Typical applications

Civil Aeronautics
Military Aeronautics
Defense
Ground Military
Industrial
Marine - Offshore
Features & Benefits

**MIL-DTL-38999 Qualified**
54 qualified layouts. Qualified protective caps.

**High reliability**
Temperature up to 200°C. High vibration withstanding (44g). 500 mating/unmating cycles.

**High end materials**

**Versatility**
RoHS platings, high density layouts, ... Contacts: signal, high speed (optical, quadrax), high power, ... Specific shells: double flange, clinch nuts, integrated backshell, ...

**Class K**
Stainless steel (D38999, EN3645 & BACC qualified). Hermetic version.
8D Series | Overview

Product overview

**Standard Series**

► 5 different materials
► A full platform that matches any environment
► Different platings (including RoHS & Cadmium free platings)

► 8D Aluminum
► 8D Composite
► 8D Titanium
► 8D Stainless Steel
► 8D Bronze

**Derived Series**

► Various possibilities of range extension & shell variant from Standard Series
► The only limit is your imagination: Consult us!

► Clinch Nut
► Double Flange
► RJ45/USB
► Reinforced Sealing
► Fuel Tank
► Quadrax
► ELIO® Fiber Optic
► Power / High Power
► Coax BMA
► Hermetic
A superior concept

A full range of contacts

- Multi-contact technology provides versatile connectors
  - Signal transmission
  - High speed data transmission
  - Quadrax
  - Concentric Twinax (= Triax)
  - Coax
  - ELIO® fiber optic
  - High power transmission
  - Up to 850A

- Various contact styles
  - Crimp
  - Solder cup
  - PC tails
  - Wire wrap
  - PCB contacts without shoulder

- Common cavity for all #8 contacts

Metallic clips

- Unique clip retention technology

- High performance contact retention system:
  - Insure high temperature withstanding
  - Provides superior strength in vibrations
  - Better retention characteristics than plastic clips

High performance sealing

- IP67
- Each contact cavity is individually sealed

Accessories available

- Protective caps, backshells, tools, ...

Note: Concentric Twinax = Triax
Product overview - A performing MIL standard connector design

**Scoop proof connector**
- No risk of damaging contacts during the coupling operation

**Self locking mechanism**
- Connector will never unscrew even under high vibration (44g)

**Patented by SOURIAU**
- Connector will never unscrew even under high vibration (44g)

**Quick screw coupling**
- 1 1/4 turn to mate

**Fully shielded connector**
- 360° shielding
- 360° teeth for optimum shield continuity with accessories
- Shell to shell bottoming = perfect shield continuity

**Visual mating indication**
- Red band visible = not correctly mated
- Red band hidden = correctly mated

**A universal product platform**

<table>
<thead>
<tr>
<th>38999 Series I: 8LT Series</th>
<th>38999 Series II: 8T Series</th>
<th>8ST Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-DTL-38999</td>
<td>MIL-DTL-38999</td>
<td>VG96912 &amp; JN1003</td>
</tr>
<tr>
<td>High density MIL-spec circular</td>
<td>High density MIL-spec circular</td>
<td>High density</td>
</tr>
<tr>
<td>Scoop proof</td>
<td>Scoop proof</td>
<td>Lightweight version of Series I</td>
</tr>
<tr>
<td>Bayonet coupling</td>
<td>Bayonet coupling</td>
<td>Scoop proof, bayonet coupling</td>
</tr>
<tr>
<td>Mounting: screws or jam nut</td>
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</tr>
<tr>
<td>Shell: Aluminum alloy</td>
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</tr>
<tr>
<td>Plating: Cadmium or nickel</td>
<td>Plating: Cadmium, nickel or</td>
<td>Plating: Cadmium or nickel</td>
</tr>
<tr>
<td>QPL approved</td>
<td>hard anodized</td>
<td>VG 96912 German specification</td>
</tr>
<tr>
<td>Numerous layouts</td>
<td>QPL approved</td>
<td>JN 1003 Typhoon specification</td>
</tr>
</tbody>
</table>
8D Series  |  Overview

Technical features

**Mechanical**

- **Shell:**
  Aluminum, composite, stainless steel, bronze

- **Shell plating:**
  - Aluminum shell:
    - Cadmium olive drab (W)
    - Black zinc nickel (Z)
    - Green zinc cobalt (ZC)
  - Composite shell:
    - Cadmium olive drab (J)
    - Nickel (M)
    - Without plating (X)
  - Stainless steel shell:
    - Passivated (K)
    - Nickel (S)
  - Titanium shell:
    - Without plating (TT)
    - Nickel (TF)
  - Bronze shell:
    - Without plating

- **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 specific contacts

- **Shock:**
  300g, 3 ms according EN 2591-D2 method A

- **Vibration:**
  - Sinus:
    - 10 à 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
    - Random:
      - 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
      - 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at amiant T°
    - Test with accessories in acc with EN2591-D3

- **Contact retention:**

- **Contact retention:**

<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>

**Description**

- High contact density layouts available
- Screw coupling, Shell size from 9 to 25
- Contact protection: 100% Scoop proof
- Protected by cadmium, nickel, green zinc cobalt or black zinc nickel plating
- RFI - EMI shielding and shell to shell continuity
- Accessories (protective caps, backshells, etc...)
- Hermetic versions
- High power up to 850A
- Optical layouts
- 230V layouts available (ABS22-19, ABS22-20, ABS22-21 & ABS22-22 qualified)
- Standards:
  - MIL-DTL-38999 Series III
  - EN3645
  - BACC63CT/CU; BACC63DB/DC

**Weight comparison**

Example for a plug shell size 15

<table>
<thead>
<tr>
<th>Materials</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>58.80 g</td>
</tr>
<tr>
<td>Titanium</td>
<td>33.90 g</td>
</tr>
<tr>
<td>Aluminum</td>
<td>20.35 g</td>
</tr>
<tr>
<td>Composite</td>
<td>14.30 g</td>
</tr>
</tbody>
</table>

SOURIAU
Electrical

- Test voltage rating (Vrms)

<table>
<thead>
<tr>
<th>Service</th>
<th>sea level at 21000 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>400</td>
</tr>
<tr>
<td>M</td>
<td>1300</td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
</tr>
<tr>
<td>I</td>
<td>1800</td>
</tr>
<tr>
<td>II</td>
<td>2300</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>146</td>
<td>7.3</td>
<td>3.8</td>
<td>3.5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- Insulation resistance:

≥ 5000 MΩ (under 500 Vdc)

- Contact rating:

<table>
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<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

- Aluminium shell:
  - Cadmium olive drab (W): 2.5 mΩ
  - Nickel (F): 1 mΩ
  - Black zinc nickel (Z): 2.5 mΩ
  - Green zinc cobalt (ZC): 2.5 mΩ
- Composite shell:
  - Cadmium olive drab (J): 3 mΩ
  - Nickel (M): 3 mΩ
- Stainless steel shell:
  - Passivated (K): 10 mΩ
  - Nickel (S): 1 mΩ
- Titanium shell:
  - Without plating (TT): 10 mΩ
  - Nickel (TF): 1 mΩ
- Bronze shell:
  - Without plating: 5 mΩ

- Shielding:

- Aluminium shell:
  - F: 65 dB at 10 GHz
  - Z, F & W: 85 dB at 1 GHz
  - Z & W: 50 dB at 10 GHz
  - ZC: Consult us

- Composite shell:
  - J & M: 85 dB at 1 GHz

- Stainless steel shell:
  - K: 45 dB at 10 GHz
  - S: 65 dB at 10 GHz
  - Titanium shell:
    - TT: 45 dB at 10 GHz
    - TF: 65 dB at 10 GHz
  - Bronze shell:
    - 85 dB at 10 GHz

Environmental

- Temperature range:

- Aluminium shell:
  - W: -65° C +175° C
  - F: -65° C +200° C
  - Z: -65° C +200° C
  - ZC: -65°C +175° C

- Composite shell:
  - J: -65° C +175° C
  - M: -65° C +200° C
  - Without plating (X): -65° C +175°

- Stainless steel shell:
  - K: -65° C +200° C
  - S: -65° C +200° C

- Titanium shell:
  - TT: -65° C +200° C
  - TF: -65° C +200° C

- Bronze shell:
  - Without plating: -65° C +175° C

- Sealing:

Mated connectors meet altitude immersion requirements of MIL-DTL-38999.

- Salt spray:

- Aluminium shell:
  - W: 500 Hrs
  - F: 48 Hrs
  - Z: 500 Hrs
  - ZC: 250 Hrs

- Composite shell:
  - J: 2000 Hrs
  - M: 2000 Hrs
  - Without plating (X): 2000 Hrs

- Stainless steel shell:
  - K: 500 Hrs
  - S: 500 Hrs

- Titanium shell:
  - TT: 500 Hrs
  - TF: 48 Hrs

- Bronze shell:
  - Without plating: 500 Hrs

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-C-87936 diluted
  - De-icing fluid: MIL-A-8243
  - Extinguishing fluid: Bromochloromethane
  - Cooling fluid: Coolanol