

# ConnectorMax MPO Link Test Solution<sup>1</sup>

A COMPLETE MPO POLARITY, CONTINUITY AND CONNECTOR INSPECTION SOLUTION FOR SHORT FIBER LINKS (UP TO 5 KM)

- All-in-one, easy-to-use solution to validate the polarity type, continuity and connector cleanliness of MPO/MTP™<sup>2</sup> links in a single automated test.



ConnectorMax



<https://goo.gl/eLzScs>



<https://goo.gl/LXmmbk>

*"Timely and needed solution as the use of MPO cables/connectors is increasing and from real world experience polarity and connector cleanliness are key issues. Having a simple testing solution would be beneficial."*

– Judge's comment

## KEY FEATURES

- Fully automated, quick test process
- Single solution to test MPO 12 and MPO 24 fiber cables
- Same unit supports both multimode and singlemode
- Cable stowing system supports APC, UPC, male (pinned) and female (unpinned) connectors
- Customizable pass/fail thresholds
- Automatic PDF reporting
- Compatible with Android™ devices

## APPLICATIONS

- Central office re-architected as data center (CORD)
- Data centers

## SUPPORTED TESTS

- MPO cable polarity type identification
- MPO cable continuity confirmation
- MPO connector endface inspection and analysis

## RELATED PRODUCTS AND ACCESSORIES



ConnectorMax Fiber Inspection Probe  
FIP-435B



ConnectorMax Automated Multifiber Connector Inspection Tip  
FIPT-400-MF



ConnectorMax Multifiber Light source  
MFS-12, MFS-24



TK-Switch MPO and MTP Kit  
iOLM-based automated MPO and MTP cable characterization solution

1. The ConnectorMax MPO Link Test Solution is patent pending.  
2. MTP is a registered trademark of US Conec Ltd.

### SOLUTION OVERVIEW

Multifiber push-on (MPO) connectors are increasingly popular because they provide many advantages to high-speed network operators, owners and installation companies. Increasingly, telcos are also reconfiguring their CORD and deploying MPO cables with 12, but mostly 24 fibers. However, since the main source of loss in short links is connector-related, not properly testing and caring for MPO connectors puts networks at risk.

Techs need simple, easy-to-use tools—and a clear, reliable method—to get the essential testing required done quickly and accurately. ConnectorMax MPO Link Test Solution combines the three essential tests needed to validate MPO cables and perform short-link testing into one automated step. This solution brings together the ConnectorMax Multifiber Source with the ConnectorMax Fiber Inspection Probe to deliver a quick and easy-to-use solution that validates the polarity type, continuity and connector cleanliness of MPO links. Results are loaded in the ConnectorMax Analysis Software, an app for mobile devices providing clear pass/fail status and reporting functions, making it easy for technicians to perform and view the results of all three of these tests on the spot.

### SOLUTION BENEFITS

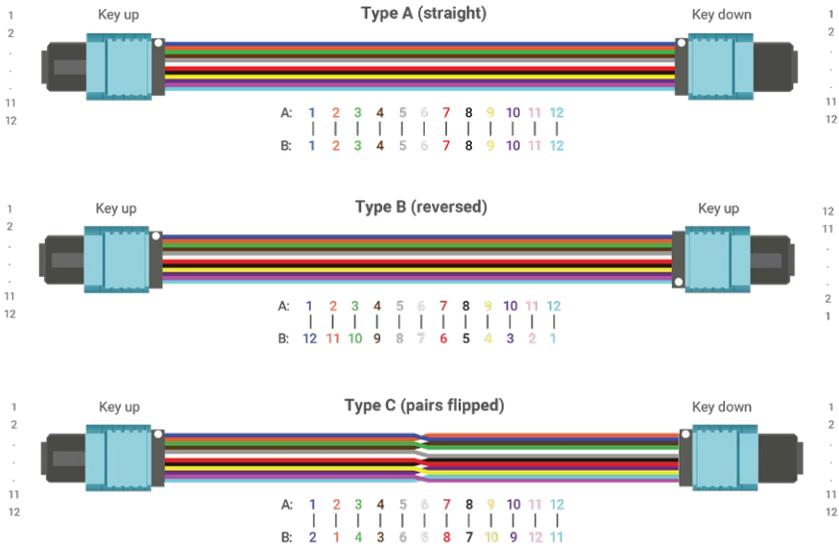
REDUCE OPEX	REDUCE CAPEX	ACCELERATE AND INCREASE REVENUE
<ul style="list-style-type: none"> <li>• Save time: get a clear pass/fail diagnosis of the problem, whether it is polarity, continuity or connector cleanliness, using one test</li> <li>• Save time: get a complete report with a single click</li> </ul>	<ul style="list-style-type: none"> <li>• Stop wasting expensive MPO patch cords that are in perfect condition</li> <li>• Avoid spending money on overkill products that provide more information than required for the task</li> <li>• Invest in a single solution to perform all tests—no need for different testers to test different types of MPO cables</li> </ul>	<p>With MPO links containing multiple fibers, turning down a link for troubleshooting can affect multiple clients and create customer churn. Using EXFO's ConnectorMax solution will ensure links are good and network downtime is minimized.</p>

### THREE ESSENTIAL MPO TESTS

#### Polarity-type validation

During installation, MPO connectors must be properly aligned and mated—not as simple as it sounds. Ensuring accurate polarity for MPO fiber array cables is a big deal and can be complicated to manage due to multiple polarity schemes available for these connectors and polarity flipping during connecting and installation. Polarity validation is proving especially critical with the new MPO connectors that enable polarity reconfiguration in the field.

According to TIA-568-C, three different polarity types, corresponding to different cable structures, are used with MPO ribbon cables. The ConnectorMax MPO Link Test Solution is an easy way to identify the polarity type of links up to 5 km long.



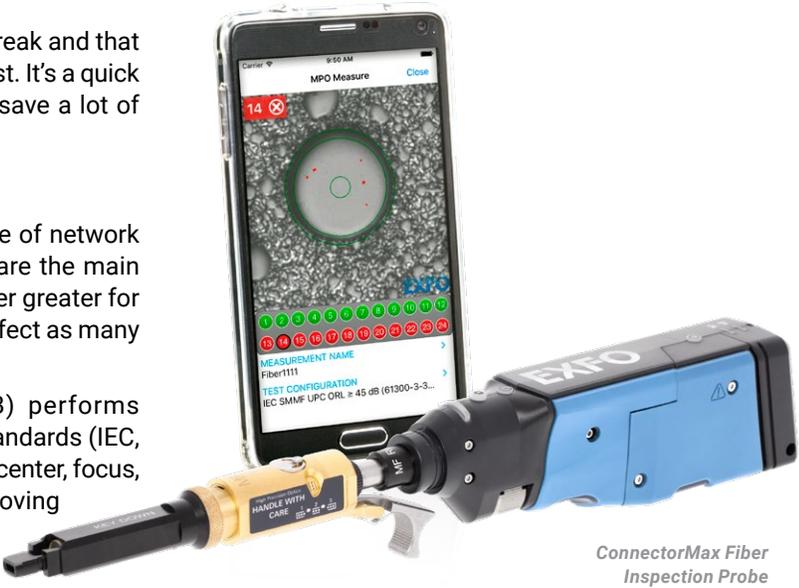
### Continuity confirmation

Confirming the continuity of a link ensures that there is no break and that light travels properly all the way to the end of the link under test. It's a quick validation test that, when done at time of installation, can save a lot of time in potential troubleshooting later.

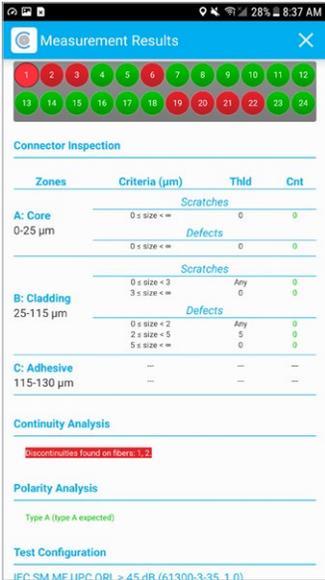
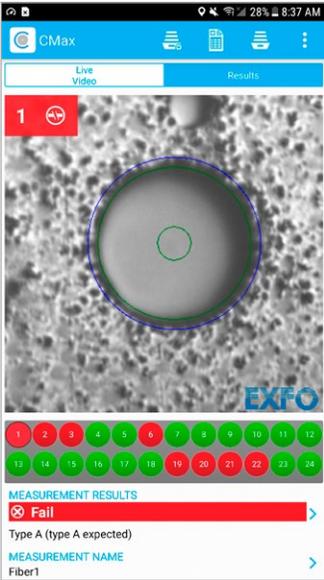
### Connector inspection

With contaminated connectors being the number one cause of network failure, connector inspection is a priority. Bad connectors are the main cause of loss for short links up to 5 km and the impact is ever greater for MPO links where a single dirty or damaged connector can affect as many as 12 or 24 fibers.

The ConnectorMax Fiber Inspection Probe (FIP-435B) performs automated pass/fail connector endface analysis against standards (IEC, IPC or custom). It provides a fast and easy process to detect, center, focus, capture, analyze and save results automatically, while removing any risk of false positives or misinterpretation of results. This wireless solution uses a smart device, eliminating the need to carry a platform, and the LED indicator quickly communicates results for screenless, single-handed operation. All models are compatible with a multifiber inspection tip designed for easy access to recessed connectors in dense panels.



ConnectorMax Fiber Inspection Probe



### AUTOMATIC PASS/FAIL ANALYSIS WITH ConnectorMax ANALYSIS SOFTWARE

#### Fully automated solution

- Easy to operate, simply hit the start button and it's powered up and ready to begin.
- Fully automated, the ConnectorMax Fiber Inspection Probe with the MPO tip is used as a detector on the other end.
- All results are integrated in the same ConnectorMax Analysis Software application with clear pass/fail status and reports.
- No training required—the test sequence is exactly the same as the current FIP MPO.



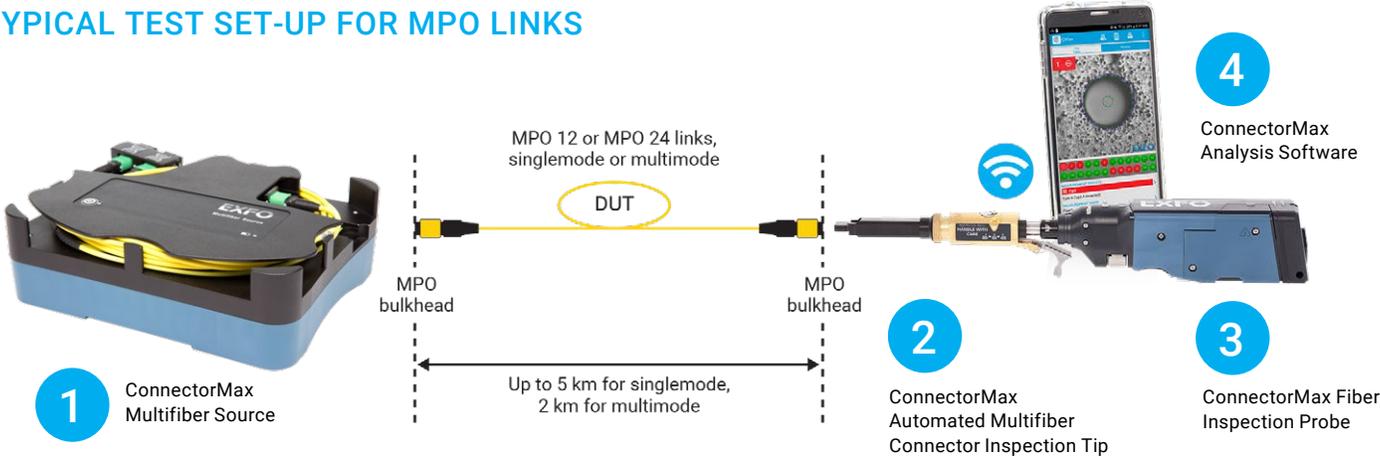
### CABLE STOWING SYSTEM

The ConnectorMax Multifiber Source has a cable stowing system and includes a launch cable for:

- Improved longevity: preserves the MPO connector on the source for a longer period of time
- Multi-functional design, by changing the cable you can go from:
  - APC to UPC
  - Male (pinned) to female (unpinned)
  - With the MFS-24 model, you can use a Y cable to test MPO 12
  - Singlemode to multimode



### TYPICAL TEST SET-UP FOR MPO LINKS



## SPECIFICATIONS: ConnectorMax MULTIFIBER SOURCE

For technical details concerning the ConnectorMax Fiber Inspection Probe (FIP-435B), consult its spec sheet on our web site.

### GENERAL SPECIFICATIONS

Size (H x W x D)	155 mm x 200 mm x 60 mm (6 1/8 in x 7 7/8 in x 2 3/8 in)
Weight	1.2 kg (2.65 lb)
Temperature	operating: -10 °C to 50 °C (14 °F to 122 °F) storage: -40 °C to 70 °C (-40 °F to 158 °F)
Relative humidity	0 % to 95 % non-condensing
Autonomy	16 h
Distance range (typical) <sup>a</sup>	singlemode: 5 km (3.10 mi) multimode: 2 km (1.24 mi)

### ACCESSORIES (INCLUDED)

Quick reference guide (hard copy)	
GP-2269	USB-A to USB-C cable
GP-2227	USB AC adapter/charger
GP-3142	Rechargeable battery
GP-10-108	Soft carrying case
GP-10-086	Rigid carrying case ( available at an extra cost)
GP-2176	Hook ( available at an extra cost)

### LASER SAFETY



a. Depending on fiber attenuation and connector loss

ORDERING INFORMATION

ConnectorMax MPO Link Test Solution

TK-MFS-XX-XX-FIP-435B-XX-MPO-XX

Source model
12 = Covering MPO 12
24 = Covering MPO 12 and MPO 24

Test jumper

For EXFO model MFS-12

MPO 12 testing

TJ-B92M-12-92F-1.8m = Singlemode, output connector: APC female (unpinned)
TJ-B92M-12-92M-1.8m = Singlemode, output connector: APC male (pinned)
TJ-C92M-12-94F-1.8m = Multimode, output connector: UPC female (unpinned)
TJ-C92M-12-94M-1.8m = Multimode, output connector: UPC male (pinned)

For EXFO model MFS-24

MPO 24 testing

TJ-B92M-24-92F-1.8m = Singlemode, output connector: APC female (unpinned)
TJ-B92M-24-92M-1.8m = Singlemode, output connector: APC male (pinned)
TJ-C92M-24-94F-1.8m = Multimode, output connector: UPC female (unpinned)
TJ-C92M-24-94M-1.8m = Multimode, output connector: UPC male (pinned)

Y test jumpers

MPO 12 testing, one side female (unpinned) and one side male (pinned)

TJ-B92M-24-Y92F92M = Singlemode
TJ-C92M-24-Y94F94M = Multimode

Example: TK-MFS-12-TJ-B92M-12-92F-1.8m-FIP-435B-APC-MPO-APC

- Automated multifiber tips for the ConnectorMax Fiber Inspection Probe
UPC for MPO UPC connectors
FIPT-400-NZ-MPO (MPO UPC nozzle)
FIPT-400-MPO-BLK (MPO bulkhead adapter)
APC for MPO APC connectors
FIPT-400-NZ-MPO-APC (MPO APC nozzle)
FIPT-400-MPO-BLK (MPO bulkhead adapter)
K for MPO UPC and APC connectors
FIPT-400-NZ-MPO (MPO UPC nozzle)
FIPT-400-NZ-MPO-APC (MPO APC nozzle)
FIPT-400-MPO-BLK (MPO bulkhead adapter)
Single fiber tips for the ConnectorMax Fiber Inspection Probe
UPC = FIPT-400-FC-SC (FC-SC bulkhead tip)
FIPT-400-U25M (universal patchcord tip, 2.5 mm ferrule)
APC = FIPT-400-SC-APC (SC APC tip for bulkhead adapter)
FIPT-400-U25MA (universal patchcord tip, 2.5 mm ferrules)

ORDERING INFORMATION

ConnectorMax Multifiber Source only (for customers that already have a FIP-435B and an MPO tip)

MFS-XX-XX

Source model
12 = Covering MPO 12
24 = Covering MPO 12 and MPO 24

Test jumper

For EXFO model MFS-12

MPO 12 testing

TJ-B92M-12-92F-1.8m = Singlemode, output connector: APC female (unpinned)
TJ-B92M-12-92M-1.8m = Singlemode, output connector: APC male (pinned)
TJ-C92M-12-94F-1.8m = Multimode, output connector: UPC female (unpinned)
TJ-C92M-12-94M-1.8m = Multimode, output connector: UPC male (pinned)

For EXFO model MFS-24

MPO 24 testing

TJ-B92M-24-92F-1.8m = Singlemode, output connector: APC female (unpinned)
TJ-B92M-24-92M-1.8m = Singlemode, output connector: APC male (pinned)
TJ-C92M-24-94F-1.8m = Multimode, output connector: UPC female (unpinned)
TJ-C92M-24-94M-1.8m = Multimode, output connector: UPC male (pinned)

Y test jumpers

MPO 12 testing, one side female (unpinned) and one side male (pinned)

TJ-B92M-24-Y92F92M = Singlemode
TJ-C92M-24-Y94F94M = Multimode

Example: MFS-12-TJ-B92M-12-92F-1.8m

EXFO headquarters T +1 418 683-0211 Toll-free +1 800 663-3936 (USA and Canada)

EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to www.EXFO.com/contact.

For the most recent patent marking information, please visit www.EXFO.com/patent. EXFO is certified ISO 9001 and attests to the quality of these products. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurement in this document conform to SI standards and practices. In addition, all of EXFO's manufactured products are compliant with the European Union's WEEE directive. For more information, please visit www.EXFO.com/recycle. Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.

For the most recent version of this spec sheet, please go to www.EXFO.com/specs.

In case of discrepancy, the web version takes precedence over any printed literature.

