

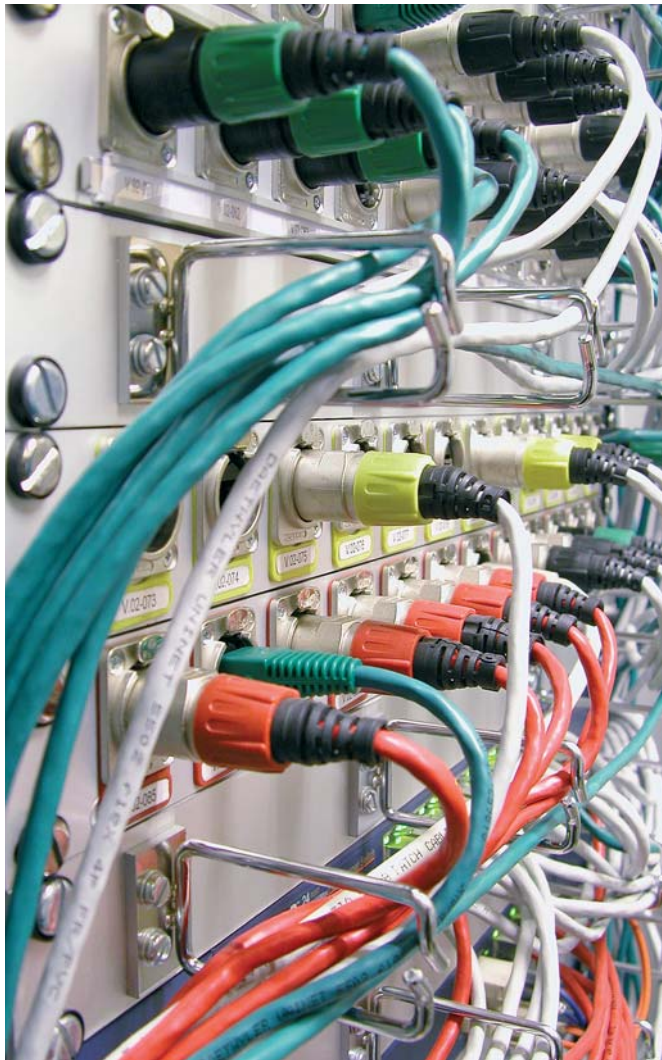


## Data Connectors

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## Introduction

Neutrik's data connector range copes with the increasing demand of digital connections in the professional audio and entertainment industry. Digitalization in the audio business for networking and computerized controls requires also reliable and rugged interconnection systems. Neutrik® early understood this trend and realized Pro Audio proof connector systems based on standard digital interconnection products like fiber optic, Ethernet, USB or Firewire. The Neutrik® data connector line fulfils the stringent requirements of the Pro Audio market and offers ruggedized and reliable optical and RJ45 cable and chassis connectors as well as USB and Firewire panel mount connectors.

Example of EtherCon® RJ45 Data Connector.

## Design Criteria

During the past few years signal digitalization found its way into the Pro Audio & Entertainment business, revolutionizing equipment and applications.

Nowadays one fiber optic cable can transmit hundreds of channels, is light and easy to pass, and avoids grounding problems or noises.

The weak spot has been again the connector. Fragile fiber optic network connectors like the ST, SC, LC etc. are optimized for a one time permanent connection but can not meet the rough requirements of the entertainment industry. Military extended beam lens coupling connectors are very expensive and have the disadvantage of an extensive attenuation increase.

Neutrik®, as Pro Audio & Video technology leader when it comes to connectors, kept up with the time and developed a suitable fiber optic connection system - the OpticalCon®.

The system is based on a standardized optical LC-Duplex connection but eliminates its weakness and guarantees a safe and rugged connection.

Because of the compatibility with conventional LC connectors it offers the choice of using a cost effective LC connector as a permanent connection (e.g. patch cable) or our rugged OpticalCon® cable connector for mobile applications. The system enables a run of up to 4 copper wires for power supply or any data signal, a special SMPTE-version has been optimized for broadcast applications and offers an additional ground-shell contact. The chassis connector acts as "feed through" and guarantees a simple installation by simply connecting a conventional LC-Duplex connector (e.g. with a permanent installation cable) on the rear.

The cable connector comes pre-assembled onto a choice of mobile field cables, currently 5 types and their variations (Multimode, Singlemode, APC) can be offered in any length.



Rugged metal housing



Cable drum

## Cable Connector Assembly

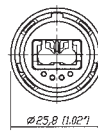
**NEW  
IP65**



NKO2M-4S75

- Ruggedized and dirt protected fiber optic connection system
- Waterproof acc. to IP65
- Cable connector comes pre-assembled with a choice of five mobile field cables
- Range of cables include rugged hybrid (fiber + 4 copper wires), robust and lightweight mobile field cable with 2 multi- or singlemode fibers, a 4 pole Y-split and a SMPTE type cable
- Accommodates standard optical LC-Duplex connectors
- Cable connector features rugged all metal housing and heavy duty cable retention
- Excellent dust and dirt protection due to automatic sealing shutter with silicone gasket
- Reliable Push-Pull locking mechanism
- Easy to clean, no tools required
- Cable packed in case, on drum or air spool
- Field repairable

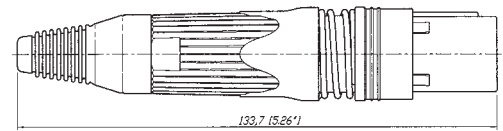
### NKO2M-4S75\*



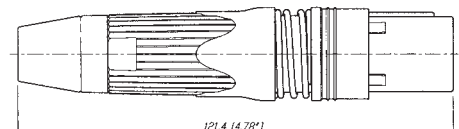
∅ 25,8 (1.02")



∅ 25,8 (1.02")



133,7 (5.26")



121,4 (4.78")



Rear LC connection



Sealed housing



Coloured coding to identify fiber mode



## Chassis Connector

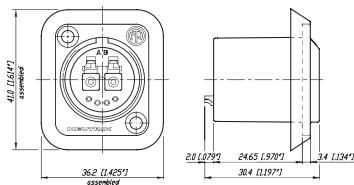
**NEW**  
IP65



NO2-4FDW

- Designed as feedthrough with automatic sealing shutter
- Shutter with silicone gasket protects optical connection from dust and dirt
- Waterproof acc. to IP65 ingress protection
- Rubber sealing gasket (black, blue, green)
- Accommodates standard LC connectors on the rear for simple installation
- Connection on the front side either by rugged OpticalCon® or standard LC connector
- Colour coding to identify fiber mode
  - Multimode – black
  - Singlemode PC – blue
  - Singlemode APC – green

NO2-4FDW



## Coupler

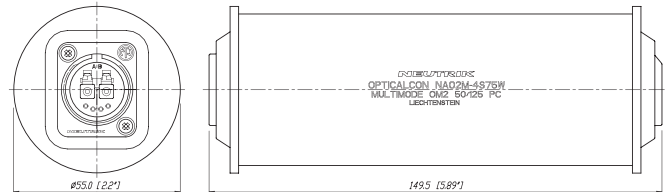
**NEW**  
IP65



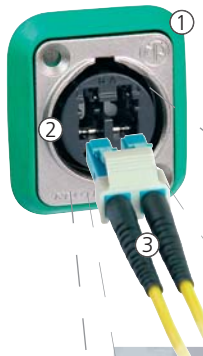
NAO2S-4S75W

- OpticalCon® coupler (adapter) in „D“ size housing for cable extensions
- Available in three versions - LC-Duplex multi and single mode (PC and APC) all with 4 copper wires

NAO2M-4S75W



## Features and Benefits



- ① Sealing gasket
- ② 4 additional female copper contacts
- ③ Mates and locks also with standard LC-Duplex connectors



Wiring:

- ④ Big solder cups (AWG 18)
- ⑤ Mates with conventional LC-Duplex



⑥ Dirtprotection



⑮ Coloured sealing gasket identifies fiber mode



- ⑦ All metal rugged housing
- ⑧ Sealing shutter (inside)
- ⑨ Push-Pull locking mechanism
- ⑩ Standard LC-Duplex connector, easy to clean
- ⑪ 4 additional copper contacts
- ⑫ Heavy duty cable retention
- ⑬ All metal bushing
- ⑭ Cable protection boot
- ⑯ Sealing ring



## Technical Data OpticalCon® Connectors

Optical			Cable Connector	Chassis Connector
Optical connector			LC-Duplex	LC-Duplex Feedthrough
Fiber		Multimode, Singlemode PC, Singlemode APC	●	●
Insertion loss		< 0.5 dB / connection	●	●
Mechanical				
Insertion / withdrawal force		< 45 N	●	●
Lifetime		> 1'000 cycles	●	●
Cable retention force	2M-4S75	500 N	●	-
	2S/2M	500 N	●	-
	SMPTE	350 N	●	-
	4 MY	300 N	●	-
Electrical				
Number of electrical contacts			4	4 (5)
Rated current		6 A	NKO2M-4S75*	●
		10 A (contact 1+4)	NKO2S(A)-SMPTE*	●
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>	● <sup>1</sup>
Material				
Shell	Zinc diecast (ZnAl4Cu1)	(hard Nickel or Ruthenium plating)	●	●
Insert / Insulation		Polyamid PA 6, PBT 30% GR, PBT 50% GR	●	●
Contacts	- male:	Brass (CuZn39Pb3)	●	-
	- female:	Bronze (CuSn6)	-	●
Contact surface		Gold (gal 0.2 μm Au over 2 μm Ni)	●	●
Strain relief		POM (brass)	●	-
Bushing		ZnAl4Cu1	●	-
Boot		EPDM, rubber boot	●	-
Slit sleeve		ceramics	-	●

### Environmental

Operating temperature	-25°C to +75°C	flammability UL94 HB	●	●
Solderability complies with IEC 68-2-20			●	●

<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".

## Technical Data Fiber Cables

		2M	2S	2SA	4MY	2M-4S75	2S-S1	2SA-S1
Attenuation:	@ 850 nm	3 dB/km			3.5 dB/km	2.5 dB/km		
	@ 1300 nm	1 dB/km			1.5 dB/km	0.7 dB/km		
	@ 1310 nm		0.5 dB/km	0.5 dB/km			0.45 dB/km	0.45 dB/km
	@ 1550 nm		0.5 dB/km	0.5 dB/km			0.5 dB/km	0.5 dB/km
Bandwidth:	@ 850 nm	500 MHz-km			500 MHz-km	500 MHz-km		
	@ 1300 nm	500 MHz-km			500 MHz-km	500 MHz-km		
	@ 1310 nm							
	@ 1550 nm							
Refraction index:	@ 850 nm	1.468			1.468	1.482		
	@ 1300 nm	1.468			1.468	1.477		
	@ 1310 nm		1.458	1.458			1.468	1.468
	@ 1550 nm		1.458	1.458			1.468	1.468

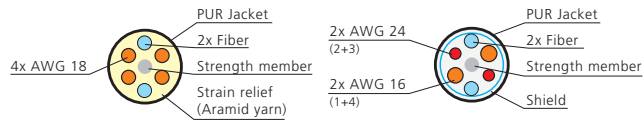


## Technical Data Mobile Fiber Cables



	2M	2S	2SA	4MY
Number of Fibers	2	2	2	4
Fiber type	Multimode	Singlemode	Singlemode	Multimode
Core diameter	50 µm	9 µm	9 µm	50 µm
Cladding diameter	125 µm	125 µm	125 µm	125 µm
Copper wires	-	-	-	-
Outer shield	-	-	-	-
Strength member	-	-	-	-
Cable retention	Aramid yarn	Aramid yarn	Aramid yarn	Aramid yarn
Overall diameter	5 mm	5 mm	5 mm	9.5 mm
Jacket	PUR	PUR	PUR	PUR
Optical connector	LC-Duplex	LC-Duplex	LC-Duplex	2 x LC-Duplex
Type	Multimode	Singlemode PC	Singlemode APC	Multimode
Colour	black, matte	black, matte	black, matte	black, matte
Min. bending radius	4 cm	4 cm	4 cm	10 cm
Weight	23 kg/km	23 kg/km	23 kg/km	103 kg/km
Wiring				

## Technical Data Mobile Hybrid Cables



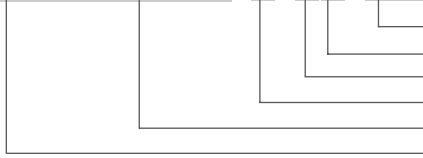
	2M-4S75	2S-S1	2SA-S1
Number of Fibers	2	2	2
Fiber type	Multimode	Singlemode	Singlemode
Core diameter	50 µm	9 µm	9 µm
Cladding diameter	125 µm	125 µm	125 µm
Copper wires	4 x AWG 18 (0.75mm <sup>2</sup> )	2 x AWG 24 + AWG 16	2 x AWG 24 + AWG 16
Outer shield	-	Copperbraid-Tinned	Copperbraid-Tinned
Strength member	GFK	Stainless Steel	Stainless Steel
Cable retention	Aramid yarn	Crimp type	Crimp type
Overall diameter	8.9 mm	9.2 mm	9.2 mm
Jacket	PUR	PVC	PVC
Optical connector	LC-Duplex	LC-Duplex	LC-Duplex
Type	Multimode	Singlemode PC	Singlemode APC
Colour	black, matte	black, matte	black, matte
Min. bending radius	10 cm	10 cm	10 cm
Weight	78 kg/km	118 kg/km	118 kg/km
Wiring			

## Ordering Information

### Coding of Mobile Cables

Find a convenient OpticalCon® part number generator on [www.neutrik.com](http://www.neutrik.com)

**N K O 2 M - 4 S 7 5 - R - 1 F - 1 5 0** (Example)



Length [m]

Gender: No suffix ... Male-Male; F ... Male-Female

Packaging 0 to 4

Plating: No suffix ... hard Nickel; R ... Ruthenium

Cable (Assembled)

Neutrik® Optical Cable

### Gender

Male-Male



Standard product (two cable ends)

Male-Female



wired chassis connector for cable extension (one cable end)

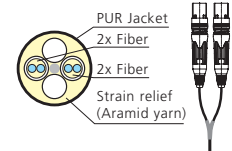
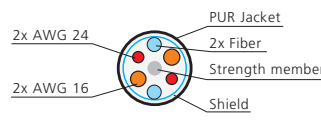
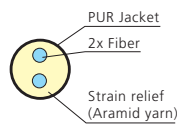
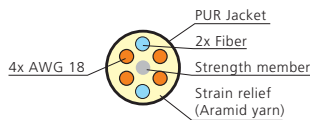
### Cable

Field cable + copper

2 pole field cable

SMPTE cable

4 pole Y-split cable



	Field cable + copper	2 pole field cable	SMPTE cable	4 pole Y-split cable
Multimode PC (black)	2M-4S75 <sup>2)</sup>	2M	-	4MY <sup>1) 2)</sup>
Singlemode PC (blue)	-	2S	2S-S1 <sup>2)</sup>	-
Singlemode APC (green)	-	2SA	2SA-S1 <sup>2)</sup>	-

<sup>1)</sup> ...Gender: Male-male only (no suffix)

### Packaging

0 ... Airspool



1 ... OpticalCon Case



2 ... Drum Schill GT310



3 ... Drum Schill GT380



4 ... Drum Schill HT582



<sup>2)</sup> ...Packaging "2" not possible

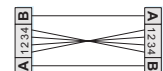
### Chassis Connectors

	Colour	Plating	Fiber	Solder contacts	Shell ground contact
NO2-4FDW	*	hard Nickel	2 x	4 x	-
NO2-4FDW-R	*	Ruthenium	2 x	4 x	-
NO2-4FDW-1	*	hard Nickel	2 x	4 x	1 x
NO2-4FDW-1-R	*	Ruthenium	2 x	4 x	1 x

\* ... Coloured labeling to indicate the fiber mode included.

### Coupler

	Colour (fiber mode)	Plating	Fiber	Copper wire
NAO2M-4S75W	black	black	LC-Duplex Multimode PC	4 x 0.75 mm <sup>2</sup>
NAO2S-4S75W	blue	black	LC-Duplex Singlemode PC	4 x 0.75 mm <sup>2</sup>
NAO2SA-4S75W	green	black	LC-Duplex Singlemode APC	4 x 0.75 mm <sup>2</sup>





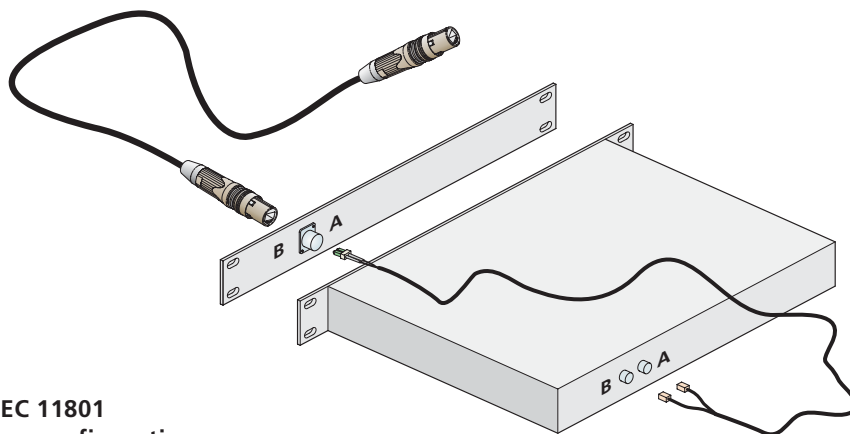
## Accessories



NDO	Dummy plug for OpticalCon chassis connector
SCDR	Rear end protection cover for D-size chassis connectors
SCDX	Hinged cover seals D-size chassis connectors, IP42 rated
Field repair toolkit	find more details on <a href="http://www.neutrik.com">www.neutrik.com</a>

## OpticalCon® Wiring and hook up suggestion

In order to achieve uniform and compatible systems we recommend to follow the hook up suggestions of the ISO / IEC 11801 which defines channel A (right) as input and B (left) as output.



### Extract of the ISO / IEC 11801 Patch cord termination configuration

It is recommended that connection of patch cords and equipment cords to the duplex adapter be made by means of a duplex connector assembly.

Optical fibre patch cords, whether they are used for cross-connection or interconnection to equipment, shall be of a cross-over orientation such that Position A goes to Position B on one optical fibre, and Position B goes to Position A on the other optical fibre of the optical fibre pair (Figure 17). Each end of the optical fibre patch cord shall be identified to indicate Position A and Position B if the connector can be separated into its simplex components. For alternate connector designs utilising latches, the latch defines the positioning in the same manner as the keys.

For simplex connectors, the connector that plugs into the receiver shall be considered Position A, and the connector that plugs into the transmitter shall be considered Position B.



Legend:



Note: Shading for clarification only

## Ruggedized RJ45 Data Connector

Ethercon® provides solutions for data transfer in harsh and demanding applications. These connectors are especially applicable for Ethernet networking in audio, commercial, entertainment, live stage production, DMX lighting, industrial and outdoor internet access environments.

The Ethercon® series offers male cable carriers, assembled female receptacles, feedthrough jacks, cable coupler and shielded versions with or without illumination possibilities by LEDs. The male cable end offers a rugged diecast metal shell as a carrier for pre-assembled RJ45 plugs, which does not require the re-termination of the cable assembly. Female chassis receptacles are based on the current Neutrik® "A & B" series as well the "D" series of XLR receptacles with secure latching system - a feature not found on other RJ45 receptacles. Terminations include horizontal and vertical PCB or IDC. Colour coding is available for both the cable carriers and the receptacles for ease of identification.

Neutrik® Ethercon® receptacles comply with CAT5e (IDC versions) or Class D (PCB versions), shielded or unshielded according to TIA / EIA 586B and ISO / EC 11801 standard.

### EtherCon chassis overview

	Class D	CAT 5e	CAT 6
	Fastethernet 10/100 Base-T	Gigabit 1000 Base-T	10 Gigabit (IP54)
<b>PCB mount</b>	NE8FAV NE8FBV NE8FDV NE8FAH NE8FBH*	NE8FDH-C5E	
<b>IDC</b>		NE8FAV-Y* NE8FDV-Y*	NE8FDY-C6
<b>Feedthrough</b>		NE8FDP NE8FF	



Rugged diecast shell



Bushing

## Cable Carriers



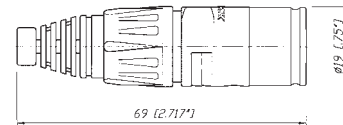
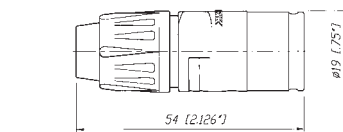
NE8MC + BSE\*



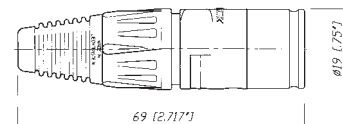
NE8MC-1 + BSE\*

- The RJ45 system for harsh and demanding environment
- Cable connector carrier accepts the most common RJ45 plugs
- Cable carrier has rugged diecast shell and unique chuck type strain relief
- NE8MC-1 version with weatherproof Collinox plating and O-ring gasket
- Protects Ethernet connections in a variety of commercial type applications and is designed to prevent breakage of the fragile components of standard RJ45 connectors
- Cable carrier does not include RJ45 plug

### NE8MC



### NE8MC-1





Horizontal PCB



Vertical PCB



IDC Terminals

## Receptacles



NE8FAV + ACRF-2



NE8FBH



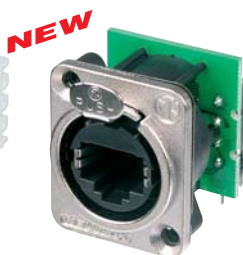
NE8FAV-YK



NE8FDV



NE8FDV-Y110-B

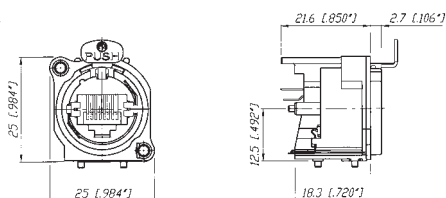


NE8FDH-C5E

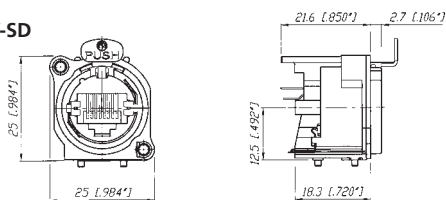
- "A / B" and "D" sized receptacles available in vertical and horizontal PCB or IDC terminations
- Accommodates NE8MC carriers or any standard RJ45 Plug
- D-versions with unified metal flange equal to "D" series- XLR, Speakon®, PowerCon® and BNC Bulkhead

- Receptacles comply with Class D (PCB versions) or CAT 5e (IDC versions and NE8FDH-C5E) according to TIA / EIA 568B and ISO / IEC 11801 standard
- D-versions mountable from the front or rear of the panel
- Version with screw domes to fix connector onto PCB securely (NE8FAV-SD)

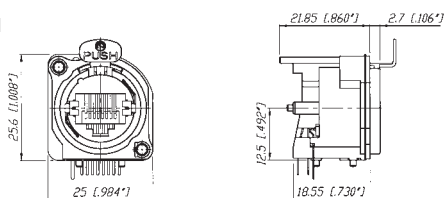
NE8FAV



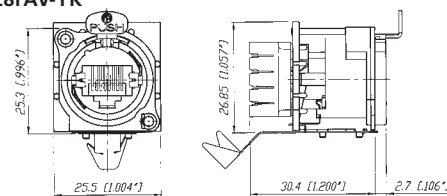
NE8FAV-SD



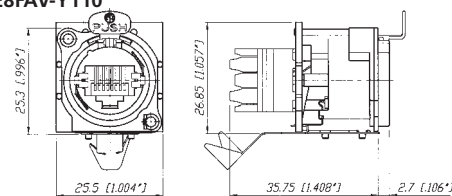
NE8FBH



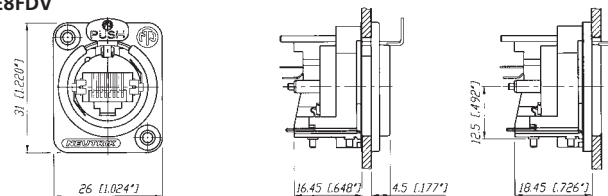
NE8FAV-YK



NE8FAV-Y110



NE8FDV





Completely closed housing



Light pipe



NE8FDP rear side



Locking latch

## Shielded & Lighted



NE8FBH-S



NE8FBH-LED

- Comprehensive shielding granted by completely closed metal housing
- Improves EMC performance of appliance even in unmated condition
- Lighted version offers in addition various illuminating indication possibilities by means of two separate light pipes
- Light pipes illuminated by standard 3 mm LEDs - to be mounted on PCB by customer

## Feedthrough



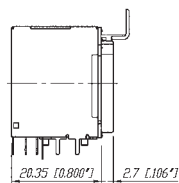
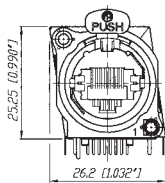
NE8FDP



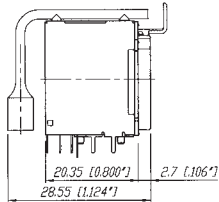
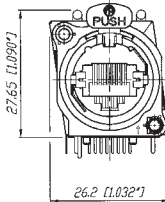
NE8FF

- Feedthrough as panel mount receptacle and as cable coupler
- NE8FDP feedthrough connector in D series housing for use in patchfields - rear side accommodates standard RJ45 plug
- NE8FF coupler (adapter) for cable to cable mating - use with NE8MC carriers or any standard RJ45 plugs

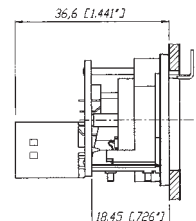
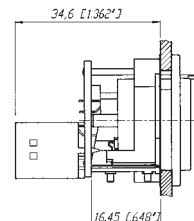
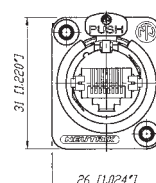
### NE8FBH-S



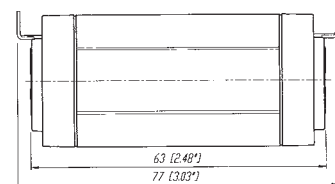
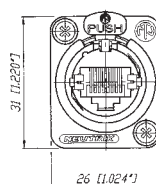
### NE8FBH-LED



### NE8FDP



### NE8FF



Specification		NE8MC* Cable Con.	NE8FA/B* (A + B Series)	NE8FD* (D Series)
<b>Electrical</b>				
Number of contacts		- <sup>1)</sup>	8	8
Rated current per contact	> 1.5 A	- <sup>1)</sup>	●	●
Rated voltage	< 50 V ac	- <sup>1)</sup>	●	●
Contact resistance	< 10 mΩ	- <sup>1)</sup>	●	●
Insulation resistance	> 500 MΩ	- <sup>1)</sup>	●	●
Dielectric strength	> 1'000 V ac rms	- <sup>1)</sup>	●	●
Frequency bandwidth	1 - 100 MHz	- <sup>1)</sup>	●	●
Transmission class acc. TIA / EIA 568B or IEC 11801	CAT 5e	- <sup>1)</sup>	●	● NE8FDH-C5E
	Class D	- <sup>1)</sup>	PCB Versions	PCB Versions
				NE8FDV
<b>Mechanical</b>				
Retention method	latch lock	●	●	●
Life time (mating cycles)	> 1'000 mating cycles	●	●	●
	> 200 mating cycles	-	-	SE8FD
Insertion / withdrawal force	≤ 20 N	●	●	●
Cable O.D. range	3.5 - 8 mm	●	-	-
Wire size	AWG 26 - 20	- <sup>1)</sup>	NE8*-Y*	NE8*-Y*
Panel thickness	max. 3 mm / 0.12"	-	●	4 mm / 0.16"
<b>Material</b>				
Housing	PBT D202G30	-	●	●
	Zinc diecast (ZnAlCu1, gal Ni / bl Cr / Collinox)	●	-	-
B / D-flange	Zinc diecast (ZnAlCu1, gal Ni / bl Cr)	-	●	●
Strain relief clamp	POM	●	-	-
	CuZn35Pb2, Tin plated	-	NE8*-Y*	NE8*-Y*
Contacts	Bronze (CuSn6)	- <sup>1)</sup>	●	●
Contact surface	Au (gal 0.2 μm over Ni plating)	- <sup>1)</sup>	●	●
Locking Element	Ck 67 steel, treated	-	●	●
Bushing	Polyamide (PA 6 15% GR)	●	-	-
Boot	Polyamide (PA 6)	●	-	-
Sealing gasket	EPDM	-	-	SE8FD
<b>Environment</b>				
Operating Temperature	-30°C to +80°C	●	●	●
	-20°C to +60°C	-	-	SE8FD
Protection class	IP54	-	-	SE8FD
Flammability	UL94 HB	●	●	●
Solderability complies with IEC 68-2-20		-	PCB Version	PCB Version
Mating screw		-	A screw	E screw
Colour coding		BSE-* / BSX-*	ACRF-*	DSS-*

<sup>1)</sup>...Specs depend on type of RJ45 plugs used

## Ordering Information

### Cable Connector

NE8MC	Cable housing with chuck and bushing (two antikink boots, one up to 5 mm and one up to 8 mm cable O.D.) (standard bushing in black, 9 different coding colours on request)
NE8MC-B	Black chromium housing with chuck and bushing (two antikink boots, one for 5 mm and one for 8 mm cable O.D.) (standard bushing in black, 9 different coding colours on request)
NE8MC-1	Cable housing with chuck and X-series bushing, Collinox plating and O-ring gasket (perfect for waterproof applications) (standard bushing in black, 9 different coding colours on request)
NE8MC-B-1	Black chromium housing with chuck and X-series bushing (standard bushing in black, 9 different coding colours on request)
IMPORTANT:	Cable connectors do not include RJ 45 plug. RJ 45 cable assembly must be provided by end-user!

Receptacle	A-shape (all plastic)	B-shape (Nickel ring)	D-shape
Horizontal PCB	NE8FAH	NE8FBH	
Vertical PCB	NE8FAV	NE8FBV	NE8FDV
Vertical PCB with additional screw domes	NE8FAV-SD**		
IDC terminals	NE8FAV-YK**		NE8FDV-YK**
IDC 110 punch down terminals	NE8FAV-Y110**		NE8FDV-Y110**
Horizontal PCB with metal housing (shielded)		NE8FBH-S	
Horizontal PCB in CAT5e			NE8FDH-C5e
Horizontal PCB with metal housing and light pipe		NE8FBH-LED	
** ... includes 2 mounting screws			

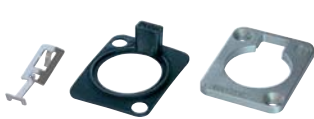

### Feedthrough

NE8FDP	Receptacle (includes 2 mounting screws)
NE8FF	Coupler

### Accessories

							
A screw	E screw	E screw Nickel	ACRF-*	DSS-*	BSE-*	BSX-*	SCDX
A-Screw	Mounting screw for A / B -shape (black self-tapping PLASTITE® screw 2.9 x 8, panhead)						
E-Screw	Mounting screw for D-shape (black self-tapping PLASTITE® screw 2.9 x 12, countersunk)						
E-Screw-Ni	Mounting screw for D-shape (Nickel self-tapping PLASTITE® screw 2.9 x 12, countersunk)						
ACRF-*	Coloured coding rings for A-shape receptacles (Box of 100 pcs.)						
BSE-*	Coloured boot for cable connector carrier (Box of 100 pcs.)						
BSX-*	Coloured bushing for NE8MC-1 and NE8MC-B-1 cable connectors						
DSS-*	Lettering plate for D series, coloured plastic						
SCDX	Hinged cover seals D-size chassis connectors, IP42 rated						
*: 0 - Black, 1 - Brown, 2 - Red, 3 - Orange, 4 - Yellow, 5 - Green, 6 - Blue, 7 - Violet, 8 - Grey, 9 - White							

### Waterproof kit for EtherCon® D-Series

	
Waterproof assembly kit - SE8FD	
SE8FD	Waterproof kit, IP 54, consists of push, gasket, frontplate Suitable for all NE8FD*, perfect in combination with NE8MC-1 (with Collinox plating and sealing gasket)



D-shape metal shell



Closed shielding



Push Pull locking



IP65 in mated condition

## CAT6 Receptacles

## CAT6 Patch Cable



NE8FDY-C6



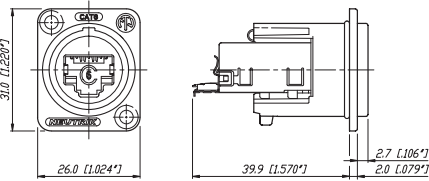
NE8FDY-C6-B



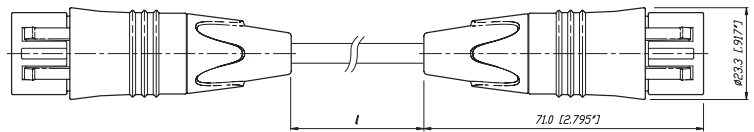
NKE6S-\*

- CAT6 compliant - data rate up to 10 GBit/s
- IP 65 rated - with dust and waterproof resistant sealing
- Push Pull mating design provides secure locking system
- Shielded system - high noise immunity and EMI protection
- IDC contacts offer gas-tight termination
- Ready made patch cables with rugged diecast cable carrier and unique chuck-type strain relief

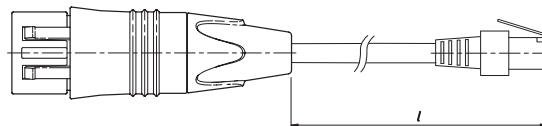
NE8FDY-C6



NKE6S-\*



NKE6S-\*-WOC



## Design Criteria

The ruggedized RJ45 CAT6 connection system, provides solutions for high bandwidth data transfer in harsh and demanding environments. This series offers additional headroom for high performance Fast Ethernet 100BaseT and Gigabit Ethernet 1000BaseT connectivity in audio, lighting, live stage and industrial environments and even guarantees to be prepared for future 10 Gbit applications (true CAT6). The EtherCon CAT6 series offers a D-shape panel connector with metal housing and secure latching system. Tool-free IDC termination makes cable assembly easy and fast. The preassembled CAT6 patch cables use a shielded S/FTP cable with cable plug carrier offering a robust metal shell and Push-Pull locking system. Integrated sealing rings make the system dust and waterproof to IP 65 rating.

### Features & Benefits:

- CAT6 performance – fast data transmission and high bandwidth applications
- CAT6 specifications according TIA / EIA 568B, ISO / IEC 11801, EN 50173
- Shielded system - high noise immunity and EMI protection
- Push Pull mating - secure and proven locking system
- D-shape metal panel connector
- Ground lead jumper on panel connector with selectable grounding option
- IDC termination without tool
- Ready made patch cables with rugged cable carrier and unique chuck-type strain relief
- Dust and waterproof according IP 65

## Technical Data

Electrical	Receptacle		Patch cable		Materials	Receptacle		Patch cable	
	Receptacle	Patch cable	Receptacle	Patch cable		Receptacle	Patch cable	Receptacle	Patch cable
Number of contacts:	8	8	8	8	Housing:	Zinc diecast	Zinc diecast	Zinc diecast	Zinc diecast
Rated current per contact:	1.5 A	1.5 A	1.5 A	1.5 A	Adapter:	Polyamide PA 6	Polyamide PA 6	Polyamide PA 6	Polyamide PA 6
TIA / EIA rating:	CAT6	CAT6	CAT6	CAT6	Strain relief clamp:	-	POM	-	POM
Input to output resistance:	< 200 mΩ	< 200 mΩ	< 200 mΩ	< 200 mΩ	Contacts:	Bronze CuSn	Bronze CuSn	Bronze CuSn	Bronze CuSn
Insulation resistance:	> 500 MΩ	> 500 MΩ	> 500 MΩ	> 500 MΩ	Contact surface:	Gold	Gold	Gold	Gold
Dielectric strength:	1 kV dc	1 kV dc	1 kV dc	1 kV dc	Bushing:	-	PU /PA	-	PU /PA
NEXT (250 MHz):	48.7 dB	48.7 dB	48.7 dB	48.7 dB					
Attenuation (250 MHz):	0.1 dB	0.1 dB	0.1 dB	0.1 dB					

### Mechanical

Retention method:	Push-Pull	Operating temperature:	-10°C to +60°C
Life time (mating cycles):	> 1'000	Storage temperature:	-40°C to +70°C
Wire size:	0.5 - 0.65 mm (AWG 24 - AWG 22)	Flammability:	UL94HB
Stranded wire:	AWG 26 / 7 - 22 / 7	Protection class:	IP 65

### Environmental

## Ordering Information

### Patch Cable

NKE6S-*	Standard lengths: 0.5, 1, 3, 5, 10 m
NKE6S-*-WOC	Equipped on one side with metal shell, standard lengths: 0.5, 1, 3, 5, 10 m Custom length in meter steps on request.

### Receptacle

NE8FDY-C6	EtherCon CAT6 with Nickel D-shell
NE8FDY-C6-B	EtherCon CAT6 with Black Chrome D-shell



# USB and Firewire Adapter



D-shape metal housing



USB type B



D-shape metal housing



IEE 1394 receptacle

## USB



NAUSB

- Ideal for audio networking and integration of computer-based equipment into audio systems
- USB gender changer type A-B (B-A)
- Reversible insert offering type A or B on front or rear end
- Universally accepted standard D-shape housing

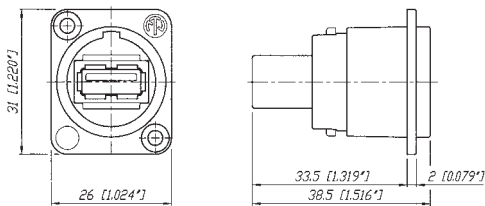
## Firewire



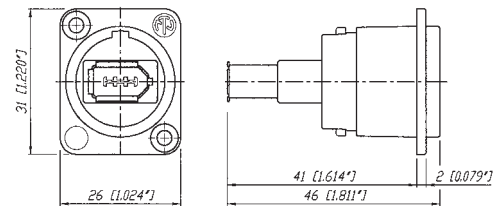
NA1394-6-B

- Ideal for audio networking and integration of digital equipment into audio systems
- Firewire feedthrough with 6-pole IEEE 1394 receptacle at both ends
- Universally accepted standard D-shape housing

NAUSB



NA1394-6



## Technical Data

		USB	Firewire
<b>Mechanical</b>			
Insertion / withdrawal force	< 35 N / > 10 N	•	•
Lifetime	> 1'500 cycles	•	•
<b>Electrical</b>			
Rated current	1.5 A	•	•
Contact resistance	< 30 mΩ (mated pair)	•	•
Insulation resistance		> 1 GΩ	> 100 MΩ
Dielectric withstanding voltage	500 V ac (1 min)	•	•
Rated voltage		< 30 V ac	< 40 V dc
<b>Material</b>			
Shell	Zinc diecast (ZnAl4Cu1)	Nickel or black Chrome	•
Insert / Insulation		Polyamid PA 6	•
Contacts		Brass (CuZn39Pb3)	-
Contact finish		Gold	•
Shell finish		Nickel	•
<b>Environmental</b>			
Operating temperature	-25°C to +85°C	•	•
Flammability	UL94 V-0	•	•

## Ordering Information

### USB

NAUSB	USB A – USB B Adapter (reversible), Nickel housing
NAUSB-B	USB A – USB B Adapter (reversible), black housing

### Firewire

NA 1394-6	6-pole Firewire Adapter (IEEE 1394), Nickel housing
NA 1394-6-B	6-pole Firewire Adapter (IEEE 1394), black housing

## Accessories



DSS-\*



SCM



SCDX

DSS-*	Lettering plate for D series, coloured plastic
SCM	Plastic sealing cover to protect the Firewire connectors against dust and moisture.
SCDX	Hinged cover seals D-size chassis connectors, IP42 rated

\*: 0 - Black, 1 - Brown, 2 - Red, 3 - Orange, 4 - Yellow, 5 - Green, 6 - Blue, 7 - Violet, 8 - Grey, 9 - White