

# opticalCON<sup>®</sup> CHASSIS CONNECTORS



# 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

# Features & Benefits

Small form factor

Automatic sealing shutter

Simple integration



## opticalCON DUO



NO2-4FDW-A



Standard LC connector



## opticalCON QUAD



NO4FDW-A



Standard LC connector



## opticalCON MTP 12



NO12FDW-A



MTP® ELITE MALE connector



## opticalCON MTP 24

NEW



NO24FDW-A



MTP® ELITE MALE connector



# opticalCON® DUO ADVANCED

## Chassis Connector



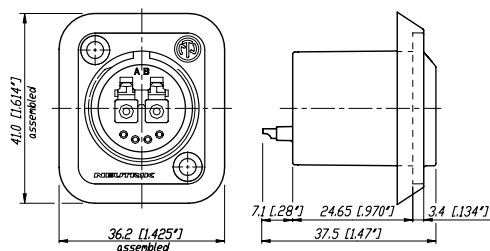
NO2-4FDW-A with SCDP-0

- Ruggedized and dirt-protected 2-channel fiber optic connection system
- Shutter with silicon gasket protects optical connection from dust and dirt
- Suggested OEM equipment connectors due to LC front compatibility
- Accommodates standard LC connectors on the rear for simple installation
- Dust and water resistant according to IP65 in mated condition
- Connection on the front side either by rugged opticalCON or standard LC connector
- Color-coded rubber sealing gasket SCDP-\*

Example: opticalCON DUO Chassis with transceiver adapter and SFP transceiver



NAO2\*-SFP-LC



**SETTING  
STANDARDS**

# Technical Data

## Technical Data Optical Chassis Connector

Optical connector		LC-Duplex Feedthrough
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	•

## ELECTRICAL

Number of electrical contacts	4 (5) <sup>2</sup>	•
Rated current	6 A	•
	10 A (contact 1+4)	•
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	• <sup>1</sup>

## MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	•
Insert / Insulation	Polyamid PA 6, PBT 30% GR	•
Insert colour	MM: black, SM PC: blue; SM APC: green	•
Contacts	female: Brass (CuZn39Pb3)	•
Contact surface	Gold (gal 0.2 µm Au over 2 µm Ni)	•
Split sleeve	Ceramics	•

## ENVIRONMENTAL

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

<sup>1</sup> ... 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".

<sup>2</sup> ... Shell ground contacts

## opticalCON DUO Chassis

	Type	Colour	Plating	Fiber	Solder contacts	Shell ground contact	Wiring
NO2-4FDW-A	Chassis	<sup>1)</sup>	Black Chrome	2	4	-	-
NO2-4FDW-1-A	Chassis	<sup>1)</sup>	Black Chrome	2	4	1	-

<sup>1)</sup> ... Coloured labeling to indicate the fiber mode included (black: M, blue: SM PC, green: SM APC)

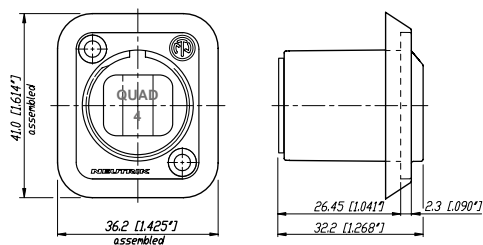
# opticalCON® QUAD ADVANCED

## Chassis Connector



NO4FDW-A with SCDP-0

- Ruggedized and dirt-protected 4-channel fiber optic connection system
- For point-to-point multichannel routing
- Laser protective metal shutter seals dust proof with two-component rubber gasket
- Dust and water resistant according to IP65 in mated condition
- Accommodates standard LC connectors on the rear for simple installation
- Color-coded rubber sealing gasket



**SETTING  
STANDARDS**

# Technical Data

## Technical Data Optical Chassis Connector

Optical connector		PC
		Feedthrough
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	•

## MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	•
Insert / Insulation	Polyamid PA 6, PBT 30% GR	•
Insert colour	MM: black, SM PC: blue; SM APC: green	•
Split sleeve	Ceramics	•

## ENVIRONMENTAL

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

## opticalCON QUAD Chassis

	Type	Colour	Plating	Fiber	Solder contacts	Shell ground contact	Wiring
NO4FDW-A	Chassis	<sup>1)</sup>	Black Chrome	4	-	-	-

<sup>1)</sup> ... Colored labeling to indicate the fiber mode included (black: M, blue: SM PC, green: SM APC)





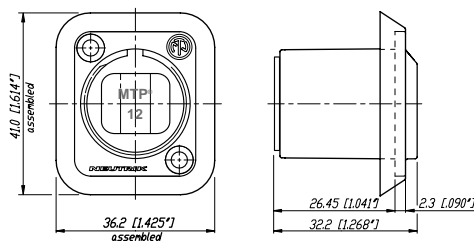
# opticalCON® MTP® 12 ADVANCED

## Chassis Connector



NO12FDW-A with SCDP-0

- Ruggedized and dirt-protected 12-channel fiber optic connection system
- For point-to-point multichannel routing
- Laser protective metal shutter seals dust proof with two-component rubber gasket
- Dust and water resistant according to IP65 in mated condition
- Accommodates standard MTP® ELITE MALE connectors on the rear for simple installation\*
- Rubber sealing gasket

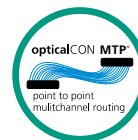


\* ... MTP® is a trademark of US Conec ([www.usconec.com](http://www.usconec.com))



**SETTING  
STANDARDS**





# Technical Data

## Technical Data Optical Chassis Connector

Optical connector		MTP® ELITE female
		Feedthrough
Fiber	Multimode, Singlemode PC / APC	•
Insertion loss	< 0.9 dB / connection	•
min. Return loss	PC > 50 dB	•
	APC > 60 dB	•

## MECHANICAL

Insertion / withdrawal force	< 45 N	•
Lifetime (mating cycles)	> 2'500	•

## MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	•
Insert / Insulation	Polyamid PA 6, PBT 30% GR	•
Insert colour	MM: black, SM PC: blue; SM APC: green	•

## ENVIRONMENTAL

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

## opticalCON MTP®12 Chassis

Type	Colour	Plating	Fiber	Solder contacts	Shell ground contact	Wiring
NO12FDW-A	Chassis <sup>1)</sup>	Black Chrome	12	-	-	-

<sup>1)</sup> ... Colored labeling to indicate the fiber mode included (black: M, blue: SM PC, green: SM APC)



# opticalCON® MTP® 24 ADVANCED

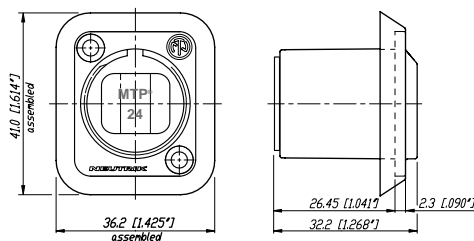
## Chassis Connector

**NEW**



NO24FDW-A with SCDP-0

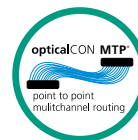
- Ruggedized and dirt-protected 24-channel fiber optic connection system
- For point-to-point multichannel routing
- Laser protective metal shutter seals dust proof with two-component rubber gasket
- Dust and water resistant according to IP65 in mated condition
- Accommodates standard MTP® ELITE MALE connectors on the rear for simple installation\*
- Rubber sealing gasket



\* ... MTP® is a trademark of US Conec ([www.usconec.com](http://www.usconec.com))



**SETTING  
STANDARDS**



# Technical Data

## Technical Data Optical Chassis Connector

Optical connector		MTP® ELITE female
		Feedthrough
Fiber	Multimode, Singlemode PC / APC	•
Insertion loss	< 0.9 dB / connection	•
min. Return loss	PC > 50 dB	•
	APC > 60 dB	•

## MECHANICAL

Insertion / withdrawal force	< 45 N	
Lifetime (mating cycles)	> 2'500	•

## MATERIAL

Shell	Zinc diecast (ZnAl4Cu1), black chrome plating	•
Insert / Insulation	Polyamid PA 6, PBT 30% GR	•
Insert colour	MM: black, SM PC: blue; SM APC: green	•

## ENVIRONMENTAL

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

## opticalCON MTP®24 Chassis

Type	Colour	Plating	Fiber	Solder contacts	Shell ground contact	Wiring
NO24FDW-A	Chassis <sup>1)</sup>	Black Chrome	24	-	-	-

<sup>1)</sup> ... Colored labeling to indicate the fiber mode included (black: M, blue: SM PC, green: SM APC)



# Ordering Information

## Accessories for Chassis & Couplers



### Accessories for Chassis



SCNO-FDW-A



SCD-NC



SCDP-\*



SCCD-W

SCNO-FDW-A	Rugged sealing cover for opticalCON chassis connectors
SCD-NC	Rubber sealing cover for opticalCON chassis connectors
SCDP-*	D-Size sealing gaskets for chassis, color coding (*: 0- black, 2- red, 4- yellow, 5- green, 6- blue, 9- white)
SCCD-W	Spring-loaded cover to seals D-size chassis connectors, IP65 rated

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



<sup>1)</sup>: find part numbers on [www.neutrik.com](http://www.neutrik.com)

### COUPLER

Weatherproof opticalCON coupler (adapter) for cable extensions.



NAO2S-H1W-A



NAO4MW-A



NAO12MW-A



NAO24MW-A

	Type	Colour	Plating	Fiber	Solder contacts	Shell ground contact	Wiring
NAO2M-H1W-A	Coupler	black	black	2 x LC-Duplex Multimode PC	4 x 0.75 mm <sup>2</sup>	●	ISO/IEC 11801
NAO2S-H1W-A	Coupler	blue	black	2 x LC-Duplex Singlemode PC	4 x 0.75 mm <sup>2</sup>	●	ISO/IEC 11801
NAO2SA-H1W-A	Coupler	green	black	2 x LC-Duplex Singlemode APC	4 x 0.75 mm <sup>2</sup>	●	ISO/IEC 11801
NAO2SA-H1W-AX	Coupler	green	black	2 x LC-Duplex Singlemode APC	4 x 0.75 mm <sup>2</sup>	●	crossed
NAO4MW-A	Coupler	black	black	4 x Multimode PC	-	-	ISO/IEC 11801
NAO4MW-AX	Coupler	black	black	4 x Multimode PC	-	-	crossed
NAO4SW-A	Coupler	blue	black	4 x Singlemode PC	-	-	ISO/IEC 11801
NAO4SW-AX	Coupler	blue	black	4 x Singlemode PC	-	-	crossed
NAO4SAW-A	Coupler	green	black	4 x Singlemode APC	-	-	ISO/IEC 11801
NAO4SAW-AX	Coupler	green	black	4 x Singlemode APC	-	-	crossed
NAO4SW-A-X	Coupler	red	black	4 x Singlemode PC	-	-	ISO/IEC 11801
NAO12MW-A	Coupler	black	black	12 x Multimode PC	-	-	Type A
NAO12SAW-A	Coupler	green	black	12 x Singlemode APC	-	-	Type A
NAO24MW-A	Coupler	black	black	24 x Multimode PC	-	-	Type A
NAO24SAW-A	Coupler	green	black	24 x Singlemode APC	-	-	Type A

X ... for crossed fiber wiring



**SETTING  
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# Transceiver Adapter

## TRANSCEIVER ADAPTER

The opticalCON Transceiver Adapter connects an opticalCON chassis (NO2-4FDW\*) and a LC SFP transceiver. NAO2\*-SFP-LC consists of two LC-SFP adapters, 2 flat gaskets (1 mm and 2 mm) and one NO2-4FDW-A without copper contacts.



MM Transceiver Adapter  
grey

SM Transceiver Adapter  
blue

SM APC Transceiver Adapter  
green

- Eases design integration of the opticalCON chassis connectors (NO2-4FDW\*) in combination with SFP transceivers
- Compatible with all LC SFP transceivers
- Automatic sealing shutter of the opticalCON avoids transceiver soiling
- Enables use of rugged opticalCON or conventional LC connectors
- Avoids vandalism, opticalCON "protects" the transceiver

NAO2M-SFP-LC	grey	MM Transceiver Adapter + opticalCON chassis (NO2-4FDW-A) without copper contacts
NAO2S-SFP-LC	blue	SM Transceiver Adapter + opticalCON chassis (NO2-4FDW-A) without copper contacts
NAO2SA-SFP-LC	green	SM APC Transceiver Adapter + opticalCON chassis (NO2-4FDW-A) without copper contacts

## NAOBO - Breakout ADAPTER

NAOBO is a flexible chassis mounting and adaption solution with cable strain relief to meet any kind of standard fiber connector (e.g. LC, SC, ST). It can be fixed to a rack with a cable tie. The breakout adapter can be mounted straight or angled.



NAOBO (KIT)



Application  
example

- Flexible chassis mounting solution
- Adaption solution to meet existing non-opticalCON fiber installation
- NAOBO can be equipped with any D-size chassis connector

NAOBO	Breakout Adapter Kit consisting of: 1 NAOBO plastic housing, 1 counter nut, 1 90° rear shell, 1 PG-gland, 1 cable tie and 2 screws
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