HUBBELL®
Premise Wiring

Custom Fiber Trunk Assemblies

What are MPO cables?

MPO stands for multi-fiber push on. It provides a multiple fiber channel in a single connector and is commonly deployed in a 12-fiber array termination. MPO connectors can contain anywhere from 8 to 72 fibers. These cables come factory terminated and plug-and-play ready.

Why use MPO assemblies instead of traditional single fiber connectors?

MPO assemblies are popular because they require significantly less space. Data centers have a multitude of various network links making cabling difficult to manage, therefore rack space is at a premium. MPO cables solve this issue by combining multiple fibers in a single interface in the same footprint as an SC connector. Plus, these assemblies allow simple migration to higher speeds such as 40G, 100G, 200G, and beyond. This eliminates the need to re-cable for future network upgrades.

What is the difference between MTP and MPO?

MTP and MPO are often used interchangeably. MPO covers any multi-fiber push on connector defined by IEC-61754-7 and TIA-604-5-D standards. MTP is a trademark of US Conec and was the first to market enhancements to the overall design in 1996. Since then, advanced MPO connectors have emerged that further optimize both insertion loss and usability.

Why choose Hubbell MPO assemblies?

Our commitment to quality and innovation helped us become a leading Datacom manufacturer for more than three decades. Our fiber trunk assemblies use the Senko MPO Plus Premium Mini Connector with the latest advancements in ferrule and spring design, metal precision guide pins, compact boot for space saving, simple gender swap or polarity flip in the field, and the lowest insertion loss values in the industry.

What cable is used in Hubbell fiber trunk assemblies?

Although it is possible to customize the cable construction to meet various application demands, standard MPO assemblies are built with loose tube micro distribution cable. The cable is Plenum rated with a flame rating in accordance with NFPA 262

How do MPO cables get connected?

MPO connectors use alignment pins to ensure proper mating between male and female connections. Male connectors come with pins and female connectors have alignment holes to accept the pins. The standard MPO assemblies will have female connectors on each end that easily plug into Hubbell cassettes or adapters. This creates a seamless low loss fiber channel with additional labor saving benefits to the installer.

What configurations does Hubbell offer?

We offer our fiber assemblies in any custom color, cable, breakout, or strand count. Although we standardize on the 12F MPO, we also have various connector options to meet your application needs. Also available are distribution trunks for pre-terminated LC-LC, MPO-LC hydra, pigtails, or any other legacy style connector.

HUBBELL ®
Premise Wiring

Custom Fiber Trunk Assemblies

What are the different polarity options for MPO cables and what do they mean?

Polarity simply means the direction of flow. MPO polarity is set by how each end is terminated. The TIA 568 standard defines three different polarity methods: Type A, Type B, and Type C. Type A would be considered straight through or "Key-Up" to "Key-Down". Using a 12-fiber MPO as an example, this configuration would have Pin 1 correspond with Pin 1 on the other end of the assembly. Type B would be considered a cross or "Key-Up" to "Key-Up". Pin 1 would correspond with Pin 12 on the other end of the assembly. Type C is rarely used but would be considered a cross pair where Pin 1 corresponds to Pin 2 at the other end of the assembly. All the connection and polarity options can seem overwhelming, but any fiber channel is only after one goal. That goal is to create an optical path from the transmit (Tx) port of one device to the receive (Rx) port of another device.

How can I test or troubleshoot my fiber trunk assemblies?

All cords and assemblies go through rigorous testing procedures before they leave the production floor (IEC 61300-3-35 and GR-326 Geometry & Performance). The test results are included inside the product packaging. The installer should always "Inspect before you Connect" as an added preventative step to ensure there is no damage or contamination to the end face. Then a continuity test can be performed. The majority of failures are a result of a polarity issue and can easily be rectified in the field without any external tool. We do not recommend any field terminating of MPO connectors.

Typical lead times for assemblies?

Assemblies typically ship within 3-5 days after receipt of order. Subject to change based on quantity and cable construction.

What type of warranty comes with these products?

Fiber trunk assemblies are eligible for our Mission Critical 25-year warranty. Please reach out to your local Hubbell representative to learn more about how to qualify for this industry-leading coverage.

How do MPO cable assemblies translate to the various ethernet applications?

Applications for MPO assemblies are endless. As the demand for bandwidth continues to grow, end users look to the high-density solution only MPO cables can provide. Two common MPO links are Base-8 and Base-12 which refers to the number of fibers used for transmission. There are pros and cons to both systems. Base-8 brings higher fiber utilization and an easier migration path to 40G/100G/200G. This is especially important in hyperscale networks. Base-12 can accomplish the same thing with 4 unused fibers. Both Base-8 and Base-12 utilize parallel optics to obtain these higher data rates but can be easily converted to Base-2 in common duplex 10G networks. Overall, Base-12 remains popular because it brings more fiber cores and greater density. It is also more easily broken out to LC connections via trunk cable or modular cassettes. Please see the Hubbell catalog for a complete guide on the IEEE 802.3 fiber ethernet standards and technical guidelines.

HUBBELL ®

A proud member of the Hubbell family.