

SMPTE & ARIB HDTV CONNECTION SYSTEM CONNECTORS AND CABLES



Precision modular connectors to suit your application

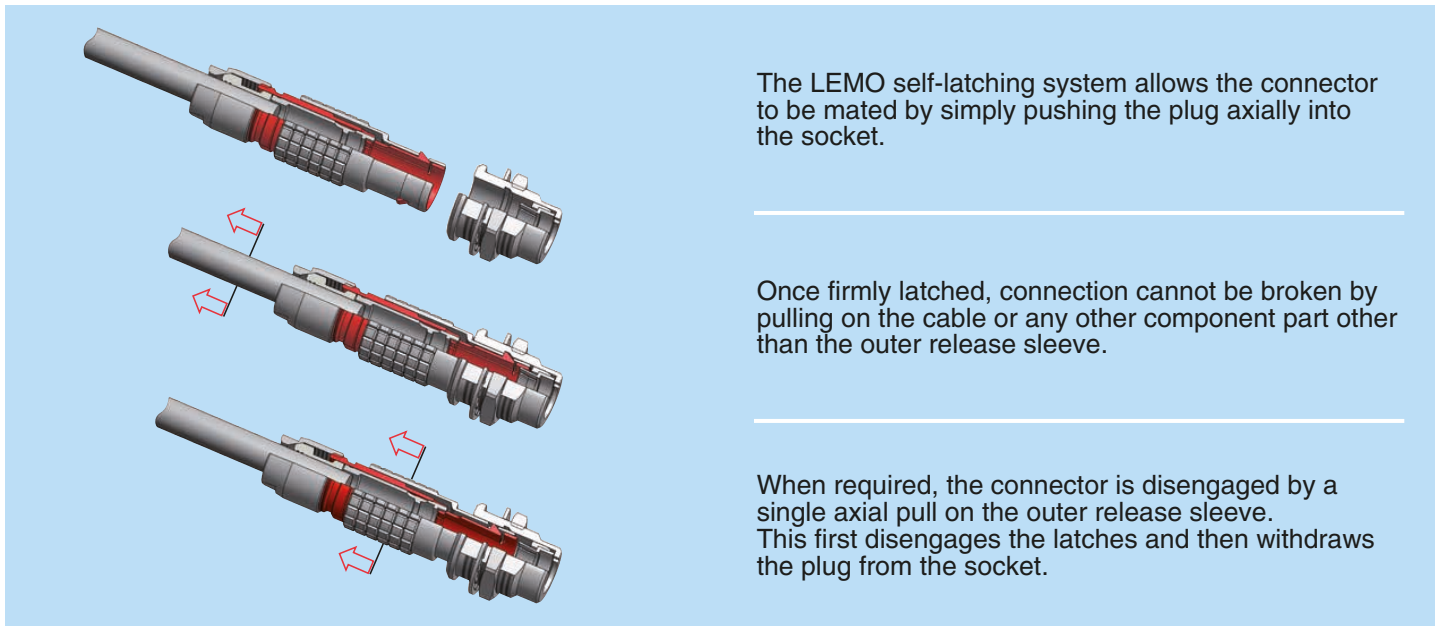
Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

Over 75000 connectors

The modular design of the LEMO range provides over 75000 connectors from miniature \varnothing 3 mm to \varnothing 50 mm, capable of handling cable diameters up to 30 mm and for up to 114 contacts. This vast portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in most markets, including medical devices, test and measurement instruments, machinery, audio video broadcast, telecommunications and military.

LEMO's Push-Pull Self-Latching Connection System

This self-latching system is renowned worldwide for its easy and quick mating and unmating features. It provides absolute security against vibration, shock or pull on the cable, and facilitates operation in a very limited space.



The LEMO self-latching system allows the connector to be mated by simply pushing the plug axially into the socket.



Once firmly latched, connection cannot be broken by pulling on the cable or any other component part other than the outer release sleeve.

When required, the connector is disengaged by a single axial pull on the outer release sleeve. This first disengages the latches and then withdraws the plug from the socket.

UL Recognition

LEMO connectors are recognized by the Underwriters Laboratories (UL). The approval of the complete system (LEMO connector, cable and your equipment) will be easier because LEMO connectors are recognized.

CE marking

CE marking  means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives. CE marking  applies to complete products or equipment, **but not to electromechanical components, such as connectors.**

RoHS

LEMO connector specifications conforms the requirements of the RoHS directive (2011/65/EU) of the European Parliament and the latest amendments. This directive specifies the restrictions of the use of hazardous substances in electrical and electronic equipment marketed in Europe.

Table of Contents

LEMO pioneered and set the standard for HDTV	4
3K.93C series	
Interconnections	5
Part section showing internal components	6
Technical characteristics	6
Part number example	7
Models	8
Insert configurations	10
Fibre optic contact	10
Accessories	11
Patch panel	13
Tooling	14
NORTHWIRE™ HDTV cables	
NORTHWIRE hybrid camera cable according to SMPTE 311 and ARIB standards	15
Hybrid HDTV fibre optic cable part number	16
Cable assembly	17
SMPTE 311M standard cable assemblies	20
ARIB cable standard cable assemblies	20

Product safety notice & disclaimers

Please read and follow all instructions specified on the last page or on our [website](#) carefully and consult all relevant national and international safety regulations for your application. Improper handling, cable assembly, or wrong use of connectors can result in hazardous situations.

LEMO products and services are provided “as is.” LEMO makes no warranties or representations with regard to LEMO product & services or use of them, express, implied or statutory, including for accuracy, completeness, or security.

In no event shall LEMO be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of LEMO’s products.

LEMO pioneered and set the standard for HDTV

The global standard for HDTV fibre connector

LEMO developed the 3K.93C Series connectors in the early stages of the introduction of HDTV, becoming the standard for high-definition TV.

It is one of the only connectors being used worldwide that complies fully with SMPTE, ARIB and EBU standards for both signal and cable. LEMO's 3K.93C connectors are the standard in national and international broadcast companies.

Fast transition to HDTV

Transition to HDTV is easier than ever with LEMO. The wide range of shell styles and termination procedures, for even non-fibre experts, makes it possible for everyone to be successful in HDTV.

The LEMO 3K.93C connector uses two single-mode fibre contacts, two high voltage contacts, and two signal contacts.

Cable drums and cable assemblies with standard lengths are available off the shelf.

Over 20'000 stainless steel shells mating cycles offered

The rugged stainless steel outer shell of the LEMO 3K.93C connectors ensures a very long product life, when properly cleaned. The fibre optic contact can will last many years.

Simple maintenance

The optical contacts are accessible for fast cleaning; an optional simple, lightweight and portable fibre inspection unit helps the user view the condition of the fibre optic contact to ensure reliable operation.

Highest performance with LEMO standard F2 fibre 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.

Extend the quality of your connection

LEMO offers quality assembly service for HDTV connection systems. The connector assembly is done in-house by qualified personnel.

F2 fibre optic contacts in various dimensions

LEMO now offers 3 choices of F2 ferrule size to fit your fibre dimensions. Fibres are manufactured to about 125 microns, but in some occasion the fibres might be larger.

LEMO's choice of inner ferrule diameter are fit for 125 µm, 125.5 µm and 126 µm fibres. Designed for use with the LEMO 3K.93C, these contacts can be used directly into any LEMO connector where the F2 contact is used.

Benefits

- Quick disconnect Push-Pull self latching system
- Over 11 shells to meet various application needs
- Stainless steel shell for rugged and harsh environment
- Optional pre-terminated F2 contacts for simple and rapid field assembly
- UL certified connectors
- ARIB (BTA S-1005B), ANSI/SMPTE (304 and 311) and EBU (R100-1999) compatible

3K.93C Series

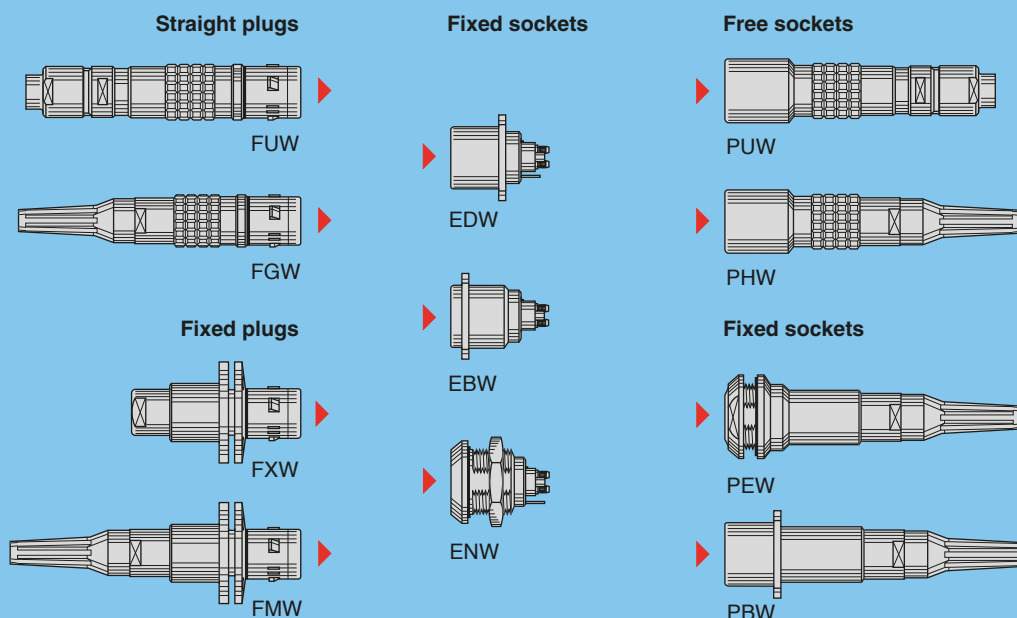
The LEMO 3K.93C connectors with keys (W) were developed to meet the critical requirements of the new generation of digital HDTV cameras.

The main features of this series are as follows:

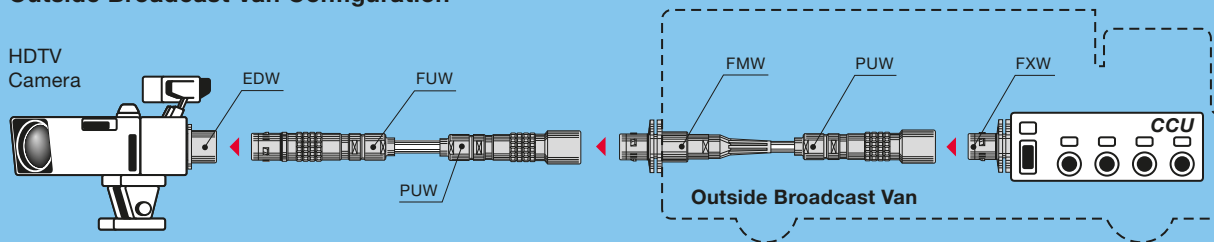
- Security of the LEMO Push-Pull self-latching system
- Fitted with the standard LEMO F2 fibre optic contacts.
- Conforms to the Japanese ARIB technical report BTA S-1005B, to the ANSI/SMPTE 304 M-1998 and 311M-1998 standards and to the European EBU Technical Recommendation R100-1999.
- Qualified for use in UL approved equipment such as those specified in UL 1419 «Professional Video and Audio Equipment».
- Cabled connectors have obtained the EC Attestation of conformity No: N8 00 03 39058 001 from the German TÜV Product Service.

The 3K.93C series consists of eleven models which will accept cables specific to this application. It includes the HEAVY DUTY line with stainless steel shells that is guaranteed to at least 20,000 mating cycles and offer more resistance to heavy wear conditions.

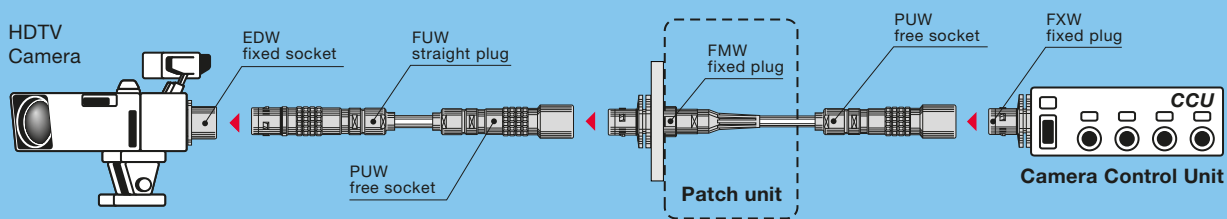
Models (page 8)



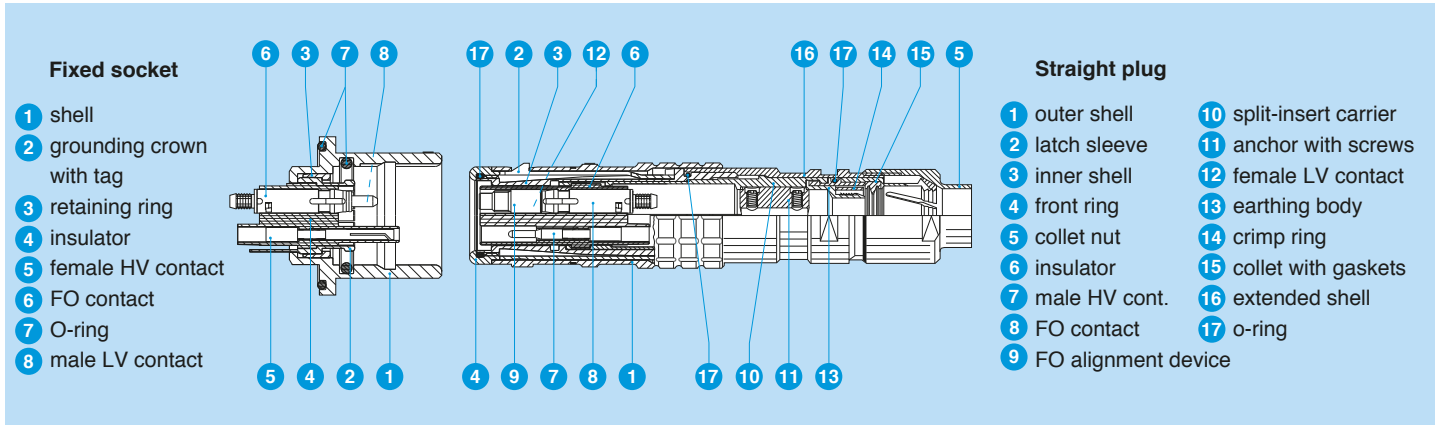
Outside Broadcast Van Configuration



Studio Configuration



Part section showing internal components



Technical characteristics

Materials and treatments

Component	Material (Standard)	Surface treatment (µm)							
		chrome			nickel		gold		
		Cu	Ni	Cr	Cu	Ni	Cu	Ni	Au
Outer shell, collet nut and oversized collet	Brass (UNS C 38500)	0.5	3	0.3					
	Stainless steel (AISI 303)	without treatment							
Grounding crown	Special brass				0.5	3			
	Stainless steel (AISI 416)	without treatment							
Latch sleeve	Special brass	0.5	3	0.3					
	Stainless steel (AISI 416)	without treatment							
Locking washer	Bronze (UNS C 52100)				0.5	3			
Hexagonal nut or round nut	Brass (UNS C 38500)				0.5	3			
Male crimp contact	Brass (UNS C 34500)						0.5	3	1.0
Female crimp contact	Bronze (UNS C 54400)						0.5	3	1.5
Clips	Cu-Be (FS-QQ-C-530)	without treatment							
Insulator	PEEK								
Crimping tube	Copper (UNS C 18700)				0.5	3			
Other metallic components	Brass (UNS C 38500)				0.5	3			
	Stainless steel (AISI 303)	without treatment							
O-ring and gaskets	Silicone MQ/MVQ, FPM/FKM (Viton®) or Nitril NBR								

Electrical

Characteristics	Value	Standard
Insulation resistance	> 10 ¹² Ω	IEC 60512-2 test 3a
Shell electrical continuity	< 1.6 mΩ	IEC 60512-2 test 2f
Contact resistance (signal)	< 4.8 mΩ	IEC 60512-2 test 2a
Contact resistance (power)	< 3.6 mΩ	IEC 60512-2 test 2a
Radiated emission	freq. 30-220 MHz	< 30 dBµV/m EN 55022 class B
	freq. 220-1000 MHz	< 37 dBµV/m EN 55022 class B

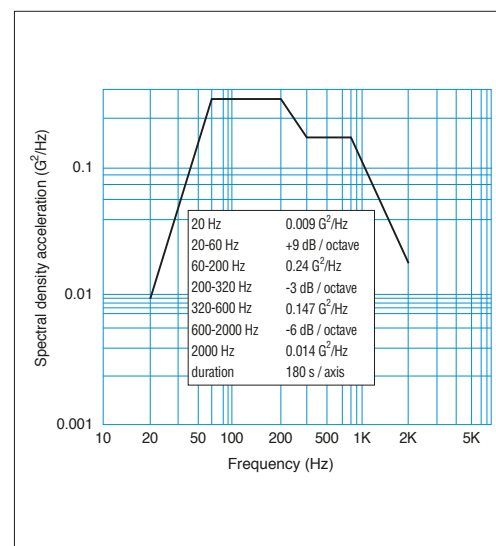
Optical

Characteristics	Value	Standard	Method
Average insertion loss fibre 9/125 µm	0.10 dB	IEC 61300-03-04	Insertion Method B
Return loss fibre 9/125 µm (UPC)	≥ 45 dB	IEC 61300-03-06	Branching Device Met.
Return loss fibre 9/125 µm (Hand polish)	~30 dB	IEC 61300-03-06	Branching Device Met.

Mechanical and environmental

Characteristics	Value	Standard
Mating durability (Brass+Brass)	10000 cycles	IEC 61300-02-02
Mating durability (Brass+Stainless steel)	8000 cycles	IEC 61300-02-02
Mating durability (Stainless steel+St. steel)	20000 cycles	IEC 61300-02-02
Damp heat steady state	up to 95% at 60°C	IEC 61300-02-19
High temperature	+80°C	IEC 61300-02-18
Low temperature	-40°C	IEC 61300-02-17
Temperature cycling	-55°C + 90°C	
Cable retention	1000 N	IEC 61300-02-04
Impact (Method A)	2 m onto concrete floor	IEC 61300-02-12
Shock (3 cycles in 2 directions)	100 g, 10-50 ms; 20 g 6-9 ms	IEC 61300-02-09
Water resistance (Depth of 1.8 for 48 h)	IP 68 ¹⁾	IEC 60529
Salt spray corrosion test ²⁾	> 1000 h	IEC 60512-6 test 11f

Vibration

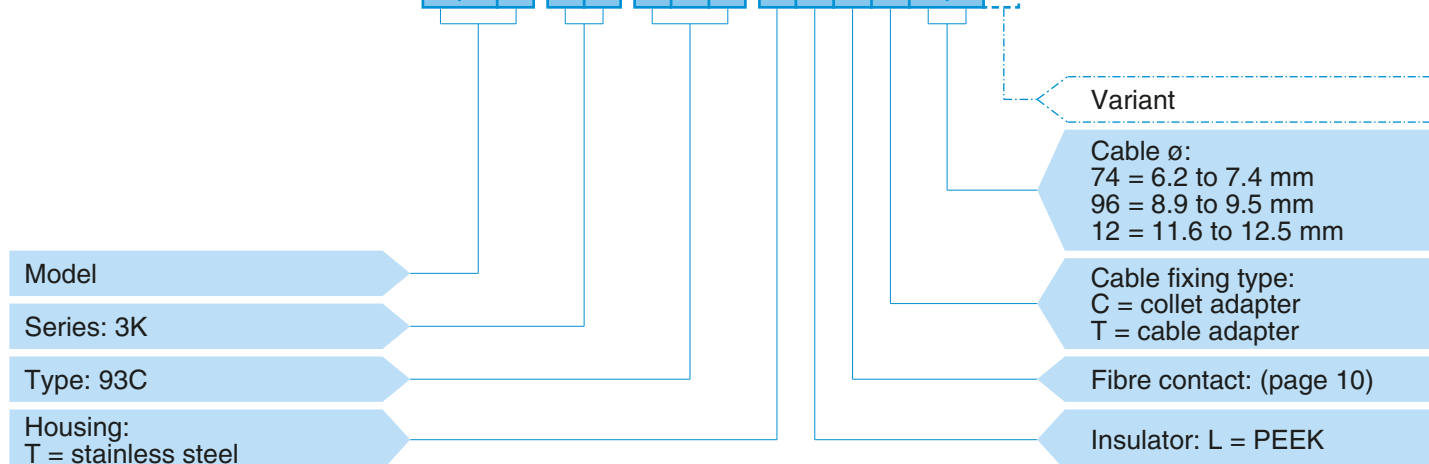


Note: ¹⁾ except FX● and FM● models.
²⁾ for chrome plated product («C» material code).

Part number example

Straight plug and free socket

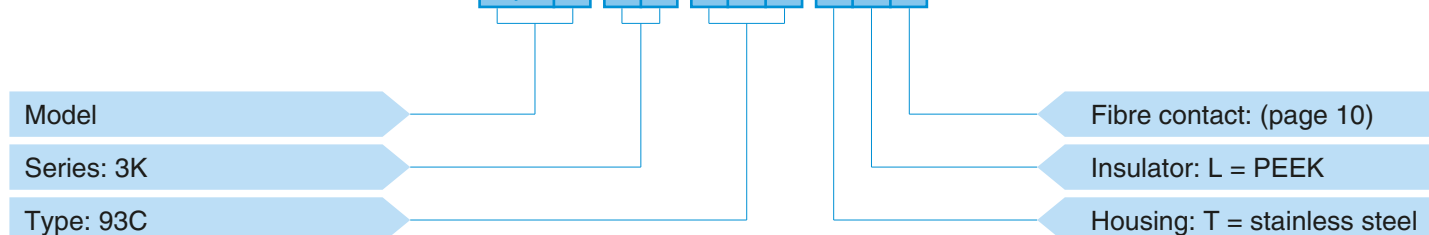
F U W . 3 K . 9 3 C . T L E C 9 6 Z



FUW.3K.93C.TLEC96Z = Straight plug with keys (W), 3K series, hybrid type to accept 2 F2 type fibre optic contacts, 2 power and 2 signal electrical contacts, stainless steel housing, PEEK insulator, female crimp signal contacts, cable fixing type T for 9.2 mm diameter cable, and nut for fitting a bend relief.

Fixed socket

E D W . 3 K . 9 3 C . T L E

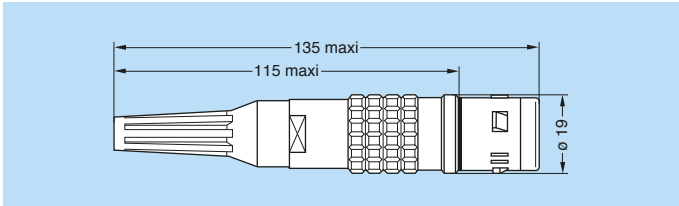
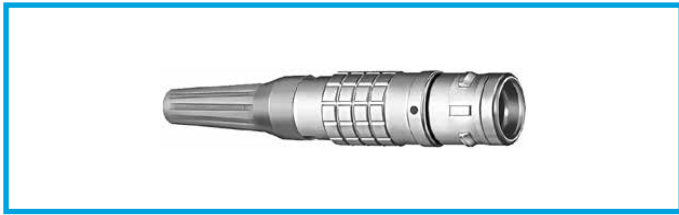


EDW.3K.93C.TLE = Fixed socket with rear square flange, keys (W), 3K series, hybrid type to accept 2 F2 type fibre optic contacts, 2 power and 2 signal electrical contacts, stainless steel housing, PEEK insulator, male crimp signal contacts.



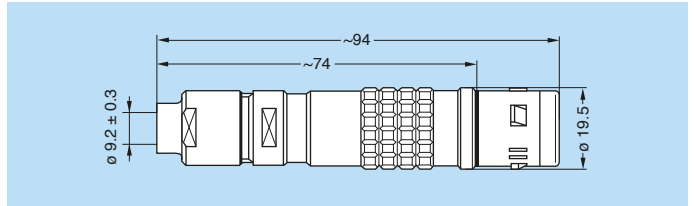
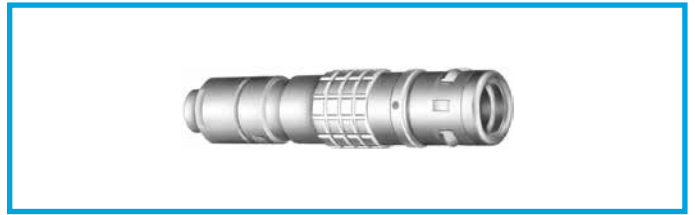
Models

FGW Straight plug, cable adapter, for bend relief



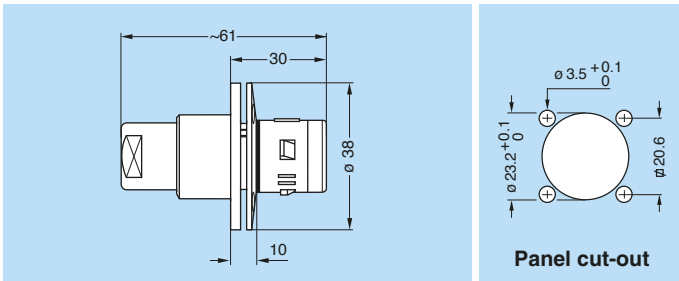
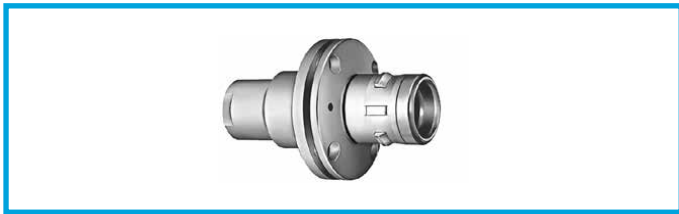
Note: The bend relief must be ordered separately (see page 11).

FUW Straight plug, cable collet adapter and long shell for fitting a bend relief with cap



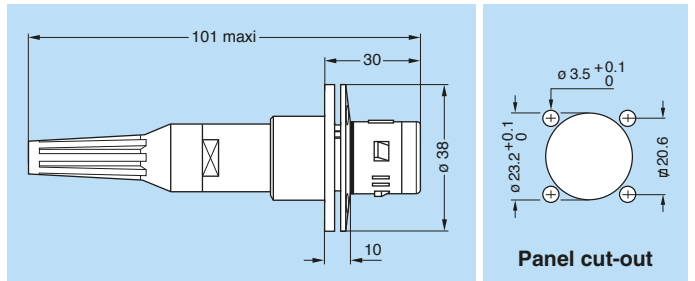
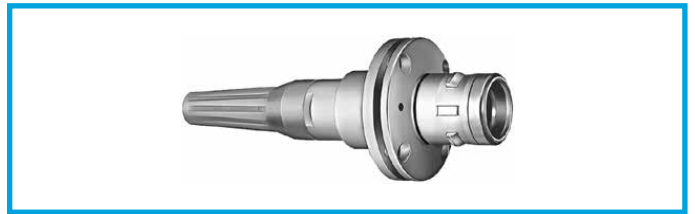
Note: The bend relief must be ordered separately (see page 11).

FXW Fixed plug, round flange (4 holes mounting), without collet



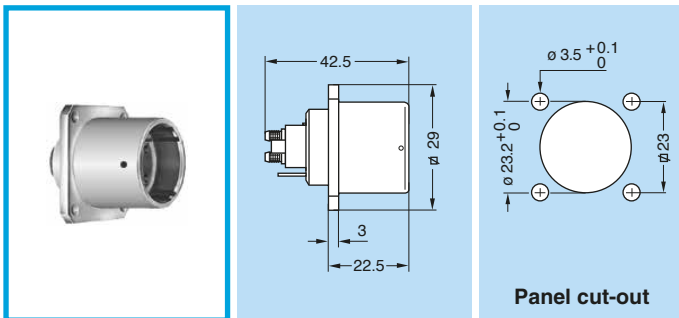
Note: Only available for IP 50 in mated condition.

FMW Fixed plug, round flange (4 holes mounting), cable adapter, for bend relief

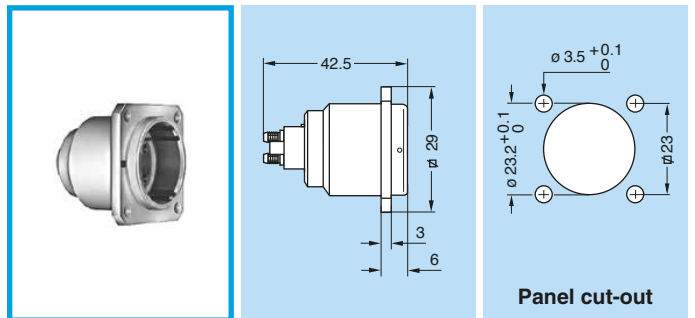


Note: Only available for IP 50 in mated condition.
The bend relief must be ordered separately (see page 11).

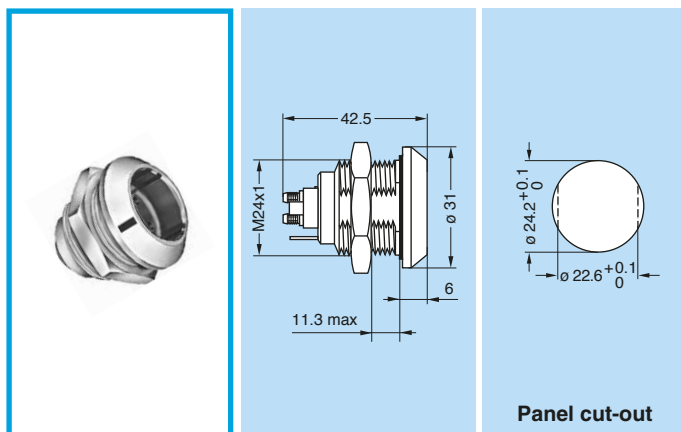
EDW Fixed socket with rear square flange, (4 holes mounting), and earthing tag



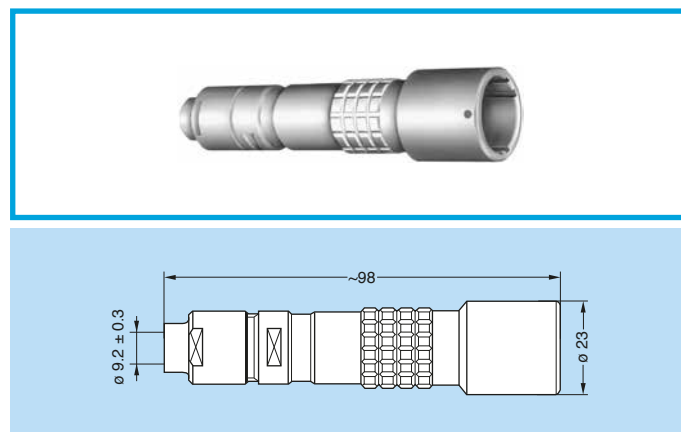
EBW Fixed socket with front square flange, (4 holes mounting)



ENW Fixed socket, nut fixing and earthing tag

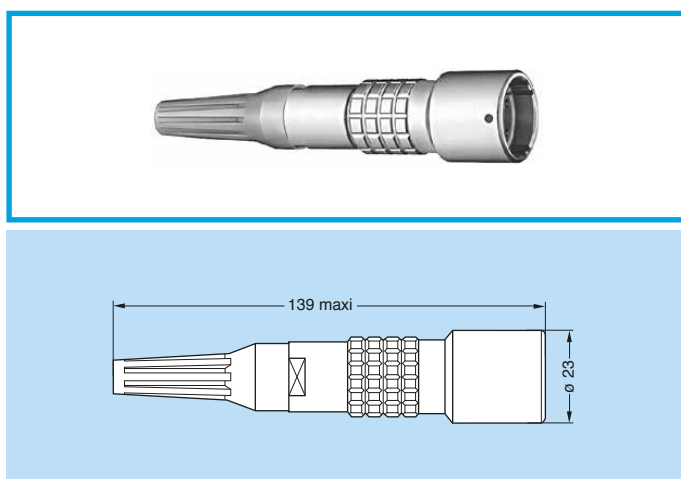


PUW Free socket, cable collet adapter and long shell for fitting a bend relief with cap



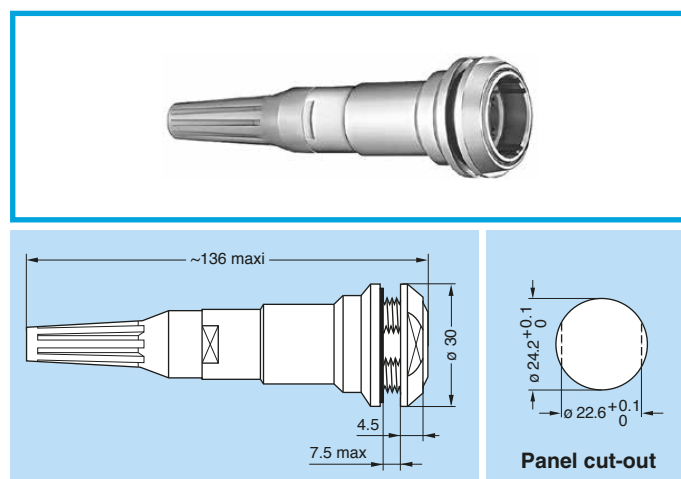
Note: The bend relief must be ordered separately (see page 11).

PHW Free socket, cable adapter, for bend relief



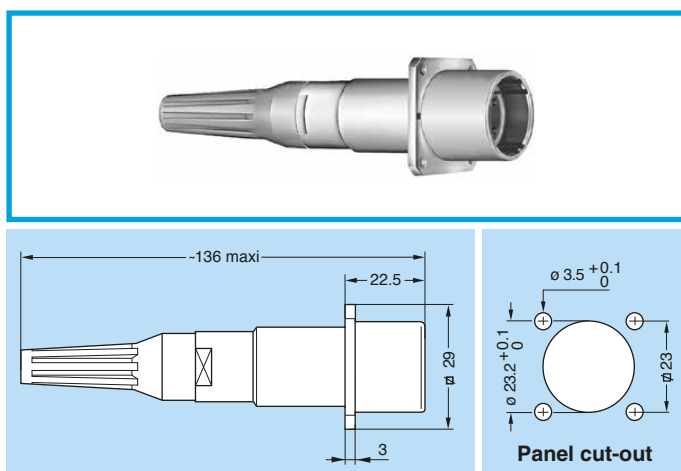
Note: The bend relief must be ordered separately (see page 11).

PEW Fixed socket, nut fixing, cable adapter, for bend relief (back panel mounting)



Note: The bend relief must be ordered separately (see page 11).

PBW Fixed socket with rear square flange, (4 holes mounting), cable adapter, for bend relief



Note: The bend relief must be ordered separately (see page 11).



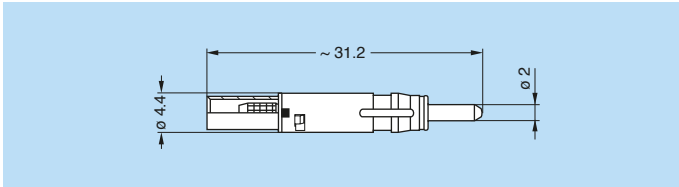
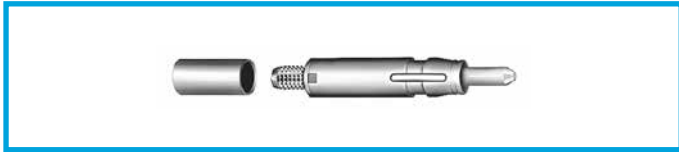
Insert configurations

Number of fibre optic contacts	Plug insulator	Socket insulator	Reference	Fibre optic contact			Electrical crimp contacts								
				Contact type for plug	Fibre core/cladding (µm)	Ferrule bore inside ø (µm)	Number of contacts	Contact function	Contact type for plug	Contact ø (mm)	AWG range	Creepage distance and air clearance (mm)	Working voltage (V rms)	Test voltage (V rms)	Rated current (A)
2			93C	fem.	9/125	125	2	signal	LV male	0.9	20-24		≤ 42	1000	3
							2	power	HV male	1.3	14-18	> 6.5	≤ 600	2250	10



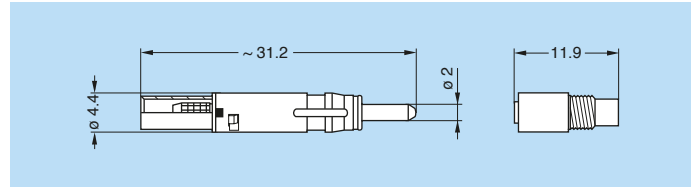
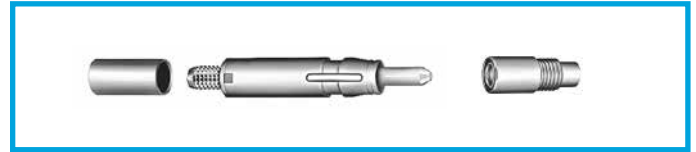
Fibre optic contact

FFS.F2 Male F2 Fibre Optic Contact



Ref.	Contact	Ferrule hole	Type	Gender	Note
E	FFS.F2.BA2.LCE30	125 µm	Crimp	Male	●
K	FFS.F2.BA2.LCT10	125 µm	Epoxy	Male	●
X	FFS.F2.BX2.LCE30	125.5 µm	Crimp	Male	○
V	FFS.F2.BX2.LCT10	125.5 µm	Epoxy	Male	○
F	FFS.F2.BB2.LCE30	126 µm	Crimp	Male	○
N	FFS.F2.BB2.LCT10	126 µm	Epoxy	Male	○

PSS.F2 Female F2 Fibre Optic Contact



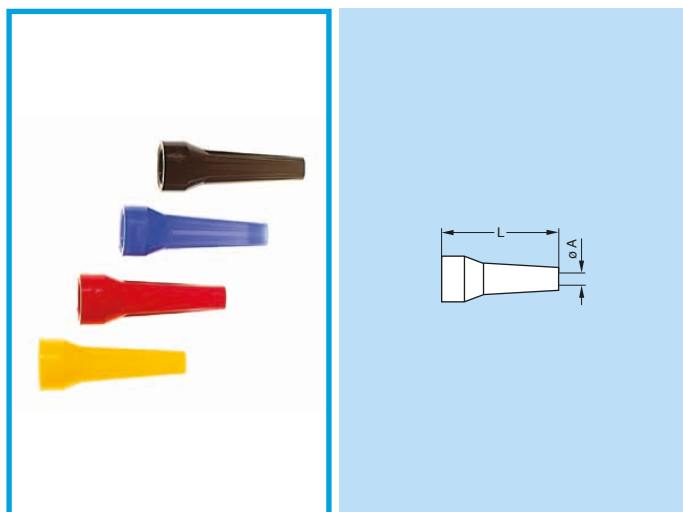
Ref.	Contact	Ferrule hole	Type	Gender	Note
E	PSS.F2.BA2.LCE30	125 µm	Crimp	Female	●
K	PSS.F2.BA2.LCT10	125 µm	Epoxy	Female	●
X	PSS.F2.BX2.LCE30	125.5 µm	Crimp	Female	○
V	PSS.F2.BX2.LCT10	125.5 µm	Epoxy	Female	○
F	PSS.F2.BB2.LCE30	126 µm	Crimp	Female	○
N	PSS.F2.BB2.LCT10	126 µm	Epoxy	Female	○

- First choice alternative
- Special order alternative

▶

Accessories

GMA Bend relief



Part number	Dim. (mm)	
	A	L
GMA.3B.090.DN	9	42
GMA.4B.011.DN	11	60

Note: The last letter «N» of the part number indicates the colour black of the bend relief. For others colour, refer to the table below and replace letter «N» by the letter of the colour required.

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

GMF Bend relief with cap for FUW plug



Part number
GMF.3K.085.EANZ

● Material: black ALCRYN®

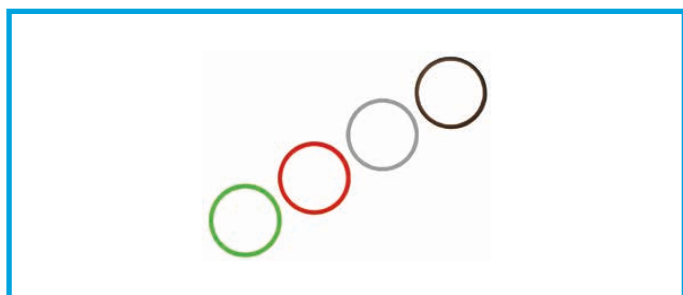
GMP Bend relief with cap for PUW free socket



Part number
GMP.3K.085.EANZ

● Material: black ALCRYN®

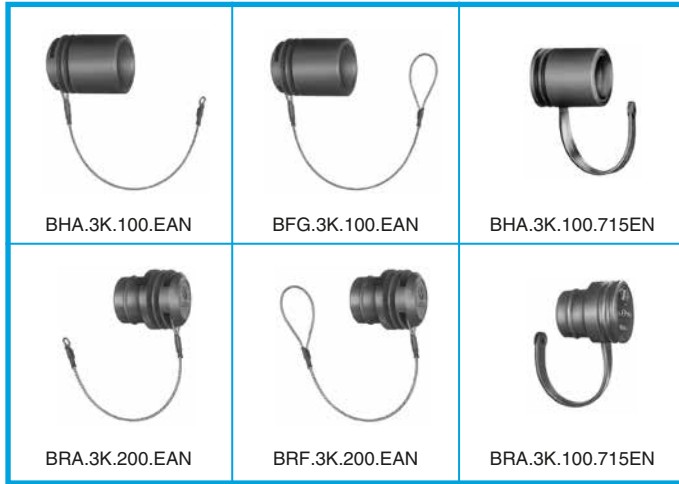
GMF Coloured ring for bend relief with cap



Part number	Colour
GMF.3K.265.RG	grey
GMF.3K.265.RN	black
GMF.3K.265.RR	red
GMF.3K.265.RV	green

● Material: Silicone

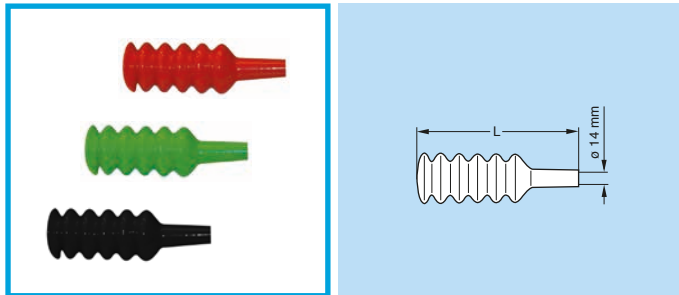
Boo Blanking caps



Part number	For connector model
BHA.3K.100.EAN	FMW, FXW
BRA.3K.200.EAN	EDW, PEW
BFG.3K.100.EAN	FUW
BRF.3K.200.EAN	PUW
BHA.3K.100.715EN	FMW, FXW
BRA.3K.100.715EN	EBW, EDW, ENW, PBW, PEW

● Material: black ALCRYN®

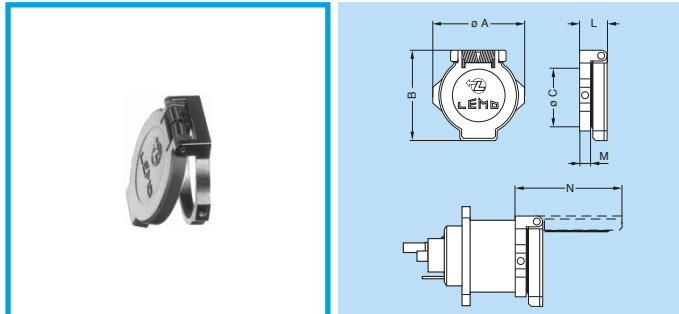
GMo Gaiters



Part number	Colour	Dimension L (mm)	For connector model
GMP.3K.140.165PER	red	165	PUW
GMP.3K.140.165PEN	black	165	PUW
GMF.3K.140.156PEV	green	156	FUW
GMF.3K.140.156PEN	black	156	FUW

● Material: PVC

BRR Spring loaded dust cap for EDW and EBW

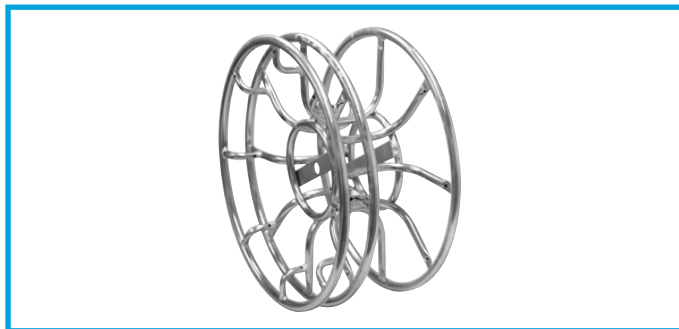


Part number	Dimensions (mm)					
	A	B	C	L	M	N
BRR.3K.200.PZSG	29	29	23	8.1	3	33.2

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

● Material: Polyoxymethylene (POM) grey (or black)

WRE Cable drum for SMPTE cable



Part number	Nb of rings	Cable length (m)	Width (mm)	Height (mm)	Weight (kg)
WRE.3K.93C.200SA	2	200	180	615	7.00
WRE.3K.93C.400SA	2	400	270	615	7.50
WRE.3K.93C.200TA	3	200	240	615	8.50
WRE.3K.93C.300TA	3	300	295	615	8.85
WRE.3K.93C.500TA	3	500	330	615	9.05



Patch panels

PB Patch panel



2U panel with one row of 6 or 10 plugs or sockets of the 3K.93C Series.

P B G . 3 K . 9 3 C . M W 9 6 0 6

Ref.	Colour
C	beige
G	grey
N	black
T	nat. anod.

Ref.	Front side connection
MW	Plug FMW
EW	Socket PEW
BW	Socket PBW

Ref.	Cable ø (mm)	Nb of connectors
9606	8.9 to 9.5	6
1206	11.6 to 12.4	6
9610	8.9 to 9.5	10
1210	11.6 to 12.4	10

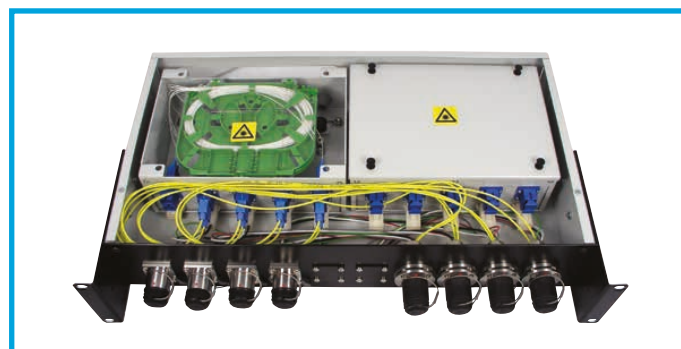
Integrated 3U panel with splice tray and connector junctions



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 can be mounted side-by-side to fit in 3U rack dimensions.

Note: Available on request.

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.

Note: Available on request.



Tooling

DCS.F2.N02.PA Fibre Optic one-click cleaner



Insert the one-click cleaner into the insulator and push until an audible "click" is heard. The cleaner uses a mechanical push action to advance an optical grade cleaning tape. More than 500 cleaning per cleaner. Product includes special LEMO F2 ferrule adaptor.

DCS.F2.035.PN Alignment device tool



Simple tool with two threaded end for installation/extraction of the F2 contact alignment device. For use with WST.KI.125.34 kit above.

DCS.3K.175.72LN Cable puller



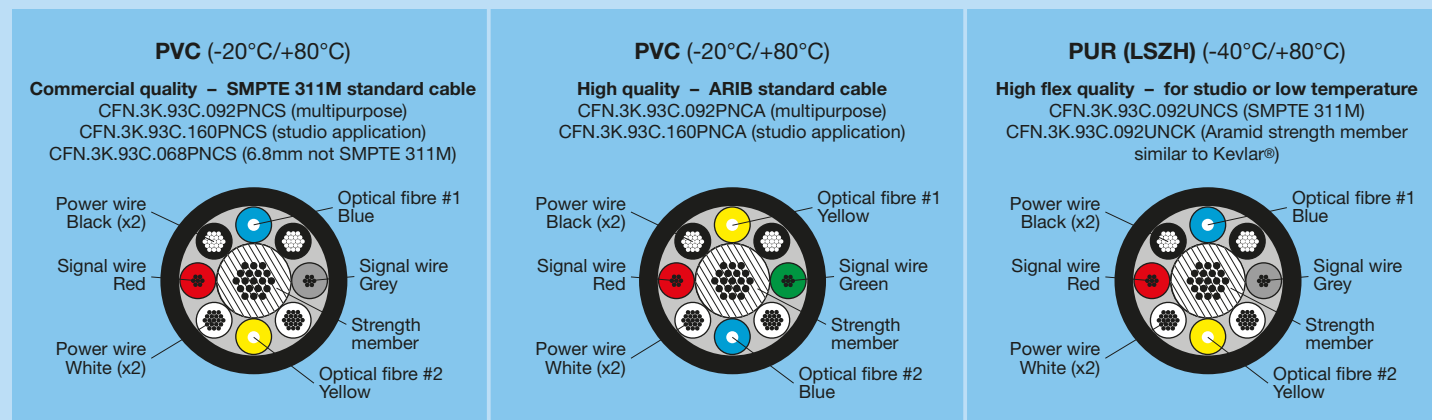
The LEMO cable puller, is a pull through tool that allows passing the cable through narrow sections and protects the optical fibre during installation.

NORTHWIRE™ HDTV cables

NORTHWIRE hybrid camera cable according to SMPTE 311 and ARIB standards

This composite cable combines 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.
- High tensile strength.



Cable specification

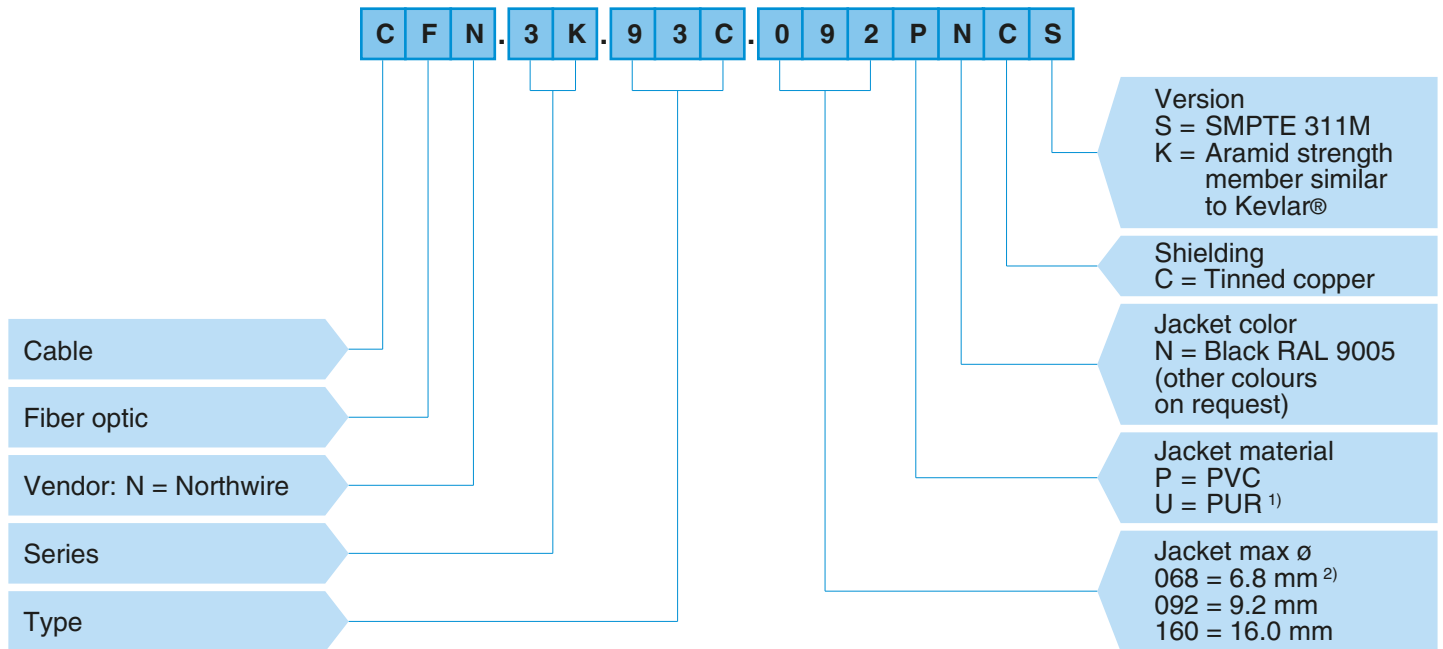
Core type	Power (Aux)	Control (Signal)	Optic fibre	Strength member
Nb of cores	4	2	2	1
Conductor sizes - AWG	20	24	–	–
Conductor construction - Nb/mm	19/0.185	7/0.193	–	19/0.330
Mode field diameter - μm	–	–	8.9 \pm 0.8 at 1310	–
Cladding diameter - μm	–	–	125 \pm 1 μm	–
Approx. diameter of conductor - 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 - V_{rms} at 60 Hz, 1 min	1750	1750 (SMPTE)	–	–
Min. insulation resistance - (20°) $M\Omega/\text{km}$	10'000	10'000	–	–
UL Listing	AWM STYLE 21971			
Allowable tension	700N			
Temperature range (PUR version)	-40°C / +80°C			
Temperature range (PVC version)	-20°C / +80°C			
Bending radius PVC version (mm)	55			

Cable specification (optical fibre)

Item	Wavelength	Characteristics	Conversion condition (km)	Conversion formula
Transmission loss	$\lambda = 1.31 \mu\text{m}$	Less than .8 dB/km	up to ≥ 0.4	$0.5 \times L \text{ dB} \geq$
	$\lambda = 1.31 \mu\text{m}$	Less than .8 dB/km	$L < 0.4$	$0.5 \times 0.4 \text{ dB} \geq$

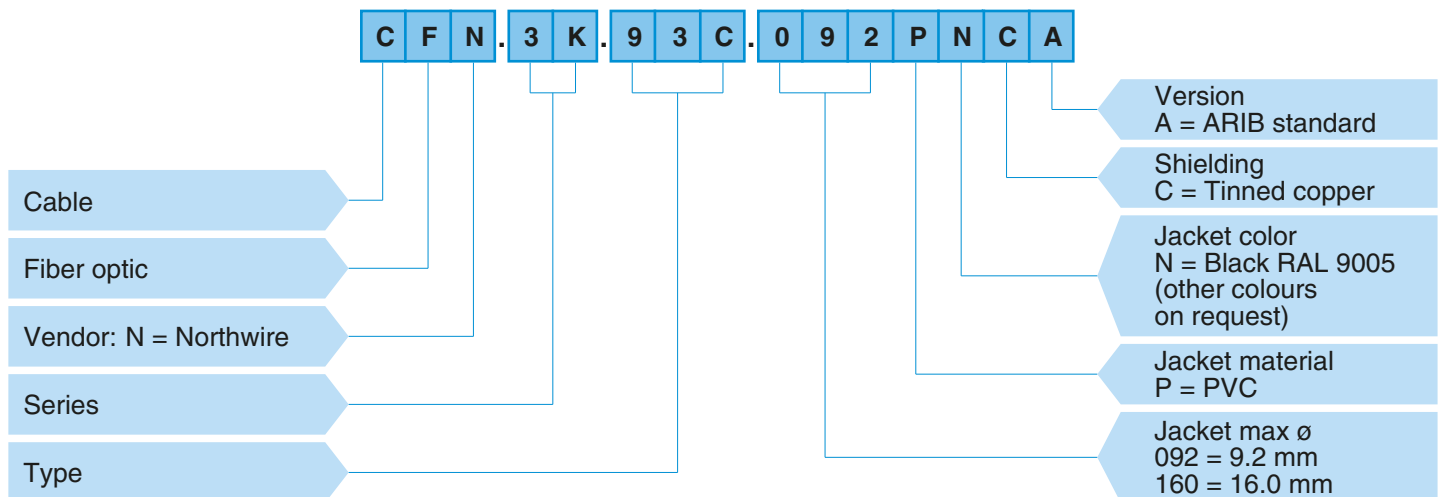
Hybrid HDTV fibre optic cable part number

SMPTE standard



Note: ¹⁾ PUR outer jacket for high flex and LSZH (Low smoke zero halogen). Recommended for cold temperatures (-40°C).
²⁾ Recommended for assembly length up to 5 meters.

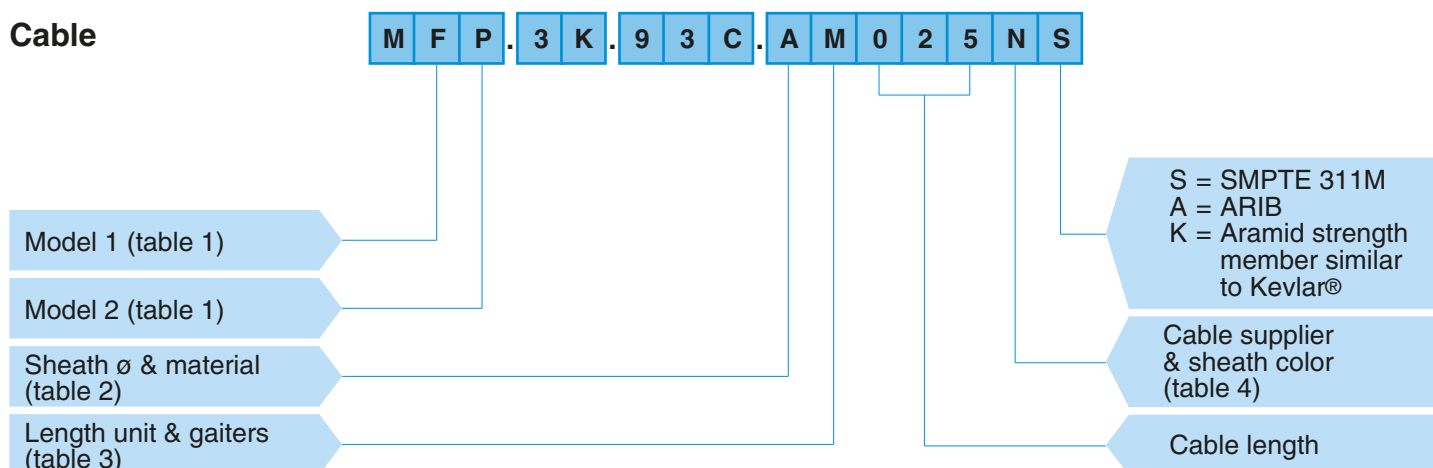
ARIB standard



Cable assembly

Part Number Example

Cable



MFP.3K.93C.AM025NS = 1 FUW plug and 1 PUW socket (key W), 3K.93C series, on a SMPTE 311M screened cable, 25 m length, sheath ø 9.2 mm, black RAL 9005 jacket color, with GMF/GMP bend relief with cap.

Table 1
Model

Model 1 & 2	Code
FUW	F
FMW	M
PUW	P
PEW	E
PBW	B

Table 2
Sheath ø & material

Sheath ø (mm)	Code	
	PVC ¹⁾	PUR
9.2	A	R
4.2	B	S
6.8	C	T
12.0	D	U
16.0	E	V

Table 3
Length unit & gaiters

	No Gaiter	Red gaiter free socket Green gaiter plug	2 black gaiters	2 yellow gaiters
cm	C	E		
dm	D	F		
m	M	G	N	J
km	K	L		
inch	I			
feet	T			

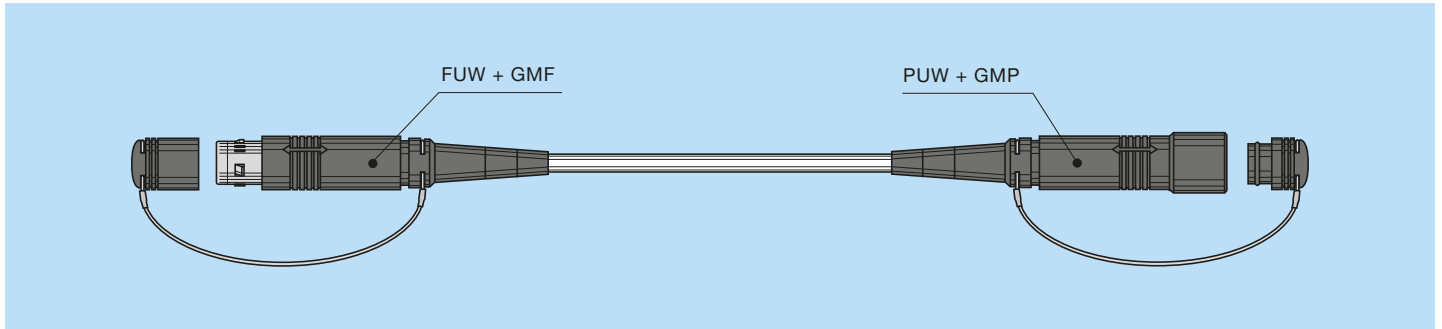
Table 4
Cable supplier & sheath color

Code	Cable supplier & sheath color
N	Northwire Black
G	Northwire Grey
A	Northwire Blue
F	Furukawa Black
B	Belden Black

Note: ¹⁾ PVC not recommended for temperatures below -20°C.

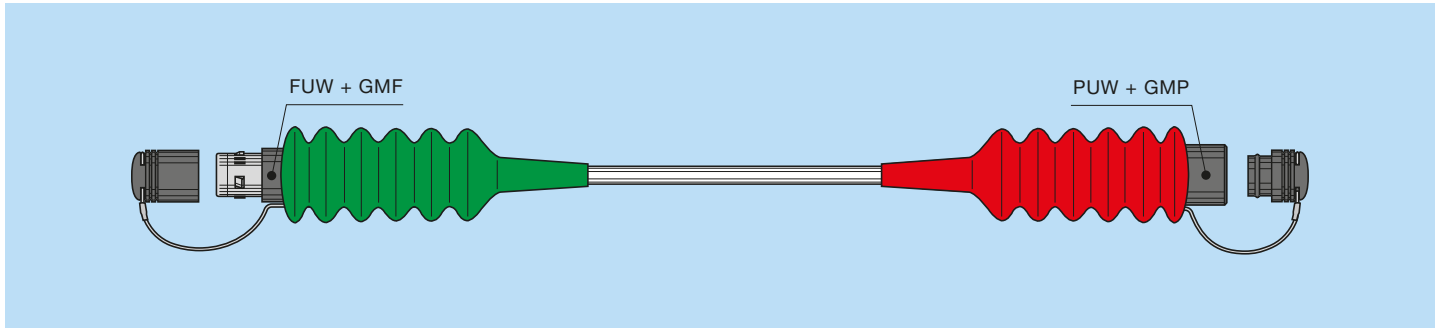
MFP Outside broadcast cable assembly

Assembly cable with one straight plug (FUW) and one straight socket (receptacle) (PUW), both complete with GMF/GMP bend relief with cap.



MFP Outside broadcast cable assembly

Assembly cable with one straight plug (FUW) and one straight socket (receptacle) (PUW), both complete with GMF/GMP bend relief with cap and gaiters.



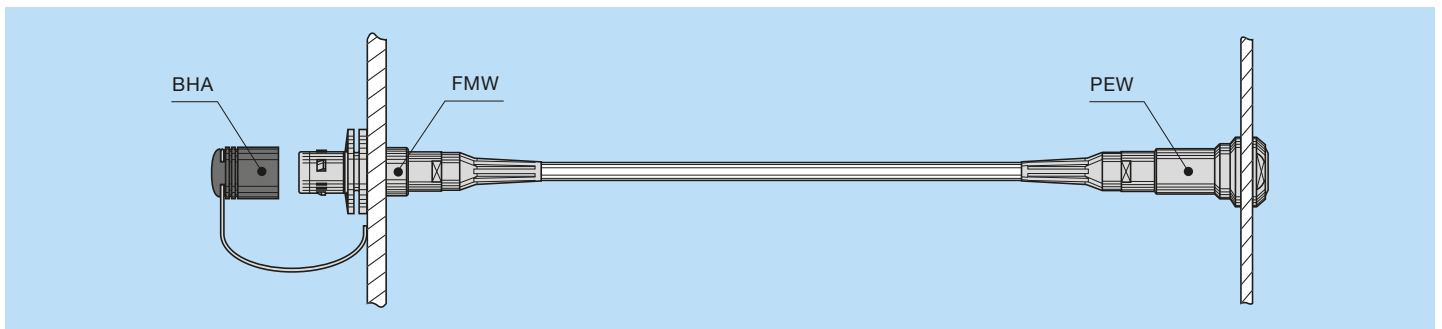
MMP Internal OB van cable assembly

Assembly cable with one fixed plug (FMW) and one straight socket (receptacle) (PUW), both complete with BHA/BRF caps.



MME Studio/Infrastructure cable assembly

Assembly cable with one fixed plug (FMW) and one straight socket (receptacle) (PEW), complete with BHA cap.



Part Number Example

Pigtails

M X T . 3 K . 9 3 C . Z Z Z C 0 5 0

Model
X = FXW
D = EDW

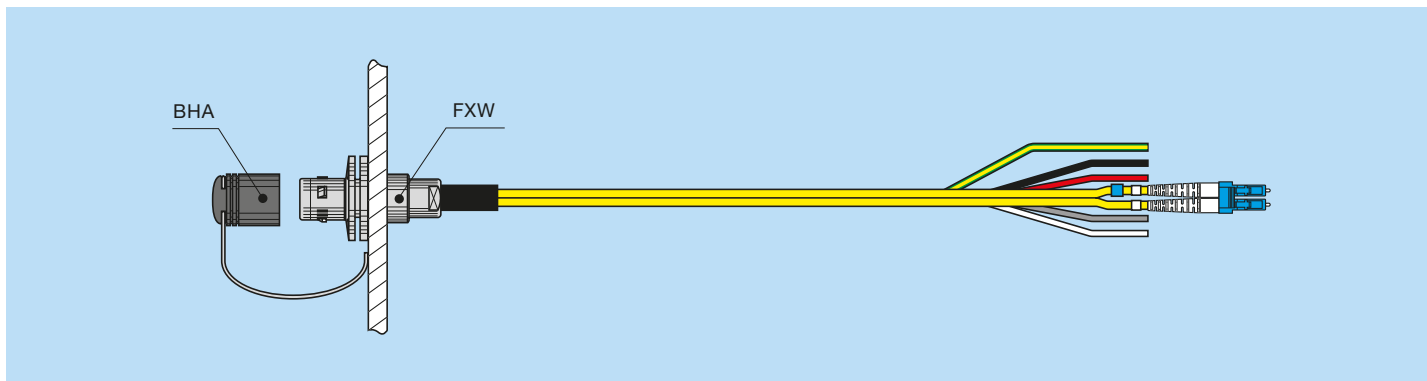
T = Pigtail (LC)

Cable length (cm)

MXT.3K.93C.ZZZC050 = 1 FXW plug (key W), 3K.93C series and one pigtail (LC) on the other side, 50 cm length.

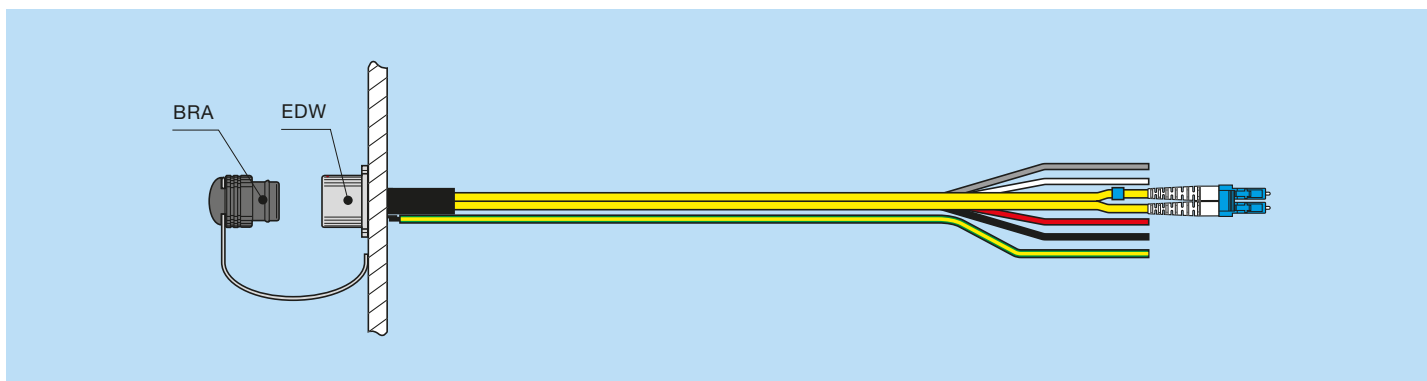
MXT ECU side pigtails

Assembly cable with one fixed plug (FXW) and one pigtail (LC) complete with BHA cap.



MDT Camera side pigtails

Assembly cable with one fixed socket (EDW) and one pigtail (LC) complete with BRA cap.



SMPTE 311M standard cable assemblies

Outside Broadcast FUW-PUW

Part number	Description
MFP.3K.93C.AM025NS	25 meter length
MFP.3K.93C.AM050NS	50 meter length
MFP.3K.93C.AM100NS	100 meter length
MFP.3K.93C.AM200NS	200 meter length
MFP.3K.93C.AM300NS	300 meter length
MFP.3K.93C.AM400NS	400 meter length
MFP.3K.93C.AM500NS	500 meter length

Internal OB van

Part number	Description
MMP.3K.93C.AM003NS	3 meter length
MMP.3K.93C.AM005NS	5 meter length
MMP.3K.93C.AM010NS	10 meter length
MMP.3K.93C.AM015NS	15 meter length
MMP.3K.93C.AM020NS	20 meter length

Studio/Infrastructure

Part number	Description
MME.3K.93C.AM020NS	20 meter length
MME.3K.93C.AM050NS	50 meter length

ARIB standard cable assemblies

Outside Broadcast FUW-PUW

Part number	Description
MFP.3K.93C.AM025NA	25 meter length
MFP.3K.93C.AM050NA	50 meter length
MFP.3K.93C.AM100NA	100 meter length
MFP.3K.93C.AM200NA	200 meter length
MFP.3K.93C.AM300NA	300 meter length
MFP.3K.93C.AM400NA	400 meter length
MFP.3K.93C.AM500NA	500 meter length

Internal OB van

Part number	Description
MMP.3K.93C.AM003NA	3 meter length
MMP.3K.93C.AM005NA	5 meter length
MMP.3K.93C.AM010NA	10 meter length
MMP.3K.93C.AM015NA	15 meter length
MMP.3K.93C.AM020NA	20 meter length

Studio/Infrastructure

Part number	Description
MME.3K.93C.AM020NA	20 meter length
MME.3K.93C.AM050NA	50 meter length

Other cable assemblies, patch cords and pig tails available on request.

Note

Note

Product safety notice & Disclaimers

**PLEASE READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY AND CONSULT ALL RELEVANT NATIONAL AND INTERNATIONAL SAFETY REGULATIONS FOR YOUR APPLICATION.
IMPROPER HANDLING, CABLE ASSEMBLY, OR WRONG USE OF CONNECTORS CAN RESULT IN HAZARDOUS SITUATIONS.**

1. SHOCK AND FIRE HAZARD

Incorrect wiring, the use of damaged components, presence of foreign objects (such as metal debris), and / or residue (such as cleaning fluids), can result in short circuits, overheating, and / or risk of electric shock.

Mated components should never be disconnected while live as this may result in an exposed electric arc and local overheating, resulting in possible damage to components.

2. HANDLING

Connectors and their components should be visually inspected for damage prior to installation and assembly. Suspect components should be rejected or returned to the factory for verification.

Connector assembly and installation should only be carried out by properly trained personnel. Proper tools must be used during installation and / or assembly in order to obtain safe and reliable performance.

3. USE



Connectors with exposed contacts should never be live (or on the current supply side of a circuit). Under general conditions voltages above 30 VAC and 42 VDC are considered hazardous and proper measures should be taken to eliminate all risk of transmission of such voltages to any exposed metal part of the connector.

4. TEST AND OPERATING VOLTAGES

The maximum admissible operating voltage depends upon the national or international standards in force for the application in question. Air and creepage distances impact the operating voltage; reference values are indicated in the catalogue however these may be influenced by PC board design and / or wiring harnesses.

The test voltage indicated in the catalogue is 75% of the mean breakdown voltage; the test is applied at 500 V/s and the test duration is 1 minute.

5. CE MARKING

CE marking  means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives. CE marking  applies to complete products or equipment, **but not to electromechanical components, such as connectors.**

6. PRODUCT IMPROVEMENTS

The LEMO Group reserves the right to modify and improve to our products or specifications without providing prior notification.

7. WARNING (Prop 65 State of California)

Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. LEMO products are exempt from proposition 65 warnings because they are manufactured, marketed, and sold solely for commercial and industrial use.

For further information, please visit: <https://web.lemo.com/img/resources/quality/LEMO-Prop-65-compliance-declaration.pdf>

8. UL RECOGNITION

LEMO connectors are components recognized by the Underwriters Laboratories (UL), facilitating the UL approval of the complete system (including LEMO connector, cable and your equipment).

9. REACH AND ROHS

LEMO connector specifications comply with the requirements of the RoHS directive (2011/65/EU) and REACH regulation (1907/2006/EU) of the European Parliament and latest amendments. These REACH and ROHS regulations specify the restrictions of the use of hazardous substances in LEMO products marketed in Europe.

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HEADQUARTERS
Switzerland

LEMO SA
Tel: +41 21 695 16 00
info@lemo.com

Subsidiaries & distributors



Online catalogue



lemo.com

