

PreCONNECT® OCTO MTP®

PRODUCT INFORMATION



**PreCONNECT® OCTO MTP® solution is available in two end face quality features: BASIC and PURE**

**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 cleanliness, 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 random mate insertion and return loss (mean) which enables up to six (6) mated pairs in a 10G/OM4 application up to 300m.

**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 “P” to the end of the quality feature BASIC part number (*Example: XXXAXXXXP*)

***(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:

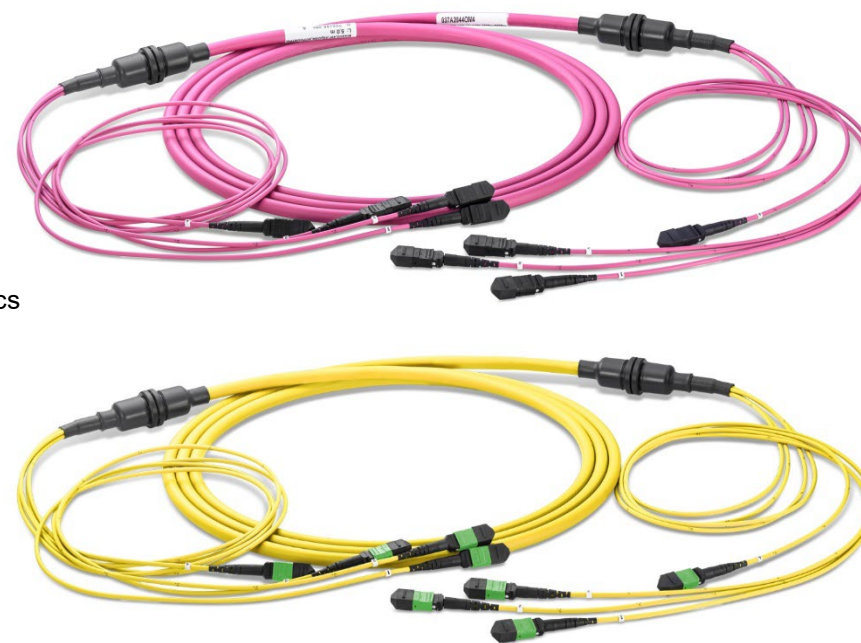
- Factory assembled fiber optic breakout cables, FRNC-LSZH indoor cables, up to 192 fibers with connector systems MTP® 4+4 fiber OCTO per MTP® channel
- MPO/MTP® Port-breakout with MTP® - LC and MTP® - MDC harnesses, MTP® module cassettes with LC and MDC front, and MTP® - LC Port-Breakout-Units
- Three 19" panel systems selectable: SMAP-G2 SD, SMAP-G2 HD and SMAP-G2 UHD
- Suitable patchcords
- Useful accessories
- Patch location rack

## Features:

- For all who already have on minimum one cabling side MPO4+4 based parallel optics SR4 and DR4/PSM4 transceivers
- Cost and attenuation optimized for SR4 and DR4/PSM4 applications

## Your benefits at a glance:

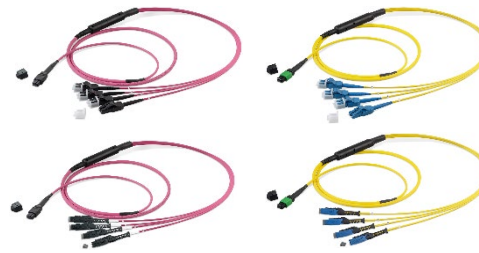
- MTP® cabling system perfectly fitting for SR4 and DR4/PSM4 applications
- Cost reduction through the only for SR4 and DR4/PSM4 needed 8 fibers instead of the so far usual 12 are in one MTP® channel
- Fast and safe installation through factory assembled plug & play systematic
- Highest quality and cost-efficiency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



**PreCONNECT® OCTO MTP®  
breakout trunk**



**PreCONNECT® OCTO MTP®  
harnesses with LC-COMPACT and MDC**



**PreCONNECT® OCTO MTP®  
patchcords**



**LC-COMPACT and MDC  
patchcords**



**19" panel systems**

**SMAP-G2 SD**



**SMAP-G2 HD and UHD**



**patch location rack**



**accessories**



**Application:**

MTP® (MPO) based data center cabling with 8 fibers per MTP® channel:

Optimized for parallel optics MPO 4+4 fiber applications:

- 40/100/200 GBASE-SR4
- 400GBASE-SR4.2 BiDi
- 4x16, 4x32 and 4x64 GFC
- 100GBASE DR4/PSM4
- 200GBASE-DR4
- 400GBASE-DR4
- 4x10 GBASE-LR



Easy migration to higher speed applications.

**System description:**

Our PreCONNECT® OCTO MTP® cabling system consists of:

- OCTO MTP® breakout trunk called factory assembled FO cables with up to 24 SR4 or DR4/PSM4 MTP® channels (24x8=192 fibers).
- 19" panel systems with part front plates with MTP®/MPO adapters, OCTO MTP® module cassettes and MTP® - LC Port-Breakout-Units
- OCTO MTP® patchcords and harnesses
- Useful accessories
- Patch location racks

Rosenberger OSI brought already 1991 high fibercount factory assembled FO trunk cables to the market. PreCONNECT® STANDARD was the first in Europe developed and manufactured, high fibercount and modular „plug & play“ FO cabling system and already 1997 we have been the first manufacturer of MTP® cabling systems in Europe.

**Properties:**

PreCONNECT® square interface and installation protection:

PreCONNECT® OCTO MTP® 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 MTP® breakout trunks: MTP® and MTP® PRO male 4+4 fiber OCTO
- OCTO MTP® patchcords, harnesses and module cassettes: MTP® and MTP® PRO 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 MTP® breakout trunks: TIA Method B „1 to 12“
- OCTO MTP® patchcords, harnesses and module cassettes: see pages of the products

**Cable types:**

- PreCONNECT® OCTO MTP® breakout trunks: I-F(ZN)H(ZN)H 8 fibers CPR class B2ca and I-F(ZN)HH n x 8 fibers CPR class Cca
- PreCONNECT® OCTO MTP® patchcords and harnesses I-F(ZN)H and I-F(ZN)H(ZN)H 8 fibers
- Cable data, see separate cable data sheets

**Fiber types:**

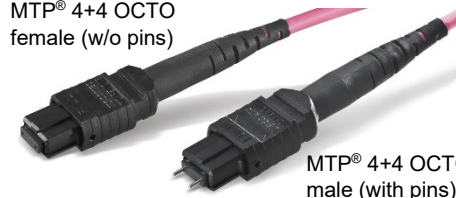
- Multimode OM4 and OM5 bend-insensitive
- Singlemode G.657.A1 bend-insensitive and backwards compatible to G.652.D
- Fiber data, see separate fiber data sheets

**Operating temperature range:** -10°C to +60°C

**Delivery form:**

- Dependent on the length as cable ring or on cardboard or wooden drum
- Insertion loss and return loss measured acc. to IEC 61300-3-4, method B, MM 850/1300nm and SM 1310/1550nm, with measurement protocol
- Product label with serial number at both sides

MTP® 4+4 OCTO female (w/o pins)



MTP® 4+4 OCTO male (with pins)



MTP® 4+4 OCTO female (w/o pins)



MTP® PRO 4+4 OCTO male (with pins)



Info about MTP® PRO  
<https://www.usconec.com/featured-products/mtp-pro-connectors>

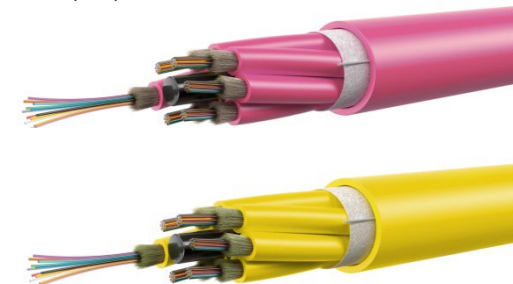
TIA type B “aligned key” „1 to 12“ grey



TIA type A “opposed key” „1 to 1“ green



I-F(ZN)HH 6 x 8 fiber breakout cable

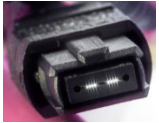


PreCONNECT® OCTO MTP® application case point-to-point:

MULTIMODE

- 40 / 100 / 200 GBASE-SR4 and 400GBASE-SR4.2 BiDi MPO4+4-MPO4+4
- 4x16 / 4x32 / 4x64 GFC MPO4+4-MPO4+4

MPO4+4 Transceiver



PreCONNECT® OCTO MTP® breakout trunk



MPO4+4 Transceiver



PreCONNECT® OCTO MTP® patchcord



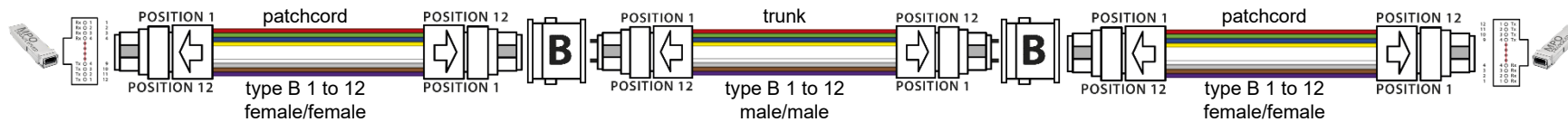
PreCONNECT® SMAP-G2 HD  
19" panel system  
6/6 width partition  
equipped with 1/6  
MTP® adapter part front plates



PreCONNECT® OCTO MTP® patchcord



channel lengths see behind in this product information

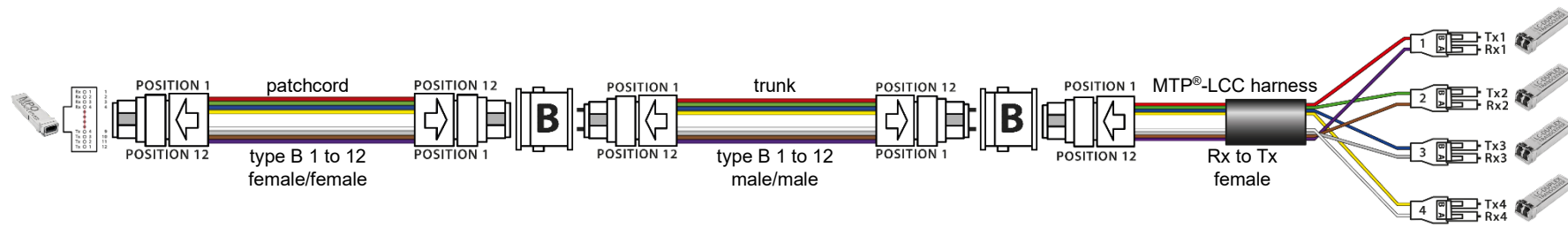
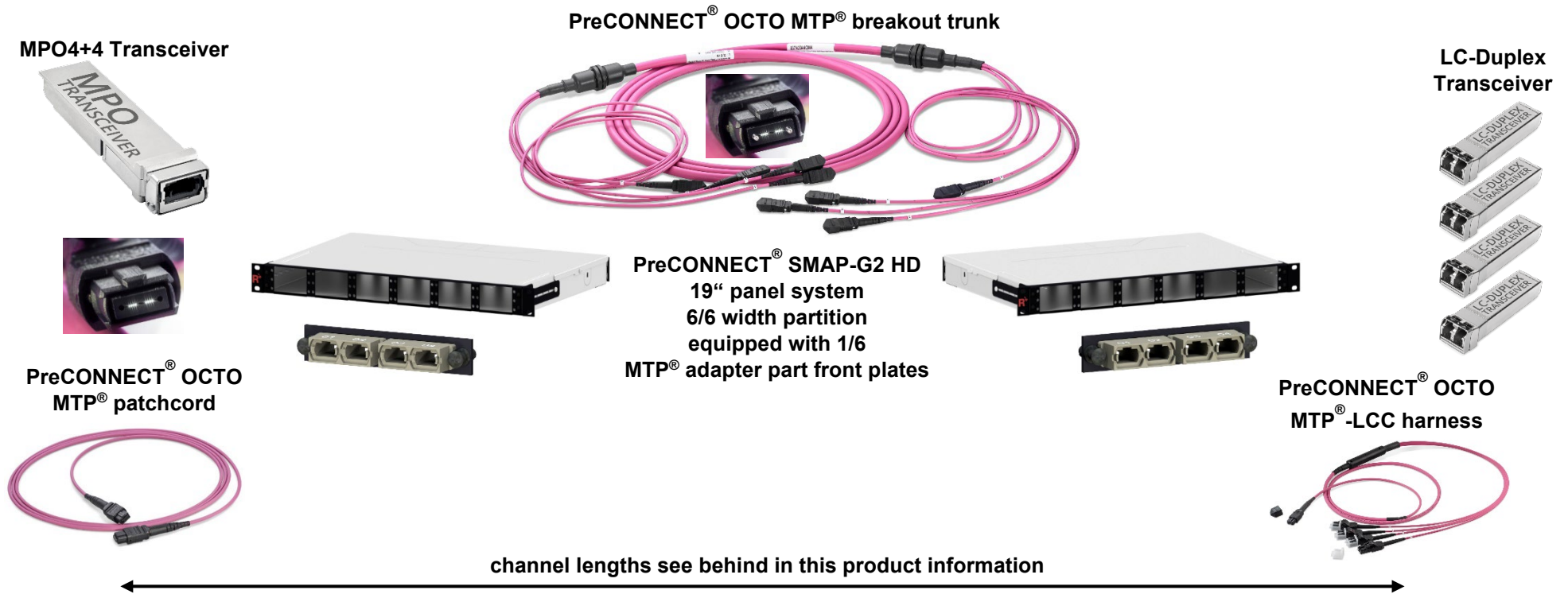


patchcord and trunk IEC fiber color code / MTP® adapter B „aligned keys“ „1 to 12“

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

MULTIMODE

- 40 / 100 / 200 GBASE-SR4 MPO4+4 to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex
- 4x16 / 4x32 / 4x64 GFC MPO4+4 to 4x16 / 4x 32 / 4x 64 GFC LC-Duplex



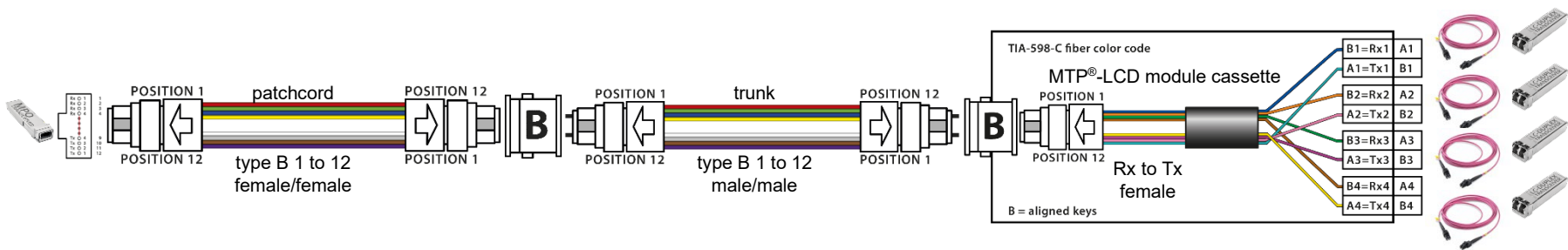
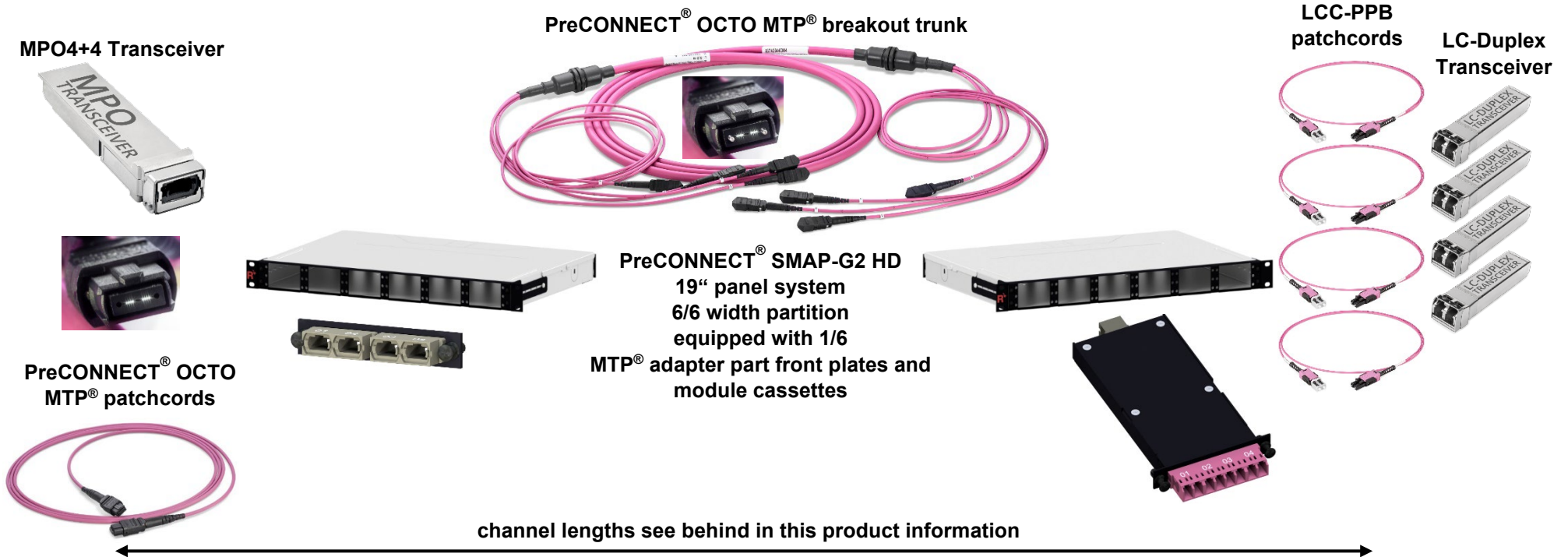
patchcord, trunk and harness IEC fiber color code / MTP® adapter B „aligned keys“ „1 to 12“



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

MULTIMODE

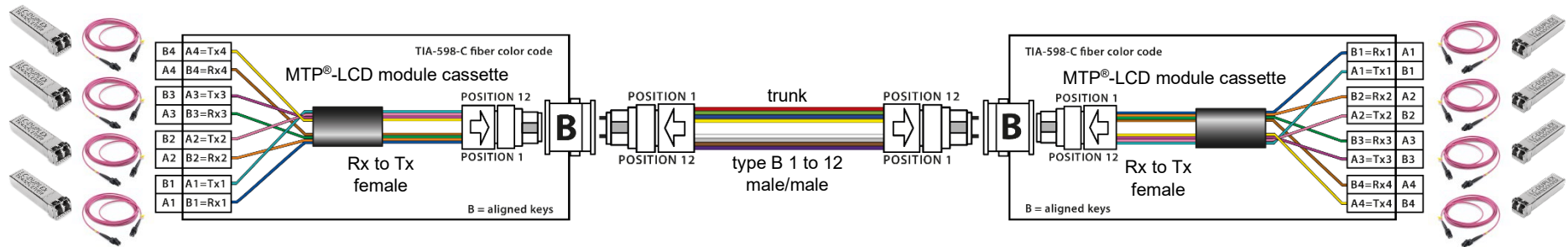
- 40 / 100 / 200 GBASE-SR4 MPO4+4 to 4x10 / 4x25 / 4x50 GBASE-SR LC-Duplex
- 4x16 / 4x32 / 4x64 GFC MPO4+4 to 4x16 / 4x 32 / 4x 64 GFC LC-Duplex



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

MULTIMODE

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



PreCONNECT® OCTO MTP® 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 MTP® application case point-to-point:

SINGLEMODE

- 100G-PSM4 MPO4+4-MPO4+4
- 4x10 GBASE-LR MPO4+4-MPO4+4
- 200 and 400GBASE-DR4 MPO4+4-MPO4+4

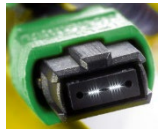
MPO4+4 Transceiver



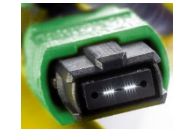
PreCONNECT® OCTO MTP® breakout trunk



MPO4+4 Transceiver



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



PreCONNECT® OCTO  
MTP® patchcords



PreCONNECT® OCTO  
MTP® patchcords



channel lengths see behind in this product information

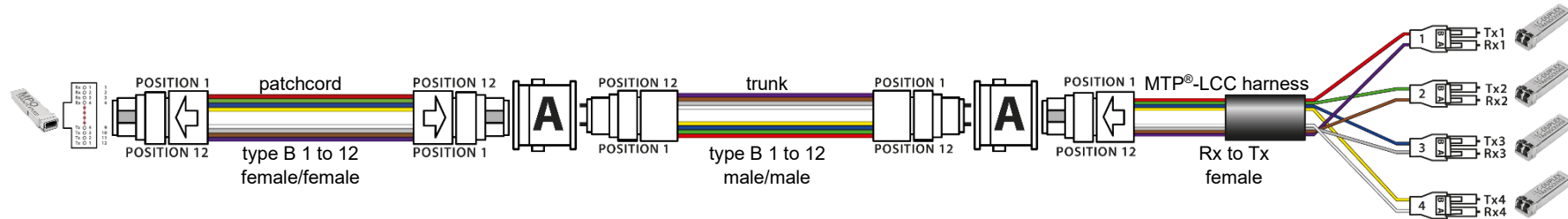


patchcord and trunk IEC fiber color code / MTP® adapter A „opposed keys“ „1 to 1“

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

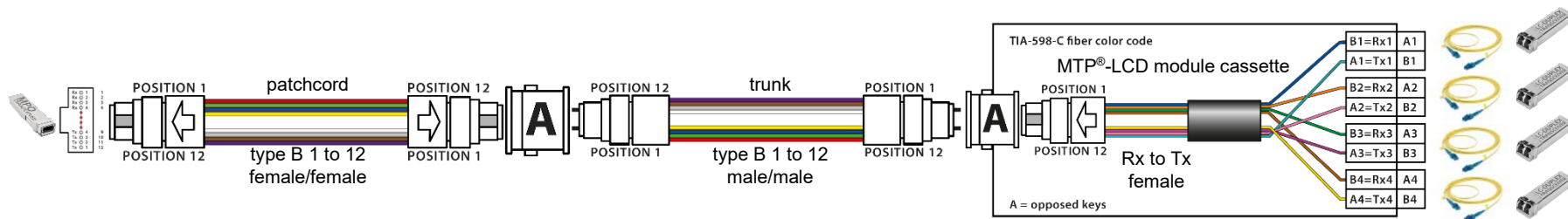
SINGLEMODE

- 100G PSM4 MPO4+4 to 4x25 GBASE-LR LC-Duplex
- 4x10 GBASE-LR MPO4+4 to 4x10 GBASE-LR LC-Duplex
- 200GBASE-DR4 MPO4+4 to 4x50 GBASE-LR LC Duplex
- 400GBASE-DR4 MPO4+4 to 4x100 GBASE-LR LC Duplex



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

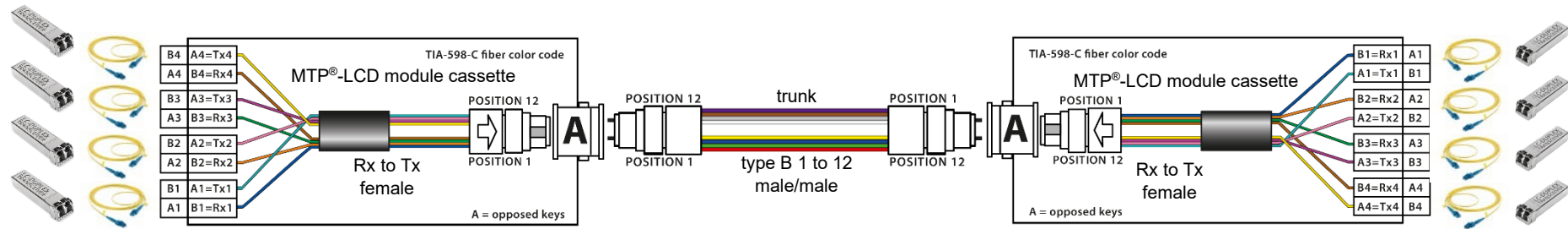
- 100G PSM4 MPO4+4 to 4x25 GBASE-LR LC-Duplex
- 4x10 GBASE-LR MPO4+4 to 4x10 GBASE-LR LC-Duplex
- 200GBASE-DR4 MPO4+4 to 4x50 GBASE-LR LC Duplex
- 400GBASE-DR4 MPO4+4 to 4x100 GBASE-LR LC Duplex



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



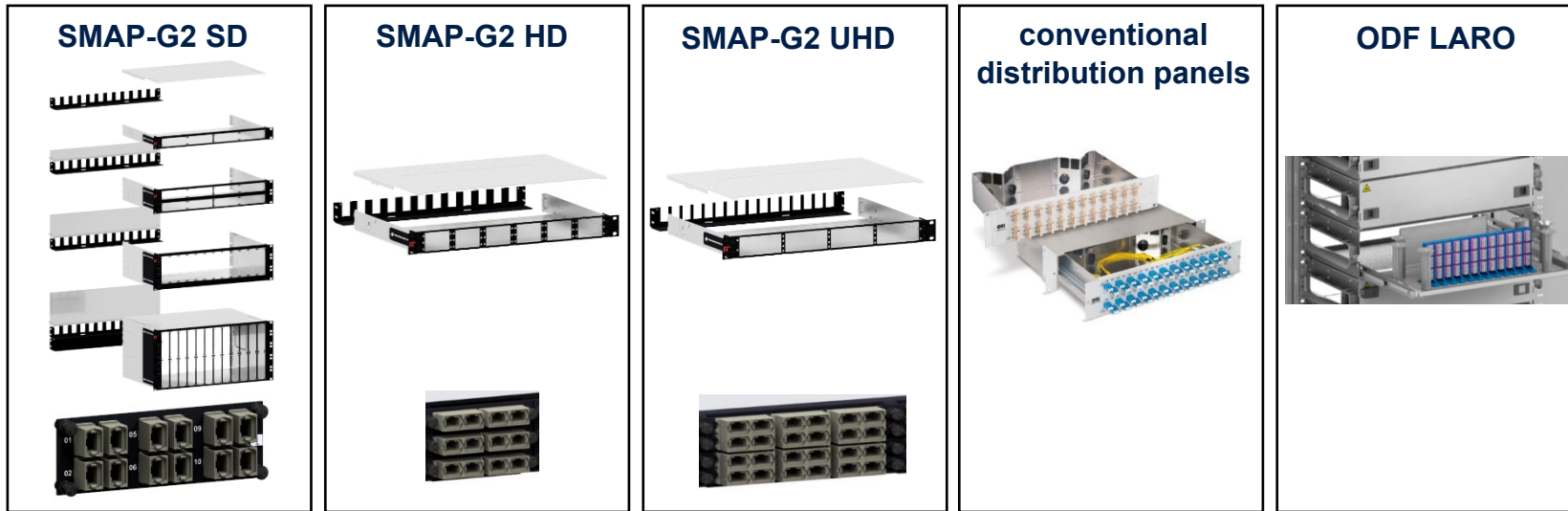
PreCONNECT® OCTO MTP® application case daisy chain to „4-connector channel“:



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

**Application of PreCONNECT® OCTO MTP® Trunks and Patchcords with MTP® and MTP® PRO in our 19" panel systems and Trunk leg lengths:**

19" panel systems	MTP® port density per HU	Trunks with MTP®	Trunks with MTP® PRO	Patchcords with MTP®	Patchcords with MTP® PRO	Trunk leg lengths
SMAP-G2 SD	48	✓	✗	✓	✗	standard stepped "A length legs"
SMAP-G2 HD	72	✓	recommended	✗	✓ required	
SMAP-G2 UHD	96	✗	✓ required	✗	✓ required	
Conventional	24	✓	✗	✓	✗	standard stepped "A length legs"
ODF LARO	144 in 5 ETSI HU	✓	recommended	✗	✓ required	extended stepped "E length legs"



MTP® female



MTP® PRO female



Info about MTP® PRO

<https://www.usconec.com/featured-products/mtp-pro-connectors>

**PreCONNECT® OCTO MTP® OM4 and OM5 breakout trunk:**

- Breakout cable n x 8 OM4 or OM5 fibers FRNC-LSZH
- **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	Cable CPR class
1	037A0110OM4	037A0110OM5	1 x 8	8	B2ca
2	037A2048OM4	037A2048OM5	2 x 8	16	Cca
4	037A2049OM4	037A2049OM5	4 x 8	32	Cca
6	037A2089OM4	037A2089OM5	6 x 8	48	Cca
8	037A2050OM4	037A2050OM5	8 x 8	64	Cca
12	037A2051OM4	037A2051OM5	12 x 8	96	Cca
18	037A2088OM4	037A2088OM5	18 x 8	144	tbt.
24	037A2067OM4	037A2067OM5	24 x 8	192	tbt.

Technical data of connectors, fibers and cables on request via the product profile of your selected trunks.

MULTIMODE



MTP® 4+4 OCTO male (with pins)

**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 MTP® OM4 and OM5 breakout trunk:**

- Breakout cable n x 8 OM4 or OM5 fibers FRNC-LSZH
- **MTP® 4+4 OCTO**, MM, male, Elite quality
- Polarity TIA method B “1 to 12”
- MTP® leg-length = standard stepped

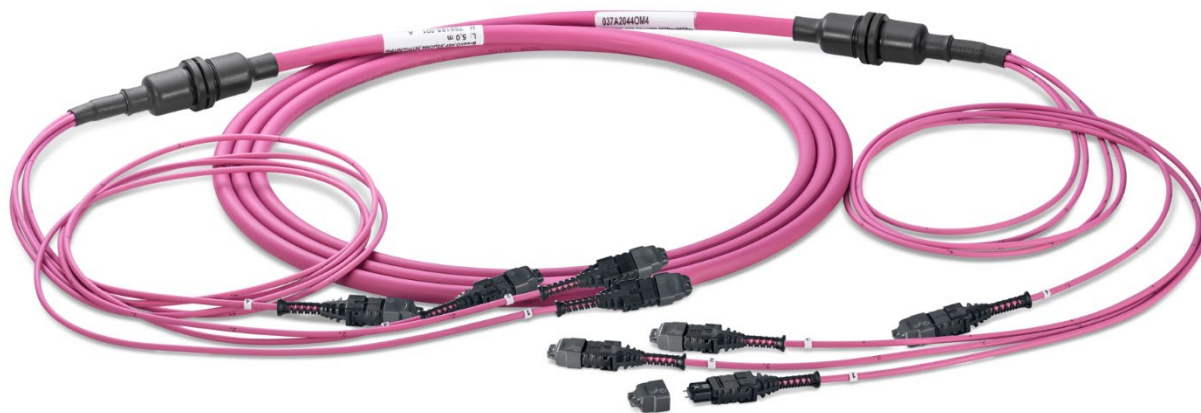
**Length definition:**

- 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	Cable CPR class
1	on request	on request	1 x 8	8	B2ca
2	on request	on request	2 x 8	16	Cca
4	on request	on request	4 x 8	32	Cca
6	on request	on request	6 x 8	48	Cca
8	on request	on request	8 x 8	64	Cca
12	on request	on request	12 x 8	96	Cca
18	on request	on request	18 x 8	144	tbt.
24	on request	on request	24 x 8	192	tbt.

Technical data of connectors, fibers and cables on request via the product profile of your selected trunks.



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

MULTIMODE



MTP® PRO 4+4 OCTO male (with pins)

**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.





**PreCONNECT® OCTO MTP® SM breakout trunk:**

- Breakout cable n x 8 SM fibers FRNC-LSZH
- **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	Cable CPR class
1	037A2096G657A1	1 x 8	8	B2ca
3	037A2091G657A1	3 x 8	24	Cca
4	037A2076G657A1	4 x 8	32	Cca
6	037A2090G657A1	6 x 8	48	Cca
8	037A2077G657A1	8 x 8	64	Cca
12	037A2078G657A1	12 x 8	96	Cca
18	037A2087G657A1	18 x 8	144	Cca

Technical data of connectors, fibers and cables on request via the product profile of your selected trunks.

**SINGLEMODE**



MTP® 4+4 OCTO male (with pins)

**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® OCTO MTP® SM breakout trunk:**

- Breakout cable n x 8 SM fibers FRNC-LSZH
- **MTP® PRO 4+4 OCTO**, SM, male, Elite quality
- Polarity TIA method B “1 to 12”
- MTP® leg-length = standard stepped

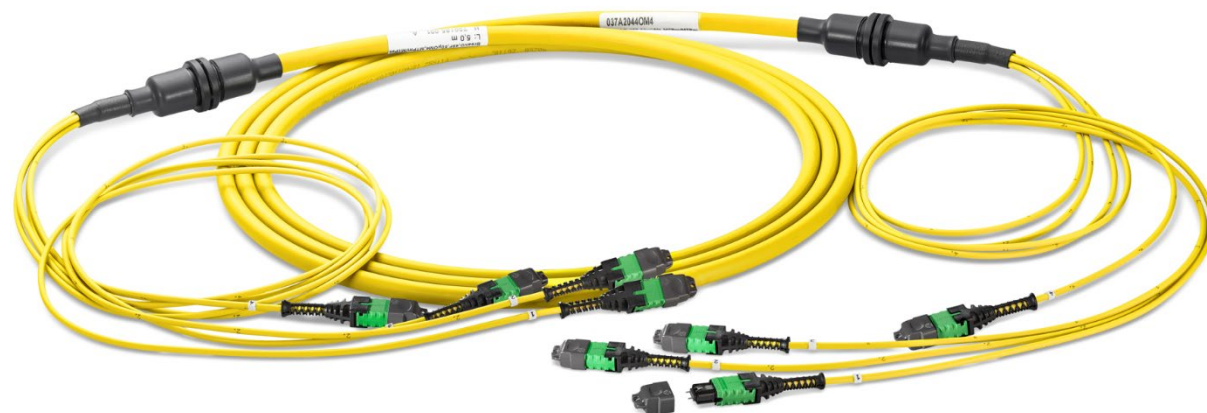
**Length definition:**

- 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	Cable structure	Number of fibers	Cable CPR class
1	on request	1 x 8	8	B2ca
3	on request	3 x 8	24	Cca
4	on request	4 x 8	32	Cca
6	on request	6 x 8	48	Cca
8	on request	8 x 8	64	Cca
12	on request	12 x 8	96	Cca
18	on request	18 x 8	144	Cca

Technical data of connectors, fibers and cables on request via the product profile of your selected trunks.



**SINGLEMODE**



MTP® PRO 4+4 OCTO male (with pins)

**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

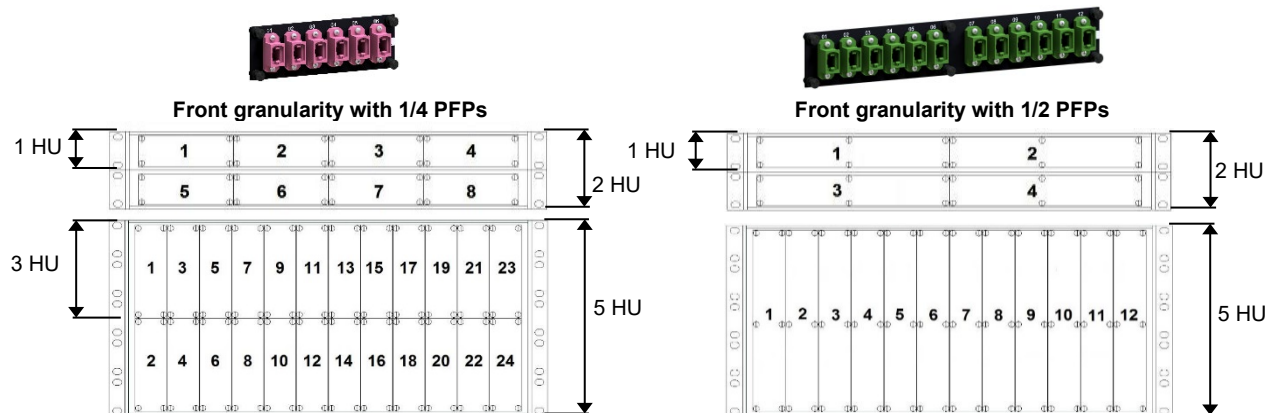
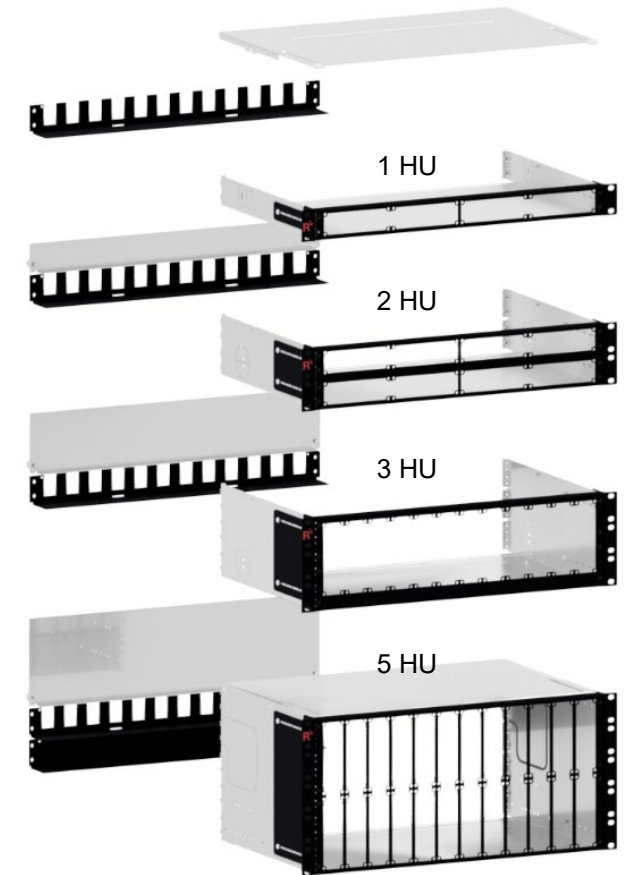
**Part numbers:**

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.

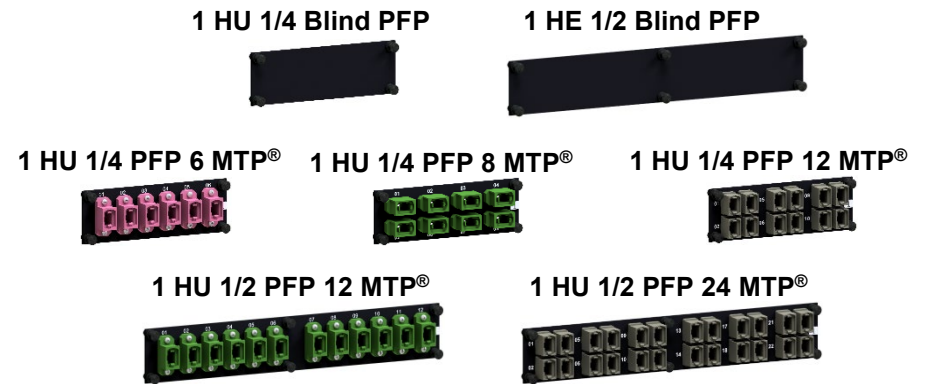
SMAP-G2 SD panels for PURE trunks are described behind in this document.



**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

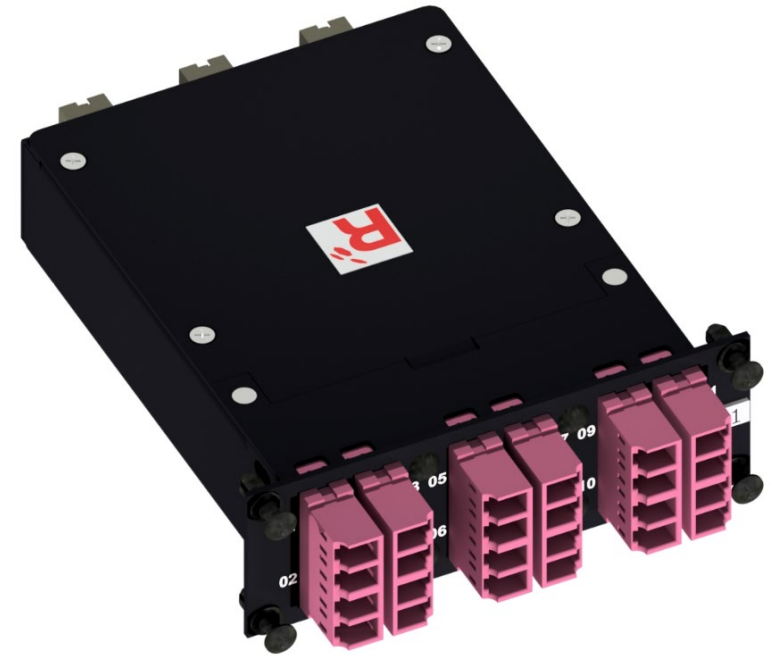
Find part numbers for panels factory assembled with part front plates in our product information SMAP-G2 SD.



**SMAP-G2 SD 24 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO MTP® 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 width partition, depth 300 mm: 171H0013

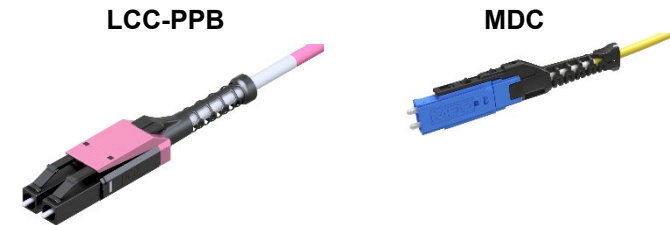
Find panels with other back plane configurations and further information in our product information SMAP-G2 HD.

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.



Front granularity 6/6 width partition					
1	4	7	10	13	16
2	5	8	11	14	17
3	6	9	12	15	18



### 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)



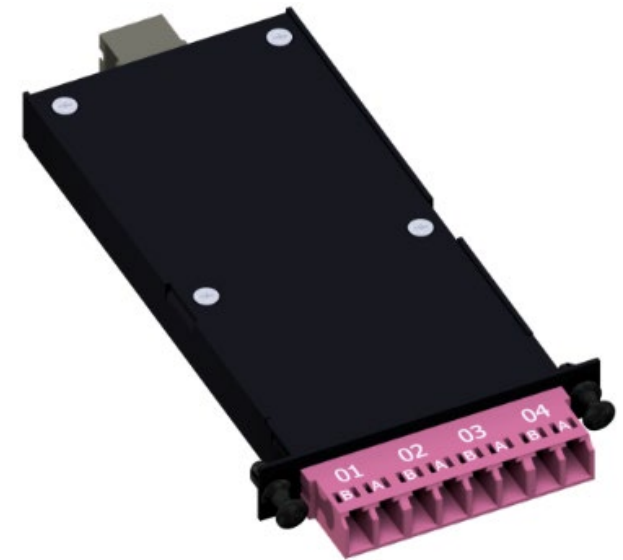
1/3 HU 1/6 Blind PFP



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



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	170H1106OM4	170H1105
Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 HD.			



## SMAP-G2 HD 8 fiber MTP®-LC Port-Breakout-Unit

**For port-breakout of a MPO4+4 transceiver to 4 LC-Duplex transceivers, without polarity, pin or debris trouble at unit pack plane, lowest attenuation:**

### Multimode applications:

- 40GBASE-SR4 MPO4+4 to 4x 10GBASE-SR/SW LC-Duplex
- 100GBASE-SR4 MPO4+4 to 4x 25GBASE-SR/SW LC-Duplex
- 200GBASE-SR4 MPO4+4 to 4x 50GBASE-SR/SW LC-Duplex
- 4x16GFC MPO4+4 to 4x 16GFC LC-Duplex
- 4x32GFC MPO4+4 to 4x 32GFC LC-Duplex
- 4x64GFC MPO4+4 to 4x 64GFC LC-Duplex

### Singlemode applications:

- 100GBASE-DR4/PSM4 MPO4+4 to 4x 25GBASE-LR LC-Duplex
- 4x10GBASE-LR MPO4+4 to 4x 10GBASE-LR LC-Duplex
- 200GBASE-DR4 MPO4+4 to 4x 50GBASE-LR LC Duplex
- 400GBASE-DR4 MPO4+4 to 4x 100GBASE-LR LC Duplex

### Part number:

- Multimode OM4: 170H8000OM4
- Singlemode: 170H8100G657A1

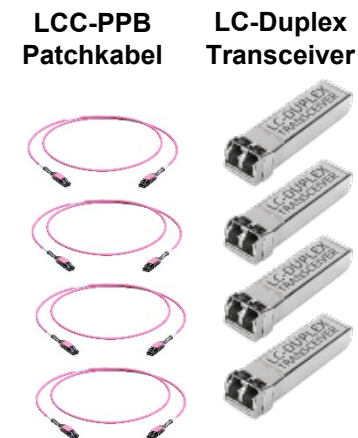
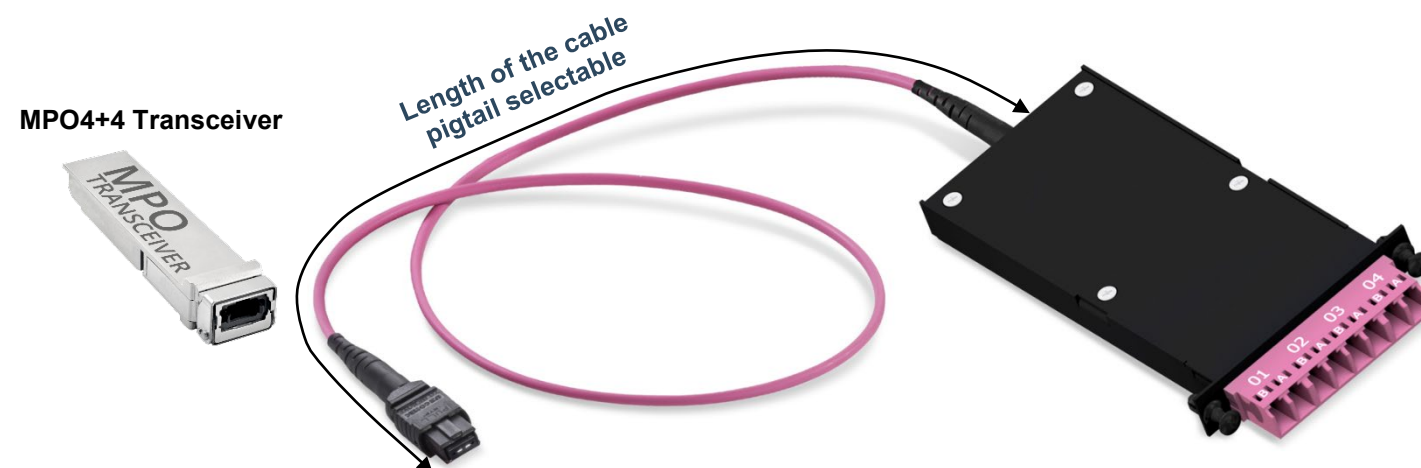
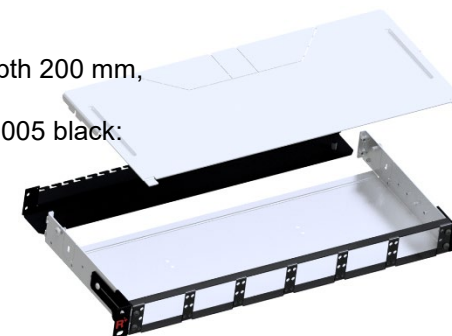
### Properties:

- 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®4+4 OCTO female connector at cable pigtail
- 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

### Recommended empty panel:

SMAP-G2 HD 1 HU, 6/6 width partition, depth 200 mm, capacity: 6x3=18 Port-Breakout-Units, with universal back plane 170A1507, RAL9005 black:

Part number: 171H0033



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

**Port density:**

- 96 LC-Duplex or 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 width partition, depth 300 mm: 171H0012
- 1 HU, 4/4 width partition, depth 300 mm: 171H0011

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.



Front granularity 6/6 width partition

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



Front granularity 4/4 width partition

1	3	5	7
2	4	6	8

### SMAP-G2 UHD 1/2 HU 1/6 and 1/4 part front plates:

Fitting into SMAP-G2 UHD empty panels with 6/6 and 4/4 width partition. The PFPs are toolless inserted from the front side and fixed with quick fasteners. By this design they can be pulled out to the front for maintenance.

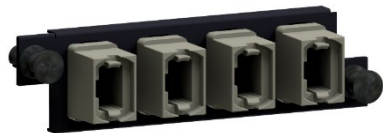
No numbering at part front plates PFP or adapters, because they are not readable at this UHD port density. Port addressing via port address field within optional patchcord manager possible, as shown behind in this document.

Material and colour: steel powder coated RAL9005 black

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
1/2 HU 1/4	12 x MTP®	170H6005TB	170H6006

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®



Using this PFP, trunks and patchcords with MTP® can be applied



1/2 HU 1/4 PFP 12 MTP®



Using this PFP, trunks and patchcords with MTP® PRO and cable diameter 2.0mm must be applied



1/2 HU 1/6 Blind PFP



1/2 HU 1/4 Blind PFP



**SMAP-G2 UHD 16 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO MTP® 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



Trunks with MTP® can be applied here

LCC-PPB

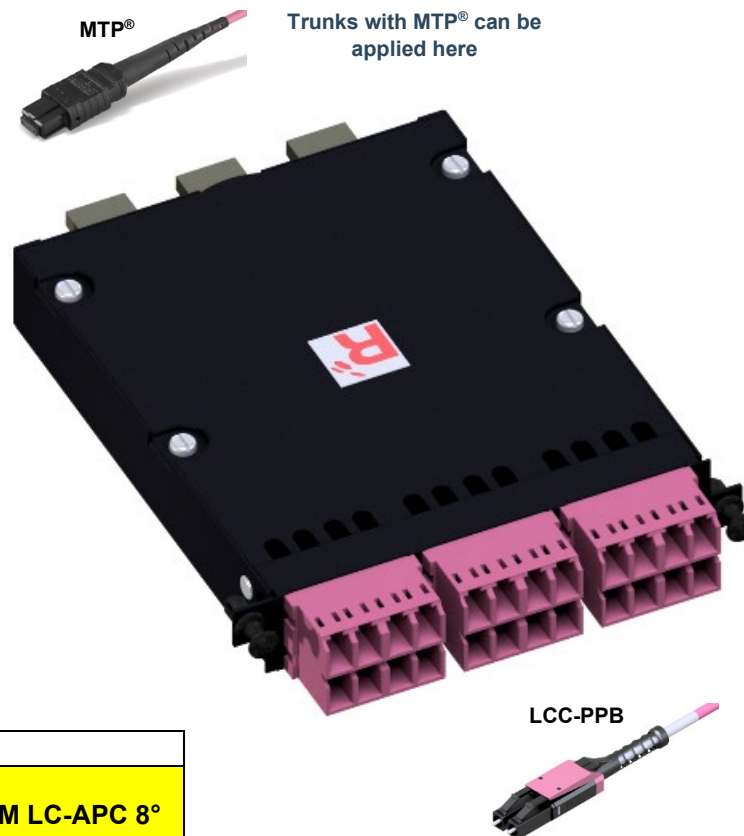
Patchcords with LC-COMPACT Push-Pull-Boot (LCC-PPB) and cable diameter 2.0mm or thinner must be applied here

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.				

**SAMP-G2 UHD 24 fiber MTP®-LC module cassettes fitting for PreCONNECT® OCTO and DUODECIM MTP® trunks:**

**Properties:**

- For Port-Breakout of PreCONNECT® OCTO and DUODECIM trunks with MTP® connectors, as described in the product information PreCONNECT® OCTO and DUODECIM
- Fitting in SMAP-G2 UHD panel with 4/4 width partition
- Height: 1/2 HU
- Width: 1/4
- Depth: 115 mm
- Polarity: Rx to Tx
- 3x MTP® female port 4+4F OCTO or 2x 12F DUODECIM 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 and front: aluminum powder coated RAL9005 black



Trunks with MTP® can be applied here

LCC-PPB

Patchcords with LC-COMPACT Push-Pull-Boot (LCC-PPB) and cable diameter 2.0mm or thinner must be applied here

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°	SM LC-APC 8°
3 x 4+4F OCTO	3 OCTO groups of 4 = 12	170H4000OM4	170H4003	on request
2 x 12F DUODECIM	2 DUODECIM groups of 6 = 12	170H4001OM4	170H4004	on request

Find part numbers for panels factory assembled with MTP® module cassettes in our product information SMAP-G2 UHD.

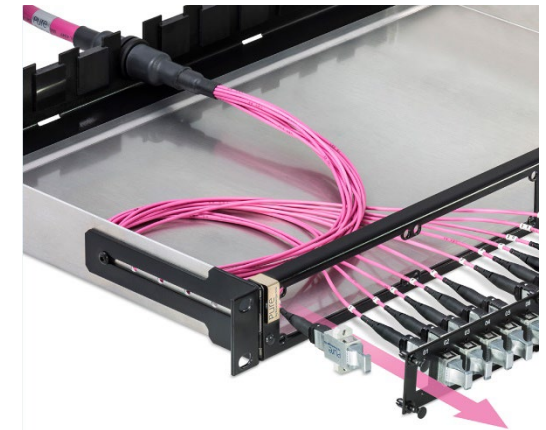
**SMAP-G2 SD PURE**  
19" distribution panels empty:

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

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



**PreCONNECT® PURE MTP®**  
Adapter interface  
at trunk connector legs



**SMAP-G2 SD PURE part-front-plates PFP**

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



1 HU 1/4 blind-PFP



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



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 MTP® OM4 and OM5 patchcords:**

MULTIMODE

**Single jacket:**

Single jacket cable 8 OM4 or OM5 fibers FRNC-LSZH  
 MTP® and MTP® PRO 4+4 OCTO, MM, female, Elite quality  
 Polarity TIA method B "1 to 12"



MTP® 4+4 OCTO female (w/o pins)

MTP® PRO 4+4 OCTO female (w/o pins)



Part numbers, length variable:		
Cable diameter	MTP®	MTP® PRO
2.0 mm	080A2063OM4/080A2063OM5	on request
3.0 mm	080A2030OM4/080A2030OM5	on request

**Double jacket:**

Double jacket cable 8 OM4 or OM5 fibers FRNC-LSZH  
 Diameter 3.0 / 4.5 mm  
 MTP® and MTP® PRO 4+4 OCTO, MM, female, Elite quality  
 Polarity TIA method B "1 to 12"

Standard lengths of the 3.0 mm single jacket MTP®-legs = 0.5 m,  
 others on request



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



Part numbers, length variable:	
MTP®	MTP® PRO
080A2031OM4 / 080A2031OM5	on request

PreCONNECT® OCTO MTP® OM4 patchcords are suitable for SR4 MPO4+4 transceiver-transceiver direct-attach.



**PreCONNECT® OCTO MTP® SM patchcords:**

**Single jacket:**

Single jacket cable 8 SM fibers FRNC-LSZH  
 MTP® and MTP® PRO 4+4 OCTO, SM, female  
 MTP® Standard quality, MTP® PRO Elite quality  
 Polarity TIA method B "1 to 12"

Part numbers, length variable:		
Cable diameter	MTP®	MTP® PRO
2.0 mm	080A2065G657A1	on request
3.0 mm	080A2036G657A1	on request

**Double jacket:**

Double jacket cable 8 SM fibers FRNC-LSZH, diameter 3.0 / 4.5 mm  
 MTP® and MTP® PRO 4+4 OCTO, SM, female  
 MTP® Standard quality, MTP® PRO Elite quality  
 Polarity TIA method B "1 to 12"

Standard lengths of the 3.0 mm single jacket MTP®-legs = 0.5 m,  
 others on request

Part numbers, length variable:	
MTP®	MTP® PRO
080A2045G657A1	on request

SINGLEMODE



MTP® 4+4 OCTO female (w/o pins)



MTP® PRO 4+4 OCTO female (w/o pins)



PreCONNECT® OCTO MTP® SM patchcords are suitable for DR4/PSM4 MPO4+4 transceiver-transceiver direct-attach.





**PreCONNECT® OCTO OM4 MTP®-LCC harness:**

**For connecting a MPO4+4 transceiver with four LC-Duplex transceivers and for port-breakout of OCTO trunks:**

- 40GBASE-SR4 MPO4+4 to 4x 10GBASE-SR/SW LC-Duplex
- 100GBASE-SR4 MPO4+4 to 4x 25GBASE-SR/SW LC-Duplex
- 200GBASE-SR4 MPO4+4 to 4x 50GBASE-SR/SW LC-Duplex
- 4x16GFC MPO4+4 to 4x 16GFC LC-Duplex
- 4x32GFC MPO4+4 to 4x 32GFC LC-Duplex
- 4x64GFC MPO4+4 to 4x 64GFC LC-Duplex

MULTIMODE



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

Double jacket cable 8 OM4 fibers 3.0 / 4.5 mm FRNC-LSZH  
 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  
 Polarity Rx to Tx

Part numbers, length variable:	
MTP®	MTP® PRO
076A0112OM4	on request



**PreCONNECT® OCTO OM4 MTP®-MDC harness:**

**For connecting a MPO4+4 transceiver with four MDC transceivers and for port-breakout of OCTO trunks:**

- 100GBASE-SR4 MPO4+4 to 4x 25GBASE-SR/SW MDC
- 200GBASE-SR4 MPO4+4 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  
 Polarity Rx to Tx

Part numbers, length variable:	
MTP®	MTP® PRO
076A0187OM4	on request

MULTIMODE



MPO4+4 Transceiver



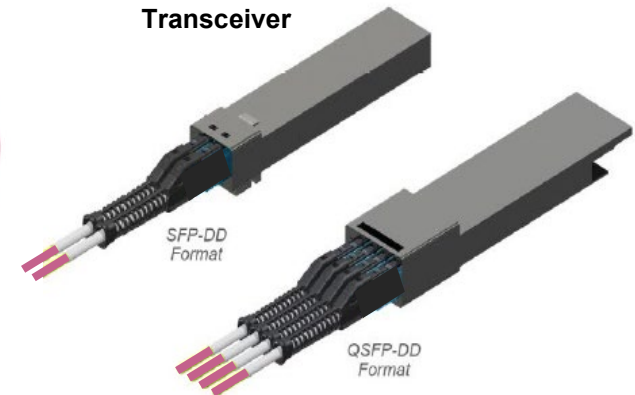
MTP® 4+4 OCTO female (w/o pins)



MTP® PRO 4+4 OCTO female (w/o pins)



MDC Transceiver



**PreCONNECT® OCTO SM MTP®-LCC harness:**

**For connecting a MPO4+4 transceiver with four LC-Duplex transceivers and for port-breakout of OCTO trunks:**

- 100G-PSM4 MPO4+4 to 4x 25GBASE-LR LC-Duplex
- 4x10GBASE-LR MPO4+4 to 4x 10GBASE-LR LC-Duplex
- 200GBASE-DR4 MPO4+4 to 4x 50GBASE-LR LC Duplex
- 400GBASE-DR4 MPO4+4 to 4x 100GBASE-LR LC Duplex

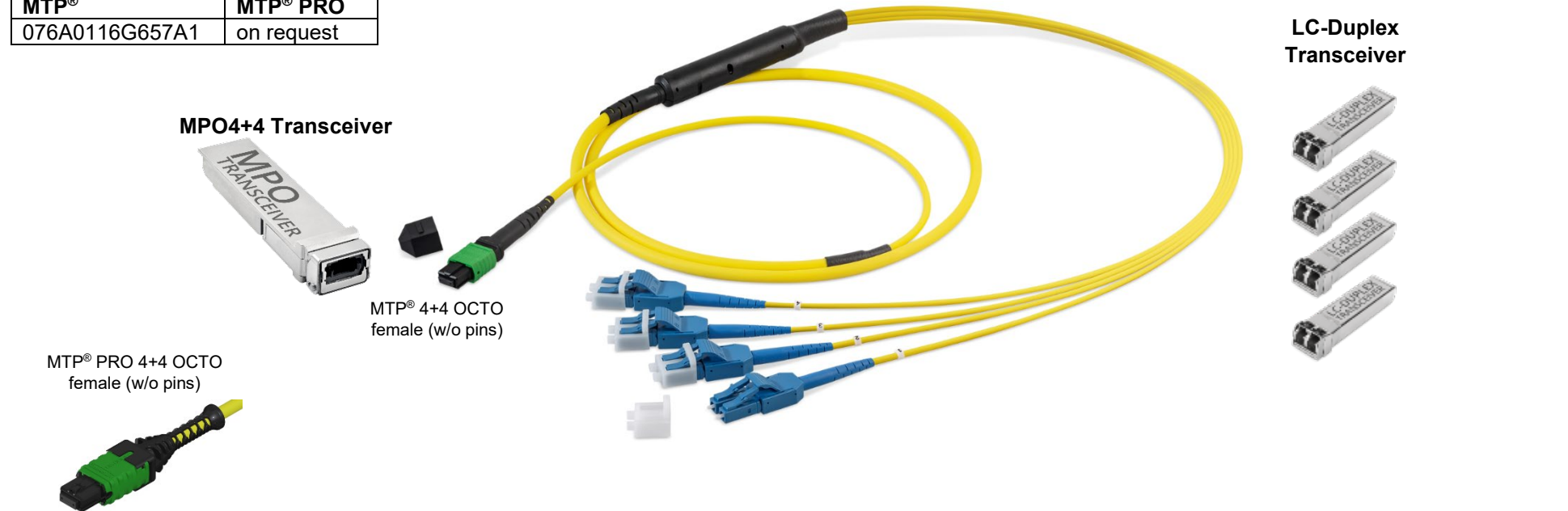
**SINGLEMODE**



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

Double jacket cable 8 SM fibers 3.0 / 4.5 mm FRNC-LSZH  
 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, MTP® Standard quality, MTP® PRO Elite quality  
 Polarity Rx to Tx

Part numbers, length variable:	
MTP®	MTP® PRO
076A0116G657A1	on request



**MPO4+4 Transceiver**

MTP® 4+4 OCTO female (w/o pins)

MTP® PRO 4+4 OCTO female (w/o pins)

**LC-Duplex Transceiver**

**PreCONNECT® OCTO SM MTP®-MDC harness:**

**For connecting a MPO4+4 transceiver with four MDC transceivers and for port-breakout of OCTO trunks:**

- 100G-PSM4 MPO4+4 to 4x 25GBASE-LR MDC
- 200GBASE-DR4 MPO4+4 to 4x 50GBASE-LR MDC
- 400GBASE-DR4 MPO4+4 to 4x 100GBASE-LR MDC

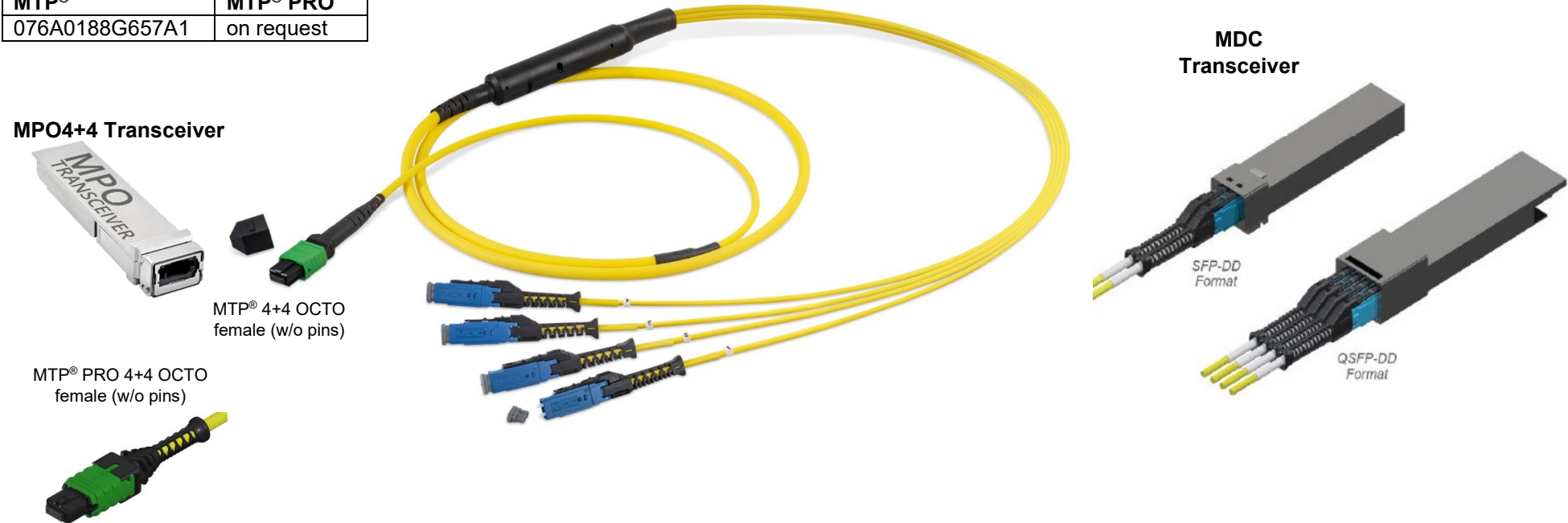
**SINGLEMODE**



**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, MTP® Standard quality, MTP® PRO Elite quality  
 Polarity Rx to Tx

Part numbers, length variable:	
MTP®	MTP® PRO
076A0188G657A1	on request



**MPO4+4 Transceiver**

MTP® PRO 4+4 OCTO female (w/o pins)

MTP® 4+4 OCTO female (w/o pins)

**MDC Transceiver**

SFP-DD Format

QSFP-DD Format

**Patchcords:**

**Properties:**

- Kink and crush resistance optimized for environmental conditions
- Operating temperature range: -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 %

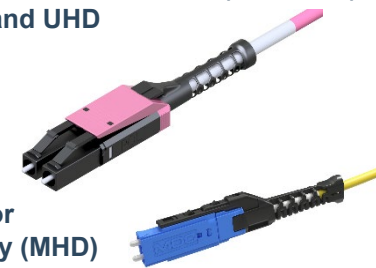
**Delivery form:**

- Attenuation (IL) measured in accordance with IEC 61300-3-4 „C“ or „Substitution“ method, MM 850nm/SM 1310nm, measurement values on request, or can be downloaded from our website by using the serial numbers of the patchcords <https://www.rosenberger.com/products/download-measurement-data/>
- Serial number labels with length information at both patchcord ends
- 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 2.0mm or thinner should be applied.



With LC-COMPACT (LCC) connectors for SMAP-G2 SD 19“ panel system



With LC-COMPACT Push-Pull-Boot (LCC-PPB) connectors for SMAP-G2 HD and UHD 19“ panel system

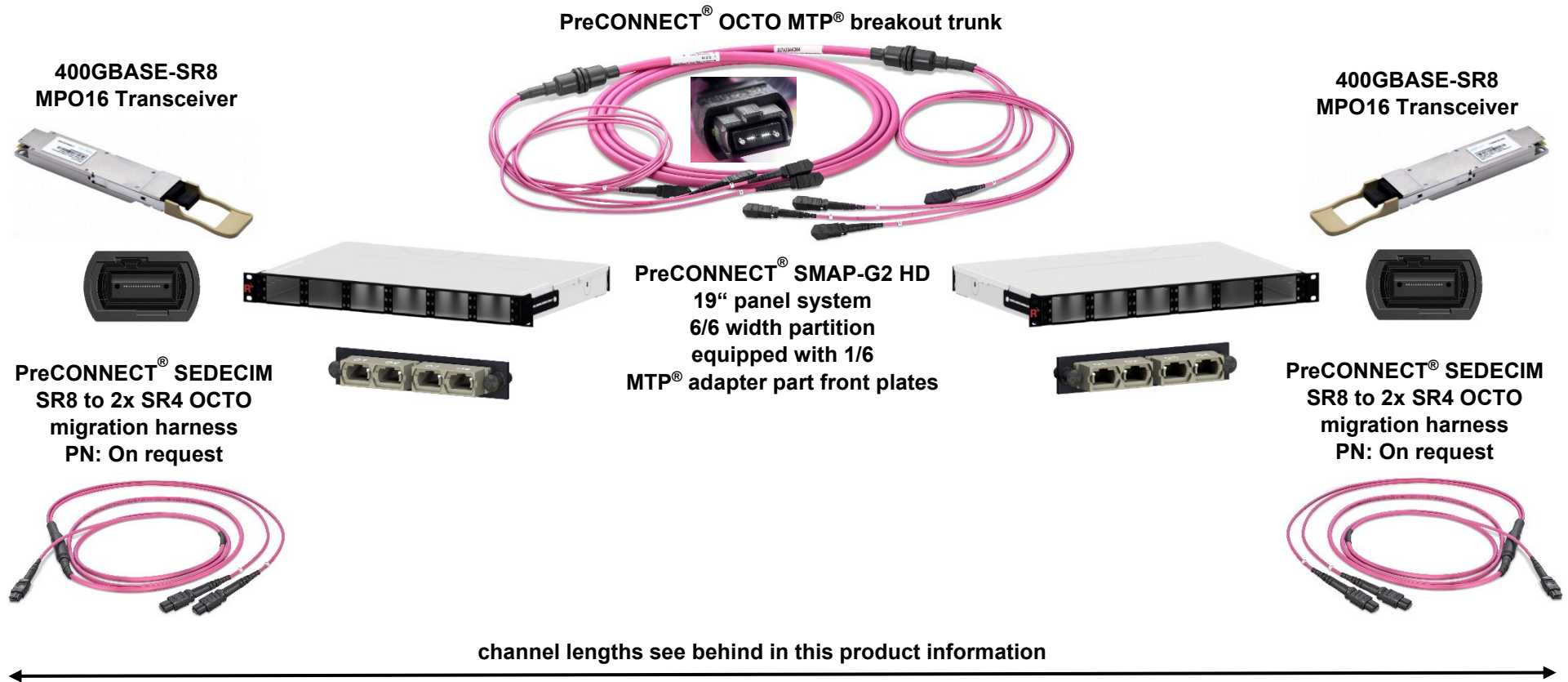
MDC connector for Mega High Density (MHD)

<b>Part numbers</b> <b>Duplex patchcord cable type round I-V(ZN)H and I-V(ZN)H(ZN)H FRNC-LSZH</b>					
Cable diameter	Connectors	Length	OM4	OS2 PC 0°	OS2 APC 8°
1.6 mm	MDC » MDC	variable	092A0010OM4	092A0009G657A1	on request
	MDC » LC-COMPACT PPB	variable	092A0012OM4	092A0011G657A1	on request
	LC-COMPACT PPB » LC-COMPACT PPB	variable	087A6949OM4	087A6948G657A1	087A6950G657A1
2.0 mm	LC-COMPACT » LC-COMPACT	variable	087A6623OM4	087A6620G657A1	087A6622G657A1
	LC-COMPACT PPB » LC-COMPACT PPB	variable	087A6737OM4	087A6738G657A1	087A6747G657A1
	MDC » MDC	variable	092A0004OM4	092A0003G657A1	on request
	MDC » LC-COMPACT PPB	variable	092A0008OM4	092A0007G657A1	on request
	LC-COMPACT » LC-COMPACT	variable	087A6601OM4	087A6600G657A1	087A6609G657A1
2.8 mm	LC-COMPACT PPB » LC-COMPACT PPB	variable	087A6753OM4	087A6754G657A1	087A6755G657A1
	LC-COMPACT » LC-COMPACT	variable	087A6613OM4	087A6610G657A1	087A6612G657A1
double jacket 2.8 / 5.0 mm	LC-COMPACT » LC-COMPACT	variable	087A6613OM4	087A6610G657A1	087A6612G657A1
	LC-COMPACT PPB » LC-COMPACT PPB	variable	087A6759OM4	087A6760G657A1	087A6761G657A1

Technical data of connectors, fibers and cables on request via the product profile of your selected patchcords.

Migration of PreCONNECT® OCTO MTP® to 40GBASE-SR8:

MULTIMODE

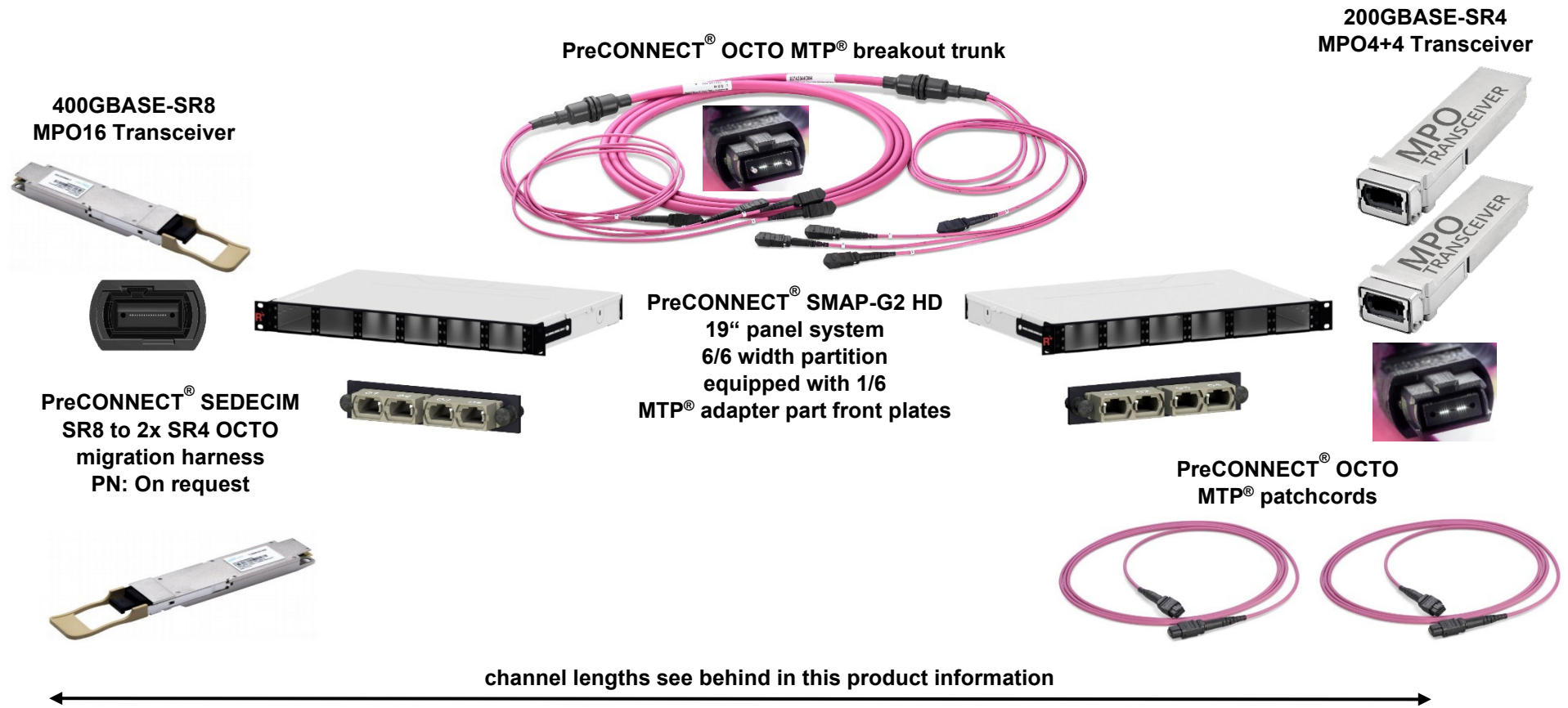


PreCONNECT® SEDECIM, SR8 to 2x SR4 OCTO, migration-harness, part numbers:

- 076A0140M4 with MTP16 MM 0° PC black boot for 40GBASE-SR8 MPO16 Transceivers with 0° PC interface
- 076A0185M4 with MTP16 MM 8° APC white boot for 40GBASE-SR8 MPO16 Transceivers with 8° APC interface

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

MULTIMODE

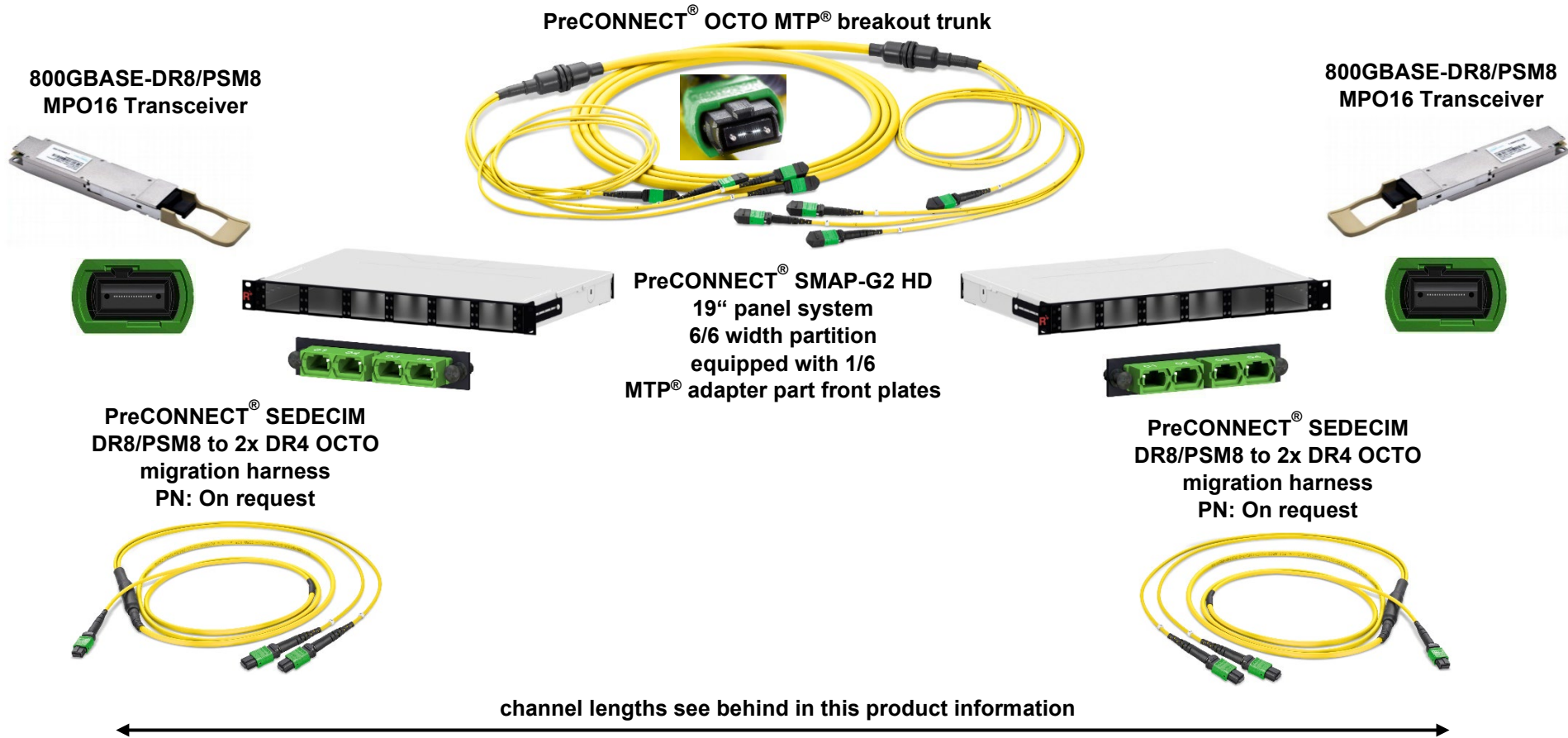


PreCONNECT® SEDECIM, SR8 to 2x SR4 OCTO, migration-harness, part numbers:

1. 076A0140OM4 with MTP16 MM 0° PC black boot for 400GBASE-SR8 MPO16 Transceivers with 0° PC interface
2. 076A0185OM4 with MTP16 MM 8° APC white boot for 400GBASE-SR8 MPO16 Transceivers with 8° APC interface

Migration of PreCONNECT® OCTO MTP® to 800GBASE-SR8/PSM8:

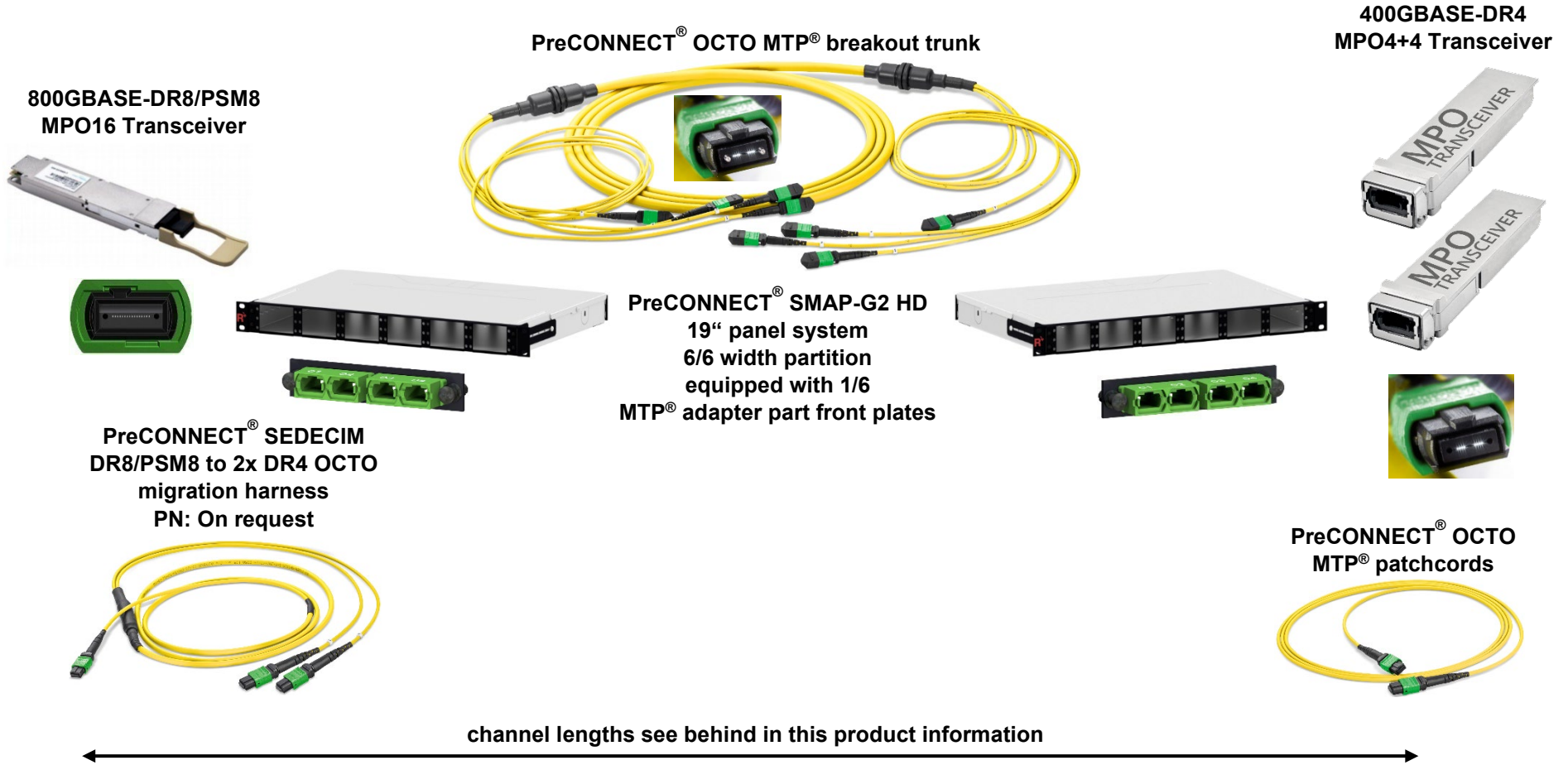
SINGLEMODE



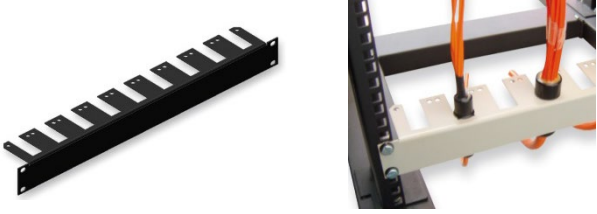




**Migration of PreCONNECT® OCTO MTP®  
800GBASE-DR8/PSM8 Port-Breakout to 2 x 400GBASE-DR4:**

**SINGLEMODE**



**Accessories:**

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

## Accessories:

### Patch location rack:

#### Applications:

High density data center infrastructures

For the construction of ultra high density data center patch locations

#### Properties:

Innovative, restriction-free cable management system

Rack pillars with integrated cable managers to prevent interference with cable routing

The covers of the cable managers fold in both directions and are completely removable

Individually selectable feedthroughs in the sides and rear walls of the large volume cable channel for simple vertical and horizontal cable routing

Professional routing of large cable volumes from the patchfields and storage of cable overlengths in the vertical cable managers

Particularly suitable for fiber optic cables thanks to the use of cable clips (L-fingers) and finger slots:

- The rounded L-fingers ensure that the cables are extremely well protected against bending and kinking even when subject to strain.
- The L-fingers do not have any sharp edges and are extremely strong and resistant to breakage.
- Because there is plenty of space for them in the large finger slots, the cables are neither squeezed nor kinked.
- The L-fingers retain the cables in the finger slots whenever you need to work with the covers folded back or removed.

Dimensions (H x L x W): 213 (46 HU) x 90 x 90 cm

Material and color: Powder-coated steel, RAL 9005 (black)

#### Optional:

19" Intermediate rack for the construction of rack rows with uneven numbers of racks on request.

#### Delivery form:

Factory mounted on pallet (total height with pallet and packaging: 230 cm)

Including adjustable feet for on-site installation

#### Accessories:

Wide range of accessories such as side walls, cable guides, excess cable storage for the top of the rack are available on request



More details in our product information " DC-PLR"

## PreCONNECT® OCTO MTP® – 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

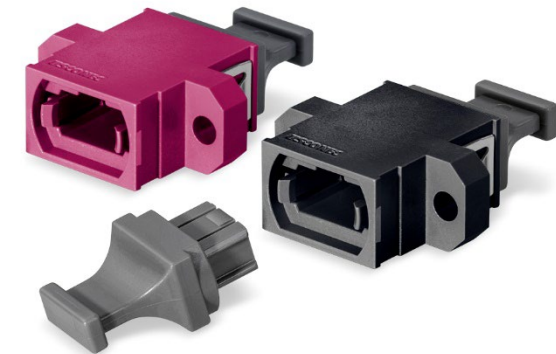
We have been the first European partner of the MTP® inventor and patent owner US Conec Ltd., and we are the largest MTP® assembler in Europe

### One connection consists of:

a „female“ connector **without pins**  
**but pin holes** ...

... a „male“ connector **with pins** ...

... and the **adapter**.

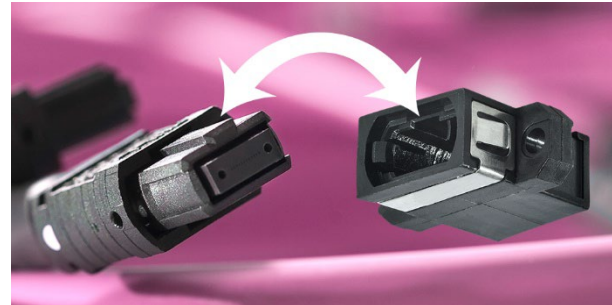
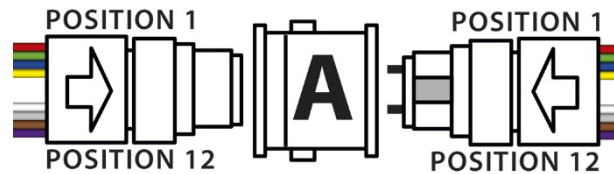


## PreCONNECT® OCTO MTP® – TECHNOLOGY AND BASICS

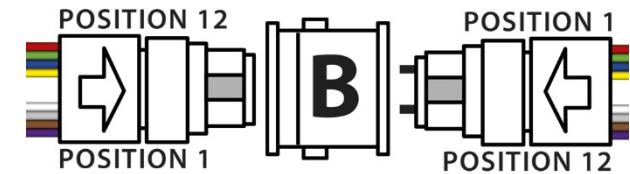
### MTP®/MPO adapters

- 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, see as well our white paper “Light Propagation Polarity Coding”.

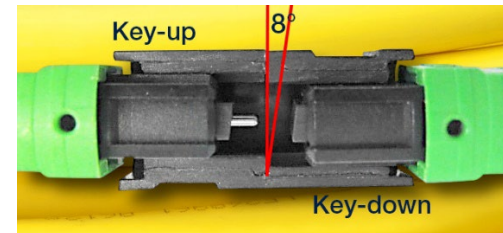
Type A „key-up to key-down“/”opposed key” results in polarity „1 to 1“



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 MTP® – TECHNOLOGY AND BASICS

**OCTO multimode products**

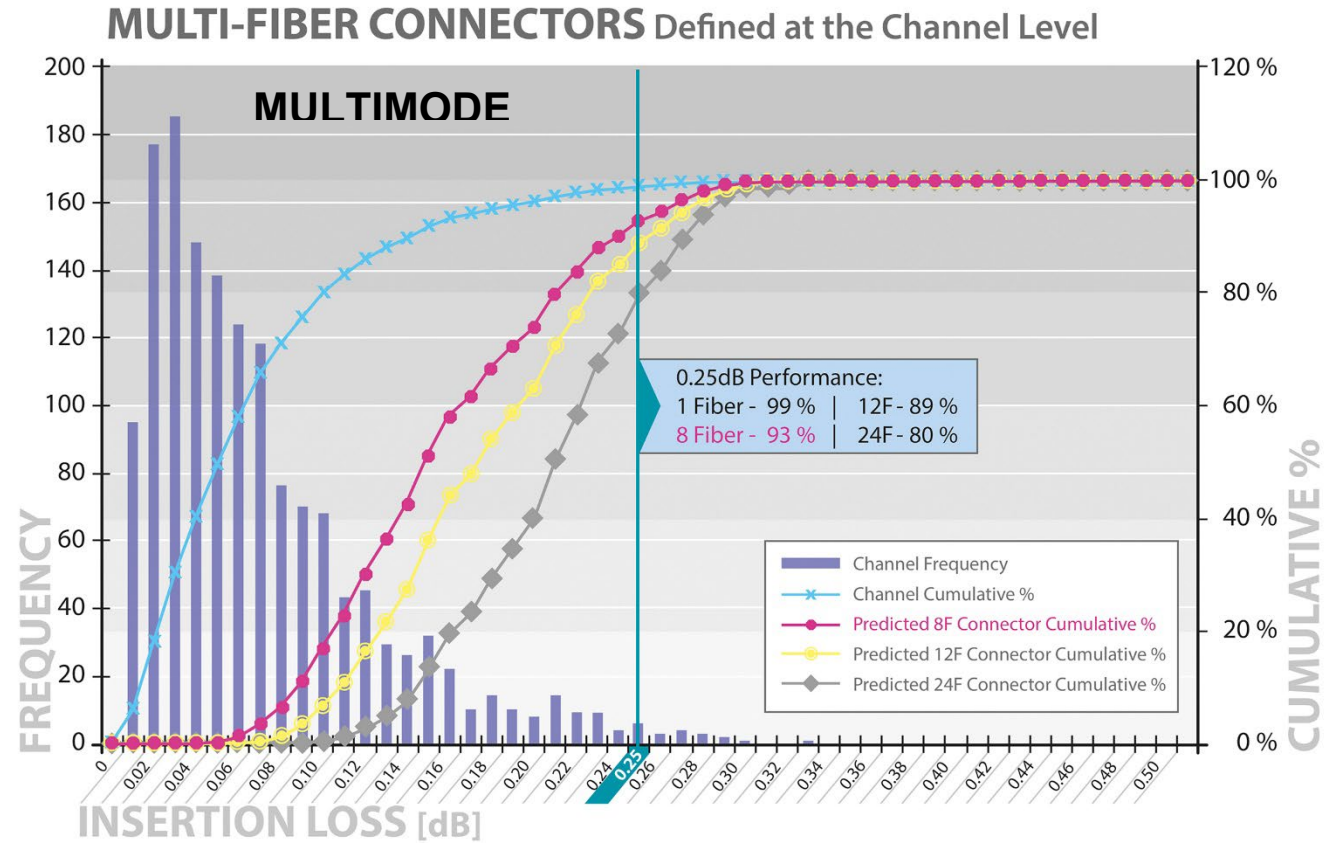
comprise MTP® multimode Elite® ferrules, which is necessary through the low power budget of the SR4 applications.

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.



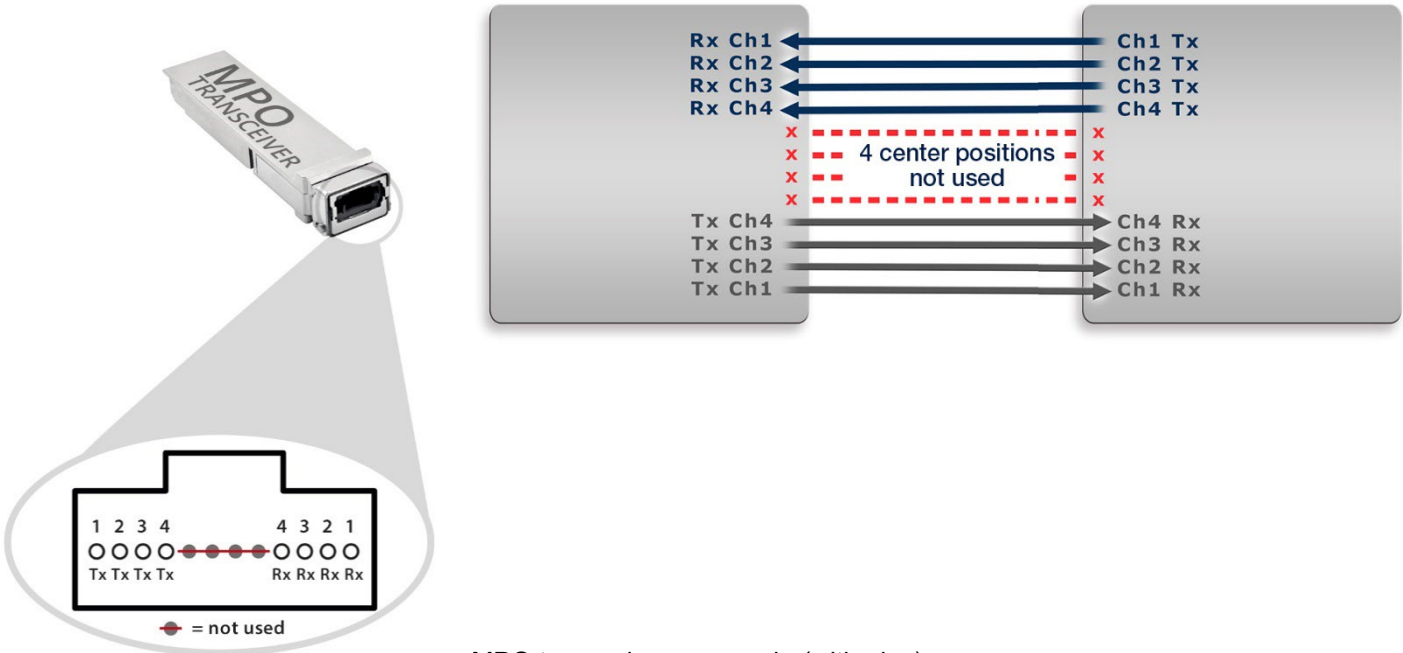
Source: US Conec Ltd.

PreCONNECT® OCTO MTP® – 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 MTP® – 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.

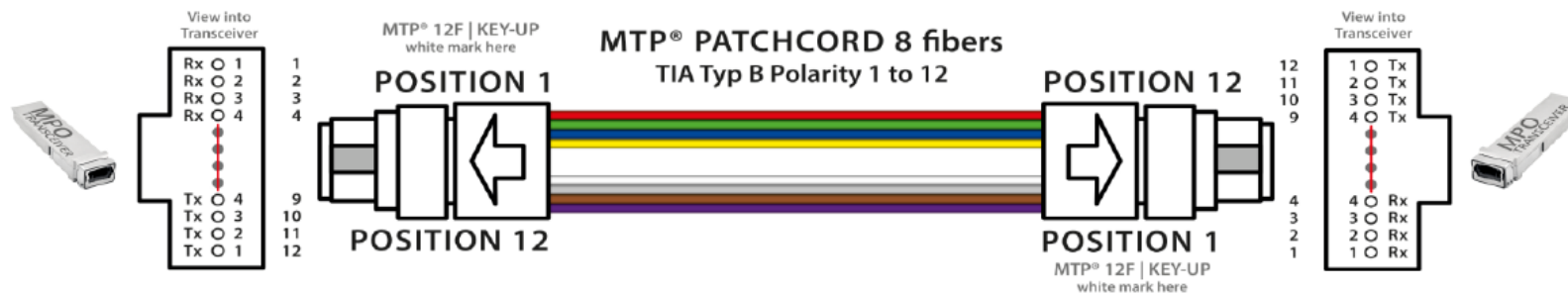


The fiber positions within MTP® connectors are counted from the side with the white mark.



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 MTP® – 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-eSR4, 850nm, MTP®/MPO4+4 OCTO	200	300	not specified	OM3 2.3 / OM4 2.4
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	70	100	150	OM3 1.8 / OM4 1.9 / OM5 2.0
400GBASE-SR8, 850nm, MTP®/MPO16 SEDECIM				
400GBASE-SR4.2, 850/910nm MTP®/MPO4+4 OCTO	in progress	in progress	in progress	in progress
800GBASE-SR8, 850nm, MTP®/MPO16 SEDECIM	in progress	in progress	in progress	in progress
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

PreCONNECT® OCTO MTP® – TECHNOLOGY AND BASICS

MTP®/MPO Ethernet and Fibre Channel channel specifications		
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
400GBASE-DR4, 1310nm, MTP®/MPO4+4 OCTO		
800GBASE-DR8, 1310nm, MTP®/MPO16 SEDECIM	in progress	in progress
800GBASE-PSM8, 1310nm, MTP®/MPO16 SEDECIM	in progress	in progress

## About 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 OSI has been part of the globally operating Rosenberger Group since 1998. The Rosenberger Group is a leading global provider of high-frequency, high-voltage and fiber optic connectivity solutions with headquarters in Germany. For further information, please visit:

[www.rosenberger.com/osi](http://www.rosenberger.com/osi)

# Rosenberger

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