

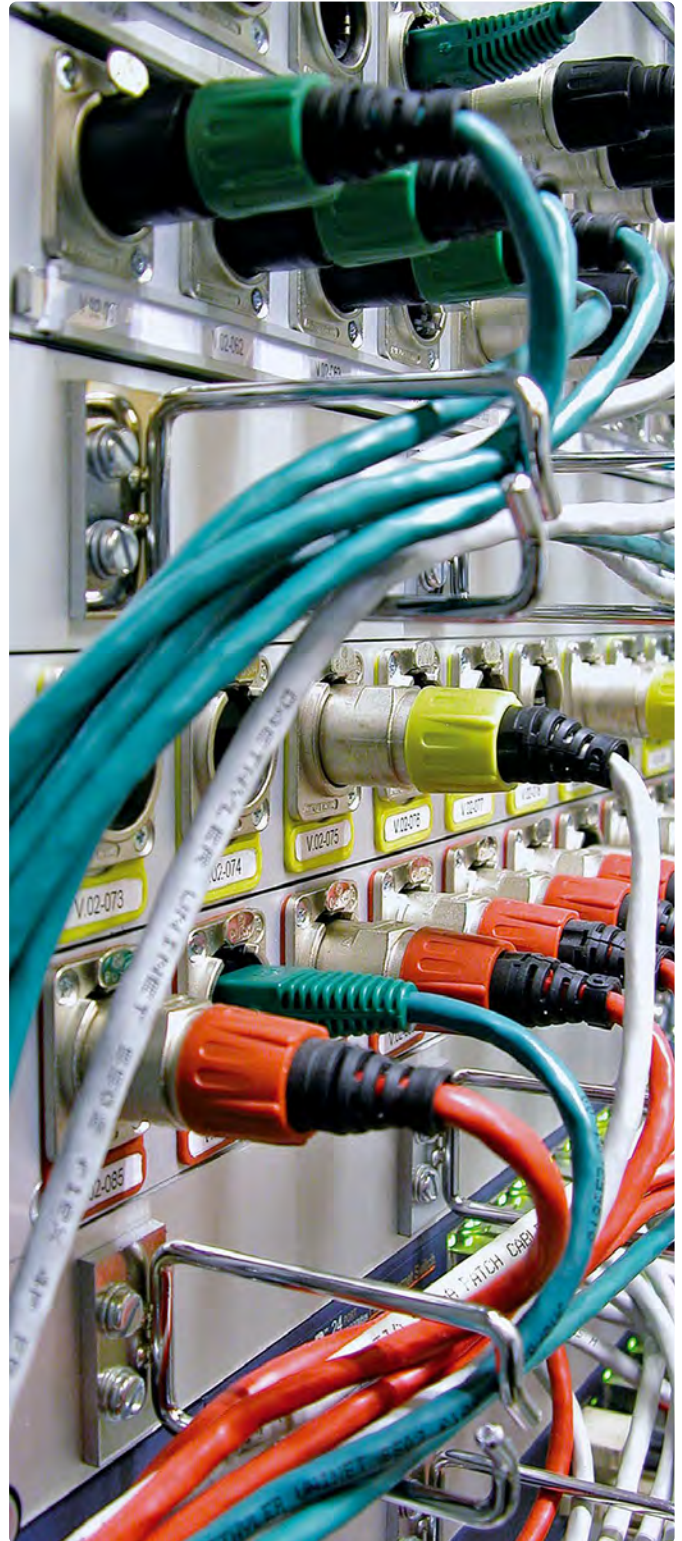
**TRUST  
THE  
ORIGINAL**

# Data Connectors



**NEUTRIK®**

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## Introduction

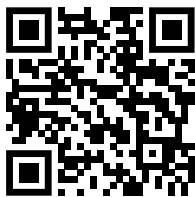
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NEUTRIK's continuously growing range of data connectors copes with the increasing and versatile demand of digital connections in the professional audio, broadcast and entertainment industry.

Networking and computerized controls have to be equipped with reliable and rugged interconnection systems, since conventional data connectors can not meet the demanding requirements of live / rental or broadcast applications.

NEUTRIK early understood this trend and realized a range of ruggedized connection systems based on standard digital interconnection products like fiber optic and network interconnections as well as Digital Interfaces HDMI, USB, D-SUB and Firewire to suit the high demands of professional users in the entertainment industry.

### Data Connectors



## 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 tailor-made products to suit all state-of-the art transmission classes like CAT6A, CAT6, CAT5e as well as class D according to TIA / EIA 568C.2 and ISO / EC 11801 respectively EN 50173-1 standard. The broadly based product range includes male cable carriers, assembled female receptacles, feedthrough jacks, cable couplers and shielded versions with or without illumination possibilities by LEDs. For pre-assembled RJ45 cables NEUTRIK offers a rugged diecast metal shell as a male cable carrier, which does not require the re-termination of the cable assembly.

Female chassis receptacles are based on the well known NEUTRIK "A & B" series as well the "D" series of XLR receptacles with either secure latching system or push pull locking (CAT6) – features not found on other RJ45 receptacles. Terminations available do include horizontal and vertical PCB mount or IDC. Ingress protection of IP54 is achieved on the CAT 5 version by assembling the waterproof sealing kit SE8FD while CAT 6 versions are IP65 rated as standard and at the new CAT6A range it is customers choice to use the IP65 protected receptacles or the unprotected versions.



Rugged diecast shell



Feedthrough



IDC Version



IP65 Protected

## etherCON CAT6A Series



NE8MX6



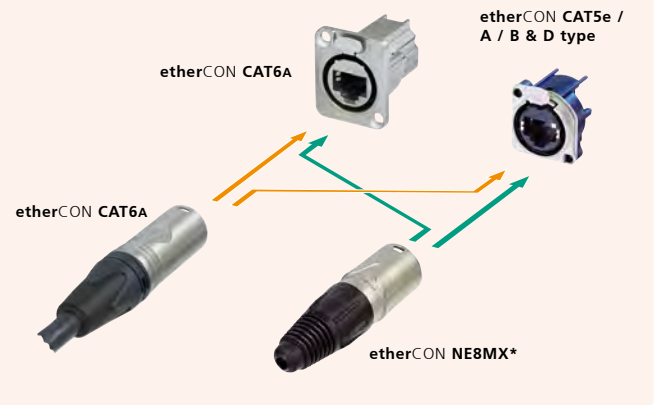
NE8FDX-P6



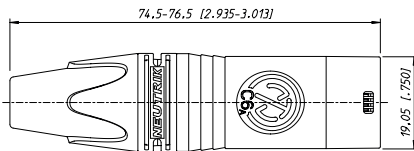
NE8FDX-Y6-W

- Ruggedized connector range with CAT6A component compliance according to ISO / IEC 11801 respectively EN50173-1 and CAT6A according to TIA / EIA 568-C.2
- D-size chassis connector for IDC self-termination or as feedthrough adapter
- IP65 protected version available
- PoE++ compliant according to 802.3bt Type4
- Downwards compatible with the existing etherCON CAT5 range

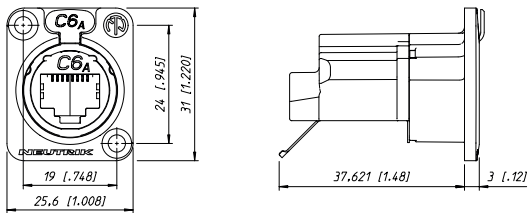
### CAT6A / CAT5\* compatibility:



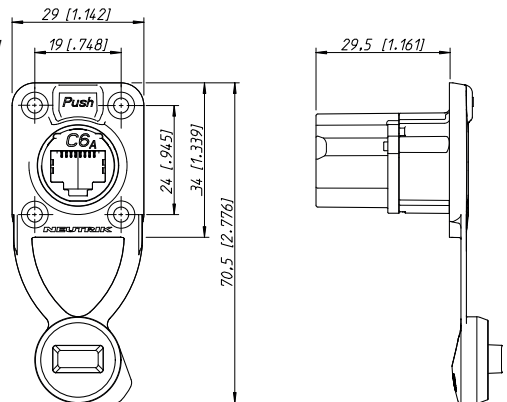
NE8MX6



NE8FDX-Y6



NE8FDX-P6-W



## Technical Data

		Receptacle	Cable connector
<b>Electrical</b>			
Number of contacts	8	●	●
Rated current per contact	1.5 A	●	●
TIA / EIA rating	CAT6A	●	●
IEC / ISO / EN rating	CAT6A	●	●
Input to output resistance	< 200 mΩ	-	-
Insulation resistance	> 500 MΩ	●	●
Dielectric strength	1 kV dc	●	●
PoE + acc. IEEE 802.3at		●	●

## Materials

Housing	Zinc diecast	●	●
Adapter	Polyamide PA 6	-	-
Strain relief clamp	POM	-	●
Contacts	Bronze CuSn	-	-
	Spring steel	●	●
Contact surface	Gold	●	●
Bushing	PU / PA	-	●

## Mechanical

Retention method	Latch Lock	●	●
Life time (mating cycles)	> 1'000	●	●
Cable O.D. range	7.0 - 9.5 mm	●	●
Wire size	solid	NE8FDX-Y6(-B)(-W):	AWG 26/1 - 22/1
	stranded wire		AWG 26/7 - 22/7
Insulation diameter		> 0.85 - 1.6 mm	NE8MX6(-B): > 1.10 - 1.60 mm NE8MX6(-B)-T: > 0.85 - 1.10 mm

## Environmental

Operating temperature / Storage temperature	-40 °C to +70 °C	●	●
Flammability	UL94V-0	●	●
Protection class	IP65 in combination with "-W" receptacle	●	●

## Ordering Information

Cable Connector		Receptacle	
NE8MX6	CAT6A, nickel plating, ≥ AWG 24	NE8FDX-P6	CAT6A shielded feedthrough, nickel plating
NE8MX6-B	CAT6A, black plating, ≥ AWG 24	NE8FDX-P6-B	CAT6A shielded feedthrough, black plating
NE8MX6-T	CAT6A, nickel plating, ≤ AWG 24	NE8FDX-Y6	CAT6A shielded IDC, nickel plating
NE8MX6-B-T	CAT6A, black plating, ≤ AWG 24	NE8FDX-Y6-B	CAT6A shielded IDC, black plating
		NE8FDX-P6-W	CAT6A shielded feedthrough, with integrated rubber sealing cap, IP65
		NE8FDX-Y6-W	CAT6A shielded IDC, with integrated rubber sealing cap, IP65

## Accessories and Assembly Tools

HTXX-14	Handtool to tighten the NE8MX6* bushing
HX-CAT6A	Parallel press tool for etherCON CAT6A Series
XXR*	Colored coding ring (see page 38)
XXCR	Translucet coding ring (see page 38)



IDC Terminals



Horizontal PCB



Vertical PCB with lightpipes



D shape metal shell



PCB Version

etherCON CAT5e – A/B & D type Receptacle



NE8FAH-C5



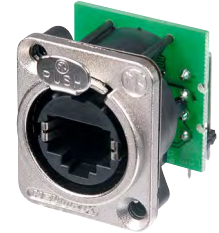
NE8FBH-C5-LED



NE8FBV-C5-LED-S



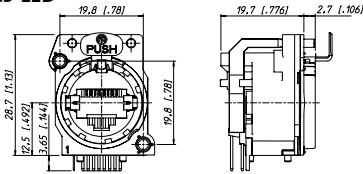
NE8FDV-Y110-B



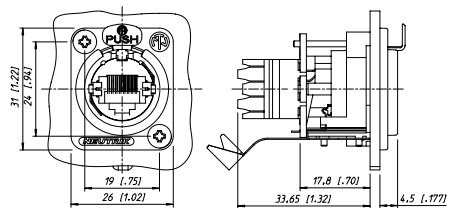
NE8FDH-C5E

- Space saving A or B type receptacles - horizontal or vertical PCB design available
- Vertical PCB design of NE8FAV-C5\* and NE8FBV-C5\* is 24 mm distance to front panel - fits the widely accepted industry standard dimensions for XLRs, 1/4" jacks etc.
- PoE+ compliant according to 802.3at Type2
- CAT5e performance according to ISO/IEC 11801 and TIA/EIA 568-C.2
- Shielded or non-shielded versions available
- Two types of light pipes available to accommodate through hole LEDs or SMD-LEDs
- Accommodates rugged etherCON NE8MX\* cable carriers or any standard RJ45 plug
- D type receptacles - horizontal PCB or punch terminal (Krone or 110) design available

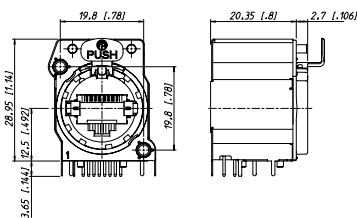
NE8FBH-C5-LED



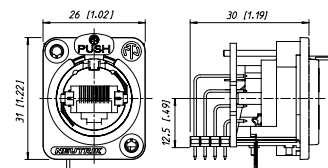
NE8FDV-Y110



NE8FBV-C5-LED-S



NE8FDH-C5E





Horizontal PCB



Vertical PCB



NE8FDV-SE – Vertical PCB receptacle combined with waterproof kit

**etherCON – Receptacles**



NE8FAV + ACRF-2



NE8FBH



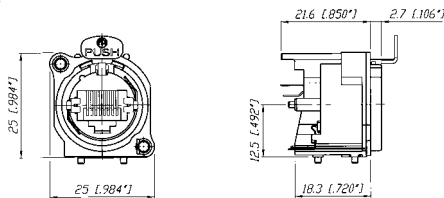
NE8FDV



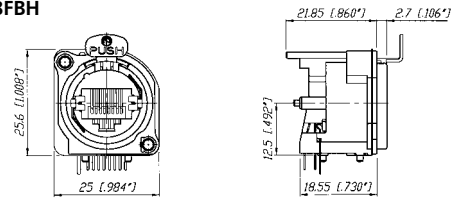
NE8FDV-SE

- "A / B" and "D" sized receptacles available in vertical and horizontal PCB or IDC terminations
- Accommodates NE8MX 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
- Version with screw domes to fix connector onto PCB securely (NE8FAV-SD)

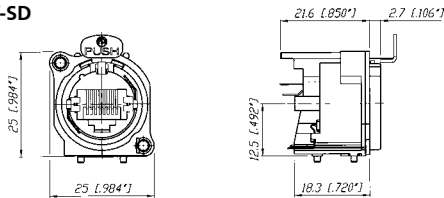
**NE8FAV**



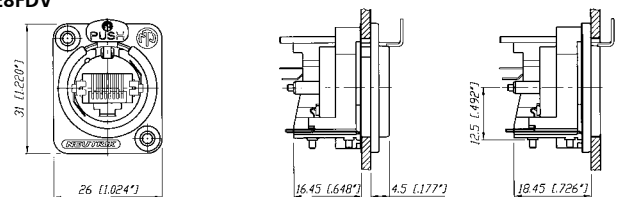
**NE8FBH**



**NE8FAV-SD**



**NE8FDV**





Completely closed housing



Light pipe

**etherCON – Shielded & Lighted**



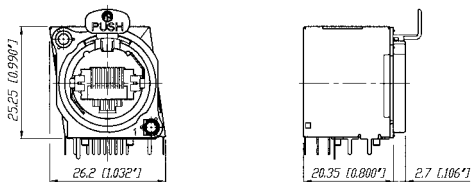
NE8FBH-S



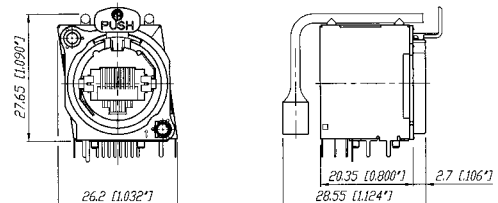
NE8FBH-LED

- Comprehensive shielding granted by completely closed metal housing
- Improves EMC performance of appliance even in unmated condition
- Light pipes illuminated by standard 3 mm LEDs – to be mounted on PCB by customer
- Receptacles comply with class D Link performance.
- Ground panel connection
- Complies with Class D according to TIA / EIA 568B and ISO / IEC 11801 standard
- Approved latch lock system

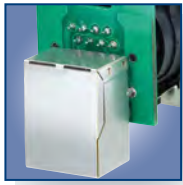
**NE8FBH-S**



**NE8FBH-LED**







NE8FDP-R rear side



Locking latch



Rugged aluminium extrusion housing



Rugged diecast shell



IP65 Protected in mated condition

## etherCON Feedthrough



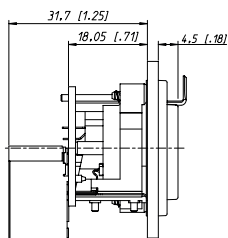
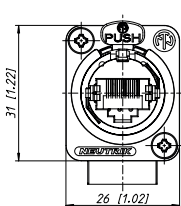
NE8FDP-R



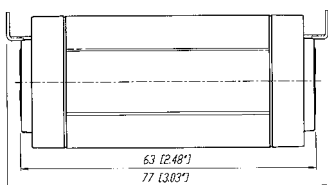
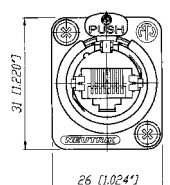
NE8FF

- 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.
- New: Right angle version available (NE8FDP-R).
- NE8FF coupler (adapter) for cable to cable mating – use with NE8MX\* carriers or any standard RJ45 plugs

NE8FDP-R



NE8FF



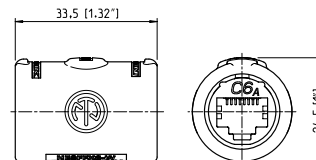
## etherCON CAT6A Adapter



NE8FFX6-W

- Ruggedized coupler with CAT6<sub>A</sub> component compliance according to ISO/IEC 11801 and TIA/EIA 568-C.2
- IP65 protected when mated with NE8MX6\*
- Accommodates standard RJ45 plug
- Revolutionary small form factor
- The adapter offers the million fold proven robust latch lock system
- The adapters are problem solvers for various intermating problems for professional and semi-professional applications

NE8FFX6-W





## etherCON TOP

**NEUTRIK's new TRUE OUTDOOR PROTECTION (TOP) products for demanding outdoor applications is setting standards. Approved for outdoor use according to UL50E. UV resistant and IP65 rated.**

The highly innovative entertainment industry is permanently evolving accompanied by increasing demands on inter-connection systems. Particular environmentally sealed connectors are highly requested for heavy-duty and harsh environment applications of entertainment equipment like PA systems, signs and LED screens or lightings.

Cable connector carrier consists of a velour chromiium shell, chuck and boot. The boot is suitable for cable diameters from 5 - 8 mm. For non pre-assembled cables only. Cable connector carrier does not include a RJ45 plug. The etherCON cable connector carrier upgrades a conventional RJ45 connector to an extremely robust, outdoor protected lockable solution (IP65 & UL50E). ATTENTION: Does not intermate with the CAT6 chassis connectors NE8FDY-C6 and NE8FDY-C6-B.

The etherCON chassis connector series is a ruggedized and lockable RJ45 connector system, optimized for pro audio, video and lighting network applications. The chassis connectors are shaped to fit into standardized panels out of the entertainment industry. The D-series offers the most rugged design of the etherCON series and is perfectly suitable for panel mount and the installer market.

ATTENTION: Does not intermate with CAT6 cable connector NE8MC6-MO and NKE6S\* cables.



Rugged diecast shell



Metal shell



Outdoor assembly kit



® **TRUE  
OUTDOOR  
PROTECTION**

**etherCON TOP – lockable RJ45 connector system**



NE8MX-TOP

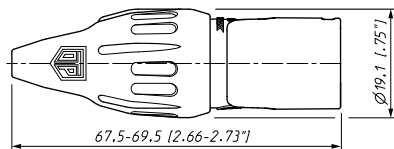


NE8FDV-TOP

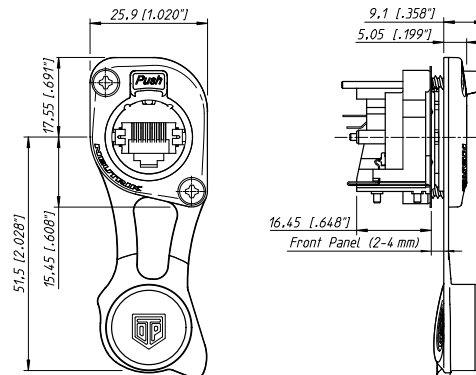
- The RJ45 system for harsh and demanding environment
- Cable connector carrier accepts the most common RJ45 plugs (see list at [www.neutrik.com](http://www.neutrik.com) etherCON downloads)
- IP65 rating and certified outdoor protection to UL 50E (in combination with a TOP range counterpart)
- Rugged diecast shell and unique chuck type strain relief
- Protects Ethernet connections in a variety of commercial type applications and is designed to prevent breakage of the fragile components of standard RJ45 connectors
- Allows assembly of non pre-assembled conventional RJ45 cables
- Accessories include color coded boots in 9 standard colors

- IP65 rating and certified outdoor protection to UL 50E (in combination with NE8MX-TOP or sealing cap closed)
- Uses high impact UV-resistant and gasket materials
- Accommodates NE8MCX\* or any standard RJ45 plug
- Class D or CAT5e according to ISO/IEC 11801 and TIA/EIA
- Approved latch lock system
- Mountable from the front of the panel
- Ground panel connection

NE8MX-TOP



NE8FDV-TOP





Newly designed rugged diecast shell

NEUTRIK bushing

**etherCON – Cable Carriers**



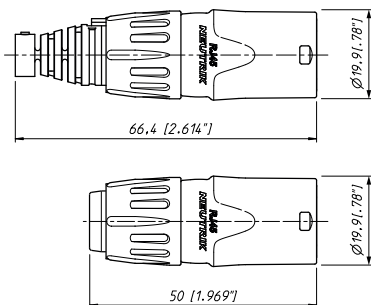
NE8MX



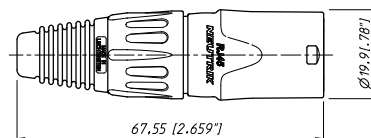
NE8MX-B-1

- The RJ45 system for harsh and demanding environment
- Cable connector carrier accepts the most common RJ45 plugs
- Cable connector carrier has rugged diecast shell and unique chuck type strain relief
- 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 connector carrier does not include RJ45 plug

**NE8MX**



**NE8MX-1**



Specification		NE8MX-TOP Cable Con.	NE8MX* Cable Con.	NE8FA/B* (A + B Series)	NE8FD*-TOP (D Shape)	NE8FD* (D Series)
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## Electrical

Number of contacts	8	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Rated current per contact	< 1.5 A	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Rated voltage	< 50 V ac	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Contact resistance	< 10 mΩ	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Insulation resistance	> 500 MΩ	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Dielectric strength	> 1'000 V ac rms	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Frequency bandwidth	1 - 100 MHz	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Transmission class acc. TIA / EIA 568B or IEC 11801 - CAT 5e	Class D	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
PoE + acc. IEEE 802.3at		- <sup>1)</sup>	- <sup>1)</sup>	●	●	●

## Mechanical

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	4.5 - 8 mm	5 - 8 mm	●	-	-	-
Wire size	AWG 26 – 20	- <sup>1)</sup>	- <sup>1)</sup>	NE8*-Y*	-	NE8*-Y*
Panel thickness	max. 3 mm / 0.12"	-	-	●	4 mm / 0.16"	4 mm / 0.16"

## Material

Housing	PBT D202G30	-	-	●	●	●
	Zinc diecast (ZnAlCu1) (gal Ni / bl Cr / Chromium)	●	●	-	-	-
B / D-flange	Zinc diecast (ZnAlCu1) (gal Ni / bl Cr)	-	-	●	●	●
	POM	●	●	-	-	-
Strain relief clamp	CuZn35Pb2, Tin plated	-	-	NE8*-Y*	-	NE8*-Y*
	Bronze (CuSn8)	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Contacts	Spring steel	NE8*-TOP	NE8*C5*	●	●	●
	Au (gal 0.2 μm over Ni plating)	- <sup>1)</sup>	- <sup>1)</sup>	●	●	●
Locking Element	Ck 67 steel, treated	-	-	●	●	●
Bushing	Polyamide (PA 6 15% GR)	●	●	-	-	-
Boot	Polyamide (PA 6)	●	●	-	-	-
Sealing gasket	EPDM	-	-	-	●	SE8FD

## Environment

Operating Temperature	-30 °C to +80 °C	●	●	●	●	●
	-20 °C to +60 °C	-	-	-	-	SE8FD
Protection class	IP54	-	-	-	-	SE8FD
	IP65, UL50E (mated or sealing cap closed)	●	-	-	●	-
Flammability	UL94V-0	●	UL94 HB	●	●	●
Solderability complies with	IEC 68-2-20	-	-	PCB Version	●	PCB Version
Mating screw		-	-	A screw	included	E screw
Color coding		-	BSE-* / BSX-*	ACRF-*	-	DSS-*

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

## Ordering Information

	Shape			Termination					Remarks	
	A	B	D	H	V	IDC	IDC 110	LED		S
<b>CAT 5e Receptacle</b>										
NE8FAH-C5	•			•						
NE8FAV-C5	•				•					
NE8FAV-YK <sup>Ⓞ</sup>	•					•				
NE8FAV-Y110 <sup>Ⓞ</sup>	•						•			
NE8FBH-C5		•		•						
NE8FBH-C5-S		•		•					•	
NE8FBH-C5-LED		•		•				•		through hole LED
NE8FBH-C5-LED1		•		•				•		SMD LED
NE8FBH-C5-LED-S		•		•				•	•	through hole LED
NE8FBH-C5-LED1-S		•		•				•	•	SMD LED
NE8FBV-C5		•			•					
NE8FBV-C5-S		•			•				•	
NE8FBV-C5-LED		•			•			•		through hole LED
NE8FBV-C5-LED1		•			•			•		SMD LED
NE8FBV-C5-LED-S		•			•			•	•	through hole LED
NE8FBV-C5-LED1-S		•			•			•	•	SMD LED
NE8FDH-C5e			•	•						
NE8FDH-C5e-SE			•	•						with sealing kit SE8FD
NE8FDV-YK <sup>Ⓞ</sup>			•			•				
NE8FDV-Y110 <sup>Ⓞ</sup>			•				•			
NE8FDP*; NE8DFP-B			•							feedthrough; black plating
NE8FDP-SE			•							with sealing kit SE8FD
NE8FDP-R <sup>Ⓞ</sup>			•							right angle port, feedthrough
NE8FDP-R-B <sup>Ⓞ</sup>			•							right angle port, feedt., black plating

## Feedthrough Coupler

NE8FF			•							feedthrough; black plating
NE8FX6-W										Revolutionary small form factor, Accommodates standard RJ45 plug, CAT6 <sub>A</sub> feedthrough, rubber sealing, protection, IP65

## TOP Series

### Cable Connector

NE8MX-TOP										IP65, UL50E (mated)
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### Chassis Connector

NE8FDV-TOP <sup>Ⓞ</sup>			D-size		•					CLASS D
NE8FDP-TOP <sup>Ⓞ</sup>			D-size							CAT5e feedthrough
NE8FDH-C5E-TOP <sup>Ⓞ</sup>			D-size	•						CAT5e
SE8FD-TOP			D-size							Outdoor assembly kit

## CLASS D Receptacle

NE8FAH	•			•						
NE8FAV	•				•					
NE8FAV-SD <sup>Ⓞ</sup>	•				•					Screw dome
NE8FBH		•		•						
NE8FBV		•			•					
NE8FDV			•		•					
NE8FDV-SE			•		•					with sealing kit SE8FD

## Cable Carriers

NE8MX	Cable housing with chuck and bushing (two antikink boots, one up to 5 mm and one up to 8 mm cable O.D.) (standard boot in black, 9 different coding colours on request ... BSE-*)	
NE8MX-B	Black chromium housing with chuck and bushing (two antikink boots, one for 5 mm and one for 8 mm cable O.D.) (standard boot in black, 9 different coding colours on request ... BSE-*)	
NE8MX-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 ... BSX-*)	
NE8MX-B-1	Black chromium housing with chuck and X-series bushing (standard bushing in black, 9 different coding colours on request ... BSX-*)	
IMPORTANT:	Cable connectors do not include RJ45 plug. RJ45 cable assembly must be provided by end-user!	
<b>INFORMATION:</b>	A .....	A-shape receptacle (all plastic)
	B .....	B-shape receptacle (Nickel ring)
	D .....	D-shape receptacle
	H .....	Horizontal PCB mount
	V .....	Vertical PCB mount
	IDC .....	IDC terminals
	IDC 110 ..	IDC 110 punch down terminals
	LED .....	Light pipe
	S .....	shielded metal housing
	Ⓞ .....	Includes 2 mounting screws

## Accessories

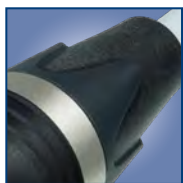


A-Screw	Mounting screw for A / B -shape (black self-tapping PLASTITE® screw 2.9 x 8, panhead)
E-Screw	Mounting screw for D-shape (black self-tapping PLASTITE® screw 2.9 x 12, countersunk)
E-Screw-Ni	Mounting screw for D-shape (Nickel self-tapping PLASTITE® screw 2.9 x 12, countersunk)
ACRF-*	Colored coding rings for A-shape receptacles (Box of 100 pcs.)
BSE-*	Colored boot for cable connector carrier (Box of 100 pcs.)
BSX-*	Colored bushing for NE8MC-1 and NE8MC-B-1 cable connectors
DSS-*	Lettering plate for D series, colored plastic
HTX	Hand tool to tighten the bushing for NE8MC-1, NE8MC-B-1 and NE8MX* cable connectors
NZP1RU	Panel1RU D-shape housing
SCDP-*	D-Size sealing gaskets, color coding (*: 0- black, 2- red, 4- yellow, 5- green, 6- blue, 9- white)
SCDX	Hinged cover seals D-size chassis connectors, IP42 rated
SCCD-W	Spring-loaded cover to seals for D-size chassis connectors, IP65 rated
SE8FD	Waterproof kit, IP54, consists of push, gasket, frontplate Suitable for all NE8FD*, perfect in combination with NE8MC-1 (with Chromium plating and sealing gasket)
SE8FD-TOP	Outdoor assembly kit to cover D-series etherCON connectors into TOP versions, according to IP65 & UL50E *: 0 - Black, 1 - Brown, 2 - Red, 3 - Orange, 4 - Yellow, 5 - Green, 6 - Blue, 7 - Violet, 8 - Grey, 9 - White





Push Pull locking



IP65 in mated condition



D-shape metal shell



Closed shielding

## etherCON CAT6 – Patch Cable & Receptacles



NKE65-\*



NE8MC6-MO



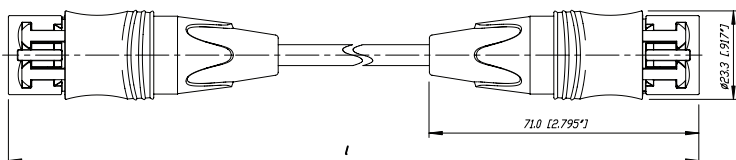
NE8FDY-C6



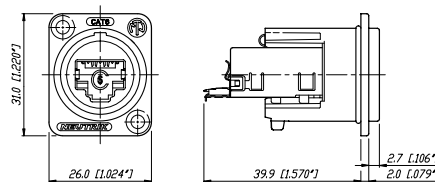
NE8FDY-C6-B

- CAT6 compliant – according to ISO / IEC 11801, TIA / EIA 568C.2, EN50173-1
- Dust and water resistant according IP65 in mated condition
- Push Pull mating design provides secure locking system
- Shielded system – high noise immunity and EMI protection
- IDC contacts for tool-free assembly offer gas-tight termination
- Ready made patch cables or cable connector for self termination with rugged diecast cable carrier and unique chuck-type strain relief

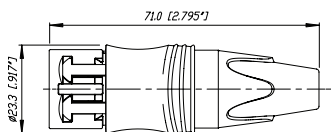
**NKE65-\***



**NE8FDY-C6**



**NE8MC6-MO**





## Technical Data

		Receptacle	Patch Cable
<b>Electrical</b>			
Number of contacts	8	•	•
Rated current per contact	1.5 A	•	•
TIA / EIA rating	CAT6	•	•
IEC / ISO / EN rating	CAT6A	-	-
Input to output resistance	< 200 mΩ	•	•
Insulation resistance	> 500 MΩ	•	•
Dielectric strength	1 kV dc	•	•
PoE + acc. IEEE 802.3at		-	-

## Materials

Housing	Zinc diecast	•	•
Adapter	Polyamide PA 6	•	•
Strain relief clamp	POM	-	•
Contacts	Bronze CuSn	•	•
	Spring steel	-	-
Contact surface	Gold	•	•
Bushing	PU / PA	-	•

## Mechanical

Retention method	Push-Pull	•	-
Life time (mating cycles)	> 1'000	•	•
Cable O.D. range	5.5 - 6.5 mm	•	•
Wire size (solid)	0.205 - 0.324 mm <sup>2</sup> (AWG 24 - AWG 22)	•	•
Stranded wire	0.141 - 0.355 mm <sup>2</sup> (AWG 26 / 7 - 22 / 7)	•	•

## Environmental

Operating temperature	-10 °C to +60 °C	•	•
Storage temperature	-40 °C to +70 °C	•	•
Flammability	UL94HB	•	•
Protection class	IP65	•	•

## Ordering Information CAT6

### Cable Connector

NE8MC6-MO RJ45 cable plug with carrier offering a robust metal shell with Push-Pull locking system

### Patch Cable

NKE6S-\* Standard lengths: 0.5, 1, 2, 3, 5, 10, 30 m

NKE6S\*-WOC Equipped on one side with metal shell, standard lengths: 1, 2, 3, 5, 10, 30 m  
Custom length in meter steps on request

### Receptacle

NE8FDY-C6 CAT6 with Nickel D-shell

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

### Accessories

see page 111 / 116 / 120



Push Pull locking



USB type B

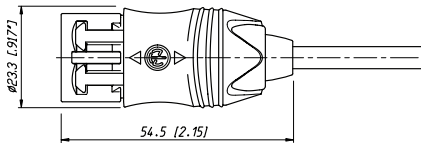
## U S B   P a t c h   C a b l e



NKUSB-\*

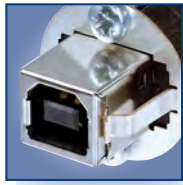
- USB 2.0 compliant – data rate up to 480 MBit/s
- Push Pull mating design provides secure locking system if mated with NAUSB-W\* and SCDP-\* sealing gasket
- Shielded connection – high noise immunity and EMI protection
- Ready made patch cables (1 m, 3 m and 5 m) with removable rugged diecast cable carrier
- Mates with conventional USB receptacles if cable carrier is removed

### NKUSB





D-shape metal housing



USB type B



USB 3.0 Type B



Rugged housing

## USB 2.0 Receptacle



NAUSB-W



NAUSB-W-B

- USB 2.0 gender changer type A-B (B-A)
- Ideal for audio networking and integration of computerbased equipment into audio systems
- Push Pull mating design provides secure locking system if mated with NKUSB-\*
- Removable chassis grounding
- Reversible insert offering type A or B on front or rear end
- Universally accepted standard D-shape housing
- IP65 ingress protection in mated condition with NKUSB-\* and SCDP-\* sealing gasket

## USB 3.0 Receptacle



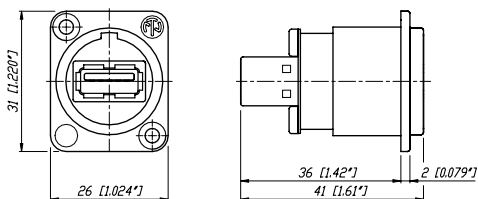
NAUSB3



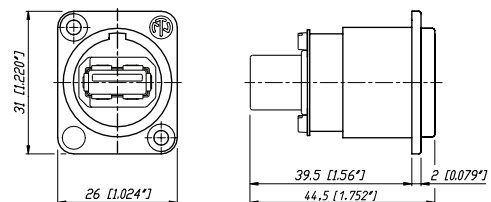
NAUSB3-B

- Rugged USB 3.0 feedthrough adapter
- Standardized D-shape housing
- Reversible insert offering type A or B on front or rear end
- Removable chassis grounding
- Nickel and black chrome plating available

### NAUSB-W



### NAUSB3



## Technical Data

### Mechanical and Electrical

	Receptacle	Patch Cable
Conform with USB 2.0 Standard	•	•

### Material

Shell	Zinc diecast (ZnAl4Cu1)	•	•
Shell plating	Nickel or black Chrome	•	Nickel
Insert		PBTP 15% GR	PVC
Contacts	Brass (CuZn39Pb3)	•	•
Contact finish	Gold	•	•

### Environmental

Operating temperature	-25 °C to +85 °C	•	•
Flammability	UL94 V-0	•	•
Protection class	IP65	•	•

## Ordering Information

### Chassis

NAUSB-W	USB 2.0: USB A – USB B Adapter (reversible), sealing ring, removable grounding, nickel housing
NAUSB-W-B	USB 2.0: USB A – USB B Adapter (reversible), sealing ring, removable grounding, black housing
NAUSB3	USB 3.0: USB A – USB B Adapter (reversible), sealing ring, removable grounding, nickel housing
NAUSB3-B	USB 3.0: USB A – USB B Adapter (reversible), sealing ring, removable grounding, black housing

### Patch Cable

NKUSB-*	USB 2.0 cable with overmolded flex relief and metal cable carrier, standard lengths: 1, 3, 5 m
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### Accessories



DSS-\*



SCDX



SCCD-W



SCD-W



SCDP-\*

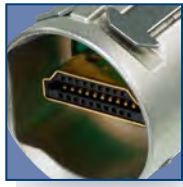
DSS-**	Lettering plate for D series, colored plastic
SCDP-*	D-Size sealing gaskets, color coding (*: 0- black, 2- red, 4- yellow, 5- green, 6- blue, 9- white)
SCDX	Hinged cover seals D-size chassis connectors, IP42 rated
SCCD-W	Spring-loaded cover seals for D-size chassis connectors, IP65 rated
SCD-W	D-Size sealing cap, IP65 rated
NZP1RU-8	Panel1RU housing with 8 D-shape cutouts
NZP1RU-12	Panel1RU housing with 12 D-shape cutouts

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





Push Pull locking



HDMI plug



D-shape metal housing



HDMI receptacle



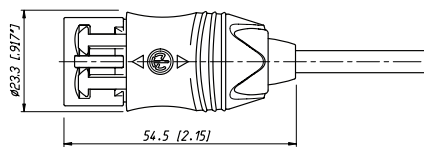
## HDMI Patch Cable



NKHDMI-\*

- HDMI 2.0 for length up to 3 m including and data rate up to 18 GBit/s
- HDMI 1.4 for length > 3 m
- Push Pull mating design provides secure locking system if mated with NAHDMI-W\*
- Shielded connection – high noise immunity and EMI protection
- Ready made patch cables (0.6 m, 1 m, 3 m, 5 m and 10 m) with removeable rugged diecast cable carrier
- Mates with conventional HDMI receptacles if cable carrier is removed
- Dust and water resistant sealing in combination with NAHDMI-W\* and SCDP-\* sealing gasket

### NKHDMI-\*



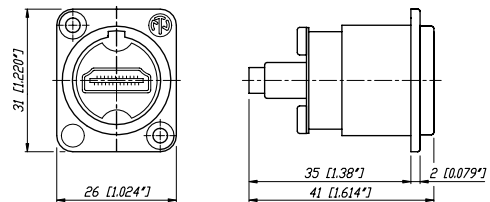
## HDMI Receptacles



NAHDMI-W

- Audio / Video interface to transmit any digital TV and PC Video format including high-definition video (HDTV).
- HDMI feedthrough adapter with 19 pole HDMI receptacle at both ends
- Removable chassis grounding
- Universally accepted standard D-shape housing
- IP65 ingress protection in mated condition with NKHDMI-\* and SCDP-\* sealing gasket

### NAHDMI-W



# D - S U B A d a p t e r s



D-SUB data connector



D-shape metal housing



9 pole or 15 pole available

## D-SUB Feedthrough



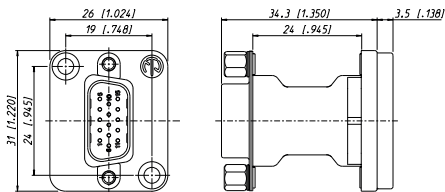
NADB9MF-B



NADB15FF

- D-SUB feedthrough adapter
- Optimized ground connection
- Standardized D-shape housing
- 9 pole and 15 pole versions available
- "Male – Female" and "Female – Female" versions available
- Nickel and black chrome plating available

### NADB9MF



## Technical Data

### Mechanical and Electrical

	HDMI Receptacle	HDMI Patch Cable	D-SUB
Conform with Standards	HDMI	HDMI	-

### Material

Shell	Zinc diecast (ZnAl4Cu1)	•	•	•
Shellplating	Nickel or black Chrome	•	•	•
Insert		ABS	Nickel	Steel, tin plated
		-	PVC	PBT
Contacts	Brass (CuZn39Pb3)	•	•	•
Contact finish	Gold	•	•	•

### Environmental

Operating temperature	-25 °C to +85 °C	•	•	•
Flammability	UL94 V-0	•	•	•
Protection class	IP65	•	•	-

## Ordering Information

### HDMI

#### Chassis

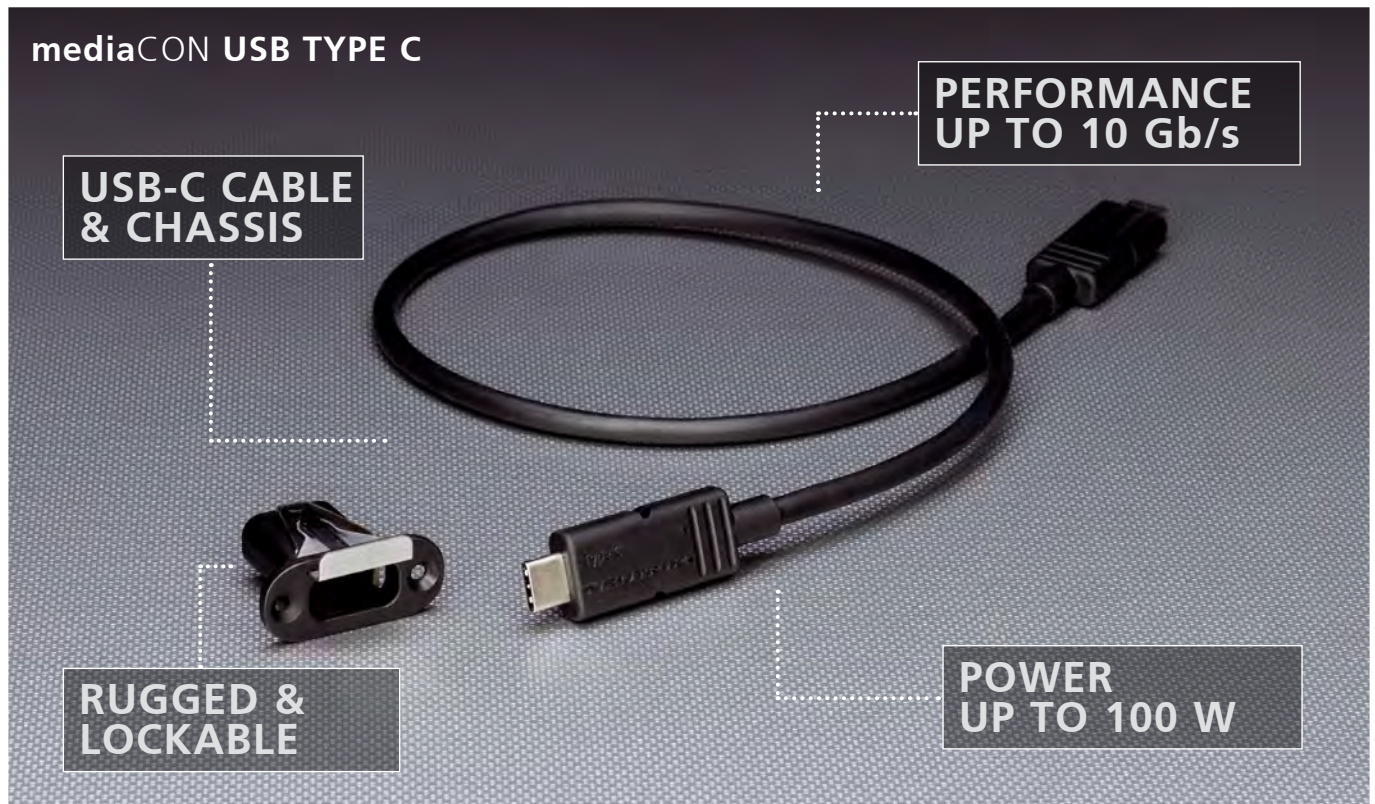
NAHDMI-W	HDMI – HDMI Adapter, sealing ring, removable grounding, nickel housing
NAHDMI-W-B	HDMI – HDMI Adapter, sealing ring, removable grounding, black housing

#### Patch Cable

NKHDMI-*	HDMI cable with overmolded flex relief and metal cable carrier, standard lengths: 0.6, 1, 3, 5, 10 m
----------	--

### D-SUB

NADB9MF	9 pole D-SUB feedthrough male-female, D-shape nickel housing
NADB9MF-B	9 pole D-SUB feedthrough male-female, D-shape black chrome housing
NADB9FF	9 pole D-SUB feedthrough female-female, D-shape nickel housing
NADB9FF-B	9 pole D-SUB feedthrough female-female, D-shape black chrome housing
NADB15MF	15 pole D-SUB feedthrough male-female, D-shape nickel housing
NADB15MF-B	15 pole D-SUB feedthrough male-female, D-shape black chrome housing
NADB15FF	15 pole D-SUB feedthrough female-female, D-shape nickel housing
NADB15FF-B	15 pole D-SUB feedthrough female-female, D-shape black chrome housing



## mediaCON the new USB-C multimedia solution

**The innovative USB-C multimedia system for demanding broadcast and professional A/V applications.**

Die mediaCON USB-C-Serie wurde u. a. für die zunehmende Digitalisierung im Broadcast- und A/V-Bereich entwickelt. Die platzsparende Einbauversion mit Push/Pull-Verriegelung kann vor- und rückseitig montiert werden. Das mediaCON-Kabel garantiert eine Übertragung von 10 Gb/s und bis zu 100 W. Das umspritzte Gehäuse des Kabel-Steckers bietet eine optimale Zugentlastung und schützt vor mechanischer Belastung.





USB Type-C cable with over molded flex relief and rugged cable

## USB Type-C Cable



NMK-20U-\*

- Guaranteed performance up to 10 Gb/s (USB 3.1 Gen.II compatibility)\*\*
- Push Pull mating design provides secure locking system if mated with NMC-\*
- Reversible USB-C housing Provide power up to 100 W (@5A/20V)
- Shielded connection – high noise immunity and EMI protection
- Mates with conventional USB-C receptacles

NMK-20U-\*



\*\* ... Die Leistung hängt von Ihren zusätzlichen Hardware- und Softwarekomponenten und -konfigurationen ab.



Lockable USB Type-C chassis



Lockable USB Type-C chassis and integral USB IF-approved receptacle

**USB Type-C Chassis**

**USB Type-C Chassis & IF**



NMC-C

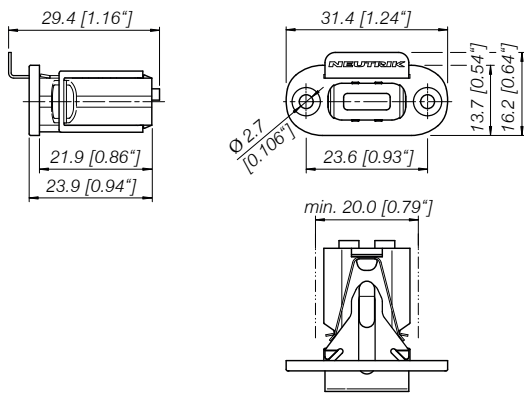


NMC-C-HR

- Push Pull mating design provides secure locking system if mated with NMK-20U\*
- Reversible USB-C housing
- Front and rear side mountable
- Guiding housing for better protection of receptacles
- USB receptacle not in scope of delivery

- Push Pull mating design provides secure locking system if mated with NMK-20U\*
- Reversible USB-C housing
- Front and rear side mountable
- Guiding housing for better protection of receptacles
- With integrated USB IF approved receptacle
- USB receptacle not in scope of delivery

**NMC-C**



Specification		NMK-20U- Cable	NMC-C Chassis	NMC-C-HR Chassis with IF
---------------	--	-------------------	------------------	-----------------------------

## Electrical

Rated current per contact	5 A	●	-	●
Rated voltage	20 V	●	-	●
Insulation resistance	10 MΩ	●	-	-
Conductor resistance	3 Ω	●	-	-
Transmission Performance	100 W	●	-	-

## Materials

Shell	TPE - Thermoplastic Elastomer	●	-	-
	Polyamide PA 6	-	●	●
Cable Jacket Type	PVC - Polyvinyl Chloride	●	-	-
Contacts	Brass CuZn37	●	-	-
Contact plating	Au	●	-	-
Latch lock & spring	Ck 67 steel, treated	-	●	●

## Mechanical

Life time (mating cycles)	> 10'000	●	●	●
Locking force	50 N	-	●	●
Locking device	latch lock	-	●	●
Orientation	Right Angle	-	●	●
PCB Mounting	HYBRID SMT+DIP	-	●	●
PCB surface center	1.58 mm	-	●	●

## Environmental

Operating temperature	-25 °C to +85 °C	●	●	●
Standard compliance	USB 3.1 Gen II; USB 3.2	●	●	●
Flammability	UL94HB	●	●	●
Environmentally Compliant	RoHS and Halogen Free	●	●	●

## Ordering Information

### Cable

NMK-20U-*	Lockable USB Type C cable with over molded flex relief and rugged strain relief *...length 0.5 m or 1.0 m
-----------	--

### Chassis

NMC-C	Locking USB C Type chassis
NMC-C-HR	Lockable USB Type C chassis with integrated USB IF approved receptacle

opticalCON FIBER OPTIC SYSTEMS



**RUGGED &  
RELIABLE**



**SUPERIOR  
QUALITY**

**DUST AND WATER  
RESISTANT - IP65**

opticalCON Chassis

opticalCON DUO

opticalCON QUAD

opticalCON MTP 12

opticalCON MTP 24



NO2-4FDW-A



Standard LC connector



NO4FDW-A



Standard LC connector



NO12FDW-A



MTP® ELITE MALE connector



NO24FDW-A



MTP® ELITE MALE connector

opticalCON ADVANCED

opticalCON DUO



NKO2S-A\*

- 4 copper contacts
- 2 fibers

opticalCON QUAD



NKO4S-A\*

- 4 fibers

opticalCON MTP 12



NKO12SA\*

- 12 fibers

opticalCON MTP 24



NKO24SA\*

- 24 fibers

opticalCON LITE

opticalCON DUO LITE



NKO2M-L\*

- 2 x 1.25 mm LC-ferrules

opticalCON QUAD LITE



NKO4M-L\*

- 4 x 1.25 mm LC-ferrules

opticalCON MTP 12 LITE



NKO12M-L\*

- 12 fiber - MTP® ferrule

opticalCON MTP 24 LITE



NKO24M-L\*

- 24 fiber - MTP® ferrule

# DRAGONFLY

opticalCON®

**LOW MAINTENANCE  
AND EASY TO CLEAN**

**DUST AND WATERPROOF TO  
IP68 IN MATED CONDITION**



**RELIABLE PUSH/PULL  
LOCKING MECHANISM**

**HIGH PERFORMANCE –  
LOW LOSS**

**FUSION SPLICE TECHNOLOGY –  
FIELD REPAIRABLE**

**LONG LIFE – 10,000  
MATING CYCLES**

**HYBRID CONNECTION –  
POWER AND DATA**

**PROVEN ANTI-KINK  
BOOT DESIGN**

## opticalCON DRAGONFLY

**opticalCON DRAGONFLY is a ruggedized and low maintenance hybrid cable connector for indoor and outdoor use.**

### CAMERA CONNECTOR SYSTEM

NEUTRIK's new fiber optic connector series offers advanced lens technology for the Broadcast and AV Market. opticalCON DRAGONFLY is more robust, reliable and easier to maintain than common hybrid camera signal transmission systems.

With technology based on fiber lenses and fusion splicing, NEUTRIK's DRAGONFLY achieves an extremely robust signal with minimal loss. opticalCON DRAGONFLY combines all the advantages of lens technology and makes it competitive with physical contact connectivity.

The DRAGONFLY connector offers long life with very low maintenance. It can also withstand harsh and demanding environments and is dust and moisture insensitive. Additionally, DRAGONFLY is robust against vibration and therefore has low potential for damage. And if there ever is a problem, DRAGONFLY is field repairable. With this new technology, DRAGONFLY provides a complete solution for the Broadcast and AV Market.

### INNOVATIVE AND FUTURE PROOF

- Fusion splice technology – field repairable
- High performance – low loss
- Consistent quality
- 100% reliable even at extreme temperature fluctuations
- Permanent connection

### SIMPLE AND EFFICIENT

- Hybrid connection – power and data over one connection
- Low maintenance interval
- Easy switching to DRAGONFLY – fits into standardized cutouts
- Easy cleaning with compressed air and water
- Competitive price

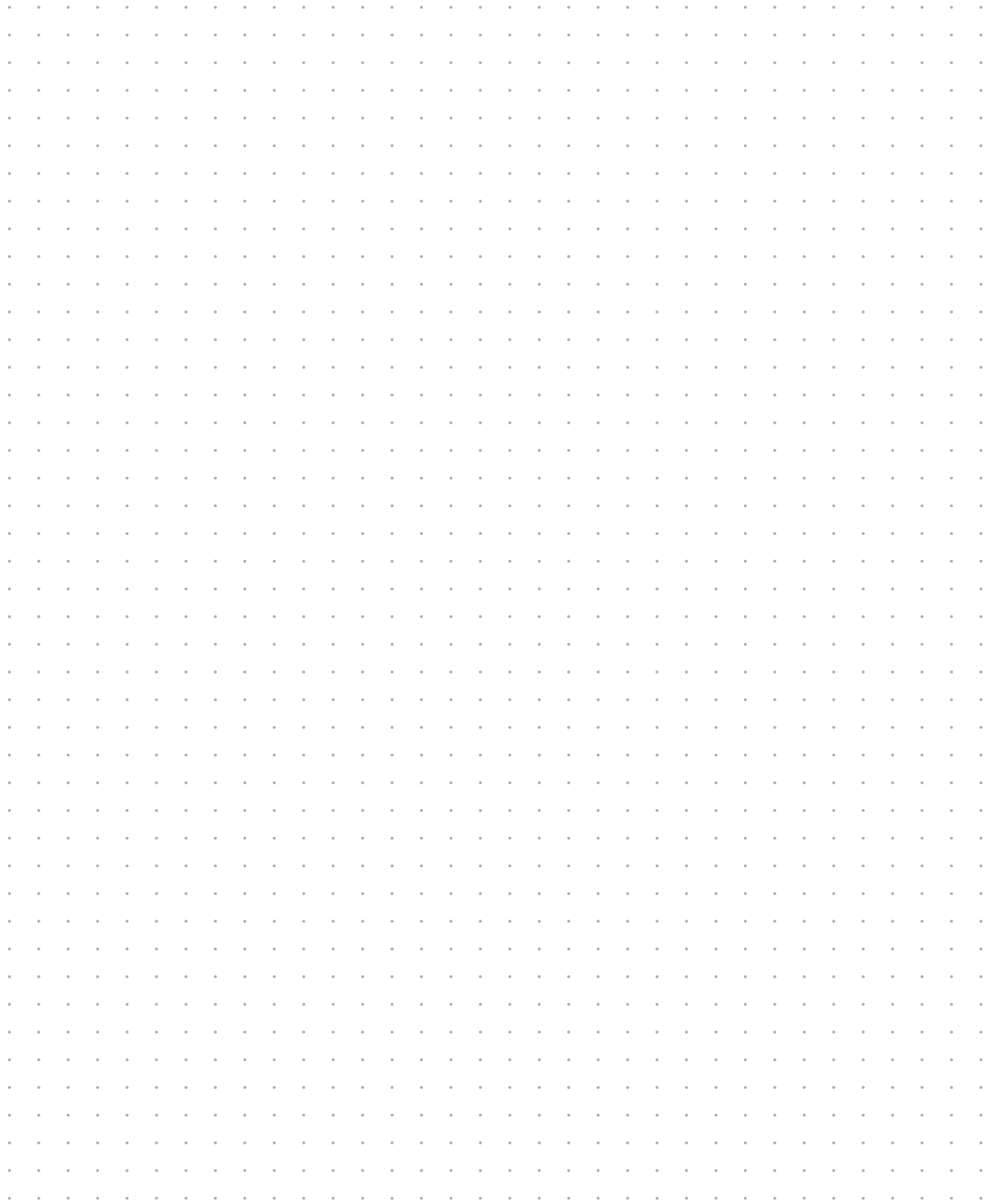
### ROBUST AND RELIABLE

- Extremely robust system
- Reliable push/pull locking mechanism
- Dust and waterproof according to IP68
- Proven anti-kink boot design
- Long life – 10,000 mating cycles

### opticalCON Technical Data

- For more information visit our website [www.neutrik.com](http://www.neutrik.com).







## Definitions, Abbreviations & Useful Information

### ELEMENTS

<b>Ag</b>	Silver
<b>Al</b>	Aluminium
<b>Au</b>	Gold
<b>Co</b>	Cobalt
<b>Cr</b>	Chromium
<b>Cu</b>	Copper
<b>Ni</b>	Nickel
<b>P</b>	Phosphorus
<b>Pb</b>	Lead
<b>Pd</b>	Palladium
<b>Sn</b>	Tin
<b>Zn</b>	Zinc
<b>SS</b>	Stainless Steel

### ALLOYS, PLASTICS, POLYMERS

<b>Brass (Alloy)</b>	CuZn39Pb3
<b>Bronze (Alloy)</b>	CuSn6
<b>Ck 67</b>	Carbon Steel
<b>EPDM</b>	Ethylene Propylene
<b>GR</b>	Glass Reinforced
<b>PA</b>	Polyamide
<b>PBTP</b>	Polybutylene Terephthalate
<b>POM</b>	Polyacetal
<b>PTFE</b>	PolyTetraFluoroEthylene (TEFLON)
<b>PUR</b>	Polyurethane

### MEASUREMENT LEGEND

<b>N</b>	Newton
<b>Ω</b>	Ohm
<b>μ</b>	Micro
<b>OD</b>	Outside Diameter
<b>m</b>	Meter(s)
<b>k</b>	Kilo


### ENGLISH TO METRIC CONVERSIONS



<b>1/8 inch</b>	3.175	millimeters (mm)
<b>1/4 inch</b>	6.35	millimeters (mm)
<b>1 inch</b>	25.4	millimeters (mm)
	2.54 cm	1 inch
<b>1 foot</b>	30.48	centimeters (cm)
	0.305	meter (m)
<b>6 foot</b>	1.828	meters (m)
<b>50 foot</b>	15.24	meters (m)
<b>100 foot</b>	30.48	meters (m)
<b>1000 foot</b>	304.8	meters (m)

### METRIC TO ENGLISH CONVERSIONS

<b>1 centimeter</b>	0.3937	inches
<b>1 meter</b>	39.37	inches
<b>3.281 meter</b>	10	feet
<b>10 meters</b>	32.808	feet
<b>50 meters</b>	164.041	feet
<b>100 meters</b>	328.084	feet

### OTHER ABBREVIATIONS

<b>UL®</b>	Underwriters Laboratories
<b>IP Rating</b>	Ingress Protection rating for objects and water ACC IEC529/EN60529
<b>IEC</b>	International Electrotechnical Commission is the international standards and conformity assessment body for all fields of electrotechnology
	UL Recognized Component Mark

	<b>ENEC</b> – European norms electrical certification, demonstrates compliance with European safety standards.
	<b>VDE</b> Association for Electrical, Electronic and Information Technologies e.V.
<b>AWG</b>	American Wire Gauge

**NEUTRIK, crystalCON®, etherCON®, maxCON®, miniCON®, nanoCON®, neutriCON®, opticalCON®, powerCON®, powerCON® TRUE1®, rofi®, rearTWIST®, silentPLUG®, speakON®, TOP®, DiWA®, XIRIUM®,** are registered trademarks of Neutrik AG.

## NEUTRIK® Part Number Guide

### NC3FAH1-B-0-D

<b>Packaging:</b>	<b>D</b>	Cable connector: bulk packed
<b>Assembly:</b>	<b>D</b>	Chassis connector: disassembled push latch
<b>Retention:</b>	<b>w/o</b>	Latch lock
	<b>-0</b>	Retention spring
	<b>-DA</b>	Asymmetric PUSH
	<b>B</b>	Black shell, gold contacts
<b>Shell:</b>	<b>BAG</b>	Black shell, silver contacts
	<b>0</b>	Separate ground contact connected to shell, male only
<b>Grounding:</b>	<b>1</b>	Pin 1 & panel & shell connected, no separate ground contact
	<b>2</b>	Separate ground contact connected to shell & panel, separate Pin 1
	<b>E</b>	Additional ground contacts
	<b>w/o number</b>	No ground/shell contact (except 4/5 pole), female only
	<b>Termination:</b>	<b>H</b>
	<b>HL</b>	Lateral left PCB mount
	<b>HR</b>	Lateral right PCB mount
	<b>L</b>	Solder cups
	<b>V</b>	Vertical PCB mount
	<b>Y</b>	IDC for wires (no ground)
	<b>M3</b>	Mounting holes with M3 thread
	<b>M25</b>	Mounting holes with M2.5 thread
	<b>-</b>	Not applicable
<b>Series:</b>	<b>A, AA, B, D, DL, DLX, MPR, P, PX, RX, X, XX</b>	
<b>Gender:</b>	<b>F</b>	Female
	<b>M</b>	Male
<b>Number of Contacts:</b>	<b>2, 3, 4, 5, 6, 7, 8, 12</b>	
<b>Connector Type:</b>	<b>A</b>	Adapter
	<b>AC</b>	powerCON®
	<b>B</b>	BNC
	<b>C</b>	XLR
	<b>D</b>	dummyPLUG
	<b>E</b>	etherCON® - RJ45
	<b>F</b>	RCA / CINCH
	<b>J (MJ, RJ, SJ)</b>	Jack
	<b>K</b>	Cable Assembly
	<b>L</b>	speakON - Loudspeaker
	<b>M</b>	Module
	<b>O</b>	opticalCON® - Fiber Optic Connector
	<b>P</b>	Plug
	<b>PP</b>	Patch Panel
	<b>R</b>	Circular Connector
	<b>T</b>	Transformer
	<b>TOP</b>	True Outdoor Protection

Definitions, abbreviations & useful information see page 33.

# NEUTRIK® Product Line

<p><b>XLR Connectors</b></p>	<p><b>Plugs &amp; Jacks</b></p>	<p><b>speakON® Connectors</b></p>	<p><b>Data Connectors</b></p>	<p><b>Circular Connectors</b></p>	<p><b>powerCON® Connectors</b></p>	<p><b>Patch Panels</b></p>	<p><b>Digital Devices</b></p>
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# NEUTRIK®

The premium brand of the Neutrik Group

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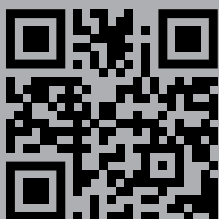
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