Rosenberger

PreCONNECT® OCTO

PRODUCT INFORMATION

Rosenberger PreCONNECT® (XXXX) solutions are available in three end face quality levels: BASIC, PURE, and LOTUS

- Define the end-face quality according to your application requirements

PreCONNECT® BASIC is our well-proven, high-grade, standards compliant, product in terms of end-face geometry, defect, and cleanness, providing excellent IL and RL performance:

- The PreCONNECT® factory-assembled plug & play system enables quick and reliable, cost efficient, installation and performance
- Harmonized modular components of the PreCONNECT® BASIC solution ensure end to end performance of the entire channel

PreCONNECT® PURE is our enhanced version of PreCONNECT® BASIC, but with more stringent defect and cleanliness screening and factory sealed, tamper evident adapter-interfaces.

- Guaranteed protection of the polished connector surfaces against contamination and damage through sealed adapter-interfaces, enabling time savings during initial installation and commissioning due to the elimination of the need for cleaning and testing*/**.
- PreCONNECT® PURE provides an industry leading low random mate insertion and return loss (mean) which enables up to six (6) mated pairs in a 10G/OM4 application up to 300m.

PreCONNECT® LOTUS builds upon the PreCONNECT® BASIC and PreCONNECT® PURE performance by introducing our unique LOTUS end-face coating technology that provides dirt, moisture, and grease repellence to maintain cleanliness in initial and subsequent matings.

- Potential long-term time savings by reducing or eliminating the need for cleaning during initial installation and subsequent MACs
- Increased reliability and availability throughout various environmental and contaminate environments

Part numbers:

PreCONNECT® BASIC: The part numbers XXXAXXXX listed in this document are valid for the BASIC quality level.

PreCONNECT® PURE: Add a "**P**" to the end of the PreCONNECT® BASIC part number (*Example: XXXAXXXX**P***)

PreCONNECT® LOTUS: Add an "**L**" to the end of the PreCONNECT® BASIC part number (*Example: XXXAXXXX**L***)

(Note: PreCONNECT® PURE trunk cables have factory attached sealed coupling adapters incorporated and thus utilize empty patch panels and enclosures)

** While Rosenberger does not require permanent link or channel testing for warranty registration of PreCONNECT® PURE installations due to guaranteed performance, certain customers will require testing documentation for their records.*

*** Only applicable when all components are PreCONNECT® PURE and installed by trained PreCONNECT® PURE installers.*

Applications

Infrastructure and IT room cabling within data centers

System consists of:

- Factory assembled OFNR Riser or OFNP Plenum rated n x 8 fiber Microunit Breakout Cables, up to 192 fibers with MTP® connector systems, 8 fibers (OCTO) assigned per MTP® channel
- Port-Breakout with MTP® - LC Harness and MTP® Module-Cassettes with LC front
- 19” Panel systems in two different types, modular SMAP-G2 and SMAP-G2 HIGH DENSITY
- Suitable Patchcords
- Useful accessories
- Patch Location Rack

Features

- For all applications with at minimum one cabling side MPO based parallel optics SR4 or PSM4 Transceivers
- Cost and attenuation optimized for SR4 and PSM4 applications

Your benefits at a glance:

- MTP® cabling system perfectly suitable for SR4 and PSM4 applications
- Cost reduction - SR4 and PSM4 need only 8 fibers instead of the usual 12 in one MTP® channel
- Fast and safe installation through factory assembled Plug & Play system
- Highest quality and cost-efficiency through factory assembling
- PreCONNECT® cabling systems consist of perfectly harmonized modular single components

PreCONNECT® OCTO Breakout-Trunk

PreCONNECT® OCTO Harness

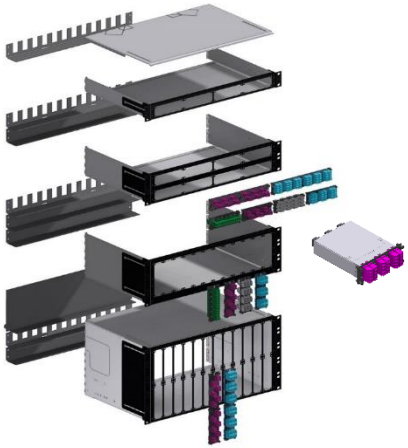
PreCONNECT® OCTO Patchcords and Multijumpers

LC-COMPACT Patchcords

Patch Location Rack

19” Panel Systems

SMAP-G2



SMAP-G2 HD

SMAP-G2 UHD

Accessories

Application:

MTP® (MPO) based Data Center cabling with 8 fibers per MTP® channel:

Optimized for parallel optics applications:

- **40/100/200 GBASE-SR4**
- **400GBASE-SR4.2 BiDi**
- **4x16 and 4x32 GFC**
- **100G PSM4**
- **4x10 GBASE-LR**
- **400GBASE-DR4**

Easy migration to 400GBASE-SR8 and SR16.

System description:

Our PreCONNECT® OCTO cabling system consists of:

- OCTO Breakout-Trunk factory assembled FO cables with up to 24 SR4 or PSM4 MTP® channels (24x8=192 fibers).
- 19” Panel Systems with Part-Front-Plates, MTP®/MPO Adapters, and OCTO Module-Cassettes
- OCTO Patchcords, and Harness
- Useful accessories
- Patch Location Racks

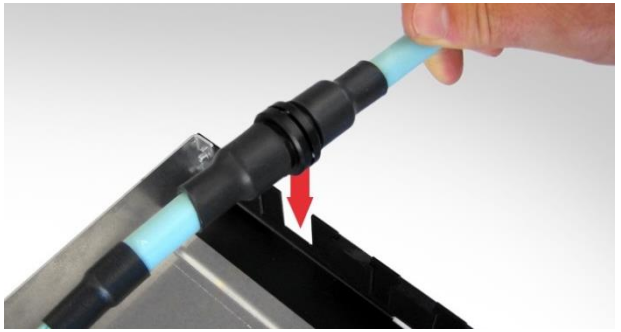
- In 1991 Rosenberger began delivering high fiber count factory assembled FO Trunk cables to the market. PreCONNECT® STANDARD was the first European developed and manufactured, high fiber count and modular “plug-and-play” FO cabling system. In 1997 we became the first manufacturer of MTP® cabling systems in Europe.

Properties:

PreCONNECT® square-interface and installation protection:

PreCONNECT® OCTO Breakout-Trunks have PreCONNECT® square-interfaces on both sides which allow tool-less installation into the 19” Panel Systems for tensile and torsion resistant fixing of the Trunks.

The Trunk connector legs are engineered for the 19” Panel Systems and are packaged in dust-proof foil tubes. Installation tubes with high tensile strength, crush resistance, and kink and torsion resistance are optionally available..



Installation Tube Indoor, IP50 dustproof

Properties:

Connector types:

- OCTO Breakout-Trunks: MTP® 12 fiber male with OCTO fiber assignment
- OCTO Patchcords, Multijumpers, Harnesses, and Module-Cassettes: MTP® 12 fiber female with OCTO fiber assignment

Adapter types:

- MTP® multimode and singlemode TIA Type A “1 to 1”
- Adapter colors: OM3 = Aqua, OM4 = Violet, SM = Green
- Description of the adapter types A and B see last pages of in this document

Polarity:

- OCTO Breakout-Trunks: Multimode and Singlemode: TIA Method B “1 to 12”
- OCTO Patchcords, Harness and Module-Cassettes: See pages of the products

Cable types:

- PreCONNECT® OCTO Breakout-Trunks:
  OFNR Riser and OFNP Plenum rated n x 8 fiber Microunit Breakout Cables
- PreCONNECT® OCTO Patchcords and Harness
  OFNR Riser and OFNP Plenum rated 8 fiber Microunit Interconnect Cables
- Cable data, see separate cable data sheets

MTP adapters TIA Type A "1 to 1"

Fiber types:

- Multimode OM4 bend-insensitive for SR4
- Singlemode G.657.A1 bend-insensitive and backwards compatible to G.652.D for PSM4
- Fiber data, see separate fiber data sheets

Microunit Breakout Cables 6 x 8 fibers

Length definition:

Order-length = length between the connectors of the longest legs at both sides, not between the Pre-CONNECT® square-interfaces.

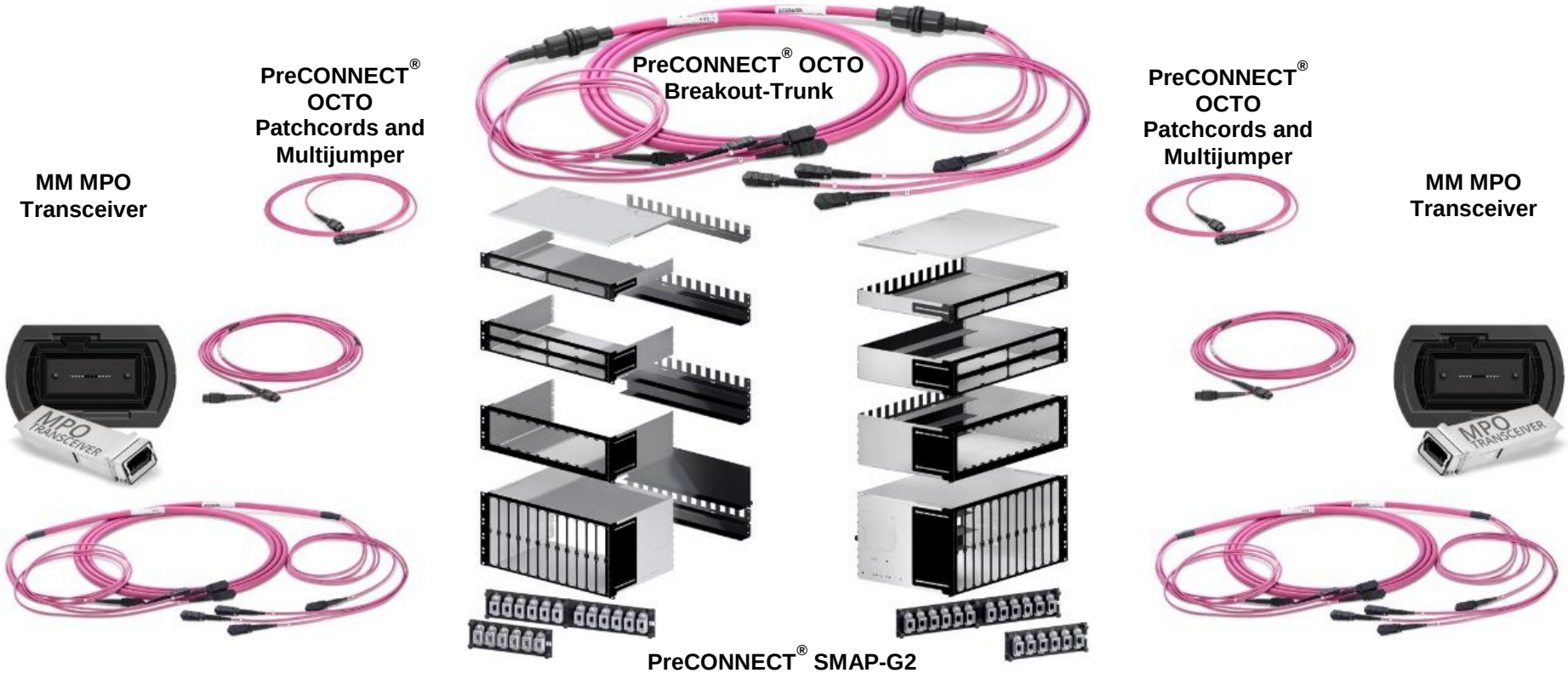
Delivery form:

Dependent of the length as cable ring or on cardboard or wooden drum,
100% IL factory measured with measurement protocol, product label with serial number on both sides.

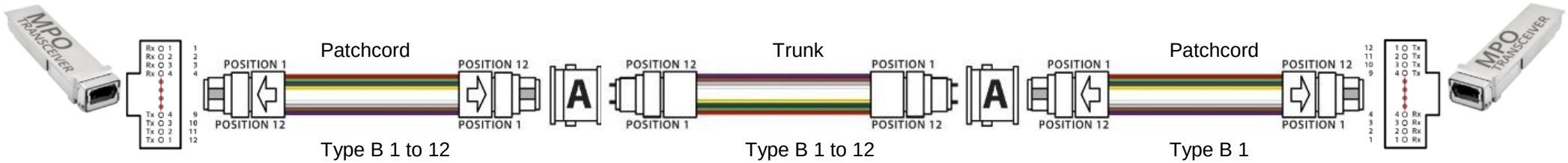
PreCONNECT® OCTO application case Point-to-Point:

MULTIMODE

- **40 / 100 / 200 GBASE-SR4 and 400GBASE-SR4.2 BiDi MPO-MPO**
- **4x16 / 4x32 GFC MPO-MPO**



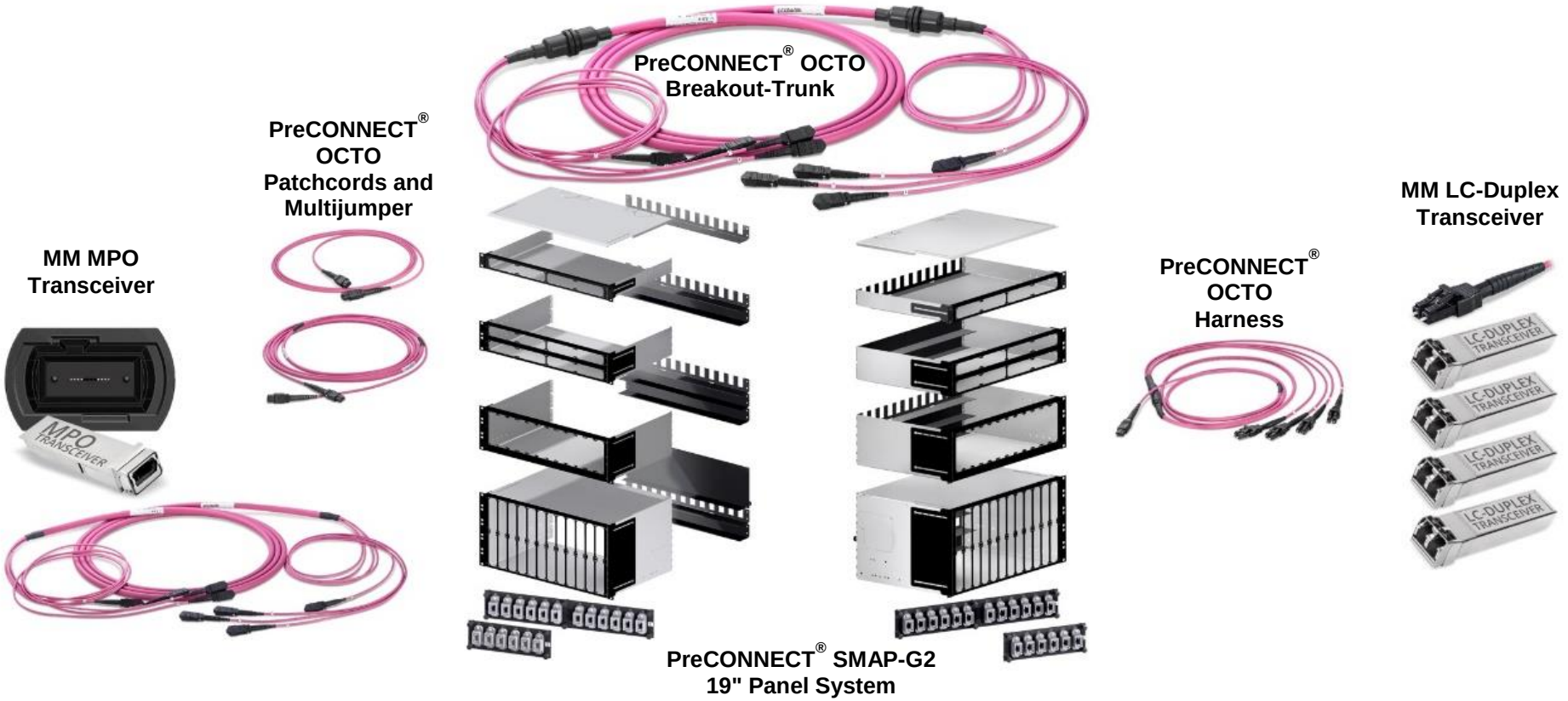
channel lengths see behind in this product information



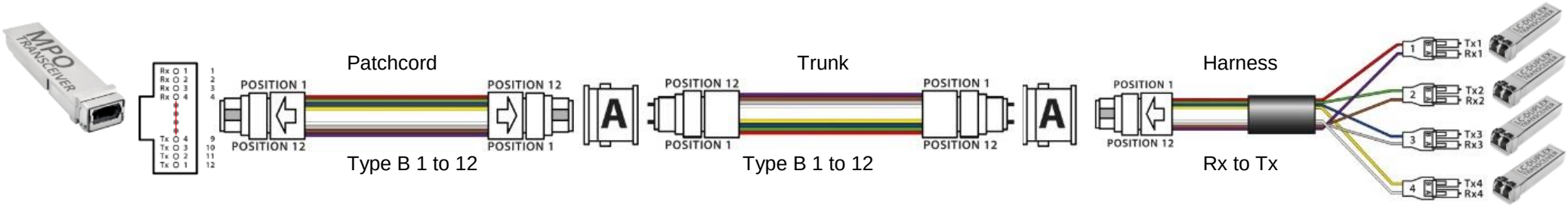
PreCONNECT® OCTO application case Port-Breakout with Harness:

MULTIMODE

- **40 / 100 / 200 GBASE-SR4 MPO to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex**
- **4x16 / 4x32 GFC MPO to 4x16 / 4x 32 GFC LC-Duplex**



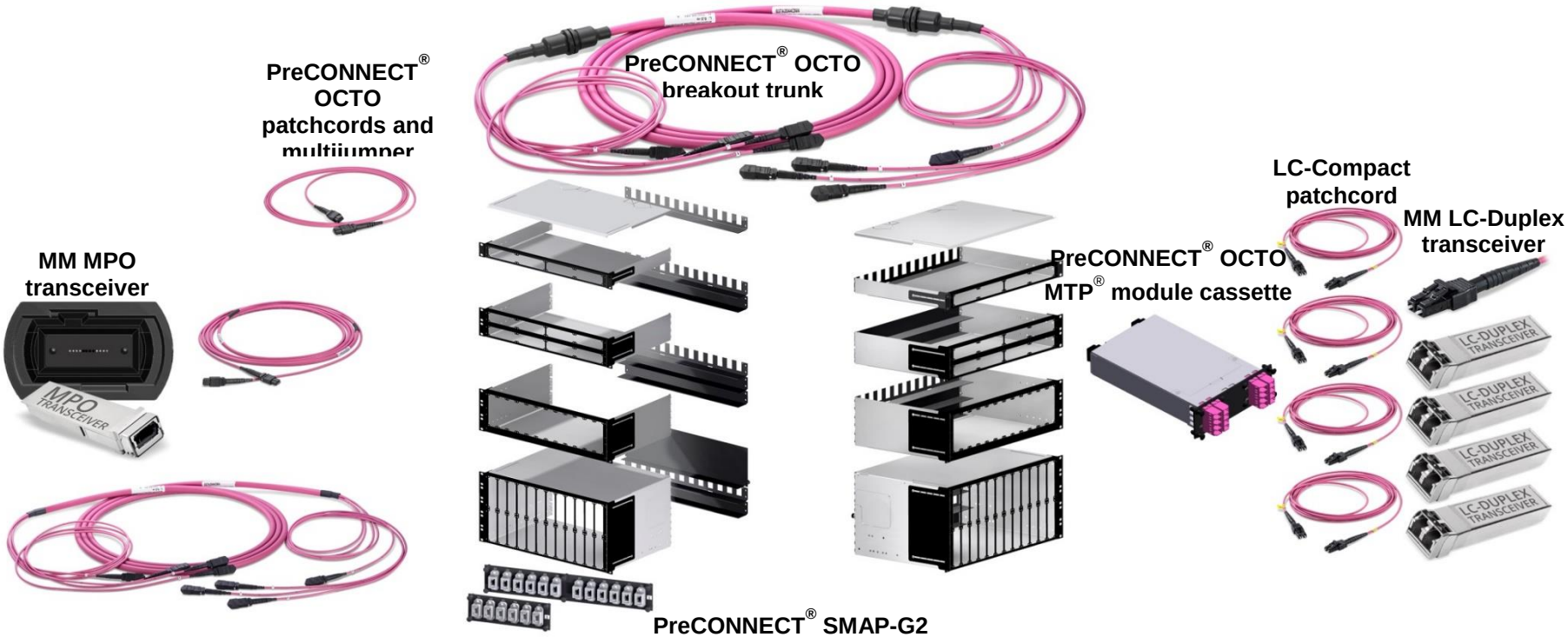
channel lengths see behind in this product information



PreCONNECT® OCTO application case Port-Breakout with Module-Cassette:

MULTIMODE

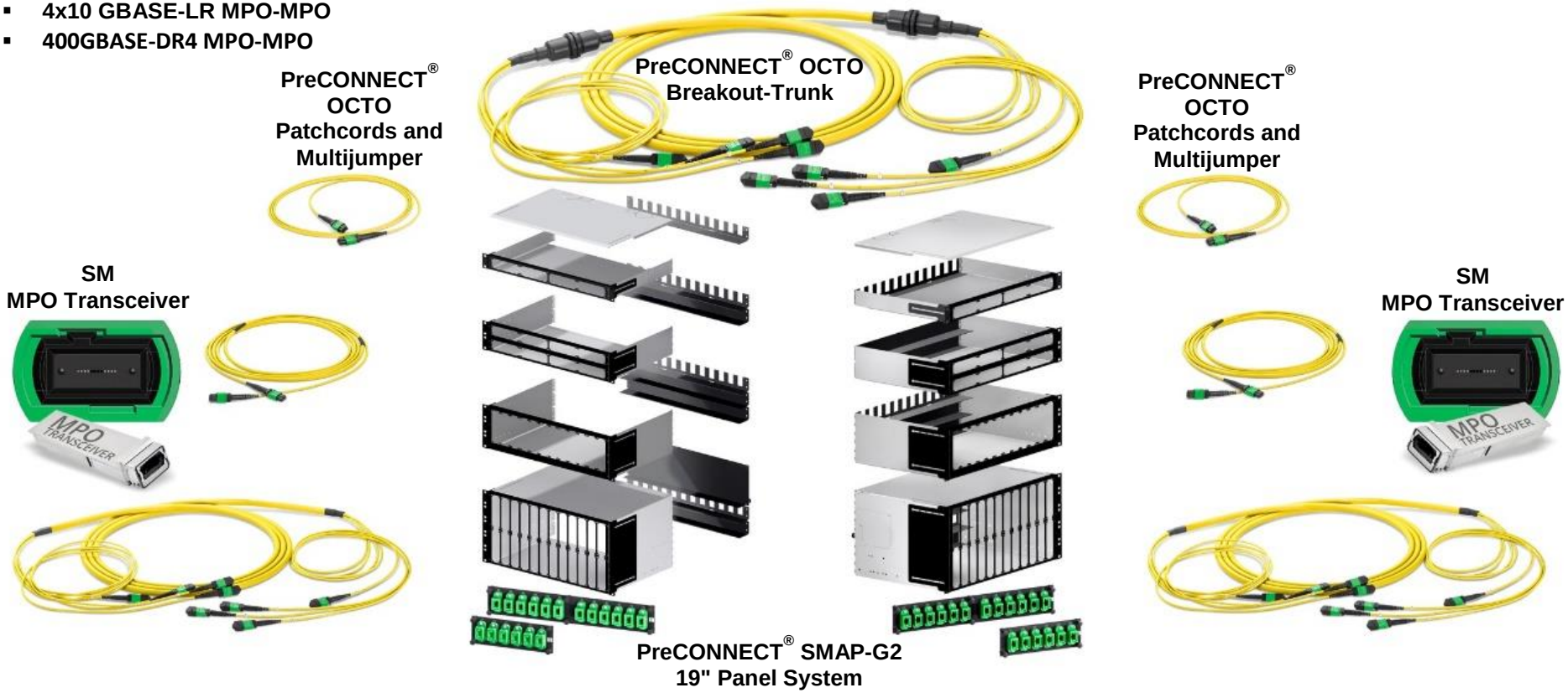
- **40 / 100 / 200 GBASE-SR4 MPO to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex**
- **4x16 / 4x32 GFC MPO to 4x16 / 4x 32 GFC LC-Duplex**



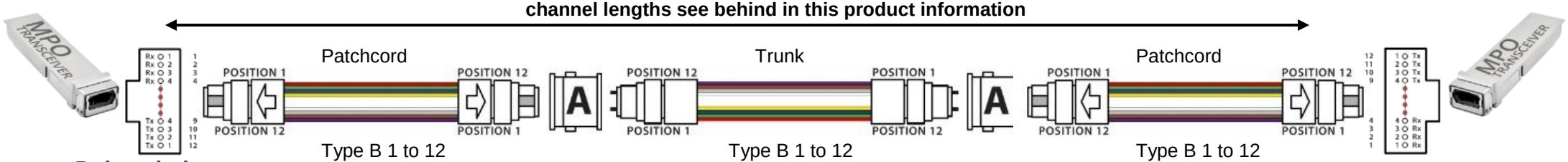
PreCONNECT® OCTO application case Point-to-Point:

SINGLEMODE

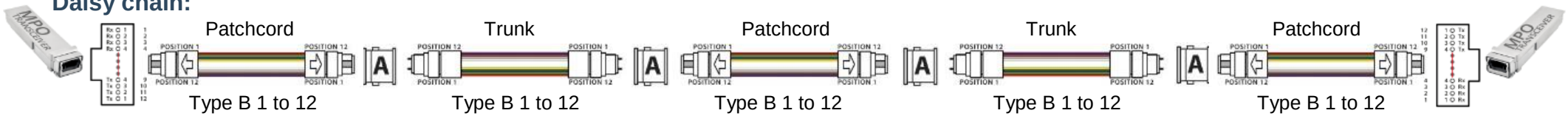
- **100G PSM4 MPO-MPO**
- **4x10 GBASE-LR MPO-MPO**
- **400GBASE-DR4 MPO-MPO**



channel lengths see behind in this product information



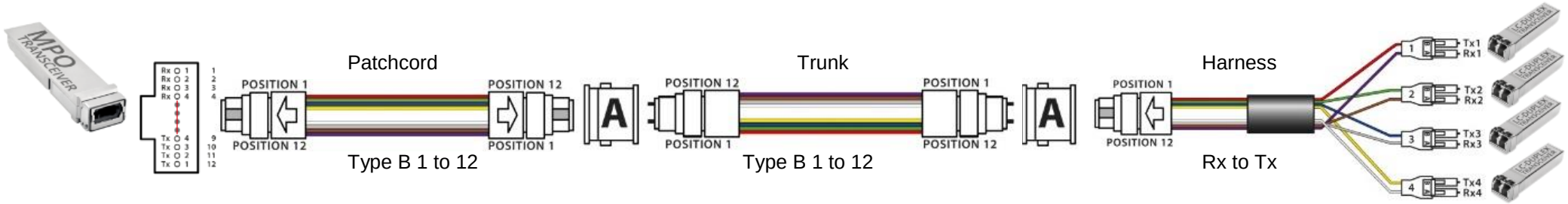
Daisy chain:



PreCONNECT® OCTO application case Port-Breakout with Harness:

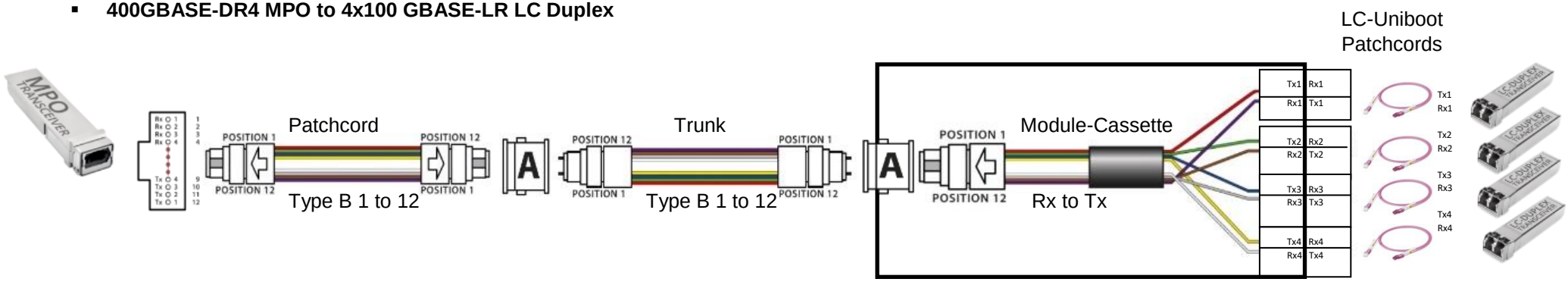
SINGLEMODE

- **100G PSM4 MPO to 4x25 GBASE-LR LC-Duplex**
- **4x10 GBASE-LR MPO to 4x10 GBASE-LR LC-Duplex**
- **200GBASE-DR4 MPO to 4x50 GBASE-LR LC Duplex**
- **400GBASE-DR4 MPO to 4x100 GBASE-LR LC Duplex**



PreCONNECT® OCTO application case Port-Breakout with Module-Cassette:

- **100G PSM4 MPO to 4x25 GBASE-LR LC-Duplex**
- **4x10 GBASE-LR MPO to 4x10 GBASE-LR LC-Duplex**
- **200GBASE-DR4 MPO to 4x50 GBASE-LR LC Duplex**
- **400GBASE-DR4 MPO to 4x100 GBASE-LR LC Duplex**



PreCONNECT® OCTO SR4 OM4 and OM5 Breakout-Trunk

MULTIMODE

OM5 is only needed for 400GBASE-SR4.2 BiDi channel lengths 101 to 150 meter.

OFNR Riser and OFNP Plenum rated Microunit Breakout Cables n x 8 OM4 fibers
MTP® 12 male with OCTO fiber assignment
Polarity TIA method B “1 to 12”
MTP® leg-length = standard stepped

Part numbers, length variable:

OFNR Riser rated:
1 OCTO channels: 034A2047OM4/034A2047OM5
2 OCTO channels: 034A2048OM4/034A2048OM5
4 OCTO channels: 034A2049OM4/034A2049OM5
8 OCTO channels: 034A2050OM4/034A2050OM5
12 OCTO channels: 034A2051OM4/034A2051OM5
24 OCTO channels: 034A2067OM4/034A2067OM5

OFNP Plenum rated:
1 OCTO channels: 027A2047OM4/027A2047OM5
2 OCTO channels: 027A2048OM4/027A2048OM5
4 OCTO channels: 027A2049OM4/027A2049OM5
8 OCTO channels: 027A2050OM4/027A2050OM5
12 OCTO channels: 027A2051OM4/027A2051OM5
24 OCTO channels: 027A2067OM4/027A2067OM5

Microunit Breakout Cables n x 8			
OCTO channels	Structure	Fiber count	Diameter
1	1x8	8	4.5mm (0.18”)
2	2x8	16	6.4mm (0.25”)
4	4 x 8	32	6.4 mm (0.25”)
8	8 x 8	64	7.5 mm (0.30”)
12	12 x 8	96	9.9 mm (0.39”)
24	24 x 8	192	15.9 mm (0.63”)

PreCONNECT® OCTO PSM4 SM Breakout-Trunk

SINGLEMODE

OFNR Riser and OFNP Plenum rated Microunit Breakout Cables n x 8 SM fibers
MTP® 12 male with OCTO fiber assignment
Polarity TIA method B “1 to 12”
MTP® leg-length = standard stepped

Part numbers, length variable:

OFNR Riser rated:
1 OCTO channels: 034A2075G657A1
4 OCTO channels: 034A2076G657A1
8 OCTO channels: 034A2077G657A1
12 OCTO channels: 034A2078G657A1
24 OCTO channels: 034A20xxG657A1

OFNP Plenum rated:
1 OCTO channels: 027A2075G657A1
4 OCTO channels: 027A2076G657A1
8 OCTO channels: 027A2077G657A1
12 OCTO channels: 027A2078G657A1
24 OCTO channels: 027A20xxG657A1

Microunit Breakout Cables n x 8			
OCTO channels	Structure	Fiber count	Diameter
1	1x8	8	4.5mm (0.18”)
4	4 x 8	32	6.4 mm (0.25”)
8	8 x 8	64	7.5 mm (0.30”)
12	12 x 8	96	9.9 mm (0.39”)
24	24 x 8	192	15.9 mm (0.63”)

SMAP-G2 19” panel system with 1HU 1/4 part front plates and MTP® module

Port density:

- 32 MTP® ports per HU with MTP® part front plates
- 48 LC-Duplex ports per HU with MTP® module cassettes

Dimensions:

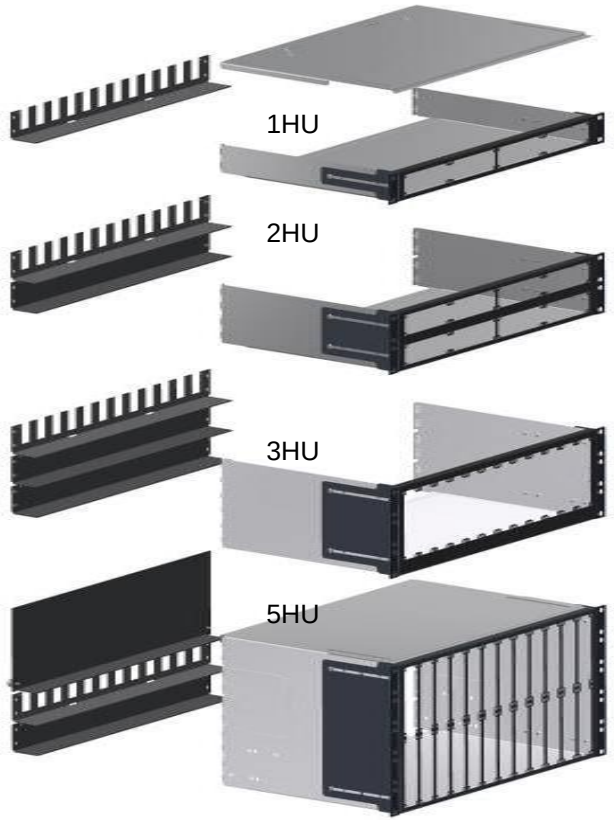
- Width: 19“
- Height: 1, 2, 3 and 5 HU
- Depth: 200mm and 300mm. We recommend 300mm as shown here, because the space to accommodate trunk cable dividers and connector legs is uncomfortable narrow within 200mm deep panels.

Part numbers:

SMAP-G2 empty distribution panels, RAL9005 black, back plane with 12 PreCONNECT® square interfaces:

1HU, depth 300mm	171A0001
1HU, depth 200mm	171A0020
2HU, depth 300mm	172A0001
3HU, depth 300mm	173A0001
5HU, depth 300mm	175A0001

SMAP-G2 panels for PURE trunks are described behind in this document.
Find further information in our product information SMAP-G2.



SMAP-G2 1HU 1/4 part front plates with matrix numbering:

Part numbers RAL9005 black			
1HU 1/4 Blind-PFP		170A0001	
1HU 1/2 Blind-PFP		170A0002	
PFP type	**Number and type of ports**	**for fiber type**	
		MM	**SM**
		grey type A “oppose key	green type A “opposed key”
1HU 1/4	6 x MTP®	170A0634OM4	170A0620
1HU 1/4	8 x MTP®	170A0142OM4	170A0140
1HU 1/2	12 x MTP®	170A0671OM4	170A0660
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2.			

1HU 1/4 Blind-PFP

1HU 1/2 Blind-PFP

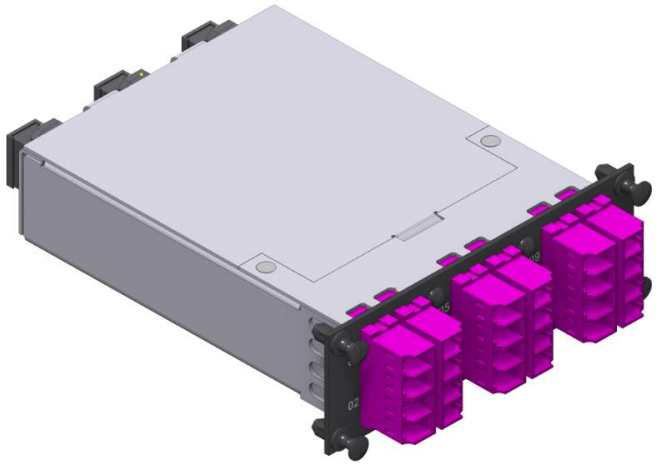
1HU 1/4 TFP 6 MTP

1HU 1/4 PFP 8 MTP

1HU 1/2 TFP 12 MTP

PreCONNECT® OCTO MTP® Module-Cassettes

for SMAP-G2 with 1HU Part-Front-Plates PFP



Properties:

- For Port-Breakout of PreCONNECT® OCTO Breakout-Trunks, as described in the application cases earlier in this document
- Height: 1HU
- Width: ¼
- Depth: 115 mm
- Polarity: Rx to Tx
- 3x MTP® female port 4+4F OCTO at the rear side:
  - MTP® multimode and singlemode TIA Type A “1 to 1”
  - Adapter colors: OM3 = Aqua, OM4 = Violet, SM = Green
- LC-Duplex ports at the front side
- Toolless placement of the module cassettes into the panel from the front side, fixing with quick fasteners
- Material and color:
  - Cassette body: aluminum silver
  - Front: Steel powder coated RAL9005 black

Part numbers

Number of OCTO channels OCTO MTP® female interfaces at the back plane	Number of LC-Duplex interfaces at the front plane	OM4 for SR4	SM for PSM4
3	3 OCTO groups of 4 = 12	170A2029OM4	1702027

PreCONNECT® SMAP-G2 HIGH-DENSITY 19” Panel System with 1/3 HU Part-Front-Plates PFP or MTP® Module-Cassettes

Port density:
- 72 MTP® ports per HU with MTP® part front plates
- 48 LC-Duplex ports per HU with MTP® module cassettes

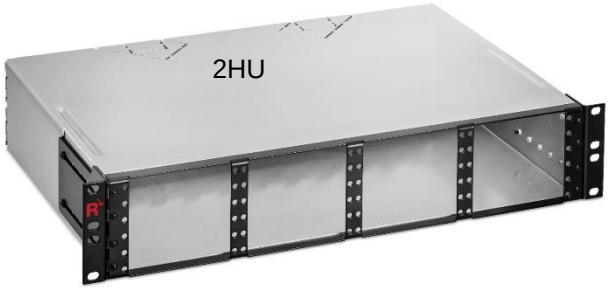
Dimensions:
- Width: 19“
- Height: 1HU and 2HU
- Depth: 200mm and 300mm. We recommend 300mm as shown here, because the space to accommodate trunk cable dividers and connector legs is uncomfortable narrow within 200mm deep panels.

Part numbers:

SMAP-G2 HD empty distribution panels, RAL9005 black, back plane with 12 PreCONNECT® square interfaces:

1HU, depth 300mm	171H0010
1HU, depth 200mm	171H0001
2HU, depth 300mm	172H0001
2HU, depth 200mm	on request

SMAP-G2 HD panels are not appropriate for PURE trunks.
Find further information in our product information SMAP-G2 HD.



SMAP-G2 HD 1/3HU 1/4 part front plates with matrix numbering:

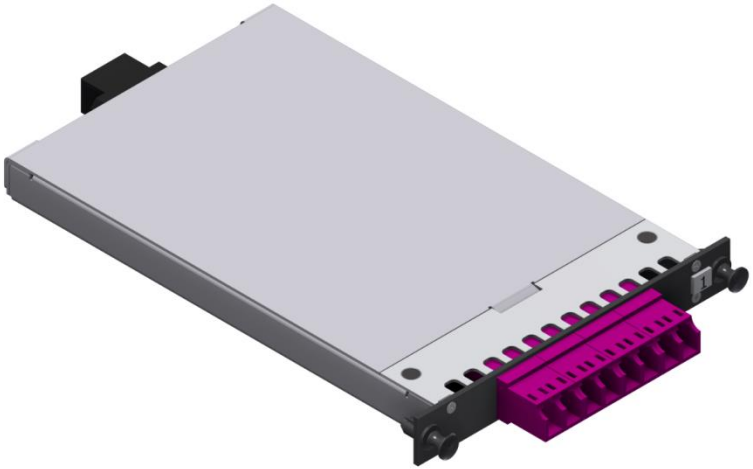
Part numbers RAL9005 black			
1/3HU 1/4 Blind-PFP		170H0001	
PFP type	**Number and type of port**	**for fiber type**	
		MM	**SM**
		6 MTP® Type A “Key-up to Key-down“ violet	6 MTP® Type A “Key-up to Key-down“ green
1/3HU 1/4	6 x MTP®	**170H2013OM4**	170H2023
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2 HD.			

1/3HU 1/4 Blind-PFP

1/3HU 1/4 PFP 6 MTP®

PreCONNECT® OCTO MTP® Module-Cassettes

for SMAP-G2 HIGH-DENSITY with 1/3 HU Part-Front-Plates PFP



Properties:

For Port-Breakout of PreCONNECT® OCTO Breakout-Trunks, as described in the application cases earlier in this document

- Height: 1/3 HU
- Width: ¼
- Depth: 124 mm
- Polarity: Rx to Tx
- 1x MTP® female port 4+4F OCTO at the rear side:
  - MTP® multimode and singlemode TIA Type A “1 to 1”
  - Adapter colors: OM3 = Aqua, OM4 = Violet, SM = Green
- LC-Duplex ports at the front side
- Toolless placement of the module cassettes into the panel from the front side, fixing with quick fasteners
- Material and color:

- Cassette body: aluminum silver
- Front: steel powder coated RAL9005 black

LC-COMPACT HIGH DENSITY patchcords with push-pull-tabs at the connectors and cable diameter 2.0 mm must be used with this panel system, to be found behind in this product information.

Part numbers			
Number of OCTO channels OCTO MTP® female interfaces at the back plane	**Number of LC-Duplex interfaces at the front plane**	**OM4 for SR4**	**SM for PSM4**
1	**1 OCTO group of 4 = 4**	**170H1011OM4**	**170H1020**

SMAP-G2 ULTRA HIGH DENSITY UHD 19” panel system with 1/2HU 1/6 MTP® module cassettes:

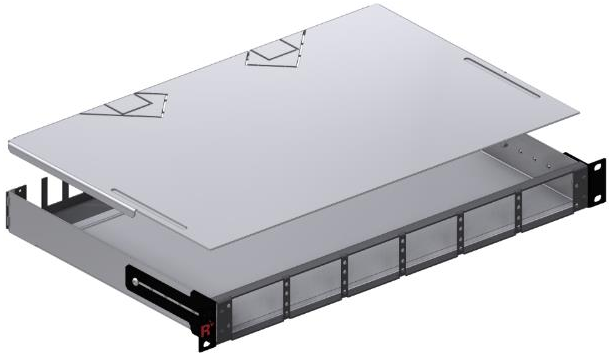
Port density:
- 96 LC-Duplex ports per HU

Dimensions:
- Width: 19“
- Height: 1HU
- Depth: 200mm and 300mm. We recommend 300mm as shown here, because the space to accommodate trunk cable dividers and connector legs is uncomfortable narrow within 200mm deep panels.

Part numbers:

SMAP-G2 UHD empty distribution panels, RAL9005 black, back plane with 16 PreCONNECT® square interfaces:

- 6/6 slot partition, depth 300mm: 171H0012



Blind part front plates, steel powder coated RAL9005 black:

- 1/2HU 1/6 width for 6/6 slot: 170H5001

SMAP-G2 UHD panels are not appropriate for PURE trunks.

Find further information in our product information SMAP-G2 UHD.

SMAP-G2 UHD 16 fiber MTP® module cassettes for 6/6 slot panels fitting for PreCONNECT® OCTO trunks

Properties:

- For Port-Breakout of PreCONNECT® OCTO trunks with MTP® connectors
- Fitting in 6/6 slot SMAP-G2 UHD panel
- Height: 1/2HU
- Width: 1/6
- Depth: 115mm
- Polarity: Rx to Tx
- 2x MTP® female port 4+4F OCTO at the rear side:
  - MTP® multimode and singlemode TIA Type A “1 to 1”
  - Adapter colors: OM3 = Aqua, OM4 = Violet, SM = Green

  LC-Duplex ports at the front side
- Toolless placement of the module cassettes into the panel from the front side, fixing with quick fasteners
- Material and color of cassette body: steel powder coated RAL9005 black

LC-COMPACT ULTRA HIGH DENSITY patchcords with push-pull-tabs at the connectors and cable diameter 2.0 mm must be used with this panel system, to be found behind in this product information.

Part numbers RAL9005 black			
Number and type of MTP® female ports at rear side	**Number of LC-Duplex ports at front side**	**OM4**	**SM LC-PC 0°**
2x 4+4F OCTO	**2 OCTO groups of 4 = 8**	**170H6002OM4**	**170H6003**
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 UHD.			

SMAP-G2 PURE

19” Distribution Panels empty

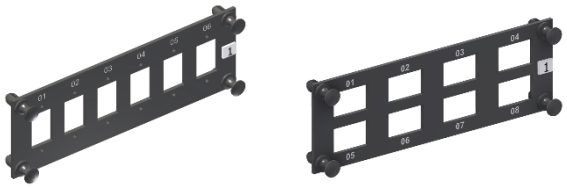
Part numbers RAL9005 black	
1HU	**171A0001P**
2HU	**172A0001P**
3HU	**173A0001P**
5HU	**175A0001P**

Standard back plane configuration for max. 12 Trunk cable-dividers per panel.

PreCONNECT® PURE
MTP® adapter-interface
at Trunk connector legs

SMAP-G2 PURE Part-Front-Plates PFP

1HU 1/4 TFP for 6 and 8 MTP® adapter-interfaces



1HU 1/2 TFP for 12 MTP® adapter-interfaces

1HE 1/4 Blind-PFP

1HE 1/2 Blind-PFP

SMAP-G2 PURE 1/4 and 1/2 Part-Front-Plates part numbers RAL9005 black	
PFP type / number of adapter slots	**SMAP-G2 PURE Part-Front-Plates without adapters**
1/4 Blind-PFP	170A0001P
1/2 Blind-PFP	170A0002P
¼ / 6 MTP®	170A0630P
¼ / 8 MTP®	170A0140P
½ / 12 MTP®	170A0670P

PreCONNECT® OCTO SR4 OM4 and OM5 Patchcord

MULTIMODE

OFNR Riser and OFNP Plenum rated Microunit Interconnect Cables 8 OM4/OM5 fibers
Diameter 3 mm
MTP® 12 female with OCTO fiber assignment
Polarity TIA method B “1 to 12”

Part number, length variable:

OFNR Riser rated:
080A2066OM4/080A2066OM5

OFNP Plenum rated:
080A2061OM4/080A2061OM5

OM5 is only needed for 400GBASE-SR4.2 BiDi channel lengths 101 to 150 meter.

OM5 OCTO patchcords are lime green.

PreCONNECT® OCTO Patchcords Polarity TIA method B “1 to 12” are suitable for Transceiver-Transceiver direct-attach.

PreCONNECT® OCTO PSM4 SM Patchcords

SINGLEMODE

OFNR Riser and OFNP Plenum rated Microunit Interconnect Cables 8 SM fibers
Diameter 3 mm
MTP® 12 female with OCTO fiber assignment
Polarity TIA method B “1 to 12”

Part number, length variable:

OFNR Riser rated: **080A2067G657A1**

OFNP Plenum rated: **080A2062G657A1**

PreCONNECT® OCTO Patchcords Polarity TIA method B “1 to 12” are suitable for Transceiver-Transceiver direct-attach.

PreCONNECT® OCTO SR4 OM4 and OM5 Multi-patchcord

MULTIMODE

OFNR Riser and OFNP Plenum rated Microunit Breakout Cables n x 8 OM4/OM5 fibers
MTP® 12 female with OCTO fiber assignment
Polarity TIA method B “1 to 12”
MTP® leg-length = standard stepped

Microunit Breakout Cables n x 8			
OCTO channels	Structure	Fiber count	Diameter
4	4 x 8	32	6.4 mm (0.25”)
8	8 x 8	64	7.5 mm (0.30”)
12	12 x 8	96	9.9 mm (0.39”)

Part numbers, length variable:

OFNR Riser rated:
4 OCTO channels: 034A2052OM4\034A2052OM5
8 OCTO channels: 034A2053OM4\034A2053OM5
12 OCTO channels: 034A2054OM4\034A2054OM5

OFNP Plenum rated:
4 OCTO channels: 027A2052OM4\027A2052OM5
8 OCTO channels: 027A2053OM4\027A2053OM5
12 OCTO channels: 027A2054OM4\027A2054OM5

OM5 is only needed for 400GBASE-SR4.2 BiDi channel lengths 101 to 150 meter.

OM5 OCTO multijumpers are lime green.

PreCONNECT® OCTO Multi-patchcord polarity TIA method B “1 to 12” are suitable for Transceiver-Transceiver direct-attach.

PreCONNECT® OCTO PSM4 SM Multi-patchcord

SINGLEMODE

OFNR Riser and OFNP Plenum rated Microunit Breakout Cables n x 8 SM fibers
MTP® 12 female with OCTO fiber assignment
Polarity TIA method B “1 to 12”
MTP® leg-length = standard stepped

Part numbers, length variable:

OFNR Riser rated:
4 OCTO channels: 034A2060G657A1
8 OCTO channels: 034A2061G657A1
12 OCTO channels: 034A2062G657A1

OFNP Plenum rated:
4 OCTO channels: 027A2060G657A1
8 OCTO channels: 027A2061G657A1
12 OCTO channels: 027A2062G657A1

Microunit Breakout Cables n x 8			
OCTO channels	Structure	Fiber count	Diameter
4	4 x 8	32	6.4 mm (0.25”)
8	8 x 8	64	7.5 mm (0.30”)
12	12 x 8	96	9.9 mm (0.39”)

PreCONNECT® OCTO Multi-patchcord polarity TIA method B “1 to 12” are suitable for Transceiver-Transceiver direct-attach.

PreCONNECT® OCTO SR4 OM4 Harness

MULTIMODE

For connecting a SR4 MPO Transceiver with four LC-Duplex-Transceivers and for Port-Breakout of OCTO Trunks:

Ex.: - QSFP 40GBASE-SR4 to four SFP+ 10GBASE-SR/SW
- QSFP 100GBASE-SR4 to four SFP+ 25GBASE-SR/SW
- QSFP 4x16 GFC to four SFP+ 16 GFC / 4x32 GFC to four SFP+ 32 GFC

OCTO SR4 OM4 Harness MTP® 12 female to 4 LC-Uniboot

OFNR Riser and OFNP Plenum rated 8 OM4 fiber Microunit Interconnect Cables 3 mm
LC-Uniboot leg-lengths 0.5m, legs numbered LSZH by default1 to 4.
Other leg lengths on request
Order length = total length

Part number coding Rx to Tx:

OFNR Riser rated: **076A0155OM4**

OFNP Plenum rated: **076A0152OM4**

PreCONNECT® OCTO PSM4 SM Harness

S I N G L E M O D E

For connecting a PSM4 MPO Transceiver with four LC-Duplex-Transceivers and for Port-Breakout of OCTO Trunks:

Ex.: - QSFP 100G PSM4 to four SFP+ 25GBASE-LR
- QSFP 4x10GBASE-LR to four SFP+ 10GBASE-LR

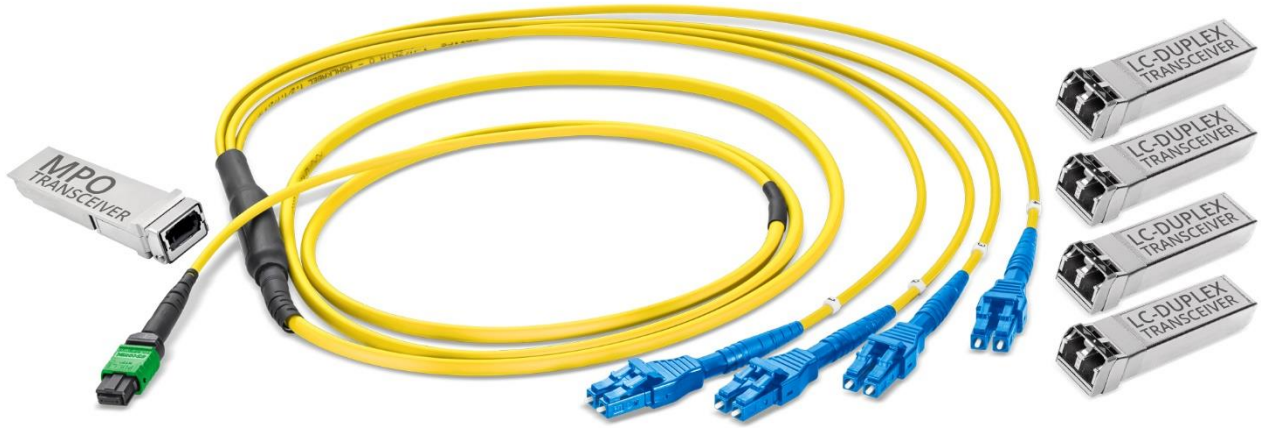
OCTO PSM4 SM Harness MTP® 12 female to 4 LC-Uniboot

OFNR Riser and OFNP Plenum rated 8 SM fiber Microunit Interconnect Cables 3 mm
LC-Uniboot leg-lengths 0.5m, legs numbered LSZH by default 1 to 4.
other leg lengths on request
Order length = total length

Part number coding Rx to Tx:

OFNR Riser rated: **076A0154G657A1**

OFNP Plenum rated: **076A0153G657A1**



Patchcords

Properties:

- Required for the high density of the SMAP-G2 HIGH-DENSITY
- 19” Panel System
- Kink and crush resistance optimized for environmental conditions
- Suitable for operation in temperatures from -10 °C to +60 °C
- Polarity:
- The standard polarity is TIA 568.3-D (A to B pairing) for full-duplex transmission system –A1 to B1, A2 to B2, etc.

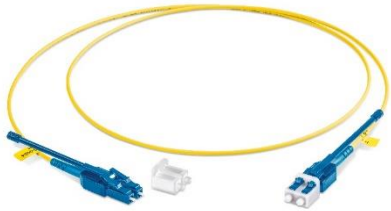
Length tolerances:

- Up to 1 m = - 50 mm
- 2 m to 3 m = - 100 mm
- 4 m to 25 m = - 200 mm
- Longer than 25 m = - 1 %

Delivery form:

- Attenuation measured in accordance with IEC 61300-3-4 “C“ or “Sub-stitution” method, measurement values on request
- Serial number labels at the cable ends on both sides
- Individually packaged in foil bags with product ID label

With LC-Uniboot connectors for SMAP-G2 19“ panel system



With LC-Uniboot HD connectors for SMAP-G2 HD 19“ panel system

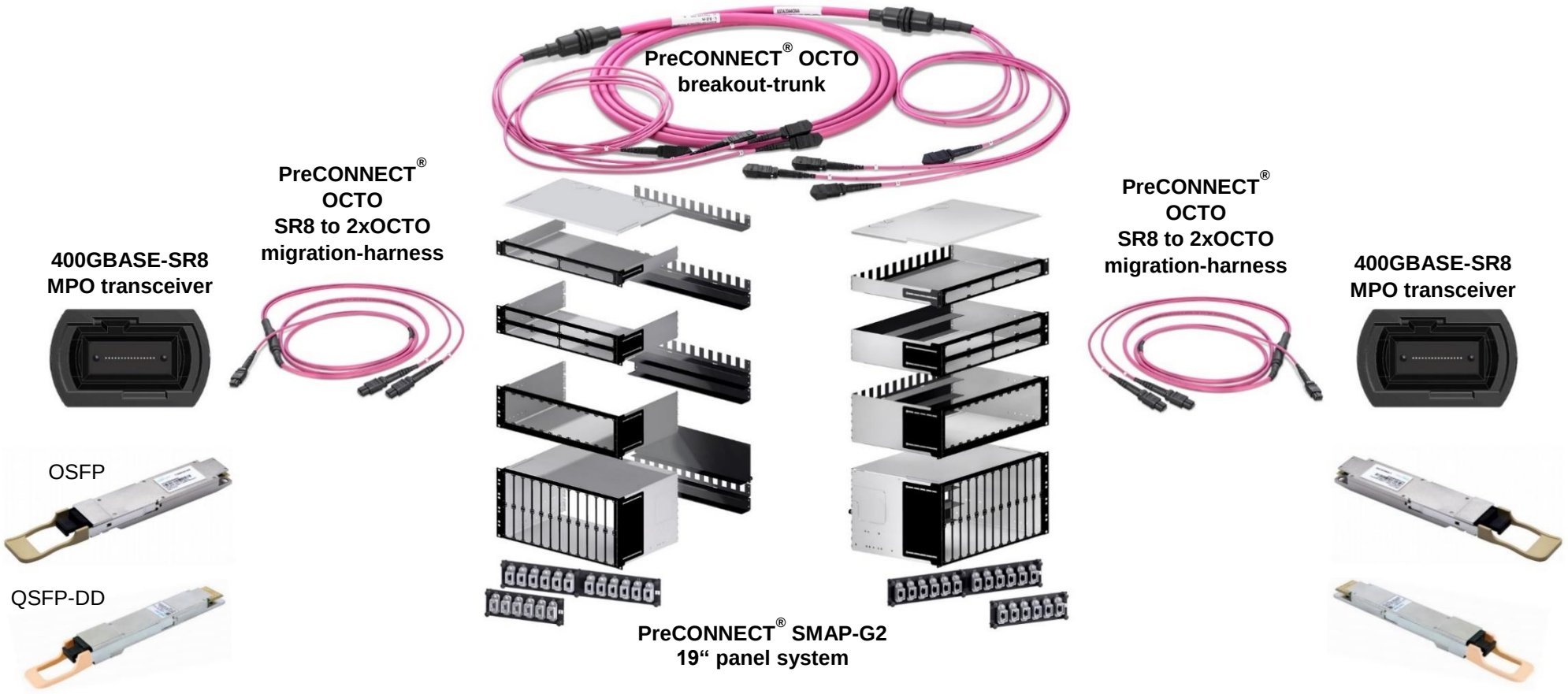
With LC-Uniboot UHD connectors for SMAP-G2 UHD 19“ panel system

Part numbers
Duplex Patchcord cable type round OFNR Riser and OFNP Plenum rated 2 fibers Interconnect Cables

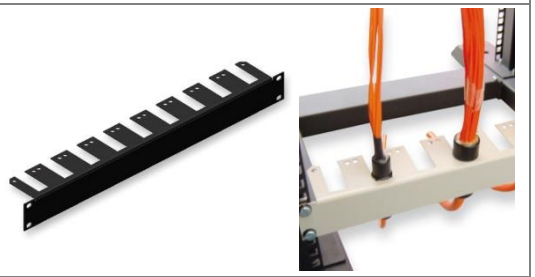
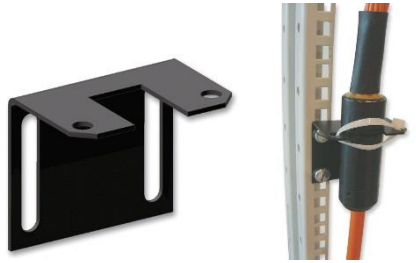
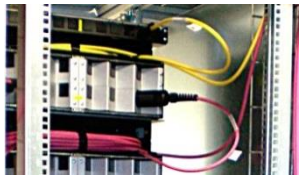
Cable diameter	Connectors	Length	Rating	OM4	SM
2.0mm	LC-Uniboot » LC-Uniboot	variable	OFNR Riser	087A6661OM4	087A6662G657A1
			OFNP Plenum	087A6657OM4	087A6658G657A1
2.0mm	LC-Uniboot HD » LC-Uniboot HD	variable	OFNR Riser	087A6663OM4	087A6664G657A1
			OFNP Plenum	087A6659OM4	087A6660G657A1
2.0mm	LC-Uniboot UHD » LC-Uni-boot UHD	variable	OFNR Riser	087A6675OM4	087A6673G657A1
			OFNP Plenum	087A6676OM4	087A6674G657A1

Migration of PreCONNECT® OCTO to 400GBASE-SR8:

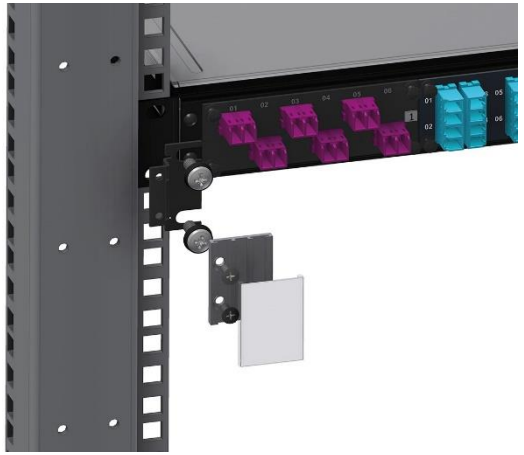
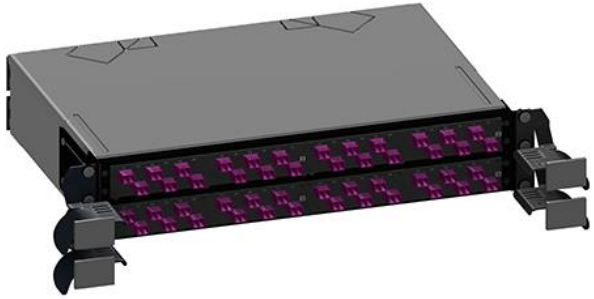
Part numbers of the shown migration-harness and how PreCONNECT® OCTO can be migrated to 400GBASE-SR16, will we explain to you on request.



Accessories:

	Part number	
19” 1 HU Universal Trunk Cable Divider Holder For the universal installation of trunk cable dividers in 19" cabinets and racks. RAL 9005 (black)	099A0085	
19” 1 HU Individual Universal Trunk Cable Divider Holder For the universal installation of trunk cable dividers in 19" cabinets or racks or anywhere where these components can be installed individually. RAL 9005 (black)	099A0065	
19” Horizontal Cable Manager RAL 9005 (black) 1 HU 2 HU	 111A0454 111A0453	
19” Cable Overlength Panel to be mounted behind Cable Managers to store Trunk cable RAL 9005 (black) 1 HU 2 HU Cable Managers must be ordered separately.	 142A0530 142A0531	 

Accessories:

	Part number	
Labeling Fields Suitable for all Rosenberger OSI panels and most commercially available panels, comprising: - 1 labeling field - Mounting material - Mounting instructions 1 HU 2 HU 3 HU 4 HU 5 HU	 171A0002 172A0002 173A0002 174A0002 175A0002	
1 HU Patchcord Guides For routing and fixing patchcords per height unit. 1 HU to both sides. The patchcord guide prevents excessively small bending radii which increase attenuation in the patchcord. Set consisting of 1 HU left-hand and right-hand patchcord guides with labeling fields and Velcro strips, M6 screws and cage nuts. Suitable for use in 600 mm (23.6 inch) wide cabinets. For 1 HU Panel For 2 HU Panel For 3 HU Panel For 4 HU Panel For 5 HU Panel	 171A0006 172A0006 173A0006 174A0006 175A0006	

Accessories:

	Part Number	
Patchcord Guides with foldaway labeling field For routing and fixing patchcords to both sides. The patchcord guide prevents excessively small bending radii which increase attenuation in the patchcord. The foldaway labeling field can be opened for patching. RAL 9005 (black) 1 HU 2 HU	 170H0005 170H0006	

Patch Location Rack:

Applications:

- High-density data center infrastructures and ultra-high-density data center patch locations

Properties:

- Cable managers attach to the sides of the rack providing cable routing for jumpers and trunk cables
- Doors on the cable managers open in both directions and are completely removable
- Professional routing of large cable volumes from the patch areas and storage of cable over length in the vertical cable managers
- Rounded T-shaped fingers ensure that the cables are extremely well protected against bending and kinking even when subject to strain.
- Material and color: Powder-coated aluminum and steel, black or glacier white

Optional:

Cable manager available in multiple sizes (widths). Use End manager at the ends of rows or on single racks, use mid manager in-between racks in multi-rack rows.

Delivery form:

- Rack and cable managers are packaged separately. Choice of cable manager sizes. Rack assembles with included hardware. Cable managers attach to the side(s) of the rack.
- Attach rack to the floor with floor-mount hardware, M10 (3/8-16) concrete anchors or all thread.

Description	Part Number	Shipping Weight kg (lb)
Standard Rack, 45U, 2100 mm (84 in.) H, 150 mm (6 in.) D, 482.6 mm (19 in. EIA) W, Black	66353-703	17.2 (38)
Standard Rack, 45U, 2100 mm (84 in.) H, 150 mm (6 in.) D, 482.6 mm (19 in. EIA) W, Glacier White	66353-E03	17.2 (38)
Evolution g3 Combination Vertical Cable Manager, 2100 mm (84 in.) H, 513 mm (20.2 in.) D, 200 mm (8.0 in.) W, Black	35572-703	32.7 (72)
Evolution g3 Combination Vertical Cable Manager, 2100 mm (84 in.) H, 513 mm (20.2 in.) D, 200 mm (8.0 in.) W, Glacier White	35572-E03	32.7 (72)
Evolution g3 Combination Vertical Cable Manager, 2100 mm (84 in.) H, 513 mm (20.2 in.) D, 150 mm (6.0 in.) W, Black	35571-703	30.8 (68)
Evolution g3 Combination Vertical Cable Manager, 2100 mm (84 in.) H, 513 mm (20.2 in.) D, 150 mm (6.0 in.) W, Glacier White	35571-E03	30.8 (68)

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

The connectivity system of multimode Parallel Optics is MTP®/MPO

- MTP® = “Mechanical Transfer Push-On”, is a registered trademark of US Conec Ltd., since 1997 on the market
- Standardized since 2000 in IEC 61754-7 as MPO = “Multifiber Push-On” or “Multipath Push-On”
- MTP®/MPO is the fiber optic connectivity system with the highest density, 4 to 72 fibers
- In 1997 Rosenberger became first manufacturer of MTP® cabling systems in Europe, through initiative of IBM
- We are one of only a few worldwide IBM MTP® qualified manufacturers
- Rosenberger was the first European partner of the MTP® inventor and patent owner US Conec Ltd., We are the largest MTP® assembler in Europe, and one of the largest in Asia.

One connection consists of:

a “female” connector **without pins but pin holes** …

… a “male” connector **with pins** …

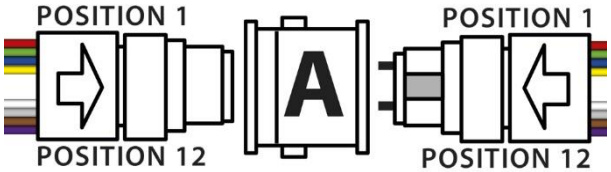
… and the **adapter**.

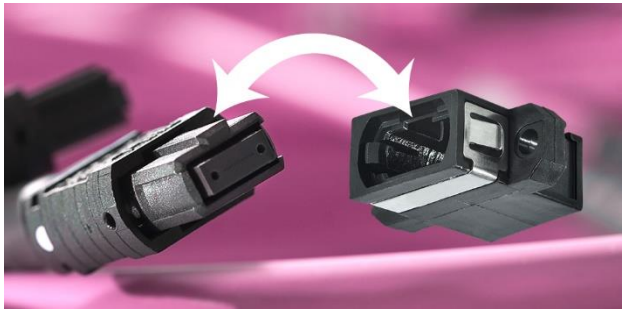
PreCONNECT® OCTO – TECHNOLOGY AND BASICS

MTP®/MPO adapters

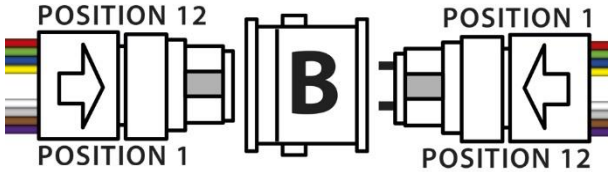
- are only mechanical fixture, fiber positioning through “male” pins in “female” holes of the ferrules
- according to ANSI/TIA-568-B.1-7, two designs of MTP® adapters are existing

Type A “Key-up to Key-down”
mated connection
Polarity “1 to 1”

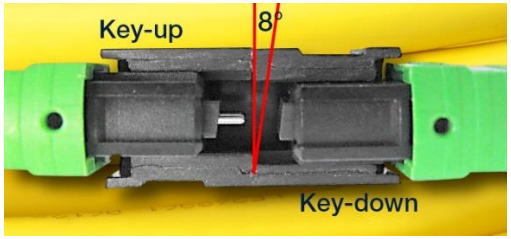




Type B “Key-up to Key-up” (aligned key)
mated connection
Polarity “1 to 12”



Because singlemode MTP® connectors are usually APC 8°, singlemode MTP® adapters must be Type A “Key-up to Key-down”.



MTP® adapter colors:
Type A “Key-up to Key-down”:
OM2 = black, OM3 = aqua, OM4 = violet, SM = green

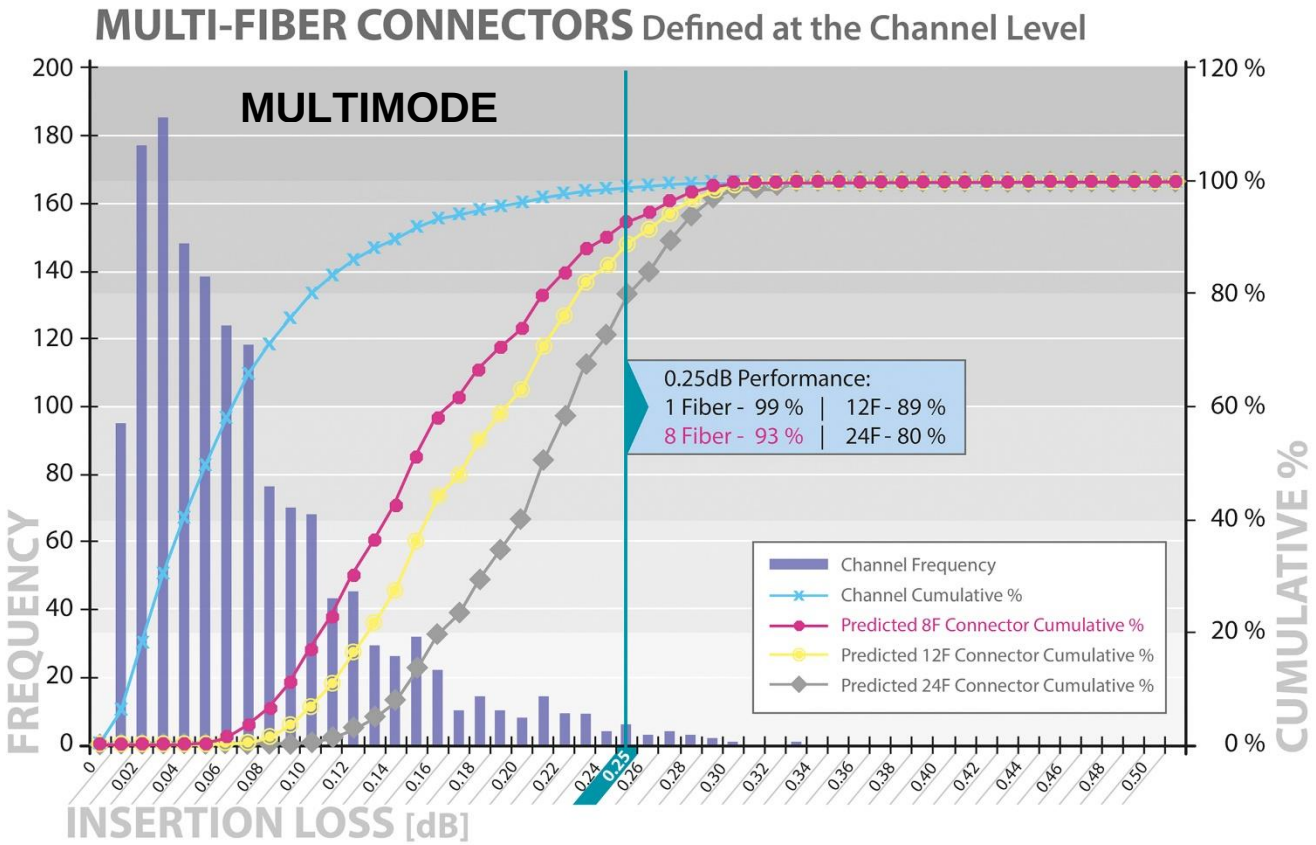
Type B “Key-up to Key-up”:
grey for all fiber types

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

- **OCTO multimode products** comprise MTP® multimode Elite® ferrules, which is necessary through the low power budget of the SR4 applications.
- The Insertion Loss (IL) of connections within channels:

  89% of all 12 fiber connections have less than 0.25 dB attenuation

- **OCTO singlemode** products comprise MTP® singlemode standard ferrules, which is sufficient for the power budget of the PSM4 applications.



Source: US Conec Ltd.

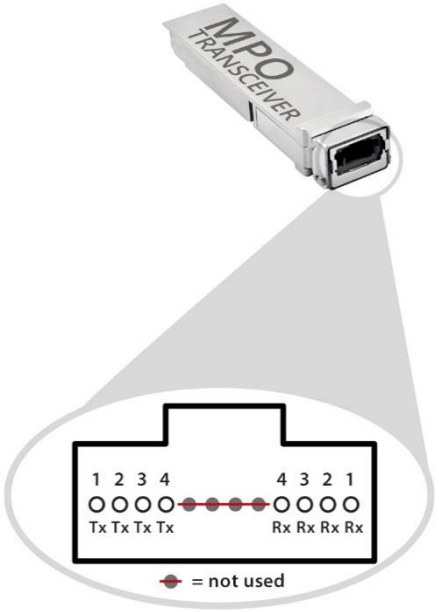
PreCONNECT® OCTO – TECHNOLOGY AND BASICS

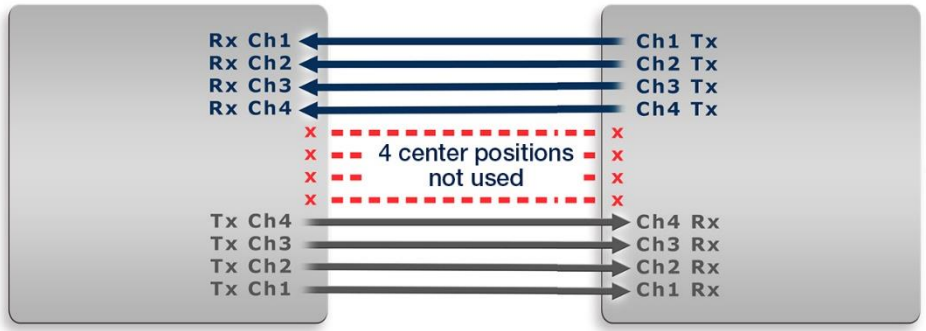
OCTO fiber assignment

SR4 multimode and PSM4 singlemode Parallel Optics applications

40/100/200GBASE-SR4, 4x16/4x32G Fiber Channel, InfiniBand® 4x, PSM4

QSFP SR4 or
PSM4 MPO 12 Transceiver





QSFP SR4 or
PSM4 MPO 12 Transceiver

- SR4 and PSM4 MPO Transceivers are male (with pins)
- MPO/MTP® connectors must be female (without pins) and must have 12 fiber matrix
- The singlemode MPO/MTP® connectors for PSM4 must be APC 8°, female, 12 fiber matrix

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

Polarity:

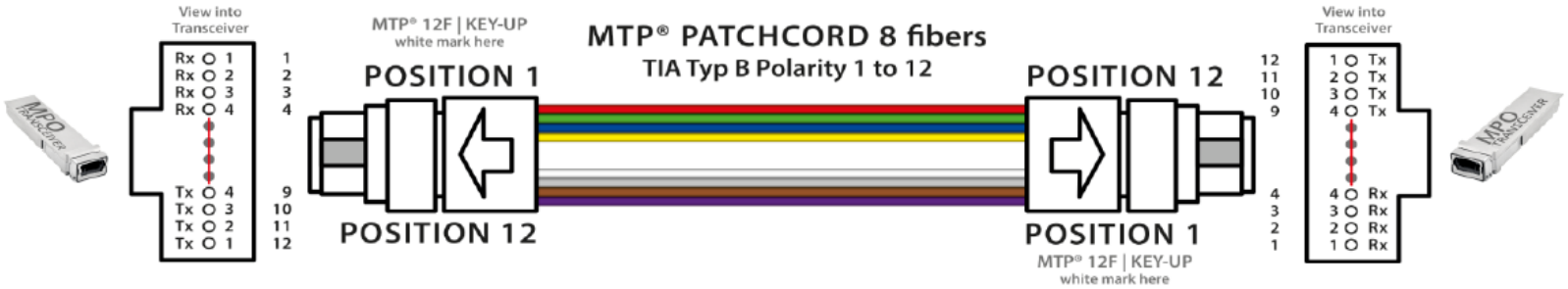
The Polarity within Parallel Optics channels must ensure the connection of transmitter Tx1 of the Transceiver at one end with the Receiver Rx1 of the Transceiver at the other end and Tx2 with Rx2, Tx3 with Rx3, etc.

With Parallel Optics applications having Transceiver or Transmitter and Receiver with 12 fiber MTP® interfaces, polarity must be : fiber position 1 of the MTP® at one end must be linked with fiber position 12 of the MTP® at the other end, the light must propagate from 1 to 12.

The fiber positions within MTP® connectors are counted from the side with the white mark.

1 2 3 4 . . . . 9 10 11 12
fiber positions

TIA method/type B “1 to12” is the SR4 and PSM4 Polarity:



PreCONNECT® OCTO – TECHNOLOGY AND BASICS

Channel specifications				
Multimode applications	**channel lengths max. [m]**			**channel attenuation max. [dB]**
	OM3	OM4	OM5	
40GBASE-SR4	IEEE 802.3 = 100 R-O = 140	IEEE 802.3 = 150 R-O = 170	IEEE 802.3 = 150 R-O = 170.	OM3 1.9 / OM4 and OM5 1.5
100GBASE-SR4 **200GBASE-SR4** **400GBASE-SR16** **400GBASE-SR8**	70	100	100	OM3 1.8 / OM4 and OM5 1.9
400GBASE-SR4.2	70	100	150	OM3 1.8 / OM4 1.9 / OM5 2.0
BROCADE 4x16 GFC	66	100	n.s.	OM3 1.9 / OM4 1.5
BROCADE 4x32 GFC	70	100	n.s.	OM3 1.9 / OM4 1.5
Singlemode applications	**channel lengths max. [m]**			**channel attenuation max. [dB]**
100G PSM4	500			3.3
200GBASE-DR4	500			3.0
400GBASE-DR4	500			3.0
R-O = channel lengths possible with Rosenberger OSI OM3 and OM4 fibers / n.s. = not specified				
Skew variation of the entire cabling channel (possible through electronic skew compensation)**:** 40/100/200/400GBASE-SRx max. 2.2ns / PSM4 and DR4 max 2.4ns (Skew = time delay of related parallel running parts of a signal)				

About Rosenberger:

Rosenberger designs and manufactures world class solutions to address a variety of needs in Data Centers and Enterprise networks around the globe. With over 25 years of optical fiber network experience, and optical manufacturing in North America, Europe, Asia, and South America, our optical interconnection solutions are deployed in many of the largest Data Centers in the world. As the optical networking industry moves from many smaller enterprise owned data centers to fewer “hyper-scale” providers of Cloud and Colocation hosting, so has Rosenberger continued to innovate solutions to address the changing interconnection needs. Our solutions are deployed in many of the largest data centers of the world.

For further information, please visit: www.rosenberger.com

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