

## PanMPO™

### Frequently Asked Questions (FAQs)

**1. Q: What does MPO stand for?**

A: MPO is an acronym for Multi-fiber Push-On.

**2. Q: What is an MPO connector?**

A: It is a high density fiber connector that is typically used in the data center as a 12-fiber connector. The center spacing of the fibers is 0.25mm. The MPO connector is compliant with IEC-61754-7 and EIA/TIA-604-5 (FOCIS 5).



**3. Q: What is the difference between MTP® and MPO connectors?**

A: Both MPO & MTP® connectors comply with IEC-61754-7 and EIA/TIA-604-5 (FOCIS 5).

This means that an MTP® connector is, by definition, an MPO connector. They are interchangeable.

MTP® is a registered trademark of US Conec Ltd. US Conec designed very tightly tolerance stainless steel guide pins with an elliptical tip which provide the fine alignment required to ensure that the fiber arrays on mating connectors are in the proper position to provide the best insertion loss.

**4. Q: What makes Panduit's PanMPO™ Connector unique?**

A: The PanMPO™ Connector is the only MPO-style connector on the market that allows the user to change both polarity and gender in the field.

**5. Q: What is meant by Polarity?**

A: Polarity management in an optical network ensures that transmitters on one side of the link are connected with receivers on the opposite side of the link.

Polarity in an array-based system (containing MPO connectors) is defined for both duplex signals (10G) and for parallel signals (40G & 100G) by ANSI/TIA-568-C.0

**6. Q: What is meant by a Polarity Method?**

A: A polarity method defines a system of polarization key orientations and/or connector-to-connector wiring. There are three such methods defined in the TIA-568-C.0 standard. They are:

Method A: Key-Up to Key-Down wired straight through

Method B: Key-Up to Key-Up wired straight through

Method C: Key-Up to Key-Down with pair flipped wiring – Side 1 is (1, 2, 3, 4, 5, 6...) Side 2 is (2, 1, 4, 3, 6, 5, etc...)

Much more on this topic is available on [www.panduit.com](http://www.panduit.com)

**7. Q: How does Panduit maintain the performance associated with MTP® in the new PanMPO™ Connector?**

A: Panduit uses alignment pins supplied by US Conec in the PanMPO™ Connector.

Panduit uses high precision multi-fiber ferrules supplied by US Conec.

**8. Q: Is Panduit's PanMPO™ Connector considered to be in compliance with industry standards?**

A: Yes, the PanMPO™ Connector meets all industry interface standards and is completely intermatable with other MPO connectors in the market.

**9. Q: Will I see any difference in optical performance with the PanMPO™ Connector?**

A: No. Fiber optic cable assemblies containing the PanMPO™ Connector are manufactured to the same exacting specifications and optical performance standards found in assemblies containing MTP® connectors.

**10. Q: What fiber types will contain PanMPO™ Connectors?**

A: The PanMPO™ Connector will initially appear on assemblies containing OM3 & OM4 fiber cable because these are defined as the only multimode cable used for 40G & 100G in IEEE 802.3. PanMPO™ Connectors are not available at this time with Signature Core™ Cable, however they will be available in the future. The changeover to PanMPO™ Connectors will be based on capability, fiber count, fiber type, and volume.

**11. Q: Will PanMPO™ Connectors be a premium option, or will they replace all MTP solutions?**

A: PanMPO™ Connectors will eventually replace all MTP connectors on OM3 and OM4 multimode fiber cable assemblies. The first phase includes 12-fiber round interconnect assemblies and 12- and 24-fiber fiber trunk assemblies on small diameter cable containing OM3 and OM4 fiber. Higher fiber counts and a version for flat-ribbon furcated assembly breakouts will be released at a later date.

**12. Q: Will PanMPO™ Connectors be available on harness cable assemblies?**

A: Yes. The PanMPO™ Connector will be on the "Next Generation Fiber Harness" when it is released in 4Q2013.

**13. Q: Are there any plans to put PanMPO™ Connectors on single mode fiber cable?**

A: No. There is no connector migration from 10G to 40G for single mode transmission in either the equipment, cross-connect, or fiber backbone cabling so there is no value in putting a PanMPO™ Connector on these assemblies.

Single mode transmission at 10G, 40G, or 100G is accomplished with a different family of transceivers that all employ serial duplex communication using the SFP+ form factor, which accept duplex LC fiber connectors. The 40GBASE-LR4 transceiver combines, or multiplexes, four different 10G signals on 4 different wavelengths of light onto a single mode fiber. The receiver at the opposite end of the channel demultiplexes these wavelengths back into their original wavelengths and reads the information. If MPO connectors are used in the single mode fiber backbone an angled physical contact (APC) version of the MPO connector is used. These single mode MPO/APC assemblies must always be built as polarity method A (key-up to key-down) so that the angles mate in the correct orientation.

**14. Q: Is there a degradation of performance due to the tolerances in the ferrule holes that allow the pins to move in and out?**

A: No. Panduit uses the exact same pins and fiber ferrules in the PanMPO™ Connector as are used in MTP® connectors supplied by US Conec. In fact, the pins in an existing MTP® connector can actually move in and out of the ferrule today, but it is a very difficult task to remove the pins from a male MTP® connector in the field.

**15. Q: Can I use something like a paperclip to move the pin assembly in and out?**

A: No. The connector or the fiber could be damaged if anything other than the ejecting tool supplied by Panduit is used to move the pin assembly in and out.

**16. Q: How can I get some extra pin insertion/extraction tools?**

A: We are setting up part number PANMPOPINTOOL which is a bag of 5 of the insertion and extraction tools.

**17. Q: Why are PanMPO™ Interconnects only available in lengths up to 100 feet or 30 meters?**

A: 3.0mm interconnect cables are designed and tested for shorter applications. If the application requires longer lengths, PanMPO™ Trunks are recommended instead. These trunks are 4.5mm, are available with pulling eyes, and are tested for longer length applications.

**18. Q: When can Panduit begin accepting purchase orders for cable assemblies with the PanMPO™ Connector?**

A: Immediately. Interconnect Cable Assemblies and Trunk Cable Assemblies are both available and orders can be placed now. Harnesses and Reference Cords will be available beginning in 4Q2013.

**19. Q: What will the lead time be for orders?**

A: Assemblies containing the PanMPO™ Connector will be supplied with the same production lead times that Panduit is currently supplying with our MTP fiber assemblies, and this lead time changes based on the size of the backlog. Please contact Customer Service for the latest delivery information.