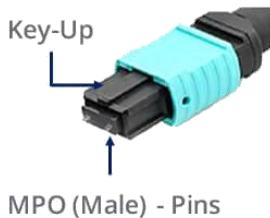


Tech Tip

Inspecting MPO Cables is Critical During Installation

Multi-fiber Push On (MPO) cables have become popular in data centers for their ability to transmit a great deal of information. Each cable can house from 12-96 optic fibers, with 12-24 fibers being most common. A unique aspect of the cables is that the 12-24 fibers protrude slightly out of the end of the connector creating a “rake” that attracts dirt and debris.



12 Fiber MPO/MTP



24 Fiber MPO/MTP

This rake effect makes it critical that the connectors be inspected, and if dirty, cleaned before the connection is made. Contractors sometimes take shortcuts by wiping connectors on their pants or shirt, but this can make the MPO connectors dirtier and in some cases will crack the fiber.

Problems with Dirty MPO Connectors

Why is this a problem? A dirty connector can create air gaps in the connection. This causes an increase in both backscatter and attenuation and can even cause premature failure of the laser. A dirty connector doesn't just affect the area near the connection itself, it can create traffic degradation down the line towards the rack. In other words, where a dirty simplex connection only ruined one link, a dirty MPO connection can ruin several links.

In a worst-case scenario where the fiber is cracked, the MPO cable or device with a MPO connector must be replaced, which can be costly. For example, a transceiver with a broken MPO connector can cost \$12,000 USD or more to replace. Therefore, proper cleaning is so important.

We know what you're thinking, "I don't have time to test and clean every connection!" Contractors must inspect tens of thousands of connections in a data center. Doing the proper inspecting and cleaning used to take too much time – and time is money.

Save Time When Inspecting

The newest inspection units can cut the inspection time of each connection from two or three minutes to 18 seconds or less. In a normal day, that is a difference of 4.5 hours using traditional units versus 15 minutes or less with the newest testers. That saves a lot of time and gives contractors more time to properly clean the connectors that are dirty.

Legacy MPO Inspection Process		Sidewinder MPO Inspection Process	
Step	Time	Step	Time
Focus Image	0:04	Focus Image	0:01
Scroll/Pan to fiber	0:04	Scroll/Pan all fibers	0:03
Test	0:03	Test all fibers	0:03
Save	0:02	Save	0:01
TOTAL (1 fiber)	0:13		
TOTAL (12 fibers)	2:36	TOTAL (12 fibers)	0:08

vs.

Test Time for 100 MPO Connectors
4.3 hours

Test Time for 100 MPO Connectors
< 15 minutes

It's not hard to make a clean connection. Inspect the connectors to make sure they are clean. If the connector is dirty, use a proper fiber cleaning tool to clean the end face. Re-inspect the connector. If both male and female connectors are clean, make the connection and move on to the next connection.

The newest testers have an easy “pass/fail” inspection feature to let contractors know if the connection needs to be cleaned a first time or cleaned again if the first cleaning wasn’t

sufficient. The testing unit can also store the results or export the results via WiFi or USB to a laptop or mobile device so contractors can certify to the data center operator that the connections are correct.

Inspecting MPO cables is only the beginning. Learn more about [Testing Parallel Optics](#) to see what tests and testers are used to get MPO connections ready for live traffic.

Products Used for Inspecting:

[FiberChek Probe Microscope](#)

[FiberChek Sidewinder](#)