SOURIAU
RoHS Black Zinc Nickel
Corrosion Free Solution
Black Zinc Nickel

Presentation

The new SOURIAU RoHS Zinc Nickel: The first QPL qualified cadmium free plating.

Various Environmental Directives impose requirements on the electrical and electronic equipment manufacturers: the RoHS (Restriction of use of certain Hazardous Substances) directive, part of the WEEE (Waste Electrical and Electronic Equipment) directive.

SOURIAU has more than 10 years of experience in producing Zn Ni with continuous improvements to comply with MilAero harsh environment conditions. As a result, SOURIAU Zn Ni provides customers with the most cost-effective solution for a cadmium alternative finish.

SOURIAU Zinc Nickel is the first QPL qualified to the most recent release of the MIL 38999 standard (rev. L).

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Black Zinc Nickel

Overview

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Typical applications

- Aircraft Actuators
- External lighting
- Cabin
- Turrets
- Weapons bays
- Military Computer
Features & Benefits

**Cadmium Free Plating**
- Decade of experience.
- Production process in accordance with the RoHS Directives.
- RoHS compliance certified by an independent laboratory.

**High Performance**
- 500 mating/unmating cycles.
- Temperature range: -65°C to +175°C.
- Non-reflective black colored finish.

**Meets MIL-DTL-38999 Requirement**
- SOURIAU Black Zinc Nickel plating was QPL qualified in 2010.
- The best solution in terms of performance, process and cost.
- The new standard for the cadmium replacement.

**500h Salt Spray Withstanding**
- Entire performance of 38999 Series Cadmium range preserved.
- Maintain the same mechanical and electrical characteristics.
- Shell to shell continuity: < 2.5 mΩ.

**Fully Compatible with Other Platings**
- Perfectly mated to legacy cadmium plated connectors.
- No significant galvanic reaction with Cadmium or Zinc Cobalt.
**Black Zinc Nickel | Overview**

**SOURIAU black zinc nickel**

**MIL-DTL-38999 Series I**
- **8LT Series, see page 16**
- **Application:**
  - Civil & Military aerospace
  - Marine equipments
- **Main features:**
  - Scoop proof
  - Bayonet coupling
  - Numerous layouts

**MIL-DTL-38999 Series II**
- **8T Series, see page 18**
- **Application:**
  - Civil & Military aerospace
  - Box equipments
- **Main features:**
  - Low profile
  - High contact density: from 1 to 128 contacts

**MIL-DTL-38999 Series III**
- **8D Series, see page 20**
- **Application:**
  - Civil & Military aerospace
  - Ground military
- **Main features:**
  - Quick screw coupling
  - High environments: 200°C, high vibration, 500h salt spray
  - Clinch nut, double flange, ...

**8D Series High Power**
- **See page 22**
- **According to:**
  - MIL-DTL-38999 Series III
- **Application:**
  - Civil & Military aerospace
  - Ground equipments
- **Main features:**
  - Up to 850A
  - 3 shell sizes: 19, 23 & 25
  - Modular design

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**A Global RoHS Solution**

In addition to its connectors, SOURIAU offers a complete RoHS interconnection solution: accessories with black zinc nickel finish and tin plated RoHS contacts.

A wide range of black zinc nickel plated caps and backshells.

Cost and time saving: only one supplier for connectors, contacts and accessories.

Full RoHS compliance with the connector and the accessories.

**Backshells**
- **See page 30**
- **Backshells for aeronautic and ground applications**
- **A wide range available:**
  - Backnut,
  - Cable clamp,
  - Crimp ring,
  - Shrink boot,
  - Band lock,
  - Double cone, ...
products overview

**micro38999**
See page 24

- **According to:**
  - MIL-DTL-38999 Standards

- **Application:**
  - Civil & Military aerospace
  - Communication equipments

- **Main features:**
  - 3 coupling systems:
    - bayonet, threaded, break away
  - Integrated backshell

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**VG96912 and JN1003**
8ST Series, see page 26

- **Application:**
  - Civil & Military aerospace
  - Ballistic missiles and weapon systems

- **Main features:**
  - High contact density
  - MIL-C-38999 Series I contact layouts
  - RFI-EMI shielding and shell to shell continuity

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**VG96918**
848 Series, see page 28

- **Application:**
  - Military ground equipment
  - Heavy weapons

- **Main features:**
  - Reverse bayonet
  - Power supply up to 63A
  - Large variety of backshells

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**MIL-C 26482 G Series I**
851 Series, please consult us

- **Application:**
  - Industry
  - Military ground equipment

- **Main features:**
  - Wide choice of body styles and back fittings
  - Solder, crimp, PC-tail and wire-wrap versions

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**Caps**
See page 32

- Caps for plugs and receptacles

- To protect from dust, moisture, contact bending, ...

- Available with ring or eyelet

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**Tin Plated PCB Contacts**
See page 34

- RoHS version available

- PC tail with or without shoulder

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**SOURIAU**
### SOURIAU main platings comparison

<table>
<thead>
<tr>
<th>SOURIAU Plating</th>
<th>Robustness</th>
<th>Weight</th>
<th>Conductivity</th>
<th>RoHS</th>
<th>Designed for Unpressurized Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Nickel</td>
<td>++</td>
<td>💪</td>
<td>💥</td>
<td>☑</td>
<td>🍃</td>
</tr>
<tr>
<td>Aluminum Black Zinc Nickel</td>
<td>+++</td>
<td>💪</td>
<td>💥</td>
<td>☑</td>
<td>🍃</td>
</tr>
<tr>
<td>Aluminum Olive Green Cadmium</td>
<td>+++</td>
<td>💪</td>
<td>💥</td>
<td>☑</td>
<td>🍃</td>
</tr>
<tr>
<td>Stainless Steel Passivated</td>
<td>+++++</td>
<td>🇳 🇳 🇳 🇳</td>
<td>💥</td>
<td>☑</td>
<td>🍃</td>
</tr>
<tr>
<td>Aluminum Nickel</td>
<td>++++</td>
<td>🇳 🇳 🇳 🇳</td>
<td>💥</td>
<td>☑</td>
<td>🍃</td>
</tr>
</tbody>
</table>

- **Composite Nickel (M)**
- **Aluminum Black Zinc Nickel (Z)**
- **Aluminum Olive Green Cadmium (W)**
- **Stainless Steel Passivated (K)**
- **Aluminum Nickel (F)**

**Robustness Levels:**
- 🍃: Moderate
- 😲: Average
- 🥊: Good
- 💥: Very Good
- 🎯: Excellent

**Weight Levels:**
- 💪: High
- 💪💪: Normal
- 💪💪💪: Low

**Conductivity Levels:**
- 🎯: High
- 🎯🎯: Normal
- 🎯🎯🎯: Low
- 🎯🎯🎯🎯: Very Low

**RoHS Compliance:**
- ☑: Compliant
- ☐: Non-compliant

**Designed for Unpressurized Area:**
- 🍃: Suitable

**Salt Spray Tests:**
- 2000 H:
- 500 H:
- 48 H:
### SOURIAU plating compatibilities with Black Zinc Nickel

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Composite Cadmium (J)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /> 500 Salt spray</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Aluminum Cadmium (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image" /> 500 Salt spray</td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Stainless steel Passivated (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /> 250 Salt spray</td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Composite Nickel (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Image" /> 150 Salt spray</td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Aluminum Zinc cobalt (ZC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image9.png" alt="Image" /> 125 Salt spray</td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminum Black zinc nickel (Z)</th>
<th>Aluminum Nickel (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image11.png" alt="Image" /> 48 Salt spray</td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
</tbody>
</table>

Notes: Same salt spray withstanding with reverse configuration (plug black zinc nickel + receptacle with other Souriau platings). Aluminum black zinc nickel + alodine plate = 500 hours salt spray.

### SOURIAU plating capabilities

► Plating process masters in house:
  * Plating production lines dedicated to 38999 Series
  * Full automatic line process
  * Mass production capability

► For many years, SOURIAU has been developing and improving environmentally friendly processes in order to anticipate and then exceed environmental regulations.

► Production site is **ISO 14001** since 2001 with **Zero Cadmium** emission!
## Comparison of plating codes available on the market

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Aluminum Electroless Nickel</th>
<th>Aluminum Cadmium</th>
<th>Composite Nickel</th>
<th>Aluminum Black Zinc Nickel</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finish code class per MIL spec.</td>
<td>F</td>
<td>W</td>
<td>M</td>
<td>Z</td>
<td>T, P</td>
</tr>
<tr>
<td>RoHs Compliant</td>
<td>No</td>
<td></td>
<td></td>
<td>(1)</td>
<td>(8), (9)</td>
</tr>
<tr>
<td>Galvanic compatibility with cadmium</td>
<td>Poor</td>
<td>Very good</td>
<td>No</td>
<td>Good (2)</td>
<td>Poor (3), Poor (3), Good</td>
</tr>
<tr>
<td>Easy to produce in mass production and with multi sourcing</td>
<td>No</td>
<td>(4)</td>
<td>(10)</td>
<td>No (4) (10)</td>
<td>No (5)</td>
</tr>
<tr>
<td>Finish according to standard</td>
<td>ASTM B733</td>
<td>ASTM B766</td>
<td>ASTM B841</td>
<td>No standard (6) (proprietary process)</td>
<td>No standard (6) (proprietary process)</td>
</tr>
<tr>
<td>Shell-to-Shell Continuity &lt; 2.5 mΩ</td>
<td>&lt;1 mΩ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability (500 mating cycles)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(7)</td>
</tr>
<tr>
<td>Dynamic salt spray resistance</td>
<td>48 hours</td>
<td>500 hours</td>
<td>2000 hours</td>
<td>500 hours</td>
<td>500 hours (8), 500 hours (7)</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>according to standard 175°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200°C</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Reflective</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Magnetic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cr6+ &lt; 0.01 % (RoHs limit = 0.1 % max)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>(8), (9)</td>
</tr>
<tr>
<td>Easy to check homogeneity / Thickness of layer</td>
<td></td>
<td></td>
<td></td>
<td>No (10), No (10)</td>
<td></td>
</tr>
<tr>
<td>Environment friendly</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Good (11)</td>
<td>Poor (11), -</td>
</tr>
<tr>
<td>Human health and safety</td>
<td>Poor</td>
<td></td>
<td></td>
<td>Poor (12), Poor (12), Poor (13)</td>
<td></td>
</tr>
<tr>
<td>Compatibility with new de-icing fluid (with potassium acetate)</td>
<td>(14)</td>
<td>(14)</td>
<td>(14)</td>
<td>(14)</td>
<td></td>
</tr>
</tbody>
</table>

See next page for notes explanation.
1 **SOURIAU Zinc Nickel (Z code) and RoHS**
A unique SOURIAU plating process compliant with RoHS regulation for Cadmium and Cr6+ restriction.

2 **Electrical compatibility of Zinc Nickel (Z code with Cadmium (W code)**
Electrical potential of Zinc Nickel and Cadmium are very similar which removes the risk of galvanic corrosion and defects after 500 hours salt spray.

3 **Electrical compatibility of Nickel PTFE (T code) with cadmium (W code)**
PTFE is an inert polymer, therefore the galvanic potential of Nickel + PTFE will be the potential of the Nickel alone. It means that the electrical compatibility is not guaranteed between Nickel PTFE and Cadmium for long salt exposure, which is not the case for Zinc Nickel (electrical potential close to Cadmium).

4 **Nickel PTFE (T code) production processes complex and expensive**
Nickel PTFE requires specially manufactured high tolerance machined parts (special requirement on surface roughness) as the thicker plating is not compatible with standard machined parts.
- These special machined parts lead to a higher cost and quality risk (mixing very similar parts and special care in case of outsourcing).
- Therefore, the high thickness of nickel PTFE means a long deposit time and also a more expensive process.
- The lifetime of the chemical mixture is half than an electrolytic nickel or nickel alloy (Zinc Nickel) mixture.

5 **Pure Electrodeposited Aluminum (P code) very complex and unique deposition process**
Very complex and explosive process which requires a building with special containment facility and not available in standard plating shops. Main limitation are the following:
- Flammable and explosive solvent which requires inert atmosphere.
- Highly skilled worker (expertise and training).
- Specific care for handling and storage of mixture in a separate building.

6 **ASTM standards**
These standards are defined to allow a reliable quality level of plating process with multisourcing option. Nickel PTFE (T code) and Pure Electrodeposited Aluminum (P code) are not defined by ASTM industrial standards.

7 **Cycles of durability, limitation for Pure Electrodeposited Aluminum (P code)**
Performance limitation has been raised in 38999 dynamic salt spray by tests against Pure Electrodeposited Aluminum:
- Galling: abrasive wear of Ni-plated EMI band lead to generate conductive particles with a potential risk of short circuiting the contacts.
- Requires use of lubricants - limited effectiveness, risk of lower electrical continuity.

8 **Thin Nickel PTFE (T code) salt spray resistance**
Thin Nickel PTFE (T code) could require Cr VI to meet corrosion performance and consequently not comply with RoHS limit. This is one way to heal pores at defect sites of the primary parts and to decrease the production cost of the thick Nickel PTFE plating (see note 4).

9 **Pure Electrodeposited Aluminum (P code) and Chromium VI**
Chromium VI is required to meet high corrosion performances.

10 **Thickness control of Nickel PTFE layer (Thin and Thick Layer)**
There is no standard in line equipment to control the homogeneity of PTFE concentration within the plating material and the only way to control the PTFE concentration is achieved with complex lab equipment such as Scanning Electron Microscope (PTFE is a non conductive material). There is consequently a strong limitation for in line process control and ability to outsource. It means that the lack of control associated with the risk of non homogeneity of the PTFE concentration could lead to an uncontrolled dormant failure and a rapid corrosion.

11 **Environment friendly, limitation for Nickel PTFE (T code)**
The average bath lifetime of the chemical nickel PTFE is half that of electroless nickel and 10 times less than nickel alloy (zinc nickel) bath. This leads to a higher waste volume of nickel pollution. Furthermore, the waste toxicity of electroless nickel or nickel alloys is higher than the electrolytic process:
- Cadmium
- Nickel electroless
- Nickel PTFE
- Electrolytic zinc nickel
In addition, the PTFE material is toxic and indestructible. Some PTFE suppliers might stop their PTFE production after 2013 (ie. Dupont)

12 **Nickel PTFE (T code) is potentially hazardous to human health**
The Nickel PTFE material is recognized as toxic and indestructible. Most of the experts are considering PFOA (used in PTFE) a «likely human carcinogen». This was also proposed by the Environmental Protection Agency (EPA).

13 **Pure Electrodeposited Aluminum (P code) process is very hazardous to safety**
For Pure Electrodeposited Aluminum, production is a very high risk for human safety due to:
- Flammable and explosive solvent which requires inert atmosphere.
- High skilled of workers necessary (expertise and training).
- Specific care for handling and storage of mixture in a separate building.
- Pure Electrodeposited Aluminum is considered a dangerous explosive process for people involved in the plating process.

14 **De-icing fluid (contains potassium acetate)**
SOURIAU Zinc Nickel is compatible with de-icing fluids containing potassium acetate.
No datas found regarding Nickel PTFE or Pure Electrodeposited Aluminum.
Black Zinc Nickel

Product Ranges

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Black Zinc Nickel  |  38999 Series I - 8LT Series

**Description**

- High contact density
- Bayonet coupling
- Contact protection: 100% Scoop proof
- Shell size from 9 to 25
- Accessories available (protective caps, backshells, etc…)
- RFI - EMI shielding and shell to shell continuity
- Hermetic
- Aluminum alloy

**Technical features**

**Materials**

- **Shell:** aluminum alloy
- **Plating:** black zinc nickel (Z)
- **Insulator:** thermoplastic or metallic version available for specification 284 & 384
- **Grommet or seal:** liquid silicone rubber or fluorocarbone elastomer for spec. 022
- **Contact:** copper alloy
- **Plating contact:** gold over nickel
- **Endurance:** 500 mating / un mating operations
- **Shock:** 300 g during 3 ms and as per MIL S 901 grade A
- **Vibration:**
  - Sine 10 to 2000 Hz - 30 g
  - Random 100 à 300 Hz - 5 g²/Hz
- **Contact retention (min force in N):**

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>24</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min force in N</td>
<td>30</td>
<td>44</td>
<td>67</td>
<td>111</td>
<td>111</td>
<td>111</td>
<td>111</td>
</tr>
</tbody>
</table>

**Electrical**

- **Test voltage (Vrms)**

<table>
<thead>
<tr>
<th>Service</th>
<th>Sea level</th>
<th>At 21000 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>400</td>
<td>N/A</td>
</tr>
<tr>
<td>M</td>
<td>1 300</td>
<td>800</td>
</tr>
<tr>
<td>N</td>
<td>1 000</td>
<td>600</td>
</tr>
<tr>
<td>I</td>
<td>1 800</td>
<td>1 000</td>
</tr>
<tr>
<td>II</td>
<td>2 300</td>
<td>1 000</td>
</tr>
</tbody>
</table>

- **Insulation resistance:** ≥ 5 000 MW (at 500 Vcc)

- **Contact resistance:**

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance mΩ</td>
<td>16</td>
<td>14.6</td>
<td>7.3</td>
<td>3.8</td>
<td>3.5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Contact rating:**

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating (A)</td>
<td>3</td>
<td>5</td>
<td>7.5</td>
<td>13</td>
<td>23</td>
<td>45</td>
<td>80</td>
</tr>
</tbody>
</table>

- **Shell continuity:** 2.5 mΩ
- **Shielding:**
  - 90 db at 100 MHz, 50 db at 10 000 MHz
- **Electrical continuity between contact and shell for spec. 284 & 384:** 10 mΩ max

**Environmental**

- **Temperature range:** -65°C +175°C (Z)
- **Sealing (mated connectors):**
  - Differential pressure 2 bars:
    - leakage ≤ 16 cm³/h
- **Salt spray as per MIL STD 1344 method 1001:** 500 hours (Z)
- **Resistance to fluids:**
  - As per MIL DTL 38999, hydraulic fluids, solvents
  - Specification 022 for fuel immersion (please consult us)

**Dimensions, layouts, contacts, accessories & tooling**

Please consult «8LT Series - MIL-DTL-38999 Series I» catalog on www.souriau.com
### Ordering information

**Souriau 8LT Series - Part numbers**

<table>
<thead>
<tr>
<th>Basic series</th>
<th>8LT</th>
<th>0</th>
<th>-</th>
<th>13</th>
<th>Z</th>
<th>35</th>
<th>P</th>
<th>N</th>
<th>L</th>
</tr>
</thead>
</table>

**Shell type**
- 0: Square flange receptacle
- 1: In line receptacle
- 2: Short square flange receptacle, not accepting backshell
- 3: Square flange receptacle (rear mounting)
- S: Plug with RFI shielding
- 7: Jam nut receptacle
- 15: Plug with RFI shielding, not accepting backshell

**Type**
- L: Connector with long PC tail (male and female #22D)
- M: Connector with medium PC tail
- C: Connector with short spill (male and female #22D, #20, #16, #12, #8 quadrax)
- T: Connector with male contact size 20 for wire wrap (2 wraps)
- W: Connector with male contact size 22D for wire wrap (3 wraps)
- S: Connector with specific PC Tail (male and female #22D only)
- O: Connector with quadrax crimp contacts
- P: Connector with solder cup (please consult us)

**Shell size:** 09; 11; 13; 15; 17; 19; 21; 23; 25

**Plating**
- Z: Black zinc nickel

**Contact layout:** See SOURIAU «8LT Series - 38999 Series I» catalog

**Contact type**
- P: Male
  - A: Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- S: Female
  - B: Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

**Orientation:** N, A, B, C, D (orientations B & C not developed for shell size number 9)

**Specifications**
- None: Supplied with contact
- 046: PC Tail contact with tinned plating
- 251: Connector provided with power contacts (#8 layout)
- 022: Fuel tank (please consult us)
- 260: Quadrax grounded (cts 100Ω) (1)(2)
- 261: Quadrax not grounded (cts 100Ω) (1)
- 264: Quadrax grounded (cts 150Ω) (1)(2)
- 265: Quadrax not grounded (cts 150Ω) (1)

**Special custom**
- None: Standard plastic cap
- M: Antistatic plastic cap

L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)

---

### MIL-DTL-38999 Series I - Part numbers

<table>
<thead>
<tr>
<th>Basic series</th>
<th>MS</th>
<th>27466</th>
<th>T</th>
<th>13</th>
<th>Z</th>
<th>35</th>
<th>P</th>
<th>L</th>
</tr>
</thead>
</table>

**Shell type**
- 27466: Square flange receptacle (front mounting)
- 27656: Square flange receptacle (rear mounting)
- 27468: Jam nut receptacle
- 27467: Plug with RFI shielding
- 27505: Square flange receptacle, not accepting backshell

**Class**
- E: Without thread for back fitting, not accepting backshell for MS27505 and MS27467 only
- T: With thread for backfitting, supplied without backshell (excepted MS27505)

**Shell size:** 09; 11; 13; 15; 17; 19; 21; 23; 25

**Plating**
- Z: Black zinc nickel

**Contact layout:** See SOURIAU «8LT Series - 38999 Series I» catalog

**Contact type**
- P: Male
  - A: Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- S: Female
  - B: Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

**Orientation**
- None: Normal (N)
- A, B, C, D (orientations B & C not developed for shell size number 9)

**Special custom**
- None: Standard plastic cap
- M: Antistatic plastic cap

L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)

---

(1) Type shell 0, 3 and 5 available only. (2) Expected mixed layouts with quadrax and signal contacts. Please consult us.
**Black Zinc Nickel | 38999 Series II - 8T Series**

**Description**
- Low profile/not scoop proof
- Bayonet locking system
- 11 shell types
- 43 layouts
- High density connector from 1 to 128 contacts
- An excellent shock vibration and fluid resistance solution
- QPL qualified

**Technical features**

**Materials**
- **Shell**: Aluminum alloy
- **Plating**: Black zinc nickel (Z)
- **Insulator**: Thermoplastic
- **Grommet and seal**: Silicone elastomer
- **Contact**: Copper alloy
- **Plating**: Gold over nickel
- **Endurance**: 500 mating cycles
- **Shock**: 300g, 3ms duration
- **Vibration**: Random 100 to 1000Hz - 1g2/Hz
- **Contact retention (mini force in N)**:
  - Size 22D: 44N
  - Size 20: 67N
  - Size 16: 110N
  - Size 12: 110N

**Electrical**
- **Test voltage (Vrms)**:
<table>
<thead>
<tr>
<th>Service</th>
<th>Sea level</th>
<th>at 21 000 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>1300</td>
<td>800</td>
</tr>
<tr>
<td>I</td>
<td>1800</td>
<td>1000</td>
</tr>
<tr>
<td>II</td>
<td>2300</td>
<td>1000</td>
</tr>
</tbody>
</table>
- **Contact resistance**:
  - Size 22D: 14.6mΩ
  - Size 20: 7.3mΩ
  - Size 16: 3.8mΩ
  - Size 12: 3.5mΩ
- **Insulation resistance**:
  - ≥ 5000MΩ (at 500Vdc)
- **Contact rating**:
  - Size 22D: 5A
  - Size 20: 7.5A
  - Size 16: 13A
  - Size 12: 23A
- **Shell continuity (with EMI ring)**:
  - Black zinc nickel plating: 2.5mΩ

**Environmental**
- **Temperature range**:
  - Zinc nickel plating (Z): -65°C +175°C
- **Sealing (mated connectors)**:
  - Differential pressure 1 bar
  - Leakage ≤ 8cm³/h
- **Salt spray to**:
  - MIL-STD 1344 method 1001: 500 hours
- **Damp heat**:
  - MIL-C 38999: 10 cycles (24 hours)
  - NFC 93422: 56 days
- **Resistance to fluids**:
  - To MIL-L 38999:
    - MIL-L 7808, MIL-L 23699, MIL-H 5606, MIL-A 8243, MIL-L 25769, MIL-G 3056, MIL-T 5624 (JP5); hydraulic fluids; solvents
  - To NFC 93422:
    - F 46, F 54, O/180, H 515, H 542, XH 45

**Dimensions, layouts, contacts, accessories & tooling**
Please consult «8T Series - MIL-DTL-38999 Series II» catalog on www.souriau.com
Ordering information

Souriau 8T Series - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8T</th>
<th>0</th>
<th>14</th>
<th>Z</th>
<th>35</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
</table>

**Shell type:**
- 0: Square flange receptacle (front mount with accessory threads)
- 1: In line receptacle (with accessory threads)
- 2: Square flange receptacle (rear mount without accessory threads)
- 3: Square flange receptacle (rear mount with accessory threads)
- 4: Square flange receptacle (front mount without accessory threads)
- 5: Plug with RFI shielding
- 6: Plug without RFI shielding
- 7: Jam nut receptacle (with accessory threads)
- 10: Square flange receptacle (front mount, rear knurling)
- 15: Plug with RFI shielding (rear knurling)
- 16: Plug without RFI shielding (rear knurling)

**Contact style:**
- -: Connectors with standard crimp contacts
- L: Receptacle with long PC tail
- C: Receptacle with short PC tail
- P: Receptacle with solder cup

**Shell size:** 08; 10; 12; 14; 16; 18; 20; 22; 24

**Plating:**
- Z: Black zinc nickel

**Contact layout:** See SOURIAU «8T Series - 38999 Series II» catalog

**Contact type:**
- P: Male
  - A: Connector supplied less pin contact or with specific contacts (Connector marking: A + orientation)
- S: Female
  - B: Connector supplied less socket contact or with specific contacts (Connector marking: B + orientation)

**Orientation:** N, A, B, C & D

**Special custom:**
- None: Standard plastic cap
- M: Antistatic plastic cap

L: For P and S contact type only, connector delivered without contacts, connector marking P or S (without L)

MIL-DTL-38999 Series II - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>MS</th>
<th>27497T</th>
<th>14</th>
<th>Z</th>
<th>35</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
</table>

**Shell type & Class:**
- 27472T: Square flange receptacle (front mount with accessory threads)
- 27508E: Square flange receptacle (rear mount without accessory threads)
- 27497T: Square flange receptacle (rear mount with accessory threads)
- 27499E: Square flange receptacle (front mount without accessory threads)
- 27484T: Plug with RFI shielding
- 27473T: Plug without RFI shielding
- 27474T: Jam nut receptacle (with accessory threads)
- 27472E: Square flange receptacle (front mount, rear knurling)
- 27472E: Square flange receptacle (front mount, rear knurling)
- 27484E: Plug with RFI shielding (rear knurling)
- 27473E: Plug without RFI shielding (rear knurling)

**Shell size:** 08; 10; 12; 14; 16; 18; 20; 22; 24

**Plating:**
- Z: Black zinc nickel

**Contact layout:** See SOURIAU «8T Series - 38999 Series II» catalog

**Contact type:**
- P: Male
  - A: Connector supplied less pin contact or with specific contacts (Connector marking: A + orientation)
- S: Female
  - B: Connector supplied less socket contact or with specific contacts (Connector marking: B + orientation)

**Orientation:** N, A, B, C & D

L: For P and S contact type only, connector delivered without contacts, connector marking P or S (without L)
**Technical features**

**Materials**
- **Shell**: Aluminum
- **Shell plating**: Black zinc nickel (Z)
- **Insulator**: Thermoplastic
- **Grommet and interfacial seal**: Silicone elastomer
- **Contacts**: Copper alloy
- **Contacts plating**: Gold over nickel plated
- **Endurance**: 500 mating cycles all materials, 1500 mating cycles for composite connectors with specifics contacts
- **Shock**: 300g, 3 ms according EN 2591-D2 method A
- **Vibration**: Sinus: 10 to 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
  - Random: 50 to 2000 Hz, 2x8 Hrs (1g/Hz, 100 - 2000Hz) at T° max.
  - 25 to 2000 Hz, 2x8 Hrs (5g/Hz, 100 - 300Hz) at ambient T°
- **Contact retention**:

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>24</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min force in N</td>
<td>30</td>
<td>44</td>
<td>67</td>
<td>111</td>
<td>111</td>
<td>111</td>
<td>200</td>
</tr>
</tbody>
</table>

**Electrical**
- **Test voltage rating (Vrms)**:

<table>
<thead>
<tr>
<th>Service</th>
<th>sea level</th>
<th>at 21000 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>400</td>
<td>N/A</td>
</tr>
<tr>
<td>M</td>
<td>1 300</td>
<td>800</td>
</tr>
<tr>
<td>N</td>
<td>1 000</td>
<td>600</td>
</tr>
<tr>
<td>I</td>
<td>1 800</td>
<td>1 000</td>
</tr>
<tr>
<td>II</td>
<td>2 300</td>
<td>1 000</td>
</tr>
</tbody>
</table>

- **Contact resistance**:

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance mΩ</td>
<td>16</td>
<td>14.6</td>
<td>7.3</td>
<td>3.8</td>
<td>3.5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Insulation resistance**: ≥ 5 000 MΩ (under 500 Vdc)
- **Contact rating**:

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating (A)</td>
<td>3</td>
<td>5</td>
<td>7.5</td>
<td>13</td>
<td>23</td>
<td>45</td>
<td>80</td>
</tr>
</tbody>
</table>

- **Shell continuity**: 2.5 mΩ (Z)
- **Shielding**: 85 db at 1 GHz (Z)
  - 50 db at 10 GHz (Z)

**Environmental**
- **Temperature range**: -65°C +200°C (Z)
- **Sealing**: Mated connectors meet altitude immersion requirements of MIL-DTL-38999.
- **Salt spray**: 500 Hrs (Z)

**Resistance to fluids**
- According to MIL-DTL-38999 standard
  - Gasoline: JP5 (OTAN F44)
  - Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  - Synthetic hydraulic fluid: Skydrol 500 B4
- LD4 (SAE AS 1241)
  - Mineral lubricating: MIL-L-7870A (OTAN 0142)
  - Synthetic lubricating: MIL-L-23699 (OTAN 0158), MIL-L-7808
  - Cleaning fluid: MIL-DTL-25769 diluted
  - De-icing fluid: MIL-A-8243
  - Extinguishing fluid: Bromochloromethane
  - Cooling fluid: Coolanol
## Ordering information

**Souriau 8D Series - Part numbers**

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8D</th>
<th>0</th>
<th>-</th>
<th>Z</th>
<th>35</th>
<th>P</th>
<th>N</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shell style</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>0: Square flange receptacle</td>
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<td></td>
</tr>
<tr>
<td>1: In line receptacle</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7: Jam nut receptacle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5: Plug with RFI shielding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9: Square flange receptacle with clinch nuts available (please consult us)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10: Jam nut receptacle with double flange available (please consult us)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>- : Connectors with standard crimp contacts.</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>L: Receptacle with long PC tail (male and female size #22D, #20).</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Receptacle with short PC tail (male and female #22D, #20, #16).</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: Receptacle with specific PC tail (male et female #22D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W: Receptacle with male contacts #22D for wire wrap (3 wraps)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: Receptacle with male contacts #20 for wire wrap (2 wraps)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Receptacle with solder cup contacts - please consult us</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC tail contacts without shoulder available (please consult us)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Shell size:** | 09, 11, 13, 15, 17, 19, 21, 23, 25 |

| **Plating** |     |   |   |   |   |   |   |   |
| Z: Black zinc nickel |     |   |   |   |   |   |   |   |

**Contact layout:** See SOURIAU «8D Series - 38999 Series III» catalog

| **Contact type** |     |   |   |   |   |   |   |   |
| P: Male | A: Connector supplied less pin contact or with specific contacts (marking : A + orientation) |     |   |   |   |   |   |   |
| S: Female | B: Connector supplied less socket contact or with specific contacts (marking : B + orientation) |     |   |   |   |   |   |   |

**Orientation:** N, A, B, C, D, E

| **Specification** |     |   |   |   |   |   |   |   |
| 046: Tinned straight PC tail |     |   |   |   |   |   |   |   |
| 251: Connector provided with power contacts (layouts with contact #8) |     |   |   |   |   |   |   |   |
| 022: Fuel tank |     |   |   |   |   |   |   |   |

**Special custom**

- None: Standard plastic cap
- M: Antistatic plastic cap
- L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation

## MIL-DTL-38999 Series III - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>D38999/</th>
<th>20</th>
<th>Z</th>
<th>B</th>
<th>35</th>
<th>P</th>
<th>N</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shell style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20: Square flange receptacle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24: Jam nut receptacle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26: Plug with RFI shielding.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Plating** |     |   |   |   |   |   |   |   |
| Z: Black zinc nickel |     |   |   |   |   |   |   |   |

| **Shell size:** | A, B, C, D, E, F, G, H, J |

| **Contact layout:** See SOURIAU «8D Series - 38999 Series III» catalog |

| **Contact type** |     |   |   |   |   |   |   |   |
| P: Male | A: Connector supplied less pin contact or with specific contacts (marking : A + orientation) |     |   |   |   |   |   |   |
| S: Female | B: Connector supplied less socket contact or with specific contacts (marking : B + orientation) |     |   |   |   |   |   |   |

**Orientation:** N, A, B, C, D, E

- L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)

## Dimensions, layouts, contacts, accessories, tooling & derived series

Please consult «8D Series - MIL-DTL-38999 Series III» catalog on www.souriau.com
Description

- Threaded coupling connector with single power contact.
- Aluminum shell.
- 3 shell sizes available:
  - size 19: Up to 450 A at 40°C
  - size 23: Up to 650 A at 40°C
  - size 25: Up to 850 A at 40°C
- Silver plated contact.
- Pin contact is equipped with a plastic cap to prevent electrical shock.
- Modular design:
  - Removable backshell: straight, right angle or threaded contact.
  - Backshell termination: shrink boot.

Technical features

Materials

- Shell: Aluminum alloy
- Shell plating:
  Black zinc nickel (Z)
  Cadmium olive drab (W)
- Insulator: Thermoplastic
- Grommet and interfacial seal: Silicone elastomer
- Contact body: Copper alloy
- Endurance: 500 mating/unmating operations
- Vibration: According Def Stan 00-35
  4.2 g rms vert - 6h/3 axes

Electrical

- Test voltage
  > 1500 V
- Shell to shell continuity (no backshell)
  < 2.5 mΩ
- EMI
  85 dB @ 1GHz (F)

Environmental

- Temperature range:
  -65°C to +175°C
- Sealing:
  IP67 on mated connector (1 meter/30 min)
- Salt spray:
  500 hours

Resistance to fluids

- According to MIL-DTL-38999 standard
  - Gasoline: JP5 (OTAN F44)
  - Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  - Synthetic hydraulic fluid: Skydrol 500 B4
- LD4 (SAE AS 1241)
  - Mineral lubricating: MIL-L-7870A (OTAN 0142)
  - Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
  - Cleaning fluid: MIL-DTL-25769 diluted
  - De-icing fluid: MIL-A-8243
  - Extinguishing fluid: Bromochloromethane
  - Cooling fluid: Coolanol
Black Zinc Nickel | 8D Series High Power

Ordering information

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8D</th>
<th>0</th>
<th>25</th>
<th>Z</th>
<th>H1</th>
<th>P</th>
<th>N</th>
<th>R1</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0: Square flange receptacle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5: Plug (available with backshell D1, R1 &amp; G0 Types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7: Jam nut receptacle</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Shell size: 19, 23, 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plating:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z: Zinc Nickel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1: Single power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact style:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Pin contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: Socket contact</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Orientation: N, A, B, C, D, E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Backshell type:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1: Straight backshell shrink boot &amp; EMI (crimp version)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1: Right angle backshell shrink boot &amp; EMI (crimp version)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G0: Backshell low profile (threaded termination)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W0: Without backshell (threaded termination)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specification for backshells D1 & R1 Types (crimp version):

<table>
<thead>
<tr>
<th>Specification</th>
<th>Shell size</th>
<th>Admissible cable (mm²)</th>
<th>Barrel diameter (mm ±0.05)</th>
<th>Wire section (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Outer Ø max</td>
<td>Nominal core Ø</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>19</td>
<td>17</td>
<td>10.15</td>
<td>10.8</td>
</tr>
<tr>
<td>B</td>
<td>19</td>
<td>17</td>
<td>11.1</td>
<td>11.8</td>
</tr>
<tr>
<td>C</td>
<td>19</td>
<td>17</td>
<td>12</td>
<td>12.5</td>
</tr>
<tr>
<td>D</td>
<td>23</td>
<td>22</td>
<td>14.05</td>
<td>15</td>
</tr>
<tr>
<td>E</td>
<td>23</td>
<td>22</td>
<td>16.3</td>
<td>17</td>
</tr>
<tr>
<td>F</td>
<td>25</td>
<td>26.5</td>
<td>20.5</td>
<td>19</td>
</tr>
</tbody>
</table>

Specification for backshells G0 & W0 Types (only threaded termination):

<table>
<thead>
<tr>
<th>Specification</th>
<th>Shell size</th>
<th>Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>19, 23 &amp; 25</td>
<td>M12</td>
</tr>
</tbody>
</table>

Note: Plug not available with backshell W0 Type. Other thread, please consult us.

Contact layouts

19
H1

23
H1

25
H1

Dimensions

Please consult «8D Series - MIL-DTL-38999 Series III» catalog on www.souriau.com

Note: For other configuration or shell size, please consult us.
Black Zinc Nickel | micro38999 - 8DA, 8BA, 8LTA Series

Description
- A compact solution
  - The smallest connector available on the market (shell size 3)
  - Miniaturization of MIL-DTL-38999 Series III
  - Integrated backshell
- A versatile solution
  - 3 coupling system:
    - Threaded (8DA Series)
    - Break away (8BA Series)
    - Bayonet (8LTA Series)
  - 3 shells sizes: 3, 5, 7
  - Crimp & PC tails
  - Removable contacts #22D & #26
  - 6 keyings
- Harsh environment-resistant solution
  - Scoop Proof
  - Cavity to cavity sealed with interfacial seal and grommet
  - Fluid resistant

Technical features

Materials
- **Shell:**
  - Aluminum alloy (8DA only)
  - Passivated stainless steel (8DA & 8BA)
- **Shell plating:**
  - Zinc nickel (RoHS) for Aluminum alloy shell (8DA & 8BA)
- **Insulator:** Thermoplastic
- **Contact body:** Copper alloy (8DA & 8BA)
- **Contacts plating:** Gold over nickel plated (8DA & 8BA)
- **Shell endurance:**
  - Aluminum: 500 mating/unmating cycles
  - Passivated stainless steel: 1000 mating/unmating cycles (8DA & 8BA)
- **Vibration:**
  - 8DA: 44 grms, 2 axes during 8 hours
  - 8BA & 8LTA: 30 grms, 2 axes during 8 hours
- **Shock:** 300g, 3 ms

Electrical
- **Wire size**

<table>
<thead>
<tr>
<th>Layout</th>
<th>Wire (AWG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03-05</td>
<td>24-30</td>
</tr>
<tr>
<td>03-35</td>
<td>22-28</td>
</tr>
<tr>
<td>05-06</td>
<td>24-30</td>
</tr>
<tr>
<td>05-35</td>
<td>22-28</td>
</tr>
<tr>
<td>07-09</td>
<td>24-30</td>
</tr>
<tr>
<td>07-35</td>
<td>22-28</td>
</tr>
</tbody>
</table>

- **Test voltage (at sea level):**
  - Size 22D: 1000 Vrms
  - Size 26: 400 Vrms
- **Contact resistance:**
  - Size 22D: <14.6 mΩ
  - Size 26: <16 mΩ
- **Contact rating:**
  - Size 22D: 5A
  - Size 26: 3A
- **Contact retention:**
  - Size 22D: 45N
  - Size 26: 30N
- **Shell to shell continuity (typical value):**

<table>
<thead>
<tr>
<th>Series</th>
<th>Shell size</th>
<th>Aluminum</th>
<th>Stainless steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>8DA &amp; 8BA</td>
<td>3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>5, 7</td>
<td>10 mΩ</td>
<td>60 mΩ</td>
</tr>
<tr>
<td>8LTA</td>
<td>3, 5, 7</td>
<td>250 mΩ</td>
<td>250 mΩ</td>
</tr>
</tbody>
</table>

- **EMI:**
  - 8DA & 8BA: -70 dB @ 1GHz
  - 8LTA: -55 dB @ 1Ghz

Environmental
- **Temperature range:**
  - -55°C to +175°C
- **Water immersion:**
  - IP 67 on mated connector
  - 1 meter for 30 min minimum
  - > IP68 with appropriate cable termination
- **Salt spray:**
  - Zinc nickel: 500 hours

Resistance to fluids
- **According to MIL-DTL-38999 standard**
  - Gasoline: JP5 (OTAN F44)
  - Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  - Synthetic hydraulic fluid: Skydrol 500 B4
- **Compatible with de-icing fluids containing potassium acetate**
Contact layouts

Note: For information only.

Ordering information

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8DA: Threaded coupling</th>
<th>8BA: Break away</th>
<th>8LTA: Bayonet coupling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell type</td>
<td>0: Square flange receptacle (8DA &amp; 8LTA only)</td>
<td>1: In line receptacle</td>
<td>2: Oval flange receptacle (8LTA only)</td>
</tr>
<tr>
<td></td>
<td>5: Plug with EMI ring (8DA only - size 5 &amp; size 7)</td>
<td>6: Plug</td>
<td>7: Jam nut receptacle</td>
</tr>
<tr>
<td>Shell size</td>
<td>03 - 05 - 07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plating</td>
<td>Z: Black zinc nickel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact layout:</td>
<td>See above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact type</td>
<td>P: Pin (8DA shell size 3 scoop proof only when pin contacts mounted in Type 6)</td>
<td>S: Socket (8DA shell size 3 scoop proof only when socket contacts mounted in Type 1 &amp; Type 7. 8BA scoop proof only when socket contacts mounted in Type 1 &amp; Type 7)</td>
<td></td>
</tr>
<tr>
<td>Orientation</td>
<td>N, A, B, C, D, E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions, PC tail version, accessories & tooling

Please consult «micro38999, A Complete Miniature Range» catalog on www.souriau.com
Description

- A high density connector from 1 to 128 contacts for all military and aeronautical purposes.
- Sizes #22D, #20, #16, #12, #16 coax and #8 triax
- Bayonet locking system
- MIL-C-38999 Series I contact layouts
- 100% scoop proof
- EMI/RFI shielding and shell-to-shell continuity

Technical features

Materials

- Shell: aluminum alloy
- Plating: black zinc nickel (Z)
- Insulator: thermoplastic or metallic version available for spec. 284 & 384
- Grommet or seal: liquid silicone rubber or fluorocarbone elastomer for spec. 022
- Contact: copper alloy
- Plating contact: gold over nickel
- Endurance: 500 mating/unmating operations
- Shock: 300 g during 3 ms and as per MIL S 901 grade A
- Vibration: 147 m/s², 10 to 2000 Hz
- Contact retention (min force in N):

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min force in N</td>
<td>30</td>
<td>44</td>
<td>67</td>
<td>111</td>
<td>111</td>
<td>111</td>
<td>200</td>
</tr>
</tbody>
</table>

Electrical

- Test voltage (Vrms):

<table>
<thead>
<tr>
<th>Service</th>
<th>sea level</th>
<th>at 21000 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>400</td>
<td>N/A</td>
</tr>
<tr>
<td>M</td>
<td>1 300</td>
<td>800</td>
</tr>
<tr>
<td>N</td>
<td>1 000</td>
<td>600</td>
</tr>
<tr>
<td>I</td>
<td>1 800</td>
<td>1 000</td>
</tr>
<tr>
<td>II</td>
<td>2 300</td>
<td>1 000</td>
</tr>
</tbody>
</table>

- Insulation resistance:
  ≥ 5 000 MW (at 500 Vcc)
- Contact resistance:

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance mΩ</td>
<td>16</td>
<td>144</td>
<td>7.3</td>
<td>3.8</td>
<td>3.5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- Contact rating:

<table>
<thead>
<tr>
<th>Contacts size</th>
<th>26</th>
<th>22</th>
<th>20</th>
<th>16</th>
<th>12</th>
<th>8</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating (A)</td>
<td>3</td>
<td>5</td>
<td>7.5</td>
<td>13</td>
<td>23</td>
<td>45</td>
<td>80</td>
</tr>
</tbody>
</table>

- Shell continuity: 2.5 mΩ (Z)
- Shielding: 70 db at 0.01 to 100 MHz
- Electrical continuity between contact and shell for specification 284 & 384: 10 mΩ max

Environmental

- Temperature range: -65°C +175°C (Z)
- Sealing, mated connectors: Differential pressure 2 bars leakage ≤16 cm³/h
- Salt spray as per MIL STD 1344 method 1001: 500 hours (Z)

Resistance to fluids

- Specification 022 for fuel immersion: Please consult us
Ordering information

<table>
<thead>
<tr>
<th>Basic series</th>
<th>8ST 0 - 10 Z 35 P N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell style</td>
<td></td>
</tr>
<tr>
<td>0: Square flange receptacle</td>
<td></td>
</tr>
<tr>
<td>1: In line receptacle</td>
<td></td>
</tr>
<tr>
<td>2: Square flange receptacle, not accepting backshell</td>
<td></td>
</tr>
<tr>
<td>3: Square flange receptacle, rear mounting</td>
<td></td>
</tr>
<tr>
<td>5: Plug with RFI/EMI shielding</td>
<td></td>
</tr>
<tr>
<td>6: Plug without RFI/EMI shielding</td>
<td></td>
</tr>
<tr>
<td>7: Jam nut receptacle</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>-: Connector with standard crimp contacts</td>
<td></td>
</tr>
<tr>
<td>L: Connector with long PC tail contacts</td>
<td></td>
</tr>
<tr>
<td>M: Connector with medium PC tail contacts</td>
<td></td>
</tr>
<tr>
<td>C: Connector with short PC tail contacts</td>
<td></td>
</tr>
<tr>
<td>Shell size: 08; 10; 12; 14; 16; 18; 20; 22; 24</td>
<td></td>
</tr>
<tr>
<td>Plating</td>
<td></td>
</tr>
<tr>
<td>Z: Black zinc nickel</td>
<td></td>
</tr>
</tbody>
</table>

Contact layout: See SOURIAU «8ST Series - VG96912 & JN1003» catalog

Contact type
- P: Pin - 500 mating/unmating
- H: Pin - 1500 mating/unmating
- A: Connector supplied without pin contact
- S: Socket - 500 mating/unmating
- J: Socket - 1500 mating/unmating
- B: Connector supplied without socket contact

Orientation: N, A, B, C, D (orientations B & C not developed for shell size number 9)

Specifications
- None: Supplied with contact
- 034: As per JN1003 Standard - B type plating only
- 046: PC Tail contact with tinned plating
- 251: Connector provided with power contacts - layouts with cavities #8 only
- 022: Fuel tank - Please consult us

Dimensions, layouts, contacts, accessories & tooling

Please consult «8ST Series - VG96912 & JN1003» catalog on www.souriau.com
Description

• Bayonet coupling connector with crimp contacts.
• Qualified as per VG96918
• Power supply (up to 63A)
• Pilot and ground contacts available.
• Contact layouts for:
  . Mono 220 V
  . Tri 220/380 + N + Pilot

Technical features

Materials

• Shell & Backshell material:
  Aluminum

• Shell & Backshell plating:
  Black Zinc Nickel

• Insulator:
  Neoprene

• Contact:
  Crimp, machined, from brass

• Contact plating:
  Silver

• Endurance:
  500 mating/unmating operations

Electrical

• Operating voltage:
  . Contact layout 25: 250 Vrms
  . Contact layouts 48: 400 Vrms
  . Contact layouts 58: 380 Vrms

• Current rating:
  . Contact layout 25: 16 A
  . Contact layout 48: 25 A
  . Contact layout 58: 63 A

• Withstanding voltage:
  . 2000 Veff for shell sizes 2 and 4
  . 2500 Veff for shell size 5

• Shielding effectiveness:
  . 10kHz - 3MHz 70dB min.
  . 100MHz - 1000MHz 40dB min.

Environmental

• Temperature range:
  - -55°C to + 85°C (125°C peak)

• Sealing (immersion):
  1 bar - 24 hours

• Salt spray resistance:
  500 hours

• Pollution degree 3:
  according to DIN EN60664-1

Contact layouts

<table>
<thead>
<tr>
<th>25</th>
<th>48</th>
<th>58</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="25 Layout" /></td>
<td><img src="image" alt="48 Layout" /></td>
<td><img src="image" alt="58 Layout" /></td>
</tr>
</tbody>
</table>
### Ordering information

#### SOURIAU 848 Series - Part numbers (with contacts and backshells)

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>848 Series</th>
<th>5</th>
<th>47</th>
<th>N</th>
<th>3</th>
<th>08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell material and plating</td>
<td>8: Aluminum shell with black zinc nickel plating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact layout</td>
<td>25, 48, 58 (see previous page)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shell type</td>
<td>A: Square flange receptacle, smooth holes, without thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B: Square flange receptacle, smooth holes, with thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L: Square flange receptacle, threaded holes, without thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M: Square flange receptacle, threaded holes, with thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F: Plug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P: Cable connecting receptacle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D: Jam nut receptacle with thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: Jam nut receptacle without thread for backfitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact type</td>
<td>1: Crimp male contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: Crimp female contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backshell type</td>
<td>00: Receptacles (A, L, R types), without thread for backfitting receptacles (B, M, D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21: Straight cable clamp and sealing gland backshell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23: Elbow cable clamp and sealing gland backshell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>47: Straight backshell for shield termination and heatshrink sleeving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>48: Straight backshell for shield termination and heatshrink sleeving and tightening shield ring (for contact layout 48 &amp; 58 only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation</td>
<td>N, W, X, Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert type</td>
<td>0: Without grommet, without pilot contact. Only for contact layout 25 and 48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1: With grommet, without pilot contact. Contact layout 58: insert is only with grommet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2: Without grommet, with pilot contact. Only for contact layout 48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: With grommet, with pilot contact. Filler plug supplied. Only for contact layout 48 and 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specification</td>
<td>08: Aluminum shell with black zinc nickel plating</td>
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</table>

### VG96918 - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>VG96918</th>
<th>A1</th>
<th>25</th>
<th>P</th>
<th>N</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell type</td>
<td>A1: Fixed connector with mounting flange</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B1: Fixed connector with mounting flange and adapter for shielding braid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C: Fixed connector for single hole mounting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D: Fixed connector for single hole mounting and adapter for shielding braid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>E: Cable connecting receptacle with adapter for shielding braid</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>F: Free plug with adapter for shielding braid</td>
<td></td>
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</tr>
<tr>
<td>Contact layout</td>
<td>25, 48, 58 (see previous page)</td>
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<tr>
<td>Contact type</td>
<td>P: Male contact</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>S: Female contact</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Orientation</td>
<td>N, W, X, Y</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Plating</td>
<td>C: Aluminium shell with black zinc nickel plating</td>
<td></td>
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</tr>
</tbody>
</table>

### Dimensions, caps, contacts & tooling

Please consult «847/848 Series, Power Supply up to 63A» Product News on www.souriau.com
Backshell types

**Backnut**
The backnut compress the connector sealing grommet. It's the cost efficient solution to avoid grommet deformations and leakage infiltrations.

**Cable clamp**
Cable clamp is used to prevent wires and cables from pulling on the contacts and damaging the termination. It is available in straight or 90° angle.

**Crimp ring**
Eliminates EMI leakage paths, providing reliable and repairable shield terminations.

**Shrink boot**
Backshell ideal for environmental protection of connector wire terminations in most harsh environments including ground military equipments.

**Band lock**
This backshell type offers a complete grounded backshell, shield termination, and environmental sealing.

**Double cone**
Ensures the shielding by clamping the braid with a screwing system, developed according to HE308 standard.

**Description**
- Souriau offers a full range of aluminum caps and backshells. The best choice for a global solution provider.
- Cost & time saving: one supplier for connector and accessories.
- A global RoHS solution:
  - With Zinc-Nickel accessories, Souriau offers a complete RoHS solution.
  - Nickel, Cadmium and Black anodize finishes also available.
- A wide range:
  - 6 backshell types and 2 angles.
  - Available for 38999 Series I, II, III & IV.
- High reliability: conforming to AS85049 standards.
### Ordering information

**Aluminum backshells for 8LT & 8T Series**

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8T</th>
<th>AB</th>
<th>05</th>
<th>A</th>
<th>16</th>
<th>Z</th>
<th>S</th>
<th>01</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accessories type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td><strong>Type:</strong></td>
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<td></td>
<td></td>
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<tr>
<td>01: Backnut</td>
<td>04: Crimp ring</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02: Cable clamp</td>
<td>05: Band lock</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>03: Shrink boot</td>
<td>06: Double cone</td>
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<tr>
<td><strong>Angle:</strong></td>
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<tr>
<td>A: Straight</td>
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<tr>
<td>B: 90° (Type 02 only)</td>
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<td><strong>Shell size:</strong></td>
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<tr>
<td>08, 10, 12, 14, 16, 18, 20, 22, 24</td>
<td>09, 11, 13, 15, 17, 19, 21, 23, 25</td>
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<tr>
<td><strong>Finish:</strong></td>
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<tr>
<td>Z: Black zinc nickel</td>
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<tr>
<td><strong>Self locking option:</strong></td>
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<tr>
<td>None</td>
<td>S: Self locking (available for Types 01 &amp; 02 - mandatory for Type 05)</td>
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<tr>
<td><strong>Cable entry (Type 05 only):</strong></td>
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<tr>
<td>01, 02 (02 mandatory for shell size 08 &amp; 10)</td>
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<tr>
<td>None</td>
<td>D: Drain hole (Type 03 only)</td>
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**Aluminum backshells for 8D Series**

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8D</th>
<th>AB</th>
<th>05</th>
<th>A</th>
<th>17</th>
<th>Z</th>
<th>S</th>
<th>02</th>
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<tbody>
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<td><strong>Accessories type</strong></td>
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<td><strong>Type:</strong></td>
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</tr>
<tr>
<td>01: Backnut</td>
<td>04: Crimp ring</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02: Cable clamp</td>
<td>05: Band lock</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03: Shrink boot</td>
<td></td>
<td></td>
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<td></td>
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<td><strong>Angle:</strong></td>
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<tr>
<td>A: Straight</td>
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<tr>
<td>B: 90° (Type 02 only)</td>
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<td><strong>Shell size:</strong></td>
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<tr>
<td>09, 11, 13, 15, 17, 19, 21, 23, 25</td>
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<tr>
<td>Z: Black zinc nickel</td>
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<tr>
<td><strong>Self locking option:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>S: Self locking (available for Types 01 &amp; 02 - mandatory for Type 05)</td>
<td></td>
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<tr>
<td><strong>Cable entry (Type 05 only):</strong></td>
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</tr>
<tr>
<td>02, 03 (03 mandatory for shell size 09 &amp; 11)</td>
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</tr>
<tr>
<td><strong>Drain hole option:</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>D: Drain hole (Type 03 only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Dimensions, accessories & assembly instructions

Please consult «Backshell & Accessories» catalog on www.souriau.com

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**SOURIAU**

31
Description

- Metallic aluminum caps to protect plugs and receptacles from dust, moisture, contact bending, ...
- Developed conforming to D38999 standards.
- Caps for receptacles and plugs.
- Teflon coated stainless steel rope.
- Available with ring or eyelet.

Ordering information

Souriau 8D Series caps - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>8D</th>
<th>AC</th>
<th>5</th>
<th>R</th>
<th>09</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum caps</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Caps style</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5: Plug caps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0: Receptacle caps</td>
<td></td>
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</tr>
<tr>
<td>Accessories</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N: With stainless steel rope and ring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R: With stainless steel rope and eyelet</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z: Black zinc nickel plating</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

MIL-DTL-38999 caps - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>D38999/</th>
<th>32</th>
<th>Z</th>
<th>09</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caps style</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32: Plug caps</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>33: Receptacle caps</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Z: Black zinc nickel plating</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N: With stainless steel rope and ring</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>R: With stainless steel rope and eyelet</td>
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</tbody>
</table>
### Souriau micro38999 caps - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>Cap type</th>
<th>Cap style</th>
<th>Shell size</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>8DAC</td>
<td>32</td>
<td>P</td>
<td>03, 05, 07</td>
<td>N</td>
</tr>
<tr>
<td>8LTA</td>
<td>33</td>
<td>R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cap type**
- 32: Cap for plug
- 33: Cap for receptacle

**Cap type**
- Z: Black zinc nickel plating

**Shell size:** 03, 05, 07

**Style**
- N: Ring
- R: Eyelet

### Souriau 851 Series caps - Part numbers

<table>
<thead>
<tr>
<th>Basic Series</th>
<th>Cap style</th>
<th>Shell size</th>
<th>Attachment option</th>
<th>Length of attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>851</td>
<td>P</td>
<td>8, 10, 12, 14, 16, 18, 20, 22, 24</td>
<td>C, N, R, S, B, D, E, F, G, K</td>
<td>L: 130 ±9 mm (leave blank for standard length)</td>
</tr>
</tbody>
</table>

**Cap style**
- P: Plug cap
- R: Receptacle cap

**Shell size:** 8, 10, 12, 14, 16, 18, 20, 22, 24

**Attachment option**
- C: With stainless steel chain & eyelet
- N: With stainless steel chain & ring (only for receptacle cap)
- R: With PTFE coated stainless steel rope & eyelet
- S: With PTFE coated stainless steel rope & ring (only for receptacle cap)
- B: With green nylon rope & eyelet
- D: With green nylon rope & ring (only for receptacle cap)
- E: With black nylon rope & eyelet
- F: With black nylon rope & ring (only for receptacle cap)
- G: Without attachments
- K: Black zinc nickel plating

### Dimensions

Black Zinc Nickel | Tin Plated PCB Contacts

Description

- All 38999 pin & socket PCB contacts are now available with various tin plating, including RoHS version.

- 3 types of tin plating:
  . Tin lead (SnPb).
  . Tin silver copper (SAC 305 - RoHS).
  . Pure tin (Sn - RoHS).

- A complete & versatile offer:
  . Tin plating available for all PC tail contacts already developed.
  . PC tail contacts with or without shoulder.

Ordering information

<table>
<thead>
<tr>
<th>Basic Series:</th>
<th>8LT</th>
<th>8T</th>
<th>8D</th>
</tr>
</thead>
<tbody>
<tr>
<td>8LT &amp; 8T shell type:</td>
<td>3</td>
<td>11</td>
<td>Z</td>
</tr>
<tr>
<td>8D shell type:</td>
<td>0</td>
<td>11</td>
<td>Z</td>
</tr>
</tbody>
</table>

- 3: Square flange wall mounting receptacle
- 7: Jam nut receptacle
- 0: Square flange wall mounting receptacle
- 7: Jam nut receptacle
- 35: Square flange receptacle with M3 helicoils
- 37: Square flange receptacle with UNC 4-40 helicoils
- C: Short PC tail contact (other lengths please consult us)
- 8LT & 8D shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25
- 8T shell size: 08, 10, 12, 14, 15, 17, 20, 22, 24
- Z: Black zinc nickel plating

Contact layout: See 8LT, 8T & 8D Series catalogs

<table>
<thead>
<tr>
<th>Contact type:</th>
<th>P: Male</th>
<th>S: Female</th>
</tr>
</thead>
</table>

Orientation:

<table>
<thead>
<tr>
<th>Orientation:</th>
<th>N, A, B, C, D, E (orientations B &amp; C not developed for 8LT Series shell size 9; orientation E not developed for 8LT Series)</th>
</tr>
</thead>
</table>

Contact plating:

| 046: Tin plated PCB contact SnPb | 550: Tin plated Quadrax PCB contact SnPb (not available for 8T Series) |
| 046S: Tin plated PCB contact SAC305 | 550S: Tin plated Quadrax PCB contact SAC305 (not available for 8T Series) |
| 046E: Tin plated PCB contact Sn pur | 550E: Tin plated Quadrax PCB contact Sn pur (not available for 8T Series) |
| 901: Tin plated PCB contact without shoulder SnPb | |
| 901S: Tin plated PCB contact without shoulder SAC305 | |

Special custom:

| None: Standard plastic cap | M: Antistatic plastic cap |

Dimensions

Please consult Souriau 8LT, 8T & 8D catalogs on www.souriau.com.
Your local contact

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www.souriau.com
contactmilaero@souriau.com