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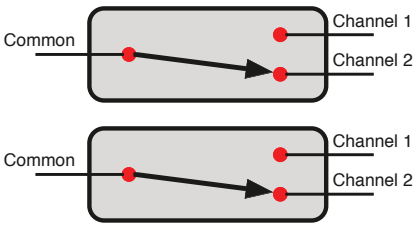
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Find the *Pickering 40-855-222* at our website: ***Click HERE***

# 40-855
# MEMS Fiber Optic Switch

- Single, Dual, Triple or Quad 2 to 1 Fiber Optic Multiplexer
- High Density 1, 2 or 3 Slot Width Modules
- FC/APC, FC/PC or SC/PC Connectors
- Small Form Factor Connectors LC or MU (mini SC)
- 1240 to 1640nm Single Mode
- 700 to 1700nm Multi-Mode
- Return Loss >55dB
- Long Operating Life >$10^9$ Operations with High Repeatability ± 0.01dB and Good Temperature Stability
- Crosstalk -60dB Typical
- 1ms Typical Switching Time
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty




Block Diagram of Dual 2 Channel Fiber Optic Multiplexer

Pickering PXI Fiber Optic MEMS Switching modules are available in many high density formats with a choice of 5 different connector styles to suit most applications: FC/APC (for optimal performance), FC/PC and SC/PC for general applications and LC and MU for high density applications.

The fiber optic multiplexers connect the optical channel by redirecting the optical signal into a selected output fiber. This is achieved using Micro-Mechanical Mirrors driven by a highly precise mechanism and activated via an electrical control signal.

The range of MEMS (Micro-Electro-Mechanical-Systems) based optical switches is:

**40-850** – Single or Dual 4 Channel Multiplexer

**40-852** – Single 8 Channel Multiplexer

**40-855** – Single, Dual, Triple or Quad 2 Channel Multiplexer

Pickering will construct custom optical systems to customers precise requirements. We have a large range of electrical switching modules which can form a complete PXI based telecom switching solution.

MEMS technology offers many advantages over traditional Optical Prism Technology as used in module types 40-810/815/820. MEMS offer similar optical performance but with lower price, higher packing density, faster operate time and much longer operating life.

## Key Features

- Very fast operate time <1ms
- Very long life >$10^9$ operations
- Return loss greater than 55dB
- High repeatability over a broad range of environmental conditions
- High density

## Applications

- Optical signal routing
- Fiber network configuration
- Fiber Optic Component Test




40-855-012
2 Channel
Fiber Optic
Multiplexer

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## General Specification (All Versions)

| **Fiber Switch Type:** | **MEMS** |
|---|---|
| **Internal Fiber Type:** | **SM 9/125** |
| Wavelength: | 1240 to 1640nm |
| Insertion loss (4 channel versions): | 0.8dB Typ |
| Return loss (APC version): | 60dB Min |
| Return loss (other versions): | 55dB Min |
| Polarization dependent loss (PDL): | 0.05dB Max |
| Repeatability: | ±0.01dB Max |
| Crosstalk: | -60dB Max |
| Optical Input Power: | 300mW Max |
| Thermal Stability: (-10 to 75°C insertion loss variation) | 0.2dB Max |
| Expected Life: | >>$10^9$ operations |
| Maximum Switching Time: | 1ms |
| Cycle Rate: | 500/sec |
| Module Weight: | <0.8Kg typ. |

## Additional Specification (MM Versions)

| **Fiber Switch Type:** | **MEMS** |
|---|---|
| **Internal Fiber Type:** | **MM 62.5/125** |
| Wavelength: | 700 to 1700nm |
| Insertion loss (4 channel versions): | 0.8dB Typ |
| Return loss (other versions): | 55dB Min |
| Polarization dependent loss (PDL): | 0.05dB Max |

## Power Requirements

| +3.3V | +5V | +12V | -12V |
|---|---|---|---|
| 0 | 300mA (typ 220mA) | 0 | 0 |

## Mechanical Characteristics

All modules are either 1 or 2 slot as indicated in model list.

Module weight: 420g (40-855-222)

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 fiber optic connectors (choice of FC/APC, FC/PC,SC/PC, MU or LC types).

## Other Fiber Connector Styles

Pickering can manufacture Fiber Optic Switch modules with other connector styles, please contact sales office for further information.

## Product Order Codes

| **2 Channel Multiplexer Versions** | |
|---|---|
| **FC/APC**, 1240 to 1640nm, Single-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-012** |
| Dual 2 Channel Fiber MUX, 2 slot | **40-855-022** |
| **FC/PC**, 1240 to 1640nm, Single-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-112** |
| Dual 2 Channel Fiber MUX, 2 slot | **40-855-122** |
| **SC/PC**, 1240 to 1640nm, Single-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-212** |
| Dual 2 Channel Fiber MUX, 2 slot | **40-855-222** |
| **MU (mini SC)**, 1240 to 1640nm, Single-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-312** |
| Dual 2 Channel Fiber MUX, 1 slot | **40-855-322** |
| Triple 2 Channel Fiber MUX, 1 slot | **40-855-332** |
| Quad 2 Channel Fiber MUX, 1 slot | **40-855-342** |
| **LC**, 1240 to 1640nm, Single-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-412** |
| Dual 2 Channel Fiber MUX, 1 slot | **40-855-422** |
| Triple 2 Channel Fiber MUX, 1 slot | **40-855-432** |
| Quad 2 Channel Fiber MUX, 1 slot | **40-855-442** |
| **SC**, 700 to 1700nm, Multi-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-212-M** |
| Dual 2 Channel Fiber MUX, 2 slot | **40-855-222-M** |
| **ST**, 700 to 1700nm, Multi-Mode | |
| Single 2 Channel Fiber MUX, 1 slot | **40-855-512-M** |
| Dual 2 Channel Fiber MUX, 2 slot | **40-855-522-M** |



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## 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

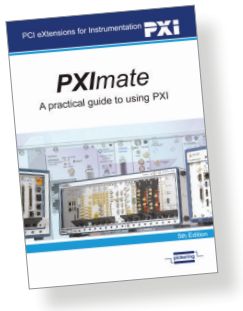
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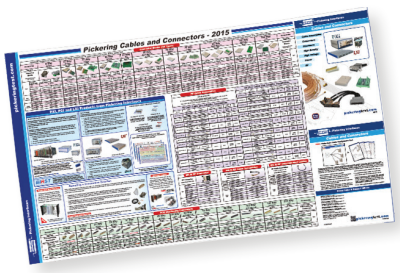

Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download.
Alternatively our web site has dynamically linked connector/cabling options,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



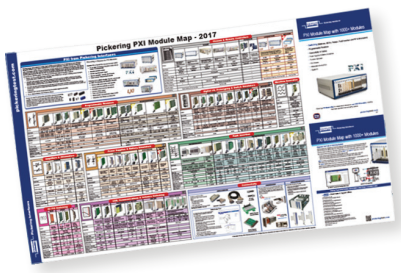

"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.




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.

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