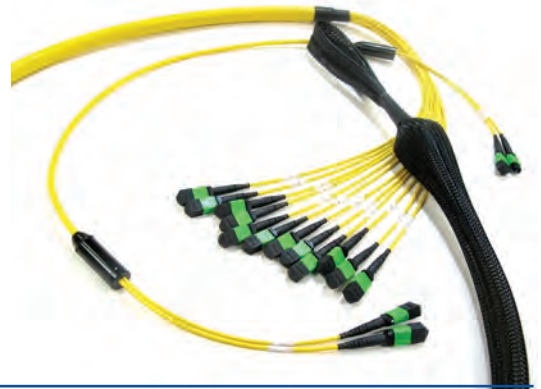


# MPO / MTP® CABLING SYSTEM

## MPO / MTP® Trunk Cable Assemblies

Optec's MPO / MTP® series of trunk cable solutions provide a time-efficient method to install a large amount of cables, while not compromising on the flexibility to unplug and re-use. It is especially suitable for areas that require high density, rapid deployment and high performance.

The high performances factory tested assemblies are pre-terminated with 12-fiber MPO / MTP® connectors and offered in customer-specified length configurations. Options include 12-, 16-, 24-, 32-, 36-, 48-, 72-, 96- and 144-fiber, terminated with round Mini-core cable to fit installation needs.



### Features And Applications

Distribute some or all of the fibers in a trunk cable to other areas  
 Applicable in backbone installation

Fiber counts available in 12 / 16 / 24 / 32 / 36 / 48 / 72 / 96 / 144-fibers  
 Supports different applications and field requirements

Round & mini-core cable structure  
 Eliminates bend sensitivity

Pulling eye design  
 Fits for different installation environments

Options for pinned (Male type) non pinned (Female type) on connector ends  
 High flexibility for different equipment

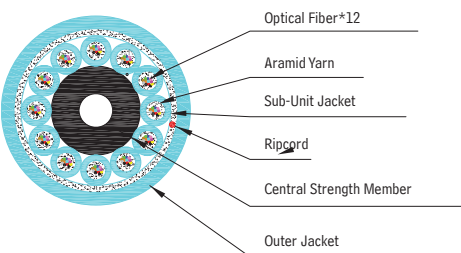
Available in singlemode (9/125μm), multimode (50 or 62.5/125μm) up to 100Gig  
 Satisfies client's needs in different industries

### Cable Structure Illustration

#### EXAMPLE

#### 144-Fiber Mini-Core Cable (Reference only)

96 Fiber Mini-Core Cable



Primary Coded Fiber (250μm)

Fiber Count

Cable Jacket

- Blue
- Orange
- Green
- Brown
- Grey
- Red
- White
- Black
- Yellow
- Purple
- Pink
- Aqua

- 12-Fiber
- 16-Fiber
- 24-Fiber
- 32-Fiber
- 36-Fiber
- 48-Fiber
- 72-Fiber
- 96-Fiber
- 144-Fiber

- SM-OS2 -Yellow
- MM-OM1 & OM2 -Orange
- OM3-Aqua
- OM4-Violet

## MPO / MTP® Trunk Cable Assemblies

### Cable Mechanical Specifications

	MINI-CORE			FIBER	IN/OUTDOOR	
	OFNP	OFNR	LSZH		OFNP	OFNR
Minimum Bend Radius (Installation)	6.0cm	6.0cm	6.0cm	12	9.9cm	9.7cm
	12.0cm	12.0cm	12.0cm	24 Round	n/a	n/a
	15.2cm	15.2cm	15.2cm	24 Zip	18.9cm	18.9cm
	18.0cm	18.0cm	18.0cm	36	14.1cm	15.1cm
	18.0cm	18.0cm	18.0cm	48	14.1cm	15.1cm
	22.4cm	22.4cm	22.4cm	72	17.5cm	17.8cm
	27.0cm	27.0cm	27.0cm	96	20.0cm	20.6cm
	35.0cm	35.0cm	35.0cm	144	26.4cm	27.2cm
Minimum Bend Radius (Long Term)	3.0cm	3.0cm	3.0cm	12	6.6cm	6.5cm
	6.0cm	6.0cm	6.0cm	24 Round	n/a	n/a
	7.6cm	7.6cm	7.6cm	24 Zip	12.6cm	12.6cm
	9.0cm	9.0cm	9.0cm	36	9.4cm	10.1cm
	9.0cm	9.0cm	9.0cm	48	9.4cm	10.1cm
	11.2cm	11.2cm	11.2cm	72	11.7cm	11.9cm
	13.5cm	13.5cm	13.5cm	96	13.4cm	13.7cm
	17.5cm	17.5cm	17.5cm	144	17.6cm	18.1cm
Maximum Tensile (Installation)	150N	150N	150N	12	1335N	1335N
	160N	160N	160N	24 Round	n/a	n/a
	300N	300N	300N	24 Zip	1335N	1335N
	1000N	1000N	1000N	36	2670N	2670N
	1000N	1000N	1000N	48	2670N	2670N
	1000N	1000N	1000N	72	2670N	2670N
	1000N	1000N	1000N	96	2670N	2670N
	1000N	1000N	1000N	144	2670N	2670N
Maximum Tensile (Long Term)	80N	80N	80N	12	400N	400N
	80N	80N	80N	24 Round	n/a	n/a
	160N	160N	160N	24 Zip	400N	400N
	300N	300N	300N	36	890N	890N
	300N	300N	300N	48	890N	890N
	300N	300N	300N	72	890N	890N
	300N	300N	300N	96	890N	890N
	300N	300N	300N	144	890N	890N

### Cable Physical Specifications

	MINI-CORE			FIBER	IN/OUTDOOR	
	OFNP	OFNR	LSZH		OFNP	OFNR
Cable Outer Diameter	3.0mm	3.0mm	3.0mm	12	6.6cm	6.5mm
	6.0mm	6.0mm	6.0mm	24 Round	n/a	n/a
	4.2mm x 7.6mm	4.2mm x 7.6mm	4.2mm x 7.6mm	24 Zip	6.2mm x 12.6mm	6.2mm x 12.6mm
	9.0mm	9.0mm	9.0mm	36	9.4mm	10.1mm
	9.0mm	9.0mm	9.0mm	48	9.4mm	10.1mm
	11.2mm	11.2mm	11.2mm	72	11.7mm	11.9mm
	13.5mm	13.5mm	13.5mm	96	13.4mm	13.7mm
	17.5mm	17.5mm	17.5mm	144	17.6mm	18.1mm
	Weight	14.0kg/km	14.0kg/km	14.0kg/km	12	48.0kg/km
30.0kg/km		30.0kg/km	30.0kg/km	24 Round	n/a	n/a
31.0kg/km		31.0kg/km	31.0kg/km	24 Zip	80.0kg/km	80.0kg/km
70.0kg/km		70.0kg/km	70.0kg/km	36	82.0kg/km	82.0kg/km
70.0kg/km		70.0kg/km	70.0kg/km	48	82.0kg/km	82.0kg/km
98.0kg/km		98.0kg/km	98.0kg/km	72	101.0kg/km	132.0kg/km
130.0kg/km		130.0kg/km	130.0kg/km	96	229.0kg/km	205.0kg/km
190.0kg/km		190.0kg/km	190.0kg/km	144	315.0kg/km	336.0kg/km
Operating Temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	12~144	-40°C to +75°C	-40°C to +75°C

### Fiber Performance Specifications\*\*

Characteristics	Fiber Type		OM1 Multimode	OM2 Multimode	OM3 Multimode*	OM4 Multimode*	OM5 Multimode*
	OS2 Singlemode	OM1 Multimode					
Core size/Cladding	9/125μm	62.5/125μm	50/125μm	50/125μm	50/125μm	50/125μm	50/125μm
Wavelength (nm)	1310 1550	850 1300	850 1300	850 1300	850 1300	850 1300	850 953 1300
Attenuation (dB/km)	≤0.32 ≤0.18	≤2.7 ≤0.6	≤2.3 ≤0.6	≤2.3 ≤0.6	≤2.3 ≤0.6	≤2.3 ≤0.6	≤2.4 ≤1.7 ≤0.6
OFL Bandwidth (MH·Km)	N/A	≥200 ≥500	≥500 ≥500	≥1500 ≥500	≥3500 ≥500	≥3500 ≥1850	≥500

\* Specification for OM3/OM4/OM5 as stated above are Bend Insensitive fibers.

\*\* Specification may vary depending on model, cable type and latest situations.

# MPO / MTP® CABLING SYSTEM

## MPO / MTP® Trunk Cable Assemblies

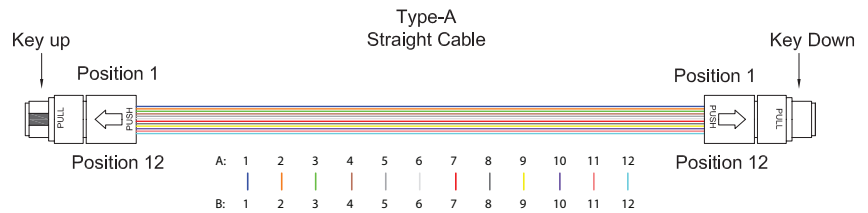
### Cable Assemblies Technical Information

#### POLARITY

To ensure fiber systems functionality, each fiber port must have a transmitter at one end, and a receiver at the other end. The proper match of the transmitting signal (Tx) to the receiving end (Rx) at both ends of the fiber optic link is referred to as POLARITY. TIA-568 standard provides three different polarity methods for MPO/MTP® Trunk Cable Method A, B and C.

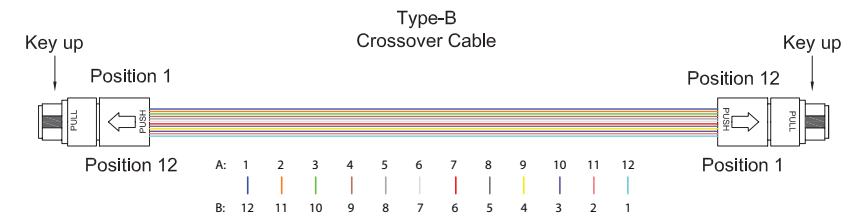
#### Type A:

The MPO/MTP® connector key are pointing down at one end of cable and up at other end. The fibers are aligned in same position at both end of the cable. It allows the fiber located in Position 1 at one end arrives at Position 1 at the other end.



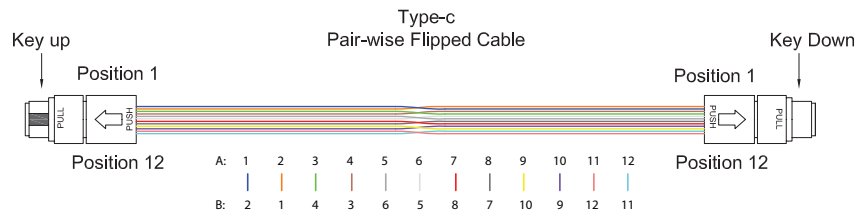
#### Type B:

The MPO/MTP® connector key are pointing up on both ends of cable. The fiber positions are reversed at each end, which allows the fiber located in Position 1 at one end arrives to Position 12 at the opposing end and so on.



#### Type C:

The MPO/MTP® connector key are pointing up at one end and down at the other end similar to Type A. However, the fibers are flipped in a pair so the fiber in Position 1 arrives to Position 2 at the other end and so on.



#### PERFORMANCE OF ASSEMBLIES

#### MPO/MTP® Connector Termination



Optical Performance **					
Performance	Type	Singlemode (APC polish)		Multimode (PC / Flat Polish)	
		Standard	Elite Low Loss	Standard	Elite Low Loss
	Insertion Loss	Maximum	≤ 0.6 dB	≤ 0.25 dB	≤ 0.45 dB
	Typical	0.45 dB	0.2 dB	0.4 dB	0.2 dB
Return Loss		≥ 50dB		≥ 30dB	
Test Wavelength		1310nm & 1550nm		850nm & 1300nm	
Geometric performance					

Manufactured to Telcordia standard GR-1435

#### Generic Connector Termination



Optical Performance **				
Performance	Type	Singlemode		Multimode
		UPC	APC	PC
Insertion Loss	Maximum	≤ 0.3 dB	≤ 0.3 dB	≤ 0.3 dB
	Typical	0.1 dB	0.1 dB	0.1 dB
Return Loss		≥ 55 dB	≥ 65 dB	≥ 25 dB
Test Wavelength		1310nm & 1550nm		850nm & 1300nm
Geometric performance				

Manufactured to Telcordia standard GR-326-CORE

Note: The above table refers to Optec standard grade performance. Due to material optimization and manufacturing techniques, we can provide different performance grade products in a cost-effective way to meet customer expectations and requirements. Please contact our professional sales team for details.

### MPO / MTP® Trunk Cable Assemblies

#### Ordering Information

1	2	3	4	5	6	7	8	9	10
<b>NT</b>									
<b>Fiber Count</b> 12 = 12-Fiber 16 = 16-Fiber 24 = 24-Fiber 32 = 32-Fiber 36 = 36-Fiber 48 = 48-Fiber 72 = 72-Fiber 96 = 96-Fiber H4 = 144-Fiber	<b>A-End &amp; B-End Connector</b> A = 1x12F MTP Male (with pins) B = 1x12F MTP Female (no pins) C = 1x12F MPO Male (with pins) D = 1x12F MPO Female (no pins) E = 1x16F MTP Male (with pins) F = 1x16F MTP Female (no pins) G = 1x16F MPO Male (with pins) H = 1x16F MPO Female (no pins) I = 1x24F MTP Male (with pins) J = 1x24F MTP Female (no pins) K = 1x24F MPO Male (with pins) L = 1x24F MPO Female (no pins)	<b>Fiber Type</b> SM = OS2 (SM 9/125) M1 = OM1 (MM 62.5/125) M2 = OM2 (MM 50/125) M3 = OM3 (MM 50/125) M4 = OM4 (MM 50/125) M5 = OM5 (WBMM 50/125) See notes (1) & (2)	<b>Cable Type</b> MP = Mini-Core Plenum (OFNP) MR = Mini-Core Riser (OFNR) ML = Mini-Core Low Smoke Zero Halogen (LSZH) See note (3)	<b>Furcation Length on A-End</b> 0600 = 600 (standard) 1000 = 1000mm xxxx = Customized See notes (4)	<b>Furcation Length on B-End</b> 0600 = 600 (standard) 1000 = 1000mm xxxx = Customized Length See notes (4)	<b>Overall Cable Length</b> xxx = 001~999 (please specify)	<b>Unit of Measure</b> F = Feet M = Meter	<b>Pulling Eye</b> 1 = On A-End 2 = On B-End 3 = On Both Ends 4 = None	<b>Polarity</b> A = Type-A Straight B = Type-B Crossover C = Type-C Pair-wise Flipped See notes (5)

**NOTES**

- (1) If Singlemode is chosen, MTP endface polishing will be APC
- (2) If Multimode is chosen, MTP endface polishing will be PC
- (3) Other cables structures are available, please contact our sales team for more information
- (4) Furcation length tolerance: +50/-0mm
- (5) Please refer to page 18 for polarity

#### Product Illustration & Example

**EXAMPLE**    **Ordering Code:** NT-H4-B-SM-MR-0600-0600-005-M-4-A  
**Item Description:** Trunk Assembly, 144-Fiber, MTP® Female (no pin) , Singlemode, Mini-Core Riser (OFNR), A-End Furcation Length 600mm, B-End Furcation Length 600mm, Overall Length 5 Meters, No Pulling Eye, Polarity A

