

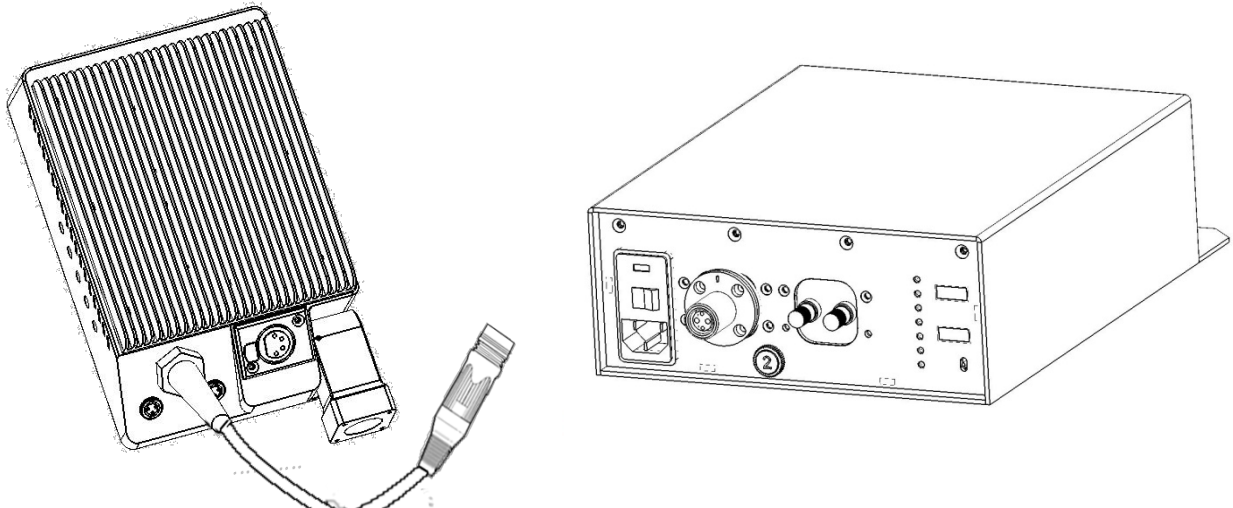


A **BELDEN** Brand

PowerPlus 3000 and HDX

**SMPTE Hybrid Power System for the
CopperHead™ Camera-Mountable Fiber Optic Link**

User Manual



***For All Copperhead 3000 Series Systems
and the JVC FS-790 System***

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About this User Guide

There are innumerable CopperHead system options and permutations, so not every page in this guide will apply to your specific system.

Throughout this guide a number of informational pointers are used to mark important or useful information.

Pointer	Meaning
	Caution: The information provided is important safety information and should be understood and followed in order to operate the CopperHead PowerPlus System safely and properly.
	Take Note: Useful information regarding the User Guide and the CopperHead PowerPlus System. Reading and understanding this information will make using the manual and the product easier.

Safety and Fiber Optic Systems

Optical Fiber Safety



Never look directly into the end of the optic fiber while either end of the system is operating. Eye damage can result.

Always use cable connector caps when the cables are not connected. This protects the connector from damage and the unlikely event of exposure to an operating optical link. Keeping the caps in place when the connectors are not in use will prevent dirt and dust from entering the connector and degrading the performance of the optical link.

Power Fuses.



The HDX is equipped with two fuses located next to the AC Power receptacle on the front of the unit. Refer to section **Error! Reference source not found.** for specific fuse and location information.

NEVER operate the HDX without properly installed and rated fuses. Severe electrical and heat damage could result as well as personal injury or death.

Important Information

Warranty

LIMITED WARRANTY STATEMENT

Telecast Fiber Systems, Inc. (“Telecast”) expressly warrants to Buyer that the Products supplied shall be free from defects in materials and workmanship for a period of 12 months following the date the Products are delivered to Buyer (the “Warranty Period”). Telecast's liability under this limited warranty shall be limited, at its option, to providing refund of purchase price for Products, or replacing or repairing Products shown to be defective either in materials or workmanship. Buyer's sole and exclusive remedy for breach of warranty shall be such refund, replacement or repair.

A claim of defect in materials or workmanship in any Product shall be allowed only when it is submitted in writing to Telecast Fiber Systems, Inc. within seven days after discovery of the defect, and in any event within the Warranty Period. No claim shall be allowed in respect of any Product which has been altered, neglected, damaged or stored in any manner which adversely affects it. In order to obtain service under the terms of this warranty, Distributor's customer or Distributor must notify Telecast of the defect prior to the expiration of the applicable warranty period and obtain a Return Authorization Number from Telecast. In no event may products be returned to Telecast or to Distributor for warranty service without having obtained from Telecast a Return Authorization Number.

This limited warranty applies only to new and unused Products delivered to Buyers located within the United States of America, or to international Buyers if sold through an authorized Distributor organization, and shall not extend to any equipment not manufactured by Telecast Fiber Systems, Inc., even though such equipment may be sold or operated with the Products. In addition, this limited warranty shall be void and of no further force or effect whatsoever if the Product is repaired or modified by any person other than an authorized representative of Telecast Fiber Systems, Inc. without the consent of Telecast Fiber Systems, Inc. This warranty shall not apply to any defect, failure or damage caused by improper use or inadequate maintenance and care. Nor shall this warranty apply to any damage caused in whole or in part by attempts by personnel other than Telecast's personnel, as approved in advance in accordance with the foregoing provisions, to open, install, repair, or service the Product; nor to damage resulting from improper connection with incompatible equipment; nor to damage to a unit which has been modified by personnel other than Telecast personnel.

Products returned to Telecast for warranty service shall be shipped, freight prepaid to Telecast. Telecast will return the repaired product or ship a replacement, freight prepaid, to either Distributor or Distributor's customer, as requested by Distributor's customer, at a location within the United States or, at Telecast's option, to Distributor's location in the case of international sales. This limited warranty shall also apply to Products that replace defective Products and Products that have been repaired by authorized representatives of Telecast Fiber Systems, Inc., but only for the original Warranty Period. The Warranty Period shall not be extended by reason of defect, or any period of time during which the Product is not available to Buyer because of defects or repairs, without the express written consent of Telecast Fiber Systems, Inc.

EXCEPT FOR THE EXPRESS LIMITED WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP CONTAINED HEREIN, TELECAST FIBER SYSTEMS, INC. MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, AND ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND OTHER WARRANTIES OF WHATEVER KIND ARE HEREBY DISCLAIMED BY TELECAST FIBER SYSTEMS, INC. THIS LIMITED WARRANTY SETS FORTH EXCLUSIVELY ALL OF TELECAST FIBER SYSTEMS, INC.'S LIABILITY IN CONTRACT OR OTHERWISE IN THE EVENT OF A DEFECTIVE PRODUCT. WITHOUT LIMITATION ON THE FOREGOING, TELECAST FIBER SYSTEMS, INC. EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER FOR ANY DAMAGES INCURRED DIRECTLY OR INDIRECTLY IN CONNECTION WITH THE SALE OR USE OF, OR OTHERWISE IN CONNECTION WITH, THE PRODUCT, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS AND SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER CAUSED BY NEGLIGENCE OR OTHERWISE, REGARDLESS WHETHER TELECAST HAS BEEN GIVEN ADVANCE NOTICE OF THE POSSIBILITY THEREOF

THIS WARRANTY IS GIVEN BY TELECAST IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED.

1. PowerPlus 3000 System

1.1 PowerPlus Overview

The PowerPlus 3000 system is used with Telecast Fiber Systems' CopperHead links, delivering electrical current to a video camera equipped with a CopperHead Camera Unit by adding power to a SMPTE Hybrid cable. The system consists of a camera-mountable PowerPlus adaptor at the camera, and the HDX Power Supply, located some distance away (up to 2 KM), and connected by SMPTE Hybrid cable.

All of the signals on the two strands of fiber connecting the CopperHead Camera Unit and the CopperHead Base Station are passed transparently through the PowerPlus and the HDX Power Supply.

The standard PowerPlus provides up to 100 watts of power to the camera and accessories. The High Profile PowerPlus can provide up to 150 watts.

The PowerPlus delivers a nominal 14 Volts to the camera through the battery plate, as well as to a 4-pin XLR connector for powering additional accessories.

For applications where 24 volt power is required at the camera, the "12/24" power option provides this voltage to two three-pin Lemo connectors on the PowerPlus adaptor.

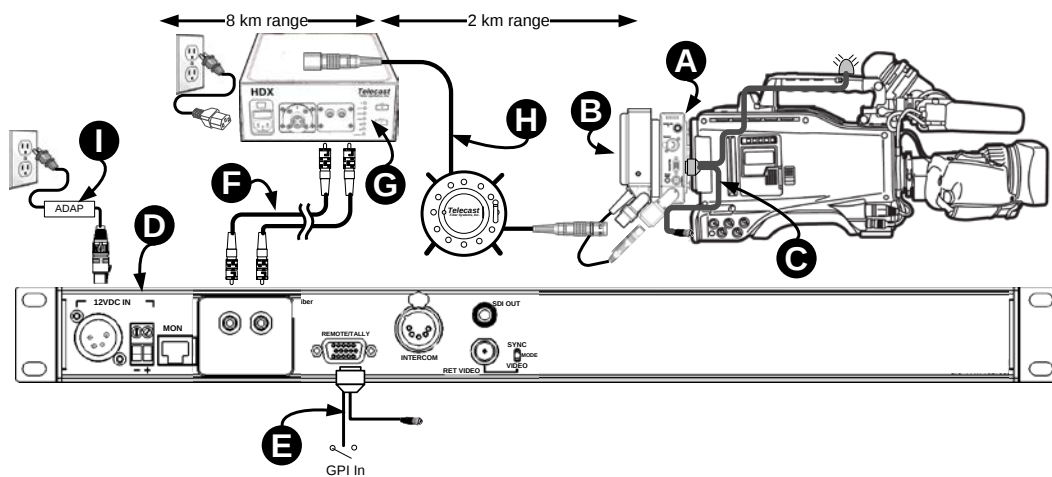


Figure 1 - CopperHead System Using PowerPlus and HDX

The first part of the fiber run can be made via "dry" tactical or infrastructure fiber, after which the HDX power supply is placed in line to provide powered SMPTE hybrid fiber cable for the camera.

Such a system is typically configured as shown in Figure 1 and includes the following components:

- | | |
|-------------------------------------|--|
| A. Camera Unit | F. Tactical fiber or Infrastructure fiber run |
| B. PowerPlus | G. HDX Power Supply |
| C. CHCR camera remote cable | H. SMPTE 311M hybrid fiber optic cable |
| D. DC-powered Base Station*. | I. ADAP 12VDC power supply |
| E. CHBR base remote cable | |

The Base Station can be separated from the HDX power supply on "dry fiber" (**F**) by more than nine kilometers (5.6 miles), where powered hybrid cable (**H**) can be run to the camera for another 2 kilometers (1.2 miles).

1.2 PowerPlus 3000 - Camera Power Adaptor

The CopperHead PowerPlus 3000 power adaptor with standard “Low Profile” heat sink (Figure 3) provides a continuous 100 watts of 12VDC power (150 watts momentary) and fiber cable signal connectivity from Base Station to the Camera. It also provides an external power feed of 12VDC and optionally 24VDC for external accessories.

The PowerPlus can be equipped with a “High Profile” heat sink (Figure 3) for power requirements up to 150 Watts.

The PowerPlus unit is equipped with a fixed tactical fiber “dongle” that can be terminated with either an OpticalCON plug, SMPTE 304M plug or an MX plug. This dongle plugs into the complimentary swivel of the CopperHead Camera Unit.

The PowerPlus is connected to the HDX power supply using Hybrid fiber cable with SMPTE 304 connectors. See Section 2 for details on connecting the PowerPlus.

The distance between the HDX power adaptor and the camera can be up to 2KM (1.2 miles) using Hybrid fiber cable and the distance between the HDX power adaptor and Base Station can be up to 8KM (4.3 miles).

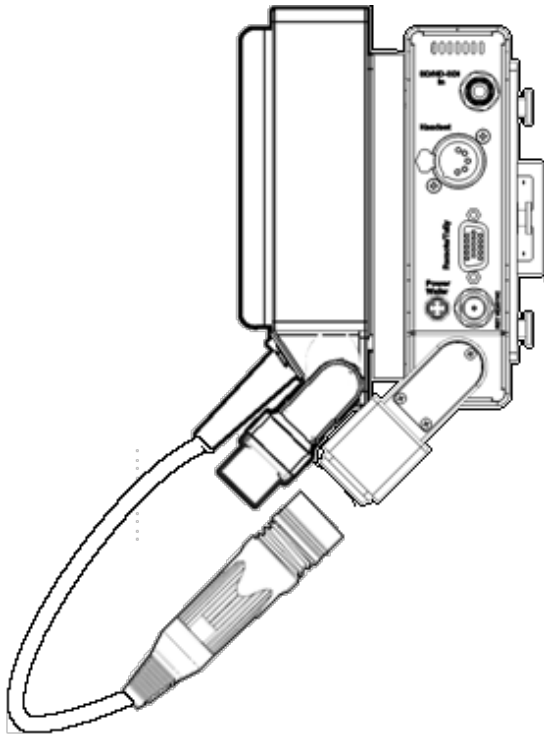


Figure 2 - PowerPlus 3000 with Low Profile Heat Sink mounted to CopperHead Camera Unit

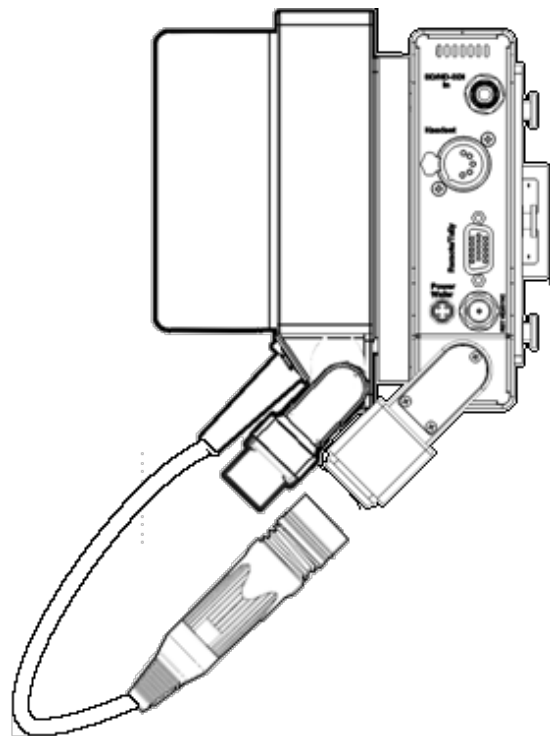


Figure 3 - PowerPlus 3000 with High Profile Heat Sink mounted to CopperHead Camera Unit

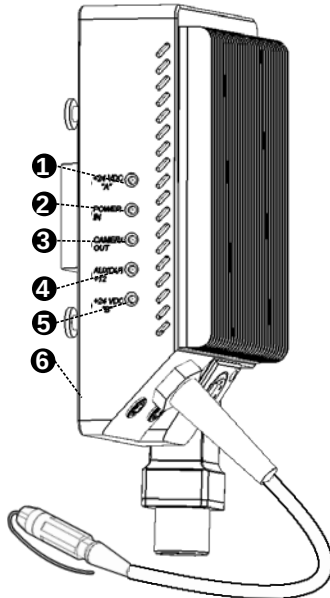


Figure 4 - PowerPlus 3000 LED Indicators

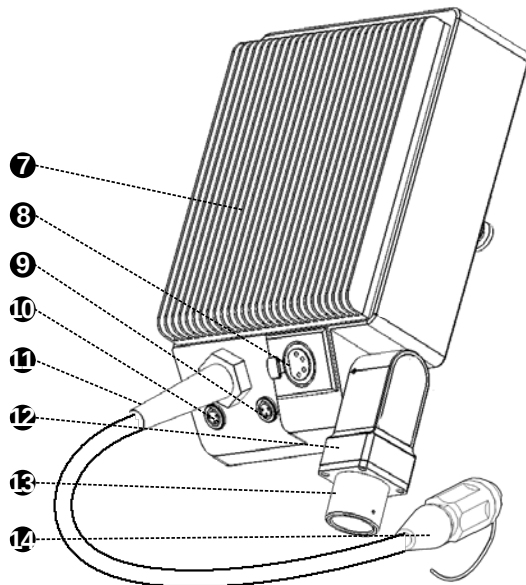


Figure 5 - PowerPlus 3000 Connectors

- 1 **24 Volt DC "A"**
 - 24VDC is available on connector 10
- 2 **Power In**

Power is being received from the HDX power supply

 - **RED** – initial safety handshaking in progress, full power not engaged.
 - **GREEN** – safety handshaking completed, full power being received from HDX power supply.
- 3 **Camera Out**
 - 12VDC is being supplied to the battery plate
- 4 **Auxiliary +12 Volt Output**
 - 12VDC is being supplied to 4-pin XLR connector 7
- 5 **24 Volt DC "B"**
 - 24VDC is available on connector 9
- 6 **Battery Plate**

Used to mount the PowerPlus to the CopperHead Camera Unit (Anton/Bauer or V-Mount)
- 7 **Heat Sink**

LP- Low Profile Heat Sink rated for 100 Watts (shown)
HP – High Profile Heat Sink rated for 150 Watts (not shown)
- 8 **12 Volt Auxiliary Output**

4-Pin XLR output connector for 12 Volt accessories
- 9 **24 Volt Auxiliary Output B**

3-pin connector for 24 Volt accessories.
- 10 **24 Volt Auxiliary Output A**

3-pin connector for 24 Volt accessories.
- 11 **Tactical Fiber Dongle**

Fixed tactical fiber cable connects to the CopperHead Camera Unit.
- 12 **SMPTE Swivel**

Adjustable swivel for Hybrid Fiber receptacle 13.
- 13 **Hybrid Fiber Receptacle (SMPTE 304M shown)**

Connect the SMPTE hybrid cable here. This cable connects to the HDX. Available with the following termination:

 - SMPTE 304M plug (shown)
 - OpticalCON Connector*
- 14 **Tactical Fiber Connector (MX shown)**

Dry fiber connector at the end of the dongle, matching the connector on the swivel of the mating CopperHead Camera Unit. Available with the following termination:

 - MX plug (shown)
 - OpticalCON Connector ("dry")
 - SMPTE 304M plug ("dry")

*At HDX power levels (>95VDC), the powered OpticalCON connector is **suitable for indoor (studio) camera links** only (See Section 4.2.3).

1.3 HDX Power Supply

The HDX Power Supply unit is required when using the PowerPlus Camera Adaptor. The HDX can be used as a free-standing unit or rack mounted, using the HDX-FR-2 for mounting one or two HDX units.

The HDX unit sends power via a SMPTE hybrid fiber cable to the PowerPlus, where it is converted to 12VDC and optionally to 24VDC). See Section 0 for details on connecting the HDX to a CopperHead system.

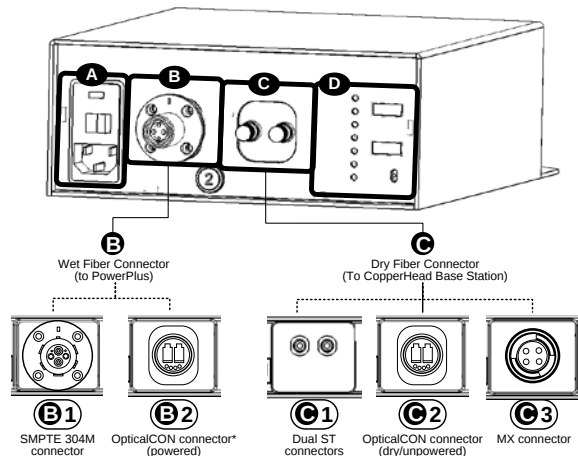


Figure 6 - HDX Front Panel

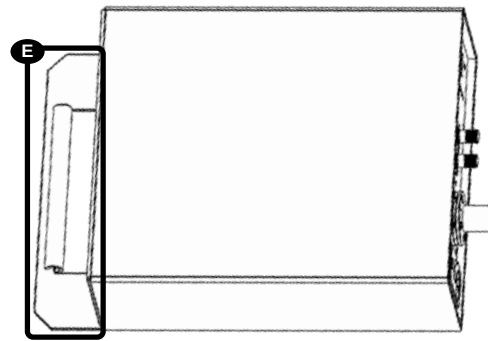


Figure 7 – Stand-alone HDX w/handle

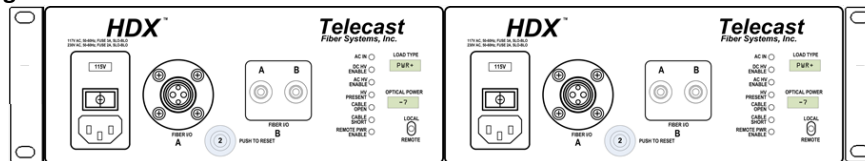


Figure 8 – HDX-FR-2 Two Unit HDX Rack Mount

The HDX has five areas of interest:

A AC Power Input Module and Switch and Fuse Holder

Power Switch and connector for AC Mains.

NOTE: Removable fuse module must be set for correct voltage (110VAC or 220VAC). See Section 1.3.2

B “Wet” Hybrid Fiber Connector

The SMPTE hybrid cable connects from here to the PowerPlus at the camera. Two options are available:

- B1 SMPTE 304M connector (standard)
- B2 OpticalCON connector (indoor use only)*

C “Dry” Fiber connector(s).

The CopperHead Base Station is connected here. This interface can be equipped with a variety of fiber connectors:

- C1 Two ST connectors
- C2 OpticalCON connector
- C3 MX connector

D Status Indicators

These indicators show the status of the HDX’s power system. See Section 1.3.1 for more details.

E HDX Integrated Handle

Stand-alone unit can be carried or hung from this robust handle.

*At HDX power levels (>95VDC), the powered OpticalCON connector is suitable for indoor (studio) camera links only (See Section 4.2.3).

1.3.1 HDX Status Indicators

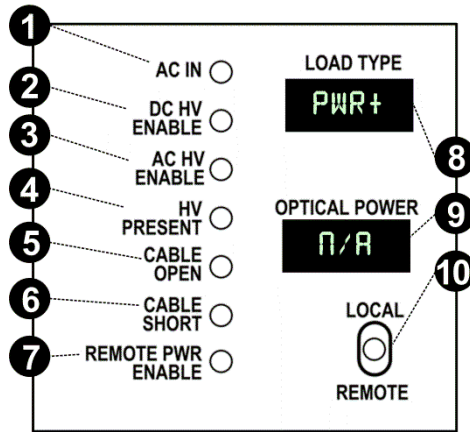


Figure 9 - HDX Displays

- 1 AC IN - MAINS**
AC Input power is present
- 2 DC HV ENABLE**
DC "Sense" voltage from PowerPlus is present
- 3 AC HV ENABLE**
AC "Sense" voltage from PowerPlus is present
(Not used with PowerPlus)
- 4 HV Present**
DC voltage is available on Hybrid connector
- 5 CABLE OPEN**
There is no electrical connection to the PowerPlus unit.
- 6 CABLE SHORT**
A short circuit is detected in the SMPTE Hybrid Cable.
High voltage is disabled until this condition is corrected
- 7 REMOTE PWR ENABLE**
Not used with PowerPlus
- 8 LOAD TYPE**
Indicates the type of load or camera being used:
N/A – No load detected
PWR+ - PowerPlus detected
Note: Upon power Up, this displays firmware version for two seconds
- 9 Optical Power**
Not used with PowerPlus.
- 10 Local Remote**
Not used with PowerPlus.

The LED Status Indicators will illuminate under "Normal" and "Error" conditions as shown:

	Normal	Not Connected	Cable Short
AC IN	●	●	●
DC HV ENABLE	●	○	●
AC HV ENABLE	○	○	●
HV PRESENT	●	○	○
CABLE OPEN	○	●	○
CABLE SHORT	○	○	●
REMOTE PWR ENABLE	○	○	○

1.3.2 HDX Fuse Holder

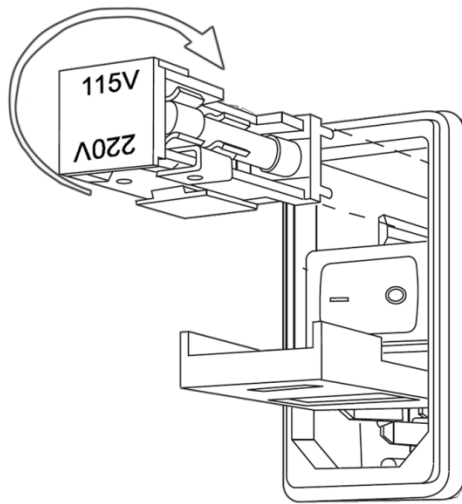


Figure 10 – HDX Fuse Holder

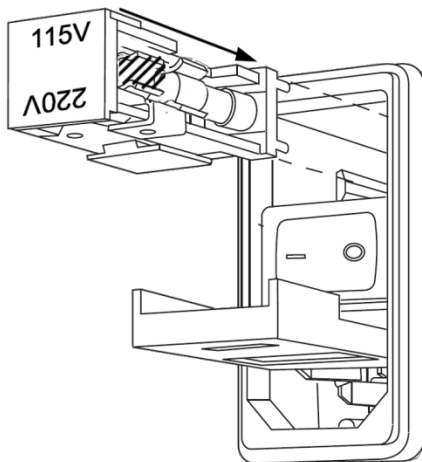


Figure 11 – Using Short Fuses

The correct fuses must be used for the appropriate AC Mains power supply:

115VAC:	Fuse 3A, "Slo-Blo"
220VAC:	Fuse 2A, "Slo-Blo"

HDX Fuse Holder must be flipped if switching between 110VAC and 220VAC, as shown in Figure 10.

The fuse holder can hold two 1/4" x 1-1/4" (3AG) or shorter 5 x 20mm (metric) fuses. If using the shorter fuses, be sure the fuse is positioned "forward" towards the HDX power supply, as shown in Figure 11.

1.3.3 Installing HDX into HDX-FR2

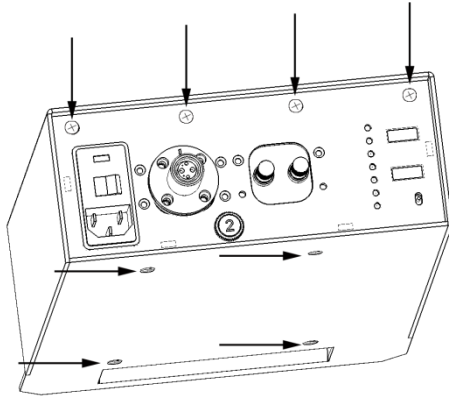


Figure 12 – HDX Screws

To install the HDX into the rack-mountable HDX-FR2 enclosure, first remove the eight screws shown in Figure 12.

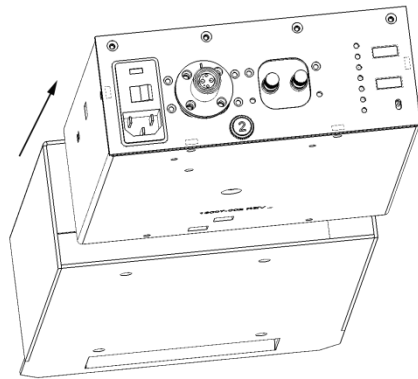


Figure 13 – Removing HDX from Individual Sheath

Slide the HDX electronic module out of the sheath as shown in Figure 13.

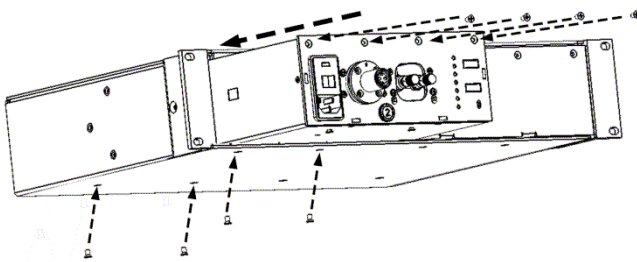


Figure 14 - Installing HDX in FR2 Frame

Slide the HDX module into the FR2 frame and reinstall the eight screws as shown in Figure 14.

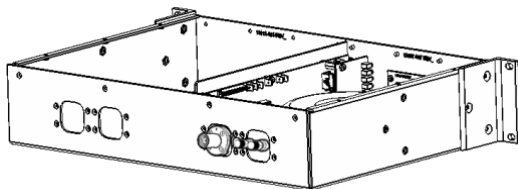


Figure 15 – Fiber Connectors on rear of HDX Frame

The fiber connectors can be relocated to the rear of the frame, as shown in Figure 15.

2. Mounting the PowerPlus

When mounting the CopperHead Camera Unit & PowerPlus, always position the camera so that the battery mounting plate at the rear of the camera is easy to access. Insure that the camera is well supported and stable. If a battery is mounted remove it and put it to one side. The camera model shown here is for illustrative purposes only – your camera may differ.

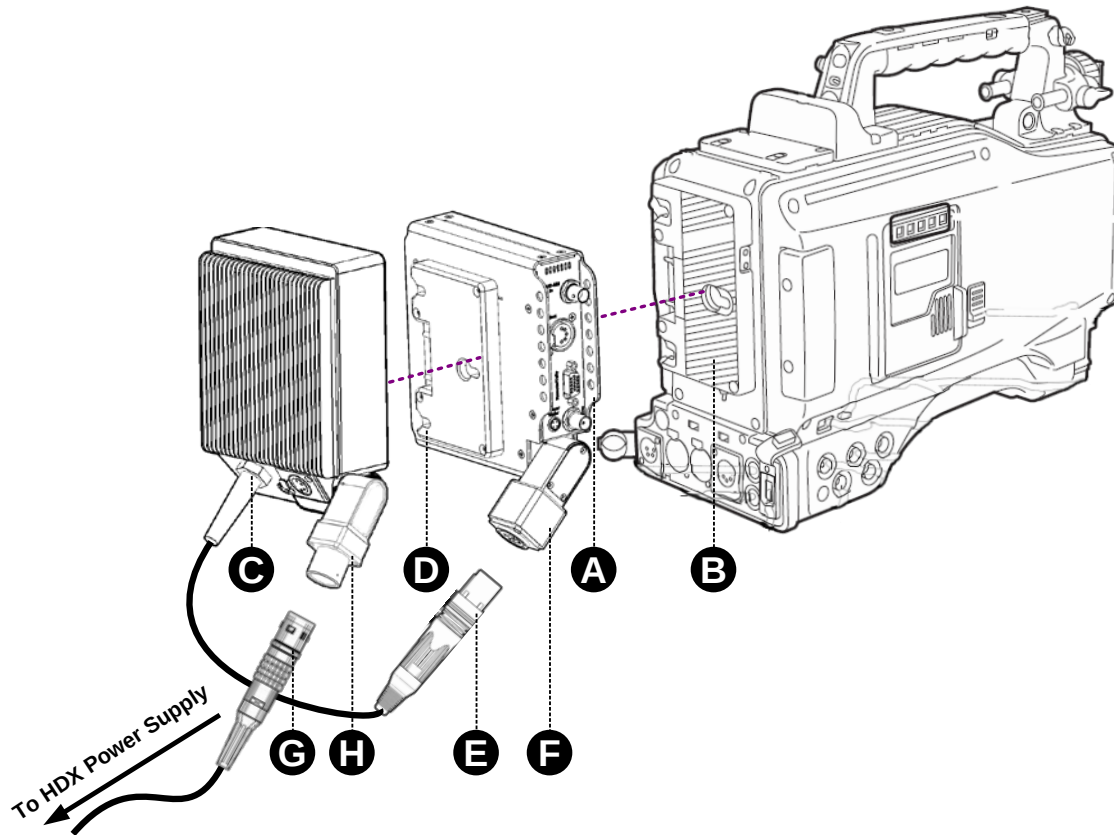


Figure 16 - Mounting the PowerPlus Unit to the Copperhead Camera Unit

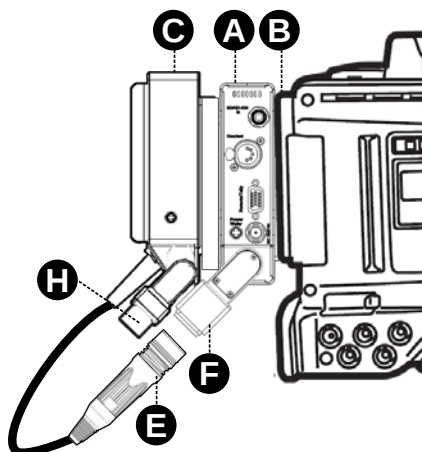


Figure 17 - PowerPlus on CopperHead

- 1) Attach the CopperHead Camera Unit **A** to the camera's battery mounting plate **B**. The mounting is mechanically identical to attaching a battery to the camera.
- 2) Mount the PowerPlus **C** to the CopperHead Camera Unit battery mounting plate **D** exactly as you would mount a battery to the camera.
- 3) Connect the PowerPlus "dongle" **E** to the fiber optic swivel **F** on Camera Unit **A**. Connect the SMPTE hybrid cable connector **G** from the HDX to the SMPTE receptacle **H** on the PowerPlus.

3. Connecting the SMPTE Hybrid Fiber between HDX Power Supply and Camera Unit

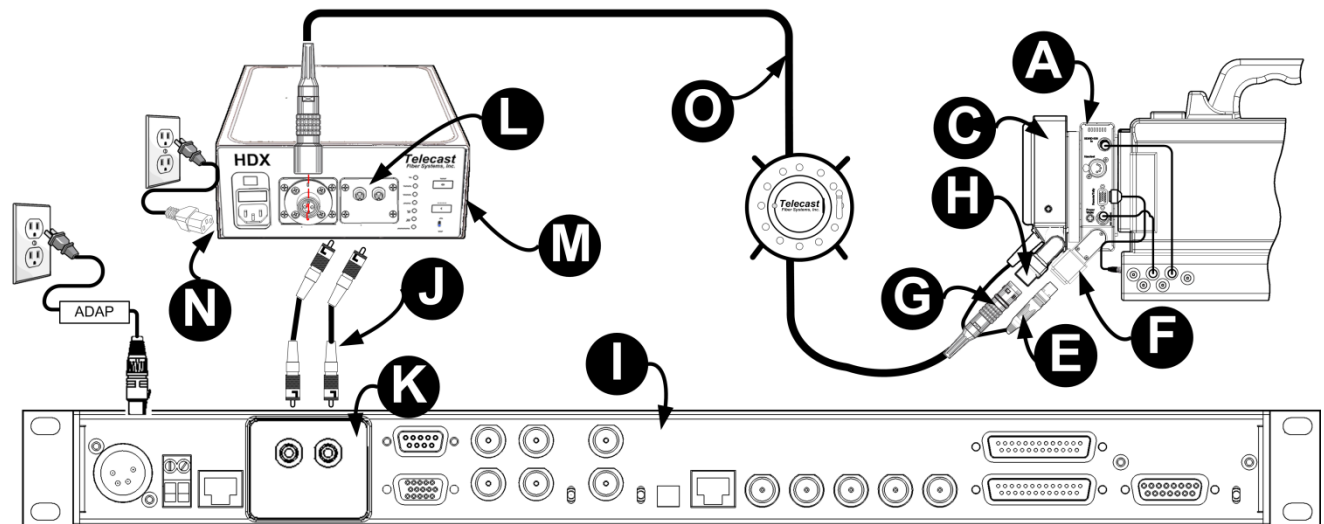


Figure 18 - SMPTE Hybrid Fiber between the HDX Power Supply and Camera Unit

Mount the PowerPlus (C) to the CopperHead Camera Unit (A) as shown in Section 2, being sure to plug the PowerPlus' tactical fiber "dongle" (E) into the swivel-mounted fiber connector (F) on Camera Unit (A).

Connect dry (unpowered) fiber cable (J) between the fiber connector(s) (K) on Base Station (I) and the "dry" fiber connector(s) (L) on the HDX Power Supply (M). Connect the HDX Power Supply (M) to AC Mains (N). Connect a length of hybrid fiber cable (O) between the HDX Power Supply (M) and the swivel-mounted hybrid fiber connector (H) on the PowerPlus (C). The hybrid fiber cable can be equipped with either SMPTE 304M (G) or OpticalCON* connectors. The camera and CopperHead Camera Unit will be powered via the hybrid cable (O) by the PowerPlus (C).

Note: *At HDX power levels (>95VDC), the powered OpticalCON connector is suitable for indoor (studio) camera links only (See Section 4.2.3).

4. Appendices

4.1 Electrical Connectors

4.1.1 PowerPlus Connectors

4.1.1.1 PowerPlus 12VDC Output Connector

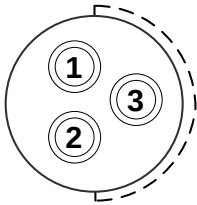


**PowerPlus #8
XLR 4-pin Female
(Ext View)**

Pin	Signal
1	GND
2	Unused
3	Unused
4	+ Power 12 VDC

PowerPlus 12VDC Connector pinout

4.1.1.2 PowerPlus 24VDC Output Connectors (optional)



**PowerPlus # 9 & #10
Fischer 3-pin Female
(Ext View)**

Pin	Signal
1	GND
2	+24VDC
3	Not Used

PowerPlus 24VDC Connector pinout

Mating connectors: Fischer S-102-A-052-130 (straight)
Fischer WSO-102-A0520130 (right angle)

4.1.1.3 24VDC Connectors – compatible plugs

1. CONNECTOR



Straight: S-102-A-052-130

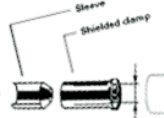
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Rt Angle: WSO-102 A052-130

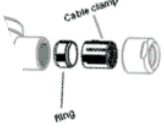
JH 11/3/11

2. CABLE CLAMP



Shielded cable clamps with sleeve

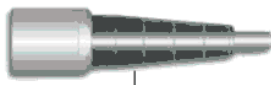
Cable Dia. Range	Collet Diameter	Cable Clamp Set ①
1.5 - 2.1	2.1	E32 102.1/2.1 + A
2.1 - 2.6	2.6	E32 102.1/2.6 + A
2.6 - 3.1	3.1	E32 102.1/3.1 + A
3.1 - 3.6	3.6	E32 102.1/3.6 + A
3.6 - 4.1	4.1	E32 102.1/4.1 + A
4.1 - 4.3	4.3	E32 102.1/4.3 + A
4.3 - 4.7	4.7	102.248 + A



102

Cable Dia. Range	Clamp Diameter	Cable Clamp Set ①	Unsealed	Sealed
1.5 - 2.1	2.1	E3 102.12/2.1	E3 102.13/2.1	
2.1 - 2.6	2.6	E3 102.12/2.6	E3 102.13/2.6	
2.6 - 3.1	3.1	E3 102.12/3.1	E3 102.13/3.1	
3.1 - 3.6	3.6	E3 102.12/3.6	E3 102.13/3.6	
3.6 - 4.1	4.1	E3 102.12/4.1	E3 102.13/4.1	
4.1 - 4.3	4.3	E3 102.12/4.3	E3 102.13/4.3	
4.3 - 4.7	4.7	E3 102.12/4.7		

3. BEND RELIEF BOOT (optional)



Part Number for cable diameter		Bend Relief Color
1.5 - 3.4	3.5 - 4.5	
E4 102.190.2	E4 102.192.2	black



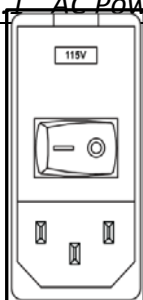
Optional 24VDC output on two 3-pin Fischer receptacle



24VDC option uses
 3-pin Fischer receptacle (x2):
 D-102-A-052-130 – PEEK
 Pinout:
 1: GND
 2: +24VDC

4.1.2 HDX Power Supply Connector

4.1.2.1 AC Power Input Connector



**AC Power Interface
IEC C14 receptacle**

Panel Mounted AC Power Receptacle: 110/220 VAC

Fuses:

The removable fuse holder can hold two 1/4" x 1-1/4" (3AG) or shorter 5 x 20mm (metric) fuses.

120 VAC: Two 3 amp slo-blo fuses

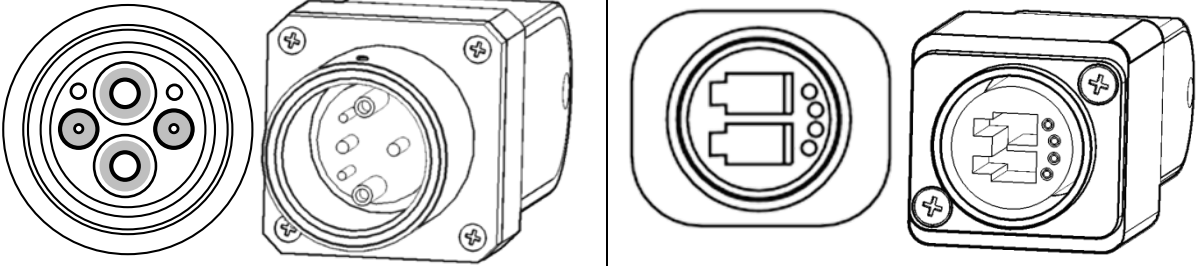
220 VAC: Two 2 amp slo-blo fuses

NOTE: Removable fuse module must be set for correct voltage (110VAC or 220VAC). See Section 1.3.2

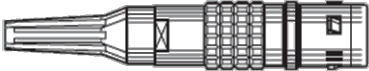
4.2 Fiber Connectors

4.2.1 PowerPlus Fiber Connectors

4.2.1.1 PowerPlus Powered Fiber Connector Options (Swivel)

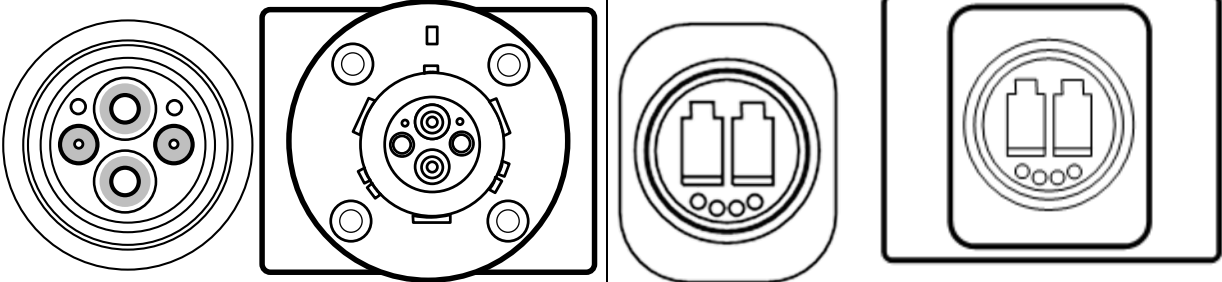
	
SMPTE 304M Receptacle	OpticalCON Receptacle Indoor only: Pollution Degree 1 (See Section 4.2.3)

4.2.1.2 PowerPlus Unpowered Fiber Connector Options (Dongle)

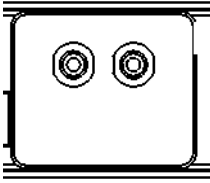
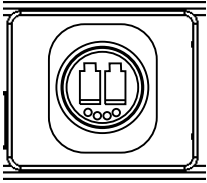
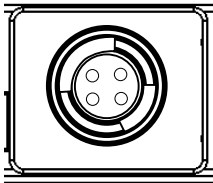
		
MX Plug	OpticalCON Plug	SMPTE 304M Plug

4.2.2 HDX Fiber Connectors

4.2.2.1 HDX Powered Fiber Connector Options

	
SMPTE 304M Panel Mounted Plug	OpticalCON Receptacle Indoor only: Pollution Degree 1 (See Section 4.2.3)

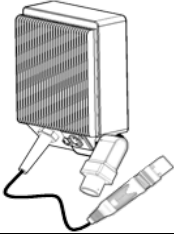
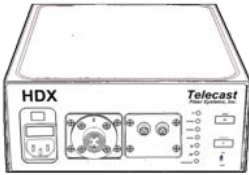
4.2.2.2 HDX Unpowered Fiber Connector

		
ST Receptacles	OpticalCON Receptacle	MX Receptacle

4.2.3 Important Note Regarding Use of Powered OpticalCON connector with PowerPlus & HDX System

At HDX power levels (>95VDC), the powered OpticalCON connector is suitable for indoor (studio) camera links only, under specific conditions according to IEC 60664-1 "Pollution Degree 1," where there is zero humidity, zero expected condensation and zero conductive pollution. The powered OpticalCON connector is NOT suitable for outdoor/field use where humidity/condensation may be present. For detailed information, ask for the Neutrik White Paper "OpticalCON Camera Applications Using Hybrid SMPTE Cables Where Voltage Exceeds 50V".

4.3 PowerPlus 3000/HDX Parts & Accessories

PWRPLS3	
Long Distance "PowerPlus" Camera Adaptor for use with HDX (specify LP or HP)	
HDX	
Power Supply for PowerPlus Power Adaptor	
HDX-FR-2	
Rack mount frame kit for one or two HDX units (HDX power supplies not included) .	

4.4 Part Numbering Matrix

Product	-	Power Output	-	Dongle	-	Battery Mount
PWRPLS3		12		MX		V
		12-HP		NEU		AB
		12-24		304		
		12-24-HP				

A. Power Output

12	=	12VDC output, 100 Watts Max, Low Profile Heat Sink
12-HP	=	12VDC output, 150 Watts Max, High Profile Heat Sink (High Power/High Profile)
12-24	=	12VDC and 24VDC output, 100 Watts Max, Low Profile Heat Sink
12-24-HP	=	12VDC and 24VDC output, 150 Watts Max, High Profile Heat Sink (High Power/High Profile)

B. Fiber Dongle

MX	=	MX Mini Expanded Beam
NEU	=	OpticalCON Duo, unpowered
304	=	SMPTE 304M male, unpowered

C. Battery Mounting Plate

V	=	V-Shoe (Sony)
AB	=	Gold Mount (Anton/Bauer)

Appendix A. HDX - Part Numbering Matrix

Product	-	Powered Connector	-	Dry Connector(s)	-	Special Options
HDX		LM		ST		RC
		FIS		LC		LD3
				MX		PAN
				NEU		HIT-RC

A. Powered Connector

LM	=	SMPTE 304M female – Lemo
FIS	=	SMPTE 304M female – Fischer

B. Dry Connector(s)

ST	=	2 STs
LC	=	2 LCs
MX	=	MX Expanded Beam (2 channels only)
NEU	=	Neutrik OpticalCON Duo (dry)
NEU4	=	Neutrik OpticalCON Quad (2 channels only)

C. Special Options

RC	=	Remote camera power shutoff control
LD3	=	Grass Valley LDK Cameras only
PAN	=	Panasonic Cameras only
HIT-RC	=	Hitachi Cameras only

5. Specifications

Electro-Optical Fiber Compatibility Powered Fiber Between HDX and PowerPlus Hybrid Fiber/Copper Cable..... SMPTE 311M cable Hybrid Optical Connector Options Standard..... SMPTE 304M Special Order OpticalCON[§] Dry Fiber PowerPlus (“Dongle” to CopperHead) SMPTE 304M, OpticalCON, or MX HDX (to CopperHead Base Station) Dual STs, OpticalCON, or MX Power <u>PowerPlus</u> Input (from HDX): 320VDC Output: Low Profile 100W continuous (150 momentary) @14 VDC High Profile.....150W continuous @14 VDC 12VDC Power Connector.....Battery Plate, 4-Pin XLR 24VDC Power Connector (optional)3-pin Fischer <u>HDX:</u> Power Req..... 110-120/220-240 VAC, 50 to 60Hz Power Consumption.....250 watts max @120VAC Safety Interlock.....32VAC Pilot, 5VDC Sense return Main Output (to PowerPlus): 320VDC	Distance Limit * see note below HDX w/PowerPlus..... 2km (6562 ft.): 100W Cont./150W Peak* Mechanical/Environmental Dimensions (HxWxD) PowerPlus LP (100W).....5" x 6" x 2.5" PowerPlus HP (150W)5" x 6" x 3.7" HDX.....3.5" x 8.25" x 10" FR-23.5" x 16.5" x 12" (2RU high, rack mountable) Weight PowerPlusLP: 2.3 lb.....HP: 2.5 lb. HDX..... 10.5 lb. Temperature Range -25° to +55°C Humidity Range 0 to 95% RH, Noncondensing
[§] At HDX power levels (>95VDC), the powered OpticalCON connector is suitable for indoor (studio) camera links only, under specific conditions according to IEC 60664-1 “Pollution Degree 1,” where there is zero humidity, zero expected condensation and zero conductive pollution. The powered OpticalCON connector is NOT suitable for outdoor/field use where humidity/condensation may be present. For detailed information ask for the Neutrik White Paper "OpticalCON Camera Applications Using Hybrid SMPTE Cables Where Voltage Exceeds 50V".	
* The maximum cable length varies due to optical loss that can depend on cable quality, dirt/dust/contamination on connectors, and the number of cable connectors. When using hybrid cable for camera power, the size and condition of the hybrid cable, as well as the power draw of the camera, lens, viewfinder, and other accessories are also factors	

Telecast Fiber Systems

A Belden Brand

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