Kinvergent

Fiber Quick Reference Guide

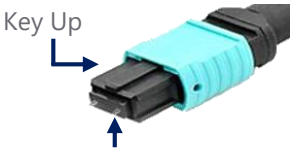
Fiber Optic Connector Types

Type	ST	SC	LC	FC	MT-RJ	E2000 & MU
Connector						
Polish*	PC, UPC	PC, UPC, APC	PC, UPC, APC	PC, UPC, APC	N/A	PC, UPC, APC
Ferrule Diameter	2.5 mm	2.5 mm	1.25 mm	2.5 mm	2.45 x 4.44 mm	2.5 & 1.25 mm

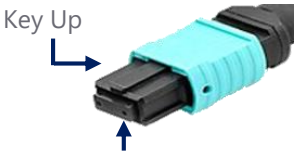
***PC** (Physical Contact) <-35dB Return Loss **UPC** (Ultra Physical Contact) <-55 dB Return Loss **APC** (Angled Physical Contact) <-65dB Return Loss

What is MPO/MTP?

MPO is a Multifiber Push-On connector. MTP is a type of MPO connector patented and made by US Conec that includes mechanical and performance enhancements, but remain 100% compatible with each other.



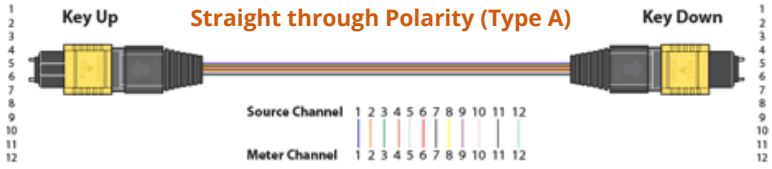
MPO/MTP (Male) - Pins

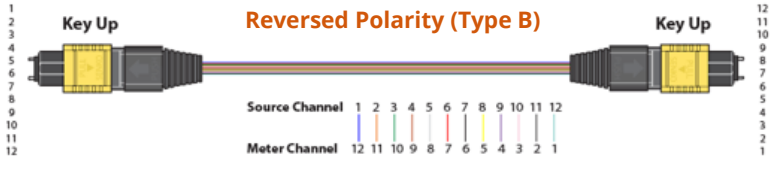


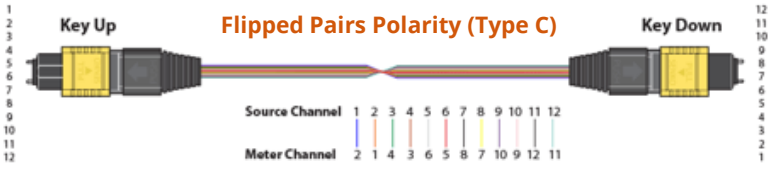
MPO/MTP (Female) – No Pins

12 Fiber MPO/MTP

24 Fiber MPO/MTP







General Rules for Polarity and Gender

1. Use the same type of patch cable in your network closets and data centers to eliminate polarity confusion. The most common for LC-LC duplex is a Type A to B crossover (maps Tx to Rx ports)
2. MPO/MTP connectors should always mate Male to Female for the lowest loss
3. Active equipment is always pinned Male, so MPO/MTP patch cables should always be Female to Female to avoid damage
4. Always use cassettes with Male MPO/MTP connectors
5. Trunk cables between cassettes should be Female to Female and use Polarity B. Allows for the use of standard A to B patch cables

NOTE: There can be exceptions to these rules depending on your current infrastructure and future initiatives, so we encourage you to contact one of our engineers to confirm your exact installation requirements.

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Fiber Cable Types (Speed and Distance)

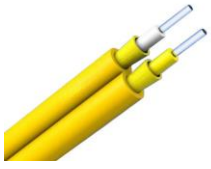
		Multimode					Singlemode
Speed	Wave Length (nm)	62.5um (OM1)	50um (OM2)	50um (OM3)	50um (OM4)	50um (OM5)	9um (OS1/OS2)
1000Base-SX	850	220m	550m	550m	550m	550m	-
1000Base-LX	1300	550m*	550m*	550m*	550m*	550m*	10km
10GBase-SR	850	32m	82m	300m	400m	400m	-
10GBase-LR	1310	300m*	300m*	300m*	300m*	300m*	10km
40GBase-SR4	850	-	-	100m	150m	150m	-
40GBase-LR4	1310	-	-	-	-	-	10km
100GBase-SR4	850	-	-	70m	100m	100m	-
100GBase-LR4	1310	-	-	-	-	-	10km
40GBase-SWDM4	850	-	-	240m	350m	440m	-
100GBase-SWDM4	850	-	-	75m	100m	150m	-

- Distances may vary due to fiber quality and hardware used
- OM5 Fiber is fully backwards compatible with OM3 and OM4, but can support at least four SWDM channels between 850nm-953nm

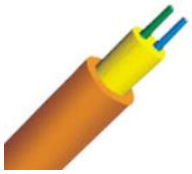
* Requires use of mode-conditioning patch cable at each end of the link.

Most Common Indoor Fiber Cable

Simplex



Duplex (Zip Cord)



2 Fiber Round

Distribution (Tight Buffer)

Breakout

Jacket Materials

LSZH (Low-Smoke Zero Halogen) – considerably reduces the amount of toxic gases released during combustion.
Plenum – made of fire-retardant PVC or FEP. Used in any enclosed area that facilitates environmental air handling.
Riser (PVC) – although fire retardant, the NEC specs are not as demanding as plenum and are only suitable for non-plenum vertical installations such as between floors of a building.

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