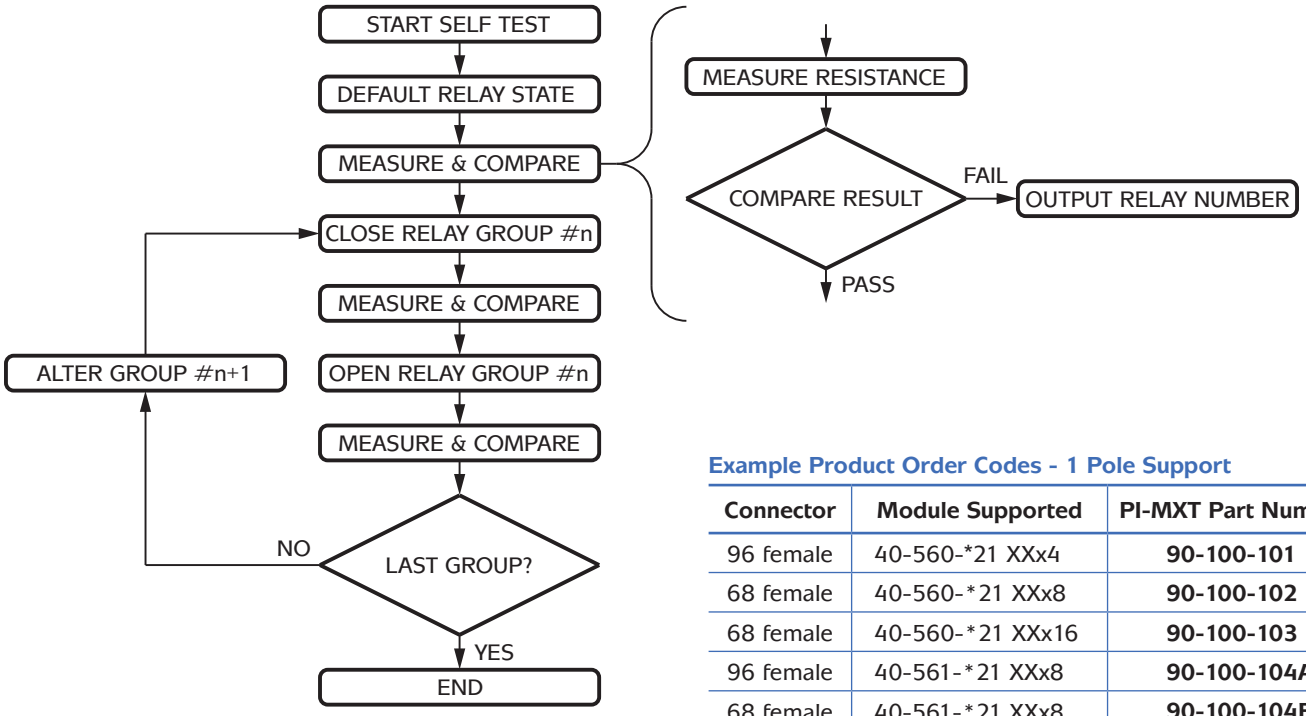
The 90-100 is designed to compliment self test capabilities built into a test system. Self test systems can identify failures in system connectivity but generally cannot identify whether these failures are in the cable and other external hardware or in the switching modules. By testing the switch modules the user can quickly identify if the failure is in the switching module. Pickering Interfaces can also assist users in integrating the 90-100 code into their system level software.

Fast Turnaround

Use of the 90-100 can significantly reduce the system repair time in the event of failure, and make it unnecessary to return a failed module to a service centre. It can also help the user pinpoint problems in their system design that are causing relay failures – by far the most common source of relay problems. Failure patterns allow the user to quickly identify the location of failed relays and therefore give important information on how to improve system reliability.

All Pickering Interfaces switching products are designed to ensure relay replacement is as simple as possible. Most designs use thru hole components to simplify relay replacement and avoid the reflow and stress on adjacent components caused by the rework of surface mount devices. This avoids the return of modules to service centres with surface mount rework capabilities, permitting many repairs to be conducted in situ. Many of Pickering Interfaces modules can also be supplied with spare relay kits or have spare relays fitted to the modules to further minimize down time.

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90-100 PI-MXT Flow Chart

The Pickering PI-MXT Kit

The PI-MXT kit comprises the following:

- A Test Adapter for the specific BRIC™, matrix, multiplexer or switch module being tested (The test adaptor required is different for each module, the part number required being shown on the data sheet, manual or obtained by contacting Pickering Interfaces).
- PI-MXT Software (Windows 2000 or XP executable).

The PI-MXT package requires the use of a separate Digital Multimeter (DMM). The default 6½ digit DMM is the Pickering PXI 41-200 (or 41-210 7½ Digit DMM).

Other DMMs can be supported such as the NI 4065, NI 4070, NI 4071 (PXI), the Agilent 34401A (GPIB) and the Keithley 20xx Series (GPIB) - please contact your sales office for further details. Alternatively a simple hand-held DMM may also be used for manual operation, but is not recommended for dense modules.

The Test Adapter and the PI-MXT software must be ordered together. The DMM is provided separately (most functional test systems already have a DMM present).

Latest Details

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

Example Product Order Codes - 1 Pole Support

Connector	Module Supported	PI-MXT Part Number
96 female	40-560-*21 XXx4	**90-100-101**
68 female	40-560-*21 XXx8	**90-100-102**
68 female	40-560-*21 XXx16	**90-100-103**
96 female	40-561-*21 XXx8	**90-100-104A**
68 female	40-561-*21 XXx8	**90-100-104B**
68 female	40-561-*21 XXx16	**90-100-105**
96 female	40-562-*21 XXx4	**90-100-106**
68 female	40-562-*21 XXx8	**90-100-107**
68 female	40-562-*21 XXx16	**90-100-108**
68 female	40-560-*21 XXx8-M	**90-100-115**

Where XX is a two, three or four digit number representing the X dimension of the matrix.
*=0 (BRIC4) or 1 (BRIC8).

Example Product Order Codes - 2 Pole Support

Connector	Module Supported	PI-MXT Part Number
96 female	40-561-*22 XXx8	**90-100-204A**
68 female	40-561-*22 XXx8	**90-100-204B**
68 female	40-561-*22 XXx16	**90-100-205**
96 female	40-562-*22 XXx4	**90-100-206**
68 female	40-562-*22 XXx8	**90-100-207**
68 female	40-562-*22 XXx16	**90-100-208**
78 female	40-565-*02 XXx8	**90-100-209**

Where XX is a two, three or four digit number representing the X dimension of the matrix.
*=0 (BRIC4) or 1 (BRIC8)

Other PXI switching models are also supported from the Pickering range. A more complete list can be found in the product manual. If you have a requirement to support a specific high density Pickering switch card that is not listed please consult your Pickering sales representative.

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