

# Solutions Selection guide



With a strong legacy of excellence and innovation, the LEMO Group is a global leader in providing high-performance custom interconnect solutions. From the depth of the oceans to the far reaches of outer space, no matter how harsh the environment may be, our connectors and cable solutions are chosen, wherever connections are too critical, precious, or vital to fail.

Offering over 90,000 product combinations that continue to grow through custom specific designs, our subsidiaries and 20 distributors have built a global network of strong, dedicated local resources with unmatched technical expertise and understanding of customer requirements. Thanks to our global network, we serve more than 150,000 customers in over 80 countries worldwide.

All our staff of 2000 people are united to accomplish the same mission: to guarantee to our customers interconnect solutions that exceed their current requirements and anticipate their future expectations.

**+75**

years of excellence

**+150,000**

customers worldwide

**+2000**

employees

**Empowering  
connectivity**

# Our application fields

LEMO solutions have been designed for the most demanding applications, wherever connections are too critical, precious, or vital to fail or to be even momentarily disrupted. Our solutions connect critical systems for key industries such as:



# Reliable connections when failure is not an option

## Complete connectivity

### End-to-end interconnect solutions

LEMO's three generations of experience extends far beyond its technical expertise in precision connectors and custom cables. LEMO offers complete solutions including cable assembly services meeting the most stringent specifications.



## Leading innovation

### Over 75 years of innovation and technology leadership

LEMO's globally recognized technological leadership stems from the pioneering Push-Pull connector invented by the founder Léon Mouttet, a revolution in connector technology.

Our innovations and high-quality interconnect solutions define industry excellence and standards.

## Extensive product range

### An outstanding solution portfolio that exceeds customer requirements

The modular design of the LEMO range provides over 90'000 combinations that enables you to select the ideal interconnect solution for your specific application. With a rich legacy of excellence, LEMO offers a wide range of high-quality connectors meticulously designed to meet your precise needs.

## Reliability and quality

### Swiss-made performance for the most demanding applications

LEMO's precision engineered components meet or exceed the listed specifications for the duration of the product life cycle, regardless of harsh operating or environmental conditions.

## Global partner

### Our worldwide reach, your local expert

Relying on a global network of local subsidiaries and distributors, customers anywhere in the world can benefit from the same unmatched technical expertise of LEMO's leading technical advisors, as well as from our full inventory of products.

## Vertically integrated ecosystem

### Our total independence, an asset for our clients

Founded in Switzerland in 1946, LEMO has always been able to maintain full control over its business, with the aim of ensuring high quality and performance of its solutions. Such stability is what ultimately enables LEMO to successfully build long-term partnerships and ensure consistent customised support.

# LEMO Solutions Portfolio



## 1 ORIGINALS

Your configurable solution

- Self-Latching Push-Pull locking
- Wide & modular range
- Broad application reach
- Indoor & outdoor

Series B, K, T

S, E



## 2 REDEL

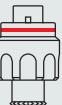
Your medical preferred solution

- Medical and Industrial grade plastics
- Device ergonomics
- Electrical safety
- High density & modularity

Series P

SP

MP



## 3 OPTIMA

Your optimised solution

- Compact & miniature
- Lightweight & low-profile
- High vibration resistance
- IP68 & MIL-STD tested

Series M

F

D



## 4 SUPREME

Your extreme solution

- High/Low pressure
- Radiation & corrosion
- High Voltage
- Regulated environments

Series N

W

Y



## 5 SPECIALTIES

Your specialised solution

- Industry standards
- Special configurations
- Historical products

Series 3K.93C.Y, 00 Nim-Camac

H, V, 2G/2C, R, ...



## 6 CABLES

Your unique cable solution

- Design expertise
- In house prototype to production
- Custom cables
- Conductive & hybrid

Series Technical cables

Biocompatibility

Automation & high-flex

Retractile coil cords

Ruggedised

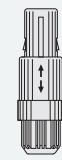
## SERVICES

Cable assembly services (single-end, double-end, custom harness, overmolding, ...)

Custom solution (connector, cable, device)

Signal integrity end-to-end services

# 1 ORIGINALS



## TECHNICAL INFO

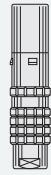
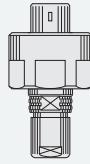
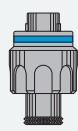
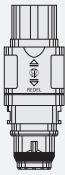
	B	K	T	S	E	P
Locking			Push-Pull			Push-Pull
Material (std)			Brass			Plastic
Colour (std)			Silver			Grey
Sealing Mated (std)	IP50		IP68	IP50	IP68	IP50/66
Number of shell models	60	28	14	50	22	12
Number of guides for keying	1, 2, 3 or 5	1, 2 or 5	1 or 2	Stepped insert		1, 2 or 3
Shell Sizes	00 (multip)		TT	00 (unip)		
	0B	OK	0T	0S	0E	
	1B, XB	1K	1T	1S	1E	1P
	2B	2K	2T	2S	2E	2P
	3B	3K	3T	3S	3E	3P
	4B	4K		4S	4E	
	5B	5K		5S	5E	
				6S	6E	
Max nb of contacts (Low Voltage)	64	64	32	106	106	34
Low Voltage	✓	✓	✓	✓	✓	✓
High Voltage						✓
Coax	✓	✓	✓	✓	✓	
Triax				✓	✓	
Fibre Optic	✓	✓	✓			
Fluidic	✓	✓	✓			✓
Thermocouple	✓	✓		✓	✓	✓

## INDUSTRIES

Test & Measurement	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Energy & Industrial	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Medical	✓✓	✓	✓	✓	✓	✓✓
Semiconductor	✓✓	✓	✓	✓✓	✓	
Audio Video	✓✓	✓	✓	✓✓	✓	
Security & Defence	✓	✓	✓	✓	✓	
Motorsport						
Transportation, Aerospace & UAV	✓✓		✓			✓✓
Specialties & Other	✓✓					✓

# 3 OPTIMA

# 4 SUPREME



SP	MP	M	F	D	N	W	Y
Inner Push-Pull	Inner Push-Pull	Screw	Push-Pull	Push-Pull and Break-Away	Push-Pull	Screw	Push-Pull
Plastic	Plastic		Aluminium	Brass	Stainless Steel		Brass
Grey	Grey		Anthracite			Silver	
IP50	IP50	IP68	IP67	IP68	IP66	IP68	IP50
8	6	40	12	5	18	9	19
3	3	3 or 5	3 or 5	5	1	1 or 2	N/A
		MM	FF	DD			
		0M	0F	0D		0W	
SP		1M	1F	1D		1W	1Y
		2M	2F	2D	2N	2W	
		3M	3F	3D	3N	3W	3Y
	MP	TM, 4M, LM	4F, LF		4N	4W	
		5M	5F		5N	5W	
							6Y
22	36 (144 PCB)	114	68	32	64	64	1 (High Voltage)
✓	✓	✓	✓	✓	✓	✓	
		✓					✓
	✓	✓		✓	✓	✓	
						✓	
	✓	✓	✓				
	✓					✓	

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		✓	✓	✓	✓✓	✓✓	✓✓

# ORIGINALS

## Your configurable solution



- Self-Latching Push-Pull locking
- Wide & modular range
- Broad application reach
- Indoor & outdoor



**B**

**Indoor keyed**



**K**

**Outdoor keyed**

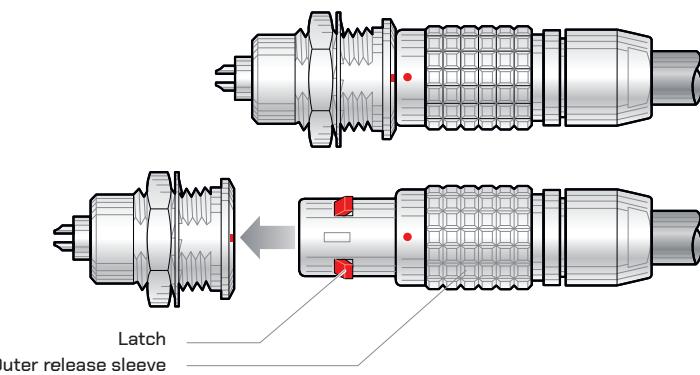


**T**

**Small Outdoor keyed**

Description	LEMO original Push-Pull solution for protected environments	LEMO original Push-Pull solution for outdoor environments	LEMO original miniature Push-Pull solution for outdoor environments
Locking	Push-Pull	Push-Pull	Push-Pull
Size (Ø diameter)	8 sizes from Ø 6.4 to Ø 35.0 mm [plugs]	6 sizes from Ø 11.0 to Ø 38.0 mm [plugs]	5 sizes from Ø 7.0 to Ø 18.8 mm [plugs]
Keying	13 keyway options	9 keyway options	5 keyway options
Shell Types	Over 60 shell styles	Over 28 shell styles	Over 14 shell styles
Shell Material	Brass	Brass	Brass
Plating	Chrome	Chrome	Chrome
Cable Diameter	1.4 to 25 mm	1.0 to 23.5 mm	2.4 to 15 mm
NB of contact	2 to 64	2 to 64	2 to 32
AWG	8 to 32	8 to 32	12 to 32
Contact types	Multipole / Coax / Fibre Optic / Fluidic / High Voltage / Mixed / Thermocouple	Multipole / Coax / Fibre Optic / Fluidic / High Voltage / Mixed / Thermocouple	Multipole / Coax / Fibre Optic / Fluidic / High Voltage / Mixed / Thermocouple
Contact Termination	Solder / Crimp / Print [PCB]	Solder / Crimp / Print [PCB]	Solder / Crimp / Print [PCB]
Data Protocols	USB 2.0 / USB 3.1 / Eth Cat6a / SPE	USB 2.0 / USB 3.1 / Eth Cat6a / SPE	USB 2.0 / USB 3.1 / Eth Cat6a / SPE
Sealing Level	IP50 / Hermetic sockets	IP68 / Hermetic sockets	IP68 / Hermetic sockets
Temperature Range	-55°C to 250°C*	-55°C to 200°C*	-55°C to 200°C*
Mating Cycles	> 5000	> 5000	> 3000

\*maximum temperature valid for short periods of use.



### The original Push-Pull connector

Constantly upgraded with the latest technologies since its invention by LEMO, the Push-Pull connector has been the trusted solution to build long-lasting, safe and high precision interconnect solutions for more than 60 years. The revolutionary system became a new global standard across the electronics industry. Today, like yesterday, LEMO is recognized as the expert and benchmark of Push-Pull connectors.



## S

### Indoor stepped insert

## E

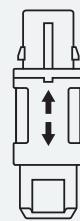
### Outdoor stepped insert

Description	LEMO original Push-Pull solution with unmatched mating ergonomics	LEMO original Push-Pull solution for outdoor environments with unmatched mating ergonomics
Locking	Push-Pull	Push-Pull
Size (Ø diameter)	8 sizes from Ø 6.4 to Ø 46.0 mm [plugs]	7 sizes from Ø 11.0 to Ø 47.0 mm [plugs]
Keying	1 [stepped inserts]	1 [stepped inserts]
Shell Types	Over 50 shell styles	Over 22 shell styles
Shell Material	Brass	Brass
Plating	Chrome	Chrome
Cable Diameter	1.3 to 30 mm	1.0 to 30 mm
NB of contact	1 to 106	1 to 106
AWG	0 to 32	0 to 32
Contact types	Unipole / Multipole / Coax / Fibre Optic / Fluidic / Mixed / Thermocouple	Unipole / Multipole / Coax / Fibre Optic / Fluidic / Mixed / Thermocouple
Contact Termination	Solder / Crimp / Print [PCB]	Solder / Crimp / Print [PCB]
Data Protocols	-	-
Sealing Level	IP50 / Hermetic sockets	IP68 / Hermetic sockets
Temperature Range	-55°C to 250°C*	-55°C to 200°C*
Mating Cycles	> 5000	> 5000

\*maximum temperature valid for short periods of use.

# REDEL

Your medical  
preferred solution



- Medical and Industrial grade plastic
- Device ergonomics
- Electrical safety
- High density & modularity



**P**

**Push-Pull**

**SP**

**Inner Push-Pull**



**MP**

**Modular Push-Pull**

Description	Highly configurable plastic Push-Pull connector	Highly configurable plastic connector with inner Push-Pull	Modular plastic connector with inner Push-Pull
Locking	Push-Pull	Inner Push-Pull	Inner Push-Pull
Size (Ø diameter)	3 sizes from Ø 14.0 to Ø 21.2 mm [plugs]	1 size Ø 15.5 mm [plugs]	1 size Ø 24.4 mm [plug]
Keying	6 keyway + 7 colour options	4 keyway + 7 colour options	4 keyway + 4 colour options
Shell Type	Over 12 shell styles	Over 8 shell styles	Over 6 shell styles
Shell Material	PEI / PSU	PPSU	PPSU
Plating	—	—	—
Cable Diameter	1.7 to 9.5 mm	2.5 to 7.5 mm	Module selection dependent
NB of contact	2 to 34	4 to 22	2 to 144
AWG	12 to 32	18 to 32	20 to 32
Contact types	Multipole / Coax / Fibre Optic / Fluidic / High Voltage / Mixed / Thermocouple	Multipole	Multipole / Coax / Fibre Optic / Fluidic / Hybrid / Mixed
Contact Termination	Solder / Crimp / Print [PCB]	Solder / Crimp / Print [PCB]	Solder / Crimp / Print [PCB]
Sterilization	Steam / ETO / Gamma	Steam / ETO	Steam / ETO
Sealing level	IP50 / IP66	IP50	IP50
Temperature range	-55°C to 170°C	-50°C to 170°C	-50°C to 170°C*
Mating Cycles	> 5000	> 5000	> 2000

\*with all modules except PCB modules

# OPTIMA

## Your optimised solution



- Compact & miniature
- Lightweight & low-profile
- High vibration resistance
- IP68 & MIL-STD tested



### M

#### Rugged Ratchet coupling

### F

#### Rugged Push-Pull

### D

#### Compact design with overmolding

Description	LEMO lightweight, compact, high vibration resistant [MIL STD 202 & 810F], IP68 screw locking connector	LEMO lightweight, compact, high vibration resistant [MIL STD 810F], IP67 Push-Pull connector	LEMO lightweight, miniature, high vibration resistant [MIL STD 810H], IP68 Push-Pull connector
Locking	Triple start, 3/4 turn ratchet coupling	Push-Pull	Push-Pull and Break-Away
Size (Ø diameter)	9 sizes from Ø 11.1 to Ø 34.0 mm [plugs]	8 sizes from Ø 8.5 to Ø 36.1 mm [plugs]	5 Sizes from Ø 7.0 to Ø 18.8 mm [plugs]
Keying	10 keyway options	6 keyway options	3 keyway options
Shell Types	Over 40 shell styles	Over 12 shell styles	Over 3 shell styles
Shell Material	Aluminium or Brass	Aluminium or Brass	Brass
Plating	Anthracite nickel or Chrome	Anthracite nickel or Chrome	Anthracite nickel
Cable Diameter	2.2 to 34 mm 4 backshell options available	2.2 to 34 mm 1 backshell option	3.2 to 11.7 mm Overmolded backshell
NB of contact	2 to 114	2 to 68	2 to 32
AWG	Low Voltage 16 to 32 High Power 1 to 8	18 to 32	10 to 30
Contact types	Multipole / Coax / Fibre Optic / Fluidic / Mixed / High power	Multipole / Fibre Optic	Multipole / Coax / Mixed
Contact Termination	Crimp / Print [PCB]	Crimp / Print [PCB]	Crimp / Print [PCB] / Solder
Data Protocols	USB 2.0 / Eth Cat6	-	SPE / Ethernet / USB 2.0 and 3.2
Sealing level	IP68 / Hermetic sockets	IP67 / Hermetic sockets	IP68 unmated
Temperature range	-55°C to 200°C*	-55°C to 200°C*	-55°C to 150°C*
Mating Cycles	> 3000	300 / 5000 acc. to sizes/material	> 5000

\*maximum temperature valid for short periods of use.

# SUPREME

**Your extreme  
solution**



- High/Low pressure
- Radiation & corrosion
- High Voltage
- Regulated environments



## N

### Nuclear Stainless Steel

## W

### Underwater

## Y

### High Voltage Unipole

Description	Flawless performances in highly regulated environments such as nuclear hot cells	High water pressure screw locking connectors designed for demanding marine and underwater applications	Single pole high voltage connectors in high grade materials for research applications
Locking	Push-Pull telemanipulator	Screw locking	Push-Pull
Size (Ø diameter)	4 sizes from Ø 22.0 to Ø 45.0 mm [plugs]	6 sizes from Ø 17.2 to 50.0 mm [plugs]	3 sizes from Ø 13.0 to 47.0 mm [plugs]
Keying	2 keyway	4 keyway	No keyway (unipole)
Shell Type	Special shell design	Over 9 shell styles	Over 19 shell styles
Shell Material	Stainless steel	Stainless steel or Brass	Brass
Plating	—	Chrome on brass version	Chrome
Cable Diameter	6.1 to 30.0 mm	1.0 to 23.5 mm	1.2 to 31.3 mm
NB of contact	2 to 64	1 to 64	1
AWG	8 to 32	8 to 32	1.45 to 6.6 mm
Contact types	Multipole / Coax	Multipole / Coax / Fibre / Fluidic	High Voltage
Contact Termination	Solder / Crimp	Solder / Crimp / Print (PCB)	Solder
Test voltage	up to 5 kV DC	up to 5 kV DC	up to 50 kV DC
Sealing level	IP66	IP68, 30 bars	IP50
Temperature range	-40°C to 160°C	-20°C to 200°C*	-55°C to 230°C*
Mating Cycles	> 5000	> 1000	> 1000

\*maximum temperature valid for short periods of use.

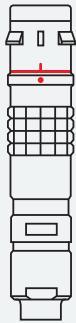
# SPECIALTIES

## Your specialised solutions

- Industry standards
- Special configurations
- Historical products

Series 3K.93C.Y, 00 Nim-Camac

H, V, 2G/2C, R, ...



### 3K.93C.Y - SMPTE Hybrid

The standard for high-definition TV (SMPTE 304). Robust hybrid fibre optic connector guaranteeing certified signal integrity.



### 00 NIM-CAMAC & 01 Series

The micro miniature 50 Ohms Coaxial self-latching connectors.



### H Series

Hermaphroditic self-latching Push-Pull connectors.



### R Series

Rectangular low-profile Push-Pull connectors.

# CABLES

## Your unique cable solution



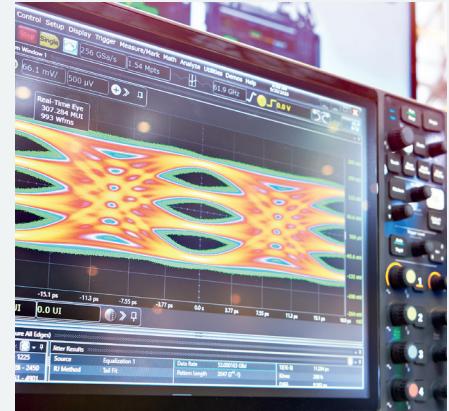
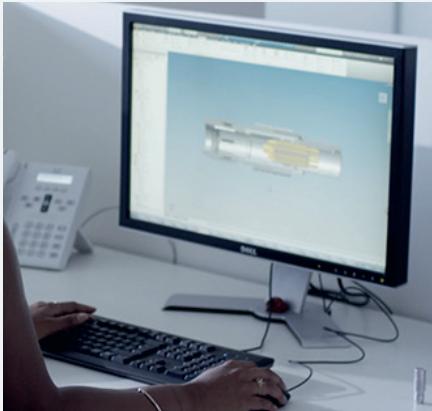
- Design expertise
- In house prototype to production
- Custom cables
- Conductive & hybrid

Series	Technical cables
	Biocompatibility
	Automation & high-flex
	Retractile coil cords
	Ruggedised



# SERVICES

## Connectivity Services for High-Performance Solutions



### Customised solutions

#### Transform challenges into solutions with LEMO

Using state-of-the-art technology, LEMO designs, tests and builds customised connectivity solutions, employing our customers' most stringent requirements as our guide. From a thorough needs analysis and an evaluation of our customer's specifications, our engineers and technical advisers can accompany our customers from the design to the delivery of your connectivity solutions.

### Cable assembly service

#### Cable assembly for complete interconnect solutions

By combining in-house cable assembly with our expertise in connectors and cables, LEMO established integrated solutions as the standard for connectivity. We offer comprehensive interconnect solutions, ensuring optimal connections between our connectors and suitable cables. Our certified teams design, build, and test complex cable assemblies, driven by customer requirements.

### End-to-end signal integrity services

#### From pins to protocols

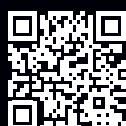
In order to ensure that high-speed signals travel from one device to another without loss or distortion, special attention needs to be given to the connector design, cable selection and cable assembly, in order to limit the effect of insertion loss, attenuation, return loss and crosstalk. For connectors or cable assemblies requiring unique signal integrity, LEMO can design, simulate and test bespoke solutions to meet customers' specifications.



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