Rosenberger

PreCONNECT® OCTO - North America version

PreCONNECT® OCTO solution is available in three end face quality features: BASIC, PURE and LOTUS

Define the end face quality according to your application requirements:

Quality feature 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 quality feature BASIC solution ensure end to end performance of the entire channel

Quality feature PURE is the enhanced version of our quality feature BASIC, but with more stringent defect and cleanliness screening and factory sealed, tamper evident adapter interfaces.

- Guaranteed protection of the polished connector end face 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*/**.
- Quality feature PURE provides an industry leading low <u>random mate</u> insertion and return loss (mean) which enables up to six (6) mated pairs in a 10G/OM4 application up to 300m.

Quality feature LOTUS builds upon our BASIC and 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:

Quality feature BASIC: The part numbers XXXAXXXX listed in this document are valid for the BASIC quality feature.

Quality feature PURE: Add a "<u>P</u>" to the end of the quality feature BASIC part number (*Example: XXXAXXXX<u>P</u>*)

Quality feature LOTUS: Add an "<u>L</u>" to the end of the quality feature BASIC part number (*Example: XXXAXXXX<u>L</u>*)

(Note: 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 PURE installations due to guaranteed performance, certain customers will require testing documentation for their records.*

** *Only applicable when all components are of quality feature PURE and installed by trained PURE installers.*

Applications:

Infrastructure and IT room cabling within data centers

System consists of:

- Factory assembled FO OFNP Plenum rated n x 8 fiber Microunit Breakout Cables, up to 192 fibers with connector systems MTP® 4+4 fiber OCTO per MTP® channel
- Port-breakout with MTP® - LC and MTP® - MDC harnesses and MTP® module cassettes with LC and MDC front
- Three 19" panel systems selectable: SMAP-G2 SD, SMAP-G2 HD and SMAP-G2 UHD
- Suitable patchcords
- Useful accessories

Features:

- For all who already have on minimum one cabling side MPO based parallel optics SR4, PSM4 or DR4 transceivers
- Cost and attenuation optimized for SR4, PSM4 or DR4 applications

Your benefits at a glance:

- MTP® cabling system perfectly fitting for SR4, PSM4 and DR4 applications
- Cost reduction through the only for SR4, PSM4 and DR4 needed 8 fibers instead of the so far usual 12 are in one MTP® channel
- Fast and safe installation trough factory assembled plug & play systematic
- Highest quality and cost-efficiency through factory assembling
- PreCONNECT® cabling systems consist of perfectly harmonized modular single components

PreCONNECT® OCTO breakout trunk
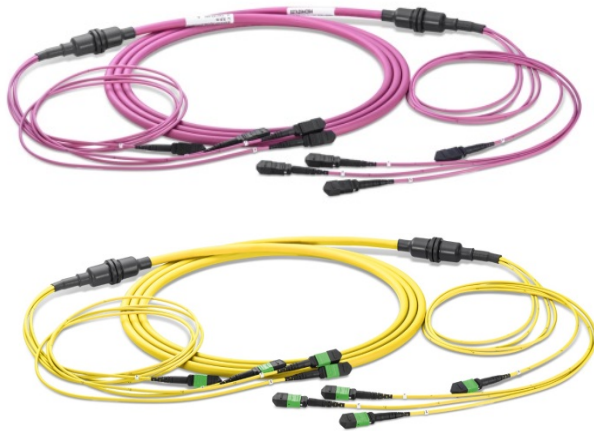
PreCONNECT® OCTO harnesses with LC-COMPACT and MDC
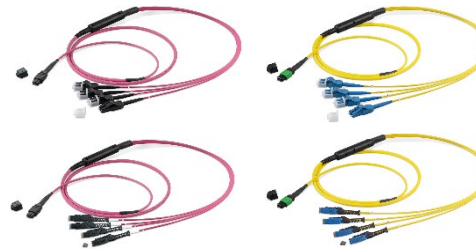
PreCONNECT® OCTO patchcords

LC-COMPACT and MDC patchcords

19" panel systems

SMAP-G2 SD

SMAP-G2 HD and 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, 4x32 and 4x64 GFC**
- **100G PSM4**
- **4x10 GBASE-LR**
- **200GBASE-DR4**
- **400GBASE-DR4**

Easy migration to 400 GBASE-SR8 and SR16.

System description:

Our PreCONNECT® OCTO cabling system consists of:

- OCTO breakout trunk called factory assembled FO cables with up to 24 SR4 or PSM4 MTP® channels (24x8=192 fibers).
- 19" panel systems with part front plates with MTP®/MPO adapters and OCTO module cassettes
- OCTO patchcords and harnesses
- Useful accessories

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 can be tool-less hooked into the 19" panel systems for tensile and torsion resistant fixing of the trunks.

The trunk connector legs are fitting for the 19" panel systems and are packaged in non-pull resistant dust-proof foil tubes. On request with tensile strength, crush resistant, kink and torsion resistant, installation tubes deliverable.
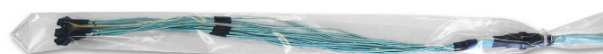
Installation Tube Indoor, IP50 dustproof

Properties:

Connector types:
- OCTO breakout trunks: MTP® male 4+4 fiber OCTO
- OCTO patchcords, multijumpers, harnesses and module cassettes: MTP® female 4+4 fiber OCTO

Adapter types:
- MTP® multimode: TIA type B "aligned key" „1 to 12" grey
- MTP® singlemode TIA type A "opposed key" „1 to 1" green
- Description of the adapter types A and B see last pages of in this document

Polarity:
- OCTO breakout trunks: TIA Method B „1 to 12"
- OCTO patchcords, harnesses and module cassettes: see pages of the products

Cable types:
- PreCONNECT® OCTO breakout trunks: OFNP Plenum rated n x 8 fiber Microunit Breakout Cables
- PreCONNECT® OCTO patchcords and harnesses: OFNP Plenum rated 8 fiber Microunit Interconnect Cables
- Cable data, see separate cable data sheets

Fiber types:
- Multimode OM4 an dOM5 bend-insensitive
- Singlemode G.657.A1 bend-insensitive and backwards compatible to G.652.D
- Fiber data, see separate fiber data sheets
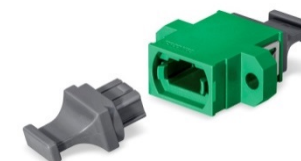
Delivery form:
Dependent on the length as cable ring or on cardboard or wooden drum,
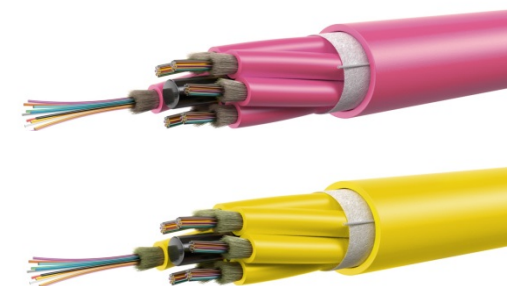100% IL factory measured with measurement protocol, product label with serial number on both sides.

MTP® female

MTP® male
(with Pins)

TIA type B "aligned key" „1 to 12" grey

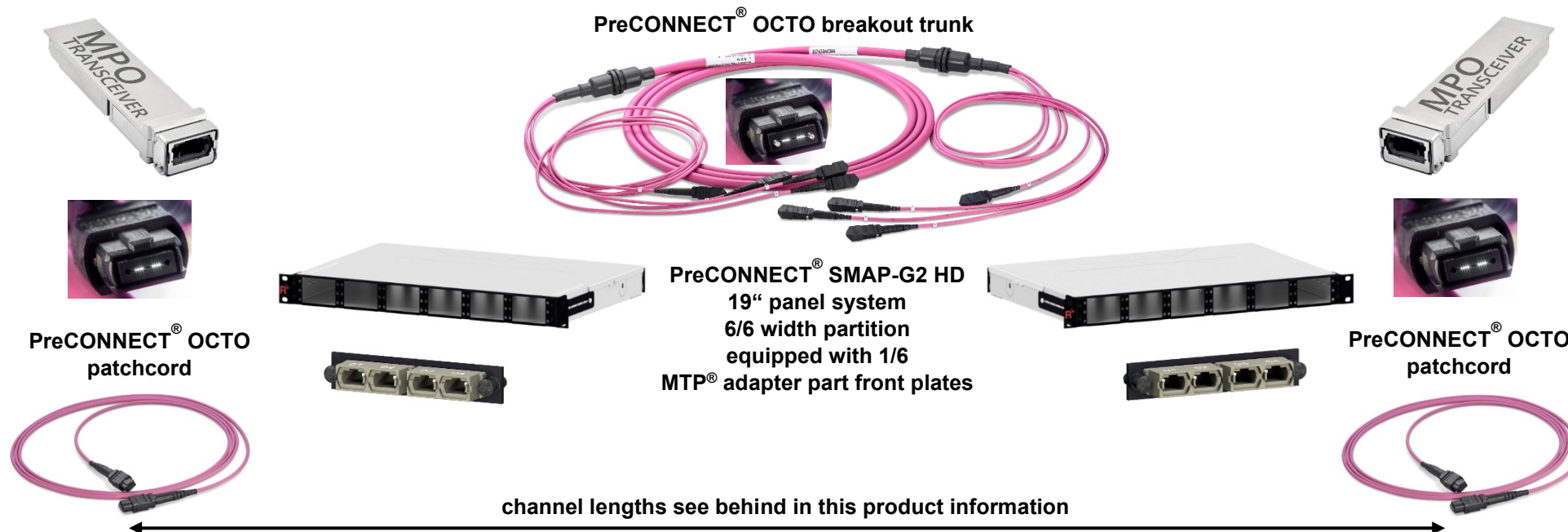TIA type A "opposed key" „1 to 1" green

Microunit Breakout Cables 6 x 8 fibers

PreCONNECT® OCTO application case point-to-point:

- **40 / 100 / 200 GBASE-SR4 and 400GBASE-SR4.2 BiDi MPO-MPO**
- **4x16 / 4x32 / 4x64 GFC MPO-MPO**

PreCONNECT® OCTO breakout trunk

**PreCONNECT® SMAP-G2 HD
19" panel system
6/6 width partition
equipped with 1/6
MTP® adapter part front plates**

**PreCONNECT® OCTO
patchcord**

**PreCONNECT® OCTO
patchcord**

channel lengths see behind in this product information

POSITION 1 | patchcord | POSITION 12 | POSITION 1 | trunk | POSITION 12 | POSITION 1 | patchcord | POSITION 12

POSITION 12 | type B 1 to 12 female/female | POSITION 1 | POSITION 12 | type B 1 to 12 male/male | POSITION 1 | POSITION 12 | type B 1 to 12 female/female | POSITION 1
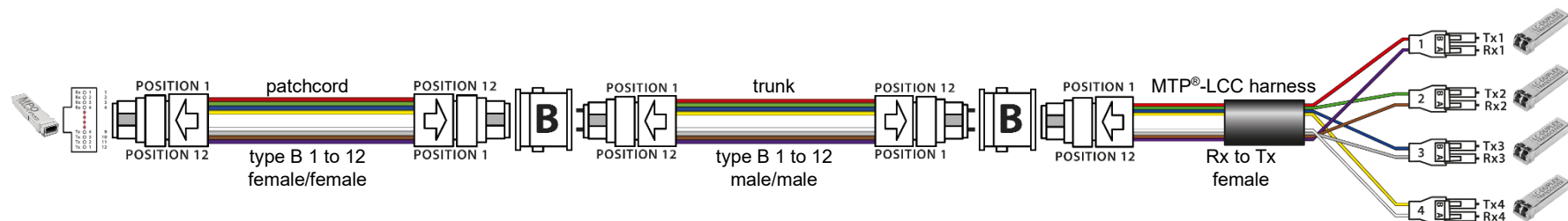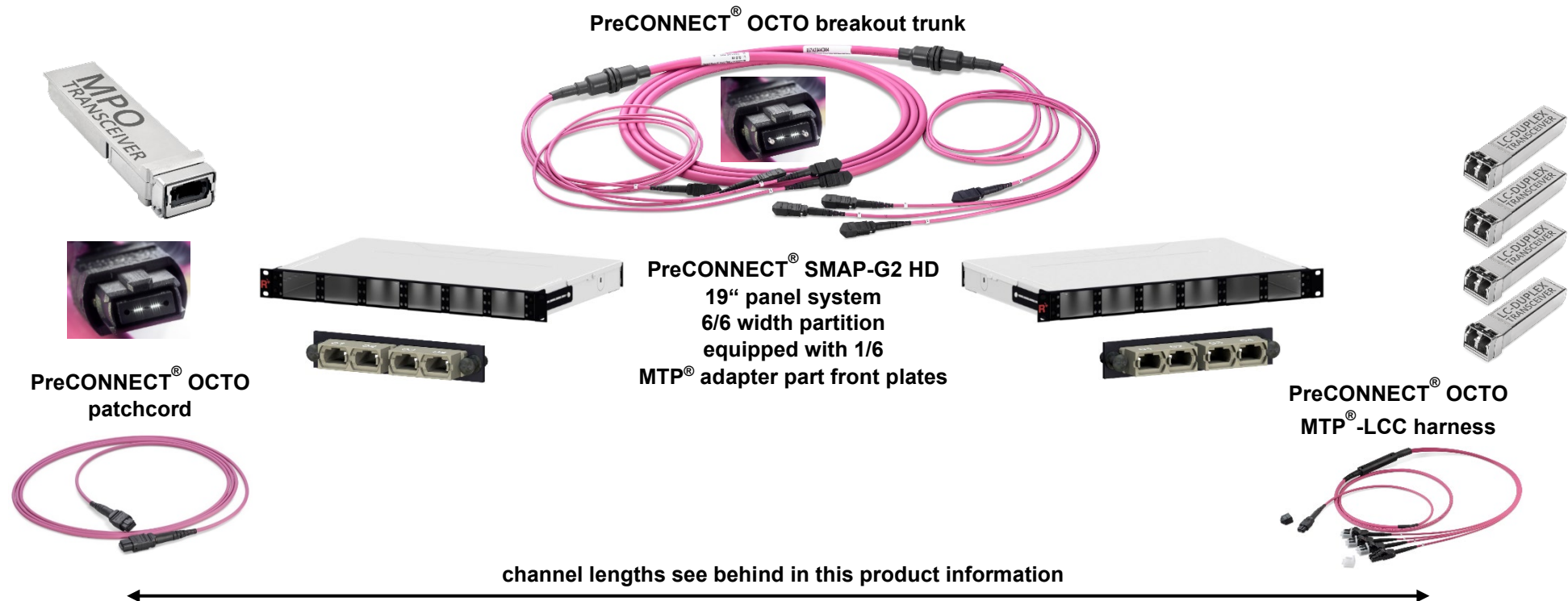
patchcord and trunk IEC fiber color code / MTP® adapter B „aligned keys" „1 to 12"

PreCONNECT® OCTO application case port breakout with MTP® harness:

- 40 / 100 / 200 GBASE-SR4 MPO to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex
- 4x16 / 4x32 / 4x64 GFC MPO to 4x16 / 4x 32 / 4x 64 GFC LC-Duplex

PreCONNECT® OCTO breakout trunk

PreCONNECT® SMAP-G2 HD
19" panel system
6/6 width partition
equipped with 1/6
MTP® adapter part front plates

PreCONNECT® OCTO
patchcord

PreCONNECT® OCTO
MTP®-LCC harness

channel lengths see behind in this product information

POSITION 1   patchcord   POSITION 12   **B**   POSITION 1   trunk   POSITION 12   **B**   POSITION 1   MTP®-LCC harness

POSITION 12   POSITION 1   POSITION 12   POSITION 1   POSITION 12

type B 1 to 12 female/female   type B 1 to 12 male/male   Rx to Tx female
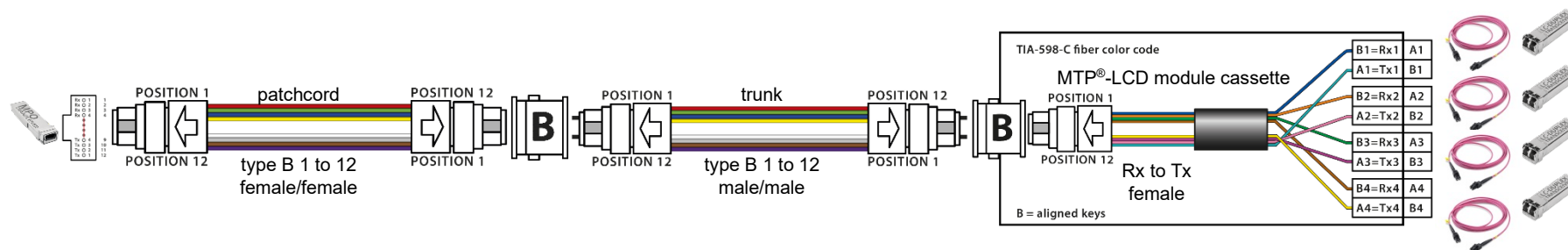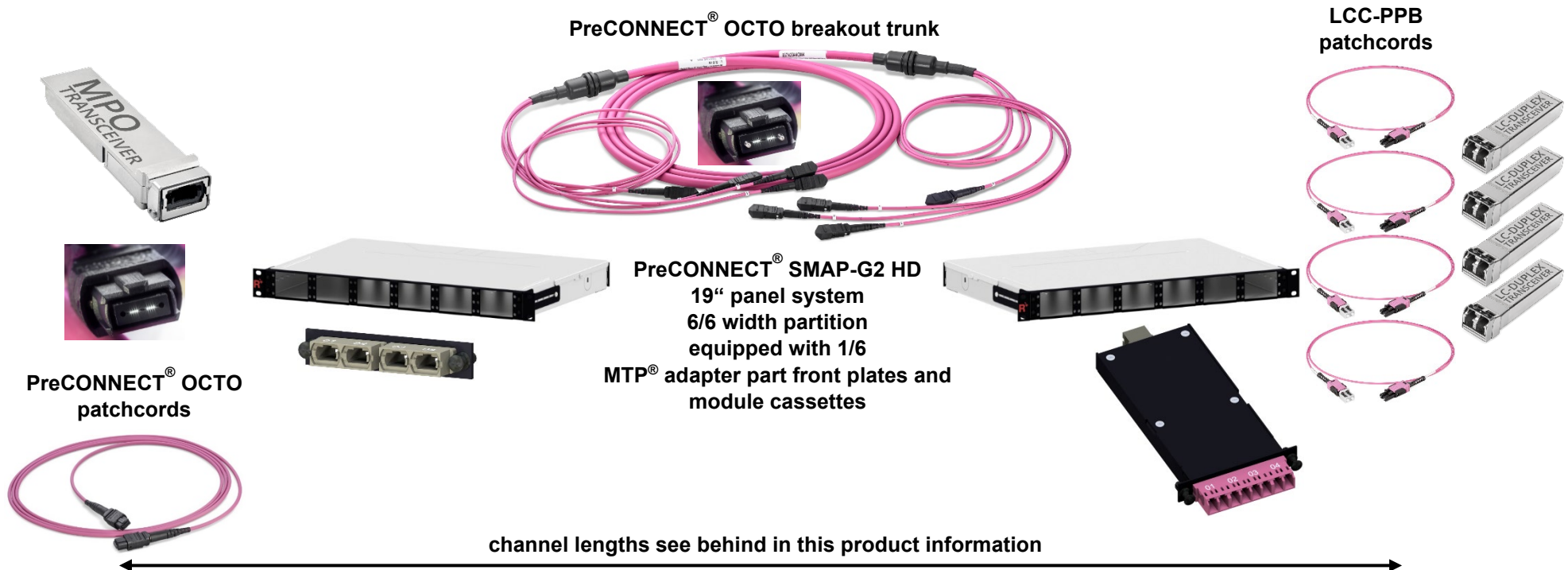
Tx1 Rx1 / Tx2 Rx2 / Tx3 Rx3 / Tx4 Rx4

patchcord, trunk and harness IEC fiber color code / MTP® adapter B „aligned keys" „1 to 12"

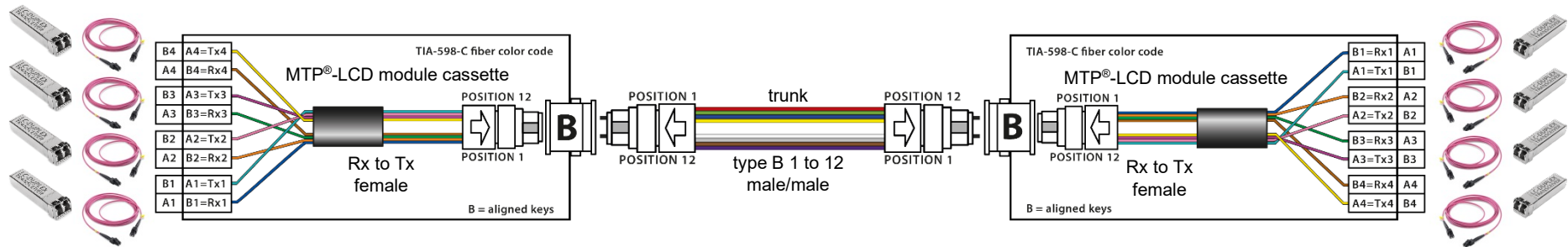**PreCONNECT® OCTO application case port breakout with MTP® module cassette:**

- 40 / 100 / 200 GBASE-SR4 MPO to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex
- 4x16 / 4x32 / 4x64 GFC MPO to 4x16 / 4x 32 / 4x 64 GFC LC-Duplex

PreCONNECT® OCTO breakout trunk

LCC-PPB patchcords

PreCONNECT® SMAP-G2 HD
19" panel system
6/6 width partition
equipped with 1/6
MTP® adapter part front plates and module cassettes

PreCONNECT® OCTO patchcords

channel lengths see behind in this product information

patchcord and trunk IEC fiber color code / modul cassette TIA fiber color code / MTP® adapter B „aligned keys" „1 to 12"

PreCONNECT® OCTO application case MTP® module cassettes at both sides:

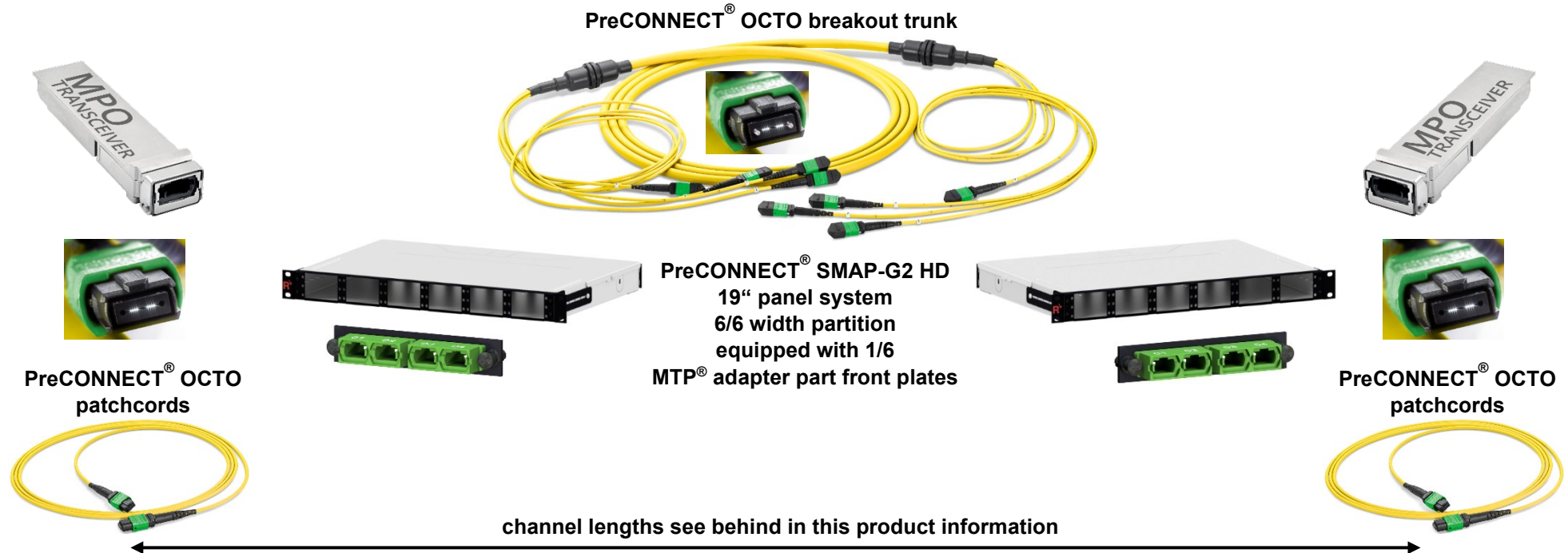## PreCONNECT® OCTO application case daisy chain to „4-connector channel":

patchcord and trunk IEC fiber color code / modul cassette TIA fiber color code / MTP® adapter B „aligned keys" „1 to 12"

PreCONNECT® OCTO application case point-to-point:

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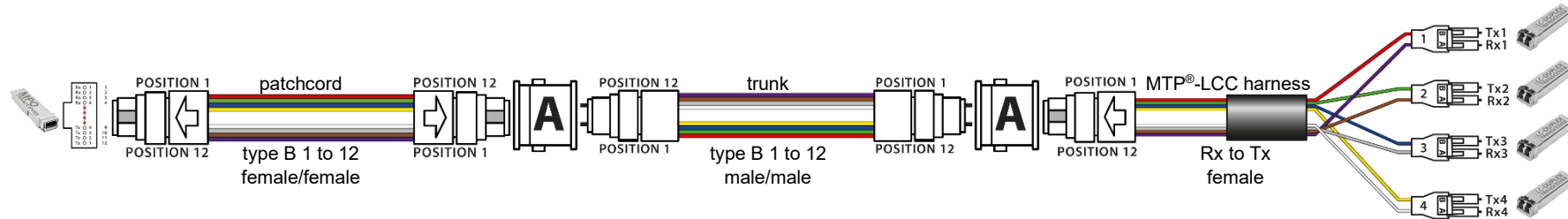- **4x10 GBASE-LR MPO-MPO**
- **200 and 400GBASE-DR4 MPO-MPO**

PreCONNECT® OCTO breakout trunk

PreCONNECT® SMAP-G2 HD
19" panel system
6/6 width partition
equipped with 1/6
MTP® adapter part front plates

PreCONNECT® OCTO patchcords

PreCONNECT® OCTO patchcords

channel lengths see behind in this product information

patchcord and trunk IEC fiber color code / MTP® adapter A „opposed keys" „1 to 1"

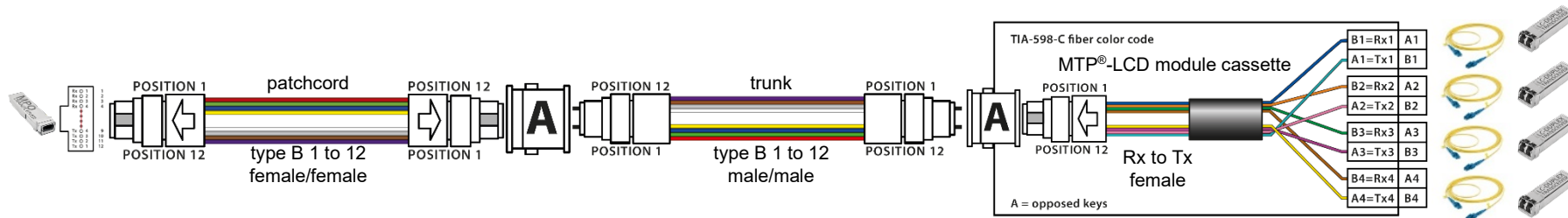**PreCONNECT® OCTO application case port breakout with MTP® harness:**

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**

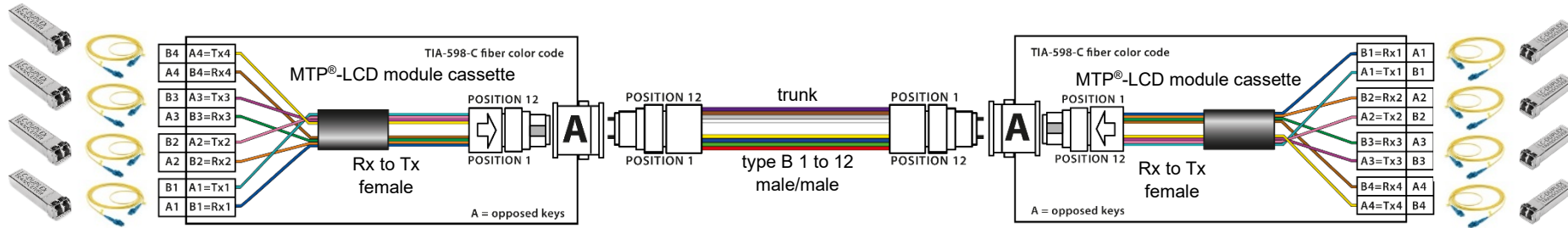**PreCONNECT® OCTO application case port breakout with MTP® module cassette:**

- **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**
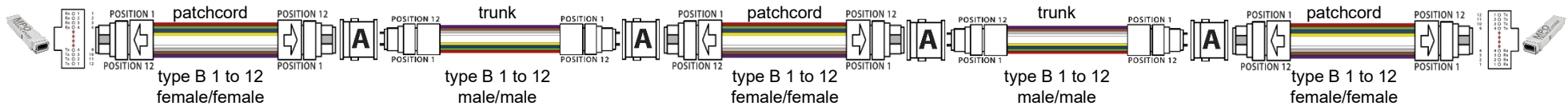- **400GBASE-DR4 MPO to 4x100 GBASE-LR LC Duplex**

Patchcord, trunk and harness IEC fiber color code / modul cassette TIA fiber color code / MTP® adapter A „opposed keys" „1 to 1"

SINGLEMODE

PreCONNECT® OCTO application case MTP® module cassettes at both sides:

PreCONNECT® OCTO application case daisy chain to „4-connector channel":

patchcord and trunk IEC fiber color code / modul cassette TIA fiber color code / MTP® adapter A „opposed keys" „1 to 1"

PreCONNECT® OCTO OM4 and OM5 breakout trunk:

MULTIMODE

- OFNP Plenum rated Microunit Breakout Cables n x 8 OM4 or OM5 fibers
- MTP® 4+4 OCTO, MM, male, Elite quality
- Polarity TIA method B "1 to 12"
- MTP® leg-length = standard stepped

Length definition:

- Order length = length between the connectors of the longest legs at both sides, not between the PreCONNECT® square interfaces.
- Possible order-lengths: From 5 to 2000 meter

Part numbers, length variable:

Number of OCTO channels	Part numbers OM4	Part numbers OM5	Cable structure	Number of fibers
1	027A2047OM	027A2047OM5	1 x 8	8
2	027A2048OM	027A2048OM5	2 x 8	16
4	027A2049OM	027A2049OM5	4 x 8	32
8	027A2050OM	027A2050OM5	8 x 8	64
12	027A2051OM	027A2051OM5	12 x 8	96
24	027A2067OM	027A2067OM5	24 x 8	192
On request you can get technical data of connectors, fibers and cables via the product profile of your selected trunks.				

Length tolerance:

Trunk length	Tolerance
<= 10m	+/- 50cm
> 10m <= 30m	+/- 100cm
> 30m <= 100m	+/- 150cm
> 100m	+/- 2%

OM5 is only needed for 400GBASE-SR4.2 BiDi channel lengths 101 to 150 meter. OM5 OCTO trunks are fibrous green.

Connector leg lengths see table at page of SM Breakout-Trunk

PreCONNECT® OCTO SM breakout trunk:

- OFNP Plenum rated Microunit Breakout Cables n x 8 SM fibers
- MTP® 4+4 OCTO, SM, male, Standard quality
- Polarity TIA method B "1 to 12"
- MTP® leg-length = standard stepped

Length definition:

- Order length = length between the connectors of the longest legs at both sides, not between the PreCONNECT® square interfaces.
- Possible order-lengths: From 5 to 2000 meter

Part numbers, length variable:

Number of OCTO channels	Part numbers	Cable structure	Number of fibers
1	027A2075G657A1	1 x 8	8
4	027A2076G657A1	4 x 8	32
8	027A2077G657A1	8 x 8	64
12	027A2078G657A1	12 x 8	96

On request you can get technical data of connectors, fibers and cables via the product profile of your selected trunks.

SINGLEMODE

Length tolerance:

Trunk length	Tolerance
<= 10m	+/- 50cm
> 10m <= 30m	+/- 100cm
> 30m <= 100m	+/- 150cm
> 100m	+/- 2%

Connector leg lengths:

Number of OCTO channels	Leg lengths [cm]
1	79
2	79 to 87 stepped
4	79 to 95 stepped
8	79
12	79
18	79
24	79
Production tolerance – 7 cm	

PreCONNECT® SMAP-G2 Standard Density (SD) 19" panel system:

Port density:
- 48 LC-Duplex or MTP® ports per HU at the 1, 2 and 3 HU panels and 57.6 per HU (total 288) at the 5 HU panel

Dimensions:
- Width: 19"
- Height: 1, 2, 3 and 5 HU
- Depth: 200 mm and 300 mm, see product information SMAP-G2 SD

Part numbers:

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

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

Find panels with other back plane configurations and further information in our product information SMAP-G2 SD.

SMAP-G2 SD panels for PURE trunks are described behind in this document.

1 HU

2 HU

3 HU

5 HU

Front granularity with 1/4 PFPs

Front granularity with 1/2 PFPs
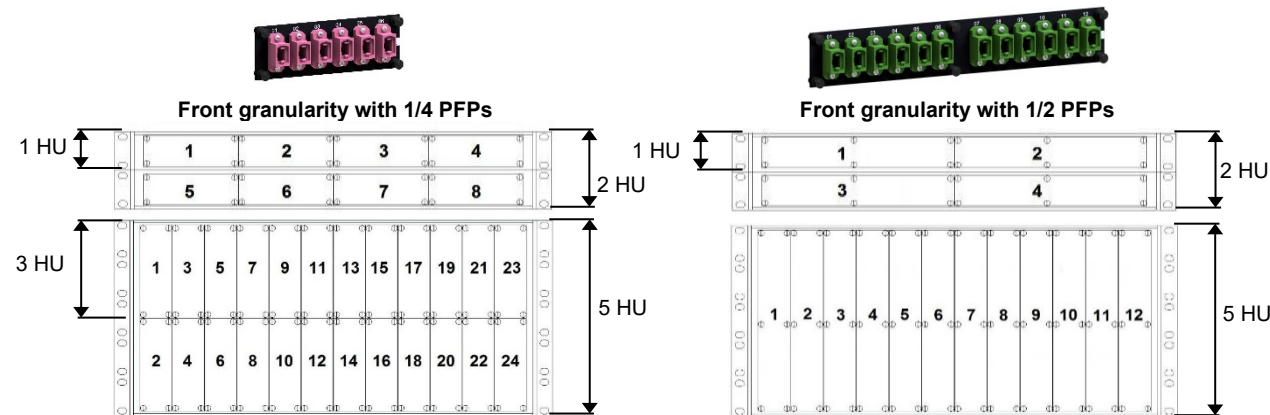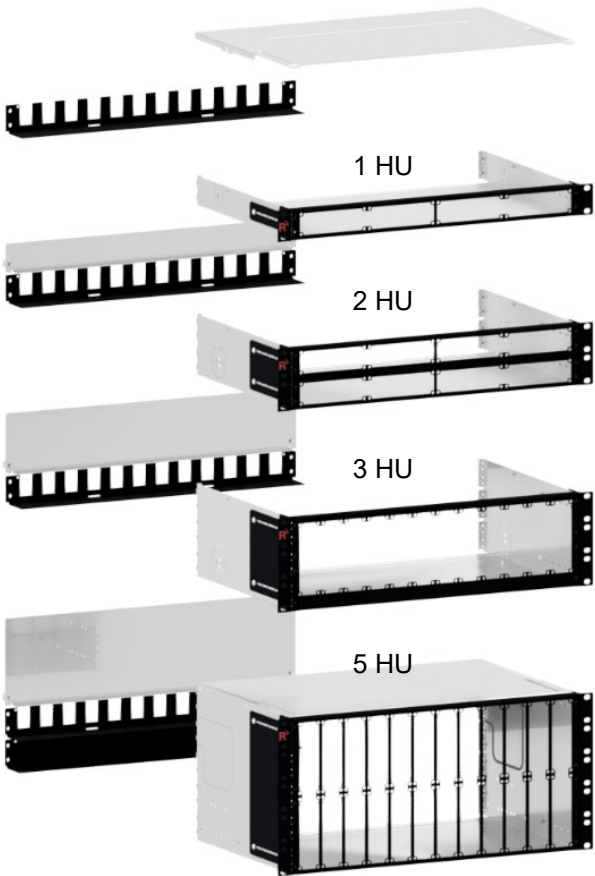
SMAP-G2 SD 1HU 1/4 and 1/2 part front plates with matrix numbering:

Part numbers RAL9005 black			
1 HU 1/4 Blind PFP	170A0001		
1 HU 1/2 Blind PFP	170A0002		
PFP type	**Number and type of ports**	**for fiber type**	
		MM	**SM**
		grey type B "aligned key	green type A "opposed key"
1 HU 1/4	6 x MTP®	170A0630TB	170A0620
1 HU 1/4	8 x MTP®	170A0141TB	170A0140
1 HU 1/4	12 x MTP®	170A0636TB	170A0623
1 HU 1/2	12 x MTP®	170A0670TB	170A0660
1 HU 1/2	24 x MTP®	170A0674TB	170A0664
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2 SD.			

1 HU 1/4 Blind PFP   **1 HE 1/2 Blind PFP**

1 HU 1/4 PFP 6 MTP®   **1 HU 1/4 PFP 8 MTP®**   **1 HU 1/4 PFP 12 MTP®**

1 HU 1/2 PFP 12 MTP®   **1 HU 1/2 PFP 24 MTP®**

SMAP-G2 SD 24 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO trunks:

Properties:

- For port breakout of PreCONNECT® OCTO trunks with MTP® connectors
- Height: 1 HU
- Width: 1/4
- Depth: 115 mm
- Polarity: Rx to Tx
- 3x MTP® female port 4+4F OCTO at the rear side:
  - OM4: Elite quality, MTP® adapter type B „aligned key" grey
  - SM: Standard quality, MTP® adapter type A „opposed key" green
- 12 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 colour:
  - Cassette body: aluminum powder coated RAL9005 black
  - Front: steel powder coated RAL9005 black

Part numbers RAL9005 black				
Number of 4+4F OCTO MTP® female ports at rear side	**Number of LC-Duplex ports at front side**	**OM4**	**SM LC-PC 0°**	**SM LC-APC 8°**
3	3 OCTO groups of 4 = 12	170A2026OM4	170A2027	on request
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 SD.				

PreCONNECT® SMAP-G2 High Density (HD) 19" panel system:

Port density:
▪ 72 LC-Duplex or MTP® ports or 144 MDC ports per HU

Dimensions:
▪ Width: 19"
▪ Height: 1 HU and 2 HU
▪ Depth: 200 mm and 300 mm, see product information SMAP-G2 HD

Part numbers:

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

▪ 1 HU, 6/6 OCTO width partition, depth 300 mm: 171H0013

Find panels with other back plane configurations and further information in our product information SMAP-G2 HD.

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

LC-COMPACT Push-Pull-Boot (LCC-PPB) and MDC patchcords with cable diameter 2.0 mm or thinner must be used with this panel system, to be found behind in this product information.

171H0013

Front granularity 6/6 OCTO width partition

1	4	7	10	13	16
2	5	8	11	14	17
3	6	9	12	15	18

LCC-PPB   **MDC**

SMAP-G2 HD 1/3 HU 1/6 part front plates with matrix numbering:

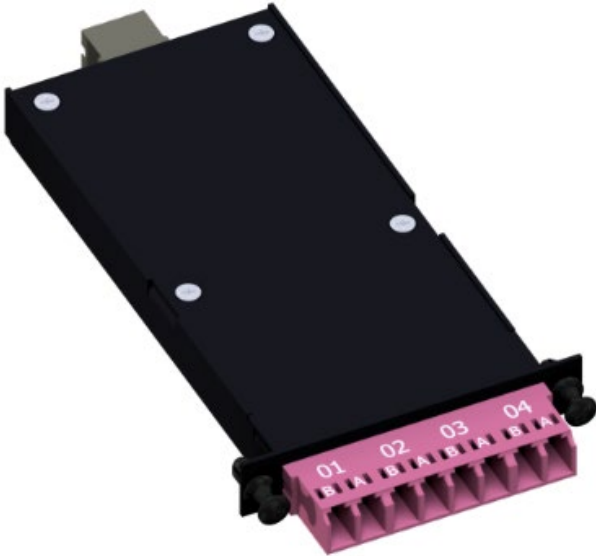| Part numbers RAL9005 black			
1/3HU 1/6 Blind PFP	170H0002		
PFP type	**Number and type of port**	**for fiber type**	
		MM	**SM**
		grey Typ B "aligned key"	green Typ A "opposed key"
1/3 HU 1/6	4 x MTP®	170H2104TB	170H2103
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2 HD.			

1/3 HU 1/6 PFP 4 MTP® (2 MTPD)

1/3 HU 1/6 Blind PFP

SMAP-G2 HD 8 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO trunks:

Properties:

- For Port-Breakout of PreCONNECT® OCTO trunks with MTP® connectors
- Fitting in SMAP-G2 HD panel with 6/6 width partition
- Height: 1/3 HU
- Width: 1/6
- Depth: 115 mm
- Polarity: Rx to Tx
- 1x MTP® female port 4+4F OCTO at the rear side:
  - OM4: Elite quality, MTP® adapter type B „aligned key" grey
  - SM: Standard quality, MTP® adapter type A „opposed key" green
- 4 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 colour cassette body and front: aluminum powder coated RAL9005 black

Part numbers RAL9005 black				
Number of 4+4F OCTO MTP® female ports at rear side	Number of LC-Duplex ports at front side	OM4	SM LC-PC 0°	SM LC-APC 8°
1	1 OCTO group of 4 = 4	170H1100OM4	170H1101	on request
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 HD.				

SMAP-G2 HD 16 fiber MTP®-MDC module cassettes fitting for PreCONNECT® OCTO trunks:

Properties:

- For Port-Breakout of PreCONNECT® OCTO trunks with MTP® connectors
- Fitting in SMAP-G2 HD panel with 6/6 width partition
- Height: 1/3 HU
- Width: 1/6
- Depth: 115 mm
- Polarity: Rx to Tx
- 2x MTP® female port 4+4F OCTO at the rear side:
  - OM4: Elite quality, MTP® adapter type B „aligned key" grey
  - SM: Standard quality, MTP® adapter type A „opposed key" green
- 8 MDC ports at the front side
- Toolless placement of the module cassettes into the panel from the front side, fixing with quick fasteners
- Material and colour cassette body and front: aluminum powder coated RAL9005 black

MEGA HIGH DENSITY (MHD) with MDC
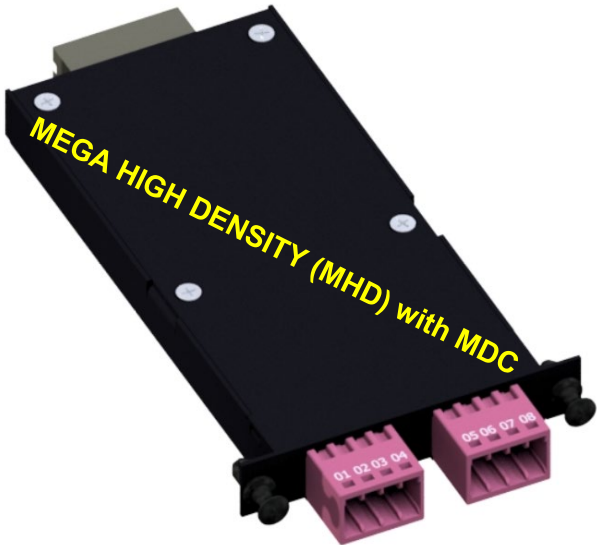
Part numbers RAL9005 black			
Number of 4+4F OCTO MTP® female ports at rear side	**Number of MDC ports at front side**	**OM4**	**SM MDC-PC 0°**
2	2 OCTO groups of 4 = 8	170H2106OM4	170H2105
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 HD.			

PreCONNECT® SMAP-G2 Ultra High Density (UHD) 19" panel system:

Port density:
- 96 LC-Duplex or 48 MTP® ports per HU

Dimensions:
- Width: 19"
- Height: 1 HU
- Depth: 200 mm and 300 mm, see product information SMAP-G2 UHD

Part numbers:

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

- 1 HU, 6/6 OCTO width partition, depth 300 mm: 171H0012

Find panels with other back plane configurations and further information in our product information SMAP-G2 UHD.

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

LC-COMPACT Push-Pull-Boot (LCC-PPB) patchcords with cable diameter 2.0 mm or thinner must be used with this panel system, to be found behind in this product information.

171H0012

Front granularity 6/6 width partition

1	3	5	7	9	11
2	4	6	8	10	12

SMAP-G2 UHD 1/2 HU 1/6 part front plates:

Part numbers RAL9005 black			
1/2 HU 1/6 Blind PFP	170H3002		
PFP type	**Number and type of port**	**for fiber type**	
		MM	**SM**
		grey Typ B "aligned key"	green Typ A "opposed key"
1/2 HU 1/6	4 x MTP®	170H6104TB	170H6103
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2 UHD.			

1/2 HU 1/6 PFP 4 MTP®

1/2 HU 1/6 Blind PFP
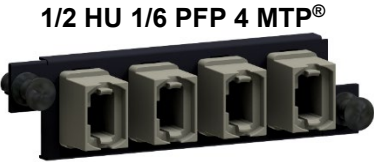
SMAP-G2 UHD 16 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO trunks:

Properties:

- For Port-Breakout of PreCONNECT® OCTO trunks with MTP® connectors
- Fitting in SMAP-G2 UHD panel with 6/6 width partition
- Height: 1/2 HU
- Width: 1/6
- Depth: 115 mm
- Polarity: Rx to Tx
- 2x MTP® female port 4+4F OCTO at the rear side:
  - OM4: Elite quality, MTP® adapter type B „aligned key" grey
  - SM: Standard quality, MTP® adapter type A „opposed key" green
- 8 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 colour cassette body and front: aluminum powder coated RAL9005 black
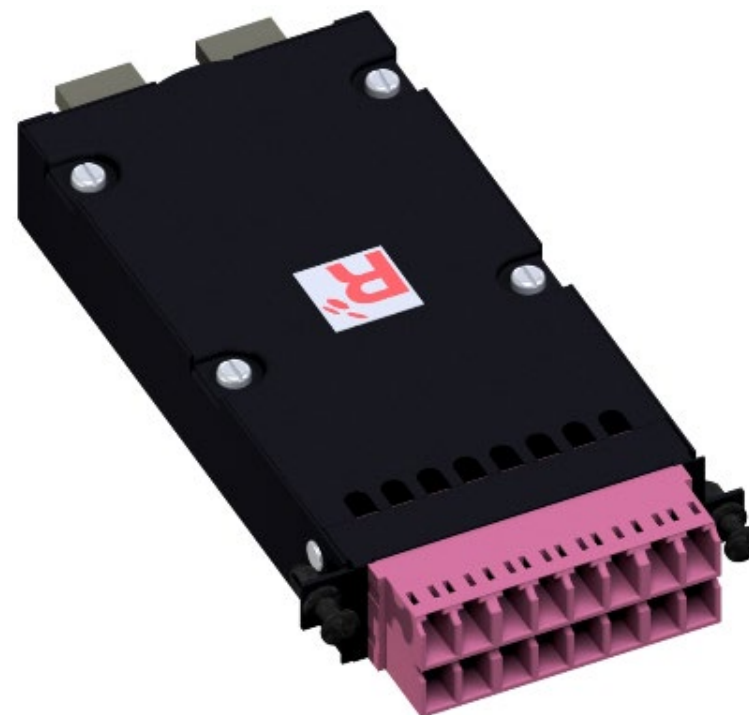
Part numbers RAL9005 black				
Number of 4+4F OCTO MTP® female ports at rear side	**Number of LC-Duplex ports at front side**	**OM4**	**SM LC-PC 0°**	**SM LC-APC 8°**
2	2 OCTO groups of 4 = 8	170H4100OM4	170H4103	on request
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 UHD.				

SMAP-G2 SD PURE
19" distribution panels empty:

Part numbers RAL9005 black, 300mm depth	
1 HU	171A0001P
2 HU	172A0001P
3 HU	173A0001P
5 HU	175A0001P

PreCONNECT® PURE MTP®
Adapter interface
at trunk connector legs

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

SMAP-G2 SD PURE part-front-plates PFP

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

1 HU 1/2 PFP for 12 MTP® adapter interfaces

1 HU 1/4 blind-PFP

1 HU 1/2 blind-PFP

SMAP-G2 SD PURE 1 HU 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
1/4 / 6 MTP®	170A0630P
1/4 / 8 MTP®	170A0140P
1/2 / 12 MTP®	170A0670P

PreCONNECT® OCTO OM4 and OM5 patchcords:

Single jacket:

Single jacket OFNP Plenum rated
Microunit Interconnect Cables 8 OM4 or OM5 fibers
Diameter 3.0 mm
MTP® 4+4 OCTO, MM, female, Elite quality
Polarity TIA method B "1 to 12"

Part number, length variable:

080A2061OM4 / 080A2061OM5

On request you can get technical data of connectors, fibers and cables
via the product profile of your selected patchcords.

**OM5 is only needed for 400GBASE-SR4.2 BiDi
channel lengths 101 to 150 meter.
OM5 OCTO patchcords are fibrous green.**

PreCONNECT® OCTO patchcords polarity TIA method B "1 to 12" are suitable for transceiver-transceiver direct-attach

PreCONNECT® OCTO SM patchcords:

SINGLEMODE

Single jacket:

Single jacket OFNP Plenum rated
Microunit Interconnect Cables 8 SM fibers
Diameter 3 mm
MTP® 4+4 OCTO, SM, female, Standard quality
Polarity TIA method B "1 to 12"

Part number, length variable:

080A2062G657A1

On request you can get technical data of connectors, fibers and cables
via the product profile of your selected patchcords.

PreCONNECT® OCTO patchcords polarity TIA method B "1 to 12" are suitable for transceiver-transceiver direct-attach

PreCONNECT® OCTO OM4 MTP®-LCC harness:

MULTIMODE

For connecting a MPO transceiver with four LC-Duplex transceivers and for port-breakout of OCTO trunks:

- **40GBASE-SR4 MPO to 4x 10GBASE-SR/SW LC-Duplex**
- **100GBASE-SR4 MPO to 4x 25GBASE-SR/SW LC-Duplex**
- **200GBASE-SR4 MPO to 4x 50GBASE-SR/SW LC-Duplex**
- **4x16GFC MPO to 4x 16GFC LC-Duplex**
- **4x32GFC MPO to 4x 32GFC LC-Duplex**
- **4x64GFC MPO to 4x 64GFC LC-Duplex**

OCTO OM4 harness MTP® 4+4 OCTO, MM, female to 4 LC-COMPACT

Double jacket OFNP Plenum rated Microunit Interconnect Cables 8 OM4 fibers 3.0 / 4.5 mm
LC-Compact leg-lengths 0.5 m, legs numbered 1 to 4, other leg lengths on request
Order length = total length
MTP® 4+4 OCTO, MM, female, Elite quality

Part number polarity Rx to Tx: 076A0152OM4

On request you can get technical data of connectors, fibers and cables via the product profile of your selected harnesses.

PreCONNECT® OCTO OM4 MTP®-MDC harness:

For connecting a MPO transceiver with four MDC transceivers and for port-breakout of OCTO trunks:

- **100GBASE-SR4 MPO to 4x 25GBASE-SR/SW MDC**
- **200GBASE-SR4 MPO to 4x 50GBASE-SR/SW MDC**

OCTO OM4 harness MTP® 4+4 OCTO, MM, female to 4 MDC

Double jacket cable 8 OM4 fibers 3.0 / 4.5 mm FRNC-LSZH
MDC leg-lengths 0.5 m, legs numbered 1 to 4
other leg lengths on request
Order length = total length
MTP® 4+4 OCTO, MM, female, Elite quality

Part number polarity Rx to Tx: 076A0187OM4

On request you can get technical data of connectors, fibers and cables via the product profile of your selected harnesses.

PreCONNECT® OCTO SM MTP®-LCC harness:

For connecting a MPO transceiver with four LC-Duplex transceivers and for port-breakout of OCTO trunks:

- **100G-PSM4 MPO to 4x 25GBASE-LR LC-Duplex**
- **4x10GBASE-LR MPO to 4x 10GBASE-LR LC-Duplex**
- **200GBASE-DR4 MPO to 4x 50GBASE-LR LC Duplex**
- **400GBASE-DR4 MPO to 4x 100GBASE-LR LC Duplex**

OCTO SM harness MTP® 4+4 OCTO, SM, female to 4 LC-COMPACT

Double jacket OFNP Plenum rated Microunit Interconnect Cables 8 SM fibers 3.0 / 4.5 mm
LC-Compact leg-lengths 0.5 m, legs numbered 1 to 4, other leg lengths on request
Order length = total length
MTP® 4+4 OCTO, SM, female, Standard quality

Part number polarity Rx to Tx: 076A0153G657A1

On request you can get technical data of connectors, fibers and cables via the product profile of your selected harnesses.

SINGLEMODE

PreCONNECT® OCTO SM MTP®-MDC harness:

For connecting a MPO transceiver with four MDC transceivers and for port-breakout of OCTO trunks:

- **100G-PSM4 MPO to 4x 25GBASE-LR MDC**
- **200GBASE-DR4 MPO to 4x 50GBASE-LR MDC**
- **400GBASE-DR4 MPO to 4x 100GBASE-LR MDC**

OCTO SM harness MTP® 4+4 OCTO, SM, female to 4 MDC

Double jacket cable 8 SM fibers 3.0 / 4.5 mm FRNC-LSZH
MDC leg-lengths 0.5 m, legs numbered 1 to 4
other leg lengths on request
Order length = total length
MTP® 4+4 OCTO, SM, female, Standard quality

Part number polarity Rx to Tx: 076A0188G657A1

On request you can get technical data of connectors, fibers and cables via the product profile of your selected harnesses.
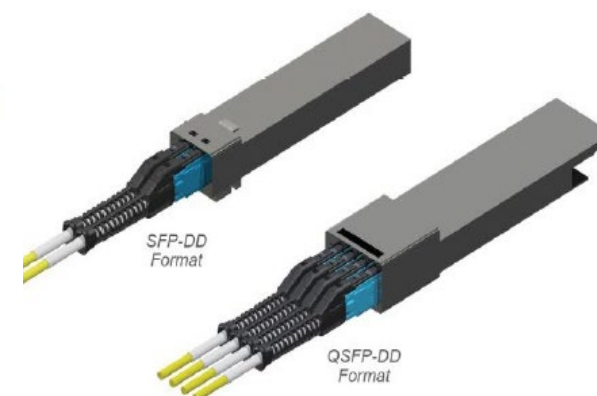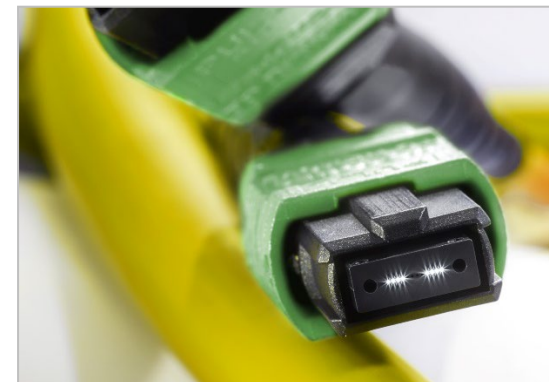
Patchcords:

Properties:
- Kink and crush resistance optimized for environmental conditions
- Suitable for operation in temperatures from -10 °C to +60 °C
- Polarity:
  Full-duplex cables with duplex connectors on both sides "crossed" A to B
  in accordance with ISO/IEC 11801 and EN 50173

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 „Substitution" method, measurement values on request
- Serial number labels at the cable ends on both sides
- Individually packaged in foil bags with product ID label

For our SMAP-G2 HD and SMAP-G2 UHD 19" panel systems only patchcords with diameter 2.0 mm or thinner should be applied.

With LC-COMPACT (LCC) connectors for SMAP-G2 SD and DCP 19" panel system

With LC-COMPACT Push-Pull-Boot (LCC-PPB) connectors for SMAP-G2 HD and UHD 19" panel system
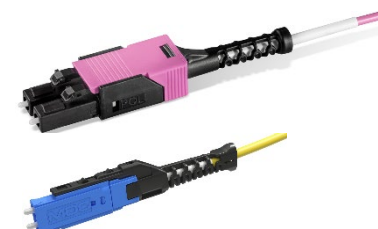
MDC connector for Mega High Density (MHD)

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

Cable diameter	Connectors	Length	OM4 violet	OM4 aqua	OS2 PC 0°	OS2 APC 8°
1.6 mm	MDC » MDC	variabel	092A0002OM4	on request	092A0001G657A1	on request
	MDC » LC-COMPACT PPB	variabel	092A0006OM4	on request	092A0005G657A1	on request
	LC-COMPACT PPB » LC-COMPACT PPB	variable	on request	on request	on request	on request
2.1 mm	LC-Compact » LC-Compact	variable	087A6657OM4	087A6912OM4	087A6910G657A1	087A6911G657A1
	LC-Compact PPB » LC-Compact PPB	variable	087A6947OM4	087A6946OM4	087A6944G657A1	087A6945G657A1
	MDC » MDC	variable	092A0013OM4	on request	092A0016G657A1	on request
	MDC » LC-COMPACT	variable	092A0014OM4	on request	092A0017G657A1	on request
	MDC » LC-COMPACT PPB	variable	092A0015OM4	on request	092A0018G657A1	on request
2.9 mm	LC-Compact » LC-Compact	variable	on request	087A6915OM4	087A6913G657A1	087A6914G657A1
On request you can get technical data of connectors, fibers and cables via the product profile of your selected patchcords.						

Migration of PreCONNECT® OCTO to 400GBASE-SR8:

**400GBASE-SR8
MPO Transceiver**

OSFP

QSFP-DD
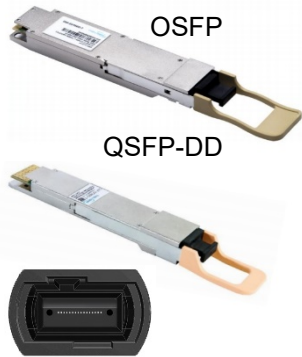
PreCONNECT® OCTO breakout trunk

**400GBASE-SR8
MPO Transceiver**

**PreCONNECT® SMAP-G2 HD
19" panel system
6/6 width partition
equipped with 1/6
MTP® adapter part front plates**

**PreCONNECT® SEDECIM
SR8 to 2x SR4 OCTO
migration-harness**

**PreCONNECT® SEDECIM
SR8 to 2x SR4 OCTO
migration-harness**
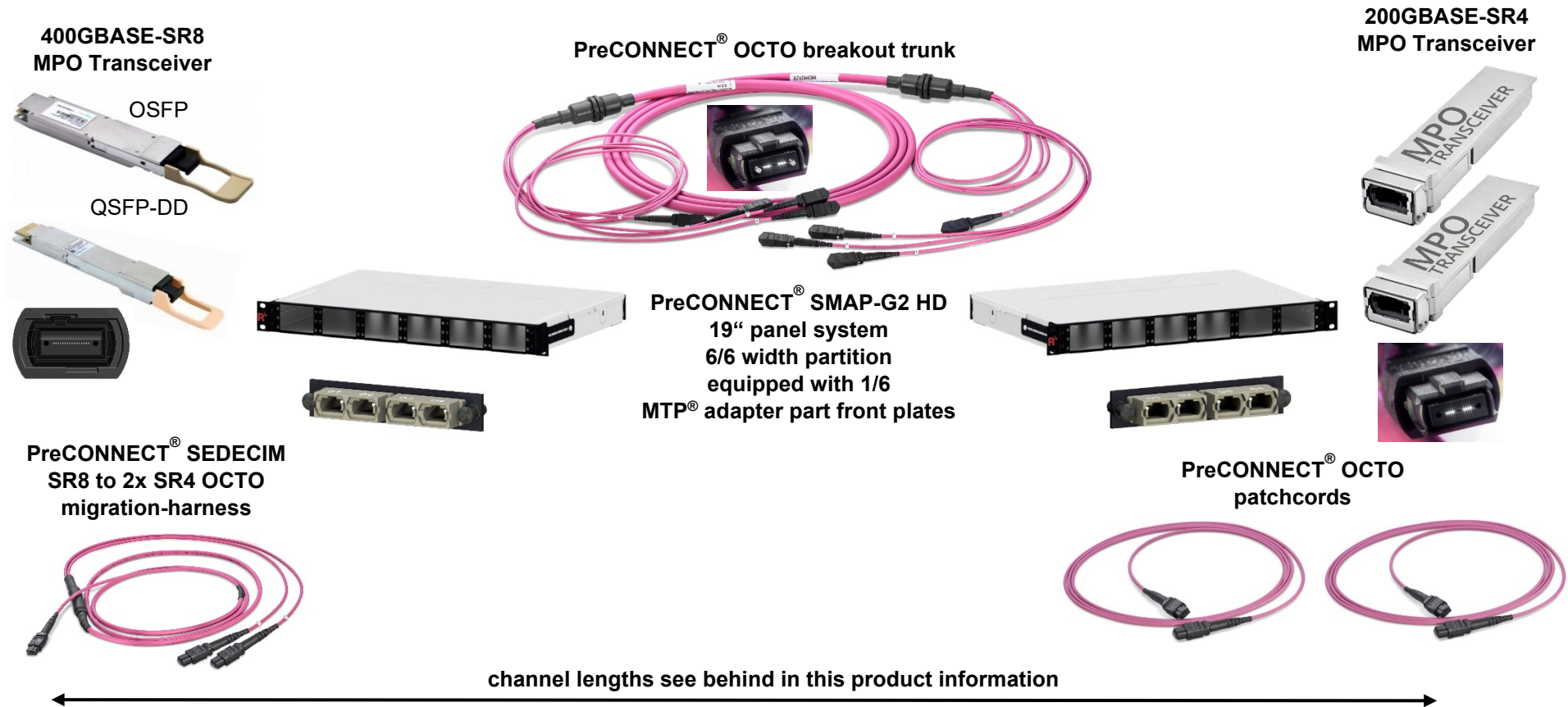
channel lengths see behind in this product information

PreCONNECT® SEDECIM, SR8 to 2x SR4 OCTO, migration-harness, part numbers:
- **076A0140OM4 with MTP16 MM 0° PC black boot for 400GBASE-SR8 Transceivers with 0° PC interface**
- **076A0185OM4 with MTP16 MM 8° APC white boot for 400GBASE-SR8 Transceivers with 8° APC interface**

Migration of PreCONNECT® OCTO to 400GBASE-SR8 port-breakout to 2 x 200GBASE-SR4:
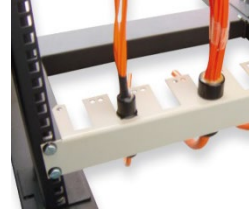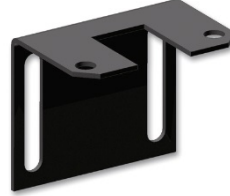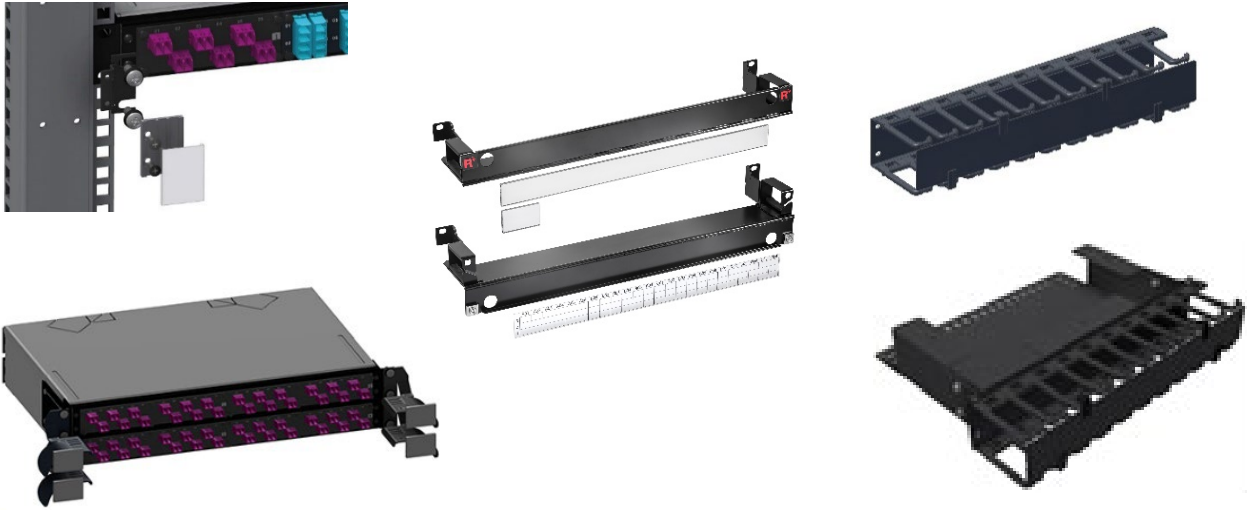
400GBASE-SR8 MPO Transceiver

OSFP

QSFP-DD

PreCONNECT® OCTO breakout trunk

200GBASE-SR4 MPO Transceiver

PreCONNECT® SMAP-G2 HD 19" panel system 6/6 width partition equipped with 1/6 MTP® adapter part front plates

PreCONNECT® SEDECIM SR8 to 2x SR4 OCTO migration-harness

PreCONNECT® OCTO patchcords

channel lengths see behind in this product information

PreCONNECT® SEDECIM, SR8 to 2x SR4 OCTO, migration-harness, part numbers:

- **076A0140OM4 with MTP16 MM 0° PC black boot for 400GBASE-SR8 Transceivers with 0° PC interface**
- **076A0185OM4 with MTP16 MM 8° APC white boot for 400GBASE-SR8 Transceivers with 8° APC interface**

Accessories:

Description	Part number	Pictures
19" 1 HU universal trunk cable divider holder For the universal installation of multiple trunk cable dividers within 19" racks.	RAL9005 black 099A0085	
19" 1 HU single universal trunk cable divider holder For the universal installation of a single trunk cable dividers within 19" racks.	RAL9005 black 099A0065	
For 19" panel accessories see our product information 19" panel accessories		

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

- Already in 1997 we have been the first manufacturer of MTP® cabling systems in Europe, through initiative of IBM

- We are one of only a few worldwide IBM MTP® qualified manufacturers

- We have been the first European partner of the MTP® inventor and patent owner US Conec Ltd., and we are the largest MTP® assembler in Europe

One connection consists of:

a „female" connector **without pins but pin holes** …

… a „male" connector **with pins** …
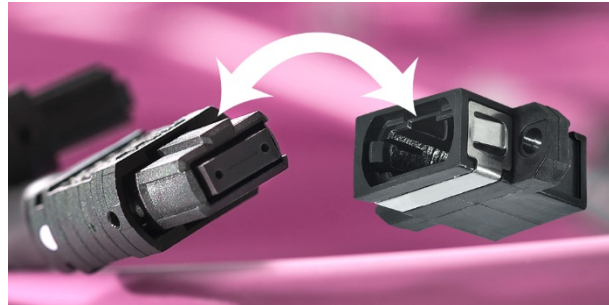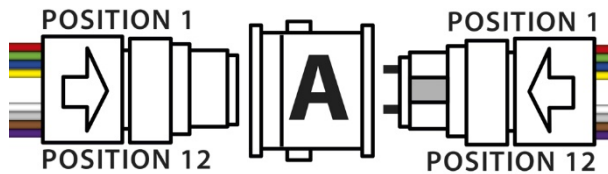
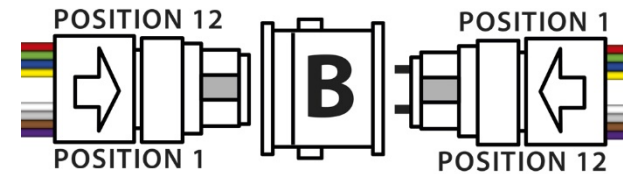… and the **adapter**.

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

MTP®/MPO adapters

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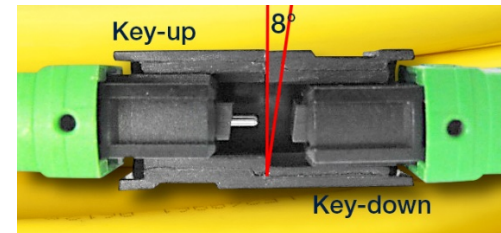- according to ANSI/TIA-568-B.1-7, two designs of MTP® adapters are existing

Type A „key-up to key-down"/"opposed key" results in polarity „1 to 1"

Type B „key-up to key-up"/"aligned key" results in polarity „1 to 12"

Hence singlemode MTP® connectors are usually APC 8°, singlemode MTP® adapters must be Type A „key-up to key-down"/"opposed key".
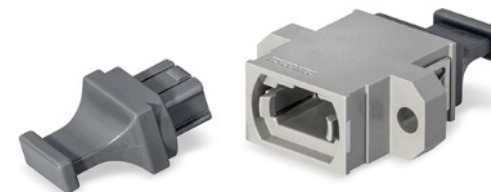

MTP® adapter colors:
Type A „key-up to key-down"/"opposed key":
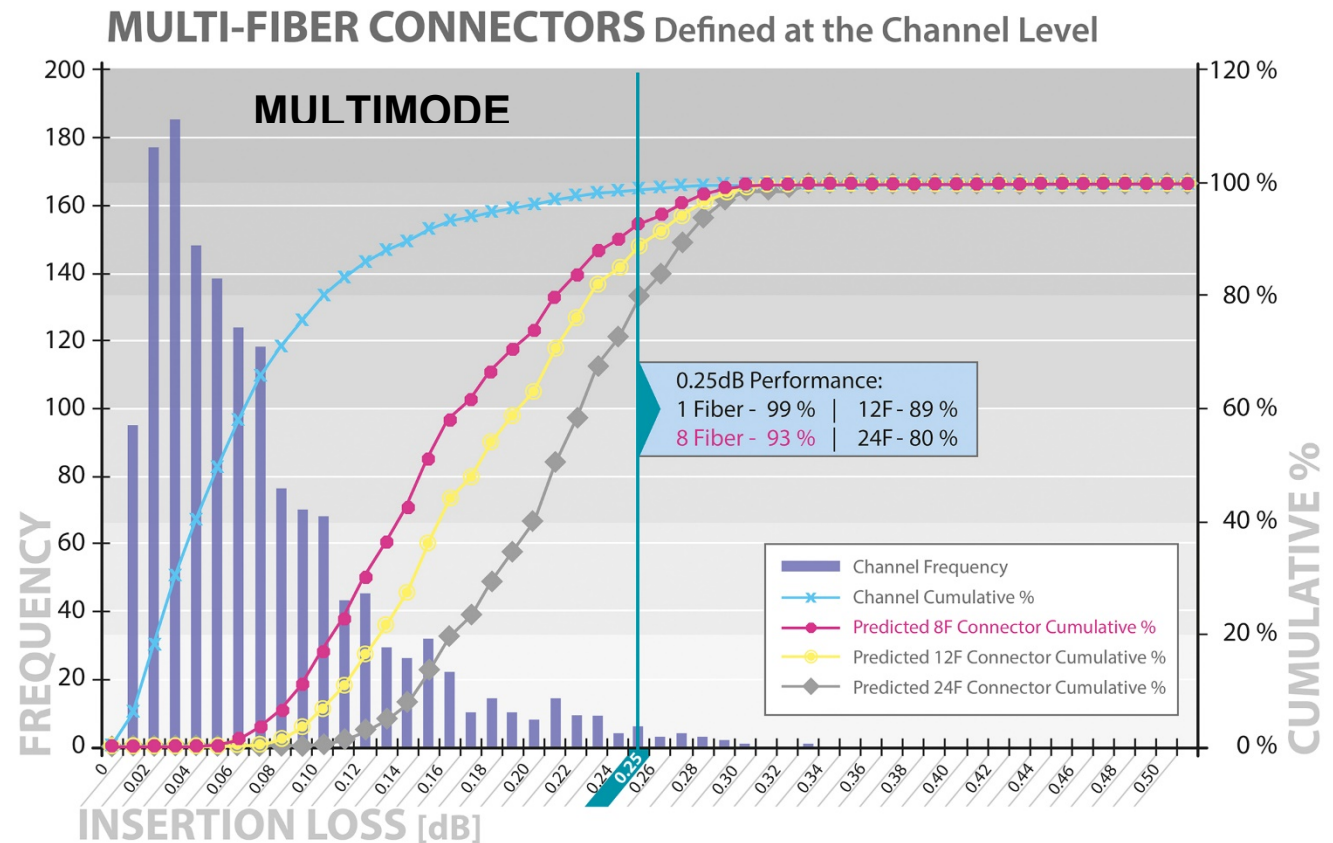OM2 = black, OM3 = aqua, OM4 = violet, SM = green since APC 8°

Type B „key-up to key-up"/"aligned key":
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.


MULTI-FIBER CONNECTORS Defined at the Channel Level

MULTIMODE

0.25dB Performance:
1 Fiber - 99 % | 12F - 89 %
8 Fiber - 93 % | 24F - 80 %

Legend:
- Channel Frequency
- Channel Cumulative %
- Predicted 8F Connector Cumulative %
- Predicted 12F Connector Cumulative %
- Predicted 24F Connector Cumulative %

FREQUENCY — INSERTION LOSS [dB] — CUMULATIVE %

Source: US Conec Ltd.

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

4+4 OCTO fiber assignment

SR4 multimode and PSM4/DR4 singlemode parallel optics applications
40/100/200GBASE-SR4, 400GBASE-SR4.2, 4x16 / 4x32 / 4 x 64 GFC, InfiniBand® 4x, 100G-PSM4, 200/400GBASE-DR4
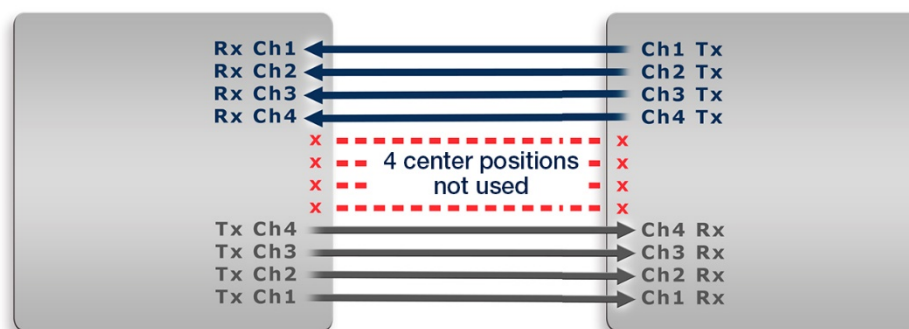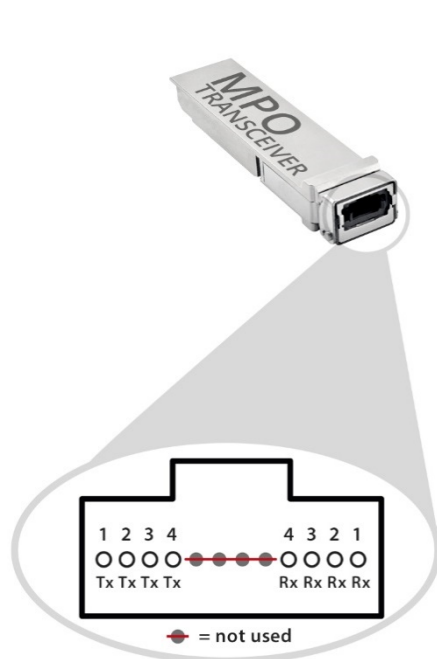
- MPO transceivers are male (with pins)

- MPO/MTP® connectors must be female (without pins) and must have 4+4 OCTO fiber assignment

- The singlemode MPO/MTP® connectors must be APC 8°, female and must have 4+4 OCTO fiber assignment

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.
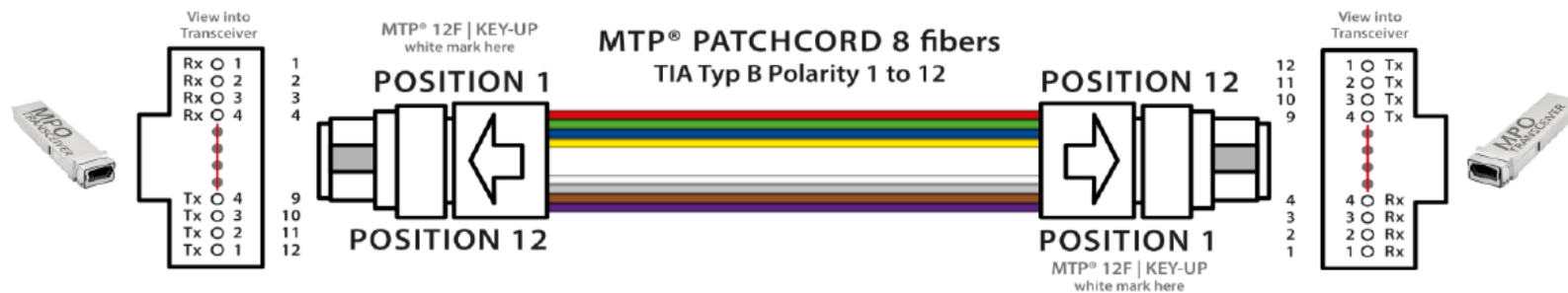

The fiber positions within MTP® connectors are counted from the side with the white mark.

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

TIA method/type B "1 to12" is the SR4, PSM4 and DR4 polarity:

PreCONNECT® OCTO – TECHNOLOGY AND BASICS

MTP®/MPO Ethernet and Fibre Channel channel specifications				
Multimode applications	Channel length max. [m]			Channel attenuation max. [dB]
	OM3	OM4	OM5	
40GBASE-SR4, 850nm, MTP®/MPO4+4 OCTO	IEEE 802.3 = 100	IEEE 802.3 = 150	IEEE 802.3 = 150	OM3 1.9 / OM4 and OM5 1.5
100GBASE-SR10, 850nm, MTP®/MPO24(20)	R-O = 140	R-O = 170	R-O = 170	
100GBASE-SR4, 850nm, MTP®/MPO4+4 OCTO	70	100	100	OM3 1.8 / OM4 and OM5 1.9
100GBASE-SR2, 850nm, MTP®/MPO2+2				
200GBASE-SR4, 850nm, MTP®/MPO4+4 OCTO				
400GBASE-SR16, 850nm, MTP®/MPO32				
400GBASE-SR8, 850nm, MTP®/MPO16 SEDECIM				
400GBASE-SR4.2, 850/910nm MTP®/MPO4+4 OCTO	70	100	150	OM3 1.8 / OM4 1.9 / OM5 2.0
FC 4 x 8 = 128 Gbit/s, 850nm, MTP®/MPO4+4 OCTO	70	100	100	OM3 1.25 / OM4 and OM5 1.36
FC 4 x 16 = 128 Gbit/s, 850nm, MTP®/MPO4+4 OCTO				
FC 4 x 32 = 128 Gbit/s, 850nm, MTP®/MPO4+4 OCTO				
FC 4 x 64 = 256 Gbit/s, 850nm, MTP®/MPO4+4 OCTO	in progress	in progress	in progress	in progress
Singlemode applications	Channel length max. [m]			Channel attenuation max. [dB]
100G PSM4, 1310nm, MTP®/MPO4+4 OCTO	500			3.3
200GBASE-DR4, 1310nm, MTP®/MPO4+4 OCTO				3.0
200GBASE-DR4, 1310nm, MTP®/MPO4+4 OCTO				

R-O = the channel lengths possible with Rosenberger-OSI fibers
Skew variation for the entire cabling path (made possible due to electronic skew compensation): 40/100/200/400GBASE-SRx max. 2.2ns / PSM4 und DR4 max 2.4ns
(Skew = Runtime difference of associated parallel signal portions)

About Rosenberger:

The Rosenberger Group is a leading global provider of high-frequency, high-voltage and fiber optic connectivity solutions with headquarters in Germany.

Rosenberger OSI

Since 1991, Rosenberger Optical Solutions & Infrastructure (Rosenberger OSI) has been a recognized expert for fiber-based connectivity, cabling solutions and infrastructure services in the areas of data centers, local area networks, mobile networks and industrial applications. As an integrated solution provider, we have high expertise in the development and operational excellence in the production of system solutions for communication networks. Our comprehensive services enable the secure and efficient operation of digital infrastructures. This combination, combined with our strong customer focus, makes us unique and a strong partner in the global market.

Rosenberger Site Solutions

Rosenberger Site Solutions, based in Lake Charles, LA, is active in the American Market since 2007. To provide high class customer satisfaction in North America, Rosenberger Site Solutions is the point of contact for FTTA and data center solutions for the American market within the Rosenberger Group.

Further information is available at: www.rosenberger.com/osi

Rosenberger

Rosenberger data center solutions are available
for the North American market via:

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Optical Solutions & Infrastructure
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info-osi@rosenberger.com

www.rosenberger.com/osi

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Fax: (377) 598-5290

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Creation date: 2015-08-11
Valid since: 2021-07-15
Revision: 008