Varicon®

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<th>Series Number</th>
</tr>
</thead>
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<tr>
<td>0.050*</td>
<td>2 to 152</td>
<td>Plugs and Receptacles</td>
<td>Staggered, Fixed: Solder, Eyelet</td>
<td>5</td>
<td>8218</td>
</tr>
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<td>0.050*</td>
<td>18, 30, 36, 42, 54, 72</td>
<td>Plugs and Receptacles</td>
<td>Staggered, Fixed: Straight &amp; Right Angle Solder, Eyelet</td>
<td>5</td>
<td>8219</td>
</tr>
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<td>0.075&quot; x 0.130&quot; &amp; 0.075&quot; x 0.150&quot;</td>
<td>20, 38, 56, 90, 120 75, 100, 130</td>
<td>Plugs and Receptacles</td>
<td>Staggered, Removable: Taper Tab, Eyelet, Wire Wrap, Crimp</td>
<td>8</td>
<td>8016 8017</td>
</tr>
<tr>
<td>0.100*</td>
<td>17, 23, 29, 35, 41</td>
<td>Receptacles</td>
<td>Same as series 7024</td>
<td>8</td>
<td>7008</td>
</tr>
<tr>
<td>0.100*</td>
<td>17, 23, 29, 35, 41, 47</td>
<td>Plugs</td>
<td>Staggered, Fixed: Solder</td>
<td>6</td>
<td>7022</td>
</tr>
<tr>
<td>0.100*</td>
<td>17, 23, 29, 35, 41, 47</td>
<td>Receptacles</td>
<td>Staggered, Fixed: Solder</td>
<td>6</td>
<td>7023</td>
</tr>
<tr>
<td>0.100*</td>
<td>17, 23, 29, 35, 41</td>
<td>Receptacles</td>
<td>Staggered, Fixed: Solder, Taper Tab, Eyelet, Wire Wrap, Bus Line</td>
<td>8</td>
<td>7024</td>
</tr>
<tr>
<td>0.100*</td>
<td>17, 23, 29, 35, 41, 47</td>
<td>Receptacles</td>
<td>Staggered, Removable: Taper Tab, Eyelet, Wire Wrap, Crimp</td>
<td>8</td>
<td>7038</td>
</tr>
<tr>
<td>0.100*</td>
<td>24, 48, 72, 96</td>
<td>Plugs and Receptacles</td>
<td>Square Grid Dual Row, Fixed: Straight and Right Angle Solder, Eyelet, Wire Wrap, Crimp Wrappable Removable</td>
<td>5</td>
<td>8223</td>
</tr>
<tr>
<td>0.200*</td>
<td>2, 3</td>
<td>Plugs and Receptacles</td>
<td>In-line Fixed: Solder Crimp</td>
<td>8.5</td>
<td>8020</td>
</tr>
</tbody>
</table>
AVX's Varicon product range is available as two-piece input/output and board level connectors (intermateable plugs and receptacles). Varicon contacts are also available in strips, on disposable carriers, ready for staking to p.c. cards. They all use the famous, fork-like Varicon® (fixed) or Varilok® (insertable / removable) hermaphroditic contact design.

**VARICON DESIGN ADVANTAGES**

AVX's hermaphroditic Varicon contact utilizes a fork-like design incorporating four large mating surfaces that are coined to achieve exceptional hardness and smoothness. The mating surfaces are wedged together by the spring-like design of the contact and by the innate properties of the contact material. The Varicon contact has proven its reliability in innumerable applications and with over one-million contacts being produced daily, billions of successful, trouble-free operating hours have been logged.

**FEATURES**

- Four intimate contact areas, electrically parallel
- High current carrying capability, excellent heat dissipation
- Self-cleaning, wiping action burnishes contacting surfaces reducing constrictive resistance
- Low contact resistance 3 to 4 milliohms
- Stable in vibration and adverse environments
- High contact normal pressure achieved at low stress levels

**HIGH RELIABILITY**

The mating surfaces provide a gas-tight connection and resists corrosion caused by adverse environments. This seal is made possible by the spring-like properties of the Varicon contact and by the smoothness of the coined mating surfaces. After being mated for years, the contacts still retain clean, unoxidized mating surfaces.

**LOW RESISTANCE**

Because of the spring-like properties of the Varicon contact, both sides of the contact are always under considerable pressure when mated. Their sliding and wiping action burnishes the surfaces in a self-cleaning action reducing any constrictive resistance. The low contact resistance remains a permanent feature of the Varicon contact even after thousands of mating and unmating cycles.

**HIGH CURRENT CAPACITY**

The low contact resistance contributes substantially to Varicon's high current-carrying capacity. Also, its heat-dissipating characteristics are enhanced by its flat configuration.

**SHOCK AND VIBRATION RESISTANCE**

Should external forces cause any decrease in contact pressure between two of the four mating surfaces, it is automatically compensated by redistributing the contact pressure between the other two mating surfaces.

**ECONOMY**

Varicon contacts are stamped from sheet stock instead of screw-machined. Consequently, this production method not only increases the production capacity but decreases production cost as there is little waste.

**VERSATILITY**

The Varicon concept can be used in a card-mounted plug that mates with a receptacle, or Varicon contacts can be staked directly to a pc board and soldered into place. This latter method eliminates the need for a conventional plug reducing the cost of the connection system while retaining the proven reliability of the Varicon interconnection.

**CONTACT TYPES**

Two basic sizes of our Varicon contact are available: standard and miniature Varicon. And each size has two major variations: the fixed Varicon contact and the Varilok insertable / removable version. The standard size is rated at 8 amps and has a withdrawal force range of 2 to 16 ounces per contact. The miniature size is specifically for high density applications and is rated at 5 amps with a withdrawal force of 2 to 8 ounces per contact. (For exact specifications, check the individual series listing.)
CONTACT MATERIAL
The primary contact material used is phosphor bronze. The electrical conductivity of copper alloys are extremely good. Within the Varicon concept, the contacts must also perform as springs and these alloys offer the elastic properties and the endurance required by today’s rugged applications.

CONTACT PLATING
A nickel underplate of 50 to 100 microinches, followed by a minimum of 10 microinches of gold plate is AVX’s standard contact plating. The gold plate prevents the formation of insulating oxide films while the nickel plate provides a hard backing. It, in turn, reduces wear on the gold and prevents diffusion between the gold and base metal. Other plating thicknesses, such as those required by military specifications, can be supplied on request.

VARILOK CRIMP-AND-INSERT CONTACTS
The crimp-termination, insertable / removable Varilok contact offers a solderless connection between wire and contact as well as strain relief for the wire. This contact snaps into the insulator quickly and easily. With our simple tool it can be removed without difficulty, yet it locks securely into place and cannot twist or bend out of alignment.

Loose Varilok Contacts
Reel-Mounted Varilok Contacts

Varilok contacts also are available with wire-wrapable, solder and taper-tab tail configurations. Available loose for small scale production and replacement purposes, the Varilok contact is also supplied on reels for use with fast, economical automatic crimping machines reducing man-hour requirements and production costs in medium and large-scale production runs. Because the contact can be crimped to the wire and installed into the insulator at any point during the manufacturing operation, it offers the user convenience and flexibility. Reels contain 1800 standard contacts or 3000 miniature contacts.

All commercial Varicon products are RoHS compliant.
MINI-VARILOK

The Mini-Varilok is half the size of the standard Varilok contact. It’s designed for hand or machine crimping to solid or stranded AWG #22 to #30 wire. Its basic features are identical to the standard Varilok however it also incorporates a decreased insertion force and is used for high density applications. Production methods for the Mini-Varilok are the same as the standard Varilok.

CONTACT RETENTION

The Varilok contact, after undergoing five insertion / extraction cycles and being subjected to the vibration and shock tests of MIL-C-28731, still withstands an axial load in excess of 10 pounds (6 for mini-Varilok).

WIRE SIZE

The Varilok contact with its open crimp barrel conforms to practically all specifications written for screw-machined contacts with closed crimp barrels. The crimp barrel of the Varilok contact is designed to accommodate wire sizes AWG #18 to #26. It’s also possible to crimp together two stranded #22 or smaller wires. The Mini-Varilok accommodates wire sizes AWG #22 to #30. Table I lists the various sizes of wire to which Varilok contacts can be crimped, and indicates the minimum conductor diameter and the maximum insulator diameter that can be accommodated by the contacts. The crimp barrel is also crimped to the wire’s insulation for strain relief and the large, overlapping ears of the barrel accommodate a wide range of wire insulation sizes (Table I). For an optimum crimp connection, the insulation is stripped one-eighth inch from the end of the conductor.

<table>
<thead>
<tr>
<th>Wire Size (AWG)</th>
<th>Crimping Characteristics</th>
<th>Wire Pull-out Force (In Pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#18</td>
<td>4.0</td>
<td>18</td>
</tr>
<tr>
<td>#20</td>
<td>2.5</td>
<td>15</td>
</tr>
<tr>
<td>#22</td>
<td>1.5</td>
<td>10</td>
</tr>
<tr>
<td>#24</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>#26</td>
<td>0.8</td>
<td>3</td>
</tr>
<tr>
<td>#30</td>
<td>0.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

CRIMP CHARACTERISTICS

The illustration shows an enlarged cross-section of a typical Varilok crimp on a #22 stranded wire. No significant voids are visible. The complete deformation of the wire strands indicates optimum contact between the contact barrel and the conductors.

TENSILE STRENGTH

Table II lists the values, in pounds, of tensile strength (wire pull-out force) for Varilok and Mini-Varilok contacts crimped to stranded AWG #18 to #30 wires.

<table>
<thead>
<tr>
<th>Wire Size (AWG)</th>
<th>#18</th>
<th>#20</th>
<th>#22</th>
<th>#24</th>
<th>#26</th>
<th>#28</th>
<th>#30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stranded Wire</td>
<td>40</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

CRIMPING EQUIPMENT

All equipment needed to crimp Varilok and Mini-Varilok contacts is normally available from stock. Crimping equipment for production crimping as well as hand-operated crimping pliers are designed to realize the full electrical, mechanical and economical advantages of the Varilok and Mini-Varilok contact.
Varicon®
Series 7008 – 0.100" Staggered Dual Row

FEATURES
• Available with or without card guides
• Sizes 17, 23, 29, 35, 41
• Wide range of contact terminations
• For ¼" thick PCB
• Polarization insert
• Mates with Series 7000 and 7022 Plugs

TECHNICAL SPECIFICATIONS

Current Rating:
10 amperes

Contact Resistance:
6 milliohms, maximum

Contact Material and Plating:
Phosphor Bronze per QQ-B-750, Composition A.
Gold, 10 microinches minimum, over nickel, 30 to 100 microinches

Insulator Material:
Diallyl phthalate, glass-filled, flame resistant, per MIL-M-14F, Type SDGF.

Insulation Resistance:
25,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 2000 Volts rms
3.4" Hg: 675 Volts rms

Insertion/Withdrawal Force:
2 to 16 ounces per contact

Operating Temperature:
-40°C to +125°C

ORDERING CODE

00 7008 017 146 001

Number of Contacts
017, 023, 029, 035, 041

Contact Code
See table.

Variation Code
See table.

Availability

<table>
<thead>
<tr>
<th>Connector Description</th>
<th>No. of Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Guides – for 1/16&quot; Card</td>
<td>17</td>
</tr>
<tr>
<td>Without Guides – for 1/16&quot; Card</td>
<td>X</td>
</tr>
</tbody>
</table>
Varicon®
Series 7008 – 0.100" Staggered Dual Row

DIMENSIONS:

<table>
<thead>
<tr>
<th>Number of Contacts</th>
<th>A (Bottom)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E 1/16&quot; Card</th>
<th>F</th>
<th>G*</th>
<th>H ±.003</th>
<th>L +.010</th>
<th>N*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>millimeters (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
<td>mm (inches)</td>
</tr>
<tr>
<td>17</td>
<td>1.920 (0.076)</td>
<td>2.134 (0.086)</td>
<td>2.60 (0.094)</td>
<td>1.835 (0.072)</td>
<td>0.074 (0.003)</td>
<td>0.531 (0.021)</td>
<td>-000</td>
<td>1.468 (0.059)</td>
<td>3.343 (0.131)</td>
<td>1.920 (0.076)</td>
</tr>
<tr>
<td>23</td>
<td>2.520 (0.099)</td>
<td>2.734 (0.108)</td>
<td>3.00 (0.118)</td>
<td>2.435 (0.096)</td>
<td>0.074 (0.003)</td>
<td>0.531 (0.021)</td>
<td>-000</td>
<td>2.200 (0.087)</td>
<td>3.634 (0.143)</td>
<td>2.520 (0.099)</td>
</tr>
<tr>
<td>29</td>
<td>3.120 (0.123)</td>
<td>3.334 (0.131)</td>
<td>3.60 (0.142)</td>
<td>3.025 (0.119)</td>
<td>0.074 (0.003)</td>
<td>0.531 (0.021)</td>
<td>-000</td>
<td>2.800 (0.110)</td>
<td>3.100 (0.120)</td>
<td>3.120 (0.123)</td>
</tr>
<tr>
<td>35</td>
<td>3.270 (0.129)</td>
<td>3.334 (0.131)</td>
<td>3.60 (0.142)</td>
<td>3.025 (0.119)</td>
<td>0.074 (0.003)</td>
<td>0.531 (0.021)</td>
<td>-000</td>
<td>3.400 (0.134)</td>
<td>3.700 (0.146)</td>
<td>3.400 (0.134)</td>
</tr>
<tr>
<td>41</td>
<td>3.320 (0.130)</td>
<td>3.334 (0.131)</td>
<td>3.60 (0.142)</td>
<td>3.025 (0.119)</td>
<td>0.074 (0.003)</td>
<td>0.531 (0.021)</td>
<td>-000</td>
<td>4.000 (0.157)</td>
<td>4.300 (0.169)</td>
<td>4.000 (0.157)</td>
</tr>
</tbody>
</table>

*N-CON = Non-Conductive Chassis
CON = Conductive Chassis
(1/16" Clearance Around Contacts)
(1/8" Clearance Around Contacts)

P.C. CARD LAYOUT

CHASSIS MOUNTING
Varicon®
Series 7022 – 0.100" Staggered Dual Row

FEATURES
- Insulator rigidity reduces p.c. card warp
- Insulator maintains exact spacing between contacts
- Reduces cost of card punching operation (fewer holes)
- Reduces cost of contact staking operation (one operation instead of two)
- Reduces assembly time (no plastic strip to remove)
- For ¼" or ⅜" p.c. card
- Mates with Series 7000 Receptacles with or without card guides

TECHNICAL SPECIFICATIONS

Current Rating:
10 amperes

Contact Resistance:
6 milliohms, maximum

Contact Material and Plating:
Phosphor Bronze per QQ-B-750, Composition A.
Gold, 10 microinches minimum, over nickel, 30 to 100 microinches

Insulator Material:
Diallyl phthalate, glass-filled, per MIL-M-14F, Type SDGF.
Variation 001/002
Thermoplastic Polycarbonate
Variation 003

Insulation Resistance:
25,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 2000 Volts rms
3.4" Hg: 675 Volts rms

Insertion/Withdrawal Force:
2 to 16 ounces per contact

Operating Temperature:
-40°C to +125°C

ORDERING CODE

00 7022 023

Number of Contacts
017, 023, 029, 035, 041
For Series 7008 receptacle

Variation Code
001 = 1/16" Module Card Thickness
002 = 3/32" Module Card Thickness

MOUNTING LAYOUT

Holes to be located as shown within .062" of true position.
**Varicon®**

**Series 7023 – 0.100" Staggered Dual Row**

**FEATURES**
- Guide pins facilitate mating, ensure correct alignment
- Insulator rigidity reduces p.c. card warp
- Insulator maintains exact spacing between contacts
- Reduces cost of card punching operation (fewer holes)
- Reduces cost of contact staking operation (one operation instead of two)
- Reduces assembly time (no plastic strip to remove)
- For ¼" or ⅜" p.c. card
- Mates with Series 7024 and 7038 Receptacles

**TECHNICAL SPECIFICATIONS**

- **Current Rating:** 10 amperes
- **Contact Resistance:** 6 milliohms, maximum
- **Contact Material and Plating:** Phosphor Bronze per QQ-B-750, Composition A. Gold, 10 microinches minimum, over nickel, 30 to 100 microinches

**Insulator Material:**
- Dialyl phthalate, glass-filled, flame resistant per MIL-M-14F, Type SDGF.
- Variation 001/002/110/111
- Thermoplastic Polycarbonate Variation 003

- **Insulation Resistance:** 25,000 megohms, minimum
- **Dielectric Withstanding Voltage:**
  - Sea Level: 1800 Volts rms
  - 3.4" Hg: 675 Volts rms
- **Insertion/Withdrawal Force:**
  - 2 to 16 ounces per contact
- **Operating Temperature:** -40°C to +125°C

**ORDERING CODE**

| Number of Contacts | 017, 023, 029, 035, 041, 047 |

**DIMENSIONS:** millimeters (inches)

<table>
<thead>
<tr>
<th>Number of Contacts</th>
<th>B (Max.)</th>
<th>C (Max.)</th>
<th>H (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>2.200 (0.087)</td>
<td>2.470 (0.097)</td>
<td>1.600 (0.063)</td>
</tr>
<tr>
<td>23</td>
<td>2.800 (0.110)</td>
<td>3.070 (0.121)</td>
<td>2.200 (0.087)</td>
</tr>
<tr>
<td>29</td>
<td>3.400 (0.134)</td>
<td>3.670 (0.144)</td>
<td>2.800 (0.110)</td>
</tr>
<tr>
<td>35</td>
<td>4.000 (0.157)</td>
<td>4.270 (0.168)</td>
<td>3.400 (0.134)</td>
</tr>
<tr>
<td>41</td>
<td>4.600 (0.181)</td>
<td>4.870 (0.191)</td>
<td>4.400 (0.171)</td>
</tr>
<tr>
<td>47</td>
<td>5.200 (0.205)</td>
<td>5.470 (0.215)</td>
<td>4.800 (0.181)</td>
</tr>
</tbody>
</table>

**Contacts used in this connector:**

<table>
<thead>
<tr>
<th>Card</th>
<th>Upper Card Contacts</th>
<th>Lower Card Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16&quot;</td>
<td>60 7001 29 13</td>
<td>60 7001 28 13</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>60 7001 29 23</td>
<td>60 7001 28 23</td>
</tr>
</tbody>
</table>

**MOUNTING LAYOUT**
Varicon®
Series 7024 – 0.100" Staggered Dual Row

FEATURES
- Guide sockets facilitate mating, ensure correct alignment
- Open-ended card slot; use with p.c. card of any width
- Wide range of contact terminations
- Sizes 17, 23, 29, 35, 41
- For ¼" or ½" p.c. card
- Mates with Series 7023 Plug

TECHNICAL SPECIFICATIONS

Current Rating:
10 amperes

Contact Resistance:
6 milliohms, maximum

Contact Material and Plating:
Phosphor Bronze per QQ-B-750, Composition A.
Gold, 10 microinches minimum, over nickel, 30 to 100 microinches

Insulator Material:
Diallyl phthalate, glass-filled, flame resistant, per MIL-M-14F, Type SDGF.

Insulation Resistance:
25,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 1800 Volts rms
3.4" Hg: 675 Volts rms

Insertion/Withdrawal Force:
2 to 16 ounces per contact

Operating Temperature:
-40°C to +120°C

ORDERING CODE

Number of Contacts
017, 023, 029, 035, 041

Contact Code
See table.

Variation Code
001 = 1/16" Thick Card
002 = 3/32" Thick Card
110 = 1/16" Thick Card 50 mil Gold
111 = 3/32" Thick Card 50 mil Gold

Availability

<table>
<thead>
<tr>
<th>Connector Description</th>
<th>No. of Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 1/16&quot; Card</td>
<td>17 X X X 41 X</td>
</tr>
<tr>
<td>For 3/32&quot; Card</td>
<td>17 X X X X</td>
</tr>
</tbody>
</table>
**DIMENSIONS:**

<table>
<thead>
<tr>
<th>Number of Contacts</th>
<th>A</th>
<th>B</th>
<th>C (Max.)</th>
<th>D</th>
<th>E ±.003</th>
<th>F</th>
<th>G††</th>
<th>H</th>
<th>N††</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/16&quot; Card</td>
<td>3/32&quot; Card</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1.900 (.075)</td>
<td>2.300 (.091)</td>
<td>2.570 (.101)</td>
<td>1.185 (.072)</td>
<td>.074 (.003)</td>
<td>.105 (.004)</td>
<td>17/32&quot;</td>
<td>.468 (0.018)</td>
<td>343 (0.014)</td>
</tr>
<tr>
<td>23</td>
<td>2.500 (.098)</td>
<td>2.900 (.114)</td>
<td>3.170 (.125)</td>
<td>2.435 (.096)</td>
<td>.074 (.003)</td>
<td>.105 (.004)</td>
<td>17/32&quot;</td>
<td>.468 (0.018)</td>
<td>343 (0.014)</td>
</tr>
<tr>
<td>29</td>
<td>3.100 (.122)</td>
<td>3.500 (.138)</td>
<td>3.770 (.148)</td>
<td>3.035 (.119)</td>
<td>.074 (.003)</td>
<td>.105 (.004)</td>
<td>17/32&quot;</td>
<td>.468 (0.018)</td>
<td>343 (0.014)</td>
</tr>
<tr>
<td>35</td>
<td>3.700 (.146)</td>
<td>4.100 (.161)</td>
<td>4.370 (.172)</td>
<td>3.835 (.134)</td>
<td>.074 (.003)</td>
<td>.105 (.004)</td>
<td>17/32&quot;</td>
<td>.468 (0.018)</td>
<td>343 (0.014)</td>
</tr>
<tr>
<td>41</td>
<td>4.300 (.169)</td>
<td>4.700 (.185)</td>
<td>4.970 (.196)</td>
<td>4.435 (.167)</td>
<td>.074 (.003)</td>
<td>.105 (.004)</td>
<td>17/32&quot;</td>
<td>.468 (0.018)</td>
<td>343 (0.014)</td>
</tr>
</tbody>
</table>

†† N-CON = Non-Conductive Chassis
(1/16" Clearance Around Contacts)

CON = Conductive Chassis
(1/8" Clearance Around Contacts)
Varicon®
Series 7038 – 0.100”
Staggered Dual Row

FEATURES
- Varilok® contacts are insertable and removable by user
- Crimp, solderless wrap, tapered tab, and wire hole terminations available
- All crimping, insertion, and extraction equipment available (see page 26)
- Guide sockets facilitate mating, ensure correct alignment
- Open-ended card slot; no p.c. card notching necessary
- Mates with Series 7023 Plug

TECHNICAL SPECIFICATIONS

Current Rating: 8 amperes
Contact Resistance: 6 milliohms, maximum
Contact Material and Plating: Phosphor Bronze
Gold, 10 microinches minimum, over nickel, 50 to 100 microinches

Insulator Material: Dialyl phthalate, glass-filled, flame resistant, per MIL-M-14F, Type SDGF.
Insulation Resistance: 5,000 megohms, minimum

Dielectric Withstanding Voltage:
- Sea Level: 1800 Volts rms
- 3.4” Hg: 675 Volts rms

Insertion/Withdrawal Force: 2 to 16 ounces per contact

Operating Temperature: -40°C to +120°C

ORDERING CODE

00 7038

023
Number of Contacts
017, 023, 029, 035, 041

000
Contact Code
See table.

001
Variation Code
001 = 1/16” Thick Card
002 = 3/32” Thick Card
110 = 1/16” Thick Card 50 mil Gold
111 = 3/32” Thick Card 50 mil Gold

217 = 60 8017 05 13
Wire Hole

218 = 60 8017 06 13
Solderless Wrap Tail – .025” x .050” x .567”

750 = 60 8017 06 23
Solderless Wrap Tail – .025” x .050” x .760”

296 = 60 8017 06 33
Solderless Wrap Tail – .025” x .025” x .580”

504 = 60 8017 06 63
Solderless Wrap Tail – .025” x .025” x .170”

*000 = 60 8017 03 13
Wire Crimp Tail (Contacts Loose) 18-26 AWG

*000 = 60 8017 03 23
Wire Crimp Tail (Contacts on a Reel) 18-26 AWG

*Order separately by part number, refer to page 25
### DIMENSIONS:

<table>
<thead>
<tr>
<th>Number of Contacts</th>
<th>A (millimeters)</th>
<th>B (millimeters)</th>
<th>C Max. (millimeters)</th>
<th>D (millimeters)</th>
<th>E (millimeters)</th>
<th>F (millimeters)</th>
<th>G (millimeters)</th>
<th>J (millimeters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>1.900 (0.075)</td>
<td>2.300 (0.091)</td>
<td>2.570 (0.101)</td>
<td>1.890 (0.075)</td>
<td>.074 (0.003)</td>
<td>.105 (0.004)</td>
<td>.571 (0.022)</td>
<td>1.850 (0.073)</td>
</tr>
<tr>
<td>23</td>
<td>2.500 (0.098)</td>
<td>2.900 (0.114)</td>
<td>3.170 (0.125)</td>
<td>2.490 (0.098)</td>
<td>.074 (0.003)</td>
<td>.105 (0.004)</td>
<td>.571 (0.022)</td>
<td>2.450 (0.096)</td>
</tr>
<tr>
<td>29</td>
<td>3.100 (0.122)</td>
<td>3.500 (0.138)</td>
<td>3.770 (0.148)</td>
<td>3.090 (0.121)</td>
<td>.074 (0.003)</td>
<td>.105 (0.004)</td>
<td>.571 (0.022)</td>
<td>3.050 (0.120)</td>
</tr>
<tr>
<td>35</td>
<td>3.700 (0.146)</td>
<td>4.100 (0.161)</td>
<td>4.370 (0.172)</td>
<td>3.690 (0.145)</td>
<td>.074 (0.003)</td>
<td>.105 (0.004)</td>
<td>.571 (0.022)</td>
<td>3.650 (0.144)</td>
</tr>
<tr>
<td>41</td>
<td>4.300 (0.169)</td>
<td>4.700 (0.185)</td>
<td>4.970 (0.196)</td>
<td>4.290 (0.169)</td>
<td>.074 (0.003)</td>
<td>.105 (0.004)</td>
<td>.571 (0.022)</td>
<td>4.250 (0.167)</td>
</tr>
</tbody>
</table>

### MOUNTING LAYOUT
FEATURES

- Available in five sizes: 20, 38, 56, 90 and 120 contacts
- Insertable / removable Varilok contacts
- Crimp, solder, solderless wrap, and taper tab terminations
- Exceptional versatility: all hardware can be mounted on plug or receptacle (see ordering code)
- Actuating screw facilitates mating and unmating, locks mated connectors together
- Polarizing hardware can be set to any of six positions at factory; can also be reset by user (see polarizing code)
- Optional cover with top or side cable entry and clamp
- Optional cable strain relief clamp with adjustable strap for large or small cable bundles (fits on sizes 38 and 56)
- Plug and receptacle contacts are protected from mishandling
- Guide pins and sockets ensure correct alignment when mating
- Aluminum covers
- CSA acceptable polyester material

TECHNICAL SPECIFICATIONS

**Current Rating:**
8 amperes, maximum

**Contact Resistance:**
6 milliohms, maximum

**Contact Material:**
Phosphor bronze

**Contact Plating:**
Gold, 10 microinches min., over Nickel, 50-100 microinches

**Insulator Material:**
Thermoplastic 94V-O glass filled polyester

**Insulation Resistance:**
5,000 megohms, min. (polyester)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Level</td>
<td>1250 volts RMS</td>
</tr>
<tr>
<td>3.4&quot; Hg</td>
<td>625 volts RMS</td>
</tr>
</tbody>
</table>

**Cover and Clamp Material and Finish:**
Aluminum with clear chromate under grey enamel finish
Varicon®
Series 8016 – Basic Components

CONECTORS:

Male
Female

(Exposed Contacts)
(Recessed Contacts)

Male, Jackscrew
Male, Fixed Nut
Female, Fixed Nut
Female, Jackscrew

001/601 Style
002/602 Style
007/607 Style
008/608 Style

COVERS:

Top Opening
Side Opening
Top/side Opening
(Removable Side Plate)

CONTACTS:

Crimp
Solder Tab
Wire Wrap 14.4mm
Wire Wrap 19.3mm
Wire Wrap .567
Solder

217 Style
218 Style
750 Style
296 Style
504 Style
**Contact Termination**

*000 = Contacts not fitted and ordered separately, see page 25 for full list of options

- 217 = Solder 0.098” x 2.49mm
- 218 = Wire Wrap – 0.025 x 0.050 x 0.567” / 0.64 x 1.27 x 14.4mm
- 296 = Wire Wrap – 0.025 x 0.026 x 0.579” / 0.64 x 0.66 x 14.7mm
- 504 = Solder Tail –
- 750 = Wire Wrap – 0.025 x 0.050 x 0.760” / 0.64 x 1.27 x 19.3mm

*Crimp contacts always ordered separately. See page 25 for details.

**Relevant Table**

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Basic P/N*</th>
<th>Color</th>
<th>Hardware Thread</th>
<th>No Cover</th>
<th>Top Std Clamp</th>
<th>Side Std Clamp</th>
<th>Actuating Screw</th>
<th>Fixed Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>00 8016 020 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>601</td>
<td>603</td>
<td>604</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td>00 8016 020 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>602</td>
<td>605</td>
<td>606</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Male</td>
<td>00 8016 020 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>001</td>
<td>903</td>
<td>904</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td>00 8016 020 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>002</td>
<td>905</td>
<td>906</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 020 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>608</td>
<td>609</td>
<td>610</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 020 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>607</td>
<td>611</td>
<td>612</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 020 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>008</td>
<td>909</td>
<td>910</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 020 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>007</td>
<td>911</td>
<td>912</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

*Select the column desired and replace the XXX with the numbers from column.

**United Course Thread**
**Varicon®**

**Series 8016 – Rectangular Connector – 38 Contact**

**ORDERING CODE**

- **Prefix:** 00
- **Series Number:** 8016
- **Number of Contacts:** 038
- **See table below**

**Contact Termination**

- *000 = Contacts not fitted and ordered separately, see page 25 for full list of options*
- **217 = Solder 0.098" x 2.49mm**
- **218 = Wire Wrap – 0.025 x 0.050 x 0.567" / 0.64 x 1.27 x 14.4mm**
- **296 = Wire Wrap – 0.025 x 0.026 x 0.579" / 0.64 x 0.66 x 14.7mm**
- **504 = Solder Tail –**
- **750 = Wire Wrap – 0.025 x 0.050 x 0.760" / 0.64 x 1.27 x 19.3mm**

*Crimp contacts always ordered separately. See page 25 for details.

**RECOMMENDED LAYOUT FOR FRONT CHASSIS MOUNTING & PCB LAYOUT**

See page 26 for assembly tools.

### 38 CONTACTS

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Basic P/N*</th>
<th>Color</th>
<th>Hardware <strong>Thread</strong></th>
<th>No Cover</th>
<th>Top Std Clamp</th>
<th>Side Std Clamp</th>
<th>Top Lge Clamp</th>
<th>Side Lge Clamp</th>
<th>Top EX Lge Clamp</th>
<th>Side EX Lge Clamp</th>
<th>Actuating Screw</th>
<th>Fixed Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>00 8016 038 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>601</td>
<td>603</td>
<td>604</td>
<td>619</td>
<td>620</td>
<td>631</td>
<td>632</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Male</td>
<td>00 8016 038 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>602</td>
<td>605</td>
<td>606</td>
<td>621</td>
<td>622</td>
<td>633</td>
<td>634</td>
<td>N</td>
<td>Y</td>
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<tr>
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<td>00 8016 038 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>001</td>
<td>903</td>
<td>904</td>
<td>919</td>
<td>920</td>
<td>931</td>
<td>932</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Male</td>
<td>00 8016 038 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>002</td>
<td>905</td>
<td>906</td>
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<td>922</td>
<td>933</td>
<td>934</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Female</td>
<td>00 8016 038 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>607</td>
<td>611</td>
<td>612</td>
<td>623</td>
<td>624</td>
<td>635</td>
<td>636</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 038 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>008</td>
<td>909</td>
<td>910</td>
<td>923</td>
<td>924</td>
<td>935</td>
<td>936</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Female</td>
<td>00 8016 038 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>007</td>
<td>911</td>
<td>912</td>
<td>925</td>
<td>926</td>
<td>937</td>
<td>938</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

*Select the column desired and replace the XXX with the numbers from column.

**United Course Thread**
**Varicon®**

**Series 8016 – Rectangular Connector – 56 Contact**

**ORDERING CODE**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series Number</th>
<th>Number of Contacts</th>
<th>See table below</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>8016</td>
<td>056</td>
<td>217</td>
</tr>
</tbody>
</table>

**Contact Termination**

*000 = Contacts not fitted and ordered separately, see page 25 for full list of options*

- 217 = Solder 0.098" x 2.49mm
- 218 = Wire Wrap – 0.025 x 0.050 x 0.567" / 0.64 x 1.27 x 14.4mm
- 296 = Wire Wrap – 0.025 x 0.026 x 0.579" / 0.64 x 0.66 x 14.7mm
- 504 = Solder Tail –
- 750 = Wire Wrap – 0.025 x 0.050 x 0.760" / 0.64 x 1.27 x 19.3mm

*Crimp contacts always ordered separately. See page 25 for details.*

**56 CONTACTS**

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Basic P/N*</th>
<th>Color</th>
<th>Hardware **Thread</th>
<th>No Cover</th>
<th>Actuating Screw</th>
<th>Fixed Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>00 8016 056 000 XXX</td>
<td>Green</td>
<td>UNC 601</td>
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<td>N</td>
<td></td>
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<tr>
<td>Male</td>
<td>00 8016 056 000 XXX</td>
<td>Green</td>
<td>UNC 602</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>00 8016 056 000 XXX</td>
<td>Gray</td>
<td>UNC 001</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>00 8016 056 000 XXX</td>
<td>Gray</td>
<td>UNC 002</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Female</td>
<td>00 8016 056 000 XXX</td>
<td>Green</td>
<td>UNC 608</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>00 8016 056 000 XXX</td>
<td>Green</td>
<td>UNC 607</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Female</td>
<td>00 8016 056 000 XXX</td>
<td>Gray</td>
<td>UNC 008</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Female</td>
<td>00 8016 056 000 XXX</td>
<td>Gray</td>
<td>UNC 007</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

*Select the column desired and replace the XXX with the numbers from column.

**United Course Thread**

**RECOMMENDED LAYOUT FOR FRONT CHASSIS MOUNTING & PCB LAYOUT**

See page 26 for assembly tools.
Varicon®
Series 8016 – Rectangular Connector – 90 Contact

ORDERING CODE

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series Number</th>
<th>Number of Contacts</th>
<th>See table below</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>8016</td>
<td>090 217 601</td>
<td></td>
</tr>
</tbody>
</table>

Contact Termination

*000 = Contacts not fitted and ordered separately, see page 25 for full list of options
217 = Solder 0.098" x 2.49mm
218 = Wire Wrap – 0.025 x 0.050 x 0.567" / 0.64 x 1.27 x 14.4mm
296 = Wire Wrap – 0.025 x 0.026 x 0.579" / 0.64 x 0.66 x 14.7mm
504 = Solder Tail –
750 = Wire Wrap – 0.025 x 0.050 x 0.760" / 0.64 x 1.27 x 19.3mm

*Crimp contacts always ordered separately. See page 25 for details.

RECOMMENDED LAYOUT FOR FRONT CHASSIS MOUNTING & PCB LAYOUT

See page 26 for assembly tools.

**Select the column desired and replace the XXX with the numbers from column.**

**United Course Thread**
Varicon®
Series 8016 – Rectangular Connector – 120 Contact

PLUG - ACTUATING SCREW

SOCKET - ACTUATING SCREW

PLUG – Fixed Nut

SOCKET – FIXED NUT

ORDERING CODE

ORDERING CODE

00 8016 120 217 601

Prefix  Series Number  Number of Contacts  See table below

Contact Termination

*000 = Contacts not fitted and ordered separately, see page 25 for full list of options

217 = Solder 0.098" x 2.49mm

218 = Wire Wrap – 0.025 x 0.050 x 0.567" / 0.64 x 1.27 x 14.4mm

296 = Wire Wrap – 0.025 x 0.026 x 0.579" / 0.64 x 0.66 x 14.7mm

504 = Solder Tail –

750 = Wire Wrap – 0.025 x 0.050 x 0.760" / 0.64 x 1.27 x 19.3mm

*Crimp contacts always ordered separately. See page 25 for details.

120 CONTACTS

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Basic P/N*</th>
<th>Color</th>
<th>Hardware **Thread</th>
<th>No Cover</th>
<th>Top Lge Clamp</th>
<th>Side Lge Clamp</th>
<th>Actuating Screw</th>
<th>Fixed Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 00 8016 120 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>001</td>
<td>603</td>
<td>604</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Male 00 8016 120 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>002</td>
<td>605</td>
<td>606</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Male 00 8016 120 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>007</td>
<td>607</td>
<td>611</td>
<td>612</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Female 00 8016 120 000 XXX</td>
<td>Green</td>
<td>UNC</td>
<td>008</td>
<td>N/A</td>
<td>N/A</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Female 00 8016 120 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>009</td>
<td>N/A</td>
<td>N/A</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Female 00 8016 120 000 XXX</td>
<td>Gray</td>
<td>UNC</td>
<td>010</td>
<td>N/A</td>
<td>N/A</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

*Select the column desired and replace the XXX with the numbers from column.

**United Course Thread

RECOMMENDED LAYOUT FOR FRONT CHASSIS MOUNTING & PCB LAYOUT

See page 26 for assembly tools.
<table>
<thead>
<tr>
<th>Part Number</th>
<th>For Size</th>
<th>Hardware Threads</th>
<th>Cable Entrance</th>
<th>Clamp Type</th>
<th>Size mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 8016 9829 00 000</td>
<td>20</td>
<td>Metric</td>
<td>Side</td>
<td>Standard</td>
<td>11.53 (0.454) Dia</td>
</tr>
<tr>
<td>30 8016 9831 00 000</td>
<td>20</td>
<td>Metric</td>
<td>Top</td>
<td>Standard</td>
<td>11.53 (0.454) Dia</td>
</tr>
<tr>
<td>30 8016 0200 00 415</td>
<td>20</td>
<td>UNC</td>
<td>45</td>
<td>Standard</td>
<td>5 x 10 (0.197 x 0.394) min</td>
</tr>
<tr>
<td>30 8016 9821 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Side</td>
<td>Standard</td>
<td>16.51 x 12.70 (0.650 x 0.500)</td>
</tr>
<tr>
<td>30 8016 9822 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Top</td>
<td>Standard</td>
<td>16.51 x 12.70 (0.650 x 0.500)</td>
</tr>
<tr>
<td>30 8016 9825 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Side</td>
<td>Large</td>
<td>16.51 x 15.44 (0.650 x 0.608)</td>
</tr>
<tr>
<td>30 8016 9826 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Top</td>
<td>Large</td>
<td>16.51 x 15.44 (0.650 x 0.608)</td>
</tr>
<tr>
<td>30 8016 9838 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Side</td>
<td>Ex-Large</td>
<td>20.83 x 15.60 (0.820 x 0.614)</td>
</tr>
<tr>
<td>30 8016 9839 00 000</td>
<td>38</td>
<td>Metric</td>
<td>Top</td>
<td>Ex-Large</td>
<td>20.83 x 15.60 (0.820 x 0.614)</td>
</tr>
<tr>
<td>30 8016 0560 00 413</td>
<td>56</td>
<td>UNC</td>
<td>Top/Side</td>
<td>Standard</td>
<td>6 x 14 (0.236 x 0.551) min</td>
</tr>
<tr>
<td>30 8016 9832 00 000</td>
<td>90</td>
<td>Metric</td>
<td>Side</td>
<td>Large</td>
<td>20.32 (0.800) Dia</td>
</tr>
<tr>
<td>30 8016 9833 00 000</td>
<td>90</td>
<td>Metric</td>
<td>Top</td>
<td>Large</td>
<td>20.32 (0.800) Dia</td>
</tr>
<tr>
<td>30 8016 9843 00 000</td>
<td>90</td>
<td>Metric</td>
<td>Side</td>
<td>Ex-Large</td>
<td>25.40 x 20.32 (1.00 x 0.800)</td>
</tr>
<tr>
<td>30 8016 9844 00 000</td>
<td>90</td>
<td>Metric</td>
<td>Top</td>
<td>Ex-Large</td>
<td>25.40 x 20.32 (1.00 x 0.800)</td>
</tr>
<tr>
<td>30 8016 9834 00 000</td>
<td>120</td>
<td>Metric</td>
<td>Side</td>
<td>Large</td>
<td>20.32 x 27.43 (0.800 x 1.080)</td>
</tr>
<tr>
<td>30 8016 9835 00 000</td>
<td>120</td>
<td>Metric</td>
<td>Top</td>
<td>Large</td>
<td>20.32 x 27.43 (0.800 x 1.080)</td>
</tr>
</tbody>
</table>
### Varicon®
**Series 8016 Covers**

#### CLAMPING AND COVER DIMENSIONS

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Part Number</th>
<th>Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>308016020000413</td>
<td>Side/Top</td>
</tr>
<tr>
<td>20</td>
<td>308016020000415</td>
<td>45º</td>
</tr>
<tr>
<td>38</td>
<td>308016038000413</td>
<td>Side/Top</td>
</tr>
<tr>
<td>38</td>
<td>308016038000415</td>
<td>45º</td>
</tr>
<tr>
<td>56</td>
<td>308016056000413</td>
<td>Side/Top</td>
</tr>
</tbody>
</table>

#### OPTIONAL REMOVABLE SIDE PLATE COVER

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Part Number</th>
<th>Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>308016020000413</td>
<td>Side/Top</td>
</tr>
<tr>
<td>20</td>
<td>308016020000415</td>
<td>45º</td>
</tr>
<tr>
<td>38</td>
<td>308016038000413</td>
<td>Side/Top</td>
</tr>
<tr>
<td>38</td>
<td>308016038000415</td>
<td>45º</td>
</tr>
<tr>
<td>56</td>
<td>308016056000413</td>
<td>Side/Top</td>
</tr>
</tbody>
</table>

#### Clamp Dimensions

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Minimum Size</th>
<th>Maximum Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5 x 10 (0.197 x 0.394)</td>
<td>10 x 10 (0.394 x 0.394)</td>
</tr>
<tr>
<td>38</td>
<td>6 x 14 (0.236 x 0.551)</td>
<td>17 x 14 (0.669 x 0.551)</td>
</tr>
<tr>
<td>56</td>
<td>6 x 14 (0.236 x 0.551)</td>
<td>17 x 14 (0.669 x 0.551)</td>
</tr>
</tbody>
</table>
CLAMPING AND COVER DIMENSIONS

90 CONTACTS

120 CONTACTS

See page 21 for part numbers
Varicon®
Series 8017

75/100/130 CONTACTS
Plug with Actuating Screw 001

Plug with Fixed Screw 002

Receptacle with Fixed Nut 007

Receptacle with Actuating Nut 008

RECOMMENDED CHASSIS LAYOUT

ORDERING CODE

 CONNECTOR PLUG AND RECEPTACLE COMBINATIONS

VARIATION CODE

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Variation Code</th>
<th>Cover &amp; Cable Entrance</th>
<th>Actuating Screw</th>
<th>Fixed Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug</td>
<td>001</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>003</td>
<td>Top</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>004</td>
<td>Side</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>005</td>
<td>Top</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>006</td>
<td>Side</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insulator Body Type</th>
<th>Variation Code</th>
<th>Cover &amp; Cable Entrance</th>
<th>Fixed Nut</th>
<th>Actuating Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacle</td>
<td>007</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>008</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>010</td>
<td>Side</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>011</td>
<td>Top</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>012</td>
<td>Side</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>001</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>003</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>004</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>005</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>006</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Varilok®

**Loose Contacts**

Varilok® connectors can be specified as either fully loaded, to include the connector body and a variety of pre-loaded contact termination types or the empty body and a selection of separately specified and ordered contacts. The table below details the various loose contacts available.

<table>
<thead>
<tr>
<th>Contact Style</th>
<th>Description</th>
<th>Plating Specification</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crimp Contact</strong></td>
<td>Ordered separately</td>
<td>0.25µM Gold All Over (Standard) 0.25µM Gold Nose &amp; Tail (Optional)</td>
<td>60 8017 0313 00 339 60 8017 0313 00 042</td>
</tr>
<tr>
<td><strong>Crimp Contact End Carrier</strong></td>
<td>Ordered separately</td>
<td>0.25µM Gold All Over (Standard) 0.25µM Gold Nose &amp; Tail (Optional)</td>
<td>60 8017 0323 99 339 60 8017 0323 99 042 60 8017 0323 00 339** 60 8017 0323 00 042**</td>
</tr>
<tr>
<td>Tail Section – 2.49 x 0.61 (0.098 x 0.024)</td>
<td>Solder Tag Contact</td>
<td>0.25µM Gold All Over (Standard)</td>
<td>60 8017 0513 00 339</td>
</tr>
<tr>
<td>Tail Section – 1.27 x 0.63 (0.025 x 0.005)</td>
<td>14.4mm Maxiwrap Contact</td>
<td>0.25µM Gold All Over (Standard)</td>
<td>60 8017 0613 00 339</td>
</tr>
<tr>
<td>Tail Section – 1.27 x 0.63 (0.025 x 0.005)</td>
<td>19.3mm Maxiwrap Contact</td>
<td>0.25µM Gold All Over (Standard)</td>
<td>60 8017 0623 00 339</td>
</tr>
<tr>
<td>Tail Section – 0.635 x 0.63 (0.025 x 0.005)</td>
<td>14.0 Miniwrap Contact</td>
<td>0.25µM Gold All Over (Standard)</td>
<td>60 8017 0633 00 339</td>
</tr>
<tr>
<td>Tail Section – 0.635 x 0.63 (0.025 x 0.005)</td>
<td>4.3mm PC Solder Contact for ø 1.00 mm P.T.H.</td>
<td>0.25µM Gold All Over (Standard)</td>
<td>60 8017 0663 00 339</td>
</tr>
</tbody>
</table>

* Indicates standard contact

** Order code to be used when purchasing through a USA source.

**Connector Polarization**

Varicon® 8016 Series connectors are designed with an integral polarizing system to ensure in high density environments that the correct halves are mated together.

As a factory standard, male plugs are set to the code PG1G1, with the female receptacles being set to the opposite matching code RS1S1.

Customers who need to change the standard polarization to another position can do so by ordering the connectors with the required polarization (eg: PG1G4 or RS2S5, etc) When ordering a different polarization from normal, the polarization is called out at the end of the part number (Ex: 00 8016 056 000 601PG2G4, etc).

**Ordering Code**

<table>
<thead>
<tr>
<th>P</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Connector Half</td>
<td>Location Side</td>
</tr>
<tr>
<td>Plug = P</td>
<td>Guide Pin = G</td>
</tr>
<tr>
<td>Socket = R</td>
<td>Guide Socket = S</td>
</tr>
<tr>
<td>1</td>
<td>Positions</td>
</tr>
<tr>
<td>1 through 6</td>
<td>Positions</td>
</tr>
</tbody>
</table>

Plating code 343 = 0.50 µm Gold all over
CONTACT INSERTION TOOLS
These are small hand tools which provide a positive method for inserting contacts into the rear of the insulator by applying pressure on the contacts directly to the end of the insulation crimp.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Contact Capability</th>
<th>Connector Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 1742 0400 00 000</td>
<td>Varilok®</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. 60 8017 Contact Family</td>
<td>7038, 8016, 8017, 8020</td>
</tr>
</tbody>
</table>

HAND CRIMP TOOLS
This tool is designed for hand crimping of contacts. The tool is well suited for maintenance, model shop, laboratory and small scale production purposes. Two crimping cavities are available; Upper Cavity will crimp wire 18-20 AWG and the Lower Cavity will crimp wire 22-26 AWG.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Contact Capability</th>
<th>Wire Type &amp; Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 7852 0100 00 000</td>
<td>Varilok®</td>
<td>Stranded AWG</td>
</tr>
<tr>
<td>(Standard)</td>
<td>No. 60 8017 0313</td>
<td>No. 18-26</td>
</tr>
<tr>
<td>06 7852 7002 01 000</td>
<td>Varilok®</td>
<td>Stranded AWG</td>
</tr>
<tr>
<td>(Blue Handle)</td>
<td>No. 60 8017 0313</td>
<td>No. 18-26</td>
</tr>
<tr>
<td>06 7858 01 000 0000</td>
<td>Mini Varilok®</td>
<td>Stranded AWG</td>
</tr>
<tr>
<td></td>
<td>No. 60 8216 0313</td>
<td>No. 22-30</td>
</tr>
</tbody>
</table>

CONTACT EXTRACTION TOOLS
This tool is designed to extract contacts from the front of the insulator quickly and easily, without damage to either contacts or insulator.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Contact Capability</th>
<th>Connector Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 1877 0400 00 000</td>
<td>Varilok®</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. 60 8017 Contact Family</td>
<td>7038, 8016, 8017, 8020</td>
</tr>
<tr>
<td>06 7699 01 000 0000</td>
<td>Mini Varilok®</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. 60 8216 Contact Family</td>
<td>8223</td>
</tr>
</tbody>
</table>

Contact Insertion Tool
Hand Crimp Tool (Standard)
Contact Extraction Tool
Varilok®
Series 8020 – Cable Connector

APPLICATION
In line connection of 2 or 3 wire of 18-26 AWG, insulation ø1.03 mm to 1.88 mm.

FEATURES AND BENEFITS
- 2 and 3 position in single row
- Uses identical molding for plug and socket
- Uses identical contact for plug and socket
- Uses standard Varicon 8016 contacts
- Uses standard Varicon Crimping Tools, Contact Extraction Tools and Insertion Tools
- Has combined nylon mounting and locking clip common to both sizes
- Contacts for both solder and crimp termination

TECHNICAL SPECIFICATIONS

Contact:
Single row of 2 or 3 Varilok contacts
Configuration:
On a 0.200 inch pitch, 5.08 mm
Contact Rating:
8.5 amperes
Contact Resistance:
6 milliohms (max)

CONNECTOR DIMENSIONS (mm)

2 way connector housing
3 way connector housing

LOCKING CLIP DIMENSIONS (mm)
P/N 608020321000000

ORDERING CODE FOR COMPLETE CONNECTORS WITH NON-CRIMP CONTACTS FITTED

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series Number</th>
<th>Number of Contacts</th>
<th>Contact Termination</th>
<th>Variation Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>8020</td>
<td>002</td>
<td>000 = Crimp Contacts (Ordered Separately)</td>
<td>001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>217 = Solder Tag</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>218 = Wire Wrap (0.61 x 1.27 x 14.4mm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>296 = Mini Wire Wrap (0.61 x 0.66 x 4.73mm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>504 = Solder Tail (0.61 x 0.66 x 4.32mm)</td>
<td></td>
</tr>
</tbody>
</table>

*Contact terminations should be insulated because they may protrude from the insulator.

NB: See page 25 for details of contacts.

ORDERING CODE FOR HOUSINGS AND CRIMP CONTACTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 way connector: Housing only</td>
<td>60-8028-3117-00-000</td>
<td>0.25μM Gold loose crimp contacts (gold all over)</td>
<td>60-8017-0323-99-339</td>
</tr>
<tr>
<td>3 way connector: Housing only</td>
<td>60-8028-3317-00-000</td>
<td>0.25μM Gold loose crimp contacts (selective)</td>
<td>60-8017-0323-99-042</td>
</tr>
<tr>
<td>0.25μM Gold loose crimp contacts (gold all over)</td>
<td>60-8017-0313-00-339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25μM Gold loose crimp contacts (selective)</td>
<td>60-8017-0313-00-042</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB: See page 25 for details of crimp contacts.
xFEATëRES

• High contact density
• For parallel or perpendicular p.c. card mounting
• High mounting density (.050" centers, minimum)
• Nylon end sections for mounting and card guidance
• Mounting hardware supplied with connector
• Mates with 8219 Series

TECHNICAL SPECIFICATIONS

Current Rating: 5 amperes, maximum
Contact Resistance: 0.005 ohm, maximum
Contact Material and Plating: Phosphor Bronze
nickel plate, 30 to 50 microinches followed by gold plate, 10 to 20 microinches

Insulator Material: Diallyl phthalate, glass-filled, flame resistant, end guides: nylon
Insulation Resistance: 5,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 1000 Volts rms
3.4" Hg: 500 Volts rms

Insertion/Withdrawal Force: 2 to 16 ounces per contact

ORDERING CODE

00 8218 000 076 000 001

Number of Contacts
02 to 076 for connectors without center guide

Contact Code

002 = Receptacle
002 = Plug-Card
005 = Plug-Board

Variation Code
011 = Receptacle
012 = Plug-Card/pin inserted in odd position
013 = Plug-Card/pin inserted in even position
017 = Plug-Board

with keying pins

021 = Receptacle
022 = Plug-Card/pin inserted in odd position
023 = Plug-Card/pin inserted in even position

with keying holes

Variant 002 right angled contacts
000 = 60 8200 16 33 P.C. Tail
000 = 60 8200 16 63 P.C. Tail

Variants 001 and 005
722 = 60 8200 16 13 Wire Hole Tail
736 = 60 8200 16 33 P.C. Tail (X = 9/32", Y = 1/4")
753 = 60 8200 16 53 P.C. Tail (X = 1/8", Y = 3/32")
771 = 60 8200 16 63 P.C. Tail (X = 31/64", Y = 29/64")

Variant 002 right angled contacts
Varicon®
Series 8218 – 0.050" Staggered Dual Row

RECEPTACLE 001 – MATES WITH PLUGS 002 AND 005

MOUNTING LAYOUT

DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(No. of contacts x 0.050&quot;) - 0.050&quot;</td>
<td>“A” dimension + 0.300&quot;</td>
<td>“A” dimension + 0.440&quot;</td>
<td>“A” dimension + 0.550&quot;</td>
<td>“A” dimension + 0.690&quot;</td>
</tr>
</tbody>
</table>

POLARIZATION

Keying Ordering No.
60-8218-4715-00-152

PLUG OR RECEPTACLE

BLACK – NATURAL

Determine polarization pin location from views.
P = Specify location by contact # where polarizing pin must be inserted.
H = Specify location by contact # where contact must be omitted for mating.
Typical Example:
00-8218-024-721-001-P17 (polarizing pin mtd. in position 17)
00-8218-024-721-005-H17 (polarizing hole is in position 17)
Varicon®
Series 8219 – 0.050" Staggered Dual Row

FEATURES
- For p.c. card-to-card applications
- High contact density
- Low withdrawal force contacts
- Rugged, color coded end guides
- Parallel or perpendicular p.c. board mounting
- Mates with Series 8218

TECHNICAL SPECIFICATIONS
Current Rating:
5 amperes, maximum
Contact Resistance:
6 milliohms, maximum
Contact Material and Plating:
Phosphor Bronze
Gold, 10 microinches minimum, over nickel, 50 to 100 microinches

Insulator Material:
Diallyl phthalate, glass-filled, flame resistant per MIL-M-14F, Type SDGF.

Guidance Hardware:
Left hand guides: Metal, gold color
Right hand guides: Metal, silver color

Insulation Resistance:
5,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 1000 Volts rms
3.4" Hg: 500 Volts rms

Insertion/Withdrawal Force:
2 to 8 ounces per contact

ORDERING CODE
<table>
<thead>
<tr>
<th>00</th>
<th>8219</th>
<th>042</th>
<th>722</th>
<th>001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Contacts</td>
<td>018, 030, 036, 042, 054, 072</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Code</td>
<td>(see below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variation Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Variation = 001

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Contact Type</th>
<th>&quot;X&quot; Dim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>722</td>
<td>Wire hole tail</td>
<td>.157</td>
</tr>
<tr>
<td>721</td>
<td>P.C. solder tail</td>
<td>.250</td>
</tr>
<tr>
<td>721</td>
<td>P.C. solder tail</td>
<td>.290</td>
</tr>
<tr>
<td>736</td>
<td>P.C. solder tail</td>
<td>.250</td>
</tr>
<tr>
<td>737</td>
<td>P.C. solder tail</td>
<td>.125</td>
</tr>
<tr>
<td>753</td>
<td>P.C. solder tail</td>
<td>.484</td>
</tr>
</tbody>
</table>

For Variation = 002

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Contact Type</th>
<th>&quot;Y&quot; Dim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>P.C. solder tails formed</td>
<td></td>
</tr>
<tr>
<td>722</td>
<td>Wire hole tail unformed</td>
<td></td>
</tr>
</tbody>
</table>

For Variation = 005

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Contact Type</th>
<th>&quot;Y&quot; Dim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>722</td>
<td>Wire hole tail</td>
<td>.157</td>
</tr>
<tr>
<td>721</td>
<td>P.C. solder tail</td>
<td>.219</td>
</tr>
<tr>
<td>736</td>
<td>P.C. solder tail</td>
<td>.250</td>
</tr>
<tr>
<td>737</td>
<td>P.C. solder tail</td>
<td>.531</td>
</tr>
<tr>
<td>753</td>
<td>P.C. solder tail</td>
<td>.093</td>
</tr>
<tr>
<td>771</td>
<td>P.C. solder tail</td>
<td>.453</td>
</tr>
</tbody>
</table>

NOTE: Connector is supplied with mounting screws or eyelets, as applicable (see drawings). Contact Factory for Special Variations.

When Keying is ordered with part number, the Key is installed at the factory.

POLARIZING SYSTEM
Varicon®
Series 8219 – 0.050” Staggered Dual Row

**DIMENSIONS:**

<table>
<thead>
<tr>
<th>Number of Contacts</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Ref. K</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>19</td>
<td>1.250 (0.049)</td>
<td>1.100 (0.043)</td>
<td>1.290 (0.051)</td>
<td>1.400 (0.055)</td>
<td>1.540 (0.061)</td>
<td>1.964 (0.077)</td>
<td>1.300 (0.051)</td>
</tr>
<tr>
<td>30</td>
<td>29</td>
<td>1.450 (0.057)</td>
<td>1.300 (0.051)</td>
<td>1.590 (0.063)</td>
<td>2.000 (0.079)</td>
<td>2.140 (0.084)</td>
<td>1.564 (0.061)</td>
<td>1.900 (0.075)</td>
</tr>
<tr>
<td>36</td>
<td>35</td>
<td>1.750 (0.069)</td>
<td>1.600 (0.063)</td>
<td>2.100 (0.080)</td>
<td>2.500 (0.096)</td>
<td>2.640 (0.098)</td>
<td>1.964 (0.075)</td>
<td>2.220 (0.087)</td>
</tr>
<tr>
<td>42</td>
<td>41</td>
<td>2.050 (0.080)</td>
<td>1.900 (0.075)</td>
<td>2.400 (0.094)</td>
<td>2.800 (0.098)</td>
<td>2.940 (0.103)</td>
<td>2.364 (0.096)</td>
<td>2.640 (0.095)</td>
</tr>
<tr>
<td>54</td>
<td>53</td>
<td>2.350 (0.092)</td>
<td>2.200 (0.087)</td>
<td>2.700 (0.106)</td>
<td>3.100 (0.122)</td>
<td>3.240 (0.131)</td>
<td>2.764 (0.106)</td>
<td>3.100 (0.122)</td>
</tr>
<tr>
<td>72</td>
<td>71</td>
<td>2.650 (0.104)</td>
<td>2.500 (0.098)</td>
<td>3.000 (0.119)</td>
<td>3.500 (0.135)</td>
<td>3.640 (0.144)</td>
<td>3.164 (0.122)</td>
<td>3.500 (0.137)</td>
</tr>
</tbody>
</table>

**RECEPTACLE 001 MATES WITH PLUGS 002 AND 005**

**MOUNTING LAYOUTS**

"When used in metal panel with Code Contact 722 cut out diam. Is .210", 

[Diagram and table of dimensions provided here]
Varicon®
Series 8223 – 0.100” Dual Row Square Grid

FEATURES
- Wide range of contact terminations including wire wrapping, P.C. solder tail, wire hole, wire crimp
- For ⅛”, ¼” P.C. card
- Polarity and keying are built into the connector body to prevent mismating
- Perpendicular or parallel connector mounting
- Proven Varicon® contact reliability
- Protected male; recessed female contacts

TECHNICAL SPECIFICATIONS
CONTACTS

Current Rating:
5 amperes with 22 AWG wire

Contact Resistance:
6 milliohms, maximum

Contact Material and Plating:
Phosphor Bronze
Nickel plate, 50 to 100 microinches, followed by gold plate. 10 microinches minimum

INSULATORS

Material:
Diallyl Phthalate, glass-filled, flame resistant, per MIL-M-14-F, Type SDGF

Insulation Resistance:
5,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 1,000 Volts rms

Insertion/Withdrawal Force:
2 to 8 ounces per contact

ORDERING CODE

Use three digit code number when contacts are to be factory installed. If contacts are to be supplied loose, or contact tails to be formed, use three zeros (000) in contact code section. Note that the wire crimp tail contacts can only be ordered as separate items by part numbers.

<table>
<thead>
<tr>
<th>Insulator Type</th>
<th>Variation</th>
<th>Contact Style</th>
<th>Cover</th>
<th>Guide Pins</th>
<th>Sockets (R)</th>
<th>Keying</th>
<th>Threaded</th>
<th>Lckg.</th>
<th>Light</th>
<th>Knyg.</th>
<th>Refer To</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (Exposed Contacts)</td>
<td>001</td>
<td>Formed Contact Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UMB 2.03</td>
</tr>
<tr>
<td>002</td>
<td>PC Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>003</td>
<td>Wire Hole Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>004</td>
<td>Formed Contact Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Female (Exposed Contacts)</td>
<td>001</td>
<td>Formed Contact Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>002</td>
<td>PC Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>003</td>
<td>Wire Hole Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>004</td>
<td>Formed Contact Terminal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Material:
Diallyl Phthalate, glass-filled, flame resistant, per MIL-M-14-F, Type SDGF

Insulation Resistance:
5,000 megohms, minimum

Dielectric Withstanding Voltage:
Sea Level: 1,000 Volts rms

Insertion/Withdrawal Force:
2 to 8 ounces per contact

Ordering Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Profile</th>
<th>Description</th>
<th>Part No.</th>
<th>H Dim.</th>
<th>Board Thk.</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td></td>
<td>Coined Tail Formed 90° after installing</td>
<td>60 8223 0223</td>
<td>.080</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>000</td>
<td></td>
<td>Coined Tail Formed 90° after installing (Max. 0236 Dia.)</td>
<td>60 8223 0243</td>
<td>.063</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>722</td>
<td></td>
<td>Wire Hole Tail (022 x .050)</td>
<td>60 8200 1613</td>
<td>.162</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>721</td>
<td></td>
<td>P.C. Tail (020 Sq.)</td>
<td>60 8200 1623</td>
<td>.228</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>736</td>
<td></td>
<td>P.C. Tail (020 Sq.)</td>
<td>60 8200 1633</td>
<td>.259</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>737</td>
<td></td>
<td>P.C. Tail (020 Sq.)</td>
<td>60 8200 1643</td>
<td>.541</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>753</td>
<td></td>
<td>P.C. Tail (020 Sq.)</td>
<td>60 8200 1653</td>
<td>.103</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>771</td>
<td></td>
<td>P.C. Tail (020 Sq.)</td>
<td>60 8200 1663</td>
<td>.462</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>000</td>
<td></td>
<td>Crimp Contact (Reel 3000) 22-30 AWG</td>
<td>60 8216 0233</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>000</td>
<td></td>
<td>Crimp Contact Loose 22-30 AWG</td>
<td>60 8216 0313</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>491</td>
<td></td>
<td>Wrappable/Removable Contact (305 Sq.)</td>
<td>60 8216 0413</td>
<td>.590</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Varicon®

Series 8223 – 0.100” Dual Row Square Grid

MALE INSULATORS

FEMALE INSULATORS

MOUNTING LAYOUT

Panel for Figures 2, 3, & 4

Panel for Figures 5 & 6

MOUNTING HARDWARE

(KEY TO DIAGRAMS

<table>
<thead>
<tr>
<th>No. of Contacts</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>S</th>
<th>Part #</th>
<th>Unified Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>1.1</td>
<td>2.2</td>
<td>1.4</td>
<td>1.9</td>
<td>1.27</td>
<td>1.26</td>
<td>1.252</td>
<td>1.26</td>
<td>Pg. 26</td>
<td>1.236</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>2.3</td>
<td>3.4</td>
<td>2.6</td>
<td>3.1</td>
<td>2.41</td>
<td>2.402</td>
<td>2.46</td>
<td>Pg. 26</td>
<td>2.406</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>3.5</td>
<td>4.6</td>
<td>3.8</td>
<td>4.3</td>
<td>3.68</td>
<td>3.652</td>
<td>3.66</td>
<td>Pg. 26</td>
<td>3.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>4.7</td>
<td>5.8</td>
<td>5.0</td>
<td>5.5</td>
<td>4.87</td>
<td>4.802</td>
<td>4.86</td>
<td>Pg. 26</td>
<td>4.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Item      Size  Part #       Unified Thread
55        #2    90-0502-0031-11-053
56        #2-5  90-0602-0121-11-053
58        #2-5  90-0902-0136-11-053

Item      Size  Part #       Part#
70        #2-5  60-8223-4562-11-062
71        #2-5  60-8223-4562-11-062
72        #2-5  60-8223-4662-11-062
73        #2-5  60-8223-4662-11-062

(See drawings for correct assembly of hardware. Hardware shown is supplied with each board mounted connector.)
**FEATURES**

- Contacts supplied imbedded in vinyl strips, correctly spaced and ready for insertion and staking into p.c. card
- For ½" thick p.c. cards
- Mates with Series 7000 Receptacles

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Current Rating:</th>
<th>10 amperes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Resistance:</td>
<td>6 milliohms, maximum</td>
</tr>
<tr>
<td>Contact Material and Plating:</td>
<td>Phosphor Bronze per QQ-B-750, Composition A. †Gold, 10 microinches minimum, over nickel, 30 to 100 microinches</td>
</tr>
<tr>
<td>Insertion/Withdrawal Force:</td>
<td>2 to 16 ounces per contact</td>
</tr>
</tbody>
</table>

**ORDERING CODE**

<table>
<thead>
<tr>
<th>02</th>
<th>000</th>
<th>147</th>
<th>5</th>
<th>200</th>
<th>000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts on Plastic Strips</td>
<td>Number of Contacts on Strip</td>
<td>Type of Contact</td>
<td>Contact Pattern</td>
<td>Contact Spacing</td>
<td>Variation</td>
</tr>
<tr>
<td>.100 = 120 max</td>
<td>.125 = 90 max</td>
<td>.150 = 80 max</td>
<td>.200 = 60 max</td>
<td>100 = .100</td>
<td>Plating</td>
</tr>
<tr>
<td>125 = .125</td>
<td>150 = .150</td>
<td>200 = .200</td>
<td>Marking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact Strip Patterns**

- Pattern 1
- Pattern 2
- Pattern 3
- Pattern 5
- Pattern 6
- Pattern 9
<table>
<thead>
<tr>
<th>Contact Code</th>
<th>Loose Contact Part Number</th>
<th>For Card Thickness</th>
<th>Silhouette</th>
<th>Available Pattern</th>
<th>Application</th>
<th>Fig #</th>
</tr>
</thead>
<tbody>
<tr>
<td>013</td>
<td>60 5001 1913 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Module Card Contact</td>
<td></td>
</tr>
<tr>
<td>014</td>
<td>60 5001 1923 00 339</td>
<td>3/32&quot; (0.09375)</td>
<td></td>
<td></td>
<td>Module Card Contact</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>60 7001 0413 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Lower Tier w/Wire Hole</td>
<td>5, 6</td>
</tr>
<tr>
<td>137</td>
<td>60 7001 0513 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Upper Tier w/Wire Hole</td>
<td>5, 6</td>
</tr>
<tr>
<td>147</td>
<td>60 7001 1513 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Lower Tier</td>
<td></td>
</tr>
<tr>
<td>323</td>
<td>60 8240 0213 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Base Card Contact</td>
<td>5, 6</td>
</tr>
<tr>
<td>327</td>
<td>60 8240 0243 00 339</td>
<td>3/32&quot; (0.09375)</td>
<td></td>
<td></td>
<td>Base Card Contact</td>
<td>5, 6</td>
</tr>
<tr>
<td>332</td>
<td>60 8240 0313 00 339</td>
<td>1/16&quot; (0.0625)</td>
<td></td>
<td></td>
<td>Module Card Contact</td>
<td></td>
</tr>
</tbody>
</table>
Varicon®
Contact Strip
Perpendicular Cards – Pad Spacing .200"

Tandem Cards – Pad Spacings .125"/.150"/.200"

所有孔径为 .052 +.000
孔位应在 .006" 半径的真位置内

### TECHNICAL SPECIFICATIONS

**Contacts:**
- Contacts on .125", .150" or .200" Centers
- Contacts supplied on disposable plastic carrier strips.
  - .200" spacing with a max. of 60 contacts.
  - .150" spacing with a max. of 80 contacts.
  - .125" spacing with a max. of 90 contacts.

**Contact Resistance:**
0.006 Ohm, maximum

**Contact Material and Plating:**
- Phosphor Bronze
  - Gold, 50 microinches minimum,
  - over nickel, 50 to 100 microinches

**Insertion/Withdrawal Force:**
- 2 to 16 ounces per contact

**Current Rating:**
- 8 amperes

---

Figure 3

Figure 4
Varicon®
Contact Strip
Perpendicular Cards – Pad Spacing .100" (In-Line or Offset)

TECHNICAL SPECIFICATIONS

Contacts:
Supplied on disposable plastic carrier strips

Current Rating:
5 amperes

Contact Resistance:
0.006 Ohm, maximum

Contact Material and Plating:
Phosphor Bronze
†Gold, 50 microinches minimum, over nickel, 50 to 100 microinches

Insertion/Withdrawal Force:
2 to 16 ounces per contact

Parallel Cards – .213" Between Cards
**Varicon®**

Contact Strip – Technical
Parallel Cards – .438" Between Cards

**TECHNICAL SPECIFICATIONS**

Contacts:
Supplied on disposable plastic carrier strips

Current Rating:
8 amperes

Contact Resistance:
0.006 Ohm, maximum

Contact Material and Plating:
Phosphor Bronze
Gold, 50 microinches minimum, over nickel, 50 to 100 microinches

Insertion/Withdrawal Force:
2 to 16 ounces per contact

- Contacts – Contacts are available on four spacings; each spacing has a corresponding maximum number of contacts. Fewer contacts can be ordered.
  - .200" spacing with a max. of 60 contacts per strip
  - .150" spacing with a max. of 80 contacts per strip
  - .125" spacing with a max. of 90 contacts per strip

**FEATURES**

- For ¼" and ⅜" thick p.c. cards
- Contacts supplied imbedded in vinyl strips, correctly spaced and ready for insertion and staking into p.c. card
- Complete set of plug contacts supplied on two disposable plastic strips, one for upper-tier contacts, the other for lower-tier contacts
- Efficient and economical installation equipment includes staking and strip removal tools for all applications

**Perpendicular Cards – Pad Spacing .100"**

**Hole Layout**

All hole diameters are .052 +.000 
Hole locations to be within .006" diameter of true location

**Figure 1**

**Figure 2**

Contact “X”

<table>
<thead>
<tr>
<th>Contact</th>
<th>&quot;X&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>114</td>
<td>.060</td>
</tr>
<tr>
<td>122</td>
<td>.250</td>
</tr>
</tbody>
</table>

Contact "X"
World Class Connections

Connector Short Form

DIN41612 / EN60603-2 Connectors

FFC/FPC Connectors

Memory Card Components
### PASSIVES

**Capacitors**
- Multilayer Ceramic
- Tantalum
- Microwave
- Glass
- Film
- Power Film
- Power Ceramic
- Ceramic Disc
- Trimmer
- BestCap™

**Resistors**
- Arrays

**Timing Devices**
- Resonators
- Oscillators
- Crystals

**Filters**
- EMI
- SAW
- Dielectric

**Thin Film**
- Inductors
- Fuses
- Capacitors
- Couplers
- Baluns
- Filters

**Integrated Passive Components**
- Low Inductance Chip Arrays
- Capacitor Arrays
- Dual Resonance Chips
- Custom IPCs

**Voltage Suppressors, Varistors and Thermistors**

**Acoustical Piezos**

### CONNECTORS

**2mm Hard-Metric for CompactPCI®**

**Automotive Connectors**

**Board to Board Connectors – SMT and Through-Hole**

**Card Edge**

**Compression**

**Custom Designed Connectors**

**Customized Backpanel, Racking and Harnessing Services**

**DIN 41612 Connectors**

**FFC/FPC Connectors**

**Insulation Displacement Connectors**

**I/O Connectors**

**Memory Card Connectors**
- CF, PCMCIA, SD, MMC
- MOBO™, I/O, Board to Board and Battery Connectors

**Press-fit Connectors**

**Varicon®**

**Wire to Board, Crimp or IDC**

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<table>
<thead>
<tr>
<th>AMERICAS</th>
<th>EUROPE</th>
<th>ASIA-PACIFIC</th>
<th>ASIA-KED (KYOCERA Electronic Devices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVX Greenville, SC Tel: 864-967-2150</td>
<td>AVX Limited, England Tel: +44-1276-697000</td>
<td>AVX/Kyocera (S) Pte Ltd., Singapore Tel: +65-6286-7555</td>
<td></td>
</tr>
<tr>
<td>AVX Northwest, WA Tel: 360-699-8746</td>
<td>AVX S.A.S., France Tel: +33-1-69-18-46-00</td>
<td>AVX/Kyocera, Asia, Ltd., Hong Kong Tel: +852-2363-3303</td>
<td></td>
</tr>
<tr>
<td>AVX Midwest, IN Tel: 317-861-9184</td>
<td>AVX GmbH, Germany Tel: +49-0811-95949-0</td>
<td>AVX/Kyocera Yuhan Hoesa, South Korea Tel: +82-2785-6504</td>
<td></td>
</tr>
<tr>
<td>AVX Mid/Pacific, CA Tel: 408-988-4900</td>
<td>AVX SRL, Italy Tel: +39-02-614-571</td>
<td>AVX/Kyocera HK Ltd., Taiwan Tel: +886-2-2656-0258</td>
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