

LEMO HD Broadcast connection solutions



LEMO - The Global standard in HD fibre optic interconnection systems

The LEMO 3K.93C system has proven itself in many different HD applications with over 100,000 of these connectors in use from studio and stadium installations to regular OB van use.

The LEMO system has been used at all summer and winter Olympic events since Atlanta in 1996, including the 2008 Beijing Olympics and will be extensively deployed for London 2012. Examples of installations include Madison Square Gardens, the Royal Opera House, Danish Radio, the Dubai Racecourse, the Marinsky Theatre, Premier League grounds and most recently the main studio block in Manchester Media City.

The use of fibre optics means that transmission can be made over much longer distances using digital signals from the camera to the base station and at a much higher rate. A report for SMPTE demonstrated capacity of up to 40Gb/s and therefore great potential for use for new demands such as for 3D.

However, the performance of the interconnection is critical if this benefit is to be fully exploited. Features and benefits of the LEMO system are as follows:

- Meets SMPTE 304, ARIB and EBU standards
- Push-Pull self-latching system for quick and easy mating
- Stainless steel body & sealed to IP68 to cope with OB environments and handling
- Compact design with 2 fibres, 2 UL approved power contacts and 2 control contacts
- Very low optical losses (≈ 0.1 dB) with constant repeatability at every connection
- Easy cleaning of fibre optic contacts
- Use of plug and socket connectors for easy chaining of cables
- 20,000 mating cycles endurance

Connectors

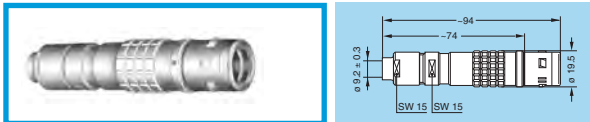
The LEMO 3K.93C HDTV Camera connectors use the F2 type Fibre Optic contact, employing ceramic technology in order to achieve optical performance of the highest standard, enabling as many as 10 or more connections within the same system, unlike expanded beam connectors. Simple and fast polishing ensures physical contact of the fibre endfaces, and the same contact is used in all of the connector models.

An alignment device is simply clipped onto the front of the Fibre Optic contact to convert it to female version and this alignment device can be easily removed in order to clean the fibre endface. A pre-terminated contact is also available for field repairs where necessary.

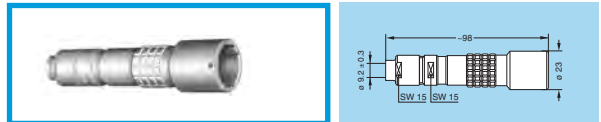


Please note that termination of HD fibre hybrid connectors requires specialist training and equipment.

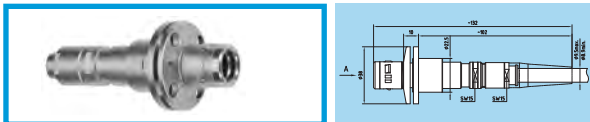
FUW.3K.93C.TLMC96



PUW.3K.93C.TLCC96



FMW.3K.93C.TLMC96Z



PEW.3K.93C.TLCC96Z



FXW.3K.93C.TLM



EDW.3K.93C.TLC



EBW.3K.93C.TLC



PBW.3K.93C.TLCC96Z



LEMO F2 fibre optic contacts

The standard F2 fibre contact is the highest performing solution on the market with excellent thermal stability and very low signal loss. A pre-terminated version of this contact is also available enabling simple and rapid on-site repair terminations without the need for special epoxy and polish processes in the field.

Part Number	
FFS.F2.BA2.LCE30	Male Contact
PSS.F2.BA2.LCE30	Female Contact*
PSS.F2.290.NZZ	Alignment device

*Female contact is male + alignment device

FFS.F2 Standard F2 male fibre optic contact



PSS.F2 Standard F2 female fibre optic contact



PSS.F2 Alignment device for F2 contact



Accessories

Cable strain reliefs and overboots

Cable strain reliefs, overboots and specially designed gaiters provide the maximum protection for the connection, particularly in outside broadcast applications. Coloured rings are available for the overboots for ease of identification, and a range of colours of strain reliefs can be beneficial where there are many connectors in one location.

Boots Part Number	For connector model
GMF.3K.085.EANZ	FUW
GMP.3K.085.EANZ	PUW
Rings Part Number	For connector model
GMF.3K.265.RG	grey
GMF.3K.265.RN	black
GMF.3K.265.RR	red
GMF.3K.265.RV	green

GMF Bend relief with cap



GMP Bend relief with cap



GMF Coloured ring for bend relief with cap



Strain reliefs for FMW, PBW and PEW models

Part number for black sleeve to suit standard ARIB/SMPTE 9.2mm diameter cable is GMA.3B.090.DN. Other diameters available on request.

Change the last letter of the part number "N" for different colour as per table opposite.

Part Number	Colour
A	blue
B	white
G	grey
J	yellow
M	brown
N	black
R	red
S	orange
V	green



Gaiters

Gaiters provide additional protection from rough handling and in outdoor applications.

Part Number	Colour
UKP.07.0487.05	Male, Green – suggested for use with FUW plugs
UKP.07.0487.04	Female red – suggested for use with PUW sockets
UKP.07.0487.01	Male, Black
UKP.07.0487.02	Female, Black
UKP.07.0487.07	Male, yellow – option for use with FUW plugs



Cable puller for factory made cable assemblies

Part Number	Description
DCS.3K.175.72.LN	3K.93C cable puller



Pre-terminated contact for field repair

Part Number	Description
FFT.F2.BA2.LCE10	Male pre-terminated contact
PST.F2.BA2.LCE10	Female pre-terminated contact

Preterminated contact



Through-panel coupler

Easy to install coupler is compact and can be mounted in a 1U or 2U panel.

Part Number	Description
UKE.0538.FMW.PH.WZ	Panel plug to socket
UKE.0538.PBW.FG.WZ	Panel socket to plug



Caps

Blanking caps for plugs and sockets

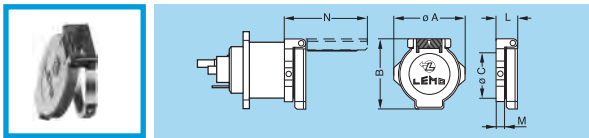
EPDM blanking caps for panel plugs and sockets help protect fibre and electrical contacts from dust and water ingress.

Part Number	For connector model
BHA.3K.100.EAN	FMW, FXW
BRA.3K.200.EAN	EDW, PEW, PBW
BFG.3K.100.EAN	FUW
BRF.3K.200.EAN	PUW

Material: black EPDM



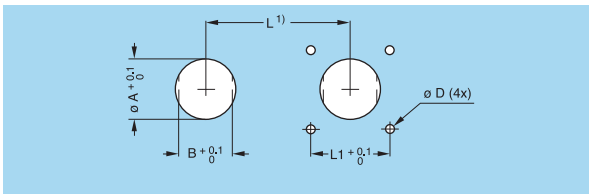
BBR Spring loaded dust cap for EDW, PBW and EBW



Part Number	Dimensions (mm)					
	A	B	C	L	M	N
BRR.3K.200.PZSG	29	29	23	8.1	3	33.2

Note: On request, this cap is available in black.
If so replace the last letter G of the part number by N

Panel cut-outs



Models	Dimensions (mm)				
	A	B	D	L	L ¹
FMW, FXW	23.2	-	3.2 or M3	39	20.6
EBW	23.2	-	3.2 or M3	30	23.0
EDW	23.2	-	3.2 or M3	30	23.0
ENW, PEW	24.2	22.6	-	32	-
PBW	23.2	-	3.2 or M3	30	23.0

Note 1) Minimum distance between adjacent connectors

Hybrid fibre cable

Furukawa 2SM-9.2-37.5 Rugged HDTV camera cable

Whilst there are a number of cables available on the market, the one cable that has proven extremely successful in Japan and Europe is the Furukawa 2SM-9.2-37.5 ARIB specification HD fibre hybrid cable. The only significant difference between the ARIB and SMPTE specifications is the colour of one of the control cores.

Cables in broadcast need to be able to withstand considerable flexing and twisting, which is a challenge for fragile fibre optic cables. In response to such a requirement, Furukawa developed, after extensive research and testing, an HDTV camera cable featuring:

- Rugged, high durability construction
- Ultra-high abrasion resistance
- Excellent flexing and twist capabilities
- Superior load bearing and tensile
- Strength capability
- Commercial grade to SMPTE standard also available



LEMO UK Part Number	Description	
UKT.0000543	High quality "J" grade to Japanese ARIB standard	2SM-9.2-37.5
UKT.0000762	High quality "J" grade studio floor cable to Japanese ARIB standard	2SM-16-37.5
UKT.0000790	Commercial quality "A" grade to SMPTE standard	TV-OM-AMS
UKT.0000992	Low smoke zero Halogen grade for HD installations	TV-OM-LSZH

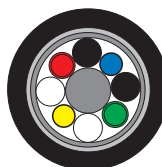
Core col.	Description
Yellow	Optical fibre
Blue	
Red	Control line
Green	
Black	Power line
White	



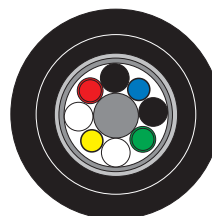
Low smoke zero halogen HDTV cable



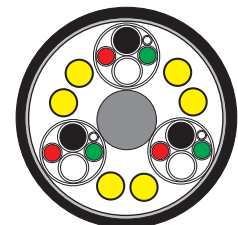
Riser grade HDTV cable



Multipurpose HDTV cable



Large sheath diameter cable for studio floor use



Riser grade multicore HDTV cable

Hybrid fibre cable assemblies

The termination of any cable to any connector is the most vulnerable part of the system and the best connectors and cables are of little use if incorrectly joined. The fibre within the connector must have room to flex when the sprung-loaded contacts mate together, and yet the fibre must avoid severe microbending. The clamping of the cable must ensure that any movement within the cable (which is worse with lower quality cables) does not result in pulling or twisting of fibre within connector. The central strength member must be properly clamped so that there is no damage when cables are reeled out, and there needs to be proper waterblocking of the back end of the connector.

LEMO has invested in the equipment and skills to ensure that assembly termination is of the highest standard leading to long life in the field. All assemblies are 100% tested prior to shipment

As well as manufacturing to custom designs, a number of application specific assemblies are available.



Application specific cable assemblies

Internal OB van cables

LEMO UK Part Number	Description
Internal cables for OB vans	LEMO panel plug (FMW model) and inline socket (PUW model) terminated to Furukawa J grade cable with BHA/BRF blanking caps
UKF.3K.C46.000300	3 metre length
UKF.3K.C46.000500	5 metre length
UKF.3K.C46.001000	10 metre length
UKF.3K.C46.001500	15 metre length
UKF.3K.C46.002000	20 metre length

Studio and other infrastructure cables

LEMO UK Part Number	Description
Internal cables for studio and other infrastructure	LEMO panel plug (FMW model) and bulkhead socket (PEW model) terminated to Furukawa J grade cable with blanking caps
UKF.3K.C53.002000	20 metre length
UKF.3K.C53.005000	50 metre length
UKF.3K.C53.XXXXXX	XXXXXX specifies length in cm

LEMO UK Part Number	Description
Internal cables for studio and other infrastructure	LEMO panel plug (FMW model) and bulkhead socket (PEW model) terminated to Furukawa A grade cable with blanking caps
UKF.3K.C55.002000	20 metre length
UKF.3K.C55.005000	50 metre length
UKF.3K.C55.XXXXXX	XXXXXX specifies length in cm

Steadicam™ cable assemblies

LEMO UK Part Number	Description
Steadicam™ cables are available in lengths between 0.3m and 6.0m	LEMO inline plug (FGW model) and inline socket (PHW model) terminated to miniature hybrid fibre cable, with BFG/BRF
UKF.3K.B86.000200	2 metre length
UKF.3K.B86.000250	2.5 metre length

Steadicam™ is a registered trademark of Tiffen.



Free-standing cable assemblies for Outside Broadcast, venues or studios

A range of free-standing cables complete with protective overboots, caps and gaiters are available from stock or can be made to order, using either the Japanese grade or commercial grade Furukawa cables, or other cable of your choice.

Cables are supplied on wooden drums (except short lengths which are coiled) unless otherwise requested—skeleton style and other drums available.

ARIB 'J' grade cables

LEMO UK Part Number	Description
Free standing cables for outside use – Japanese ARIB 'J' grade	LEMO inline plug (FUW model) and inline socket (PUW model) terminated to Furukawa J grade cable with GMF/GMP overboots, caps and protective gaiters
UKF.3K.B20.002500	25 metre length
UKF.3K.B20.005000	50 metre length
UKF.3K.B20.010000	100 metre length
UKF.3K.B20.020000	200 metre length
UKF.3K.B20.030000	300 metre length
UKF.3K.B20.040000	400 metre length
UKF.3K.B20.050000	500 metre length

SMPTE 'A' grade cables

LEMO UK Part Number	Description
Free standing cables for outside use – commercial SMPTE 'A' grade	LEMO inline plug (FUW model) and inline socket (PUW model) terminated to Furukawa A grade cable with GMF/GMP overboots, caps and protective gaiters
UKF.3K.B57.002500	25 metre length
UKF.3K.B57.005000	50 metre length
UKF.3K.B57.010000	100 metre length
UKF.3K.B57.020000	200 metre length
UKF.3K.B57.030000	300 metre length
UKF.3K.B57.040000	400 metre length
UKF.3K.B57.050000	500 metre length

Other lengths available on request

Studio floor cables

LEMO UK Part Number	Description
16mm Studio Floor cables	LEMO inline plug (FUW model) and inline socket (PUW) terminated to Furukawa J-Grade 16mm studio floor cable with GMF/GMP overboots and caps
UKF.3K.B55.000500	5 metre length
UKF.3K.B55.001000	10 metre length
UKF.3K.B55.001500	15 metre length
UKF.3K.B55.002500	25 metre length
UKF.3K.B55.003000	30 metre length
UKF.3K.B55.005000	50 metre length
UKF.3K.B55.010000	100 metre length

Maintenance of HD fibre links for long life

Care guide lines

It is essential for the ferrule end faces of any fibre optic contact to be clean and free from any kind of debris so as to ensure the correct performance and operation of the contact, and regular inspection of the contact in-situ is strongly recommended using a commercially available viewer.

If an unexpectedly high insertion loss is encountered in general use which results in the system not operating, then all fibre optic contact end faces should be cleaned – see LEMO cleaning leaflet for details.

Inspection

Fibre optic video inspector

A portable fibre optic viewer consisting of handset probe, LCD display, ferrule tips for LEMO and other contacts, USB capture device and software and AC power supply all in a rugged case.



LEMO fibre optic cleaning guide video download:



Part Number	Description
UKT.0000659	Complete video inspector kit
UKT.0000665	Handset probe only
UKT.0000671	Handset probe with USB link & software
UKT.0000669	Adaptor for LEMO F2 female contact
UKT.0000670	Adaptor for LEMO F2 male contact

USB version, and Handset version (for external monitor) also available.

Alignment device extraction tool

An extraction tool is necessary for removal of the fibre contact alignment sleeves on female contacts. This tool is double ended so that you retain both alignment sleeves of one connector avoiding losing them whilst inspecting or cleaning.



Part Number	Description
DCS.F2.035.PN	Alignment device extraction tool

Cleaning of fibre contacts

Contacts should only be cleaned if necessary, and the most effective method is by use of cotton buds and Isopropyl Alcohol, which is readily available and low cost. However, cleaning kits and mechanical cleaners are available for use on site.

IPA cleaning kit F2 contact

Fibre optic cleaning kit of 2 cotton buds, 1 dry and 1 being soaked in IPA (Isopropyl Alcohol) used for cleaning any fibre optic contacts.



One click cleaner

An alternative recommended portable cleaner with cleaning tape mechanism.



Ferrulemate disposable cleaner

A handy portable cleaner—one click passes a cleaning tape over the face of the contact and twists at the same time for reliable dirt removal.



Part Number	Description
WST.KI.125.34	IPA cleaning kit
UKT.0000812	Ferrulemate cleaner
UKE.0015.FCT.F2.01	One click cleaner

Smart electrical & optical tester for SMPTE HD fibre cables

This cable tester provides a quick and easy means of checking the functionality of HD hybrid fibre cables and cable systems. A laser source checks the fibres giving an indication of the attenuation through the whole cable or cable system, and electrical tests check for continuity of both the power and control conductors.

Part Number	Description
UKT.0000907	HD Cable tester



Fusion splice components for installation

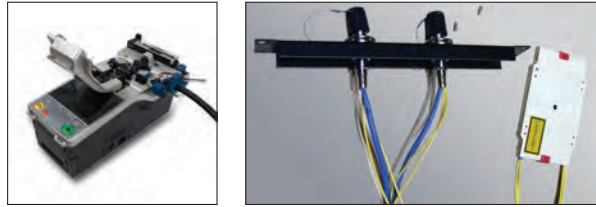
Each and every HD fibre infrastructure has different requirements and budgets, but above all requires ease of installation. For this reason LEMO UK has prepared a range of components and kits to enable customers to select those which most closely meet their needs.

Fusion splicing of fibre for easy termination

The use of modern fusion splicing equipment provides a fast and reliable means of installing HD fibre links in fixed locations. There are many means of achieving a suitable termination of panel mount connectors in installations, from a simple termination to a fully replaceable junction.

Patchcord for simple termination

All that is needed for the simplest connection is a fibre optic patchcord and splice cassette.



LEMO 3K.93C panel connectors with tails

LEMO 3K.93C panel connectors either with bare tails for customer defined use or connectors for use with junction boxes described below. Use of internal connectors provides for easy replacement in case of damage.



Component Description	Part Number
FXW.3K.93C.TLM With 0.5m bare end and electrical and fibre tails	UKF.3K.B59.000050
FXW.3K.93C.TLM With 0.5m electrical and fibre tails terminated to SC's and standard 6-way electrical connector for use with boxes below	UKF.3K.B60.000050
EDW.3K.93C.TLC With 0.5m bare and electrical and fibre tails	UKF.3K.B61.000050
EDW.3K.93C.TLC With 0.5m electrical fibre tails terminated to SC's and standard 6-way electrical connector for use with boxes below	UKF.3K.B62.000050

Boxed junctions for wallbox applications

Boxed junction typically for wallbox application where space is more readily available, each box is suitable for up to 5 installed HD cables. Supplied with cable fixing points and fibre connectors with tails for splicing.

Component Description	Part Number
Box for 1 HD cable	UKE.0528.WBX.3K.01
Box for 2 HD cable	UKE.0528.WBX.3K.02
Box for 3 HD cable	UKE.0528.WBX.3K.03
Box for 5 HD cable	UKE.0528.WBX.3K.05

Integrated 3U panel with splice tray and connector junctions

An integrated panel with built in splice tray and connector junctions for use where space is limited, either at a wallbox or a patching unit. Up to 3 panels can be mounted side-by-side to fit in 3U rack dimensions.



Component Description	Part Number
Panel with FXW.3K.93C.TLM for 1 HD cable	UKE.0528.FXW.W1.01
Panel with FXW.3K.93C.TLM for 2 HD cable	UKE.0528.FXW.W1.02
Panel with EDW.3K.93C.TLM for 1 HD cable	UKE.0528.EDW.W1.01
Panel with EDW.3K.93C.TLM for 2 HD cable	UKE.0528.EDW.W1.02

2U Rack mounted splice tray with connector junctions

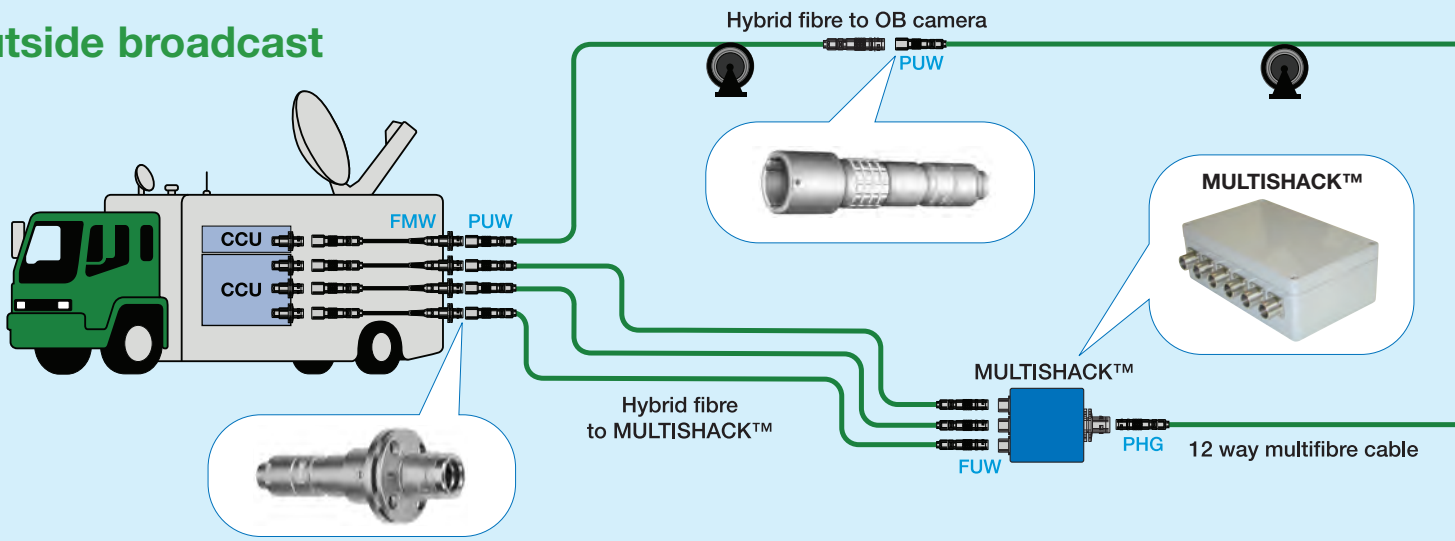
Rack mounted splice tray of 2U height with connector junctions for patch unit. Can accommodate up to 10 LEMO connectors. The modular design of the unit along with blanking plates provides opportunity for increasing numbers of channels up to 10.

Low cost rack mounted splice tray

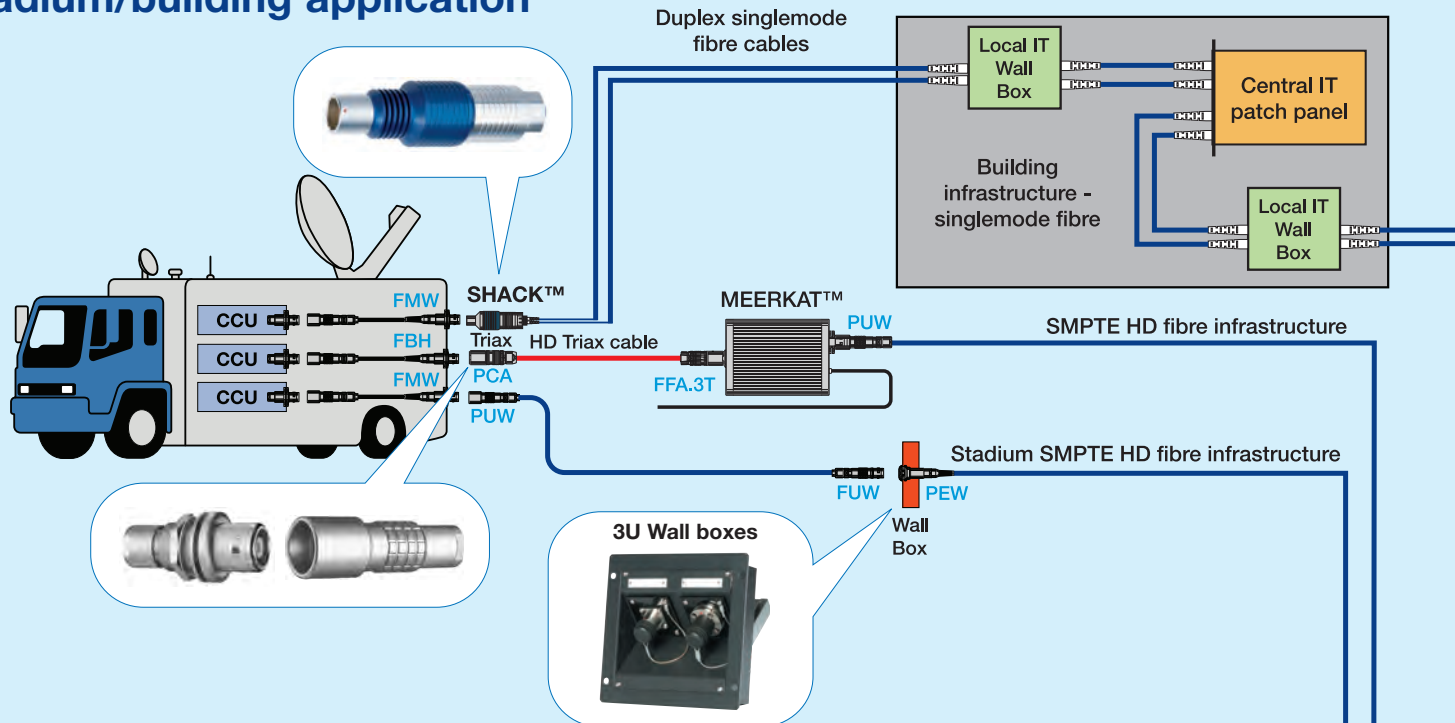


Part Number	Component Description
UKE.0528.STF.3K.** ** = number of HD channels	Complete unit with FXW.3K.39C.TLM LEMO connector – up to 10 channels
UKE.0528.STE.3K.** ** = number of HD channels	Complete unit with EDW.3K.39C.TLM LEMO connector – up to 10 channels

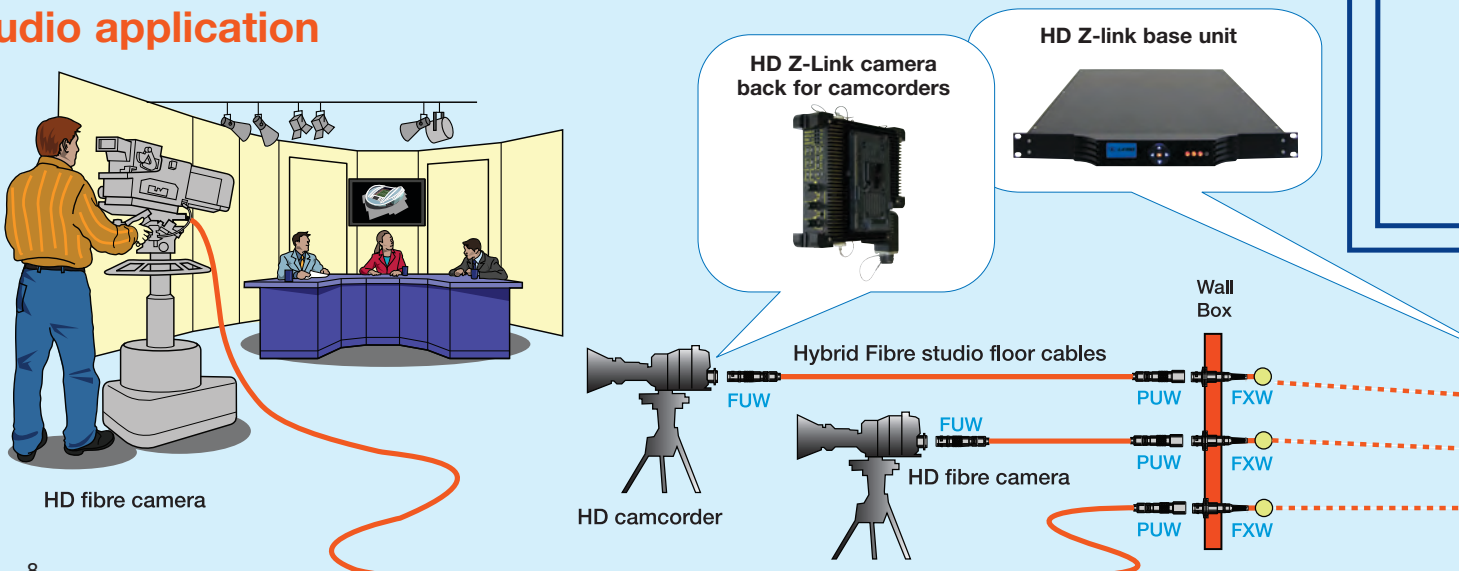
Outside broadcast

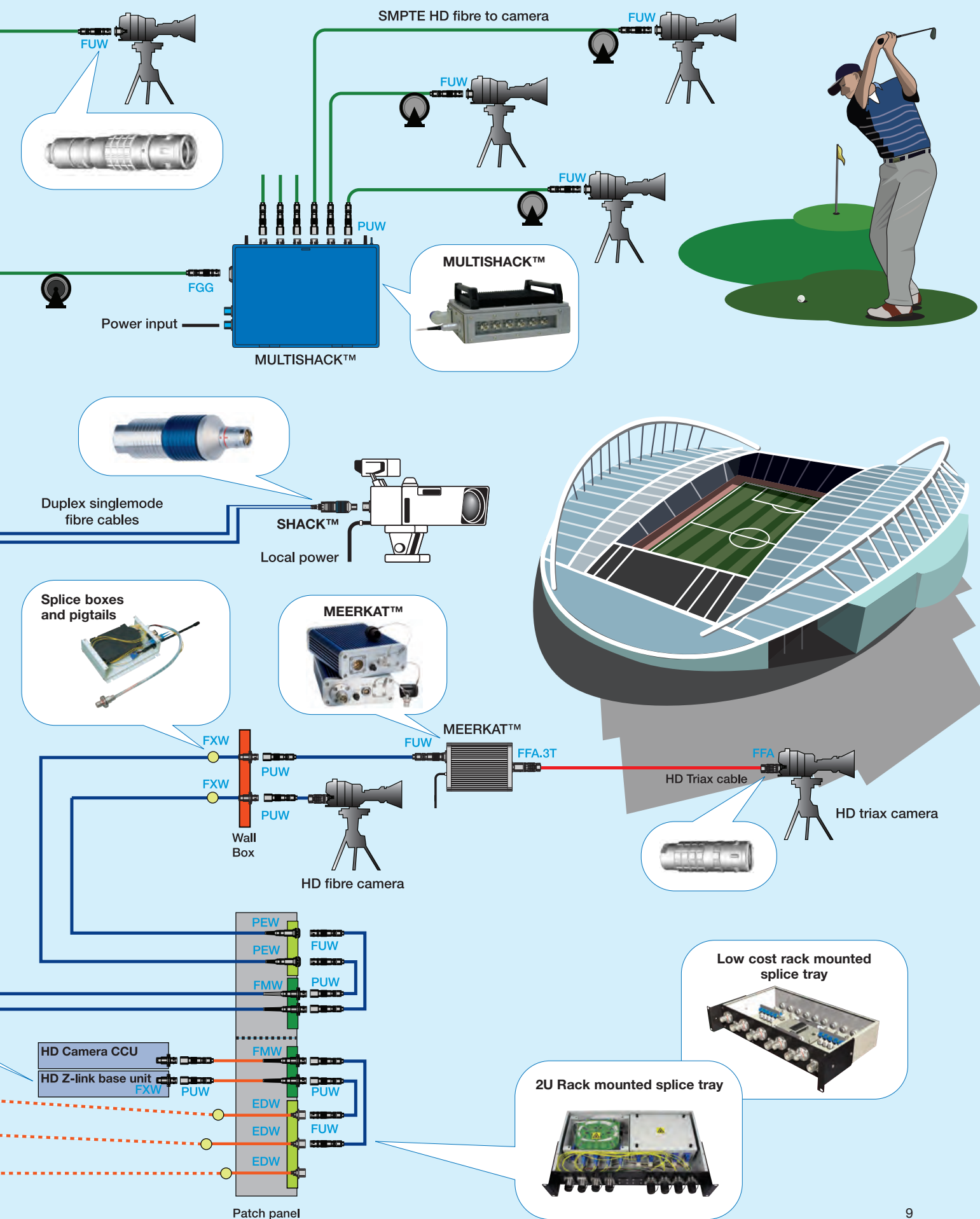


Stadium/building application



Studio application





Triax connectors for HD applications



LEMO triax connectors have been associated with highly reliable broadcast applications for many years with SD and are now proving their suitability for HD applications globally. Key features of the LEMO system have always been:

- Secure latching system which prevents the connector from falling out at critical moments
- Highly reliable precision made contact system and earthing crown for excellent EMC properties and highest electrical
- Rugged and waterproof design to cope with use in typical outside broadcast environments
- Easy to terminate and use
- Range of triax connectors to meet global standards

LEMO 4E Series

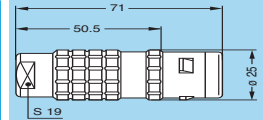
Widely used by a number of European broadcast companies as the standard high quality triax connection, particularly in Scandinavia, Netherlands, Germany and Spain.

Straight plug with cable collet

FFA.4E.675.CTAC85*
FFA.4E.675.CTAC11*



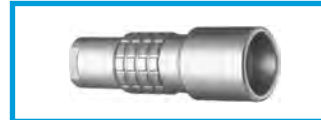
PLUG - TRIAX 8
PLUG - TRIAX 11



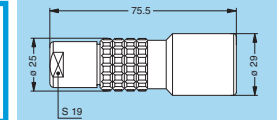
* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Straight socket with cable collet

PCA.4E.675.CTLC85*
PCA.4E.675.CTLC11*



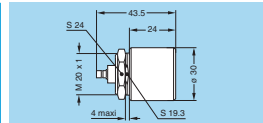
SOCKET - TRIAX 8
SOCKET - TRIAX 11



* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Panel socket with extended shell

EHN.4E.675.CTL

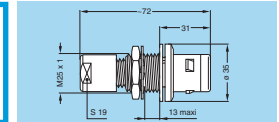


Panel plug

FBH.4E.675.CTAC85
FBH.4E.675.CTAC11



PLUG - TRIAX 8
PLUG - TRIAX 11

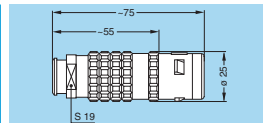


LEMO 4M Series

Adopted as the BBC standard, the 4M series is keyed for anti-rotation, and contact gender is reversed.

Straight plug with cable collet

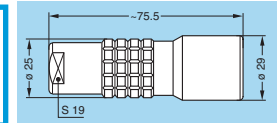
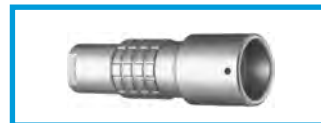
FGG.4M.650.CTLC11*



* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Straight socket with cable collet

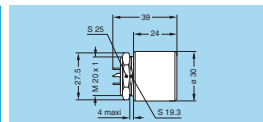
PHG.4M.650.CTAC11*



* Add "Z" to the end of the part number if a nut for fixing bend relief is required

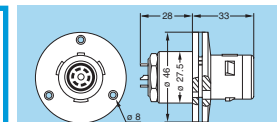
Panel socket with extended shell

EHM.4M.650.CTA



Panel plug

FBD.4M.650.CTL



Strain reliefs for 4E & 4M connectors



Part Number	Cable dia ϕ mm		Strain relief colour			
	max.	min.	*add letter to end of part number			
GMA.4B.080.D*	9.0	8.0	A	Blue	N	Black
GMA.4B.010.D*	10.9	10.0	B	White	R	Red
GMA.4B.011.D*	11.9	11.0	G	Grey	S	Orange
GMA.4B.012.D*	13.0	12.0	J	Yellow	V	Green
GMA.4B.013.D*	14.5	13.5	M	Brown		

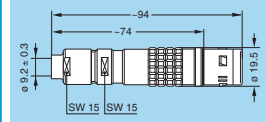
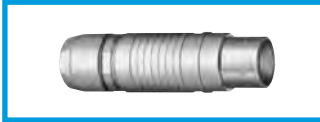
REDEL® F Series triax connectors – fully intermates to Fischer® triax

The T7 Series of connectors incorporates all the positive features of LEMO triax connectors in a connector that fully intermates with the 1051 A004 Series whilst also offering LEMO push-pull security and reliability.

Straight plug with cable collet

FAZ.T7.5FT.CC86C*
FAZ.T7.5FT.CC11C*

PLUG - TRIAX 8
PLUG - TRIAX 11

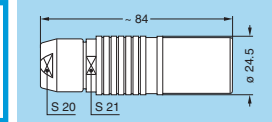
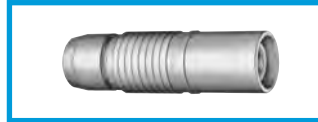


* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Straight socket with cable collet

FRZ.T7.5FT.MC86C*
FRZ.T7.5FT.MC11C*

SOCKET - TRIAX 8
SOCKET - TRIAX 11

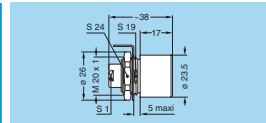


* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Fixed socket

FNZ.T7.5FT.M49C
FNZ.T7.5FT.M67C

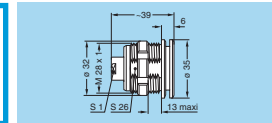
SOCKET - TRIAX 8
SOCKET - TRIAX 11



Panel plug

FEZ.T7.5FT.C49C
FEZ.T7.5FT.C67C

PLUG - TRIAX 8
PLUG - TRIAX 11



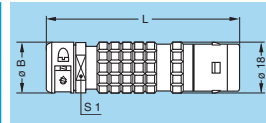
LEMO 3T Series triax connectors – fully intermates to ULC Series triax

The 3T Series of connectors are fully compatible with the ULC Series III TX75 range of triax connectors.

Straight plug with cable collet

FFA.3T.675.CTAY11S

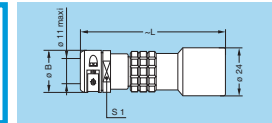
PLUG - TRIAX 11



Straight socket with cable collet

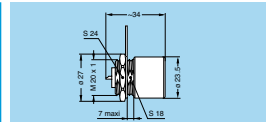
PCA.3T.675.CTLY11S

SOCKET - TRIAX 11



Fixed socket

EHP.3T.675.CTL



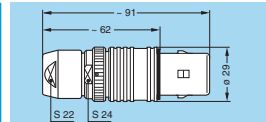
4A Series triax connectors – fully intermate to Tri-loc® series connectors

The 4A Series of connectors are fully compatible with the Kings® Tri-loc® KP80** range of triax connectors commonly employed in the North American market.

Straight plug with cable collet

FXC.4A.675.CTCC95*

PLUG - TRIAX 11

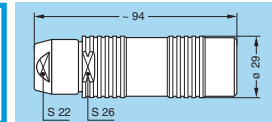


* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Free socket with cable collet

PXA.4A.675.CTRC95*

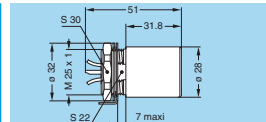
SOCKET - TRIAX 11



* Add "Z" to the end of the part number if a nut for fixing bend relief is required

Fixed socket with visible shell and tag, nut fixing

EHN.4A.675.CTL



Triax cable for HD applications



This triax cable has been specially manufactured to LEMO specifications to match the excellent transmission properties of the range of LEMO's precision triax connectors for HD applications.

Competitively priced against other HD triax cable it is ideal for both indoor and outside broadcast use, giving HD transmission distances up to 30% greater than standard triax cable.

The cable has a black outer jacket making it less likely to be seen during filming in comparison to red coloured cables, especially in studios, and is relatively light (for example only 30kg for a 200 metre length) for ease of transportation.

It is compatible for use with Fischer™ as well as LEMO triax connectors giving exceptional transmission performance in comparison to standard triax cables.

Key features of this 75Ω cable are as follows:

- **Silver coated pure solid copper central conductor for high conductivity**
- **High coverage silver coated copper braided inner shield with bare copper braided outer**
- **Black PUR outer jacket for excellent resistance to handling**
- **Low attenuation with excellent EMC screening properties**
- **11mm diameter cable as standard**



Part Number	Description
UNP.HDTRIAX75	HD triax cable

HD Triax cable assemblies

LEMO triax connectors terminated to HD 11mm triax with gaiters or overboots depending on the range. Last three numbers determine cable length in metres.

Assembly Part Number	LEMO models	Length (M)	Gaiters/overboots
UKS.3T675FFAFFA050	FFA.3T to FFA.3T	50	No overboots - no gaiters
UKS.3T675FFAFFA100	FFA.3T to FFA.3T	100	No overboots - no gaiters
UKS.4E675FFAPCA050	FFA.4E to PCA.4E	50	Yellow to red gaiters only
UKS.4E675FFAPCA100	FFA.4E to PCA.4E	100	Yellow to red gaiters only
UKS.4M650FGGPHG050	FGG.4M to PHG.4M	50	Yellow to red gaiters only
UKS.4M650FGGPHG100	FGG.4M to PHG.4M	100	Yellow to red gaiters only
UKS.T75FAZFRZ050	FAZ.T7 to FRZ.T7	50	Overboots - no gaiters
UKS.T75FAZFRZ100	FAZ.T7 to FRZ.T8	100	Overboots - no gaiters

Overboot for straight plugs



LEMO UK Part Number	Matching connector models
GMF.4A.080.145.NN	FXC.4A
GMF.4K.080.EANZ	FFA.4E
GMF.4K.080.EANZ	FGG.4M
FGA.085.145.EN	FAZ.T7

Overboot for straight sockets



LEMO UK Part Number	Matching connector models
GMP.4A.080.145.NN	PXA.4A
GMP.4K.080.EANZ	PCA.4E
GMP.4K.080.EANZ	PHG.4M
FGR.085.145.EN	FRZ.T7

NB. "Z" nut required to secure overboot
Add "Z" to end of connector part number

Gaiters

Gaiters are used on some triaxial cable assemblies to provide additional protection against damage during rigging and against water splashes when mated together.



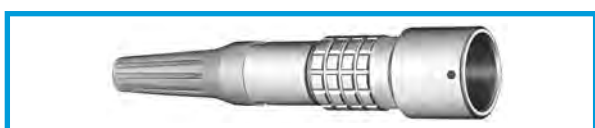
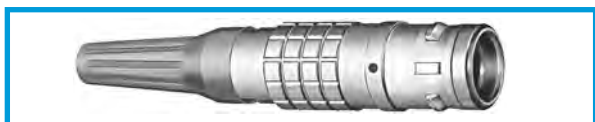
LEMO UK Part Number	Colour	Connector type
UKT.0000165	Red	Straight socket
UKT.0000166	Yellow	Straight plug
UKT.0001135	Grey	Straight plug
UKT.0001240	Black	Straight socket

NB. "Z" nut required to secure strain relief of same colour
Add "Z" to end of connector part number

LEMO K Series fibre optic and hybrid connectors for external applications

A range of inserts are available which enable the use of the LEMO F2 and F7 fibre optic contacts in multifibre and hybrid forms within the proven range of K Series connectors for demanding outdoor applications including broadcast.

The LEMO fibre contact can be used for both singlemode and multimode fibres of 125-126 microns cladding diameter.



The modular design of the LEMO range is such that many options are available, a few examples being listed below. If you have any other requirements please contact your local LEMO sales office or download our Fibre Optics catalogue from the website. The connectors shown below use the same F2 contact as in the LEMO 3K.93C SMPTE connector.



Straight plug

Component Description	Shell outer	Part Number
2-fibre connector for 5mm cable	19mm	FGG.3K.03A.CLZT56Z
4-fibre connector for 7mm cable	25mm	FGG.4K.03C.CLZT76Z
14-fibre connector for 8mm cable	38mm	FGG.5K.03N.CLZT76Z
Single fibre, 2 x 0.9mm 9Amp LV & 5mm cable	16mm	FGG.2K.92A.CLAT56Z
2-fibre, 4 x 0.9mm 8Amp LV & 8mm cable	19mm	FGG.3K.93B.CLAT81Z

In-line socket

Component Description	Shell outer	Part Number
2-fibre connector for 5mm cable	23mm	PHG.3K.03A.CLZT56Z
4-fibre connector for 7mm cable	29mm	PHG.4K.03C.CLZT76Z
14-fibre connector for 8mm cable	42mm	PHG.5K.03N.CLZT76Z
Single fibre, 2 x 0.9mm 9Amp LV & 5mm cable	19mm	PHG.2K.92A.CLLT56Z
2-fibre, 4 x 0.9mm 8Amp LV & 8mm cable	23mm	PHG.3K.93B.CLAT81Z

Panel plug

Component Description	Shell outer	Part Number
2-fibre connector	38mm	FXG.3K.03A.CLZ
4-fibre connector	47mm	FXG.4K.03C.CLZ
14-fibre connector	65mm	FXG.5K.03N.CLZ
2-fibre, 4 x 0.9mm 8Amp LV	38mm	FXG.3K.93B.CLA

Panel socket

Component Description	Shell outer	Part Number
2-fibre connector	31mm	EGG.3K.03A.CLZ
4-fibre connector	37mm	EGG.4K.03C.CLZ
14-fibre connector	55mm	EGG.5K.03N.CLZ
Single fibre, 2 x 0.9mm 9Amp LV	25mm	EGG.2K.92A.CLL
2-fibre, 4 x 0.9mm 8Amp LV	31mm	EGG.3K.93B.CLM

H Series lightweight hermaphroditic 4- fibre connectors

The unique self-latching LEMO H Series hermaphroditic connectors are made in lightweight high strength aluminium and are fully sealed for outdoor use.

The patented hermaphroditic connector avoids confusion when pulling out cables as the connection is the same at both ends of the cable.

Available as standard to take 4 fibres using the LEMO F2 contact as employed in the LEMO 3K.93C SMPTE connector.

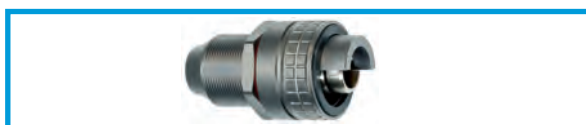
Straight plug

FHE.MH.03C.XLZT66N



Panel plug

FWE.MH.03C.XLZ



LEMO multifibre and hybrid cable

A range of Mil-tac and other fibre optic and hybrid cables is available which, when terminated to LEMO K Series connector, provide highly reliable interconnection systems.

Standard multi-fibre singlemode or hybrid cables, with aramid strength members and polyurethane outer jacket, are lightweight and extremely strong making them suitable for the most demanding outdoor applications.

The following cables with LEMO part numbers are a popular selection of tight buffered multifibre cables

purchased or specified by customers for their assemblies—other options available on request.

Multifibre cables

Cable Description	Number of fibres	Part Number
9/125 singlemode tight buffered	2	UKT.0000935
9/125 singlemode tight buffered	4	UKT.0000277
9/125 singlemode tight buffered	8	UKT.0000575
9/125 singlemode tight buffered	12	UKT.0000566

LEMO Media converters complete the interconnection solution package

Whether you are employing fibre or triax infrastructure in your camera Broadcast systems, LEMO have a solution to help maximise the use of your high value equipment.

- The new HD Z-link enables HD camcorders and other cameras to be linked to SMPTE HD fibre infrastructure
- The HD MEERKAT™ links both SD and HD triax connectors to SMPTE HD fibre
- The SHACK allows the use of duplex singlemode in buildings or over long distances as long as you have remote power available
- The MULTISHACK™-x is a 6-way version of the SHACK™ with remote power injection at the camera end
- The SERBAL™ converts 4 channels of HD/SDI to SMPTE HD Fibre

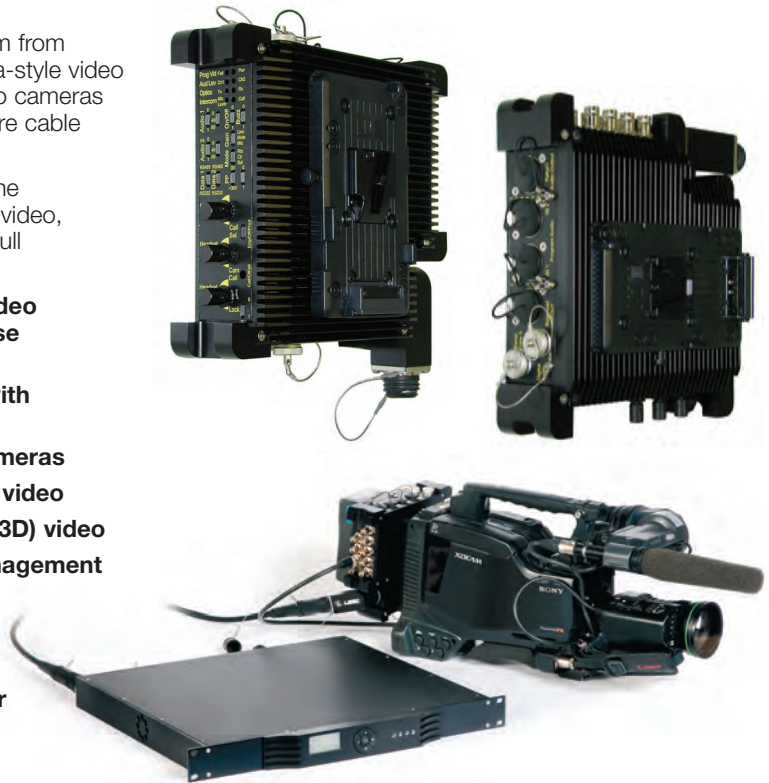


HD Z-link

The HD Z-link fibre optic camera back system from LEMO provides multi-channel system camera-style video and audio connections and control, for studio cameras and camcorders alike over a single hybrid fibre cable using LEMO 3K.93C (SMPTE) connectors.

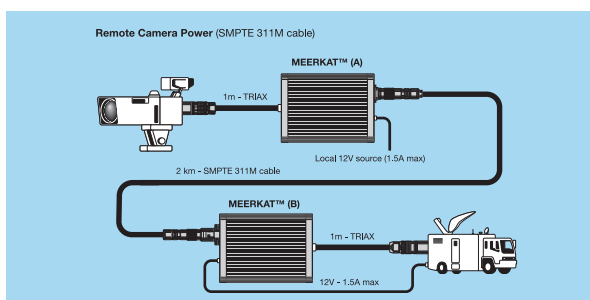
The use of high bandwidth fibre optics and the multiplexing of numerous forward and return video, audio, talkback and data channels provides full communications with any camera position.

- Enables most HD/SDi professional video cameras, including camcorders, to use SMPTE fibre infrastructure
- Entry level option can be upgraded with enhanced functionality
- Compatible with most HD and SD cameras
- 1080P 50Hz or 60Hz (3G) programme video
- Dual channel 1080i for stereoscopic (3D) video
- Automatic genlock/synchroniser management
- Allows dual-link to 3Gb/s conversion
- Full audio including 8 digital stereo channels and intercom systems
- Front panel menu-driven base unit for ease of configuration
- 100w power supply option



MEERKAT™ HD triax to fibre converter

The LEMO MEERKAT™ triax media converter system provides conversion of HD triax to the SMPTE hybrid fibre format, enabling customers to use their HD infrastructure for triax cameras. Consists of two portable units, 170 x 50 x 125mm each only. Additional remote power unit available.



SHACK™ - SMPTE to duplex fibre converter

The SHACK™ is an extremely compact (39mm dia x 136mm long) conversion system from SMPTE hybrid connectors to standard singlemode connectors— SC used as standard.

The system provides a transition from optical communication over HD hybrid fibre cables into optical communication over duplex singlemode fibre optic cables. The SHACK™ permits the camera to be locally powered while allowing the optical signals to be transmitted. It is a lightweight and very compact solution for stadiums, sports arenas and other outside broadcast applications, as well as for use in any buildings with installed singlemode fibre infrastructure.

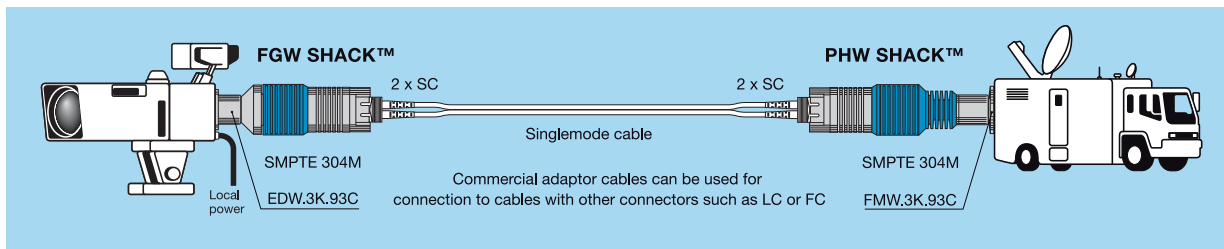


SHACK™ – camera end



SHACK™ – CCU end

Part Number	Description
FGW.3K.93C.CLMSC	SHACK plug converter – camera end
PHW.3K.93C.CLCSC	SHACK socket converter – CCU end



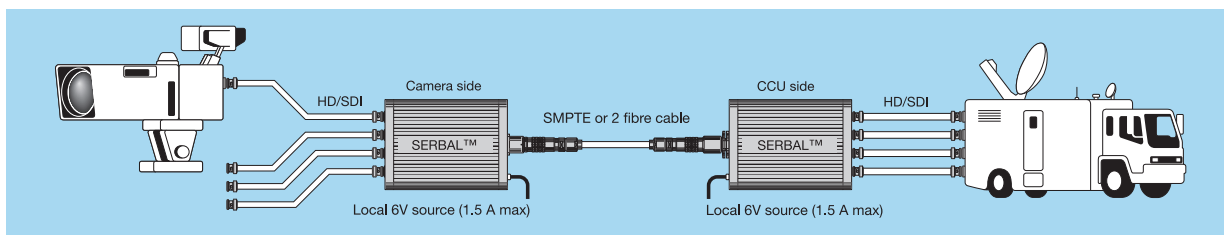
MULTISHACK™ conversion system

The MULTISHACK™ is a conversion system from multiple SMPTE connectors/cable to a single multiway fibre cable. The MULTISHACK™ enables up to 6 cameras to be connected to their CCU's via a single multi-fibre cable system for long distances, providing significant savings in both cost of cable and time for installation. The cameras can be individually powered from one remote source (i.e. a local generator) through the local SMPTE connectors and cables.



SERBAL™ HD/SDi to fibre converter

The LEMO SERBAL™ is a 4 channel multiplexer that converts HD/SDi to SMPTE hybrid fibre format, enabling the use of existing HD infrastructure for up to 4 HD/SDi cameras over a single channel. Consists of two portable units, 170 x 50 x 125mm each only.



Powerkat

The powerkat is an IN-LINE Power supply for the MEERKAT™.

The Powerkat retrieves the power directly from the CCU and allows powering both the camera and HD MEERKAT™ directly from the SMPTE cable.



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www.lemo.co.uk

Other broadcast market products.

Specialised audio connectors

LEMO connectors are widely used in audio applications due to the high reliable gold-plated contact system and rugged outer shell design.

2C series connector

e.g. FFA.2C.306.CLAC52Z



00 Series (Sennheiser™) connector

e.g. FVB.00.303.NLAE24



0B Series connector

e.g. FGG.0B.306.CLAD52Z



0B Series short connector

e.g. JGG.0B.306.CLAD52Z



B Series multipole connectors

Reliable push-pull connectors up to 64-way used in a very wide range of audio and video transmission and control applications.



M Series - alternative to MIL38999 Series III

M-SERIES is the smallest multi-pin, fully shielded, vibration-secure and sealed connector available offering a lightweight, 'one-grip' screw-lock connection with high pin-count density, 360° EMI protection, and LEMO rugged quality.



Fibre patchcords for splicing

Installation of LEMO K series multifibre panel sockets is simplified by the use of patchcords for splicing onto installed fibre or connection to internal connectors.



LEMO services

Cable assembly service

LEMO offers termination services from its fully equipped cable assembly facilities with trained technicians experienced in the termination of LEMO and other manufacturer's electrical and fibre optic connectors, providing assemblies of the highest quality and performance. Why not contact your LEMO sales office for a quotation

Maintenance training for HD fibre links

Training is available for the maintenance of HD fibre links including fault finding and cleaning of fibre contacts.

Termination training for HD fibre links

Training in the termination of LEMO's 3K.93C is offered from the company's Fibre Optics R&D facility.



Download link to the complete range of
LEMO Broadcast market datasheets and brochures