Front Runner
Circular Connectors

Featuring high performance, lightweight, composite construction

www.connectpositronic.com
Experience

- Founded in 1966
- Involvement in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG® and VITA.
- Introduction of new and unique connector products to the electronics industry.
- Patent holder for many unique connector features and manufacturing techniques.
- Vertically integrated manufacturing – raw materials to finished connectors.

Technology

- Expertise with solid machined contacts provides a variety of high reliability connectors including high current density power connectors.
- Quality Assurance lab is capable of testing to IEC, EIA, UL, C.UL, military and customer-specified requirements.
- In-house design and development of connectors based on market need or individual customer requirements.
- Internal manufacturing capabilities include automatic precision contact machining, injection molding, stamping, plating operations and connector assembly.
- Manufacturing locations in southwest Missouri, U.S.A. (headquarters); Puerto Rico, France, China, Singapore, and India. Total square footage: 369,000.

Support

- Compliance to a variety of international and customer specific environmental requirements.
- Large in-house inventory of finished connectors. Customer specific stocking programs.
- Factory direct technical sales support in major cities worldwide.
- One-on-one customer support from worldwide factory locations.
- World class web site.
- Value-added solutions and willingness to develop custom products with reasonable price and delivery.

Regional Headquarters

Springfield, MO  Auch, France  Singapore

Products described within this catalog may be protected by one or more of the following US patents:

- #4,900,261
- #5,255,580
- #5,329,697
- #6,260,268
- #6,835,079
- #7,115,002

Patented in Canada, 1992  Other Patents Pending

Positronic Industries’ FEDERAL SUPPLY CODE (Cage Code) FOR MANUFACTURERS is 28198

Unless otherwise specified, dimensional tolerances are:

1) ±0.001 inches [0.03 mm] for male contact mating diameters.
2) ±0.003 inches [0.08 mm] for contact termination diameters.
3) ±0.005 inches [0.13 mm] for all other diameters.
4) ±0.015 inches [0.38 mm] for all other dimensions.

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HIGH PERFORMANCE, LIGHTWEIGHT, COMPOSITE CONSTRUCTION

- SIZES 11 AND 19 connector diameters.
- 16 CONTACT ARRANGEMENTS from 3 to 29 contacts.
- EASY CONTACT SERVICING: Rear insertion/front release of removable contacts.
- TWO LEVEL SEQUENTIAL MATING OF CONTACTS.
- NON-CORRODIBLE/LIGHTWEIGHT COMPOSITE MATERIALS.
- ENVIRONMENTAL VERSION features dust and water ingress protection to IEC IP67 (1 meter immersion for 30 minutes) in mated condition.
- EMI/RFI SHIELDED VERSION, electroless nickel plated plastic.
- THERMOCOUPLE CONTACTS.
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**DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**
The Front Runner Series offers a multiplicity of connector features which makes it a first choice to meet the high performance and high reliability requirements of Medical, Transportation, Industrial Control, and Avionics applications. Front Runner features include:

2. Sixteen (16) contact arrangements from 3 to 29 contacts.
3. Hot pluggable capabilities to 25 amperes.
4. Two level sequential mating of contacts.
5. A mix of power and signal contacts in Sizes 12, 16, 20, and 22. Crimp removable contacts and printed board straight and right angle terminations.
6. Mounting options include flange and jam nut or printed circuit board mount.
7. Environmental version provides dust and water ingress protection to I.E.C. IP67 (1 meter immersion for 30 minutes in mated condition).
8. EMI/RFI shielded version, electroless nickel plated plastic.
9. Easy contact servicing - rear insertion/front release contact retention system.
10. Threaded coupling nut system.

Contact Technical Sales for additional information.
TYPICAL CONNECTOR ASSEMBLIES

In-line Female Contacts, Plug Housing with Cable Adapter
Part Number FR11FP316K1 with FC116N2 Contacts

Fixed Flange Mount, Male Contacts with Receptacle Housing
Part Number FR11MF316K0 with MC116N Contacts

In-line Male Contacts, Plug Housing with Cable Adapter
Part Number FR11MP520K1 with MC720N Contacts

In-line Female Contacts, Receptacle Housing with Cable Adapter
Part Number FR11FR520K1 with FC720N2 Contacts

Fixed Flange Mount, Male Contacts, Receptacle Housing with Jam Nut
Part Number FR11MJ922K0 with MC422N Contacts

In-line Female Contacts, Plug Housing with Cable Adapter
Part Number FR11FP922K1 with FC422N6 Contacts

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
CONTACT ARRANGEMENTS FOR SIZE 11 HOUSING
VOLTAGE RATINGS PER EN60950 • INSULATION RESISTANCE OF 5 G OHMS
CONTACT ARRANGEMENTS ARE SHOWN APPROXIMATELY ACTUAL SIZE
MATING FACE OF MALE OR REAR VIEW OF FEMALE CONNECTOR SHOWN

316
Three (3) Size 16 Contacts
0.063 inch [1.6 mm] minimum creepage for operation at 300V RMS

520
Five (5) Size 20 Contacts
0.039 inch [1.0 mm] minimum creepage for operation at 200V RMS

822
Eight (8) Size 22 Contacts
0.028 inch [0.7 mm] minimum creepage for operation at 100V RMS

420
Four (4) Size 20 Contacts
0.059 inch [1.5 mm] minimum creepage for operation at 250V RMS

722
Seven (7) Size 22 Contacts
0.063 inch [1.6 mm] minimum creepage for operation at 300V RMS

922
Nine (9) Size 22 Contacts
0.028 inch [0.7 mm] minimum creepage for operation at 100V RMS

CONTACT ARRANGEMENTS FOR SIZE 19 HOUSING
VOLTAGE RATINGS PER EN60950 • INSULATION RESISTANCE OF 5 G OHMS
CONTACT ARRANGEMENTS ARE SHOWN APPROXIMATELY ACTUAL SIZE
MATING FACE OF MALE OR REAR VIEW OF FEMALE CONNECTOR SHOWN

312
Three (3) Size 12 Contacts
0.197 inch [5.0 mm] minimum creepage for operation at 600V RMS

512
Five (5) Size 12 Contacts
0.091 inch [2.3 mm] minimum creepage for operation at 400V RMS

712
Seven (7) Size 12 Contacts
0.071 inch [1.8 mm] minimum creepage for operation at 300V RMS

716
Seven (7) Size 16 Contacts
0.189 inch [4.8 mm] minimum creepage for operation at 600V RMS

916
Nine (9) Size 16 Contacts
0.118 inch [3.0 mm] minimum creepage for operation at 400V RMS

920
Nine (9) Size 20 Contacts
0.154 inch [3.9 mm] Minimum Creepage for Operation at 600V RMS

1220
Twelve (12) Size 20 Contacts
0.102 inch [2.6 mm] minimum creepage for operation at 400V RMS

1920
Nineteen (19) Size 20 Contacts
0.059 inch [1.5 mm] minimum creepage for operation at 250V RMS

1822
Eighteen (18) Size 22 Contacts
0.086 inch [2.2 mm] minimum creepage for operation at 400V RMS

2922
Twenty-nine (29) Size 22 Contacts
0.051 inch [1.3 mm] minimum creepage for operation at 250V RMS

NOTE: Contact Technical Sales for availability of other contact arrangements.
TECHNICAL INFORMATION

Positronic Industries
connectpositronic.com

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:
Insulator Inserts: Glass-filled DAP. Type SDG-F, black color, UL 94V-0.
Non-Environmental Connectors:
Housings: Glass-filled polyester, black color, UL 94V-0.
Coupling Nut: Glass-filled polyester, black color, UL 94V-0.
Cable Adapters: Glass-filled polyester, black color, UL 94V-0.
Environmental Connectors:
Interfacial O-Rings: T.P.E.
Cable Adapters: Glass-filled polyester with T.P.E. boot.
Dust Cover: Glass-filled polyester, black color, or low density polyethylene, black color, UL 94V-0.
EMI/RFI Shielded Connectors:
Housings: Thermoplastic, electroless nickel over copper plated.
Cable Adapters: Thermoplastic, electroless nickel over copper plated.
Contacts: Copper alloy with gold flash over nickel or 0.000030 inch [0.76 microns] gold plate over nickel plate.
Jam Nuts: Aluminum, black anodized.

MECHANICAL CHARACTERISTICS:
Polarization: Plug and receptacle housings are molded with integral polarization system.
Removable Contacts: Rear insertion/Front release removal. Female contact features "Closed Entry Design" for highest reliability.
Contact Retention in Insulator:
Size 20: 10 lbs. [44 N] per IEC 60512-8, Test 15a.
Size 16: 20 lbs. [89 N] per IEC 60512-8, Test 15a.
Size 12: 20 lbs. [89 N] per IEC 60512-8, Test 15a.
Sequential Contact Mating Systems: One and two level systems. Contact Technical Sales for ordering information.
Coupling System:
Size 11 Housing: M19 coupling nut.
Size 19 Housing: M32 coupling nut.

Printed Board Contact Terminations: Straight and 90° solder terminations.
Mechanical Operations: 500 operations.

ELECTRICAL CHARACTERISTICS:
Nominal Contact Current Rating:
Size 12: 25 amperes.
Size 16: 13 amperes.
Size 20: 7.5 amperes.
Size 22: 5 amperes.
Initial Contact Resistance, Maximum:
Size 12: 0.001 ohms per IEC 60512-2, Test 2b.
Size 16: 0.0016 ohms per IEC 60512-2, Test 2b.
Size 20: 0.007 ohms per IEC 60512-2, Test 2b.
Size 22: 0.012 ohms per IEC 60512-2, Test 2b.
Size 16 Micro-Coaxial Contacts: See page 22 for technical information.
Insulation Resistance: 5 G ohms per IEC 60512-2, Test 3a, Method A.
Creepage and Clearance Distance: See values given with the specific contact arrangements on page 3.
Working Voltage: See values given with the specific contact arrangements on page 3.
Hot Pluggable (50 couplings per UL 1977, paragraph 15):
Size 12 Contacts: 250 VAC at 25 amperes.
Size 16 Contacts: 120 VAC at 4.5 amperes.

CLIMATIC CHARACTERISTICS:
Working Temperature: -55°C to +125°C.
Dust and Water Ingress: Per IEC IP67 (1 meter immersion for 30 minutes) in mated condition.

EMI/RFI SHIELDING CHARACTERISTICS:
Surface Conductivity: < 0.5 ohm per square.
Attenuation: 70-80 dB at most frequencies.

THERMOCOUPLE CONTACTS:
Size 20 and 22 crimp contacts are available. See page 20 for details.
PCB mount contacts are available please contact Technical Sales for details.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
All contacts of Positronic’s Front Runner Series utilize the “Large Surface Area (L.S.A.) Contact Mating System.” The “L.S.A. Contact Mating System” insures the lowest level of contact resistance during mechanical endurance tests of 1000 coupling cycles or more. Contact insertion/withdrawal forces remain substantially the same during the life of the connector.

Front Runner Series use only “Closed Entry” design female contacts. The “Closed Entry” design prevents probe damage to the female contacts, and will not allow the female contact to accept misaligned or bent male contacts.

All Front Runner Series contacts are precision machined from solid copper alloy barstock. They are durable, smooth in construction, and have greater amperage capacities than hollow, sheet metal-style contacts.

Front Runner Series contacts, having a large contact surface area, produce less heat at the contact surface, thereby permitting the connector to operate at high amperage levels continuously and still maintain lower connector temperatures.

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**CONNECTOR TEMPERATURE RISE CURVES**

Tested per IEC Publication 512-3, Test 5a

**NOTE 1:**
Curve developed using FR11MP316K0 and FR11FF316K0 connectors, MC116N and FC116N2 crimp contacts and 16 AWG [1.5 mm²] size wire. All contacts under load.

**NOTE 2:**
Curve developed using FR11MP520K0 and FR11FF520K0 connectors, MC720N and FC720N2 crimp contacts and 20 AWG [0.5 mm²] size wire. All contacts under load.

**NOTE 3:**
Curve developed using FR19MF312K0 and FR19FP312K0 connectors, MC612N and FC612N2 crimp contacts and 12 AWG [4.0 mm²] size wire. All contacts under load.

**NOTE 4:**
Curve developed using FR19MF716K0 and FR19FP716K0 connectors, MC116N and FC116N2 crimp contacts and 16 AWG [1.5 mm²] size wire. All contacts under load.
**FIXED FLANGE-MOUNT HOUSING**

RECEPTACLE HOUSING, MALE OR FEMALE CONTACTS

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>SIZE 11 HOUSING</th>
<th>SIZE 19 HOUSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.719 [18.26]</td>
<td>1.062 [26.97]</td>
</tr>
<tr>
<td>B</td>
<td>0.938 [23.83]</td>
<td>1.438 [36.53]</td>
</tr>
<tr>
<td>C Thread</td>
<td>M19</td>
<td>M32</td>
</tr>
<tr>
<td>D Thread</td>
<td>M15</td>
<td>M28</td>
</tr>
</tbody>
</table>

**MATERIALS:**
- **Insert:** Glass-filled DAP.
- **Housing:** Glass-filled polyester.

**FREE IN-LINE HOUSINGS**

**PLUG HOUSING,**

MALE OR FEMALE CONTACTS

**RECEPTACLE HOUSING,**

MALE OR FEMALE CONTACTS

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>SIZE 11 HOUSING</th>
<th>SIZE 19 HOUSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.165 [29.59]</td>
<td>1.165 [29.59]</td>
</tr>
<tr>
<td>B</td>
<td>0.890 [22.61]</td>
<td>1.435 [36.45]</td>
</tr>
<tr>
<td>D Thread</td>
<td>M15</td>
<td>M28</td>
</tr>
</tbody>
</table>

**DIMENSION | SIZE 11 HOUSING | SIZE 19 HOUSING |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.165 [29.59]</td>
<td>1.165 [29.59]</td>
</tr>
<tr>
<td>B</td>
<td>ø 0.750 [19.05]</td>
<td>ø 1.260 [32.00]</td>
</tr>
<tr>
<td>C Thread</td>
<td>M19</td>
<td>M32</td>
</tr>
<tr>
<td>D Thread</td>
<td>M15</td>
<td>M28</td>
</tr>
</tbody>
</table>

**MATERIALS:**
- **Insert:** Glass-filled DAP.
- **Housing & Coupling Nut:** Glass-filled polyester.

*Note: This connector may be ordered without the coupling nut.*
**Housing Dimensions**

**Fixed Jam Nut Mounting**

**Receptacle Housing, Male or Female Contacts**

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+----------------+-----------------+-----------------+
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Size 11 Housing</th>
<th>Size 19 Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.719 [18.26]</td>
<td>1.062 [26.97]</td>
</tr>
<tr>
<td>B</td>
<td>0.938 [23.83]</td>
<td>1.438 [36.53]</td>
</tr>
<tr>
<td>C Thread</td>
<td>M19</td>
<td>M32</td>
</tr>
<tr>
<td>D Thread</td>
<td>M15</td>
<td>M28</td>
</tr>
</tbody>
</table>
+----------------+-----------------+-----------------+
```

**Materials and Finishes:**
- **Insert:** Glass-filled DAP.
- **Housing:** Glass-filled polyester.
- **Jam Nut:** Aluminum, black anodize.

**In-Line to In-Line Mounting**

**Length of Mated Pair**

**Contact Hole Diameter**

**Termination Side of Insulator**

```
<table>
<thead>
<tr>
<th>Contact Size</th>
<th>Ø D</th>
</tr>
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<tbody>
<tr>
<td>12</td>
<td>0.195 [4.95]</td>
</tr>
<tr>
<td>16</td>
<td>0.125 [3.18]</td>
</tr>
<tr>
<td>20</td>
<td>0.097 [2.46]</td>
</tr>
<tr>
<td>22</td>
<td>0.079 [2.01]</td>
</tr>
</tbody>
</table>
```

**Materials:**
- **Insert:** Glass-filled DAP.
- **Housing & Coupling Nut:** Glass-filled polyester.

**Note:**
- This connector may be ordered without the coupling nut.
STRAIGHT PRINTED BOARD MOUNT CONNECTOR
RECEPTACLE HOUSING, MALE OR FEMALE CONTACTS

<table>
<thead>
<tr>
<th>CONTACT SIZE</th>
<th>Ø D</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0.094 [2.39]</td>
</tr>
<tr>
<td>16</td>
<td>0.035 [0.89]</td>
</tr>
<tr>
<td>20</td>
<td>0.028 [0.71]</td>
</tr>
<tr>
<td>22</td>
<td>0.025 [0.64]</td>
</tr>
</tbody>
</table>

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
90° PRINTED BOARD CONNECTORS

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

Front Runner

Positronic Industries
connectpostronic.com
SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest Ø 0.114 [2.90] plated through hole for size 12 contact termination positions.

Suggest Ø 0.052 [1.32] plated through hole for size 16 contact termination positions.

Suggest Ø 0.045 [1.14] plated through hole for size 20 contact termination positions.

Suggest Ø 0.040 [1.02] plated through hole for size 22 contact termination positions.

Suggest Ø 0.123±0.003 [3.12±0.08] hole for mounting connector with push-on fasteners.

SUGGESTED PRINTED BOARD HOLE SIZES:

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Suggest Ø 0.123±0.003 [3.12±0.08] hole for mounting connector with push-on fasteners.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
### ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 6

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - HOUSING SIZE</th>
<th>STEP 3 - HOUSING STYLE AND GENDER</th>
<th>STEP 4 - CONTACT ARRANGEMENTS AND SIZE</th>
<th>STEP 5 - SERVICE CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR 11 MF 922 K 0 /AA</td>
<td>FR - Front Runner Series</td>
<td>11 - Size 11 Housing</td>
<td>MP - Free In-line, Male Contacts with Plug Housing</td>
<td>SIZE 11 HOUSING</td>
<td></td>
</tr>
<tr>
<td></td>
<td>19 - Size 19 Housing</td>
<td>FP - Free In-line, Female Contacts with Plug Housing</td>
<td>316 - Three (3) Size 16 Contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MF - Fixed Flange Mount, Male Contacts with Receptacle Housing</td>
<td>420 - Four (4) Size 20 Contacts</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>FF - Fixed Flange Mount, Female Contacts with Receptacle Housing</td>
<td>520 - Five (5) Size 20 Contacts</td>
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<tr>
<td></td>
<td></td>
<td>MJ - Fixed Jam Nut, Male Contacts with Receptacle Housing</td>
<td>722 - Seven (7) Size 22 Contacts</td>
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<tr>
<td></td>
<td></td>
<td>FJ - Fixed Jam Nut, Female Contacts with Receptacle Housing</td>
<td>822 - Eight (8) Size 22 Contacts</td>
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<td></td>
<td></td>
<td>MR - Free In-line, Male Contacts with Receptacle Housing</td>
<td>922 - Nine (9) Size 22 Contacts</td>
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<tr>
<td></td>
<td></td>
<td>FR - Free In-line, Female Contacts with Receptacle Housing</td>
<td>SIZE 19 HOUSING</td>
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<td></td>
<td></td>
<td></td>
<td>312 - Three (3) Size 12 Contacts</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>512 - Five (5) Size 12 Contacts</td>
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<td></td>
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<td>712 - Seven (7) Size 12 Contacts</td>
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<td></td>
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<td>716 - Seven (7) Size 16 Contacts</td>
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<td>916 - Nine (9) Size 16 Contacts</td>
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<td></td>
<td></td>
<td></td>
<td>920 - Nine (9) Size 20 Contacts</td>
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<tr>
<td></td>
<td></td>
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<td>1220 - Twelve (12) Size 20 Contacts</td>
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<td></td>
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<td></td>
<td>1822 - Eighteen (18) Size 22 Contacts</td>
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<td>1920 - Nineteen (19) Size 20 Contacts</td>
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<td>2922 - Twenty-nine (29) Size 22 Contacts</td>
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<td></td>
<td></td>
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<td>1220 - Twelve (12) Size 20 Contacts</td>
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<td></td>
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<td></td>
<td>2922 - Twenty-nine (29) Size 22 Contacts</td>
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</tr>
</tbody>
</table>

### ORDERING INFORMATION

**Note:** Crimp contacts must be ordered separately. Select desired contact size and wire gauge size from pages 18 - 19.

- Order thermocouple contacts from page 20.
- Order size 16 micro-coaxial contacts from page 22.

**Step 6 - Cable Adapters (Hood)**

- 0 - None
- 1 - Long, Straight, Non-Environmental
- 2 - Short, Straight, Non-Environmental
- 4 - Long, Straight, Environmental
- 41 - Long, Straight, Environmental with single cable seal. (Size 11 - 0.150 [3.81] ID, size 19 - 0.345 [8.76] ID)
- 42 - Long, Straight, Environmental with single cable seal. (Size 11 - 0.200 [5.08] ID, size 19 - 0.420 [10.67] ID)
- 5 - Long, Straight, EMI/RFI
- 6 - Short, Straight, EMI/RFI

**Step 7 - Environmental Compliance Options**

- /AA - Compliant per EU Directive 2002/95/EC (RoHS)

**Note:** If compliance to environmental legislation is not required, this step will not be used. Example: FR11MP922K1

**Step 8 - Special Options**

For special options, see special options appendix on page 13.

**Note:** Once you have made a connector selection, contact Technical Sales if you would like to receive a drawing in DXF, PDF format or a 3-dimensional IGES, STEP, or SOLIDWORKS file.
## MODIFICATIONS (MOS)

Specify complete connector by selecting a base part number from the Ordering Information Page. Once base part number is selected, add desired modification (MOS) number below to the end of the part number.

Example part number: FR19FR916K0-14-1553.0

<table>
<thead>
<tr>
<th>HOUSING SIZE</th>
<th>GENDER</th>
<th>HOUSING STYLE</th>
<th>MODIFICATION OF STANDARD (MOS) NUMBER</th>
<th>DESCRIPTION OF MODIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 &amp; 19</td>
<td>M / F</td>
<td>PLUG</td>
<td>-1512.0</td>
<td>Allows for connector to be supplied without the coupling nut and associated retainer ring.</td>
</tr>
<tr>
<td>11 &amp; 19</td>
<td>M / F</td>
<td>FIXED FLANGE MOUNT RECEPTACLE</td>
<td>-1553.0</td>
<td>Allows for connector to be supplied with right angle (90°) printed board mount termination contacts that allow for a 0.125 [3.18] tail length.</td>
</tr>
<tr>
<td>11 &amp; 19</td>
<td>M / F</td>
<td>FIXED FLANGE MOUNT RECEPTACLE</td>
<td>-1554.0</td>
<td>Allows for connector to be supplied with straight printed board mount termination contacts that allow for a 0.125 [3.18] tail length. Push-on fasteners included.</td>
</tr>
<tr>
<td>11 &amp; 19</td>
<td>M / F</td>
<td>ALL</td>
<td>-14</td>
<td>Allows connector with signal contacts installed, for signal contacts only to be plated 0.000030 [0.76µ] gold over nickel.</td>
</tr>
<tr>
<td>11 &amp; 19</td>
<td>M / F</td>
<td>ALL</td>
<td>-15</td>
<td>Allows connector with signal contacts installed, for signal contacts only to be plated 0.000050 [1.27µ] gold over nickel.</td>
</tr>
</tbody>
</table>

MANY OTHER SPECIAL OPTIONS ARE AVAILABLE.

Find out more about Sequential Mating System, Straight and Right Angle Thermocouple Printed Circuit Board mount contacts.

CONSULT TECHNICAL SALES OR VISIT OUR WEBSITE AS WWW.CONNECTPOSITRONIC.COM
CABLE ADAPTERS

MATERIALS:
Cable Adapter & Cable Clamp: Glass-filled polyester.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>LONG CABLE ADAPTER</th>
<th>SHORT CABLE ADAPTER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Size 11</td>
<td>1.350 [34.29]</td>
<td>0.750 [19.05]</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MOLDED CABLE ASSEMBLY

Shell size 11 shown in drawing. Size 19 also available.

CONTACT TECHNICAL SALES FOR ORDERING INFORMATION.
KEYING PLUGS

MATERIAL: Nylon.

<table>
<thead>
<tr>
<th>CONTACT SIZE</th>
<th>KEYING PLUG PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 12</td>
<td>5123-1-0-0</td>
</tr>
<tr>
<td>SIZE 16</td>
<td>5123-2-0-0</td>
</tr>
<tr>
<td>SIZE 20</td>
<td>5123-3-0-0</td>
</tr>
<tr>
<td>SIZE 22</td>
<td>5123-4-0-0</td>
</tr>
</tbody>
</table>

PRESS-ON DUST COVERS

MATERIAL: Low density polyethylene.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5125-11-2-0</td>
<td>for Size 11 Connector</td>
</tr>
<tr>
<td>5125-19-2-0</td>
<td>for Size 19 Connector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5125-11-1-0</td>
<td>for Size 11 Connector</td>
</tr>
<tr>
<td>5125-19-1-0</td>
<td>for Size 19 Connector</td>
</tr>
</tbody>
</table>

THREADED DUST COVERS

MATERIAL: Glass-filled polyester.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5125-11-0-0</td>
<td>for Size 11 Connector</td>
</tr>
<tr>
<td>M19</td>
<td></td>
</tr>
<tr>
<td>5125-19-0-0</td>
<td>for Size 19 Connector</td>
</tr>
<tr>
<td>M32</td>
<td></td>
</tr>
</tbody>
</table>

PANEL MOUNTING CUTOUTS

Suggest 0.092 [2.34] maximum panel thickness if using environmental flange gasket or 0.122 [3.10] maximum panel thickness without gasket.

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>SIZE 11 HOUSING</th>
<th>SIZE 19 HOUSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.719 [18.26]</td>
<td>1.062 [26.97]</td>
</tr>
<tr>
<td>Ø B</td>
<td>0.760 ±0.003 [19.30 ±0.08]</td>
<td>1.275 ±0.003 [32.39 ±0.08]</td>
</tr>
<tr>
<td>C</td>
<td>0.715 ±0.003 [18.16 ±0.08]</td>
<td>1.227 ±0.003 [31.17 ±0.08]</td>
</tr>
</tbody>
</table>

DIMENSIONS ARE IN INCHES [MILLIMETERS]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
ENIRONMENTAL DESIGN FEATURES

Fixed Female Flange Mounted Connector

Free Male In-line Connector

MATERIALS:
O-Ring: Thermoplastic elastomer.

ENVIRONMENTAL VERSION ACCESSORIES

Environmental Flange Gasket

PART NUMBER:
5124-11-0-0 for Size 11 Connector
5124-19-0-0 for Size 19 Connector

MATERIAL: Neoprene sheet, 0.030 thick.

Environmental Cable Adapter Assembly
Male or Female, Free In-Line Connectors

MATERIALS:
Cable Seal: Thermoplastic elastomer.
Spacer: Nylon.
Cable Adapter: Glass-filled polyester.
Cable Clamp: Glass-filled polyester.

NOTE:
Environmental flange gaskets supplied with flange mount environmental connectors. Part numbers are shown for replacement parts only.
EMI/RFI SHIELDED VERSION

TECHNICAL DATA

MATERIAL: Electroless nickel over copper. Electroless plating offers surface conductivity of < 0.5 ohm per square and attenuation of 70-80 dB at most frequencies. Due to differences in cable construction and termination, results may vary and should be tested under actual operating conditions to determine exact values.

NOTE: Dimensions are consistent with non-shielded versions.
SIZE 12 REMOVABLE CONTACTS

<table>
<thead>
<tr>
<th>MALE CONTACT PART NUMBER</th>
<th>WIRE SIZE [AWG]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC612N</td>
<td>12</td>
<td>0.100</td>
<td>0.170</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FEMALE CONTACT PART NUMBER</th>
<th>WIRE SIZE [AWG]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC612N2</td>
<td>12</td>
<td>0.100</td>
<td>0.170</td>
</tr>
</tbody>
</table>

MATERIALS AND FINISHES:

- **Material:** Copper Alloy.
- **Finish:** Gold flash over nickel.
- 0.000030 inch [0.76 µ] gold over nickel available by adding “-14” suffix onto the part number.
  Example: MC612N-14.

SIZE 16 REMOVABLE CONTACTS

<table>
<thead>
<tr>
<th>MALE CONTACT PART NUMBER</th>
<th>WIRE SIZE [AWG]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC114N</td>
<td>14 / 16</td>
<td>0.081</td>
<td>0.105</td>
</tr>
</tbody>
</table>
  [2.5 / 1.5]             | [2.06]          |       | [2.67]|
| MC116N                   | 16 / 18         | 0.067 | 0.093 |
  [1.5 / 1.0]             | [1.70]          |       | [2.36]|
| MC120N                   | 20 / 22 / 24    | 0.045 | 0.065 |
  [0.5 / 0.3 / 0.25]      | [1.14]          |       | [1.65]|

<table>
<thead>
<tr>
<th>FEMALE CONTACT PART NUMBER</th>
<th>WIRE SIZE [AWG]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC114N2</td>
<td>14 / 16</td>
<td>0.081</td>
<td>0.105</td>
</tr>
</tbody>
</table>
  [2.5 / 1.5]             | [2.06]          |       | [2.67]|
| FC116N2                   | 16 / 18         | 0.067 | 0.093 |
  [1.5 / 1.0]             | [1.70]          |       | [2.36]|
| FC120N2                   | 20 / 22 / 24    | 0.045 | 0.065 |
  [0.5 / 0.3 / 0.25]      | [1.14]          |       | [1.65]|

MATERIALS AND FINISHES:

- **Material:** Copper Alloy.
- **Finish:** Gold flash over nickel.
- 0.000030 inch [0.76 µ] gold over nickel available by adding “-14” suffix onto the part number.
  Example: FC612N-14.
**SIZE 20 REMOVABLE CONTACTS**

<table>
<thead>
<tr>
<th>MALE CONTACT PART NUMBER</th>
<th>WIRE SIZE AWG [mm²]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC720N3</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
<td>0.045</td>
<td>0.068</td>
</tr>
</tbody>
</table>

**FEMALE CONTACT PART NUMBER**

<table>
<thead>
<tr>
<th>FEMALE CONTACT PART NUMBER</th>
<th>WIRE SIZE AWG [mm²]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC720N2</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
<td>0.045</td>
<td>0.068</td>
</tr>
</tbody>
</table>

**MATERIALS AND FINISHES:**

- **Material:** Copper Alloy.
- **Finish:** Gold flash over nickel.
- 0.000030 inch [0.76 µ] gold over nickel available by adding “-14” suffix onto the part number. Example: FC720N2-14.

---

**SIZE 22 REMOVABLE CONTACTS**

<table>
<thead>
<tr>
<th>MALE CONTACT PART NUMBER</th>
<th>WIRE SIZE AWG [mm²]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC422N</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
<td>0.035</td>
<td>0.056</td>
</tr>
</tbody>
</table>

**FEMALE CONTACT PART NUMBER**

<table>
<thead>
<tr>
<th>FEMALE CONTACT PART NUMBER</th>
<th>WIRE SIZE AWG [mm²]</th>
<th>Ø “A”</th>
<th>Ø “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC422N6</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
<td>0.035</td>
<td>0.056</td>
</tr>
</tbody>
</table>

**MATERIALS AND FINISHES:**

- **Material:** Copper Alloy.
- **Finish:** Gold flash over nickel.
- 0.000030 inch [0.76 µ] gold over nickel available by adding “-14” suffix onto the part number. Example: MC422N-14.

---

**ADVANTAGES OF REAR INSERTION-FRONT RELEASE CONTACT RETENTION SYSTEM**

<table>
<thead>
<tr>
<th>CONSIDERATION</th>
<th>FRONT RELEASE ADVANTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Size</td>
<td>Will accept a wire with oversized insulation diameter.</td>
</tr>
<tr>
<td>2. Connector Wiring</td>
<td>Less open wiring is required between the connector and the lacing or between the connector and the cable jacket. Minimum service time is required for repairs.</td>
</tr>
<tr>
<td>3. Shielded Wires</td>
<td>Provides the most effective RFI shielding as the shielding can be brought closer to the grommet surface for terminations to the connector shell.</td>
</tr>
<tr>
<td>4. Contact Servicing</td>
<td>Since the removal tool is inserted from the front, finding the correct position is relatively simple.</td>
</tr>
<tr>
<td>5. Wire Breakage</td>
<td>The standard removal tool can be used to remove a contact which has a broken wire at the contact crimp joint.</td>
</tr>
<tr>
<td>6. Service Tools</td>
<td>Metal tools are available for inserting and removing contacts.</td>
</tr>
</tbody>
</table>
**SIZE 20 CRIMP THERMOCOUPLE CONTACTS**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MATERIAL</th>
<th>MALE PART NUMBER</th>
<th>FEMALE PART NUMBER</th>
<th>COLOR CODE</th>
<th>WIRE SIZE AWG [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>CHROMEL (+)</td>
<td>MC720N3CH</td>
<td>FC720N2CH</td>
<td>WHITE</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
<tr>
<td></td>
<td>ALUMEL (-)</td>
<td>MC720N3AL</td>
<td>FC720N2AL</td>
<td>GREEN</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
<tr>
<td>T</td>
<td>COPPER (+)</td>
<td>MC720N3CU</td>
<td>FC720N2CU</td>
<td>RED</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
<tr>
<td></td>
<td>CONSTANTAN (-)</td>
<td>MC720N3CO</td>
<td>FC720N2CO</td>
<td>YELLOW</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
<tr>
<td>E</td>
<td>CHROMEL (+)</td>
<td>MC720N3CH</td>
<td>FC720N2CH</td>
<td>WHITE</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
<tr>
<td></td>
<td>CONSTANTAN (-)</td>
<td>MC720N3CO</td>
<td>FC720N2CO</td>
<td>YELLOW</td>
<td>20 / 22 / 24 [0.5 / 0.3 / 0.25]</td>
</tr>
</tbody>
</table>

For more information on the availability of Type J thermocouple contacts, please contact Technical Sales.

For more information about thermocouple contacts with PCB solder termination, please contact Technical Sales.

See page 24 for Crimp Tool information.

**SIZE 22 CRIMP THERMOCOUPLE CONTACTS**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MATERIAL</th>
<th>MALE PART NUMBER</th>
<th>FEMALE PART NUMBER</th>
<th>COLOR CODE</th>
<th>WIRE SIZE AWG [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>CHROMEL (+)</td>
<td>MC422NCH</td>
<td>FC422N6CH</td>
<td>WHITE</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
<tr>
<td></td>
<td>ALUMEL (-)</td>
<td>MC422NAL</td>
<td>FC422N6AL</td>
<td>GREEN</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
<tr>
<td>T</td>
<td>COPPER (+)</td>
<td>MC422NCU</td>
<td>FC422N6CU</td>
<td>RED</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
<tr>
<td></td>
<td>CONSTANTAN (-)</td>
<td>MC422NCO</td>
<td>FC422N6CO</td>
<td>YELLOW</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
<tr>
<td>E</td>
<td>CHROMEL (+)</td>
<td>MC422NCH</td>
<td>FC422N6CH</td>
<td>WHITE</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
<tr>
<td></td>
<td>CONSTANTAN (-)</td>
<td>MC422NCO</td>
<td>FC422N6CO</td>
<td>YELLOW</td>
<td>22 / 24 / 26 [0.3 / 0.25 / 0.12]</td>
</tr>
</tbody>
</table>

For more information on the availability of Type J thermocouple contacts, please contact Technical Sales.

For more information about thermocouple contacts with PCB solder termination, please contact Technical Sales.

See page 24 for Crimp Tool information.
CRIMP SHIELDED CONTACTS

SIZE 12 CRIMP SHIELDED CONTACTS

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:
Insulating Material: (Dielectric) PTFE, Teflon.
Inner Contacts: Brass & Phosphor bronze, 0.000030 inch [0.76 microns] gold over nickel and 0.000050 inch [1.27 microns] gold over nickel.
Contact Body: Brass and Phosphor bronze, gold flash over nickel.

MECHANICAL CHARACTERISTICS:
Removable Contacts: Rear insertion, front release.
Durability: 100 cycles minimum.
Vibration: 20g from 10 HZ to 500 HZ.
Shock: 30g - 11rms.

ELECTRICAL CHARACTERISTICS:
Initial Contact Resistance: 0.010 ohms maximum.
Nominal Impedance: 50 ohms.
Insertion Loss: 0.35 dB at 1 GHz
1.35 dB at 2 GHz
1.53 dB at 3 GHz
VSWR: 1.20 average at 1 GHz
1.45 average at 2 GHz
1.63 average at 3 GHz
Proof Voltage: 600 V r.m.s.

Above values measured using frequency domain techniques.

CLIMATIC CHARACTERISTICS:
Temperature Range: -55°C to +125°C.

CRIMP TOOL
Use 9504-0-0-0 Crimp Tool

SHIELDED CABLE STRIP LENGTH

CONTACT DESIGNATION | PART NUMBER | A   | Ø B | CABLE SIZE
---------------------|------------|-----|-----|-----------------
MALE                | MC601D     | 0.936 [23.77] | 0.041 [1.04] | RG 178 B/U
                     |            |     |     | RG 196 B/U
FEMALE              | FC601D     | 0.984 [24.99] | 0.041 [1.04] | RG 178 B/U
                     |            |     |     | RG 196 B/U
FEMALE              | FC602D     | 0.984 [24.99] | 0.070 [1.78] | RG 179 B/U
                     |            |     |     | RG 316 /U
MALE                | MC602D     | 0.936 [23.77] | 0.070 [1.78] | RG 179 B/U
                     |            |     |     | RG 316 /U

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
CRIMP SHIELDED CONTACTS

SIZE 16 CRIMP SHIELDED CONTACTS

CONTACT DESIGNATION | PART NUMBER | A    | B    | CABLE SIZE
MALE                | MCS126N    | 0.993 | 0.045 | RG 178 B/U
                    |            | [25.22]| [1.14]|
                    | FCS126N2   | 0.967 | 0.045 | RG 178 B/U
                    |            | [24.56]| [1.14]|
FEMALE              | FCS126N2   | 0.967 | 0.045 | RG 178 B/U
                    |            | [24.56]| [1.14]|
FRONT RUNNER        | MCS226N    | 1.048 | 0.070 | RG 179 B/U
                    |            | [26.62]| [1.78]|
                    | FCS226N2   | 1.022 | 0.070 | RG 179 B/U
                    |            | [25.96]| [1.78]|

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:
Insulating Material: (Dielectric) Teflon.
Inner Contacts: Phosphor bronze, 0.000030 inch [0.76 microns] gold over nickel.
Outer Contacts: Brass and beryllium copper, gold flash over nickel.

MECHANICAL CHARACTERISTICS:
Contact Retention in Insulator: 20 lbs. [89N].
Removable Contacts: Rear insertion, front removable.
Insertion Force per Contact: 8 oz. [2.2 N] per contact maximum.
Durability: 100 cycles minimum.
Vibration: 20g from 10 HZ to 500 HZ.
Shock: 30g - 11rms.

ELECTRICAL CHARACTERISTICS:

<table>
<thead>
<tr>
<th>CONTACT/WIRE COMBINATIONS</th>
<th>126N</th>
<th>226N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic Impedance (ohms)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>0-500 MHz</td>
<td>0-500 MHz</td>
</tr>
<tr>
<td>VSWR</td>
<td>0 to 200 MHz</td>
<td>1.25</td>
</tr>
<tr>
<td>Insertion Loss @ 500 MHz</td>
<td>0.2 dB</td>
<td>1.0 dB</td>
</tr>
</tbody>
</table>

Dielectric Strength at Sea Level: 600 V rms.
Initial Contact Resistance: 0.012 ohms maximum.
Insulator Resistance: 5 G ohms.

CLIMATIC CHARACTERISTICS:
Temperature Range: -55°C to +125°C

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
Front Runner connectors are offered with removable crimp contacts. Positronic Industries recognizes the importance of supplying application tooling to support our customers’ use of our products. Information on application tooling is available on our web site at http://www.connectpositronic.com/products/157/ApplicationTooling. There you will find downloadable PDF cross reference charts for removable contacts. These charts will supply part numbers for insertion, removal and crimping tools, along with information regarding use of tools and techniques.

Connectors Designed To Customer Specifications

Positronic Front Runner connectors can be modified to customer specifications.

Examples: select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware.

Contact Technical Sales with your particular requirements.
## APPLICATION TOOLS CROSS REFERENCE LIST

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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**Note:** All male and female crimp contacts can be ordered on reels in quantities of 2,000 by adding letter “R” after the contact part number.

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Let Positronic support you by cablizing your Front Runner connector selection.

**Cable Assembly Design Support**

We work closely with customers to:

1. Design assemblies in accordance with customer specifications.
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3. Design each system in accordance with applicable customer, domestic, and international standards.
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Puerto Rico Cable Assembly

Technical Sales Support

Engineering Support

Quality Assurance
Positronic Industries offers a range of circular connectors in a variety of contact variants and package sizes with compliant press-in, solder and cable terminations. All Positronic connector products provide high quality, reliability and flexibility.

**KING COBRA SERIES CONNECTORS**
Offer the performance of high reliability machined contacts at a price you might expect from lower performance products.
- Lightweight, non-corrodible, composite material
- Right angle and straight PCB mount terminations
- Size 16, 20 and 22 machined contact options
- Power contact current ratings to 20 amperes each
- Environmental options to IP65
- Secured using unique one quarter turn locking system

**BABY KING COBRA CONNECTORS**
Miniature, rugged, economical
- Smaller package size than King Cobra
- Solder cup terminations
- Size 20 machined contacts
- Cable or panel mount options
- Environmental options to IP65
- Secured using unique one quarter turn locking system

**CIRCLE HEX SERIES CONNECTORS**
Ideal for use in industrial and instrumentation applications where light weight, miniature, high reliability interconnections are necessary.
- “Twist Spring” locking device
- Large, miniature, and microminiature sizes available
- Solid machined contacts for high reliability
- Available in straight solder and solder cup terminations
- Variety of cable adapters and contact variants
- Contact current ratings to 7.5 amperes nominal
POWER

- High current density
- Energy savings
- Low contact resistance
- Hot swap capability
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating
- Sequential mating
- Large surface area contact mating system
- Wide variety of accessories
- Customer-specified contact arrangements
- Modular tooling which produces a single piece connector insert

Contact Sizes: 0, 8, 12, 16, 20, 22, and 24
Current Ratings: To 200 amperes per contact
Terminations: Crimp and panel mount, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41, DESC, GSFC S-311-P-4, GSFC S-311-P-10

D-SUBMINIATURE

- Four performance levels available for best cost/performance ratio: professional, industrial, military and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power
- IP65, IP67

Contact Sizes: 8, 16, 20, and 22
Current Ratings: To 100 amperes
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in
Configurations: Multiple variants in both standard and high densities, thirty package sizes
Qualifications: MIL-DTL-28748, SAE AS39029, CCITT V.35

RECTANGULAR

- Two performance levels available: industrial quality and military quality
- A wide variety of accessories
- Broad selection of contact variants and package sizes
- Connector keying options

Contact Sizes: 16, 20, and 22
Current Ratings: To 13 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, and straight compliant press-in
Configurations: Multiple variants in both standard and high densities, thirty package sizes
Qualifications: MIL-DTL-28748, SAE AS39029, CCITT V.35

CIRCULAR

- Non-corrodible / lightweight composite construction
- EMI/RFI shielded versions
- Thermocouple contacts
- Environmentally sealed versions
- Rear insertion/ front release of removable contacts
- Two level sequential mating
- Overmolding available on full assemblies

Contact Sizes: 12, 16, 20, and 22
Current Ratings: To 25 amperes nominal
Terminations: Crimp, wire solder, straight solder, and right angle (90°) solder
Configurations: Multiple variants in four package sizes
Qualifications: MIL-DTL-24308, DESC

Hermetic

- Intended for use as an electrical feedthrough in high vacuum applications
- Leakage rate: 5 x 10^-9 mbar.l/s @ vacuum 1.5 x 10^-4 atm
- Signal, power, coax and high voltage versions available
- Connectors can be mounted on flange assembly per customer specification

Contact Sizes: 8, 12, 16, 20, and 22
Current Ratings: To 40 amperes nominal
Terminations: Feedthrough is standard; flying leads and board mount available upon request
Configurations: See D-subminiature and circular configurations above
Compliance: Space-D32

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singapore@connectpositronic.com

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