

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.

Extensive product range

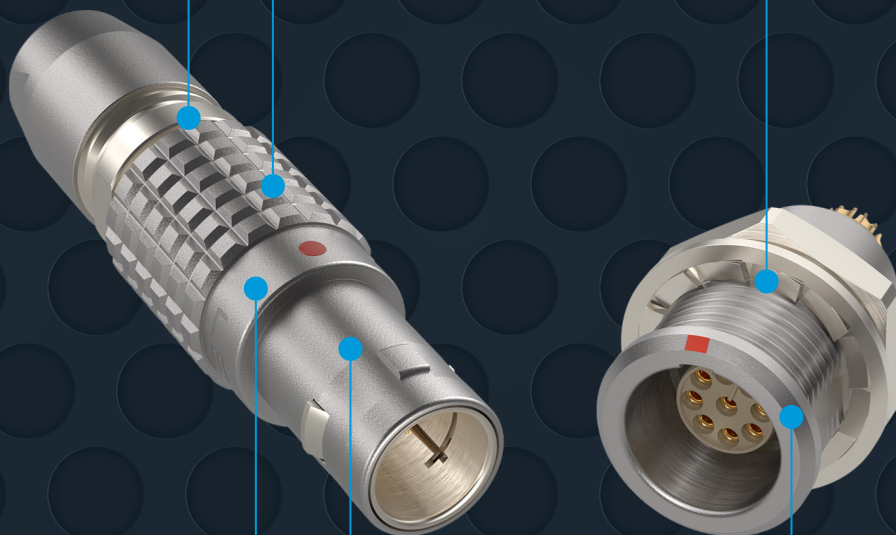
An outstanding solution portfolio that exceeds customer requirements

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.



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.

Global partner

Our worldwide reach, your local expert

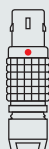
Relying on a global network of local subsidiaries and distributors, customers anywhere in the world can benefit from the same unmatched technical expertise of LEMO's leading technical advisors, as well as from our full inventory of products.

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 |



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 |
| | Retractable 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

2 REDEL



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 | 0K | 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

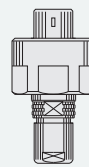
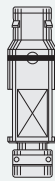
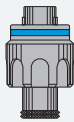
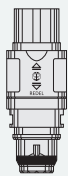
| | | | | | | |
|---------------------------------|----|----|----|----|----|----|
| Test & Measurement | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| Energy & Industrial | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| Medical | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓✓ |
| Semiconductor | ✓✓ | ✓ | ✓ | ✓✓ | ✓ | |
| Audio Video | ✓✓ | ✓ | ✓ | ✓✓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

3

OPTIMA

4

SUPREME

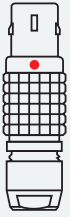


| SP | MP | M | F | N | W | Y |
|-----------------|-----------------|------------|-----------|-----------------|--------|------------------|
| Inner Push-Pull | Inner Push-Pull | Screw | Push-Pull | Push-Pull | Screw | Push-Pull |
| Plastic | Plastic | Aluminium | | Stainless Steel | Brass | |
| Grey | Grey | Anthracite | | Silver | | |
| IP50 | IP50 | IP68 | IP67 | IP66 | IP68 | IP50 |
| 8 | 6 | 40 | 12 | 18 | 9 | 19 |
| 3 | 3 | 3 or 5 | 3 or 5 | 1 | 1 or 2 | N/A |
| | | MM | FF | | | |
| | | 0M | 0F | | 0W | |
| SP | | 1M | 1F | | 1W | 1Y |
| | | 2M | 2F | 2N | 2W | |
| | | 3M | 3F | 3N | 3W | 3Y |
| | MP | TM, 4M, LM | 4F, LF | 4N | 4W | |
| | | 5M | 5F | 5N | 5W | |
| | | | | | | 6Y |
| 22 | 34 [144 PCB] | 114 | 68 | 64 | 64 | 1 (High Voltage) |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | | ✓ | | | | ✓ |
| | ✓ | ✓ | | ✓ | ✓ | |
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| | | ✓ | ✓ | ✓✓ | ✓✓ | ✓✓ |

ORIGINALS

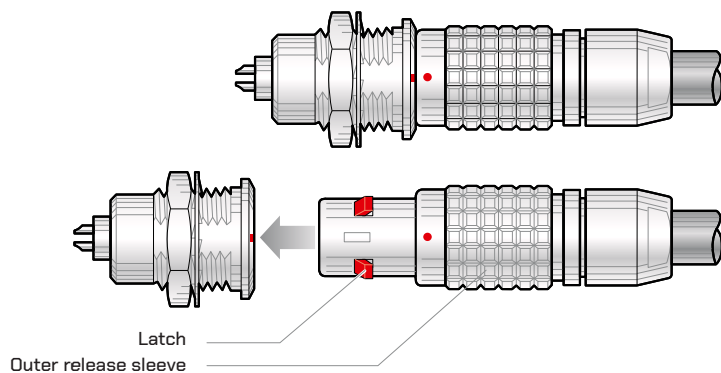
Your configurable solution

- 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

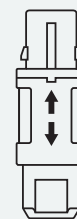
| Description | LEMO original Push-Pull solution with unmatched mating ergonomy | LEMO original Push-Pull solution for outdoor environments with unmatched mating ergonomy |
|---------------------|---|--|
| Locking | Push-Pull | Push-Pull |
| Size [ø diameter] | 8 sizes from ø 6.4 to ø 46.0 mm (plugs) | 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

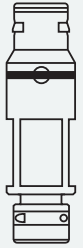
| | | |
|---------------------|--|--|
| Description | LEMO lightweight, compact, high vibration resistant (MIL STD 202 & 810F), IP68 screw locking connector | LEMO lightweight, compact, high vibration resistant (MIL STD 810F), IP67 Push-Pull connector |
| Locking | Triple start, 3/4 turn ratchet coupling | Push-Pull |
| 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) |
| Keying | 10 keyway options | 6 keyway options |
| Shell Types | Over 40 shell styles | Over 12 shell styles |
| Shell Material | Aluminium or Brass | Aluminium or Brass |
| Plating | Anthracite nickel or Chrome | Anthracite nickel or Chrome |
| Cable Diameter | 2.2 to 34 mm 4 backshell options available | 2.2 to 34 mm 1 backshell option |
| NB of contact | 2 to 114 | 2 to 68 |
| AWG | Low Voltage 16 to 32 High Power 1 to 8 | 18 to 32 |
| Contact types | Multipole / Coax / Fibre Optic / Fluidic / Mixed / High power | Multipole / Fibre Optic |
| Contact Termination | Crimp / Print (PCB) | Crimp / Print (PCB) |
| Data Protocols | USB 2.0 / Eth Cat6 | - |
| Sealing level | IP68 / Hermetic sockets | IP67 / Hermetic sockets |
| Temperature range | -55°C to 200°C* | -55°C to 200°C* |
| Mating Cycles | > 3000 | 300 / 5000 acc. to sizes/material |

*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 |

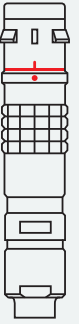
*maximum temperature valid for short periods of use.

5 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

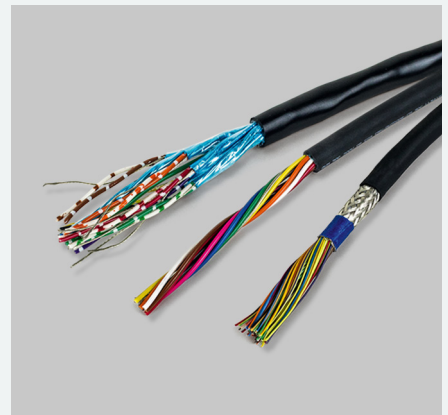
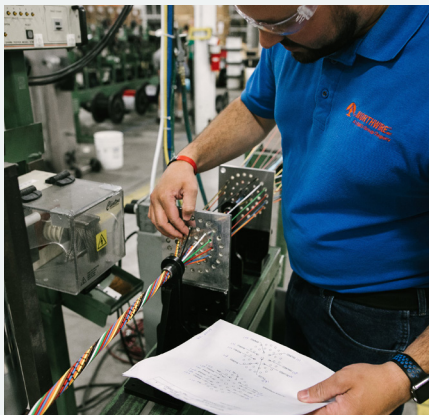
Rectangular low-profile Push-Pull connectors.

CABLES

Your unique cable solution

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

| | |
|--------|------------------------|
| Series | Technical cables |
| | Biocompatibility |
| | Automation & high-flex |
| | Retractable 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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