LEMO’s REDEL® Single-Patient Use Connector Series

LEMO’s REDEL® Single-Patient Use Connector Series are specialized connectors for critical applications in the electro-surgical device market. The REDEL brand of LEMO connectors is a well established product series in the medical market and LEMO understands the importance of sterilization in minimally invasive electro-surgical procedures. LEMO offers both sterilizable connector / cable solutions and single-patient use connector solutions. The LEMO single-patient use concept is to maintain and embrace the premium materials, quality and reliability of the connector that is reused, and minimize content on the side that is single-patient use, while still retaining critical quality attributes such as highly reliable gold plated contacts for optimal performance.

As with all LEMO products, the REDEL Connector Series has been designed to ensure quality performance in medical applications, yet are economical enough to justify single-use.

REDEL 1P Single-Patient Use Receptacle

The REDEL 1P Receptacle is the most popular and well established version of the single-patient use offering. The product has clearly demonstrated compliance with the ANSI/AAMI H18-2001 standard for “Electrosurgical Devices.” The snap in design eliminates hardware costs and is easily designed into the base of a surgical handpiece. Optional snap-on backshells are available in either PSU or ABS plastic if cable mounting is preferred. Specific reverse gender keyway configurations are available for the 9, 10 and 14-pin versions. Optional colors and keyways are also available to avoid improper mating. Choice of solder cup or PCB pins are available upon request as well as steam autoclave sterilizable extension cables.

REDEL 1P Single-Patient Use Plug

This plug mates with the 1P Receptacle and has been designed for users that do not prefer to use an extension cable and is a very simple 2-piece design to simplify content and material. The REDEL 1P Plug still utilizes the highly reliable machined gold plated contacts. The standard keyway is “G” but alternate A, B or C keyways are available upon request.

REDEL 2P Single-Patient Use Receptacle

This receptacle product extension is compatible with the standard 2P Plugs. For the electro-surgical catheters that have the need to go beyond the standard 14 pins, this version goes up to 26 and 34-pin configurations. With reverse gender male contacts in the receptacle and female contacts in the mating plug. Available in H and J keyways.

Talk to LEMO about your project!
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REDEL 1P Single-Patient Use Plug

This plug mates with the 1P Receptacle and has been designed for users that do not prefer to use an extension cable and is a very simple 2-piece design to simplify content and distribution of self latching push pull electrical and fiber optic connectors and cable assembly. The CE marking applies to complete products or equipment, but not to electromechanical components, such as connectors.

RoHS

REDEL connector specifications exceed the requirements of the RoHS directives (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.

UL Recognition

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

WARNING (Prop 65 State of California)

This product may contain one or more substances or chemicals known to the state of California to cause cancer.
### 1P Single-Patient Use Receptacle

**Characteristics**

- **Endurance for PY• (latching):** 100 Cycles IEC 60512-5 test 9a
- **Working temperature range (PSU):** -50 / +150˚C
- **Average latching force:** 6N IEC 60512-7 test 13a
- **Average unmating force:** 7N IEC 60512-7 test 13a
- **Average retention force:** 90N IEC 60512-7 test 13a

**Number of Contacts**

- 4: 2.4, 0.9, 0.8, G
- 8: 4.2, 0.7, 0.6, H
- 9: 3.9, 0.5, 0.44, G
- 10: 3.9, 0.5, 0.44, A, H, J
- 14: 3.9, 0.5, 0.44, A, G, H, J

**Note:**
- Outershell and insulator are moulded out of the same material (PSU), except for 14 pins, which is PEEK.
- Ø 0.5mm male has Ø 0.44mm buckets.

**Dimensions:**
- ØC: 02.5 = 2.5mm
- ØC: 02.7 = 2.7mm
- ØC: 03.8 = 3.8mm

**Color:**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material:**
- ABS
- PSU

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### 1P Single-Patient Use Plug

**Characteristics**

- **Endurance for PJ• (latching):** with machined contacts 15 cycles min IEC 60512-5 test 9a
- **Working temperature range (ABS):** -30 / +90˚C
- **Outershell / insulator material:** PSU
- **Backshell material:** ABS

**Characteristics**

- **Endurance for CU• (latching):** with machined contacts 100 cycles min IEC 60512-5 test 9a
- **Working temperature range (PSU):** -50 / +150˚C
- **Outershell / insulator material:** PSU

**Average latching force:** 5.5 N IEC 60512-7 test 13a
**Average unmating force:** 8.5 N IEC 60512-7 test 13a
**Average retention force:** 150 N IEC 60512-7 test 13a

**Number of Contacts**

- 26: 5.5
- 34: 7.0

**Note:**
- ABS working temperature: -30˚C + 90˚C.

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### 2P Single-Patient Use Receptacle

**Characteristics**

- **Endurance for PJ• (latching):** with machined contacts 15 cycles min IEC 60512-5 test 9a
- **Working temperature range (ABS):** -30 / +90˚C
- **Outershell / insulator material:** PSU
- **Backshell material:** ABS

**Characteristics**

- **Endurance for CU• (latching):** with machined contacts 100 cycles min IEC 60512-5 test 9a
- **Working temperature range (PSU):** -50 / +150˚C
- **Outershell / insulator material:** PSU

**Average latching force:** 5.5 N IEC 60512-7 test 13a
**Average unmating force:** 8.5 N IEC 60512-7 test 13a
**Average retention force:** 150 N IEC 60512-7 test 13a

**Number of Contacts**

- 26: 5.5
- 34: 7.0

**Note:**
- Contacts are Ø 0.5mm male with Ø 0.44mm solder buckets.

**Material:**
- ABS
- PSU

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**Figure 1**

**Solder Contacts**

- ØC: 02.5 = 2.5mm
- ØC: 03.8 = 3.8mm

**Color:**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material:**
- ABS
- PSU

---

**Figure 2**

**Solder Contacts**

- ØC: 03.8 = 3.8mm

**Color:**
- A = Blue
- B = White
- G = Gray

**Material:**
- ABS
- PSU

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**Figure 3**

**Solder Contacts**

- ØC: 02.5 = 2.5mm
- ØC: 03.8 = 3.8mm

**Color:**
- A = Blue
- B = White
- G = Gray

**Material:**
- ABS
- PSU

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**REDEL 1P (Free Receptacle)**

**REDEL 1P (Mounted)**

**REDEL 1P Single-Patient Use Plug Application Example**

**REDEL 2P Single-Patient Use Receptacle Application Example**
**1P Single-Patient Use Plug**

**Characteristics**
- **Value**: Standards
- **Endurance for PJ• (latching)**: 15 cycles min IEC 60512-5 test 9a
- **Working temperature range (ABS)**: -30 / +90˚C
- **Outershell / insulator material**: PSU
- **Average latching force**: 5.5N IEC 60512-7 test 13a
- **Average unmating force**: 8.5N IEC 60512-7 test 13a
- **Average retention force**: 150N IEC 60512-7 test 13a

**Number of Contacts**
- **26**: A, B, G
- **34**: A, B, G

**Color**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material**
- ABS

**Optional**
- Y = Raised arrows painted with black ink for enhanced visibility.

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**2P Single-Patient Use Receptacle**

**Characteristics**
- **Value**: Standards
- **Endurance for CU• (latching)**: 100 cycles min IEC 60512-5 test 9a
- **Working temperature range (PSU)**: -50 / +150˚C
- **Outershell / insulator material**: PSU
- **Average latching force**: 5N IEC 60512-7 test 13a
- **Average unmating force**: 8N IEC 60512-7 test 13a
- **Average retention force**: 15N IEC 60512-7 test 13a

**Number of Contacts**
- **26**: A, B, G
- **34**: A, B, G

**Color**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material**
- ABS

**Note**: All dimensions are in millimeters.

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**Note**: Outershell and insulator are moulded out of the same material (PSU), except for 14 pins, which is PEEK. Ø 0.5mm male has Ø 0.44mm buckets.

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**Keying**
- A, B, C, G
- H, J

**Material**
- ABS

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**Insulator**
- G = 4-10 pins
- L = 14 pins

**Color**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Note**: Contains Ø 0.8mm male with Ø 0.44mm solder buckets.

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**Optional**
- Y = Raised arrows painted with black ink for enhanced visibility.

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**Color**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material**
- ABS

**Note**: ABS working temperature: -30˚C + 90˚C.

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**Color**
- A = Blue
- B = White
- G = Gray

**Material**
- ABS

---

**Color**
- A = Blue
- B = White
- G = Gray
- J = Yellow
- N = Black
- R = Red
- V = Green

**Material**
- ABS
**1P Single-Patient Use Receptacle**

- Characteristics:
  - Standard: IEC 60512-5 test 9a
  - Endurance for PY (latching): 100 Cycles
  - Working temperature range (PSU): -50 / +150˚C

- Average latching force: 6N
- Average unmating force: 7N
- Average retention force: 90N

- Number of Contacts:
  - 4: 2.4 mm, 0.9 mm, 0.8 mm
  - 8: 4.2 mm, 0.7 mm, 0.6 mm
  - 9: 3.9 mm, 0.5 mm, 0.44 mm
  - 10: 3.9 mm, 0.5 mm, 0.44 mm
  - 14: 3.9 mm, 0.5 mm, 0.44 mm

- Material: PSU
- Color: Blue, White, Gray, Yellow, Black, Red, Green
- Ø: 0.5mm

**1P Single-Patient Use Plug**

- Characteristics:
  - Standard: IEC 60512-7 test 13a
  - Endurance for PJ (latching): 15 cycles min
  - Working temperature range (ABS): -30 / +90˚C

- Average latching force: 5.5N
- Average unmating force: 8.5N
- Average retention force: 150N

- Number of Contacts:
  - 26: 5.5 mm
  - 34: 7.0 mm

**2P Single-Patient Use Receptacle**

- Characteristics:
  - Standard: IEC 60512-5 test 9a
  - Endurance for CU (latching): 100 cycles
  - Working temperature range (PSU): -50 / +150˚C

- Average latching force: 5.5N
- Average unmating force: 8.5N
- Average retention force: 150N

- Number of Contacts:
  - 26: 5.5 mm
  - 34: 7.0 mm

**Notes:**
- All dimensions are in millimeters.
- Contacts are Ø 0.5mm with Ø 0.44mm solder buckets.
- ABS working temperature: -30˚C + 90˚C.

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**Keying:**

- A, B, G
- Reverse Gender: H, J

**Insulator:**

- G (4-10 pins)
- L (14 pins)

**Material:**

- ABS
- PSU

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**2P Single-Patient Use Receptacle Application Example**

**2P Single-Patient Use Plug Application Example**

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**Notes:**

- Ø 0.25 = 2.5mm
- Ø 0.32 = 3.2mm
- Ø 0.52 = 5.2mm
- Ø 1.38 = 3.8mm

- Color:
  - B = White
  - G = Gray

- Material:
  - A = ABS
  - E = PSU

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**Extension Cable**

- Color:
  - A = Blue
  - B = White
  - G = Gray
  - J = Yellow
  - N = Black
  - R = Red
  - V = Green

- Optional: Y = Raised arrows painted with black ink for enhanced visibility.
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