SETTING STANDARDS

The applications for fiber are extensive

A few years ago, the use of fiber optic cabling in professional AV applications was limited to such special cases as HD broadcast cameras. Since then, the AV industry's adoption of fiber optics has increased immensely. Today, fiber optics are widely used for digital signal transmission in pro audio, professional broadcast, and the touring / rental industries.

As pro audio and broadcast equipment has evolved from analog to digital data transmission, the industry has attempted to adapt connectors originally designed for data communication (e.g. RJ45 connectors for electrical transmission). Today, that trend continues with fiber optic connectors. However, conventional data communication fiber optic connectors (ST, SC, LC, etc.) have a risk of failure when they are deployed in AV applications. These conventional data connectors are optimized for permanent, one-time connection. They were never designed for mobile applications or to handle high mating cycles in harsh environments. Alternative connectors, originally developed for military applications, have not been cost effective and have been deficient either in regards to dust protection and maintenance and/or in their attenuation and return loss characteristics.

Neutrik understood these deficiencies and solved the various issues associated with mobile fiber optic connectivity when it launched its opticalCON® fiber optic line in 2005. The opticalCON® design is based on a unique concept which combines low maintenance, high mating cycles, and a safe connection in the field. As a result, opticalCON® has gained wide acceptance in the pro audio and professional broadcast industries. Both well known equipment manufacturers and key industry users have put their trust in opticalCON® for many years.

opticalCON®

opticalCON® Design Criteria

The need for rugged fiber optic connections continues to grow rapidly, driven by such technologies as ultra high definition (UHD) 4K or 8K television signals running at data rates of up to 24 Gb/s. To accommodate these higher bandwidth signals, the Society of Motion Picture & Television Engineers (SMPTE) has standardized opticalCON® connectors as the rugged fiber optic interface for mobile high definition television broadcasting where robust and reliable solutions are required.
Neutrik's opticalCON® system became the fiber optic standard in various markets.

UHD 4K8K

SMPTE standard ST2091-1

opticalCON® **ADVANCED DUO** is an LC-based fiber optic connection system which is typically used for equipment connections. With built-in, automatic dust shutters and a rugged housing, the fibers are always dust protected, and high mating cycles in harsh environments are achieved. Compatibility with conventional LC connectors at both the front and the rear of the chassis connectors offers users the choice of using either cost-effective, standard LC patch cables or else ruggedized opticalCON cables.

Following on the success of opticalCON ADVANCED DUO, the **optical**CON® **ADVANCED QUAD** series, also an LC-based connector system, doubles the fiber count to offer a rugged point-to-point connection. opticalCON® QUAD has been successfully deployed in applications such as data routing for touring / live rental, including especially OB (outdoor broadcast) applications.

opticalCON® **ADVANCED MTP®** increases the number of fibers in one connector up to 24 and is the ideal solution for point-to-point multi-fiber signal transmission.
As an alternative to opticalCON MTP's single 12 or 24-fiber connector, Neutrik offers a wide variety of SPLIT cable configuration. opticalCON® SPLIT offers an alternative for users of opticalCON® DUO or QUAD chassis connectors, providing advantages in regards to field assembly and potential repair cost.

Finally, Neutrik's **optical**CON® **LITE** connectors offer a cost effective and lightweight solution. The unique design of opticalCON® LITE's tactical patch cable allows extreme bending without fiber breakage and absorbs high lateral forces. As a result, the opticalCON® LITE is an ideal choice for such permanent and semi-permanent installations as server rooms, patch fields, and indoor cabling.

opticalCON®
Cable Connectors

opticalCON® LITE

opticalCON® ADVANCED

SETTING STANDARDS

opticalCON®
Chassis Connectors

opticalCON® DUO

2-channel fiber optic connection system

opticalCON® QUAD

4-channel fiber optic connection system

opticalCON® MTP®12

12-channel fiber optic connection system

NEW

opticalCON® MTP®24

24-channel fiber optic connection system

opticalCON®

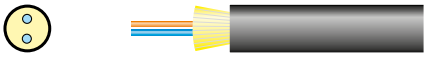
Mobile Field Cable Range

ADVANCED Cable

opticalCON DUO

Rugged and lightweight 2-channel mobile field cable, excellent cable retention due to aramid yarn, black PUR outer jacket, available in multi- and single mode (PC or APC), military approved.

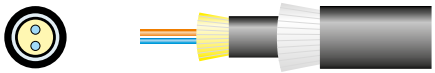
2M / 2S (A)



opticalCON DUO X-TREME

2-channel X-TREME cable offering a cut-proof and rodent resistant double jacket glass yarn armoured cable construction, excellent cable retention due to aramid yarn, black PUR outer jacket.

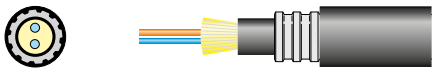
XM / X2S (A)



opticalCON DUO ARMORED

Extra rugged and lightweight stainless steel, jacket absorbs leteral forces up to 200 kg/cm². Ultra flexible due to the special spring shape construction, available in multi- and single mode (PC or APC).

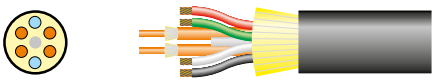
XX2M / XX2S (A)



opticalCON DUO HYBRID

Extra rugged hybrid cable with 2 multimode channels and 4 x 0.75 mm² copper conductors, GFK strengh member and aramid yarn as cable retention.

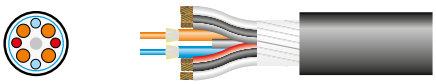
H1



opticalCON DUO SMPTE

SMPTE cable with 2 single mode channels (PC or APC), 2 x AWG 24 and 4 x AWG 20 stranded copper conductors, overall copperbraided shield and stainless steel strength member, 120 kg/km.

S1



opticalCON DUO LOW VOLTAGE HYBRID

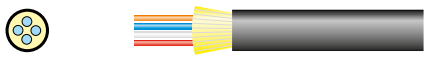
Ultra flexible, cost effective and lightweight (65 kg/km) low voltage hybrid cable with 2 single mode channels and 2 x AWG 16 copper conductors, aramid yarn cable retention.

S5

opticalCON QUAD

Rugged and lightweight 4-channel mobile field cable, excellent cable retention due to aramid yarn, black PUR outer jacket, available in multi- and single mode (PC or APC).

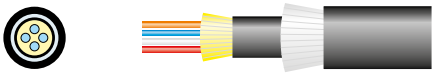
4M / 4S (A)



opticalCON QUAD X-TREME

4-channel X-TREME cable offering a cut-proof and rodent resistant double jacket glass yarn armoured cable construction, excellent cable retention due to aramid yarn, black PUR outer jacket.

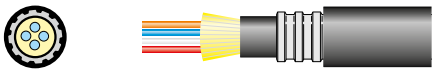
X4M / X4S (A)



opticalCON QUAD ARMORED

Extra rugged and lightweight stainless steel jacket absorbs lateral forces of 200 kg/cm². Ultra flexible due to the special spring shape construction, available in multi- and single mode (PC or APC).

XX4M / XX4S (A)

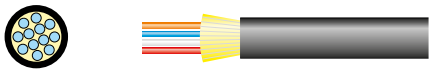


SETTING STANDARDS

opticalCON MTP® 12 & SPLIT

Rugged and lightweight 12-channel mobile field cable, excellent cable retention due to aramid yarn, black PUR outer jacket, available in multimode PC and singlemode APC.

12M / 12S (A)

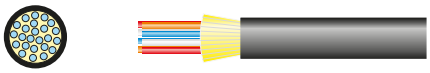


opticalCON MTP® 24 & SPLIT

NEW

24-channel mobile field cable with excellent cable PUR outer jacket, available in multimode PC and singlemode APC.

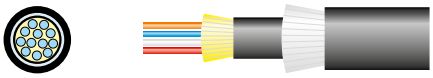
24M / 12S (A)



opticalCON MTP® X-TREME & SPLIT

12-channel X-TREME cable offering a cut-proof and rodent resistant double jacket glass yarn armoured cable construction, excellent cable retention due to aramid yarn, black PUR outer jacket.

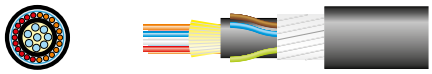
X12M / X12S (A)



opticalCON POWER-SPLIT

Extra rugged hybrid cable up to 8 single mode channels and 2 x 1.5 mm^2 copper conductors, 1.5 mm^2 shield, 2 opticalCON cable connectors and 1 powerCON cable connector.

P8M / P8S (A)

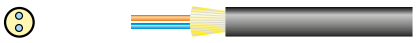


LITE Cable

opticalCON DUO LITE

Rugged and lightweight 2-channel patch cable, excellent cable retention due to aramid yarn, black PVC outer jacket, available in multi- and singlemode (PC or APC), suitable for permanent and temporary instalation.

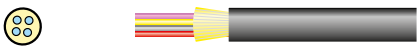
2M-L / 2S (A)-L



opticalCON QUAD LITE

Lightweight tactical patch cable, 4 x 900/125 micron fibers, rugged cable retention due to aramid yarn, black PVC outer jacket, available in multi- and singlemode (PC or APC), designed for permanent or semi-permanent installations.

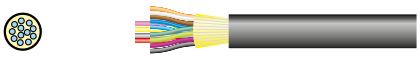
4M-L / 4S (A)-L



opticalCON MTP® 12 LITE

Rugged tactical patch cable, 12x 250/125 micron fibers, aramid yarn for appropriate cable retention, black PVC outer jacket, available in multimode PC and singlemode (APC), suitable for permanent or semi-permanent installations.

12M-L / 12SA-L



opticalCON MTP® 24 LITE

NEW

Rugged tactical patch cable, 24 x 250/125 micron fibers, aramid yarn for appropriate cable retention, black PVC outer jacket, available in multimode PC and singlemode (APC), suitable for permanent or semi-permanent installations.

24M-L / 12SA-L

opticalCON®
Custom Cable Assembly

opticalCON® LITE

opticalCON® ADVANCED

opticalCON® Split

SETTING STANDARDS

1

Rubber protection cover

Noise cancelling rubber protection cover for opticalCON cable connectors, including front housing.

2

Custom color coding

Color coding ring for opticalCON cable connectors.

3

Crossed fiber wiring (A-A), (B-B)

Neutrik standard: wiring acc. IEC 11801

4

Power IN / OUT

with Neutrik powerCON NAC3MX (IN) / NAC3FX (OUT) mains connector.

NAC3MX

NAC3FX

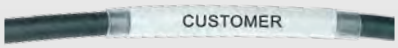
5

Breakout assembly

6

Custom cable & Split text labeling

- Custom labeling
- 1 or 2 lines
- Split text to color



7

Female assembly on cable drums

Cable extention solution eliminating the need for couplers.

8

Custom split length

Standard: length 1 m

9

Stepped split assembly

Standard: equal split length

opticalCON® ADVANCED CABLE CONNECTORS

TRUST
THE
ORIGINAL

Features & Benefits

Mobile use
Rugged
Low maintenance
High performance

opticalCON DUO	opticalCON QUAD	opticalCON MTP® 12	opticalCON MTP® 24
 NKO2S-A*	 NKO4S-A*	 NKO12SA*	NEW  NKO24SA*
• 2 fibers • 4 copper contacts	• 4 fibers	• 12 fibers	• 24 fibers

opticalCON® DUO ADVANCED

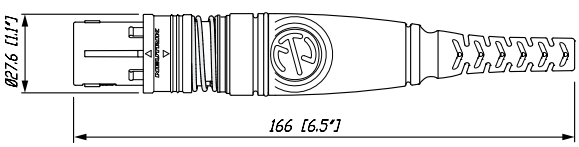
Cable Connector Assembly

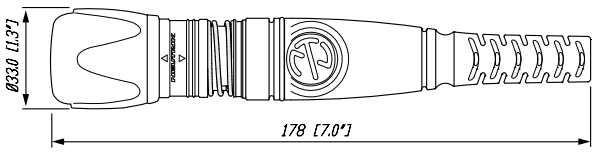
NKO2S-A*

NKO2S-S5-A*

- Ruggedized and dirt-protected 2-channel fiber optic connection system
- Cable connector features rugged metal housing and heavy-duty cable retention
- Automatic sealing shutter with silicone gasket to protect the LC's
- Dust and water resistant according to IP65 in mated condition
- Accommodates standard optical LC-Duplex connectors
- Field repairable
- Easy to clean, no special tools required
- Reliable Push-Pull locking mechanism
- Cable connector comes pre-assembled with a choice of mobile field cables
- Range of 3 hybrid cables for powered applications:
  - SMPTE cable for indoor UHD camera routing applications[1]
  - Hybrid multimode cable
  - Light weight low voltage camera / SM hybrid cable for ENG / SNG applications

[1] ... Not compatible to SMPTE 304M standard. Suitable for indoor (studio) camera links considering specific conditions acc. to IEC 60664-1 like pollution degree 1, overvoltage category 1 and rated voltage. For detailed information ask for the White Paper "opticalCON @ SMPTE Indoor Applications".





SETTING STANDARDS

Technical Data

Technical Data Optical Cable Connector

Optical connector		LC-Duplex
Fiber	Multimode, Singlemode PC / APC	●
Insertion loss	< 0.4 dB / connection	●
min. Return loss	PC > 50 dB	●
	APC > 60 dB	●

MECHANICAL

Insertion / withdrawal force		< 45 N	●
Lifetime (mating cycles)		> 5'000	●
Cable retention force	Fiber only	> 500 N	●
	Hybrid	> 500 N	●
	SMPTE	> 500 N	●

ELECTRICAL

Number of electrical contacts			4
Rated current		6 A	NKO2M-H1
	contact 1+4	10 A	NKO2S(A)-S1
Contact resistance		< 7 mΩ	●
Insulation resistance	- initial:	> 10 GΩ	●
	- after damp heat test:	> 1 GΩ	●
Dielectric strength		1500 V dc	●
Rated voltage		50 V ac	●[1]

MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	●
Insert / Insulation	Polyamid PA 6, PBT 30% GR, PBT 50% GR	●
Insert colour	MM: black, SM PC: blue, SM APC: green	●
Contacts	- male: Brass (CuZn39Pb3)	●
Contact surface	Gold (gal 0.2 µm Au over 2 µm Ni)	●
Strain relief	Brass, Ni plated	●
Bushing	ZnAl4Cu1	●
Boot	EPDM, rubber boot	●

ENVIRONMENTAL

Operating temp.	-40°C to +75°C	●
Flammability	UL94 HB	●
Solderability	complies with IEC 68-2-20	●
Protection class	in mated condition IP65	●

[1] ... Not compatible to SMPTE 304M standard. Suitable for indoor (studio) camera links considering specific conditions acc. to IEC 60664-1 like pollution degree 1, overvoltage category 1 and rated voltage. For detailed information ask for the White Paper "opticalCON @ SMPTE Indoor Applications".

Technical Data Cables

	2M	2S (A)	2M-H1	2S (A) - S1	2S (A) - S5	X2M	X2S (A)	XX2M	XX2S (A)
Max. number of fibers	2	2	2	2	2	2	2	2	2
Mode - Multimode PC	●	-	●	-	-	●	-	●	-
- Single mode PC / APC	-	●	-	●	●	-	●	-	●
Fiber - 50 / 125-OM3	●	-	●	-	-	●	-	●	-
- 9 / 125-G657A	-	●	-	●	●	-	●	-	●
Bend optimized fiber	●	●	-	●	●	●	●	●	●
Laser optimized fiber	●	N/A	-	N/A	N/A	●	N/A	●	N/A
Copper wires									
- AWG 16	-	-	-	-	2x	-	-	-	-
- AWG 18 (0.75 mm²)	-	-	4x	-	-	-	-	-	-
- AWG 20	-	-	-	4x	-	-	-	-	-
- AWG 24	-	-	-	2x	-	-	-	-	-
Outer shield									
- Copper braid	-	-	-	●	-	-	-	-	-
- Coated glass yarn	-	-	-	-	-	●	●	-	-
- Stainless steel Jacket	-	-	-	-	-	-	-	●	●
Strength member									
- GFK	-	-	●	-	-	-	-	-	-
- Stainless Steel	-	-	-	●	-	-	-	-	-
Cable retention									
- Aramid yarn	●	●	●	-	●	●	●	●	●
- Crimp type	-	-	-	●	-	-	-	-	-
Overall diameter (mm)	5.0	5.0	8.9	9.2	7.3	9.2	9.2	10.5	10.5
Jacket - PUR black matte	●	●	●	●	●	●	●	●	●
Optical connector									
- LC-Duplex	●	●	●	●	●	●	●	●	●
- LC based	-	-	-	-	-	-	-	-	-
Min. bending radius (cm)	5.0	5.0	8.9	10.0	7.5	9.2	9.2	10.5	10.5
Weight (kg / km)	21	23	78	120	65	79	79	131	133
Attenuation (dB / km)	@850 nm - 3.5 @1310 nm - 1.5	@1310 nm - 0.5 @1550 nm - 0.5	@850 nm - 2.5 @1300 nm - 0.7	@1310 nm - 0.45 @1550 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.5	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.35 @1550 nm - 0.21	@850 nm - 3.5 @1300 nm - 1.5	@1310 nm - 0.5 @1550 nm - 0.5
Bandwidth (MHz-km)	@850 nm > 1500 @1310 nm > 500		@850 nm > 500 @1300 nm > 500			@850 nm ≥ 1500 @1300 nm ≥ 500		@850 nm ≥ 1500 @1300 nm ≥ 500	
Refraction index	@850 nm - 1.483 @1310 nm - 1.479	@1310 nm - 1.458 @1550 nm - 1.458	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.468 @1550 nm - 1.468	@1310 nm - 1.458 @1550 nm - 1.458	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.483 @1310 nm - 1.479	@1310 nm - 1.458 @1550 nm - 1.458
Power solution 240V ac / 16A	-	-	-	-	-	-	-	-	-

Ordering & Packaging options with max. cable length see on the part number generator - www.neutrik.com

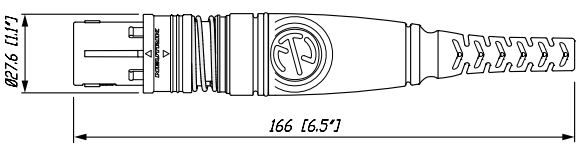
-0... Airspool	-3... Drum Schill GT380
-1... opticalCON Case	-4... Drum Schill HT582
-2... Drum Schill GT310	-5... Drum Schill GT450

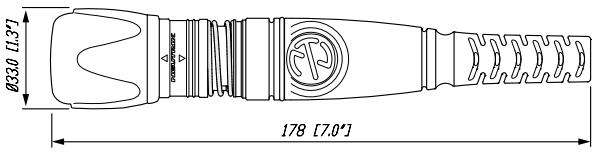
opticalCON® QUAD ADVANCED

Cable Connector Assembly

NKO4S-A*

- Ruggedized and dirt-protected 4-channel fiber optic connection system
- For point-to-point multichannel routing
- Cable connector features rugged all-metal housing and heavy-duty cable retention
- Innovative special shutter guarantees low maintenance
- Dust and water resistant according to IP65 in mated condition
- Easy to clean, no special tools required
- Reliable Push-Pull locking mechanism
- Cable connector comes pre-assembled with a choice of mobile field cables
- Field repairable





SETTING STANDARDS

Technical Data

Technical Data Optical Cable Connector

Optical connector		PC
Fiber	Multimode, Singlemode PC / APC	●
Insertion loss	< 0.4 dB / connection	●
min. Return loss	PC > 50 dB	●
	APC > 60 dB	●

MECHANICAL

Insertion / withdrawal force	< 45 N	●
Lifetime (mating cycles)	> 5'000	●
Cable retention force Fiber only	> 500 N	●

MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	●
Insert / Insulation	Polyamid PA 6, PBT 30% GR, PBT 50% GR	●
Insert colour	MM: black, SM PC: blue, SM APC: green	●
Strain relief	Brass, Ni plated	●
Bushing	ZnAl4Cu1	●
Boot	EPDM, rubber boot	●

ENVIRONMENTAL

Operating temp.	-40°C to +75°C	●
Flammability	UL94 HB	●
Protection class	in mated condition IP65	●

Technical Data Cables

	4M	4S (A)	X4M	X4S (A)	XX4M	XX4S (A)
Max. number of fibers	4	4	4	4	4	4
Mode - Multimode PC	●	-	●	-	●	-
- Single mode PC / APC	-	●	-	●	-	●
Fiber - 50 / 125-OM3	●	-	●	-	●	-
- 9 / 125-G657A	-	●	-	●	-	●
Bend optimized fiber	●	●	●	●	●	●
Laser optimized fiber	●	N/A	●	N/A	●	N/A
Outer shield						
- Copper braid	-	-	-	-	-	-
- Coated glass yarn	-	-	●	●	-	-
- Stainless steel Jacket	-	-	-	-	●	●
Strength member						
- GFK	-	-	-	-	-	-
- Stainless Steel	-	-	-	-	-	-
Cable retention						
- Aramid yarn	●	●	●	●	●	●
- Crimp type	-	-	-	-	-	-
Overall diameter (mm)	5.8	5.8	9.2	9.2	10.5	10.5
Jacket - PUR black matte	●	●	●	●	●	●
Optical connector						
- LC-Duplex	-	-	-	-	-	-
- LC based	●	●	●	●	●	●
Min. bending radius (cm)	5.8	5.8	9.2	9.2	10.5	10.5
Weight (kg / km)	31	31	88	88	141	141
Attenuation (dB / km)	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.35 @1550 nm - 0.21	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.35 @1550 nm - 0.21	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.35 @1550 nm - 0.21
Bandwidth (MHz-km)	@850 nm ≥ 1500 @1300 nm ≥ 500		@850 nm ≥ 1500 @1300 nm ≥ 500		@850 nm ≥ 1500 @1300 nm ≥ 500	
Refraction index	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467

Packaging options and max. cable length see on the part number generator - www.neutrik.com

-0...	Airspool
-1...	opticalCON Case
-2...	Drum Schill GT310
-3...	Drum Schill GT380
-4...	Drum Schill HT582
-5...	Drum Schill GT450

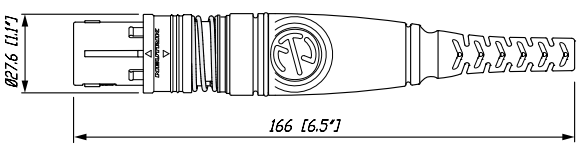
opticalCON® MTP®12 ADVANCED

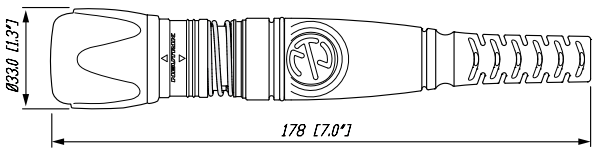
Cable Connector Assembly

NKO12SA-A*

- Ruggedized and dirt-protected 12-channel fiber optic connection system
- For point-to-point multichannel routing based on MTP® technology
- Cable connector features rugged metal housing and heavy-duty cable retention
- Spherical shutter guarantees low maintenance
- Dust and water resistant according to IP65 in mated condition
- Easy to clean, no special tools required
- Reliable Push-Pull locking mechanism
- Cable connector comes pre-assembled with a choice of mobile field cables
- Wiring Type A

The MTP® is a multichannel fiber optic connector based on MPO ("Multifiber Push On") technology (IEC-61754-7).
Breakout / Master cables to standard connectors as LC, SC, ST are available in various length.





* ... MTP® is a trademark of US Conec (www.usconec.com)

SETTING STANDARDS

Technical Data

Technical Data Optical Cable Connector

Optical connector		MTP® female
Fiber	Multimode, Singlemode PC / APC	●
Insertion loss	< 0.9 dB / connection	●
min. Return loss	PC > 50 dB	●
	APC > 60 dB	●
Wiring	Type A	●

MECHANICAL

Insertion / withdrawal force		< 45 N	●
Lifetime (mating cycles)		> 2'500	●
Cable retention force	Fiber only	> 500 N	●

MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	●
Insert / Insulation	PA 6 POM, PC, PEI	●
Insert colour	MM: black, SM PC: blue, SM APC: green	●
Strain relief	Brass, Ni plated	●
Bushing	ZnAl4Cu1	●
Boot	EPDM, rubber boot	●

ENVIRONMENTAL

Operating temp.	-40°C to +75°C	●
Flammability	UL94 HB	●
Protection class	in mated condition IP65	●

Technical Data Cables

	12M	12SA	X12M	X12SA
Max. number of fibers	12	12	12	12
Mode - Multimode PC	●	-	●	-
- Single mode PC / APC	-	●	-	●
Fiber - 50 / 125-OM3	●	-	●	-
- 9 / 125-G657A	-	●	-	●
Bend optimized fiber	●	●	●	●
Laser optimized fiber	●	N/A	●	N/A
Outer shield				
- Copper braid	-	-	-	-
- Coated glass yarn	-	-	●	●
- Stainless steel Jacket	-	-	-	-
Strength member				
- GFK	-	-	-	-
- Stainless Steel	-	-	-	-
Cable retention				
- Aramid yarn	●	●	●	●
- Crimp type	-	-	-	-
Overall diameter (mm)	8.2	8.2	10.9	10.9
Jacket - PUR black matte	●	●	●	●
Optical connector				
- LC-Duplex	-	-	●	●
- LC based	●	●	●	●
Min. bending radius (cm)	8.2	8.2	10.9	10.9
Weight (kg / km)	60	60	103	103
Attenuation (dB / km)	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3
Bandwidth (MHz-km)	@850 nm ≥1500 @1300 nm ≥500		@850 nm ≥1500 @1300 nm ≥500	
Refraction index	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467

Packaging options and max. cable length see on the part number generator - www.neutrik.com

0

1

2

3

-0...	Airspool
-1...	opticalCON Case
-2...	Drum Schill GT310
-3...	Drum Schill GT380

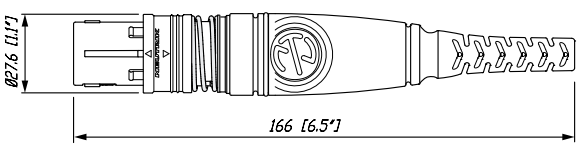
opticalCON® MTP®24 ADVANCED

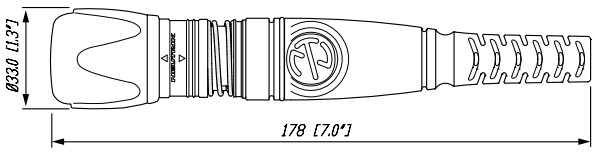
Cable Connector Assembly

NEW

NKO24M-A*

- Ruggedized and dirt-protected 24-channel fiber optic connection system
- For point-to-point multichannel routing based on MTP® technology
- Cable connector features rugged metal housing and heavy-duty cable retention
- Spherical shutter guarantees low maintenance
- Dust and water resistant according to IP65 in mated condition
- Easy to clean, no special tools required
- Reliable Push-Pull locking mechanism
- Cable connector comes pre-assembled with a choice of mobile field cables
- Wiring Type A





* ... MTP® is a trademark of US Conec (www.usconec.com)

SETTING STANDARDS

Technical Data

Technical Data Optical Cable Connector

Optical connector		MTP® female
Fiber	Multimode, Singlemode PC / APC	●
Insertion loss	< 0.9 dB / connection	●
min. Return loss	PC > 50 dB	●
	APC > 60 dB	●
Wiring	Type A	●

MECHANICAL

Insertion / withdrawal force		< 45 N	●
Lifetime (mating cycles)		> 2'500	●
Cable retention force	Fiber only	> 500 N	●

MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	●
Insert / Insulation	PA 6 POM, PC, PEI	●
Insert colour	MM: black, SM PC: blue, SM APC: green	●
Strain relief	Brass, Ni plated	●
Bushing	ZnAl4Cu1	●
Boot	EPDM, rubber boot	●

ENVIRONMENTAL

Operating temp.	-40°C to +75°C	●
Flammability	UL94 HB	●
Protection class	in mated condition IP65	●

Technical Data Cables

	24M	24SA	X24M	X24SA
Max. number of fibers	24	24	24	24
Mode - Multimode PC	●	-	●	-
- Single mode PC / APC	-	●	-	●
Fiber - 50 / 125-OM3	●	-	●	-
- 9 / 125-G657A	-	●	-	●
Bend optimized fiber	●	●	●	●
Laser optimized fiber	●	N/A	●	N/A
Outer shield				
- Copper braid	-	-	-	-
- Coated glass yarn	-	-	●	●
- Stainless steel Jacket	-	-	-	-
Strength member				
- GFK	-	-	-	-
- Stainless Steel	-	-	-	-
Cable retention				
- Aramid yarn	●	●	●	●
- Crimp type	-	-	-	-
Overall diameter (mm)	8.2	8.2	10.9	10.9
Jacket - PUR black matte	●	●	●	●
Optical connector				
- LC-Duplex	-	-	●	●
- LC based	●	●	●	●
Min. bending radius (cm)	8.2	8.2	10.9	10.9
Weight (kg / km)	43	43	103	103
Attenuation (dB / km)	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3
Bandwidth (MHz-km)	@850 nm ≥1500 @1300 nm ≥500		@850 nm ≥1500 @1300 nm ≥500	
Refraction index	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467

Packaging options and max. cable length see on the part number generator - www.neutrik.com

0 1 2 3




-0...	Airspool
-1...	opticalCON Case
-2...	Drum Schill GT310
-3...	Drum Schill GT380

opticalCON® Split Cables

SPLIT & POWER SPLIT Cables

opticalCON®

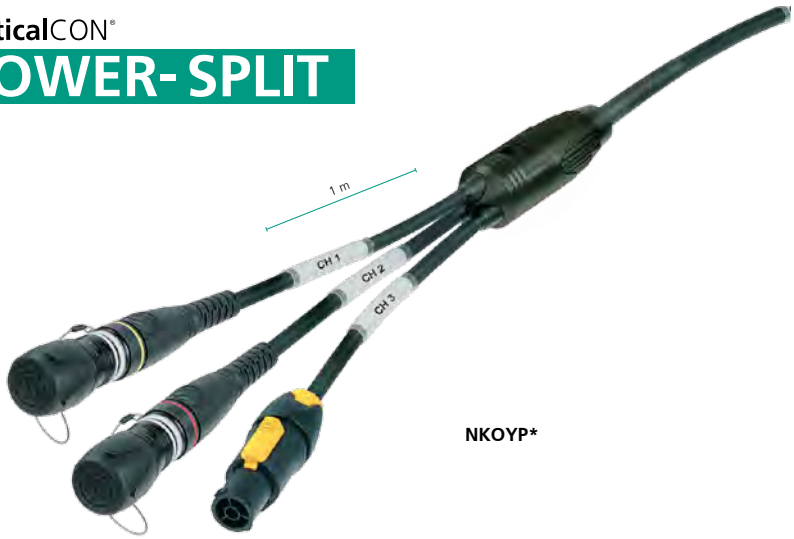
SPLIT

NKOY*

- opticalCON multichannel solution based on opticalCON DUO, QUAD or MTP® connectors
- Maximum flexibility, combining up to 12-channel
- Custom configurations available
- 1m SPLIT fanout
- Color coding for channel identification
- Field assembly possible
- XTREME version available

opticalCON®

POWER-SPLIT



NKOYP*

- 2-, 4-, 6- and 8-channel assembly available
- Custom made cable, optimized for ENG / SNG applications
- Hybrid fiber / copper solution
- Custom Configurations
- Up to 240 Vac (16 A) power transportation possible

SETTING STANDARDS

Technical Data

Technical Data Optical Cable Connector

Optical connector		PC
Fiber	Multimode, Singlemode PC / APC	●
Insertion loss	< 0.4 dB / connection	●
min. Return loss	PC > 50 dB	●
	APC > 60 dB	●

MECHANICAL

Insertion / withdrawal force	< 45 N	●
Lifetime (mating cycles)	> 5'000	●
Cable retention force Fiber only	> 500 N	●

MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	●
Insert / Insulation	Polyamid PA 6, PBT 30% GR, PBT 50% GR	●
Insert colour	MM: black, SM PC: blue, SM APC: green	●
Strain relief	Brass, Ni plated	●
Bushing	ZnAl4Cu1	●
Boot	EPDM, rubber boot	●

ENVIRONMENTAL

Operating temp.	-40°C to +75°C	●
Flammability	UL94 HB	●
Protection class	in mated condition IP65	●

Technical Data Cables

	12M	12S (A)	X12M	X12S (A)	P8M	P8S (A)
Max. number of fibers	12	12	12	12	8	8
Mode - Multimode PC	●	-	●	-	●	-
- Single mode PC / APC	-	●	-	●	-	●
Fiber - 50 / 125-OM3	●	-	●	-	●	-
- 9 / 125-G657A	-	●	-	●	-	●
Bend optimized fiber	●	●	●	●	●	●
Laser optimized fiber	●	N/A	●	N/A	●	N/A
Copper wires						
- 3 x 1.5 mm²	-	-	-	-	●	●
Outer shield						
- Copper braid	-	-	-	-	●	●
- Coated glass yarn	-	-	●	●	-	-
- Stainless steel Jacket	-	-	-	-	-	-
Strength member						
- GFK	-	-	-	-	-	-
- Stainless Steel	-	-	-	-	-	-
Cable retention						
- Aramid yarn	●	●	●	●	●	●
- Crimp type	-	-	-	-	-	-
Overall diameter (mm)	8.2	8.2	10.9	10.9	11.7	11.7
Jacket - PUR black matte	●	●	●	●	●	●
Optical connector						
- LC-Duplex	-	-	●	●	●	●
- LC based	●	●	●	●	●	●
Min. bending radius (cm)	8.2	8.2	10.9	10.9	12.1	12.1
Weight (kg / km)	60	60	103	103	138	138
Attenuation (dB / km)	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3	@850 nm - 2.5 @1300 nm - 0.5	@1310 nm - 0.5 @1550 nm - 0.3	@850 nm ≤ 2.3 @1300 nm ≤ 0.6	@1310 nm ≤ 0.33 @1550 nm ≤ 0.19
Bandwidth (MHz-km)	@850 nm ≥ 1500 @1300 nm ≥ 500		@850 nm ≥ 1500 @1300 nm ≥ 500		@850 nm ≥ 1500 @1300 nm ≥ 500	
Refraction index	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467	@850 nm - 1.482 @1300 nm - 1.477	@1310 nm - 1.467 @1550 nm - 1.467
Power solution 240V ac/16A	-	-	-	-	●*	●*

* Cable must be unreeled completely before use!

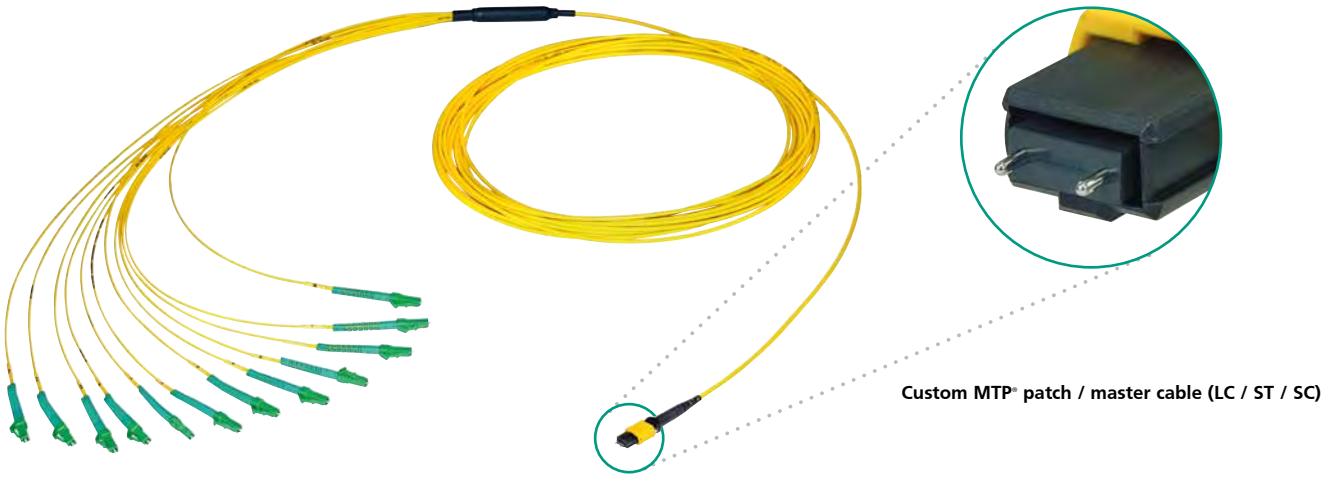
Packaging options and max. cable length see on the part number generator - www.neutrik.com

-0...	Airspool
-1...	opticalCON Case
-2...	Drum Schill GT310
-3...	Drum Schill GT380

Ordering Information

Breakout Adapter

MTP® Breakout / Master Cable



Custom MTP® patch / master cable (LC / ST / SC)

- Low loss breakout cable
- Grade A premium ferrules
- LC (APC) / SC, ST breakout connector available
- Standard split length: 61 cm
- High performance USCONEC Elite® Male MTP® ferrule
- Interferometer measurement to guarantee high ferrule performance

High performance MTP® breakout cable for permanent and temporary installations. Standard premium grade A LCs (single-mode PC; multimode PC) guarantee low insertion loss values. 61 cm long fan-out for easy fiber breakout to any opticalCON DUO or QUAD chassis.

NKOB12SA-0-**	MTP® / LC - patch cable, Singlemode PC
NKOB12M-A-0-**	MTP® / LC - patch cable, Multimode PC

Attribute:	
BO [ ]	... breakout connectors (ST, SC), APC on request
*	... Fiber optic transmission parameters exceeding standard quality, suitable for measurement applications.
Notice:	Standard for out configuration comes with LC (PC) connectors.

Accessories

Accessories for Cable Connector

SCNO*X-A

SCNO*X-A-NC

NAO4ML-A

NOR-*

SCNO*X-A	Rubber coated protection cover for opticalCON cable connectors, including black chrome front housing
SCNO*X-A-NC	Light weight noise cancelling rubber protection cover for opticalCON cable connectors, including front housing
SCNO*X-R[1)]	Rubber coated protection cover for opticalCON cable connectors, ruthenium plated front housing, upgrade kit old connector
NOR-*	Color coding ring for cable connector chassis
NAO4ML-A	opticalCON QUAD LOOP connector, multimode
NAO4SL-A	opticalCON QUAD LOOP connector, singlemode

*: 0- black, 1- brown, 2- red, 3-orange, 4- yellow, 5- green, 6- blue, 7- violet, 8- grey, 9- white

0 1 2 3 4 5 6 7 8 9

[1)]: find part numbers on www.neutrik.com

opticalCON Pulling Solutions

Single pulling sock FOPS-SINGLE

Split pulling sock FOPS-SPLIT

Application example: FOPS-SPLIT

- Pulling sock simplifies installation
- Pulling force > 100 kg
- Protects connectors in mated / unmated condition

FOPS-SPLIT	Split cable pulling sock
FOPS-SINGLE	Single cable pulling sock for DUO / QUAD or MTP® cables.