

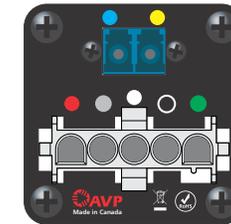
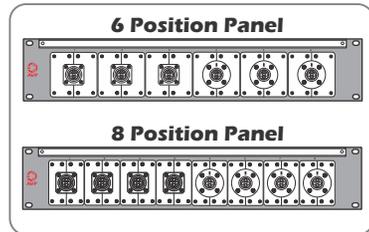
## Hybrid Electrical & Fiber-Optic Connector Break-Out Modules with LC or ST Singlemode Duplex Connector

For use in television broadcasting and video equipment such as camera head to camera control unit connections. These hybrid Break-Out modules terminate two singlemode fiber-optic contacts, two low-voltage contacts and two auxiliary 600VAC electrical contacts.

- Conform to SMPTE 304M-2003 Standard
  - Feature Lemo® Connectors for Ultimate Reliability
  - 6 Position and 8 Position Panel Configurations Available
  - Include 60" [1.5m] Electrical Connector Mating Cable\* with extra connector & 5 pi
- \*Custom lengths available



Modular Bulkhead SMPTE 304M Series Specifications	
<b>Optical</b>	
Wavelength:	1100 nm – 1350 nm
Insertion Loss:	0.5 dB maximum
Return Loss:	Better than -45 dB
<b>Electrical</b>	
Auxiliary Elec. Contacts	
Voltage:	600VAC
Current:	10A
Low-Voltage Contacts:	
Voltage:	42VAC or 60VDC
Current:	1A
<b>Environmental</b>	
Temperature, Operating:	-20°C to +60°C
Temperature, Non-operating, storage:	-40°C to +85°C
Humidity:	<95% RH (at +40°C)
RoHS:	Compliant



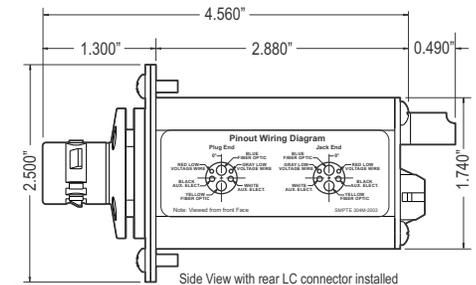
Module Rear View with LC



Module Rear View with ST

Ordering Information, 6 & 8 Position Panel Modules		
Model	AVP P/N	Description
SMPTE 304M-2003 Hybrid Electrical & Fiber-Optic Connector Break-Out Module, includes 60" [1.5m] Connector Mating Cable; for <b>6 Position</b> panel		
<b>MB6FM-LP-LC</b>	<b>906985</b>	Module, Lemo plug SMPTE 304M Camera Connector to dual singlemode LC Fiber-Optic* & 5 pin electrical contact break-out, (round flange)
<b>MB6FM-LS-LC</b>	<b>906984</b>	Module, Lemo socket SMPTE 304M Camera Connector to dual singlemode LC Fiber-Optic* & 5 pin electrical contact break-out, (square flange)
SMPTE 304M-2003 Hybrid Electrical & Fiber-Optic Connector Break-Out Module, includes 60" [1.5m] Connector Mating Cable; for <b>8 Position</b> panel		
<b>MB8FM-LP-LC</b>	<b>906980</b>	Module, Lemo plug SMPTE 304M Camera Connector to dual singlemode LC Fiber-Optic* & 5 pin electrical contact break-out, (round flange)
<b>MB8FM-LS-LC</b>	<b>906979</b>	Module, Lemo socket SMPTE 304M Camera Connector to dual singlemode LC Fiber-Optic* & 5 pin electrical contact break-out, (square flange)
<b>AT-MBFM-MCK</b>	<b>907070</b>	Mating Connector Kit, includes electrical mating connector (TE 350809-1) 600VAC 19A and 5 (TE 640347-1) socket crimps, 18-24AWG
<b>AT-MBFM-HCT1</b>	<b>907073</b>	Heavy Duty Hand Crimp Tool (TE 91510-1) for use with <b>AT-MBFM-MCK</b> Mating Connector Kit
<b>AT-MBFM-HCT2</b>	<b>907083</b>	Standard Hand Crimp Tool (TE 90548-1) for use with <b>AT-MBFM-MCK</b> Mating Connector Kit
<b>AT-MBFM-EXT</b>	<b>908916</b>	Tyco Extraction Tool (TE 1804030-1) remove pin & socket contacts from Universal MATE-N-LOK

\*Also available terminated to SC, ST and FC fiber-optic receptacles. Replace -LC in Model Name with -SC, -ST or -FC.

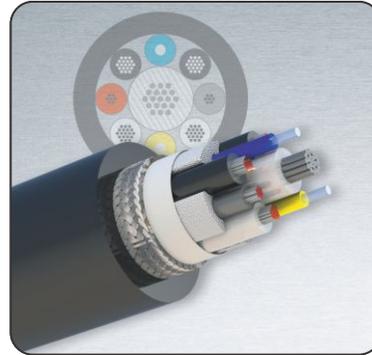


## LEMO™ Northwire™ hybrid camera cable according to SMPTE 311 standards

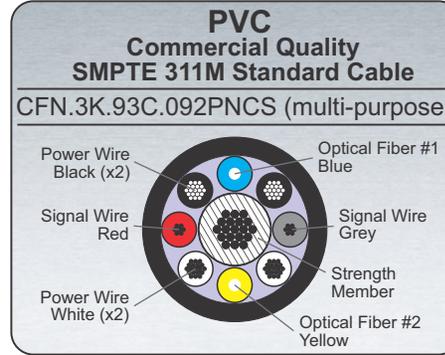
These composite cables combine power conductors for TV camera, control wires, and optical fibres for video and audio transmission in a single cable. Specially designed to cope with the heavy demands of outside broadcast. The cable fully meets the requirements of the SMPTE 311M standard for camera cables.

### Primary features and benefits of this cable are:

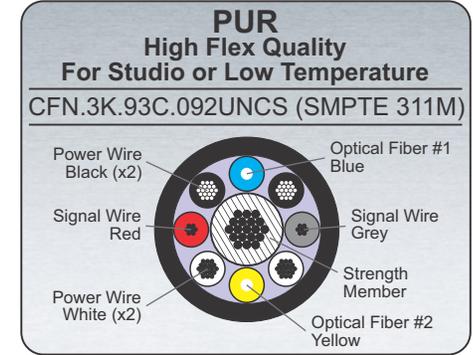
- High durability construction
- Excellent flexing and twist capability coping with rough handling by rigging crews
- Superior load bearing capabilities – can be driven over by trucks whilst in operation



### Cable Type: 1L



### Cable Type: 2L



Core Type	Power (Aux)	Control (Signal)	Optic Fibre	Strength Member
Number of cores	4	2	2	1
Conductor sizes - AWG	20	24	-	-
Conductor construction - Number/mm	19/0.185	7/0.193	-	19/0.330
Mode field diameter - µm	-	-	8.9 ± 0.8 at 1310	-
Cladding diameter - µm	-	-	125 ± 1 µm	-
Approx. diameter of conductor - mm	0.88	0.58	-	1.75
Nominal insulation thickness - mm	0.41	0.30	-	0.38
Approx. core diameter - mm	1.72	1.22	0.9	2.51
Approx. thickness of tin-coated annealed copper braid - mm	0.127			
Nominal thickness of jacket - mm	1.14			
Approx. overall diameter - mm	9.2			
Approx. net weight - g/m7	137			
Max. conductor resistance - (20°C) Ω/km	43	184 (SMPTE)	-	-
AC withstanding voltage - Vrms at 60 Hz, 1 min	1750	1750 (SMPTE)	-	-
Min. insulation resistance - (20°) MΩkm	10'000	10'000	-	-
UL Listing	AWM STYLE 21971			
Allowable tension	700N			
Temperature range (PUR version)	-40°C / +80°C			

Item	Wavelength	Characteristics	Conversion Condition (km)	Conversion Formula
Optical Fibre	λ = 1.31 µm	Less than .8 dB/km	up to ≥ 0.4	0.5xLdB≥
Transmission Loss	λ = 1.31 µm	Less than .8 dB/km	L < 0.4	0.5x0.4dB≥

DISCLAIMER The information contained within this brochure and the functions offered are intended to provide information about products. All reasonable efforts have been made to ensure the accuracy of the information. However, AVP cannot be held responsible for any errors. AVP does not warrant the accuracy and reserves the right to make changes to the catalog and its functions at any time without notice.

## SMPTE 311M Fiber Camera Cable

This composite cable integrates power line for TV camera, control line and optical fiber for video and audio transmission. The cable is standardized by SMPTE as a cable for TV camera



### Quality Built

- Test results supplied with each cable
- Epoxy and Polish Lemo F2 fiber contacts
- Connectors include bend relief & blanking cap (where applicable)



### Highest Performance with LEMO F2 Fiber Contact

The advantage of using epoxy and polish contacts is the reliability of the termination and longevity of the connector to assure a quality signal transmission. These contacts are very robust and can withstand wide outdoor temperature variations.

### Model Number

ASF - - - - -

#### Cable End A

<b>FUW</b>	FUW.3K.93C.TLKC96
<b>PUW</b>	PUW.3K.93C.TLKC96
<b>FMW</b>	FMW.3K.93C.TLKC96Z
<b>PBW</b>	PBW.3K.93C.TLKC96Z

#### Cable End B

<b>FUW</b>	FUW.3K.93C.TLKC96
<b>PUW</b>	PUW.3K.93C.TLKC96
<b>FMW</b>	FMW.3K.93C.TLKC96Z
<b>PBW</b>	PBW.3K.93C.TLKC96Z

#### Cable Length

<b>xxxM</b>	Length in Metres
<b>xxxF</b>	Length in Feet

#### Cable Type

<b>1L</b>	LEMO CFN.3K.93C.092PNCS, <i>PVC Jacket</i>
<b>2L</b>	LEMO CFN.3K.93C.092UNCS, <i>Polyurethane Jacket</i>
<b>BP</b>	Belden 7804P, <i>Flamarrest Jacket</i>



**FUW**  
Straight Cable Plug / Male



**FMW**  
Panel-mount Plug, round flange / Male



**PUW**  
Straight Cable Jack / Female



**PBW**  
Panel-mount Receptacle, square flange / Female

\*For requirements not shown, contact AVP