

PreCONNECT® PURE MTP®

PRODUCT INFORMATION



Factory assembled FO cabling system with MTP® (MPO) adapter-interfaces in PURE quality

Our motivation for the development of PreCONNECT® PURE MTP® is the consequent further development of our PreCONNECT® PURE portfolio.

The fast growing volume of 40 and 100BASE-SR4 and 4x16G Fibre Channel Transceivers with MPO connector interface leads to even strongly rising demand on attachment cables with MTP® (MPO) connectors.

As the European MTP® pioneer, we developed our MTP® (MPO) based PreCONNECT® OCTO cabling system, explicitly for these in the future dominating SR4 multimode applications. Details about this, for SR4 optimized cabling system, please see our product information and brochure PreCONNECT® OCTO.

All our PreCONNECT® PURE cabling systems are fulfilling the requirement of today's high performance transmission protocols on FO connectors with highest possible quality in perfection.

Especially the reduction of the maximum permitted loss of multimode transmission links caused by every rise of the transmission rate demands lower and lower insertion loss of FO connectors.

At singlemode data center cabling a general request of lower and lower insertion loss of FO connectors don't exist. Because they have, for singlemode technology, very short transmission links inside of a data center, adequate optical performance.

However the Fibre Channel singlemode is very sensitive to reflections in FO connectors, which are mostly caused by contamination of the connector surface. See our White Paper „FC SM APC“ reference for this. How PreCONNECT® PURE MTP® conforms to the requirement of absolutely clean FO connectors is described at the following page.



MPO is the in the year 2000 in IEC 61754-7 standardized MTP®. It is one of the eldest FO connectivity systems, developed by US Conec Ltd. www.usconec.com already in the early 90s. IBM brought the MTP®, with our intensive support, comprised in the FTS cabling system, yet middle of the 90s to the market.

„MTP® = MPO“ and „MPO = MTP®“. The MTP® is MPO with the highest quality in the market, why we recommend to use MTP® whenever you need MPO connectors.

The particular about PreCONNECT® PURE MTP® are the factory assembled MTP® adapter-interfaces on both sides of the trunks, for these we guarantee the so-called „application-value“ for random mated connections in operation with our PURE MTP® Patchcords and Harnesses.

The optical contacts integrated in MTP® adapter-interfaces of the Trunks can't be soiled and damaged at the installation, by easily clicking them from behind into the front plates of the panels.

The MTP® adapter-interfaces conform to IEC 61754-7, are equipped with protective plugs and assured with sealing tag against unauthorized use. These sealing tags may only be opened by PURE certified personnel.

PreCONNECT® PURE MTP® is a closed system, composed of PURE MTP® Trunks and Patchcords.

To achieve their high quality and that we can guarantee the specified values, only personnel which is PURE qualified and certificated by us are allowed to install and patch PURE MTP® Trunks and Patchcords.



Manufacturers of cabling components usually specify “production limit values”, measured in reference adapters against reference connectors according to IEC 61300-3-4.

Such „production limit values“ can` t be used for planning transmission links, hence “application connections” are “random mated” connections of serial quality connectors in serial quality adapters. Insertion loss of „random mated“ single fiber connectors is measured according to IEC 61300-3-34 and of multifiber connectors, like the MTP®, according to IEC 61300-3-45.

The insertion losses of “application connections” have statistical normal distribution with maximum values higher than the “production limit values”.

Even the so called Elite quality of the MTP®, which is applied in our PreCONNECT® PURE MTP® cabling system, the normal distribution of the insertion loss is wider than the ones of single fiber connectors.

Thus the maximum admissible insertion loss limit of in the application „random mated“ connections must be specified respectively high.

Planning of MTP® cabling with such high maximum admissible insertion loss limits is useless, because theoretically only one to maximum two connections could be applied in high-speed applications, with their very low attenuation budgets.

The statistical probability of the appearance of more than one fiber mating having high insertion loss within MTP® connections, in one fiber lane, is very low.

MTP® cabling for nowadays and future high-speed applications only can be done with the “mean values” of the MTP® connections, evaluated according to IEC 61300-3-45.

PURE MTP® „application value limit“ up to max. 12 fiber MTP®:

Multimode PURE Elite quality:

- Insertion loss IL: mean value 0,15 dB (max. value 0,5 dB)
- Return loss RL: min. 25 dB

Singlemode PURE Elite quality:

- Insertion loss IL: mean value 0,15 dB (max. value 0,5 dB)
- Return loss RL: min. 50 dB

PURE MTP® „production value limit“ acc. to IEC 61300-3-4 method B and IEC 61300-3-6 method 1, up to max. 12 fiber MTP®:

Multimode PURE Elite quality:

- Insertion loss IL: max. 0,25 dB
- Return loss RL: min. 30 dB

Singlemode PURE Elite quality:

- Insertion loss IL: max. 0,25 dB
- Return loss RL: min. 60 dB

The quality of the connector end face geometry and its visual excellence:

Both properties have significant influence on insertion and return loss of FO connectors.

The MTP® connector responds particularly sensitive in showing high insertion and low return losses on failures in its connector end face geometry and soiling or defects in the polished surface of its fibers.

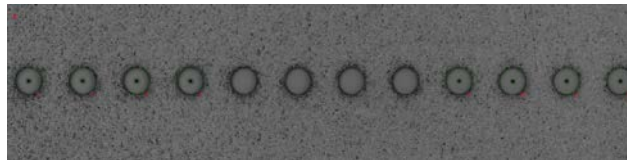
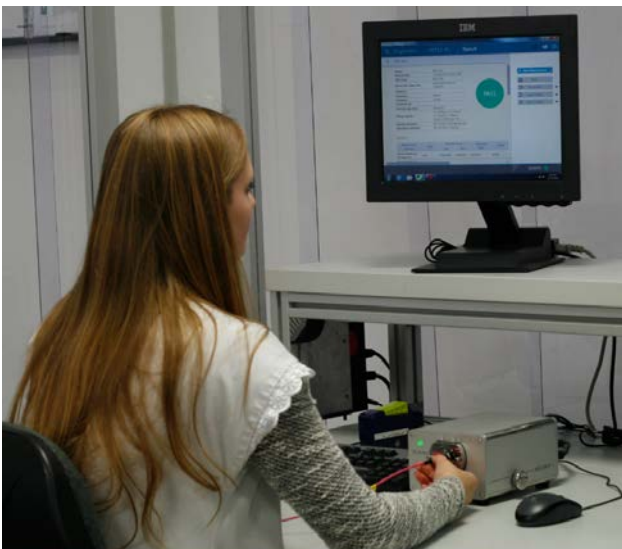
Polishing machines and plates of the highest possible precision and a perfectly adjusted polishing process are required to polishing a high quality MTP® connector end face.

To prove the high quality of PURE MTP®, each connector end face geometry and visual excellence is measured 100% with an Interferometer with integrated video microscope.

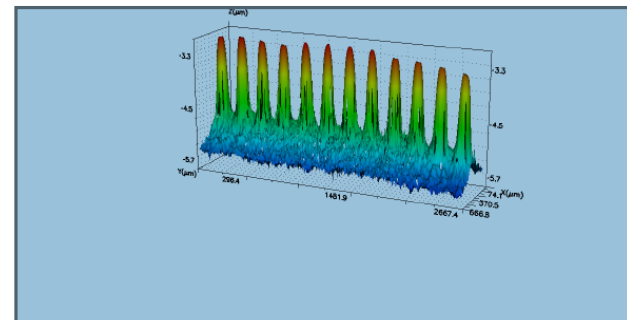
Connector end face geometry acc. to IEC 61755-3-31 CDV.

Visual excellence acc. to IEC 61300-3-35.

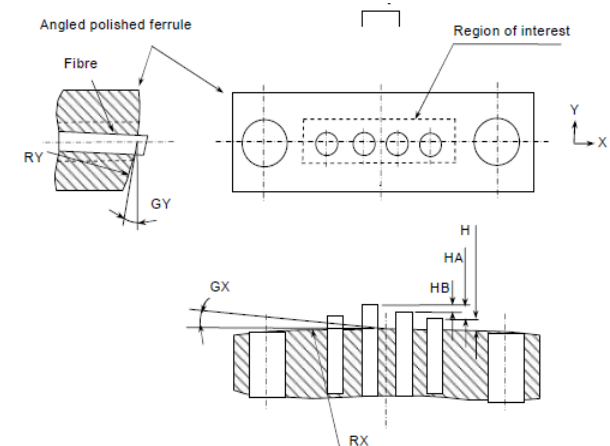
Interferometer with integrated video microscope: Measurement of the connector end face geometry and visual excellence of polished MTP® connectors in one measurement procedure.



3D Surface



**IEC 61755-3-31 CDV parameters
MTP® connector end-face geometry**



PARAMETER	REMARKS	IEC 61755-3-31 CDV	
		MIN	MAX
CF	Minus Side Coplanarity		0.4 μm
SX	Ferrule Surface X-angle	-0.15°	+0.15°
SY	Ferrule Surface Y-angle	7.8° (-0.2°*)	8.2° (+0.2°*)
H	Fiber Height	1 μm	3.5 μm
HA	Adjacent Fiber Height	0	0.3 μm
RF	Fiber Tip Spherical Radius	1 mm	-
RX	Ferrule Surface X-radius	2000 mm (convex) -10,000mm (concave)	-
RY	Ferrule Surface Y-radius	5 mm	-
GL	Geometry Limit		22.6 (4 fiber) 17.9 (8 fiber) 17.4 (12 fiber)

* Indicates US Conec recommended MM values, which are not currently specified by IEC.

PreCONNECT® OCTO MTP® cabling system in PURE quality:

The demand for our PreCONNECT® OCTO cabling system is rising through the fast growing volume of SR4 multimode applications within data centers.

By applying our PURE quality philosophy on PreCONNECT® OCTO, we fulfill the permanently tightening requirement of high performance transmission protocols on FO connections with highest possible quality.

Details about this, for SR4 optimized cabling system, please see our product information and brochure PreCONNECT® OCTO.



Part numbers PreCONNECT® PURE OCTO Patchcords		
Cable type	OM4	Singlemode
Single jacket		A 1-1: 080P2043G657A1
3 mm	080P2030OM4	B 1-12: 080P2036G657A1
Single jacket		A 1-1: 080P2044G657A1
4.5mm	080P2031OM4	B 1-12: 080P2045G657A1



Part numbers PreCONNECT® PURE OCTO Trunks		
OCTO channels / fibers	OM4	Singlemode
4 / 32	037P2049OM4	037P2063G657A1
8 / 64	037P2050OM4	037P2064G657A1
12 / 96	037P2051OM4	037P2065G657A1

Part numbers PreCONNECT® PURE OCTO Harnesses	
Type	
PURE OCTO SR4 OM4 MTP® 12 female to 4 LC-Compact	076P0112OM4
PURE OCTO PSM4 SM MTP® 12 female to 4 LC-Compact	Rx auf Tx: 076P0116G657A1 Rx auf Rx: 076P0118G657A1

SMAP-G2 PURE
19" Distribution Panels empty

Part numbers RAL9005 black	
1HU	171P0001
2HU	172P0001
3HU	173P0001
5HU	175P0001

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



SMAP-G2 PURE Part-Front-Plates PFP

1HU 1/4 PFP for 4 and 6 MTP® adapters



1HU 1/4 Blind-PFP



1HU 1/2 PFP for 8 and 12 MTP® adapters



1HU 1/2 Blind-PFP



SMAP-G2 PURE 1/4 and 1/2 Part-Front-Plates part numbers RAL9005 black

PFP type / number adapter slots	SMAP-G2 PURE Part-Front-Plates without adapters
1/4 Blind-PFP	170P0001
1/2 Blind-PFP	170P0002
1/4 / 4 MTP®	170P0632
1/4 / 6 MTP®	170P0630
1/2 / 8 MTP®	170P0672
1/2 / 12 MTP®	170P0670

About Rosenberger OSI:

Since 1991, Rosenberger Optical Solutions & Infrastructure (Rosenberger OSI) has been an expert in innovative fiber optic cabling infrastructure and service solutions for Datacom, Telecom and Industrial.

The products and services can be found wherever largest amounts of data have to be transferred quickly and securely. In addition to the development and production of a broad portfolio of fiber optic and copper cabling systems, Rosenberger OSI also offers a variety of services such as planning, installation and maintenance of cabling infrastructure. Rosenberger OSI employs about 600 people in Europe and has been a part of the globally operating Rosenberger Group since 1998, a worldwide leading provider of high-frequency-, high-voltage-, and fiber-optic-connection solutions headquartered in Germany.

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

Rosenberger

Rosenberger-OSI GmbH & Co. OHG

Optical Solutions & Infrastructure | Endorferstr. 6 | 86167 Augsburg | Telephon: +49 821 24924-0
info-osi@rosenberger.com | www.rosenberger.com/osi

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