

IP68 💧💧
2 meters/2 hours

PATENTED
inner latching

SP Series

Remarkable design delivering top performance

- **Patented internal Push-Pull latching system**
- **High-density contacts in a miniaturised size**
- **Flexible insert system for both plug and receptacle**
- **Resin-free IP68 sealing**

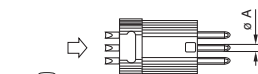
Compact. Robust. Now IP68-rated.

REDEL SP connectors are built for performance: lightweight yet durable, thanks to FDA-certified PPSU – five times lighter than steel and fully compatible with repeated sterilisation.

With a single-shell design and multiple insert and contact options, these connectors deliver **maximum flexibility**. Their patented internal push-pull locking system ensures reliable connections, while improved cleanability and 15 kV ESD resistance boost performance in harsh environments.

Now available with **IP68 sealing**, REDEL SP series offer superior water and dust protection, making them ideal for demanding integrations such as medical devices, industrial equipment, and UAVs.

The SP Series Configurations

Male solder contacts  Male crimp contacts 		Female solder contacts  Female crimp contacts 		Reference													
Number of contacts		Contact ø A (mm)		Solder bucket ø (mm)		Crimp bucket ø (mm)		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)		Test voltage (kV DC) ¹⁾ Contact-contact		Air clearance min (mm) ²⁾ Creepage distance min (mm) ³⁾	

Multipole		M04	4	1.3	1.10	1.40	18 20 22	20 28	•	•	2.26	0.95	11.5	2.54	1.35
		M06	6	0.9	0.80	1.10	20 22 24	22 30	•	•	2.20	1.20	8.5	2.70	1.50
		M08	8	0.9	0.80	1.10	20 22 24	22 30	•	•	2.10	0.75	5.0	2.10	1.1
		M10	10	0.7	0.80	0.80	22 24 26	22 30	•	•	1.65	0.70	4.2	2.17	1.1
		M13	13	0.7	0.80	0.80	22 24 26	22 30	•	•	1.50	0.50	4.0	1.80	0.9
		M16	16	0.5	0.45	0.45	28 30 32	28 34	•	•	1.05	0.47	3.0	1.88	0.8
		M18	18	0.5	0.45	0.45	28 30 32	28 34	•	•	1.00	0.47	2.5	1.60	0.8
		M22	22	0.5	0.45	0.45	28 30 32	28 34	•	•	0.90	0.48	1.2	1.90	0.8

Note:

- ¹⁾ depending on specific application and related standard, more restrictive operating voltage may apply.
- 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/crimp diameter.



Key features

- Patented internal push-pull latching system
- Wide range of keying and colour coding for failsafe set-ups in critical environments
- Strong blind mating using 3 guided keys
- RoHS compliant / UL Recognition
- For cable range from ϕ 2.5 mm to ϕ 7.5 mm
- IEC60601-1: qualified for ESD (15 kV)
- Made of PPSU (polyphenylsulfone) for increased resistance to sterilisation

Technical characteristics

Mechanical endurance	> 5000 mating cycles
Ingress protection index [mated]	IP50/ IP68 watertight (2 meters/2 hours)
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	IEC 61000-4-2 : 15 kV DC
Max ϕ wire size	AWG 18 (Crimp contact) AWG 20 (Solder contact)

User's benefits

Unique design -
flexible contact
insert system

**Reinforced mechanical
shock resistance**
ensures exceptional
durability and extended
product lifespan

Patented internal push-pull:
Protect your designs and
preserve the integrity of your
system against imitation

High contact density –
up to 22 pins in a compact
ø 15.5 mm footprint

IP68 models available
(when mated)

Lightweight yet robust,
engineered to withstand
the most demanding
environments



Main applications



Medical



Test and Measurement



UAV / Drones

Protect your critical interfaces -
even when disconnected.

Redel SP watertight caps protect critical medical interfaces from moisture, dust, and contamination – ensuring hygiene, reliability, and longer equipment life even when disconnected.



IP68 cable assembly services

A perfectly sealed IP68 solution demands advanced cabling expertise.
Entrust us with your projects where no water ingress can be risked.

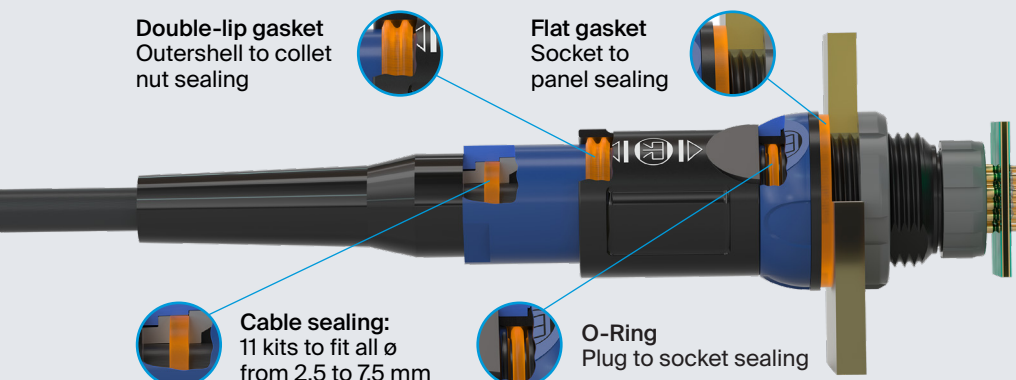
- **Custom medical-grade cables:** (BioCompatible®) designed for flexibility, biocompatibility, sterilisation resistance, and signal integrity.
- Four-level sealing system guarantees **resin-free IP68 protection.**

Double-lip gasket
Outershell to collet
nut sealing

Flat gasket
Socket to
panel sealing

Cable sealing:
11 kits to fit all ø
from 2.5 to 7.5 mm

O-Ring
Plug to socket sealing



**IEC 60601-1
compliant with 3
required aspects**

- 1 ESD (Electrostatic Discharge) 15 kV
- 2 MOPP (Means of Patient Protection) and MOOP (Means of Operator Protection)
- 3 Test Finger

[To learn more, see
the application leaflet](#)



Empowering connectivity

About LEMO

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 2,000 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.

Years of experience	+75
Employees	+2000
Custom solutions	+90000
Subsidiaries	20
Distributors	+20
Customers worldwide	+150000
Countries	+80

LEMO, your ideal partner

One-on-One local engineering expertise and technical support for system integration

Strong supply chain and global distribution network

Custom interconnect solutions for specific project requirements including rapid prototyping

Certified interconnect solutions in compliance with industry standards

Vertical integration ensuring reliable, high-quality interconnect solutions and sustained availability



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