

# Understanding Fiber Polarity Technical White Paper

## 1. What's Polarity?

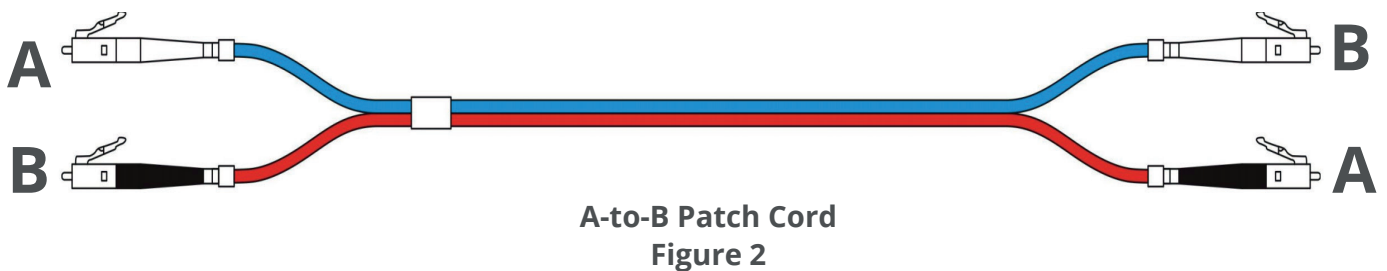
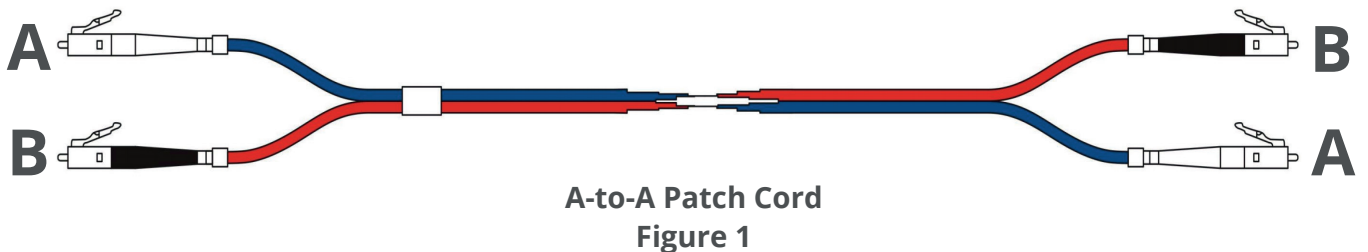
Fiber optic patch cables are ideal for supporting high speed telecommunication network fiber applications. They are manufactured and tested in compliance with TIA 604 (FOCIS), IEC 61754 and YD/T industry standards. OM1, OM2, OM3, OM4, OM5 or OS2 fiber types are available to meet the demand of Gigabit Ethernet, 10 Gigabit Ethernet and high speed Fiber Channel. Every termination is through rigorous parameter test to ensure the highest network performance.

## 2. Polarity Overview

Two types of fiber links are outlined in the TIA standard: serial duplex signals connections and parallel signals connections. This paper discusses the impact of polarity as it pertains to serial duplex signals and parallel signals.

### 2.1 Fiber Patch cords

Two types of duplex fiber patch cords are defined in the TIA standard: A-to-A type shown in Figure 1 and A-to-B type shown in Figure 2. Note: A-to-A patch cords are not commonly deployed and should be used only when necessary as part of a polarity method (See ANSI/TIA-568-C.0).

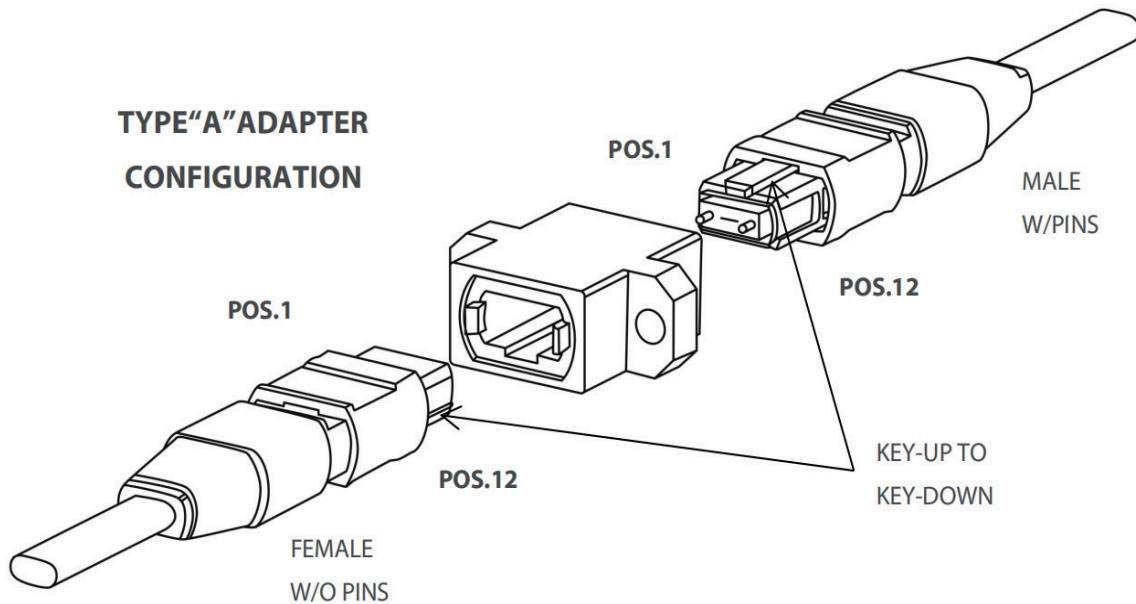


## MTP®/MPO BREAKOUT CABLE DATASHEET

## 2.2 MTP®/MPO Fiber Adapter

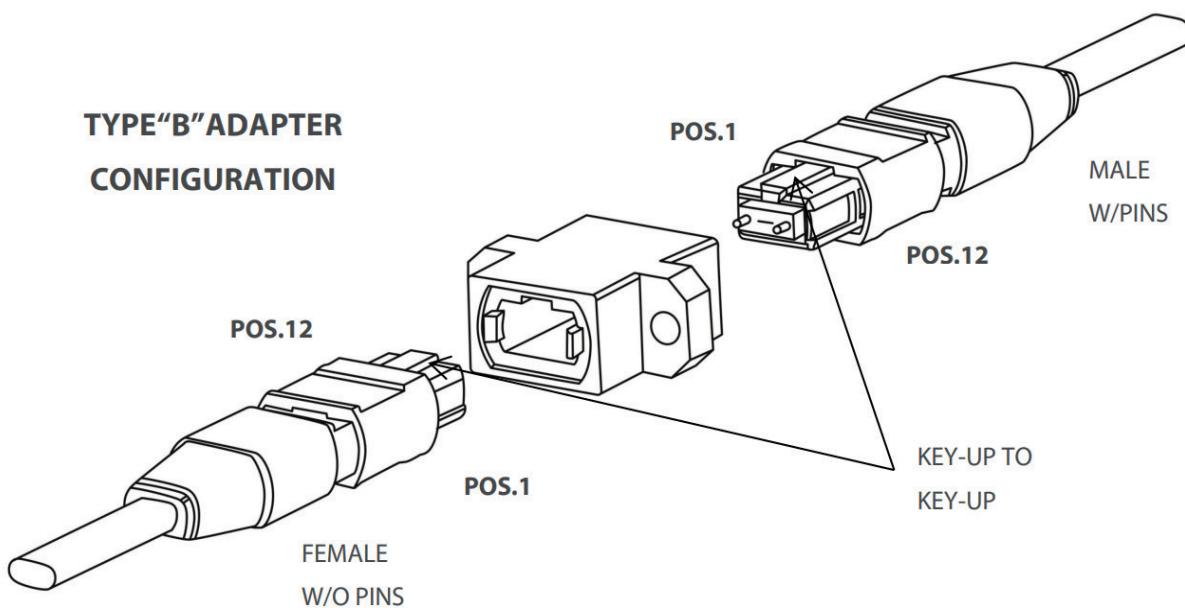
### 2.2.1 Type A adapters

There are two types of array adapters, Type A and Type B. Type A adapters shall mate two array connectors with the connector keys key-up to key-down



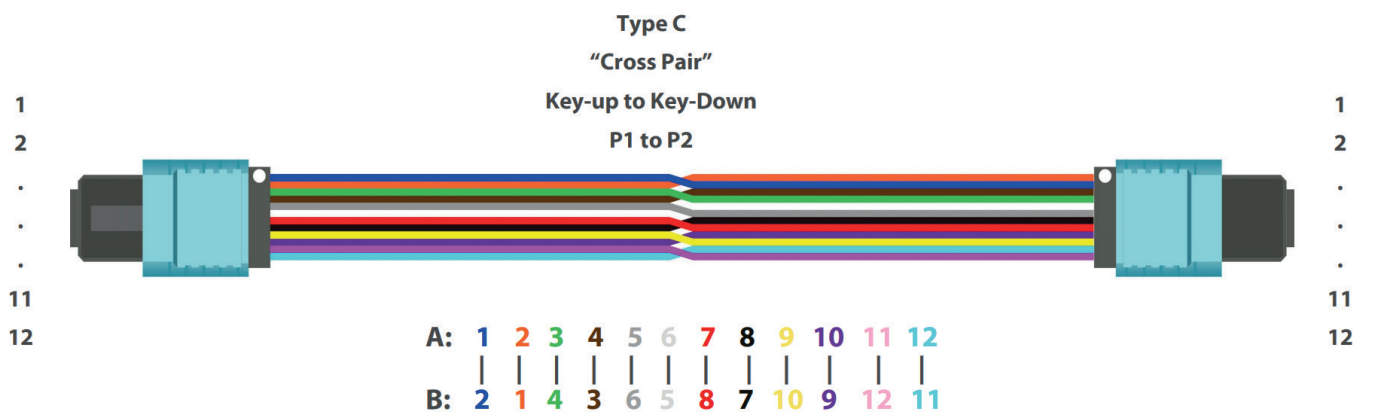
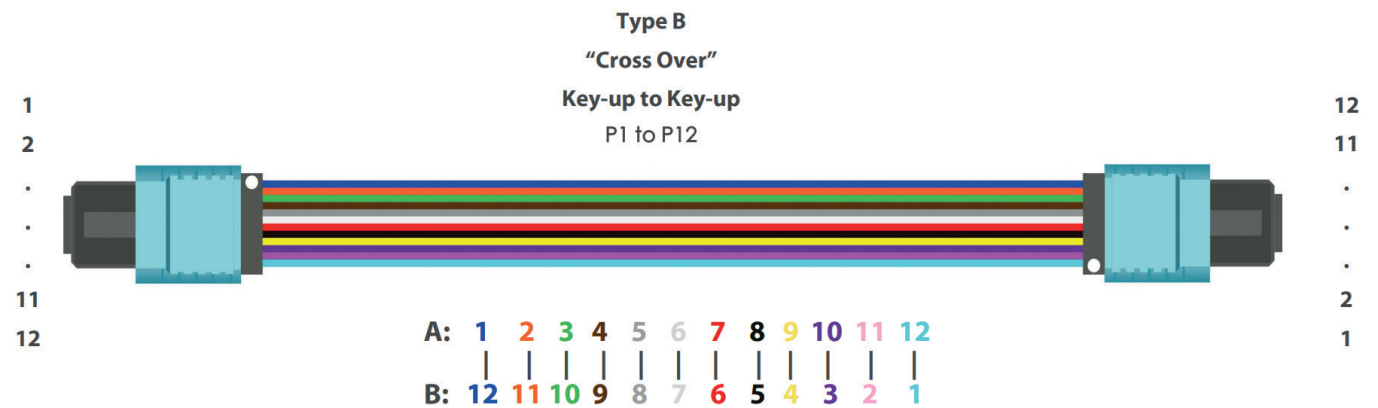
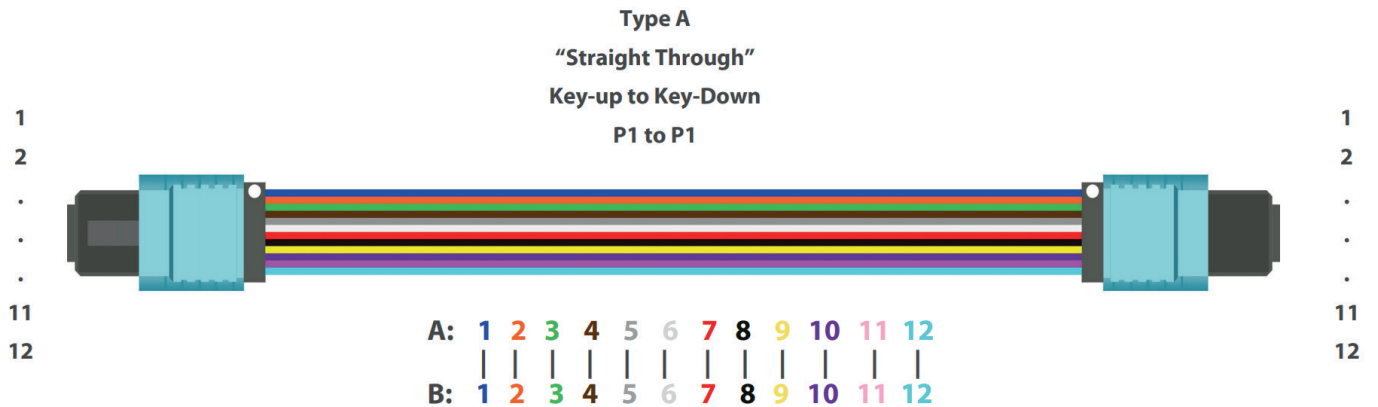
### 2.2.2 Type B adapters

Type B adapters shall mate two array connectors with the connector keys key-up to key-up (keys aligned).



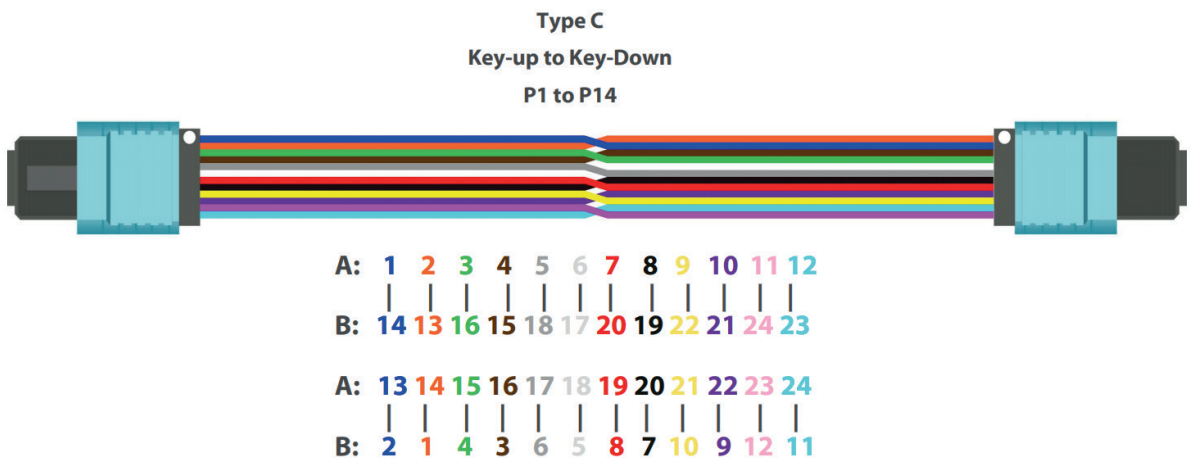
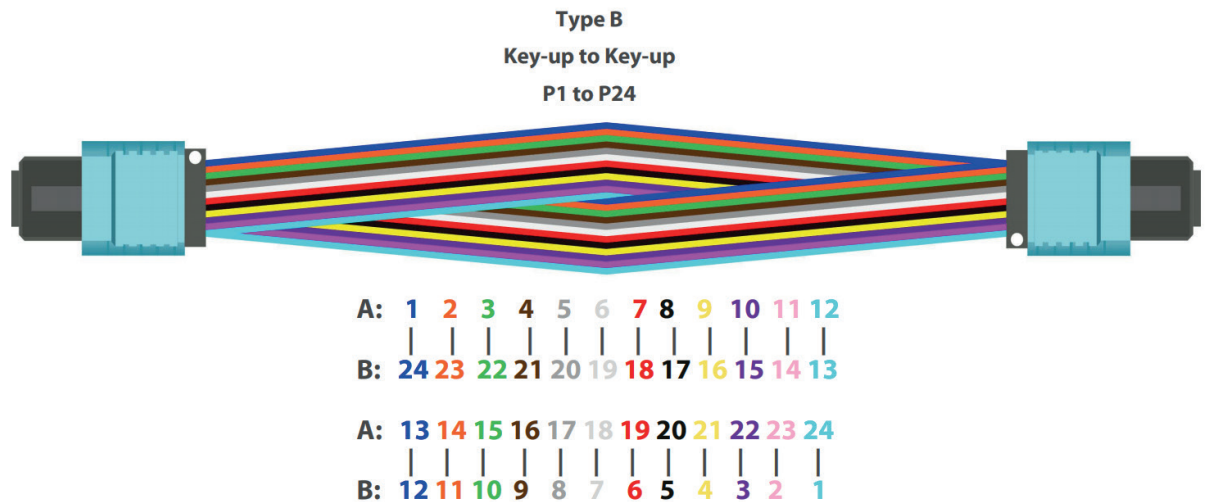
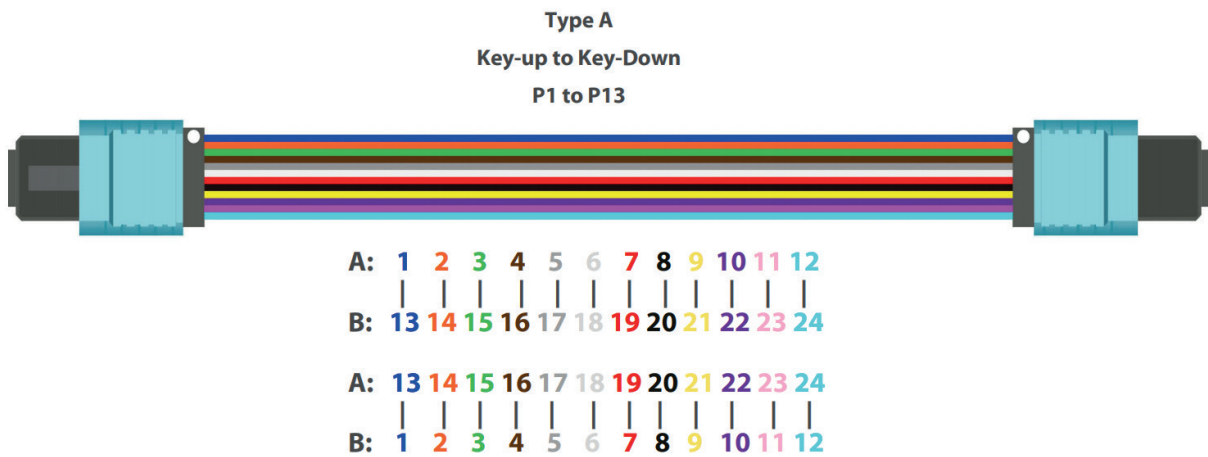
## 2.3 12-fiber MTP®/MPO array patch cord

There are three different 12-fiber MPO/MTP®-to-MPO/MTP® backbone cables defined in the TIA standard. The three different cables: Type A, B and C are used for the three different connectivity Methods A, B and C respectively.



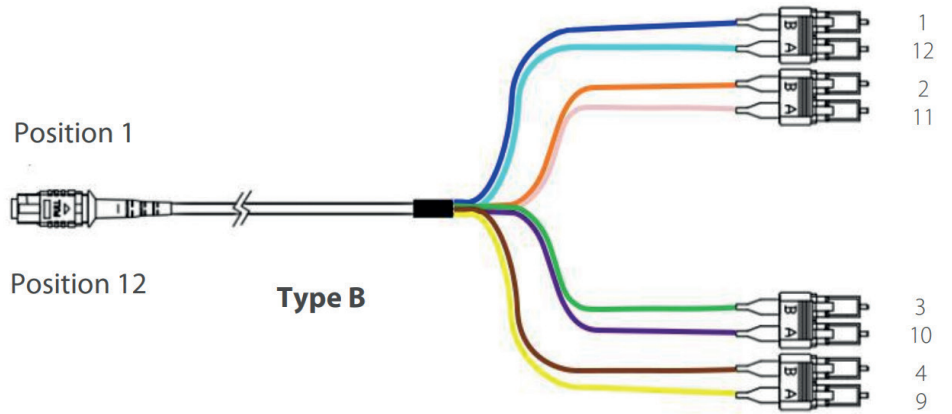
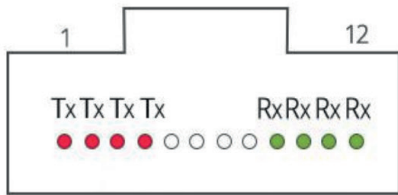
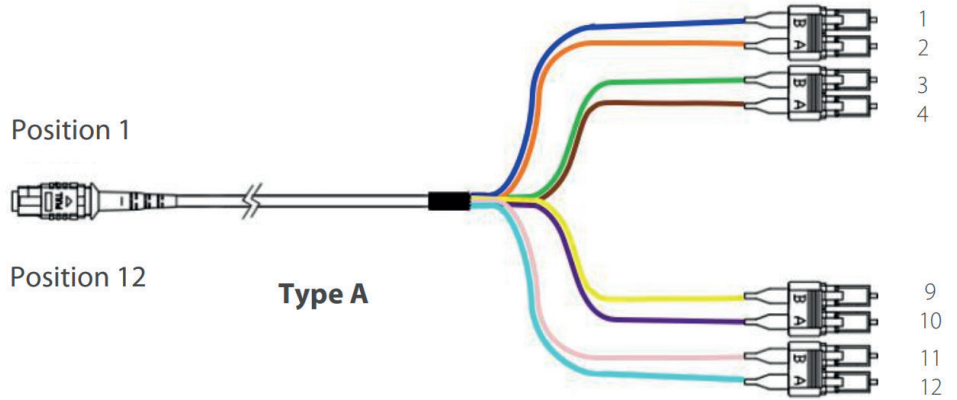
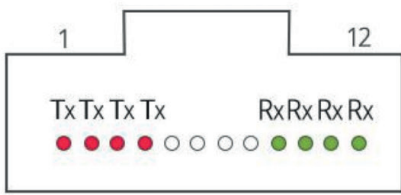
## 2.4 24-fiber MTP®/MPO array patch cord

There are three different 24-fiber MPO/MTP®-to-MPO/MTP® backbone cables defined in the TIA standard (TIA-568.3-D). The three different cables: Type A, B and C are used for the three different connectivity Methods A, B and C respectively



## 2.5 8-fiber MTP®/MPO breakout patch cord

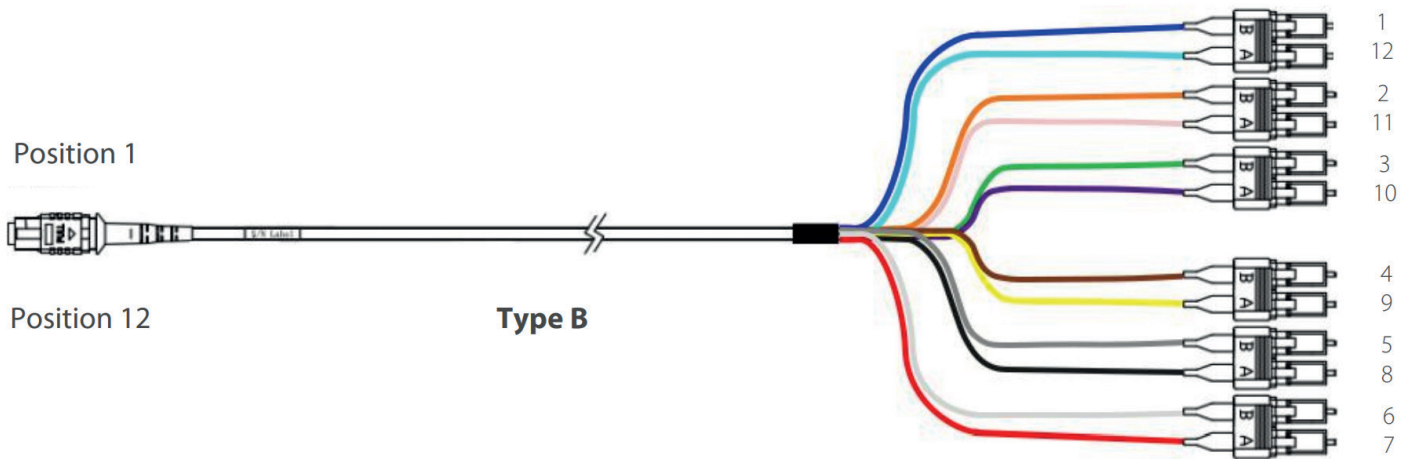
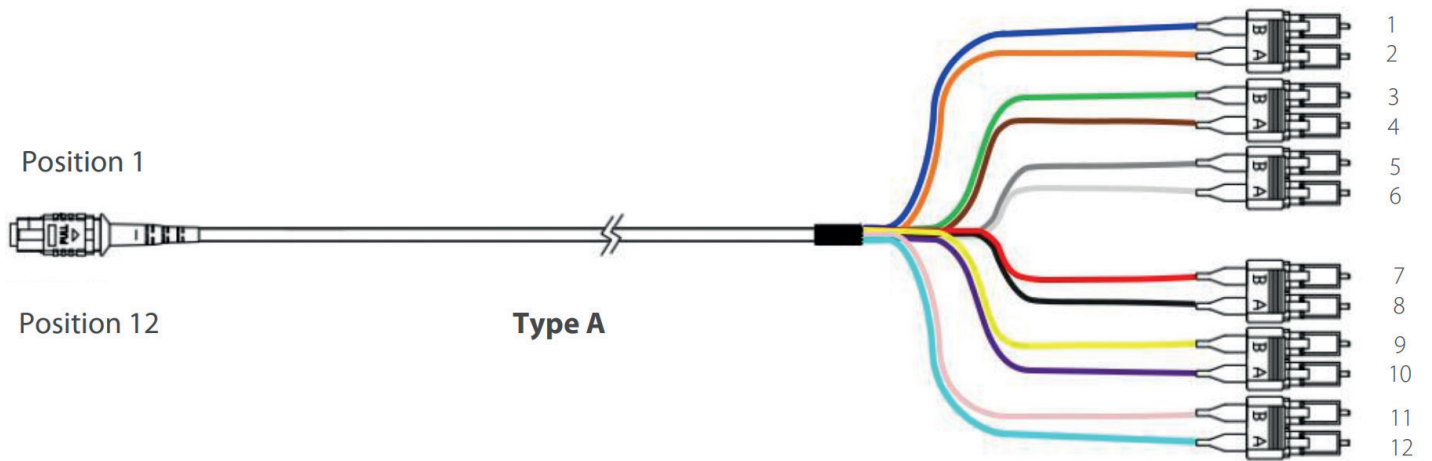
There are two different 8-fiber MPO/MTP® breakout cables: Type A and Type B.



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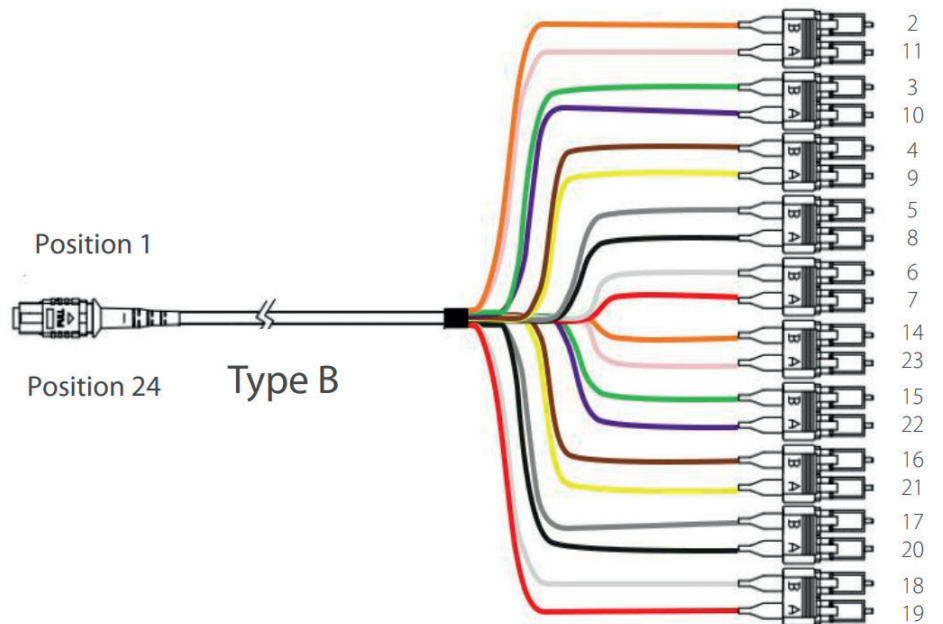
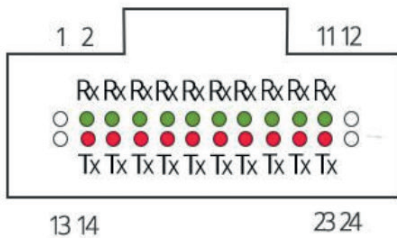
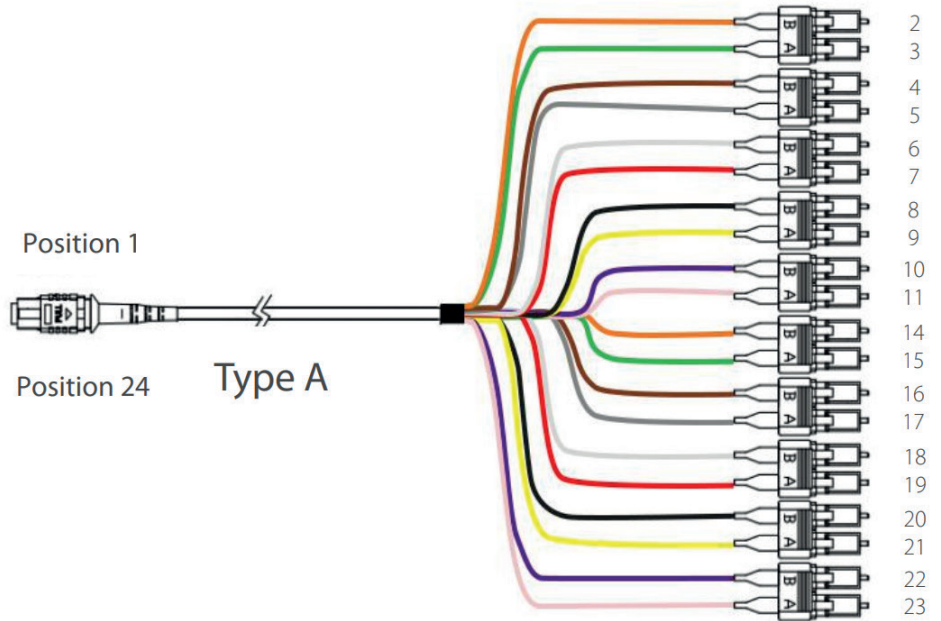
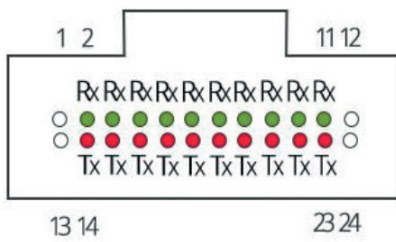
## 2.6 12-fiber MTP®/MPO breakout patch cord

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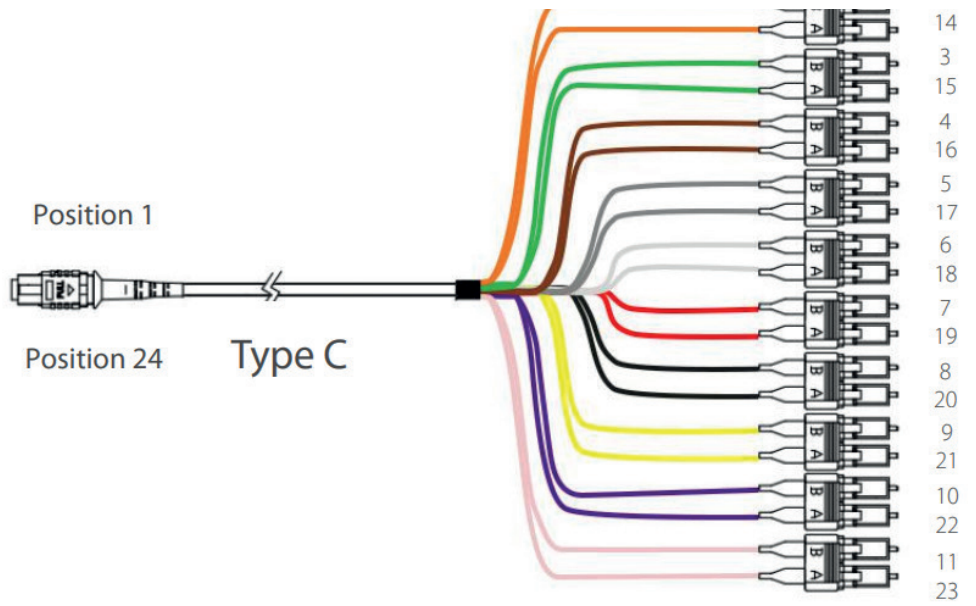
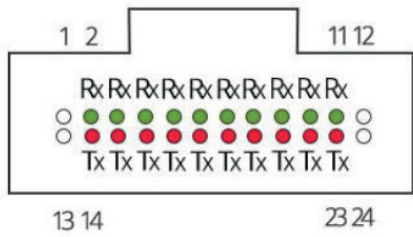


## 2.7 20-fiber MTP®/MPO breakout patch cord

There are three different 20-fiber MTP®/MPO breakout cables: Type A, Type B and Type C.

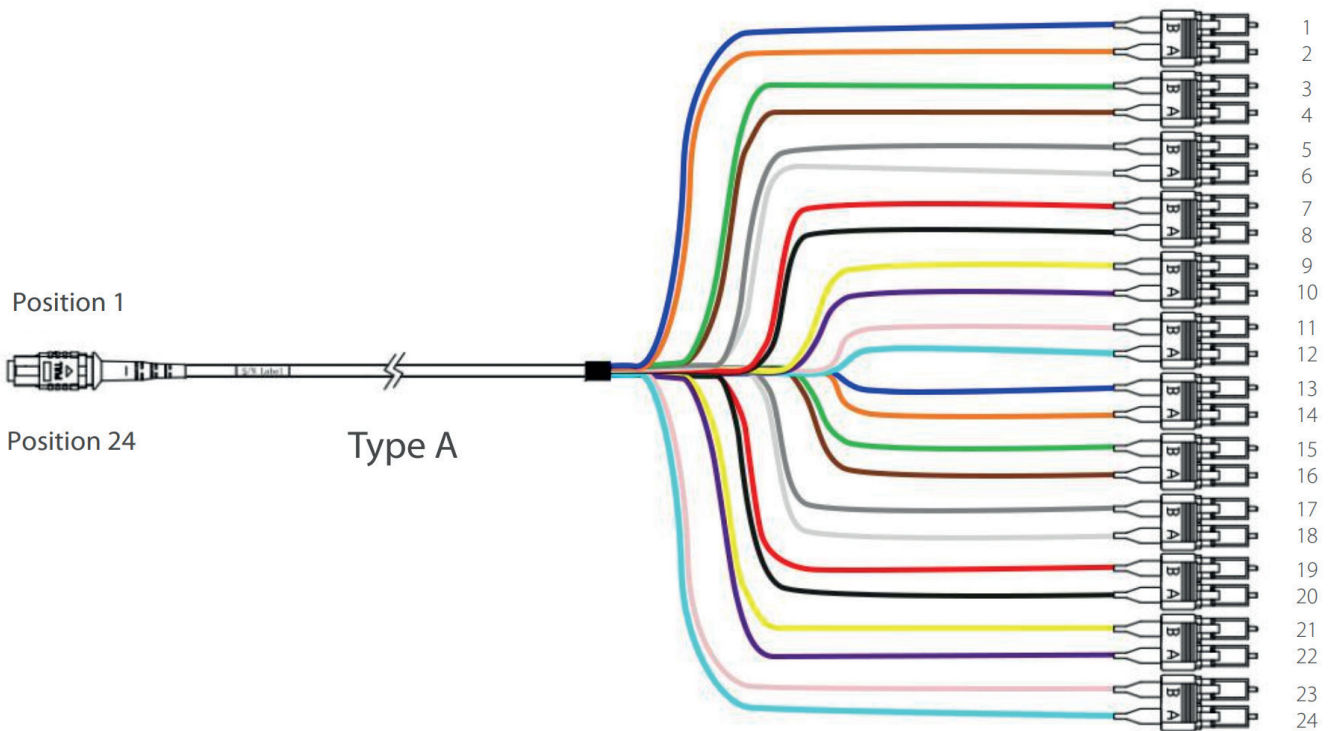


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## 2.8 24-fiber MTP®/MPO breakout patch cord

There are three different 24-fiber MTP®/MPO breakout cables: Type A, Type B and Type C.





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