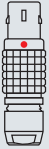


SP Series Plastic connectors



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 trusted medical 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 |
| | 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

Understanding LEMO's product selection benefits:

Standard versus Special.

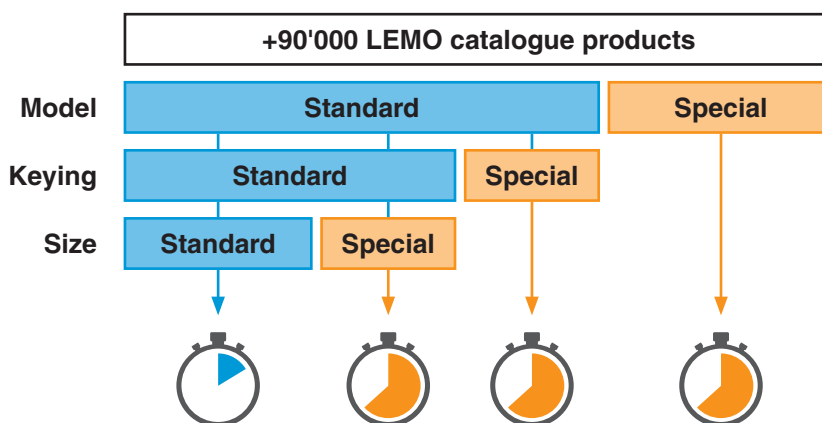
LEMO has a +80 years history of developing custom connectivity solutions. Our very broad offering of models combined with our modular insert design results in a range of over 90'000 connector solutions. This vast product portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in the most demanding markets, including yours.

In this product catalogue we have structured our product offering into two categories:

- **STANDARD** products (in blue) – Most commonly used products for which we can ensure the best availability and shorter lead times. For these products a 10 pcs minimum order quantity (MOQ) applies.
- **SPECIAL** products (in orange) – More niche products designed for customers with specific requirements. For these products a higher minimum order quantity (MOQ) will apply, prices might be higher and lead times are typically longer.

And this differentiation between **STANDARD** and **SPECIAL** applies on three different levels:

1. **MODEL** – Outershell / Backshell shape
2. **KEYING** – Alignment key for differentiated mating
3. **SIZE** – Physical dimensions of the connector



Only if Model + Keying + Size are all within the STANDARD product offering, you will have the best availability and shorter lead time. We recommend you find as much as possible the right solution for your connectivity challenge within our standard product offer.

For all other, special products, we recommend you contact your local LEMO representative to discuss your overall project's life span and long-term needs, so we can align your forecast with applicable MOQ quantities.

By clearly distinguishing between Standard and Special products, LEMO ensures maximum flexibility while still offering the perfect solution to fully meet our customer needs.

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.

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REDEL SP Series

Remarkable design delivering top performance

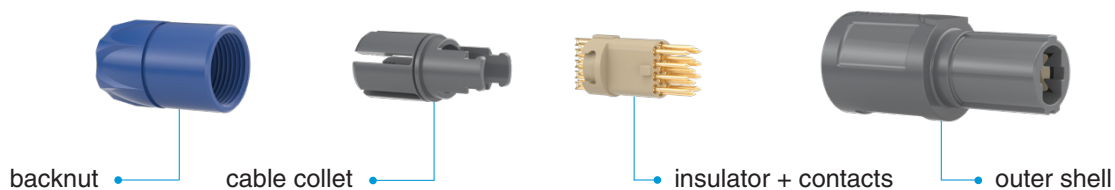
Designed for demanding environments such as medical and test & measurement applications, REDEL SP connectors offer a compact, reliable, and easily integrable solution. The Polyphenylsulfone (PPSU) housing endures repeated sterilisation cycles, while the patented internal push-pull locking system ensures secure connections, enhanced mating and shock resistance, as well as superior system protection against imitation.

Featuring high contact density, an ergonomic and modular design, and simplified wiring, REDEL SP is the trusted choice of demanding professionals who require uncompromising performance and reliability — where failure is simply not an option.

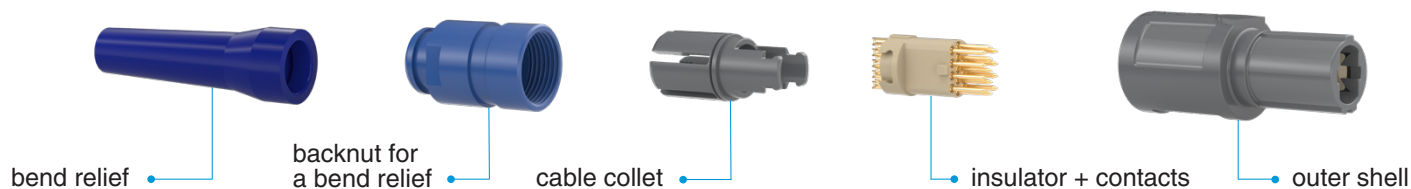


Exploded view of the REDEL SP (IP50 models)

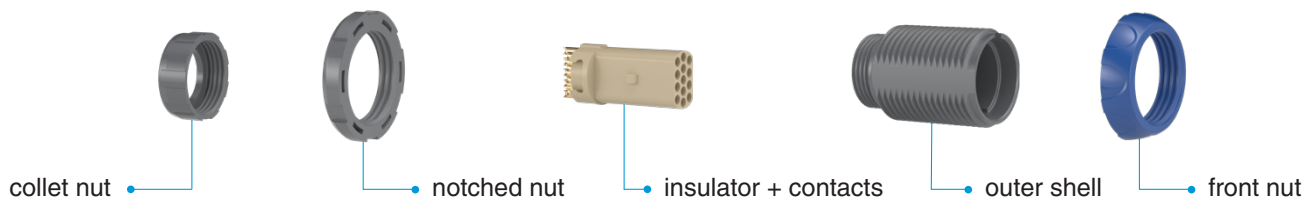
Straight plug



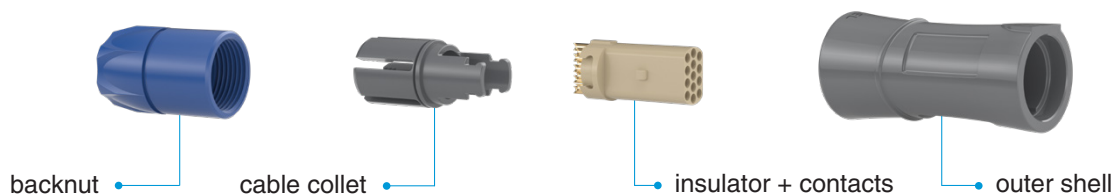
Straight plug with bend relief



Socket

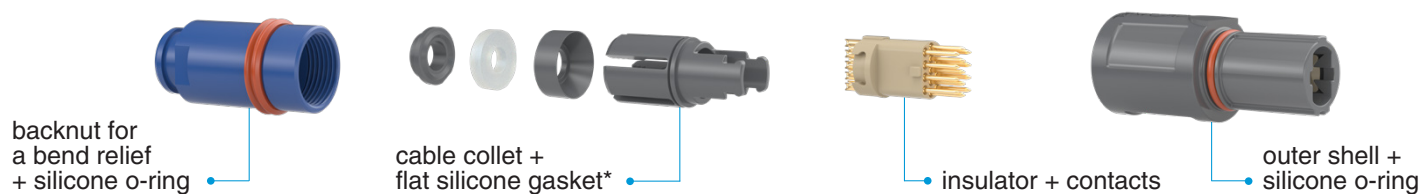


Free cable socket

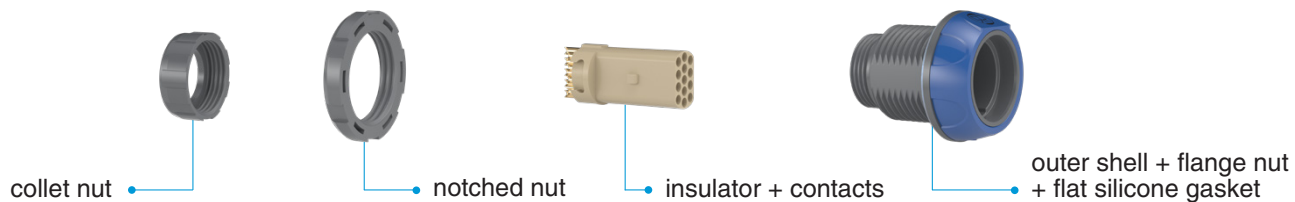


Exploded view of the REDEL SP (IP68 models)

Straight plug



Socket

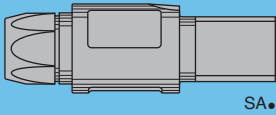


* The orientation of the sealing gasket and the two positioners must be strictly observed

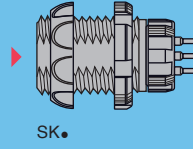
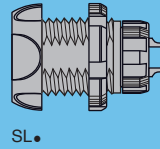
SP series (standard models)

Standard models (page 11)

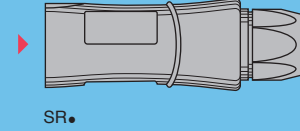
Straight plugs



Sockets

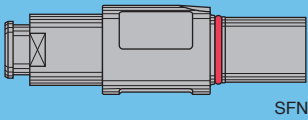


Free cable socket

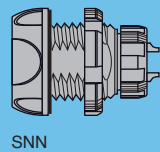


Watertight models (page 14)

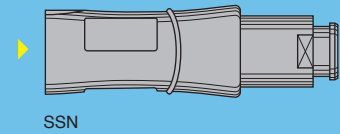
Straight plug



Socket



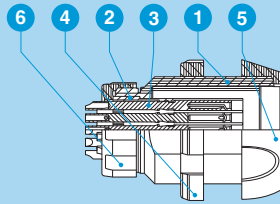
Free cable socket (coming soon)



Part section showing internal components

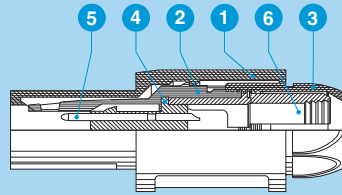
Socket

- 1 outer shell
- 2 insulator
- 3 female contact
- 4 notched nut
- 5 front nut
- 6 collet nut



Straight plug

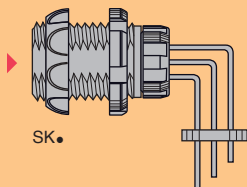
- 1 outer shell
- 2 latch sleeve
- 3 backnut
- 4 insulator
- 5 male contact
- 6 cable collet



SP series (special model)

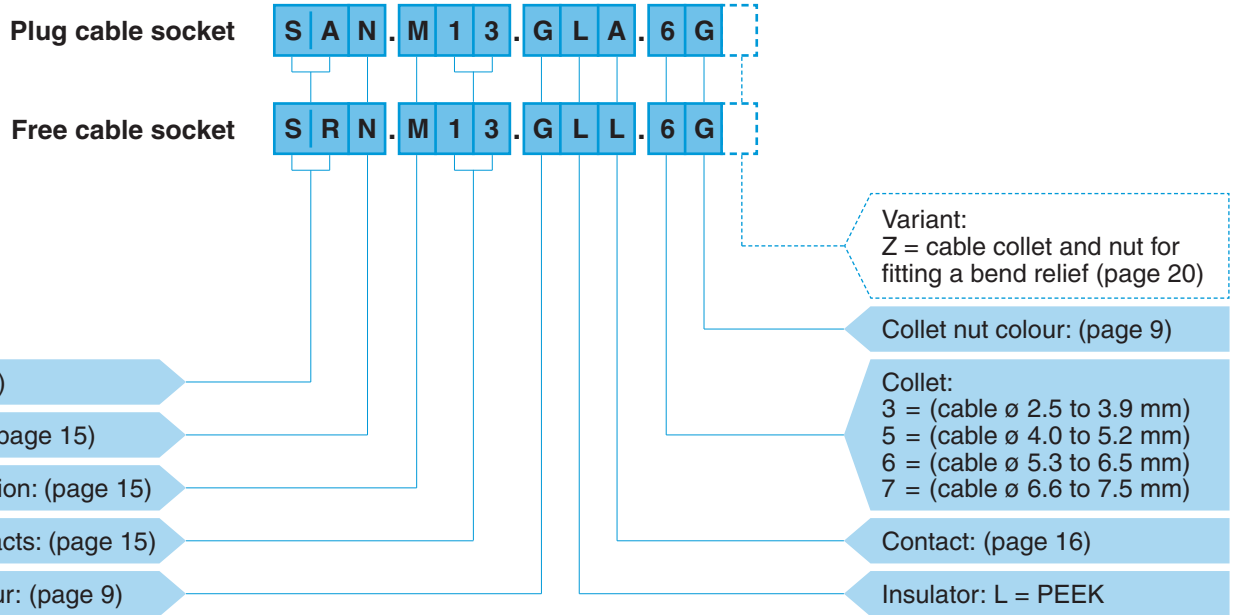
Special model (page 12)

Elbow socket model

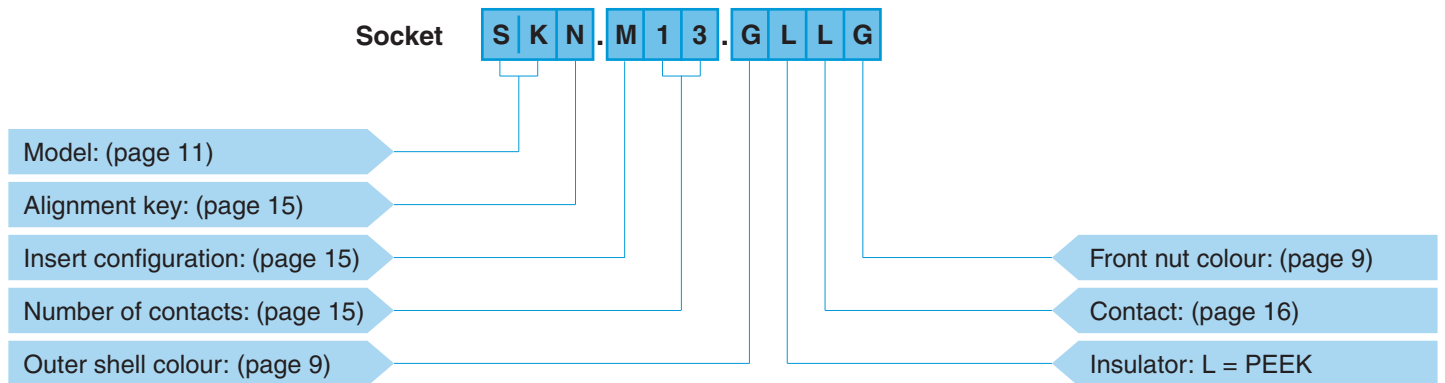


Part numbering system (IP50)

Standard models part numbering system



SAN.M13.GLA.6G = straight plug with cable collet and alignment key (N), multipole type with 13 male contacts to solder, grey Proprietary sulfone shell, PEEK insulator, collet for maximum cable ø 6.5 mm and grey collet nut.



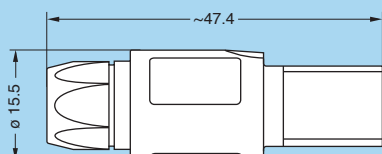
SKN.M13.GLLG = socket with two nuts and alignment key (N), multipole type with 13 female contacts to solder, grey Proprietary sulfone shell, PEEK insulator and grey plastic front nut.



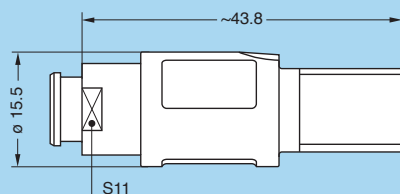
S M L

Standard models (IP50)

SA● Straight plug, key (N or P, T), with cable collet



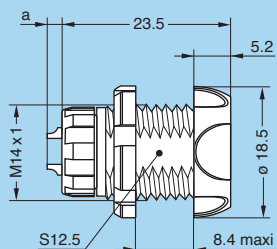
Cable collet and nut for fitting a bend relief ¹⁾



| Part number | Cable ø (mm) | |
|-----------------------|--------------|-----|
| | min | max |
| SA●.M●●.øL●.3● | 2.5 | 3.9 |
| SA●.M●●.øL●.5● | 4.0 | 5.2 |
| SA●.M●●.øL●.6● | 5.3 | 6.5 |
| SA●.M●●.øL●.7● | 6.6 | 7.5 |

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 20).

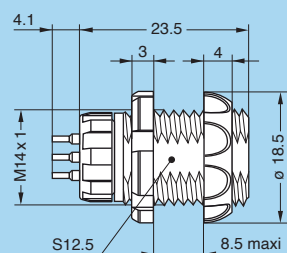
SL● Socket, nut fixing, key (N or P, T)



| Part number | Contact | |
|---------------------|------------|--------|
| | Solder | Crimp |
| | a max (mm) | a (mm) |
| SL●.M●●.øL●● | 2.2 | 0 |

Panel cut-out (page 22)

SK● Socket with two nuts, key (N or P, T) and straight print contact (back panel mounting)

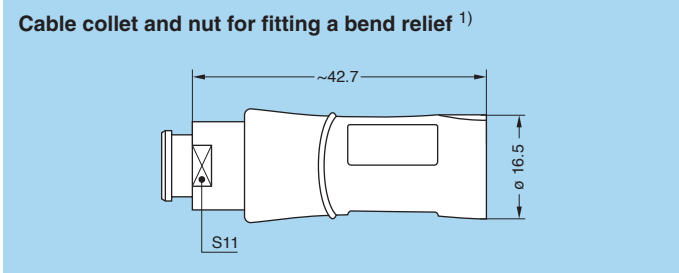
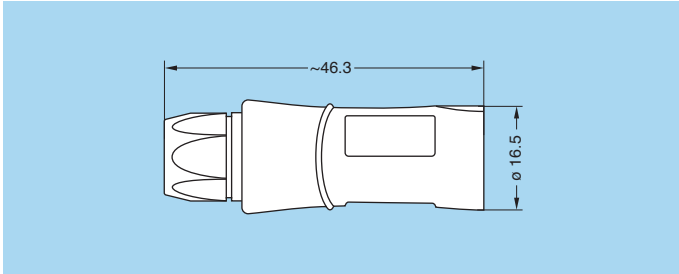


| Part number |
|---------------------|
| SK●.M●●.øLN● |

Panel cut-out (page 22)

PCB drilling pattern (page 23)

SR Free cable socket, key (N or P, T), with cable collet

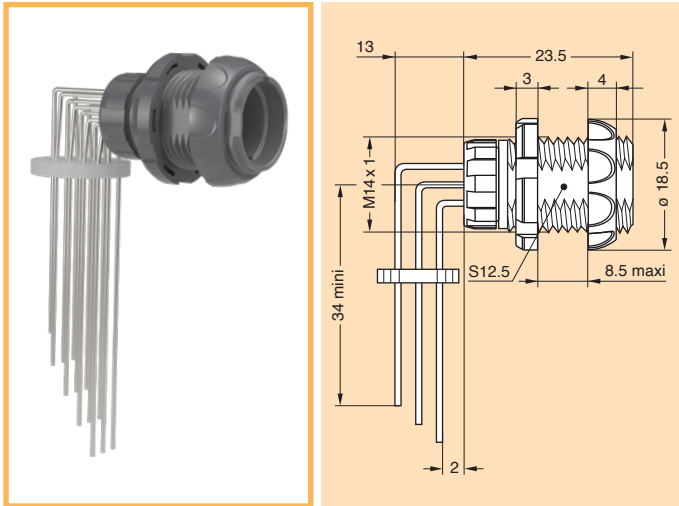


| Part number | Cable ø (mm) | |
|-------------------|--------------|-----|
| | min | max |
| SR.M...L.3 | 2.5 | 3.9 |
| SR.M...L.5 | 4.0 | 5.2 |
| SR.M...L.6 | 5.3 | 6.5 |
| SR.M...L.7 | 6.6 | 7.5 |

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 20).

S
K
M
L
V
Special model (IP50)

SK Socket with two nuts, key (N or P) and with elbow print contact (back panel mounting)



| Part number |
|------------------|
| SK.M...LV |

Panel cut-out (page 22)
PCB drilling pattern (page 23)

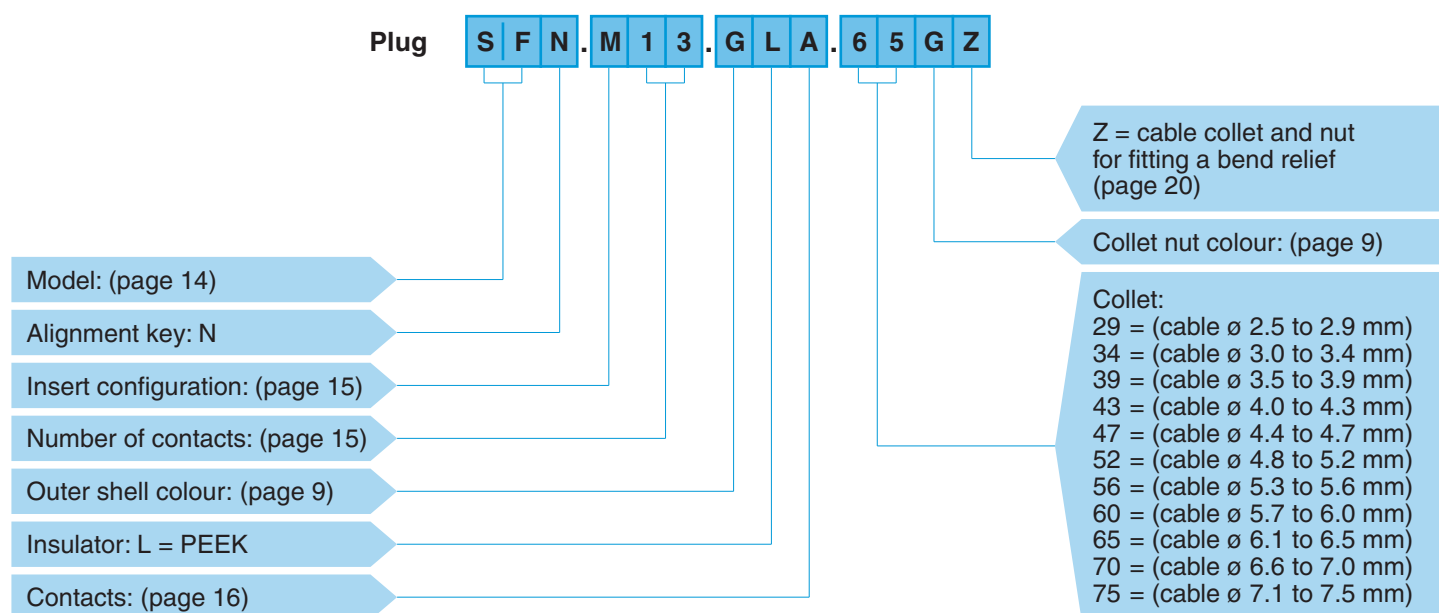


S N M L Z

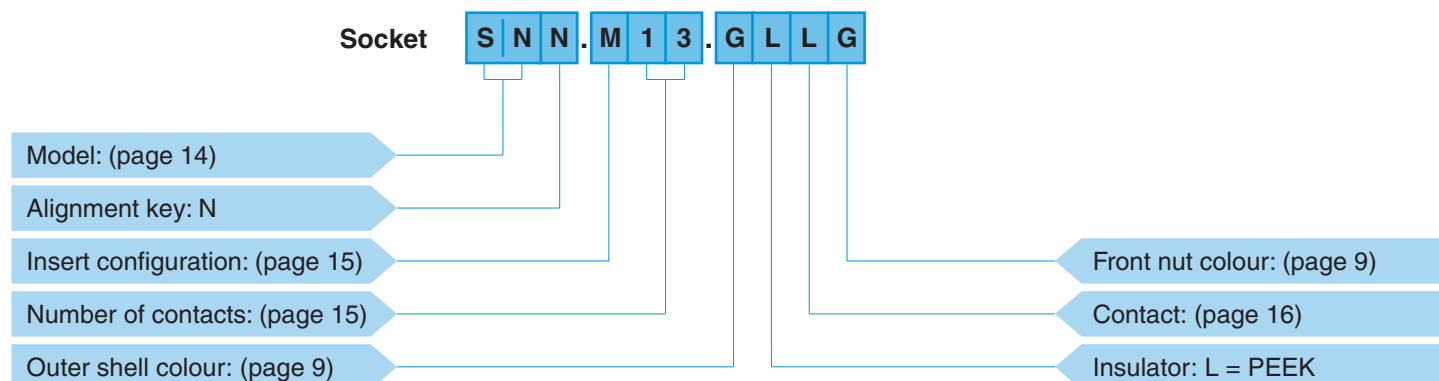
Part numbering system (IP68*)



Watertight models part numbering system



SFN.M13.GLA.65GZ = straight plug with cable collet and alignment key (N), multipole type with 13 male contacts to solder, grey Proprietary sulfone shell, PEEK insulator, collet for maximum cable ø 6.5 mm and nut for fitting a bend relief.



SNN.M13.GLLG = socket, nut fixing, alignment key (N), multipole type with 13 female contacts to solder, grey Proprietary sulfone shell, PEEK insulator and grey plastic front nut.

Note: * 2 meters - 2 hours (mated)

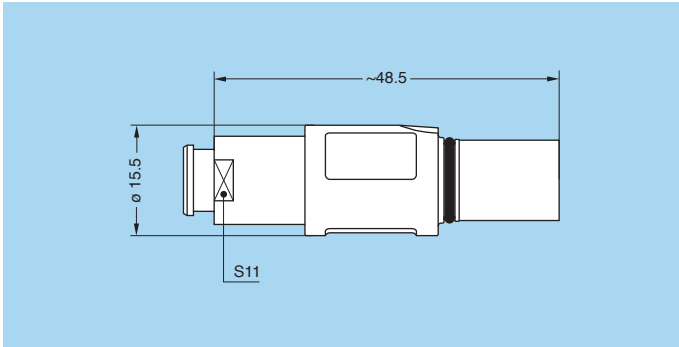


S | N | M | | L | | Z

Watertight models (IP68*)



SFN Straight plug, key (N), cable collet, nut for fitting a bend relief, watertight IP68 (when mated)

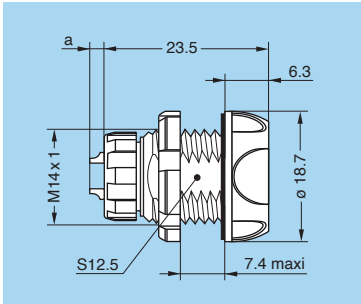


To ensure optimal sealing under all conditions, it is recommended to regularly replace the plug nose O-ring (ref. GDA.99.095.125SK) (see page 19).

| Part number | Cable ø (mm) | |
|----------------|--------------|-----|
| | min | max |
| SFN.M...øL.29Z | 2.5 | 2.9 |
| SFN.M...øL.34Z | 3.0 | 3.4 |
| SFN.M...øL.39Z | 3.5 | 3.9 |
| SFN.M...øL.43Z | 4.0 | 4.3 |
| SFN.M...øL.47Z | 4.4 | 4.7 |
| SFN.M...øL.52Z | 4.8 | 5.2 |
| SFN.M...øL.56Z | 5.3 | 5.6 |
| SFN.M...øL.60Z | 5.7 | 6.0 |
| SFN.M...øL.65Z | 6.1 | 6.5 |
| SFN.M...øL.70Z | 6.6 | 7.0 |
| SFN.M...øL.75Z | 7.1 | 7.5 |

Note: the bend relief must be ordered separately (silicone version only) (see page 20).

SNN Socket, nut fixing, key (N), watertight IP68 (when mated)

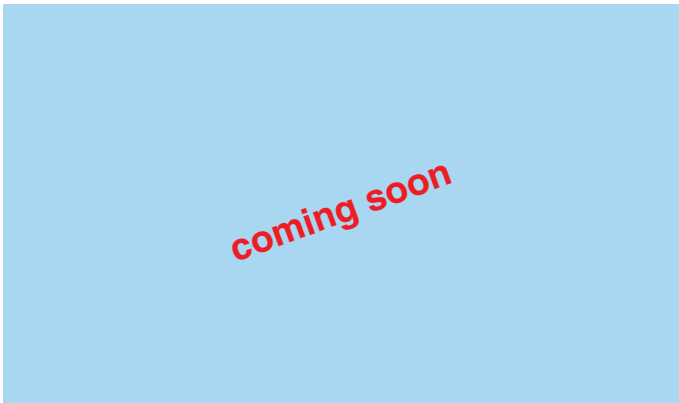


| Part number | Contact | |
|-------------|------------|--------|
| | Solder | Crimp |
| | a max (mm) | a (mm) |
| SNN.M...øL | 2.2 | 0 |

Note: fixed nut version only, designed for front panel mounting to ensure sealing on the panel side.

Panel cut-out (page 22)

SSN Free cable socket, key (N), cable collet, nut for fitting a bend relief, watertight IP68 (when mated) (coming soon)



| Part number | Cable ø (mm) | |
|----------------|--------------|-----|
| | min | max |
| SSN.M...øL.29Z | 2.5 | 2.9 |
| SSN.M...øL.34Z | 3.0 | 3.4 |
| SSN.M...øL.39Z | 3.5 | 3.9 |
| SSN.M...øL.43Z | 4.0 | 4.3 |
| SSN.M...øL.47Z | 4.4 | 4.7 |
| SSN.M...øL.52Z | 4.8 | 5.2 |
| SSN.M...øL.56Z | 5.3 | 5.6 |
| SSN.M...øL.60Z | 5.7 | 6.0 |
| SSN.M...øL.65Z | 6.1 | 6.5 |
| SSN.M...øL.70Z | 6.6 | 7.0 |
| SSN.M...øL.75Z | 7.1 | 7.5 |

Note: the bend relief must be ordered separately (silicone version only) (see page 20).

Alignment key

Verify the third digit of the part number in order to select the right keying. The standard keying is «N» coded.

| Front view of a plug | Ref. | Gender | Contact type | |
|----------------------|------|----------|--------------|--------|
| | | | Plug | Socket |
| | N | standard | male | female |
| | P | standard | male | female |
| | T | reverse | female | male |

● Standard
● Special

Multipole insert configuration

Multipole

| Male solder contacts | Female solder contacts | Reference | Number of contacts | Contact ϕ A (mm) | Solder bucket ϕ (mm) ⁴⁾ | Crimp bucket ϕ (mm) ⁴⁾ | AWG ⁴⁾ | | Contact type | Solder | | | Crimp | | | |
|----------------------|------------------------|-----------|--------------------|-----------------------|---|--|-------------------------|--------------------------|--------------|-----------------------------------|---------------|------------------------------------|-----------------|--------------------------------------|--|-------------------|
| | | | | | | | Crimp contact (max-min) | Solder contact (max-min) | | Solder / Crimp / Print (straight) | Print (elbow) | Test voltage (kV DC) ¹⁾ | Contact-contact | Air clearance min (mm) ²⁾ | Creepage distance min (mm) ³⁾ | Rated current (A) |
| | | M04 | 4 | 1.3 | 1.10 | 1.40 | 18 20 22 | 20 28 | ● | ● | 2.26 | 0.95 | 11.5 | 2.54 | 1.35 | 11.5 |
| | | M06 | 6 | 0.9 | 0.80 | 1.10 | 20 22 24 | 22 30 | ● | ● | 2.20 | 1.20 | 8.5 | 2.70 | 1.50 | 8.5 |
| | | M08 | 8 | 0.9 | 0.80 | 1.10 | 20 22 24 | 22 30 | ● | ● | 2.10 | 0.75 | 5.0 | 2.10 | 1.1 | 5.0 |
| | | M10 | 10 | 0.7 | 0.80 | 0.80 | 22 24 26 | 22 30 | ● | ● | 1.65 | 0.70 | 4.2 | 2.17 | 1.1 | 4.2 |
| | | M13 | 13 | 0.7 | 0.80 | 0.80 | 22 24 26 | 22 30 | ● | ● | 1.50 | 0.50 | 4.0 | 1.80 | 0.9 | 4.0 |
| | | M16 | 16 | 0.5 | 0.45 | 0.45 | 28 30 32 | 28 34 | ● | - | 1.05 | 0.47 | 3.0 | 1.88 | 0.8 | 3.0 |
| | | M18 | 18 | 0.5 | 0.45 | 0.45 | 28 30 32 | 28 34 | ● | - | 1.00 | 0.47 | 2.5 | 1.60 | 0.8 | 2.5 |
| | | M22 | 22 | 0.5 | 0.45 | 0.45 | 28 30 32 | 28 34 | ● | - | 0.90 | 0.48 | 2.0 | 1.90 | 0.8 | 1.2 |

Note: 1) depending on specific application and related standard, more restrictive operating voltage may apply (see page 27).
 2) shortest distance in air between two conductive parts.
 3) shortest distance along the surface of the insulating material between two conductive parts.
 4) for a given AWG, the diameter of some stranded conductor design is larger than the solder cup diameter (see page 24).

● Standard
● Special



Contact type

Select the type of contact: solder or crimp?

Plug

| Type | Reference | |
|--------|-----------|-----------------------|
| | Male | Female |
| Solder | A | L¹⁾ |
| Crimp | C | M¹⁾ |

Note: ¹⁾ only for T keying.

Socket

| Type | Reference | |
|-----------|-----------------------|----------|
| | Male | Female |
| Solder | A¹⁾ | L |
| Crimp | C | M |
| Print | D¹⁾ | N |
| Print 90° | – | V |

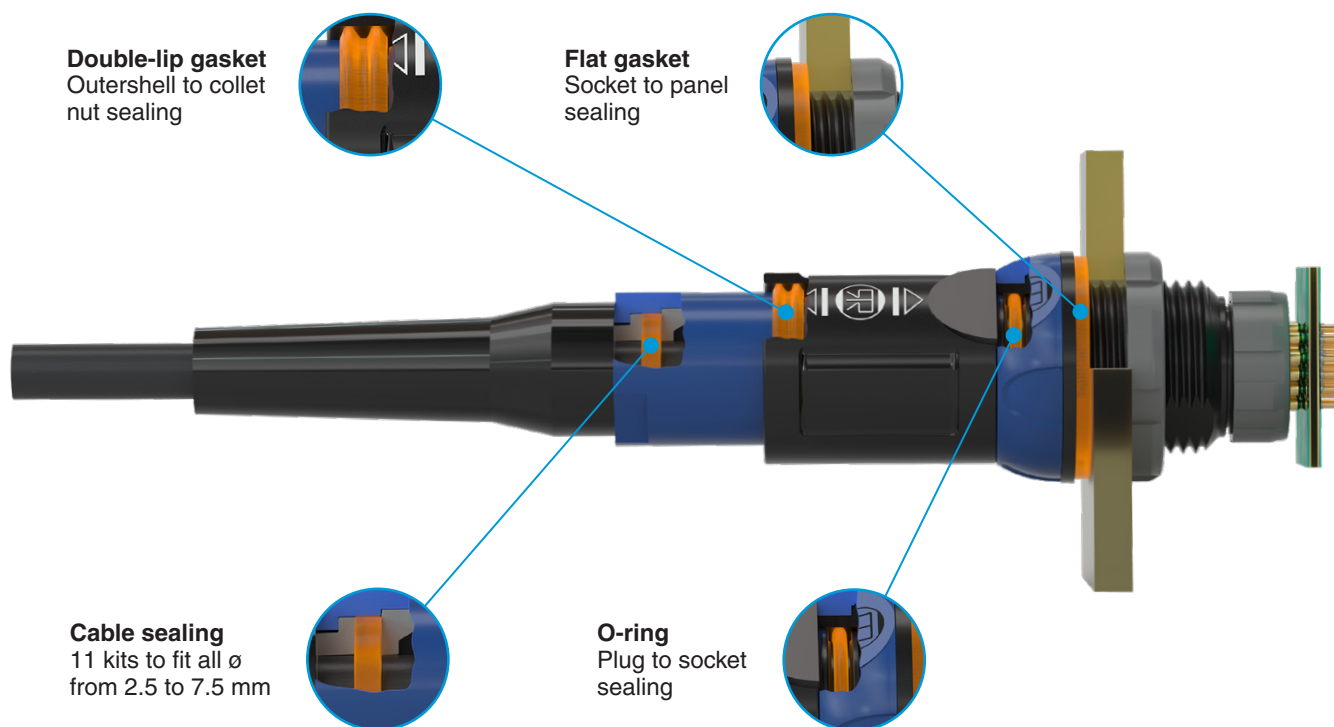
● Standard
● Special

Note: ¹⁾ only for T keying.

Cable assembly

LEMO offers an advanced cabling design ensuring a reliable mechanical, resin-free water ingress protection (IP68 - mated or unmated with caps). Assembly is performed in ISO 13485–certified facilities to guarantee process control and consistency.

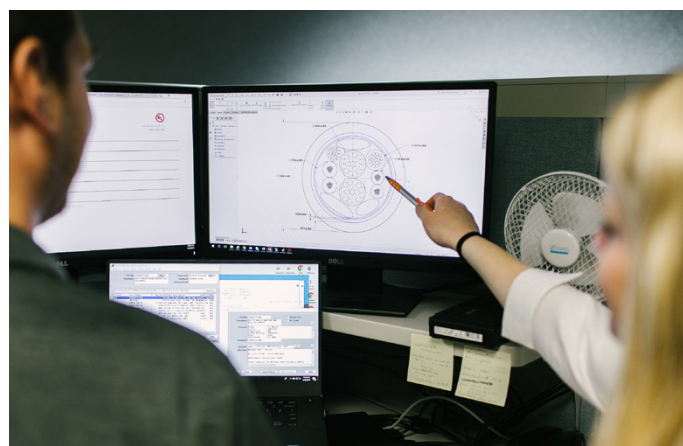
- Custom medical-grade cables (BioCompatic®) designed for flexibility, biocompatibility, sterilization resistance, and signal integrity.
- Four-level mechanical sealing (100% silicone) system guarantees resin-free IP68 protection.



Cables engineered for medical excellence

Custom medical-grade cables designed for flexibility, biocompatibility, sterilisation resistance, and signal integrity. BioCompatic® – A high-performance USP Class VI

- **Patient-friendly & biocompatible:** Free of bisphenol, phthalate, latex, and halogen
- **Durable & chemical-resistant:** Withstands chemicals, cuts, crush, and abrasion
- **Sterilization ready:** Endures steam autoclave (500 cycles at 134°C), Gamma, EtO, and STERRAD™
- **Extreme temperature resistance:** Operates from -80°C to +105°C
- **Medical-grade compliant:** USP Class VI, ISO 10993-5:2009, ISO 10993-10:2021, RoHS3
- **Highly flexible:** Designed to bend, torque, and retract repeatedly
- **Faster lead times:** No curing needed, enabling quicker time to market



Cable assemblies you can trust

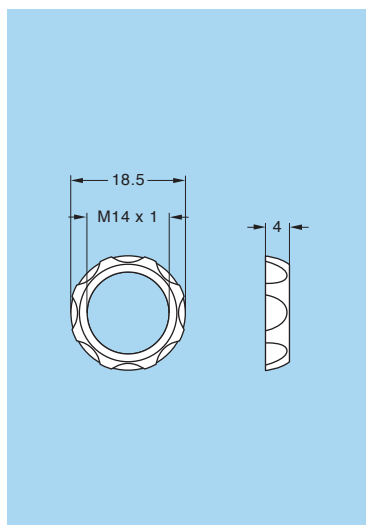
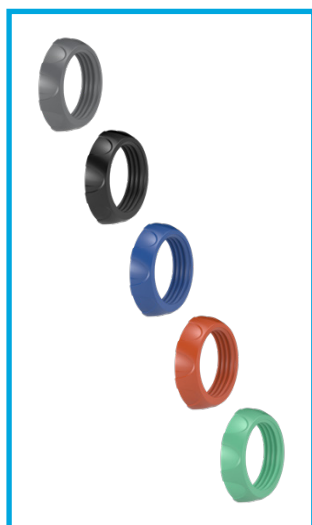
Comprehensive cable assembly capabilities from design to production, we deliver plug-and-play assemblies that ensure seamless integration and reliability.

- **Full-Service offering:** Pre-assembled cable and connector sets tailored to your application, tested and ready for integration.
- **Custom solutions:** Expert in complex cable harnesses, assemblies, and thermoplastic overmolding.
- **Private labeling:** Tailored branding for sensitive projects.
- **Certified quality:** IPC-620, ISO 9001, ISO 13485, and more.
- **Sustainability:** Eco-conscious manufacturing aligned with strict industry standards.
- **End-to-end support:** From design to delivery, with timely and reliable service. Single point of contact: One trusted partner from connector and cable selection to final cable assembly delivery.
- **Global support:** Available worldwide through LEMO's international network, with local support and logistics.
- **Design & engineering support:** Technical drawings, system-level expertise.
- **Extensively tested:** Each assembly undergoes thorough electrical, mechanical, and visual testing to guarantee performance and safety.



Accessories

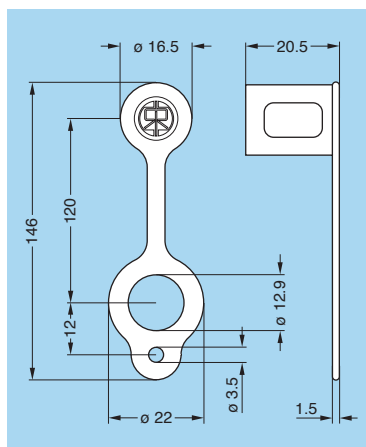
SKN Plastic front nut for SK● models (not available for IP68 sockets)



| Part number | Colours |
|-------------------|---------|
| SKN.220.RG | Grey |
| SKN.220.RN | Black |
| SKN.220.RA | Blue |
| SKN.220.RR | Red |
| SKN.220.RV | Green |

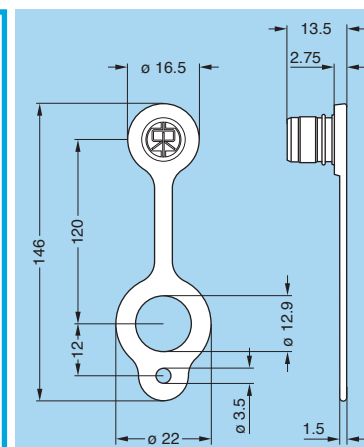
- Standard
- Special

SBZ.100.SN Blanking caps for IP68 plugs



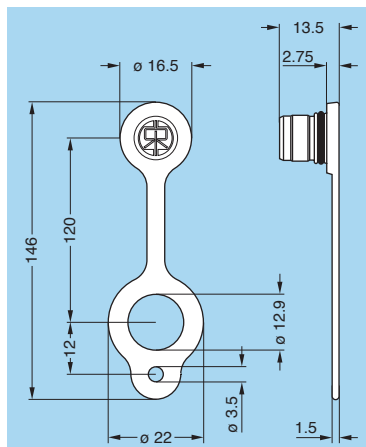
● Material: Santoprene TPV

SBZ.200.SN Blanking caps for sockets



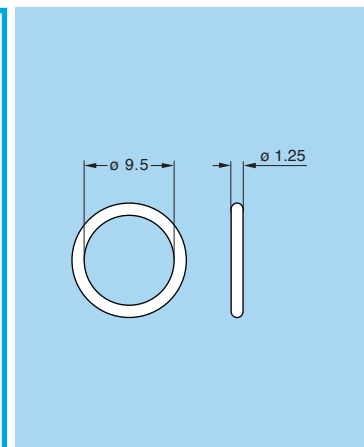
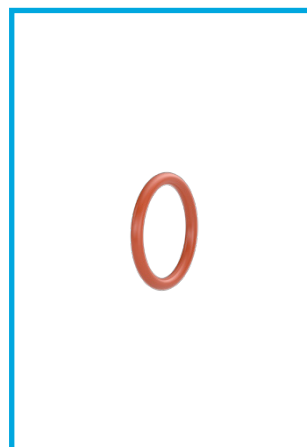
● Material: Santoprene TPV

SBZ.200.SNS Blanking caps for IP68 sockets



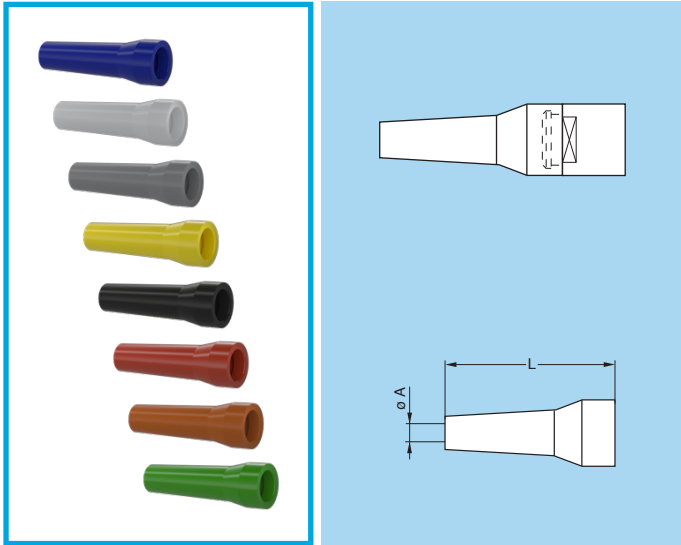
● Material: Santoprene TPV

GDA.99.095.125SK O-ring for IP68 SFN plug



● Material: Silicone VMQ

Note: after more than 20 sterilization cycles, replacing the O-ring on the plug is recommended to maintain IP68 sealing performance.

GMA.1B Bend relief


A bend relief absorbs the angular force that may be exerted on cables.

These are designed for plugs and free sockets with cable collet and nut.

Bend reliefs are available in 8 different colours. This can help you create differentiation where needed. Please note that the colour will slightly differ from the one on the hard plastic parts of connectors.

| Part number | Dimensions (mm) | | | | Material | Temperature range | |
|----------------------|-----------------|----|--------------|-----|--------------------------------------|-------------------|----------------|
| | Bend relief | | Cable ϕ | | | in dry atmosphere | in water steam |
| | A | L | min | max | | | |
| GMA.1B.025.DG | 2.5 | 30 | 2.5 | 2.9 | TPU Thermoplastic Polyurethane | -40°C, +80°C | - |
| GMA.1B.030.DG | 3.0 | 30 | 3.0 | 3.4 | | | |
| GMA.1B.035.DG | 3.5 | 30 | 3.5 | 3.9 | | | |
| GMA.1B.040.DG | 4.0 | 30 | 4.0 | 4.4 | | | |
| GMA.1B.045.DG | 4.5 | 30 | 4.5 | 4.9 | | | |
| GMA.1B.054.DG | 5.4 | 30 | 5.4 | 6.0 | | | |
| GMA.1B.065.DG | 6.5 | 30 | 6.5 | 7.0 | | | |
| GMA.1B.025.RG | 2.5 | 34 | 2.5 | 2.9 | Silicone elastomer VMQ | -60°C, +200°C | +140°C |
| GMA.1B.030.RG | 3.0 | 34 | 3.0 | 3.4 | | | |
| GMA.1B.035.RG | 3.5 | 34 | 3.5 | 3.9 | | | |
| GMA.1B.040.RG | 4.0 | 34 | 4.0 | 4.4 | | | |
| GMA.1B.045.RG | 4.5 | 34 | 4.5 | 5.0 | | | |
| GMA.1B.051.RG | 5.1 | 34 | 5.1 | 5.6 | | | |
| GMA.1B.057.RG | 5.7 | 34 | 5.7 | 6.2 | | | |
| GMA.1B.063.RG | 6.3 | 34 | 6.3 | 7.0 | | | |

Note: The last letter «G» of the part number indicates a grey colour, see the table below and replace letter «G» by the letter of the colour required. All dimensions are in millimeters

| Reference | Colours |
|-----------|---------|
| A | Blue |
| B | White |
| G | Grey |

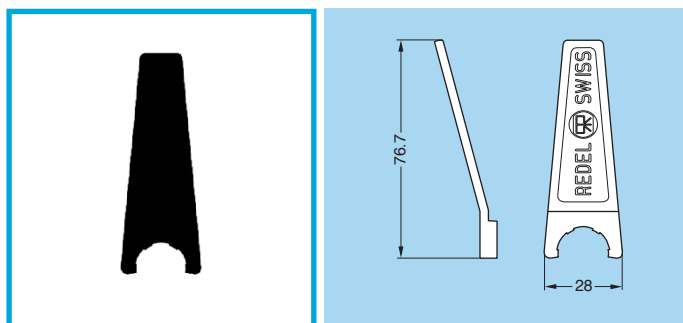
| Reference | Colours |
|-----------|---------|
| J | Yellow |
| N | Black |
| R | Red |

| Reference | Colours |
|-----------|---------|
| S | Orange |
| V | Green |

Note: the selection of pigments, which should remain stable at high temperature, is limited by the new regulations. The selected solutions represent the best possible compromise.

Tooling

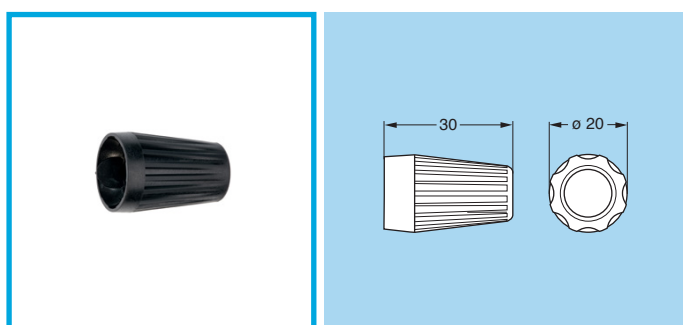
SOP Spanners with notch for securing the notched nut



| Part number | Note |
|-------------------|----------------------------|
| SOP.019.HN | for notched nut SLN.240.RG |

- Material: black polyamide

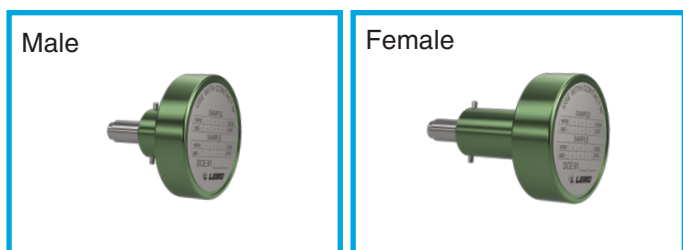
SOB Spanners for nut



| Part number | Note |
|-------------------|--------------------------|
| SOB.186.GN | for nut SLN.220.R● |
| SOB.187.GN | for front nut SKN.220.R● |

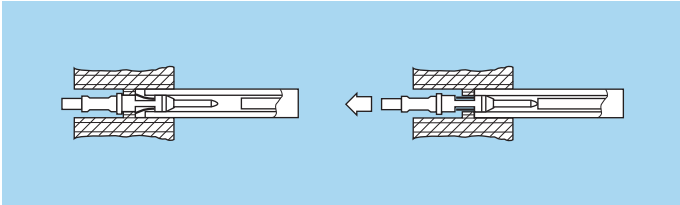
- Material: black polyamide

SOE Positioners for crimp contacts



| Part number | | Configuration | Contact \varnothing (mm) | Conductor AWG | Selector No Setting |
|-------------------|-------------------|---------------|----------------------------|---------------|---------------------|
| Male contact | Female contact | | | | |
| SOE.130.VC | SOE.130.VM | M04 | 1.3 | 18-20 | 8-7 |
| SOE.090.VC | SOE.090.VM | M06/M08 | 0.9 | 20-22-24 | 6-5-5 |
| SOE.070.VC | SOE.070.VM | M10/M13 | 0.7 | 22-24-26 | 6-5-5 |
| SOE.050.VC | SOE.050.VM | M16/M18/M22 | 0.5 | 28-30-32 | 4-3-3 |

Note: the variance in conductor stranding diameter for the minimum AWG is such that some can have a cross section which is not sufficient to guarantee crimping as per IEC 60352-2 standard.

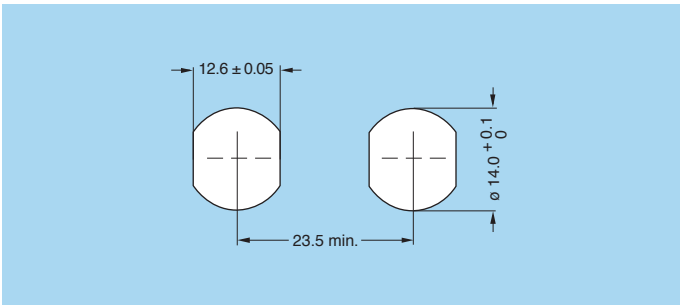
DCC Manual extractors for crimp contacts


| Part number | Configuration | Contact ø (mm) | Conductor AWG |
|-----------------------|---------------|----------------|---------------|
| DCC.13.15B.LAG | M04 | 1.3 | 18-20 |
| DCC.09.05B.LAG | M06/M08 | 0.9 | 20-22-24 |
| DCC.07.04B.LAG | M10/M13 | 0.7 | 22-24-26 |
| DCC.05.02B.LAG | M16/M18/M22 | 0.5 | 28-30-32 |

Note: the variance in conductor stranding diameter for the minimum AWG is such that some can have a cross section which is not sufficient to guarantee crimping as per IEC 60352-2 standard.

DPC.91.701.V Crimping tool

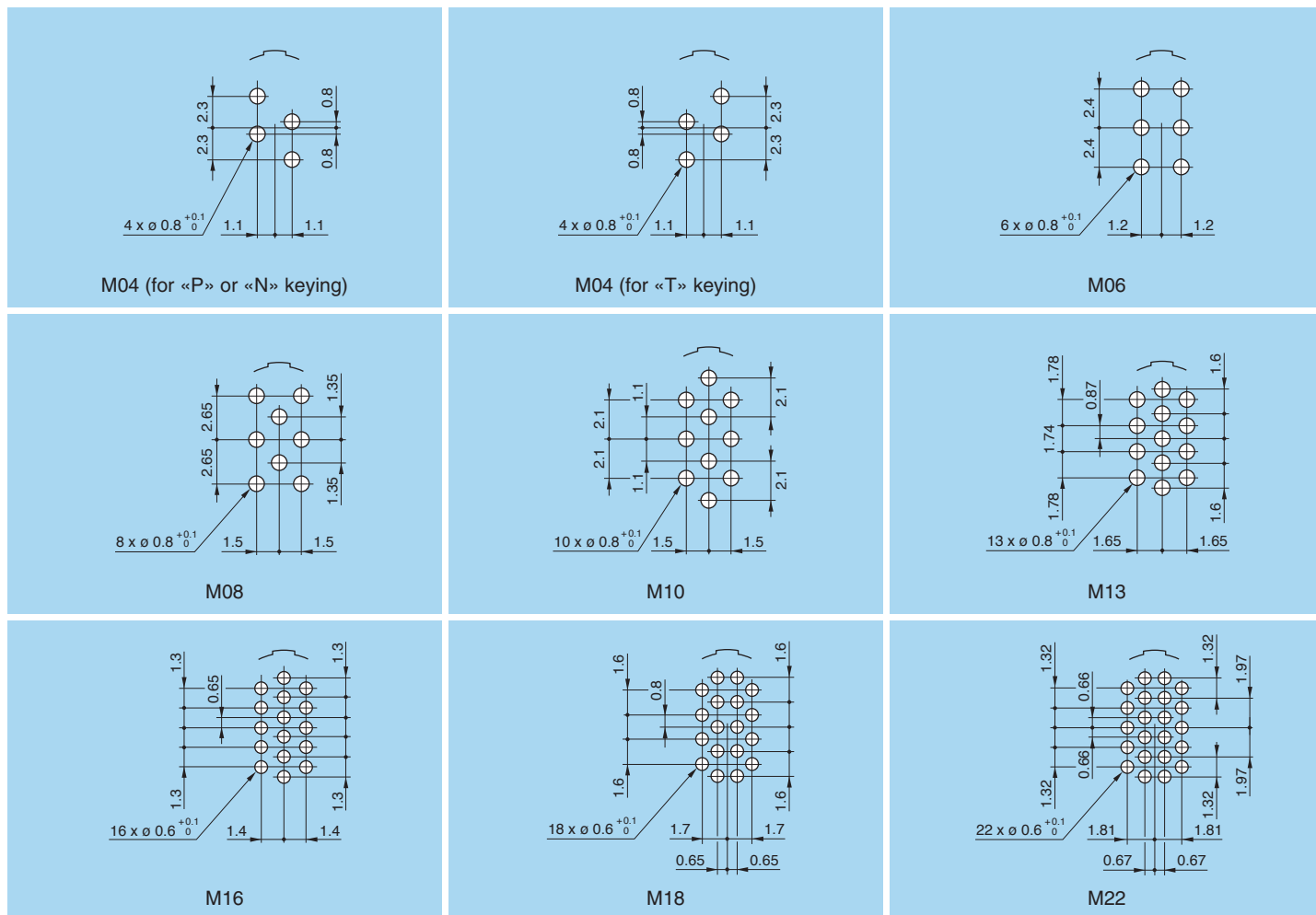

Panel cut-outs

For SL●, SK● and SNN models


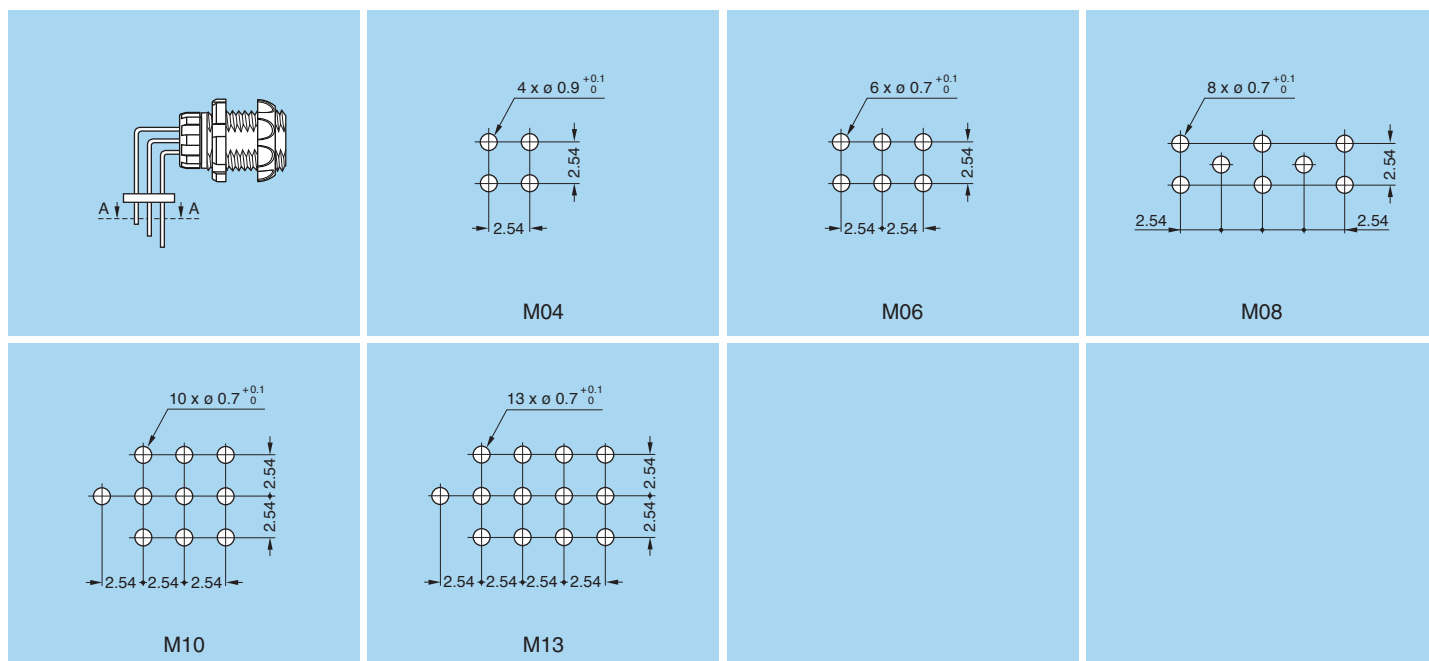
Note: Socket mounting nut torque = 1 Nm.
All dimensions are in millimeters.

PCB drilling pattern

Socket with straight print contact



Socket with elbow print contact



Technical characteristics

| Characteristics | Value | Standards |
|----------------------------------|---|---------------------|
| Mechanical endurance | > 5000 mating cycles | IEC 60512-5 test 9a |
| Ingress protection index (mated) | IP50 / IP68 watertight (2 meters / 2 hours) | IEC 60529 |
| Housing material | PPSU (Polyphenylsulfone) | – |
| Working temperature range | -50°C / +170°C | – |
| Sterilisation | Steam / ETO | – |
| Autoclave cycles | > 100 times (IP50) / > 20 times (IP68) | – |
| ESD contact and air discharge | 15 kV DC | IEC 61000-4-2 |
| Max \varnothing wire size | AWG 18 (crimp cts) / AWG 20 (solder cts) | – |

Table of American Wire Gauge

| AWG | Construction | | \varnothing wire max | | Wire section | |
|------------------|--------------|------------|------------------------|-------|--------------------|---------|
| | Strand nb | AWG/strand | (mm) | (in) | (mm ²) | (sq in) |
| 0 | 259 | 24 | 11.277 | 0.444 | 52.90 | 0.0820 |
| 1 | 817 | 30 | 9.702 | 0.382 | 41.40 | 0.0641 |
| 2 | 259 | 26 | 8.89 | 0.35 | 33.20 | 0.0514 |
| 4 | 133 | 25 | 6.9596 | 0.274 | 21.5925 | 0.0335 |
| 6 | 133 | 27 | 5.5118 | 0.217 | 13.5885 | 0.0211 |
| 8 | 168 | 30 | 4.4450 | 0.175 | 8.5127 | 0.0132 |
| 8 | 133 | 29 | 4.3942 | 0.173 | 8.6053 | 0.0133 |
| 10 | 105 | 30 | 3.3020 | 0.13 | 5.3204 | 0.0082 |
| 10 | 37 | 26 | 2.9210 | 0.115 | 4.7397 | 0.0073 |
| 10 | 1 | 10 | 2.6162 | 0.103 | 5.2614 | 0.0082 |
| 12 | 37 | 28 | 2.3114 | 0.091 | 2.9765 | 0.0046 |
| 12 | 19 | 25 | 2.3622 | 0.093 | 3.0847 | 0.0048 |
| 12 ¹⁾ | 7 | 20 | 2.5400 | 0.10 | 3.6321 | 0.0056 |
| 12 | 1 | 12 | 2.0828 | 0.082 | 3.3081 | 0.0051 |
| 14 | 41 | 30 | 2.0574 | 0.081 | 2.0775 | 0.0032 |
| 14 | 19 | 27 | 1.8542 | 0.073 | 1.9413 | 0.0030 |
| 14 ¹⁾ | 7 | 22 | 2.0828 | 0.082 | 2.2704 | 0.0035 |
| 14 | 1 | 14 | 1.6510 | 0.065 | 2.0820 | 0.0032 |
| 16 ¹⁾ | 65 | 34 | 1.5748 | 0.062 | 1.3072 | 0.0020 |
| 16 | 26 | 30 | 1.5748 | 0.062 | 1.3174 | 0.0020 |
| 16 | 19 | 29 | 1.4986 | 0.059 | 1.2293 | 0.0019 |
| 16 ¹⁾ | 7 | 24 | 1.5494 | 0.061 | 1.4330 | 0.0022 |
| 16 | 1 | 16 | 1.3208 | 0.052 | 1.3076 | 0.0020 |
| 18 ¹⁾ | 65 | 36 | 1.2700 | 0.05 | 0.8234 | 0.0013 |
| 18 ¹⁾ | 42 | 34 | 1.2700 | 0.05 | 0.8447 | 0.0013 |
| 18 | 19 | 30 | 1.3208 | 0.052 | 0.9627 | 0.0015 |
| 18 | 16 | 30 | 1.2954 | 0.051 | 0.8107 | 0.0013 |
| 18 | 7 | 26 | 1.2700 | 0.05 | 0.8967 | 0.0014 |
| 18 | 1 | 18 | 1.0414 | 0.041 | 0.8229 | 0.0013 |

| AWG | Construction | | \varnothing wire max | | Wire section | |
|------------------|--------------|------------|------------------------|-------|--------------------|----------------------|
| | Strand nb | AWG/strand | (mm) | (in) | (mm ²) | (sq in) |
| 20 ¹⁾ | 42 | 36 | 1.0160 | 0.04 | 0.5320 | 8.2x10 ⁻⁴ |
| 20 | 19 | 32 | 1.0414 | 0.041 | 0.6162 | 0.0010 |
| 20 | 10 | 30 | 1.0160 | 0.04 | 0.5067 | 7.9x10 ⁻⁴ |
| 20 | 7 | 28 | 0.9906 | 0.039 | 0.5631 | 8.7x10 ⁻⁴ |
| 20 | 1 | 20 | 0.8382 | 0.033 | 0.5189 | 8.0x10 ⁻⁴ |
| 22 | 19 | 34 | 0.8382 | 0.033 | 0.3821 | 5.9x10 ⁻⁴ |
| 22 | 7 | 30 | 0.7874 | 0.031 | 0.3547 | 5.5x10 ⁻⁴ |
| 22 | 1 | 22 | 0.6604 | 0.026 | 0.3243 | 5.0x10 ⁻⁴ |
| 24 ¹⁾ | 42 | 40 | 0.6604 | 0.026 | 0.2045 | 3.2x10 ⁻⁴ |
| 24 | 19 | 36 | 0.6858 | 0.027 | 0.2407 | 3.7x10 ⁻⁴ |
| 24 | 7 | 32 | 0.6350 | 0.025 | 0.2270 | 3.5x10 ⁻⁴ |
| 24 | 1 | 24 | 0.5588 | 0.022 | 0.2047 | 3.2x10 ⁻⁴ |
| 26 | 19 | 38 | 0.5588 | 0.022 | 0.1540 | 2.4x10 ⁻⁴ |
| 26 | 7 | 34 | 0.5080 | 0.02 | 0.1408 | 2.2x10 ⁻⁴ |
| 26 | 1 | 26 | 0.4318 | 0.017 | 0.1281 | 2.0x10 ⁻⁴ |
| 28 ¹⁾ | 19 | 40 | 0.4318 | 0.017 | 0.0925 | 1.4x10 ⁻⁴ |
| 28 | 7 | 36 | 0.4064 | 0.016 | 0.0887 | 1.4x10 ⁻⁴ |
| 28 | 1 | 28 | 0.3302 | 0.013 | 0.0804 | 1.2x10 ⁻⁴ |
| 30 | 7 | 38 | 0.3302 | 0.013 | 0.0568 | 8.8x10 ⁻⁵ |
| 30 | 1 | 30 | 0.2794 | 0.011 | 0.0507 | 7.9x10 ⁻⁵ |
| 32 | 7 | 40 | 0.2794 | 0.011 | 0.0341 | 5.3x10 ⁻⁵ |
| 32 | 1 | 32 | 0.2286 | 0.009 | 0.0324 | 5.0x10 ⁻⁵ |
| 34 | 1 | 34 | 0.1693 | 0.007 | 0.0201 | 3.1x10 ⁻⁵ |
| 36 | 1 | 36 | 0.127 | 0.005 | 0.0127 | 2.0x10 ⁻⁵ |
| 38 | 1 | 38 | 0.1016 | 0.004 | 0.0081 | 1.3x10 ⁻⁵ |
| 40 | 1 | 40 | 0.078 | 0.003 | 0.0049 | 7.5x10 ⁻⁶ |

Note: ¹⁾ not included in the standard

Table of wire gauges according to IEC-60228 standard

| Conductor no x ϕ (mm) | Max ϕ (mm) | Max ϕ (in) | Section (mm ²) | Section (sq in) |
|-------------------------------|--------------------|--------------------|-------------------------------|--------------------|
| 196x0.40 | 7.50 | 0.295 | 25.00 | 0.0387 |
| 7x2.14 | 6.10 | 0.240 | 25.00 | 0.0387 |
| 125x0.40 | 6.00 | 0.236 | 16.00 | 0.0248 |
| 7x1.72 | 4.90 | 0.192 | 16.00 | 0.0248 |
| 1x4.50 | 4.50 | 0.177 | 16.00 | 0.0248 |
| 80x0.40 | 4.70 | 0.155 | 10.00 | 0.0155 |
| 7x1.38 | 3.95 | 0.155 | 10.00 | 0.0155 |
| 1x3.60 | 3.60 | 0.141 | 10.00 | 0.0155 |
| 84x0.30 | 3.70 | 0.145 | 6.00 | 0.0093 |
| 7x1.50 | 3.15 | 0.124 | 6.00 | 0.0093 |
| 1x2.76 | 2.76 | 0.108 | 6.00 | 0.0093 |
| 56x0.30 | 2.80 | 0.110 | 4.00 | 0.0062 |
| 7x0.86 | 2.58 | 0.098 | 4.00 | 0.0062 |
| 1x2.25 | 2.25 | 0.082 | 4.00 | 0.0062 |
| 50x0.25 | 2.15 | 0.084 | 2.50 | 0.0038 |
| 7x0.68 | 2.04 | 0.080 | 2.50 | 0.0038 |
| 1x1.78 | 1.78 | 0.070 | 2.50 | 0.0038 |
| 30x0.25 | 1.60 | 0.062 | 1.50 | 0.0023 |
| 7x0.52 | 1.56 | 0.061 | 1.50 | 0.0023 |

| Conductor no x ϕ (mm) | Max ϕ (mm) | Max ϕ (in) | Section (mm ²) | Section (sq in) |
|-------------------------------|--------------------|--------------------|-------------------------------|----------------------|
| 1x1.4 | 1.40 | 0.055 | 1.50 | 0.0023 |
| 32x0.20 | 1.35 | 0.053 | 1.00 | 0.0015 |
| 7x0.43 | 1.29 | 0.050 | 1.00 | 0.0015 |
| 1x1.15 | 1.15 | 0.045 | 1.00 | 0.0015 |
| 42x0.15 | 1.20 | 0.047 | 0.75 | 0.0011 |
| 28x0.20 | 1.15 | 0.045 | 0.75 | 0.0011 |
| 1x1.0 | 1.00 | 0.039 | 0.75 | 0.0011 |
| 28x0.15 | 0.95 | 0.037 | 0.50 | 7.7x10 ⁻⁴ |
| 16x0.20 | 0.90 | 0.035 | 0.50 | 7.7x10 ⁻⁴ |
| 1x0.80 | 0.80 | 0.031 | 0.50 | 7.7x10 ⁻⁴ |
| 7x0.25 | 0.75 | 0.029 | 0.34 | 5.2x10 ⁻⁴ |
| 1x0.60 | 0.60 | 0.023 | 0.28 | 4.3x10 ⁻⁴ |
| 14x0.15 | 0.75 | 0.029 | 0.25 | 3.8x10 ⁻⁴ |
| 7x0.20 | 0.65 | 0.023 | 0.22 | 3.4x10 ⁻⁴ |
| 18x0.10 | 0.50 | 0.019 | 0.14 | 2.1x10 ⁻⁴ |
| 14x0.10 | 0.40 | 0.015 | 0.11 | 1.7x10 ⁻⁴ |
| 21x0.07 | 0.40 | 0.015 | 0.09 | 1.3x10 ⁻⁴ |
| 14x0.10 | 0.40 | 0.015 | 0.09 | 1.3x10 ⁻⁴ |

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.**

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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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