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High-density MPO / MTP wiring system

高密度MPO/MTP配线系统产品手册

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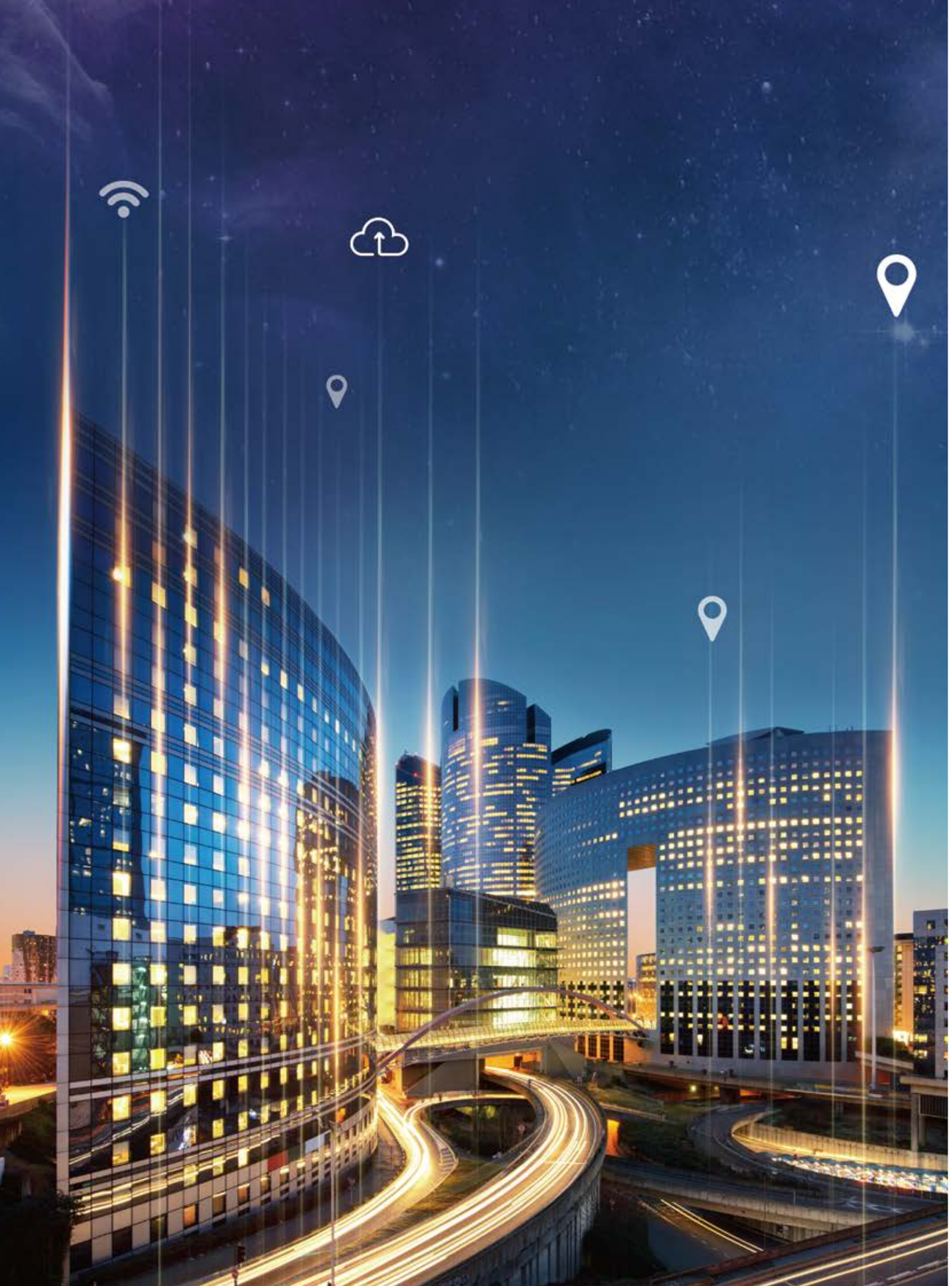
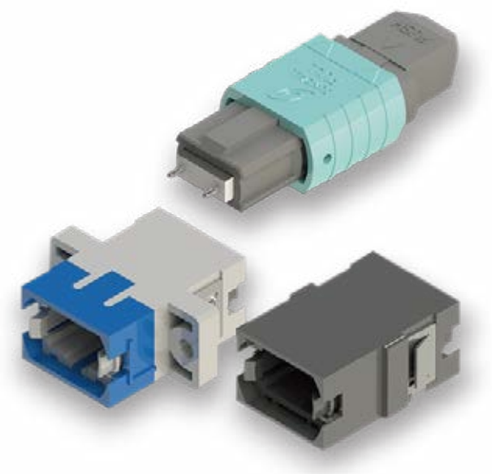


MPO Connectors & Adapters

MPO连接器，适配器



MPO光纤连接器是一种多芯光纤连接器类型，MPO为英文Multi Push On的缩写，被IEEE标准所采纳作为40G/100G传输的连接器类型一种 。MPO 高密度光纤预连接系统目前主要用于三大领域：数据中心的高密度环境的应用，光纤到大楼的应用，在分光器、40G,100G, QSFP+等光收发设备内部的连接应用 。

MPO is a multi-fiber connector, and it's shortened from Multi Push On. It's defined as connector of transferring speed of 40G/ 100G by IEEE standard. Now MPO HD pre-termination system is mostly used in: HD data centers, fiber to buildings, and connections in fiber optic splitters, receiving& transferring devices of 40G/ 100G/ QSFP+/...

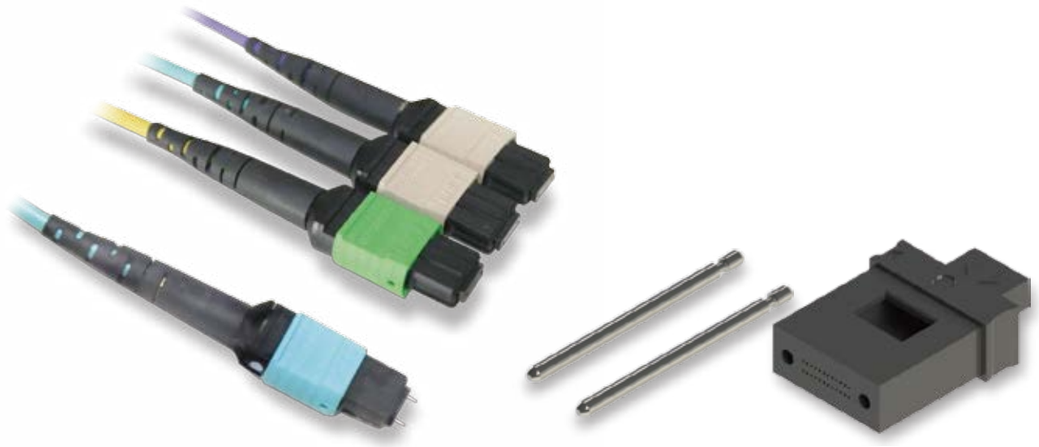
MPO连接器通常将12芯光纤排为一列，可支持一列或多列光纤在同一个MPO连接器内，标准由IEC 61754–7规范，根据连接器内排放的芯数不同分为一列（12芯），多列（24芯）。

Normally it's 12fibers per line, and there can be multi-lines in a MPO connector, the standard is defined by IEC 61754-7. For multi-line, it's 24fibers.

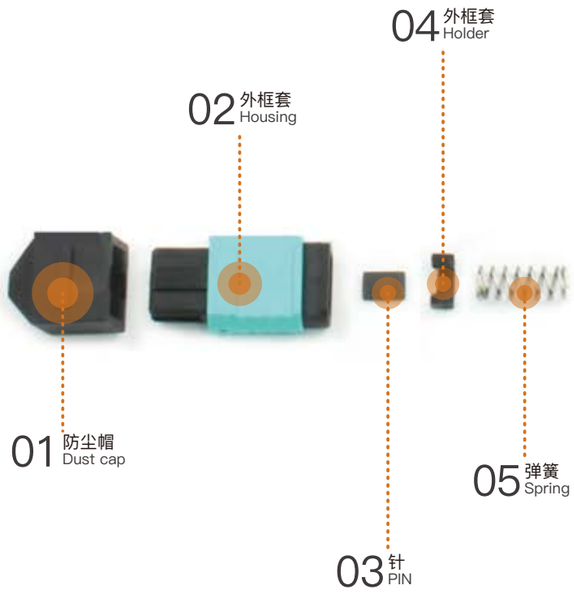
MPO连接器类型根据IEC 61754–7规定有几个因素来区分：芯数（光纤阵列数 Array Number），公母头（Male–Female），极性（Key），抛光类型（PC 或 APC），适用线径类型（束状圆缆或者带状扁缆）。

According to standard of IEC 61754-7, MPO connectors differ from: fibers(Array Number), Male or Female, Polarity, PC or APC, fiber cables suited for(round bundle cable or flat ribbon cable).

MPO公头与母头散件区别示意图
/ Difference between MPO connectors of male and female



MPO束状圆缆散件与带状扁缆散件区别示意图
/ Difference between MPO connectors of round bundle cable and flat ribbon cable



束状散件
/For round bundle cable

带状散件
/For flat ribbon cable

MPO插芯规格型号表 /Table of MPO ferrules

产品名称 Name	光纤孔直径 mm Aperture of ferrule/ mm	导针孔直径 mm Aperture of pins/ mm	偏心距 （mm） Concentricity error(mm)	材质 Material
4MT (MM)	0.127±0.001	0.7±0.001	<0.0025	PPS
8MT(MM)	0.127±0.001	0.7±0.001	<0.0025	PPS
8MT(MM 低损)	0.126+0.001/−0	0.7+0/−0.001	<0.0014	PPS
8MT(SM)	0.125+0.001/−0	0.7+0/−0.001	<0.0014	PPS
8MT(SM 低损)	0.125+0.005/−0	0.6990	<0.0007	PPS
12MT (MM)	0.127±0.001	0.7±0.001	<0.0025	PPS
12MT (MM 低损)	0.126+0.001/−0	0.7+0/−0.001	<0.0014	PPS
12MT(SM)	0.125+0.001/−0	0.7+0/−0.001	<0.0014	PPS
12MT(SM 低损)	0.125+0.005/−0	0.6990	<0.0007	PPS
24MT(MM)	0.127±0.001	0.7±0.001	<0.0025	PPS
24MT(MM 低损)	0.126+0.001/−0	0.7+0/−0.001	<0.0014	PPS
24MT(SM)	0.125+0.001/−0	0.7+0/−0.001	<0.0014	PPS
24MT(SM 低损)	0.125+0.005/−0	0.6990	<0.0007	PPS
48MT （MM)	0.127±0.001	0.7±0.001	<0.0025	PPS
48MT (SM)	0.125+0.001/−0	0.7+0/−0.001	<0.0014	PPS

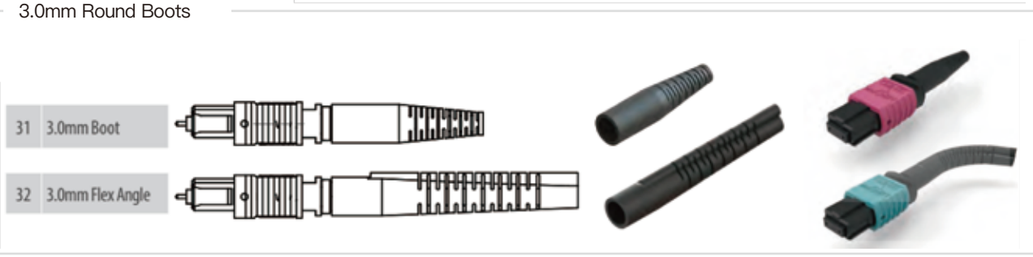
MPO束状圆缆散件
/ MPO connector of round bundle cable

MPO圆缆散件是用于Mini圆形束状光缆上的专用散件。MPO圆缆散件根据适用的线缆直径粗细分为MPO圆缆 ϕ2.0mm，ϕ3.0mm，ϕ3.6mm，ϕ4.5mm，ϕ5.0mm，ϕ5.5mm。

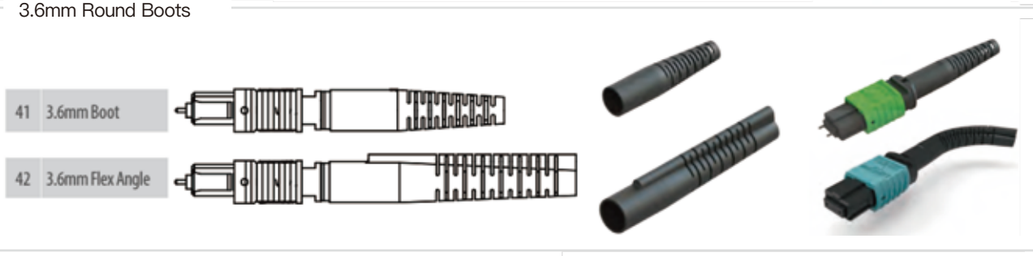
Such MPO connector is for round bundle cable only, and there're boots which are suitable for cables with different diameters: φ2.0mm, φ3.0mm, φ3.6mm, φ4.5mm, φ5.0mm, φ5.5mm.

2.0mm Round Boots

3.0mm Round Boots



3.6mm Round Boots



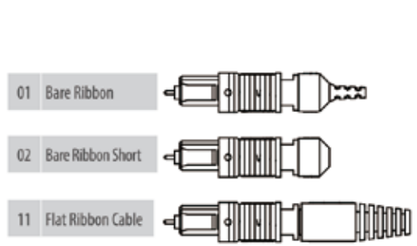
4.5/5.0/5.5 Round

MPO带状扁缆散件
/ MPO connector of flat ribbon cable

按照外框尾套的结构类型不同分为MPO常规散件，MPO–MINI短尾套散件，MPO高密度拉杆式散件，MPO可调节弯曲尾套散件。

As difference on boot and housing, there're these types for MPO connectors: Normal type, MPO-MINI Connector, High Density Push Pull Tab, and MPO Flex Angled Boot.

Ribbon Boots



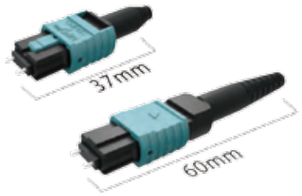
按照外框尾套的结构类型不同分为MPO常规散件，MPO–MINI短尾套散件，MPO高密度拉杆式散件，MPO可调节弯曲尾套散件。

As difference on boot and housing, there're these types for MPO connectors: Normal type, MPO-MINI Connector, High Density Push Pull Tab, and MPO Flex Angled Boot.

MPO可调节弯曲尾套散件
MPO Flex Angled Boot

支持0–90°任意方向弯曲。
It's flexible at any direction of 0–90°.

MPO–MINI短尾套散件
MPO–MINI Connector



整体长度37mm，比常规连接器长度短。
The total length is 37mm—shorter than normal connector.

MPO高密度拉杆式散件
High Density Push Pull Tab

拉杆式的设计，让连接器可以更密集的排列在一起。
The push pull tab allows high density rack applications

- 排列密度增加30%!
  The density is increased 30%!
- 可轻松拔出连接头
  The connector can be pulled out easily
- 连接器的柔性拉杆，方便连接器从高密度面板中拔出。这样就不需要把手指伸入连接器上按压Clip，所以适配器和连接器可以更加紧密的排列在一起!
  The push pull tap greatly simplify connectivity in the HD racks, then same spaces can hold more adapters and connectors.

MPO连接器选型指南
/ Ordering Information

1.确定连接头芯数
Fiber counts

2.确定连接头插芯型号（单模，多模）
Single mode or Multi mode

3.确定适用的线缆型号，选择对应的连接器（圆缆，带缆）
Round bundle cable or flat ribbon cable

4.根据链路对接的情况，确定是否安装PIN针（公头，母头）
With or without PIN (Male or Female)

5.根据特殊需求情况，选择特殊结构连接器（高密度，可弯曲尾套，MINI散件）
Or special connectors, like types of HD, flex angled boot, and MINI connector.

连接头参数表 /CONNECTOR SPECIFICATION

Usconec® MPO Connector		MM Elite® MT Ferrule	MM Standard MT Ferrule	SM Elite® MT Ferrule	SM Standard MT Ferrule
Insertion Loss (dB)	Typical	0.25 (All Fibers)	0.2 (All Fibers)	0.1 (All Fibers)	0.25 (All Fibers)
	Maximum	0.35 (Single Fiber)	0.60 (Single Fiber)	0.35 (Single Fiber)	0.75 (Single Fiber)
Return Loss(dB)		> 20	> 20	> 60 (8°Angle Polish)	> 60 (8°Angle Polish)
Exchangeability(dB)		≤0.3			
Durability(dB)		＜0.2 （500Matings,per EIA–455–21A)			
Tensile Strength(dB)		≤0.3 （Max 66N)			
Operating Temperature (℃)		–20~+60			
Storage Temperature (℃)		–40~+80			
Polarity		TIA–568–C.3 A, B, C			
Fiber Count		12, 24, 48, 72, 96 and 144			

光缆参数表 /CABLE SPECIFICATION

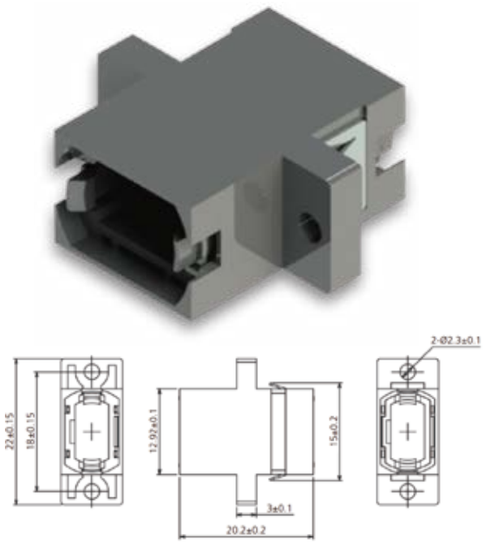
FIBER TYPE (ISO/IEC 11801 Nomendature)	OS2 (ITU 652.D compliant)	OM1	OM2	OM3	OM4
Core /Cladding Size (μm)	9/125	62.5/125	50/125	50/125	50/125
Wavelength (nm)	1310/1383/1550	850/1300	850/1300	850/1300	850/1300
Typical Attenuation dB/km)	0.34/0.34/0.20	2.7/0.6	2.2/0.6	2.2/0.6	2.2/0.6
Minimum Over Field Launch (OFL) Bandwidth (MHz–km)	–– / –– / ––	200/500	700/500	1500/500	3500/500
Laser Bandwidth/EMB (MHz–km)	–– / –– / ––	–– / ––	950/500	2000/ 500	4700/500
1 Gigabit Ethernet Distance (m)	5000 / –– / ––	300/500	750/500	1000/600	1040/600
10 Gigabit Ethernet Distance (m)	10000 / –– / 40000	33 / ––	150 / ––	300 / ––	550 / ––
40 Gigabit Ethernet Distance (m)	–– / –– / ––	–– / ––	–– / ––	140 / ––	190 / ––
100 Gigabit Ethernet Distance (m)	–– / –– / ––	–– / ––	–– / ––	140 / ––	190 / ––

MPO光纤适配器，配套MPO连接器使用，实现MPO连接器之间的互联。
/ MPO adapter is used to connect MPO connectors.

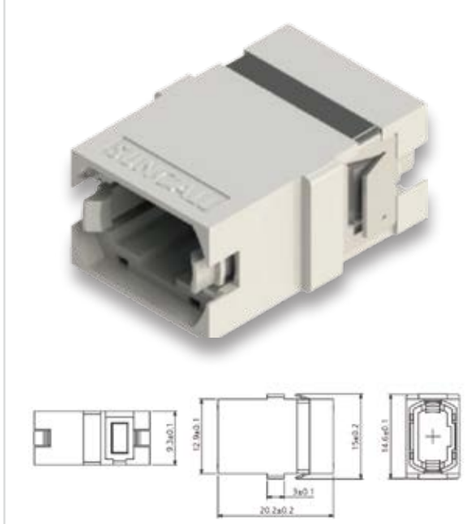
MPO适配可根据外形结构的不同分类为MPO单工有耳适配器，MPO单工无耳适配器，MPO 45°可堆叠适配器，MPO常规可堆叠适配器。

There are these types: MPO simplex adapter with flange , MPO Simplex adapter without flange , MPO 45° stackable adapter, and MPO normal stackable adapter.

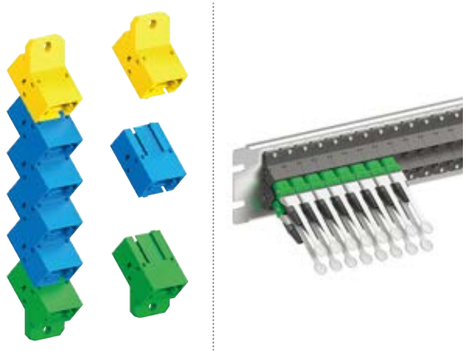
MPO单工有耳适配器
MPO Simplex adapter with flange



MPO单工无耳适配器
MPO Simplex adapter without flange

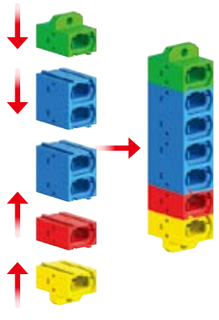


MPO 45°可堆叠适配器
MPO 45° stackable adapter

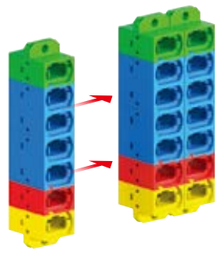


45°MPO适配器设计可让高密度的光纤走线更方便,同时减少激光对操作者的伤害.
This design makes it easier to have high-density installation, it also avoids harm of light to installers.

MPO 常规可堆叠适配器
MPO normal stackable adapter



垂直叠加
Vertical



水平叠加
Horizontal

根据外壳使用材料的不同，分为MPO塑料外壳适配器，MPO金属外壳适配器。
/ According to different materials, there're two types: MPO plastic adapter & MPO metal adapter.

MPO金属外壳适配器
MPO metal adapter

金属有耳
Metal housing with flange

金属无耳
metal housing without flange

MPO塑料外壳适配器
MPO plastic adapter

根据KEY键极性的不同，分为MPO同KEY适配器，MPO反KEY适配器，MPO可互换极性适配器。
/ According to difference of the Key, there're: MPO adapter with keys on same direction& MPO with keys on opposite direction, and MPO adapter with keys Interchangeable

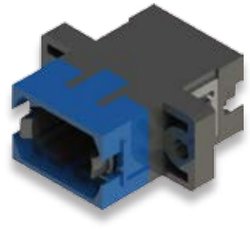
MPO同KEY适配器
MPO adapter with keys on same direction

KEY键槽口朝同一个方向。
The keys are on the same direction

MPO反KEY适配器
MPO with keys on opposite direction

KEY键槽口朝相反的不同方向。
The keys are on opposite direction

MPO可互换极性适配器
MPO adapter with keys Interchangeable



可以根据需求调整极性，在两种极性之间切换。
Polarities can be changed.

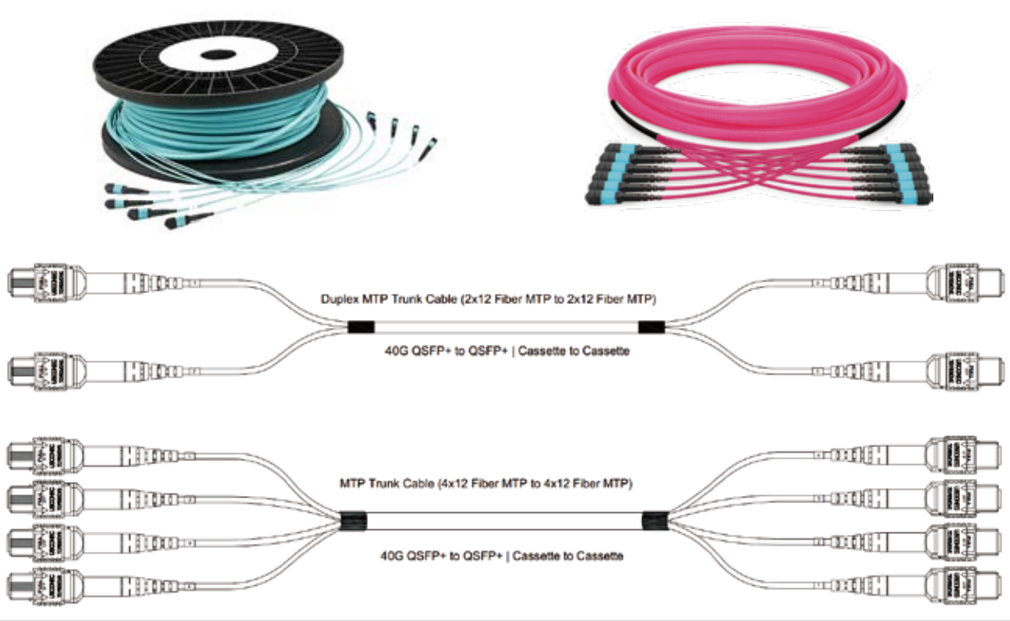
MPO-MPO Patch Cords
MPO主干缆跳线

MPO主干缆跳线，用于主干信号传输，两边多均为MPO接头。多使用圆缆，常用芯数有12/24/36/48/72/96/144芯。

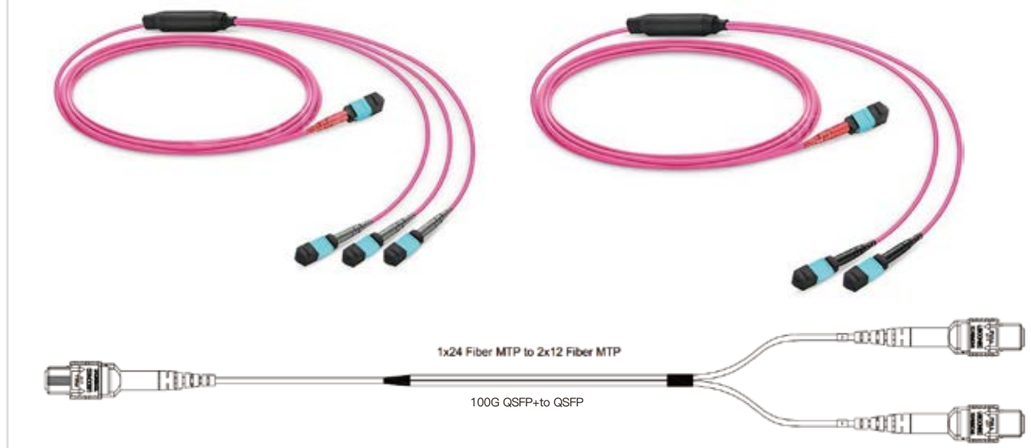
MPO -MPO patch cord is used for signal transmission, both sides are MPO connectors. Common cables are round type, and fiber counts are 12/24/36/48/72/144cores.

8/12/24芯–1*1单管式
8/12/24cores–1*1 single tube

24/48/72/96/144芯–N*N多管式
24/48/72/96/144cores–N*N multi– tubes



12/24/36芯–1*N分支多管式
12/24/36 cores–1*N fanout multi–tubes



MPO主干缆跳线极性介绍
Polarity of MPO patch cord

什么是极性?
What is polarity?

一般一条光链路需要两根光纤才能完成整个传输过程。比如，光模块包括接收端和发射端，使用时，必须确保接收端和发射端是处于互联状态，而在光纤链路两端的发送端（TX）到接收端（RX）的这种匹配就被称为极性。

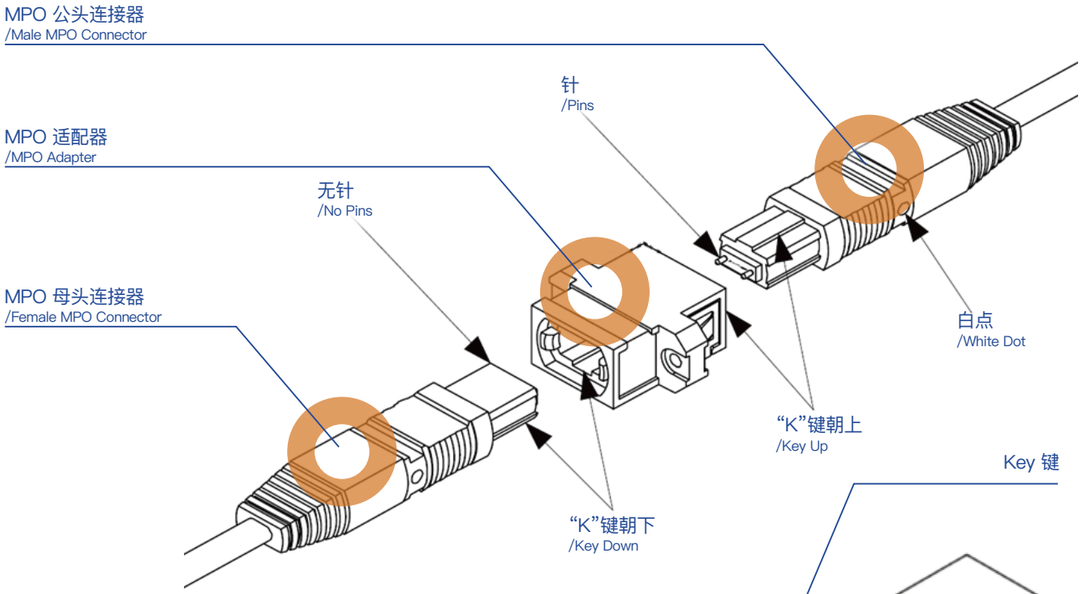
Normally a signal transmission needs two fibers. For example, optical module includes receiving and transmission types, during using, the receiving and transmission types must be connected with each other, and the matching between the transmission (TX) and receiving end (RX) types are called polarity.

在传统的布线系统中，通常情况下使用的是如LC、SC之类的连接头，因为此类连接头容易匹配，所以不存在极性选择的问题。但是，针对预端接高密度的布线系统，像MTP/MPO连接系统，则会存在极性问题，因此我们在布线中需要重视。

Connectors like LC and SC are frequently used in traditional wiring systems, because such connectors do not have matter with polarity. But polarity of connecting systems like MTP/MPO is necessary, and we must be aware of this during installation.

在区分MPO极性之前，我们首先要了解MPO的连接器和法兰的KEY键以及KEY键在对接的时候方位朝向。

Firstly, we must know keys' directions of the MPO connectors and adapters.



如上图，为MPO连接器通过MPO法兰对接时，KEY键位置和朝向示意图，可以看到MPO连接器正面，都有一个凸出的KEY键，在MPO适配器内部，有一个匹配凸出KEY的KEY槽。我们默认的常规MPO适配器，KEY槽的位置是两端相反的反KEY适配器，也就是我们将MPO适配器的两端分别接上MPO连接器的时候，两端的MPO连接头的KEY键也是相反的，一边KEY键朝上，一边KEY键朝下。

Like above picture- it's diagram for view of keys when MPO connector comes through MPO adapter, it's clear that there's a key on front of MPO connector, and there's a key groove inside the MPO adapter to match the key of the MPO connector. Keys on both sides of normal MPO adapter are on opposite positions, so when we connect the adapter with two MPO connectors, key of one of the MPO connectors is up, the other one is down.

而我们在判断MPO主干跳线的极性的时候，需要以KEY键的朝向作为辅助参照点来进行极性的判断。

So direction of the keys is a standard to check polarity of the MPO-MPO patch cords.

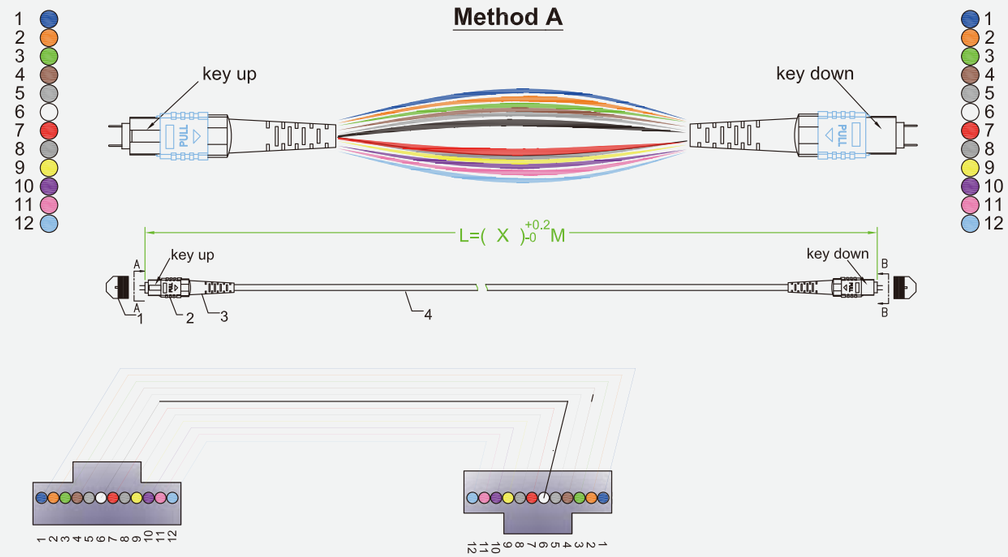
MPO系统的极性怎么区分？有哪些标准？

How to distinguish the polarity of MPO system? What's the standard?

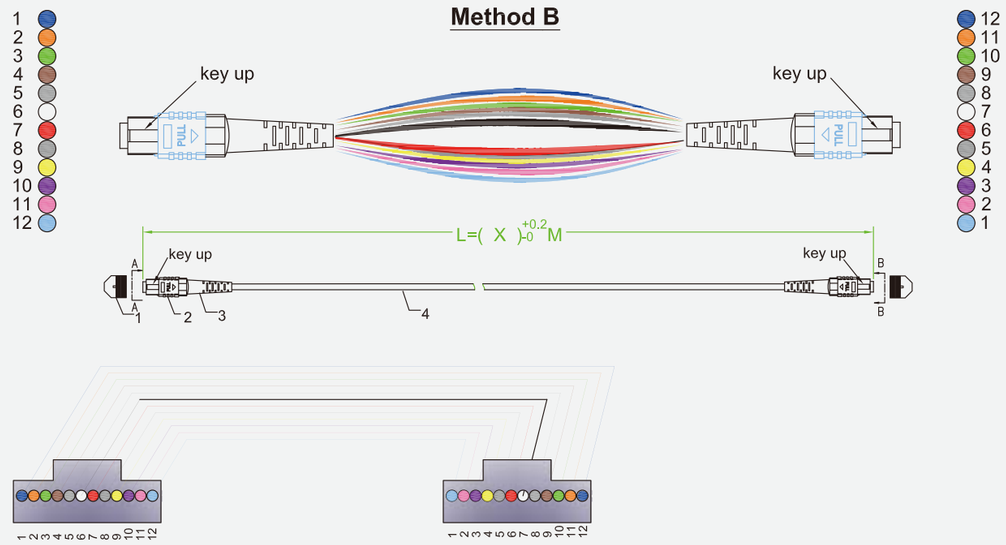
标准规定的极性方法有三种，即Type A （key up 对应 key down 直通型）、Type B（key up 对应 key up/key down对应key down交错型）、Type C（key up 对应 key down成对交错型）。

There are three types of polarity: Type A (key up- key down), Type B (key up - key up/ key down- key down), and Type C (key up- key down in pairs).

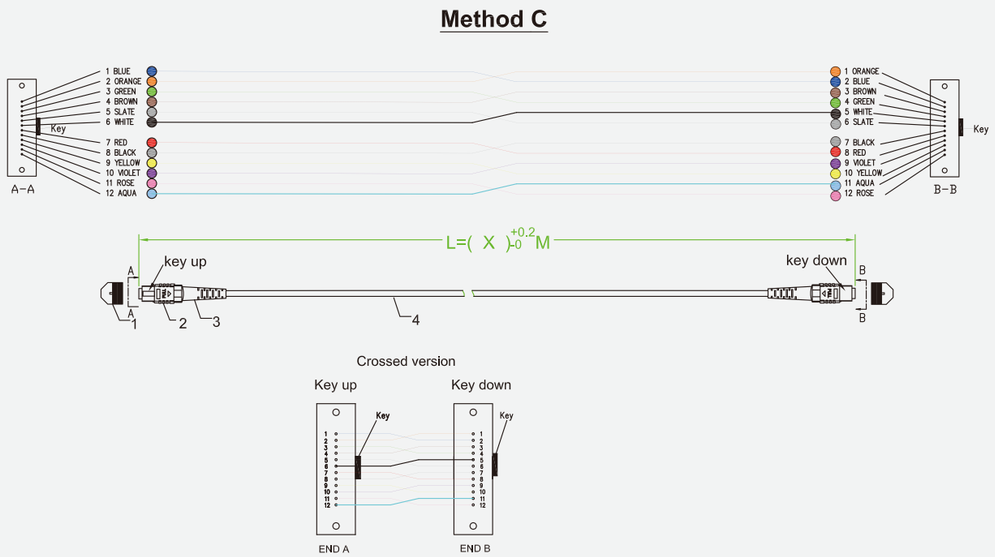
Type A （key up 对应 key down 直通型）
/ Type A (key up– key down)



Type B（key up 对应 key up/key down对应key down交错型）
/ Type B (key up – key up/ key down– key down)



Type C（key up 对应 key down成对交错型）
/ Type C (key up– key down in pairs)



主干MPO跳线选型表 /Ordering Information

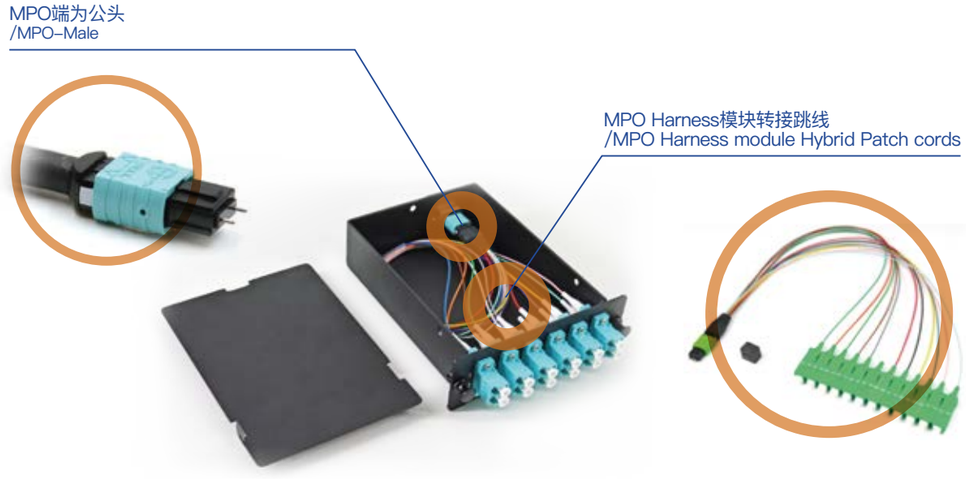
芯数 Fiber Counts	连接头A端 Connector A	连接头B端 Connector B	损耗等级 Fiber Counts	极性 Polarity	光缆结构 Cable	光纤纤芯 Fiber Type	光缆外皮 Cable Jacket
8	SM/UPC 12C 母	SM/UPC 12C 母	标准损耗 Standard Loss ≤0.7db 低损耗 Low Loss ≤0.35db	A极性 TIA–568–C.3A B极性 TIA–568–C.3B C极性 TIA–568–C.3C	Mini束状圆缆 Mini bundle cable 带状扁形 Ribbon cable 裸带状扁形 Bare ribbon cable	SM–9/125–G652D	OFNP
12	SM/APC 12C 母	SM/APC 12C 母				SM–9/125–G657A1	OFNR
24	SM/UPC 24C 母	SM/UPC 24C 母				SM–9/125–G657A2	LSZH
36	SM/APC 24C 母	SM/APC 24C 母				MM–62.5/125–OM1	
48	MM/UPC 12C 母	MM/UPC 12C 母				MM–50/125–OM3–150	
72	MM/UPC 24C 母	MM/UPC 24C 母				MM–50/125–OM3–300	
96	SM/UPC 12C 公	SM/UPC 12C 公				MM–50/125–OM4–550	
144	SM/APC 12C 公	SM/APC 12C 公					
	SM/UPC 24C 公	SM/UPC 24C 公					
	SM/APC 24C 公	SM/APC 24C 公					
	MM/UPC 12C 公	MM/UPC 12C 公					
	MM/UPC 24C 公	MM/UPC 24C 公					

MPO Harness module Hybrid Patch cords

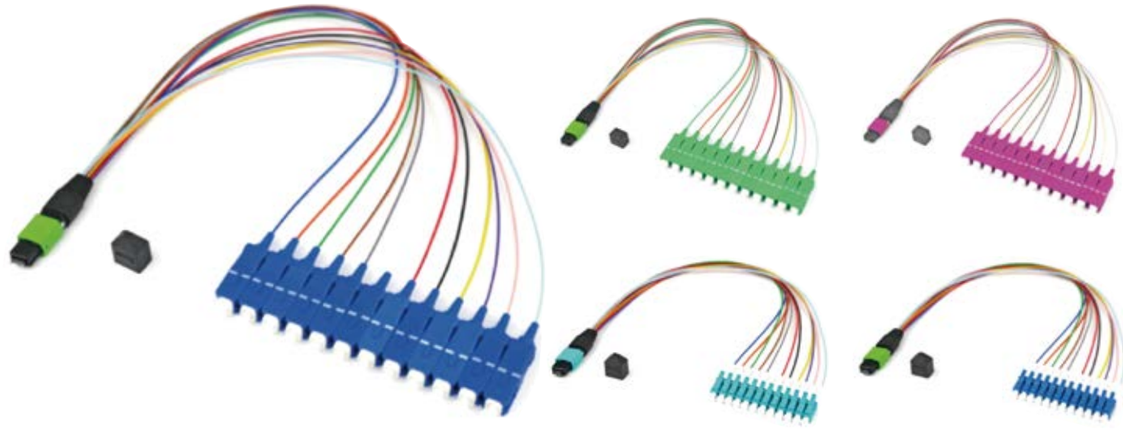
MPO Harness模块转接跳线

MPO Harness模块转接跳线，是专用于小型模块盒内部的转接跳线。其特点是米数较短，转接分支出来的缆径较细，标准为φ0.9mm，MPO端连接头为公头带PIN针。

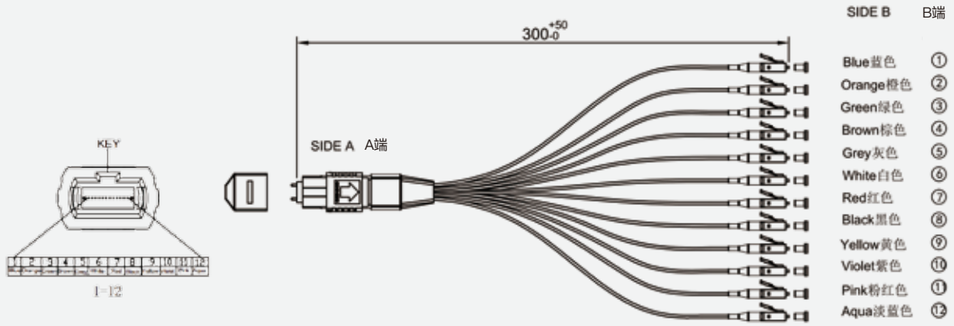
MPO Harness module Hybrid Patch cords are used in MPO cassette only. Such patch cords are short, and OD of the fan-out cables are small- normally it's φ0.9mm, and the MPO connector is male.



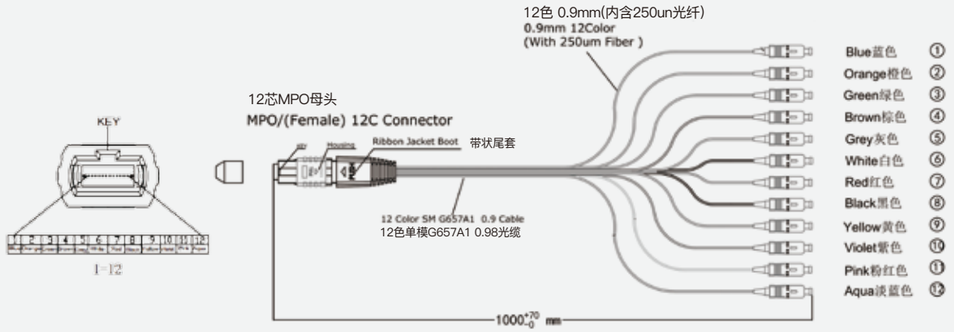
MPO Harness模块转接跳线实物图
/Pictures of MPO Harness module Hybrid Patch cords



MPO Harness12芯模块转接跳线线性图(转LC)
/ Drawing for MPO Harness 12cores module Hybrid Patch cords(To LC)



MPO Harness12芯模块转接跳线线性图(转SC)
/ Drawing for MPO Harness 12cores module Hybrid Patch cords(To SC)



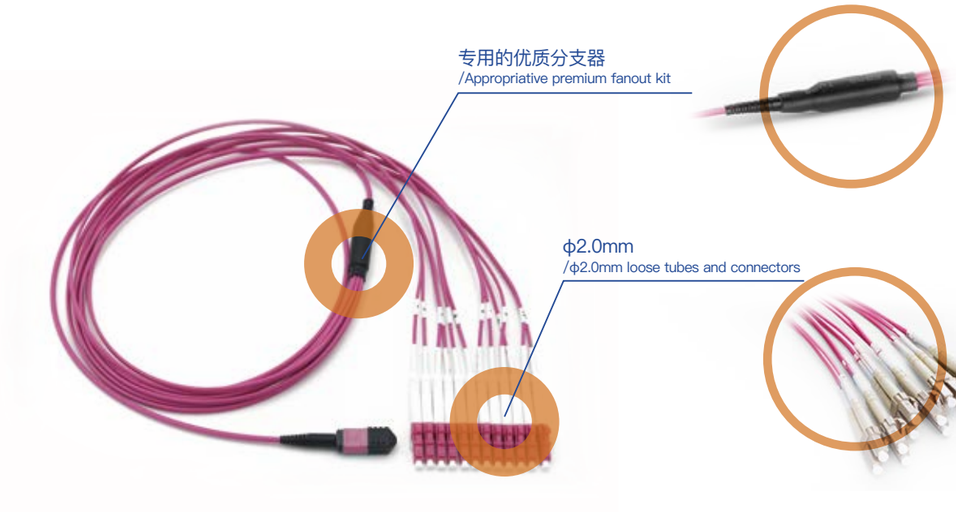
MPO Harness跳线选型表 /Ordering Information

芯数 Fiber Counts	连接头A端 Connector A	连接头B端 Connector B	损耗等级 Fiber Counts	极性 Polarity	光缆结构 Cable	光纤纤芯 Fiber Type	光缆外皮 Cable Jacket
8	SM/UPC 12C 公	LC/UPC SM	标准损耗 Standard Loss ≤0.7db	IH-MPO-A 固定插卡式模块盒	Mini束状圆缆 Mini bundle cable	SM-9/125-G652D	OFNP
12	SM/APC 12C 公	LC/UPC MM		IH-MPO-B 固定插卡式模块盒	带状扁形 Ribbon cable	SM-9/125-G657A1	OFNR
24	SM/UPC 24C 公	LC/APC SM	低损耗 Low Loss ≤0.35db	IH-MPO-C 免拆卸式模块盒	裸带状扁形 Bare ribbon cable	SM-9/125-G657A2	LSZH
	SM/APC 24C 公	SC/UPC SM				MM-62.5/125-OM1	
	MM/UPC 12C 公	SC/APC SM				MM-50/125-OM2	
	MM/UPC 24C 公	SC/UPC MM				MM-50/125-OM3-150	
						MM-50/125-OM3-300	
						MM-50/125-OM4-550	

MPO Fanout Hybrid Patch cord
MPO Fanout转接跳线

MPO Fanout转接跳线，主要用于QSFP模块与SFP模块之间的互联，或者MPO接头与LC接头之间的转接。其特点是转接分支出来的缆径较粗，标准为ϕ2.0mm粗。

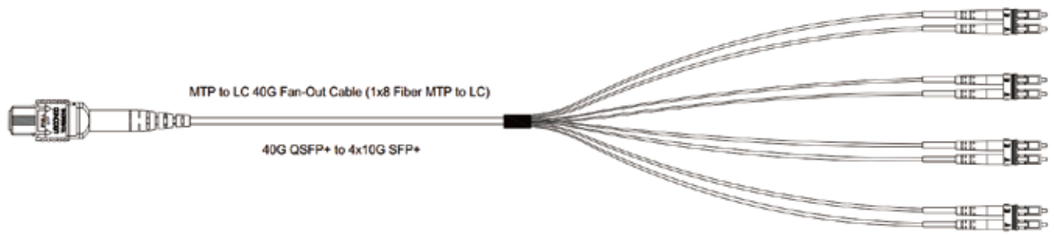
MPO Fanout Hybrid Patch cord is mainly used to connect QSFP and SFP modules, or MPO and the LC connectors. Normally OD of the fanout cables is 2.0mm.



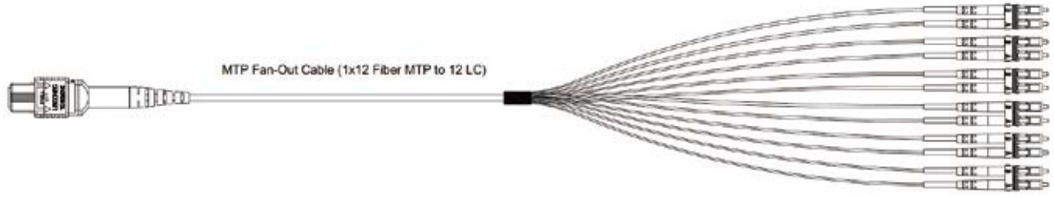
常规MPO Fanout转接跳线实物图
/Pictures of MPO Fanout Hybrid patch cords

高密度MPO Fanout转接跳线实物图
/ MPO HD Fanout Patch Cords

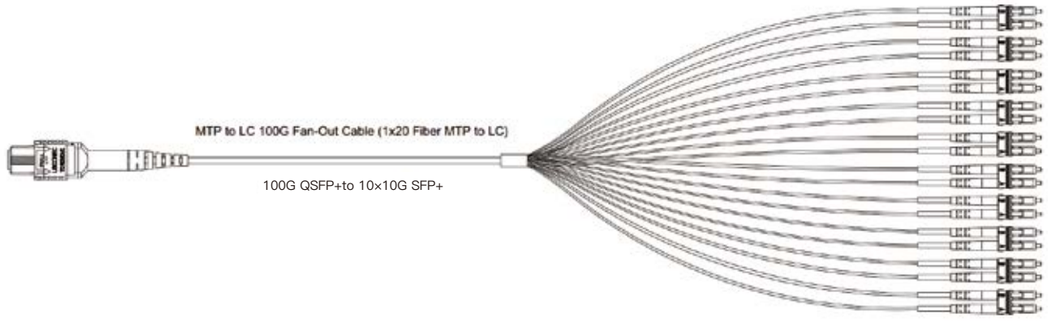
MPO Fanout 8芯转接跳线线性图（40G QSFP–4*10G SFP+）
/ Drawing for MPO Fanout 8cores Hybrid patch cord(40G QSFP-4*10G SFP+)



MPO Fanout 12芯转接跳线线性图
/ Drawing for MPO Fanout 12cores Hybrid patch cord



MPO Fanout 24芯转接跳线线性图（100G QSFP–10*10G SFP+）
/ Drawing for MPO Fanout 24cores Hybrid patch cord（100G QSFP-10*10G SFP+）



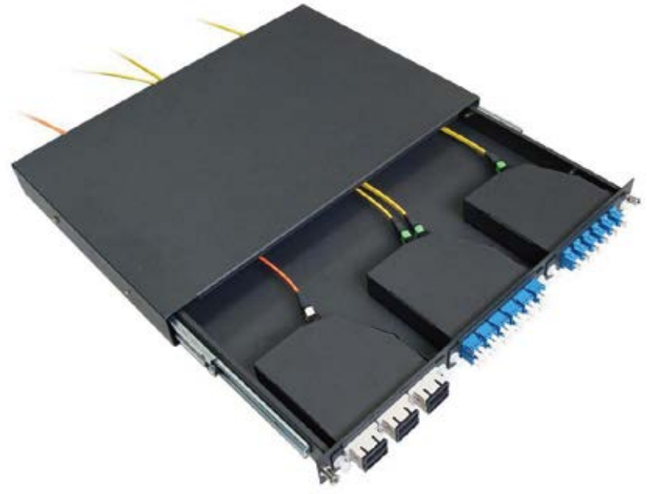
MPO Fanout转接跳线选型表 /Ordering Information

芯数 Fiber Counts	连接头A端 Connector A	连接头B端 Connector B	损耗等级 Fiber Counts	光缆结构 Cable	光纤纤芯 Fiber Type	光缆外皮 Cable Jacket
8	SM/UPC 12C 母	LC/UPC SM	标准损耗 Standard Loss	Mini束状圆缆 Mini bundle cable	SM–9/125–G652D	OFNP
12	SM/APC 12C 母	LC/UPC MM	≤0.7db	带状扁形 Ribbon cable	SM–9/125–G657A1	OFNR
24	SM/UPC 24C 母	LC/APC SM	低损耗 Low Loss		SM–9/125–G657A2	LSZH
	SM/APC 24C 母	SC/UPC SM	≤0.35db		MM–62.5/125–OM1	
	MM/UPC 12C 母	SC/APC SM			MM–50/125–OM2	
	MM/UPC 24C 母	SC/UPC MM			MM–50/125–OM3–150	
	SM/UPC 12C 公	FC/UPC SM			MM–50/125–OM4–550	
	SM/APC 12C 公	FC/UPC MM				
	SM/UPC 24C 公	FC/APC SM				
	SM/APC 24C 公	ST/UPC SM				
	MM/UPC 12C 公	ST/UPC MM				
	MM/UPC 24C 公					

MPO HD Patch Panels
MPO高密度配线架

我司设计生产的MPO配线架分为3个系列，MPO–A固定插卡式，MPO–B固定插卡式，MPO–C免拆卸式。

For MPO patch panels, we have three types: fixed insert type– MPO-A& MPO-B, free-removable type– MPO-C.



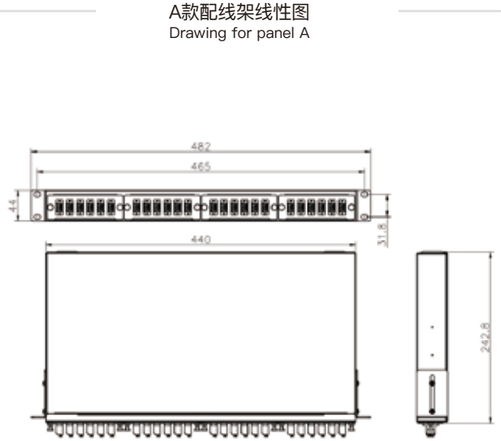
A

MPO–A固定插卡式
MPO–A

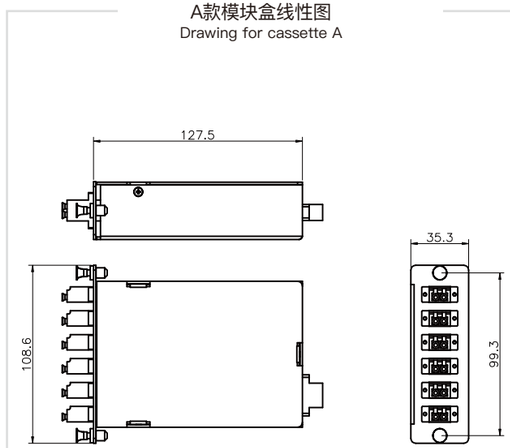
配线架和模块盒均采用冷轧板钣金材料，模块盒使用柳丁扣在配线架上插拔。

Both panel and cassette are made with cold rolled sheet, and the cassette is fixed on panel with clasps.

A款配线架线性图
Drawing for panel A



A款模块盒线性图
Drawing for cassette A



A款配线架包装尺寸对照表 /Packing Information

高度 Height	产品尺寸 Dimension	模块容纳数 Capacity of cassettes	容纳芯数 Capacity/ Cores	重量 Weight
1U	485*245*44mm	4	12–96芯	4.0kg
2U	485*245*85mm	8	96–192芯	7.0kg
3U	485*245*133mm	12	192–288芯	10.0kg
单个模块芯数12–24芯，按LC接口计算芯数 Capacity of each cassette is 12–24cores(LC ports)				空模块+机架 Empty cassette + panel

B

MPO–B固定插卡式
MPO–B

配线架采用冷轧板材料，表面磨砂喷漆，模块盒使用铝板+塑料适配器面板组合材料。模块盒使用按压式阀门扣在配线架上插拔。

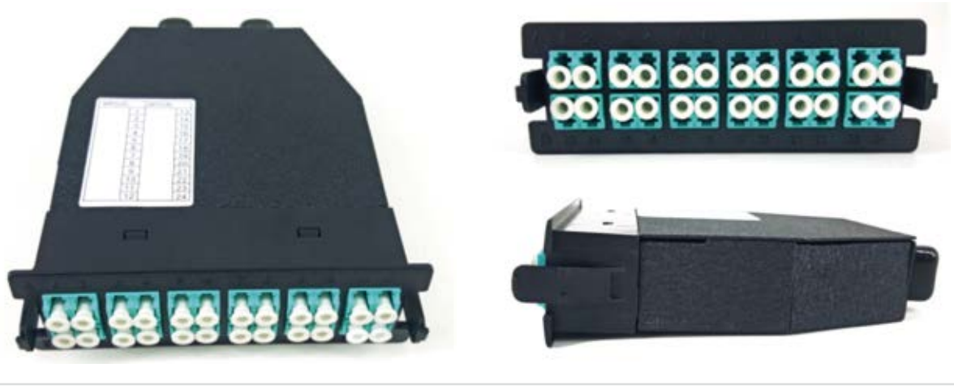
The panel is made with cold rolled sheet and frosted painting; cassette is made with aluminum, and adapter plate is made with plastic. The cassette is fixed on the panel with pressing valve.

1U实物图
Picture of 1U

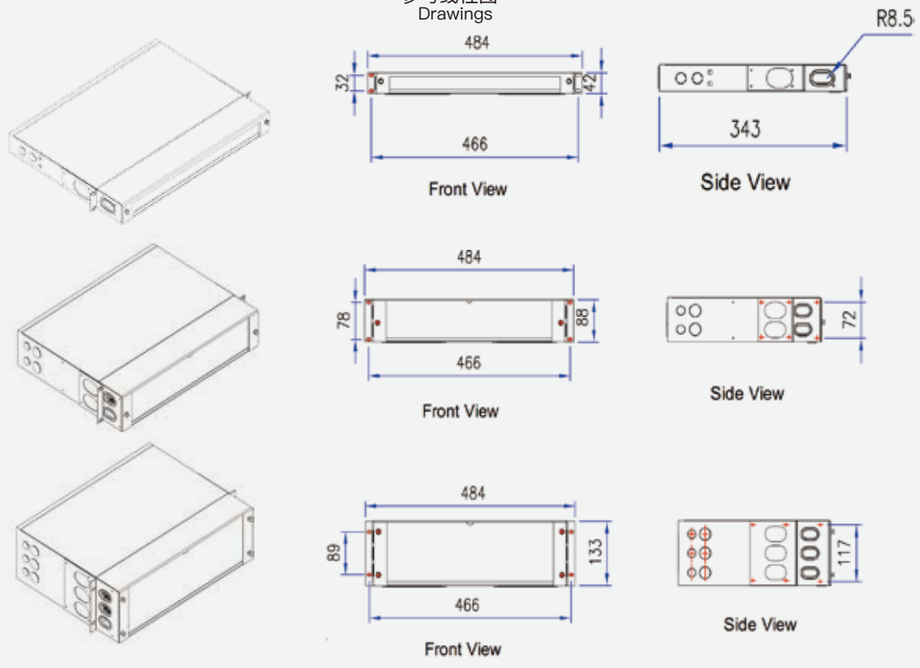
2U实物图
Picture of 2U

3U实物图
Picture of 3U

通用模块盒实物图
Cassette



参考线性图
Drawings



B款配线架包装尺寸对照表 /Packing Information

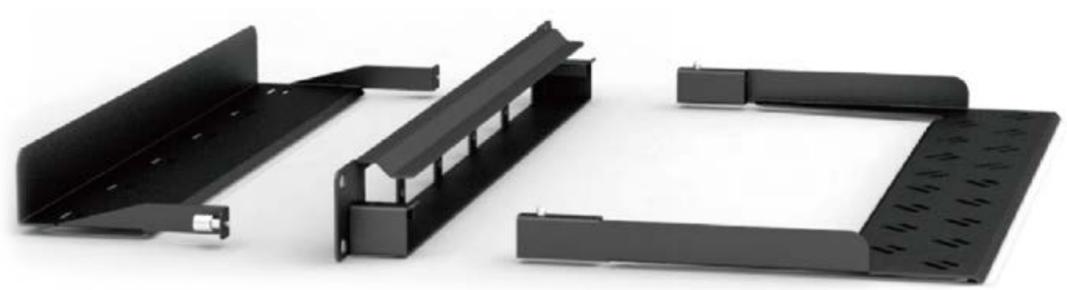
高度 Height	产品尺寸 Dimension	模块容纳数 Capacity of cassettes	容纳芯数 Capacity/ Cores	重量 Weight
1U	485*343*42mm	4	12–96芯	4.0kg
2U	485*343*88mm	8	96–192芯	7.0kg
3U	485*343*133mm	12	192–288芯	10.0kg
单个模块芯数12–24芯，按LC接口计算芯数 Capacity of each cassette is 12–24cores(LC ports)				空模块+机架 Empty cassette + panel

C

MPO–C免拆卸式
MPO–C

配线架采用不锈钢作为组装骨架，与传统配线架形式不同，配线架的安装架不再是盒式或箱式的样式，而是简单的可拆卸的安装套件，安装方便，整套的配线架使用的材料更少更轻便环保。而且模块盒的样式也经过改进，两边固定柳丁扣位置，采用的交叉式的上面不对称式的设计，这样在安装时候可以节省出更多的面积，可以在同样的安装面积下比传统款式的安装更多的模块盒。

This panel is made with stainless steel, unlike box structure of normal panels, this one is assembled with separated parts, such structure simplifies the installation. Aluminum and the simple structure make the panel lighter and more protective for environment. The cassette is also improved, it's fixed on the panel with clasps too, but the two clasps are on different positions, then more cassettes can be installed at the same space.



高密度模块盒实物图
Picture of the HD cassette

免拆卸式配线架实物图
/ Picture of the Panel

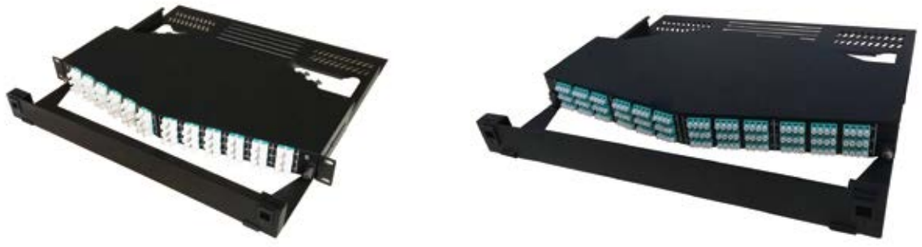
组装前
Before assembly

组装后
After assembly

1U–4端口满配
1U 4ports– Fully assembled

2U–12端口满配
2U 2ports– Fully assembled

45°扇形高密度满配
45°fan shaped HD– fully assembled

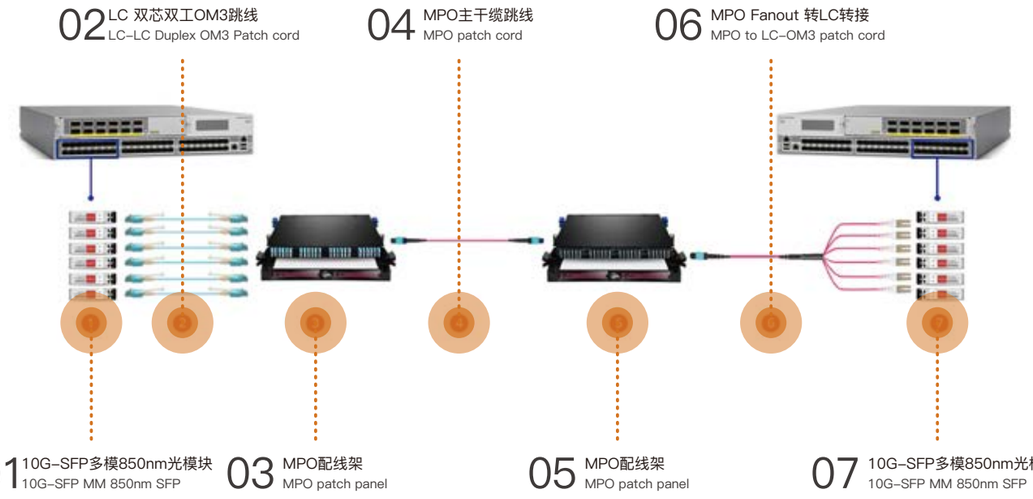


C款配线架包装尺寸对照表 /Packing Information

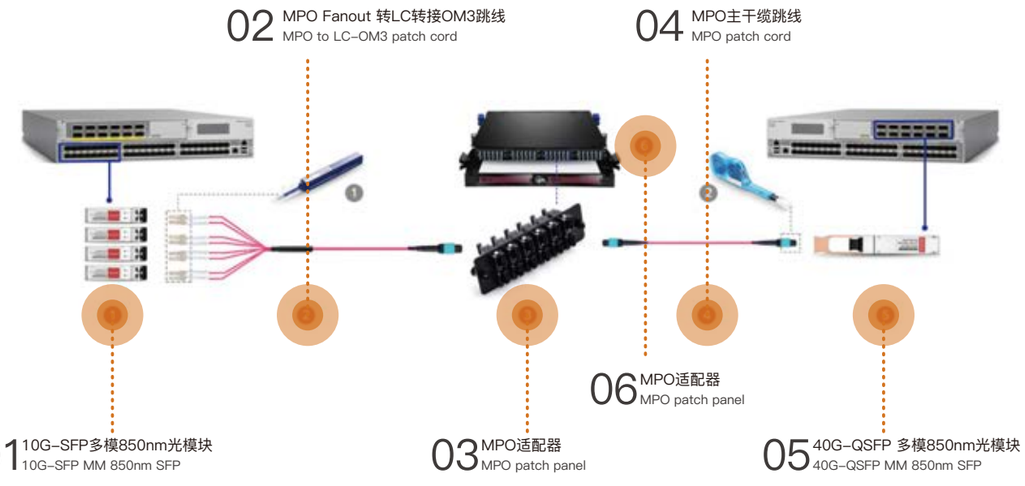
高度 Height	产品尺寸 Dimension	模块容纳数 Capacity of cassettes	容纳芯数 Capacity/ Cores	重量 Weight
1U	485*255*42mm	4	12–96芯	3.0kg
2U	485*255*88mm	12	192–288芯	6.0kg
单个模块芯数12–24芯，按LC接口计算芯数 Capacity of each cassette is 12–24cores(LC ports)				空模块+机架 Empty cassette + panel

MPO wiring systems
MPO常见布线系统介绍

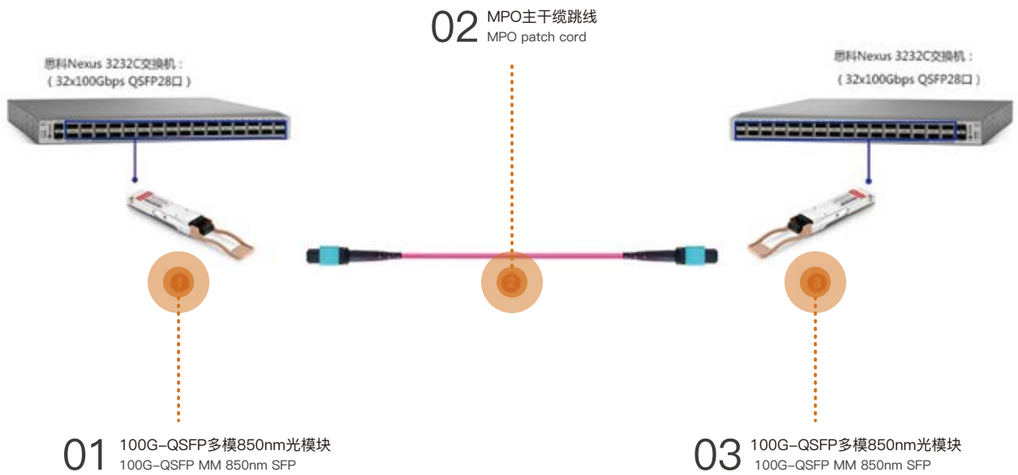
10 Gbps互联解决方案
/ 10 Gbps Interconnector solutions



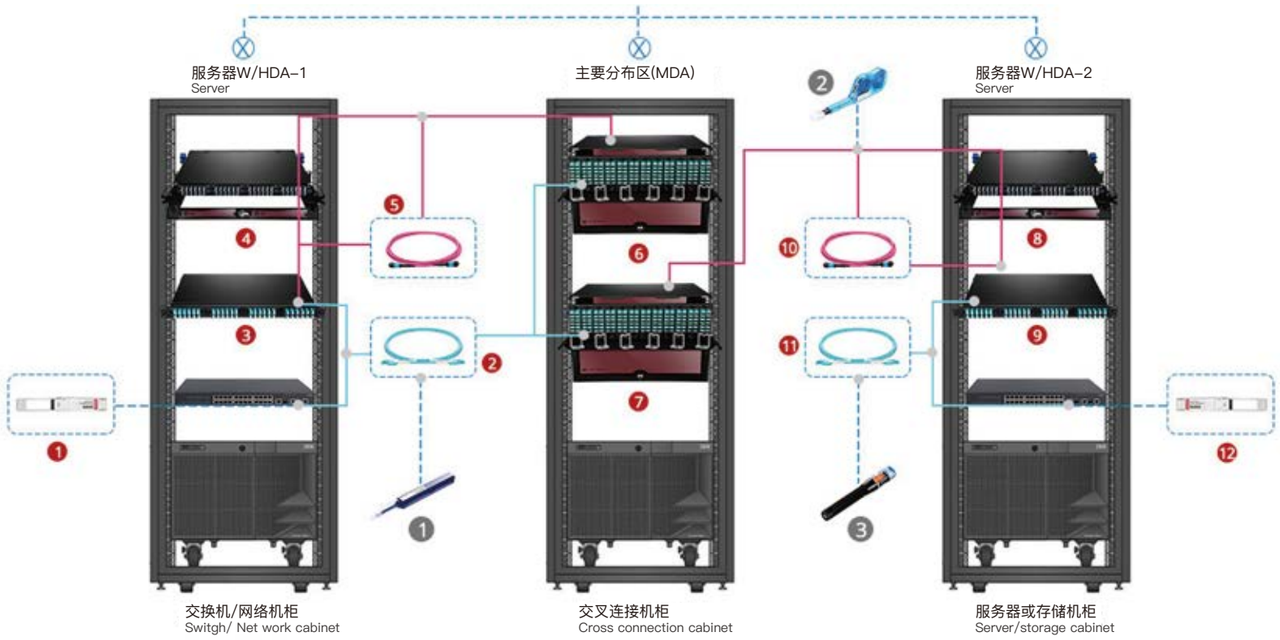
40 Gbps互联解决方案
/ 40 Gbps Interconnector solutions



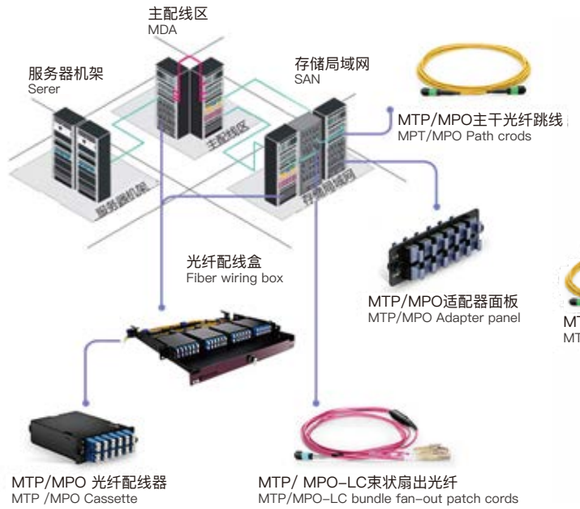
100 Gbps互联解决方案
/ 100 Gbps Interconnector solutions



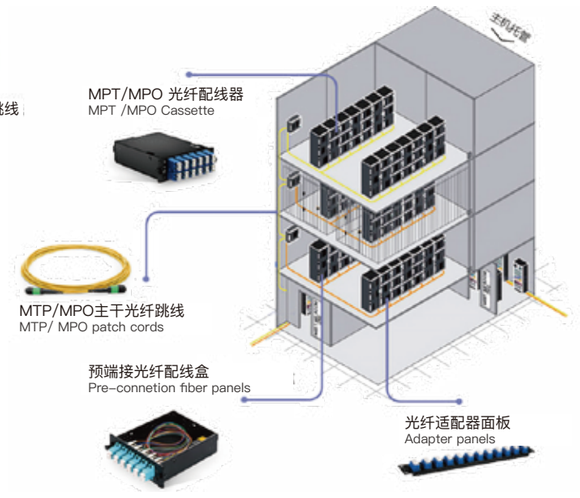
数据中心机房机柜MPO高密度解决方案图示
/ MPO high-density solutions in data center



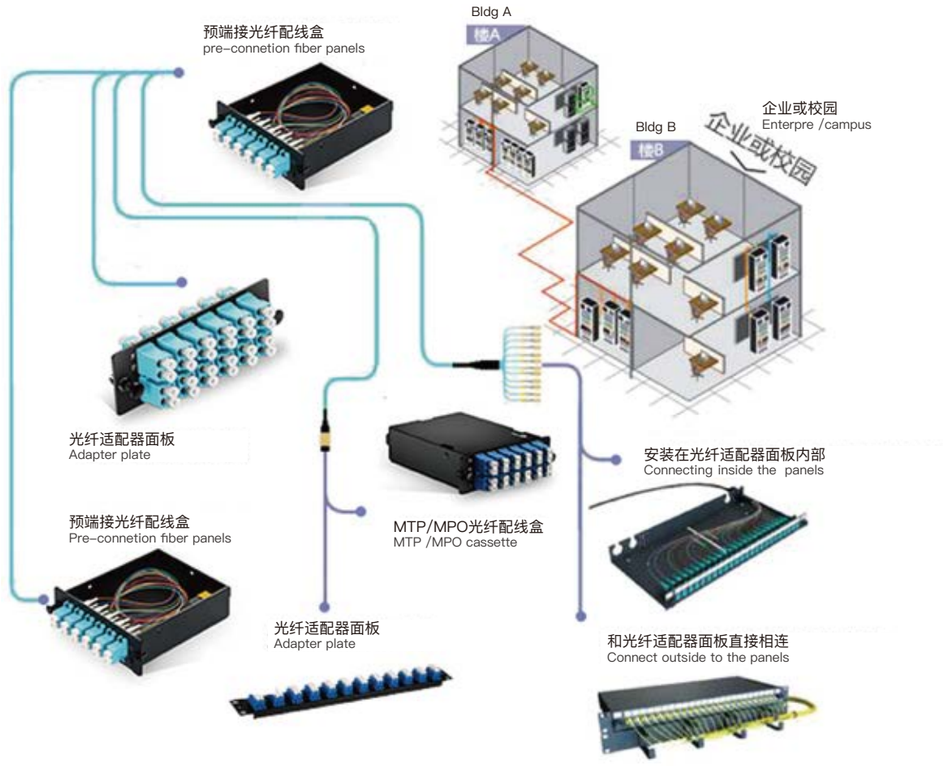
数据中心SAN（存储局域网）
/ Data center SAN (storage LAN)



主机托管数据中心
/ Host housing data center



企业网/校园网 Enterprise
/ Enterprise /Campus Internet



MPO Outdoor Waterproof Wiring Systems

MPO室外防水布线系统介绍

为了满足特殊环境下的多芯高密度配线，例如FTTA基站，RRU与BBU的室外端口互联，室外多芯通信抢修，多芯临时布线等，我司特别开发了两款不同的MPO室外防水连接器，适用于以上特殊需求环境中的MPO端口互联。

For special high density multi-core wiring systems, like FTTA base station, RRU-BBU, emergent telecommunication repair and temporary multi-core wiring, We develops two types of MPO outdoor waterproof connector.

ODVA–MPO防水连接器&适配器实物图
ODVA–MPO Waterproof Connector& Adapter

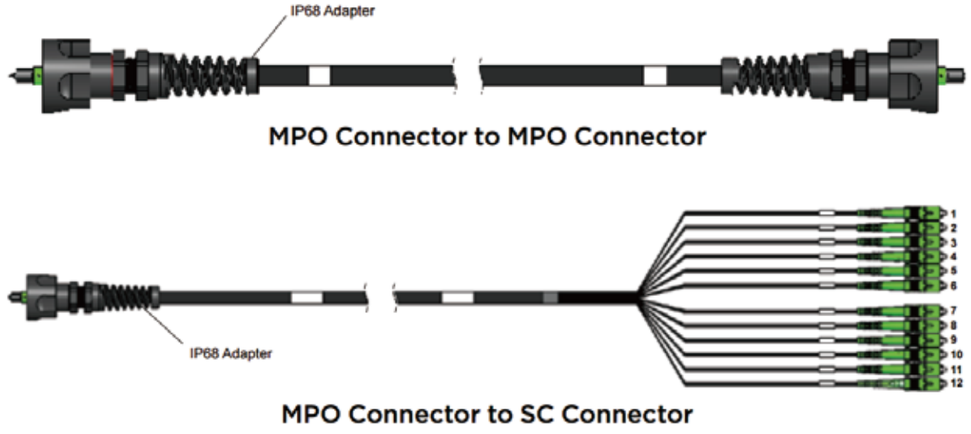
塑料款ODVA–MPO室外防水连接器
ODVA–MPO(plastic)

金属款RMC–MPO室外防水连接器
RMC–MPO(metal)

ODVA–MPO主干缆跳线实物图
Fiber Cable for ODVA–MPO

室内型ODVA–MPO Fanout
ODVA–MPO Fanout Patch Cord– Indoor

室外型ODVA–MPO Fanout
ODVA–MPO Fanout Patch Cord– Outdoor



ODVA–MPO防水模块盒
ODVA–MPO Waterproof Box

RMC–MPO防水连接器实物图
RMC–MPO Waterproof Connector

RMC–MPO插头
RMC–MPO Plug

RMC–MPO插座
RMC–MPO Socket

RMC–MPO防水连接器实物图
RMC–MPO Waterproof Connector

ODVA–MPO，RMC–MPO应用实例
Applications