The AirBorn verSI (versatile connectors with high-speed signal integrity) open-pin field product line is designed to meet the requirements for high-speed/high-density/signal integrity 100 Ω and 85 Ω differential serial bus applications while still delivering the reliability customers have come to expect from AirBorn.
VSM – Vertical (Male)

Pitch: 1.27 mm

VSM signal-integrity connectors are used in vertical, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

Contact Rating: 2 amperes maximum

Operating Temperature: -55° C to 125° C

Min Contact Wipe: 1.27 mm (0.050”)

Contact Normal Force: 35–40 grams

Max Recommended Voltage: 200 V, RMS, 60 Hz

Insulation Resistance: 5,000 megaohms minimum @ 500 VDC

Durability: 2500 connector mating cycles

Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)

Shock: 50 g (EIA-364-27, condition E)

MATERIALS and FINISHES

Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)

Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 µIN min

Glass-filled liquid crystal polymer (LCP) per ASTM D5138

Frey Eng. Co. insulating compound CF3003-80

Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2

Frey Eng. Co. insulating compound CF3003-80

Solder Paste: Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

Blank – No options

Guide pin

Guide pin

Guide pin

Guide pin

Guide pin

Surface Mount Termination only available on 4 Row vertical connectors.

No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications. RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

FEATURES

versi board-mount connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

SI DATA – Simulated (Connectors Only)

| Diff. Insertion Loss | -0.25 dB @ 5 GHz | -3dB @ 16 GHz |
| Diff. Return Loss | -20 dB @ 5 GHz | -6 dB @ 14 GHz |
| Diff. Impedance | 100 ohm ±10% @ 50 ps rise time |
| Diff. Skew | < 2 psec |

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VSM-PNB-1R
VSF – Vertical (Female)

Pitch: 1.27 mm

VSF signal-integrity connectors are used in vertical, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

Sample Part Number Format: VSF-04-10-50-02

**FEATURES**

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

**MATERIALS and FINISHES**

- **Socket Contacts:** BeCu per ASTM B194
- **Contact Finish:** Localized gold finish per ASTM B488 over nickel per BeCu per ASTM B194
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- **Potting Compound:** Frey Eng. Co. insulating compound CF3003-80
- **Hardware (except washers):** Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2
- **Washers:** Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- **Solder Paste:** Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

**PERFORMANCE**

- **Contact Rating:** 2 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Min. Contact Wipe:** 1.27 mm
- **Contact Normal Force:** 35–40 grams
- **Max Recommended Voltage:** 200 V, RMS, 60 Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 2500 connector mating cycles
- **Sinusoidal Vibration:** 20 g (EIA-364-28, condition IV)
- **Shock:** 50 g (EIA-364-27, condition E)

**NOTES**

- Connector potting is standard.
- 1 Used for PC board thickness up to 0.125"
- 2 Used for PC board thickness 0.125" up to 0.250"
- 3 Surface Mount Termination only available on 4 Row vertical connectors.
- 4 No hardware supplied with blank hardware option connectors.
- AirBorn can manufacture other configurations to your exact specifications.
- RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

**CONTACT CUSTOMER SERVICE**

CALL 512-863-5585 x6400

**VSF-PNB-10**
Single-ended, differential pair, power, and ground are all available in one connector design. The open-pin field design allows for flexibility in termination schemes.

**FEATURES**

- Low mating force / high-reliability contact system with continuous performance.
- Ruggedized versions of the standard VSM male connectors.
- VRM signal-integrity connectors are used in extreme environmental conditions while maintaining high reliability.

**DIMENSIONS**

- **Pitch**: 1.27 mm
- **Board Spacing**: 0.80 mm to 25 mm

**MATERIALS and FINISHES**

- Shell: Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Finish: Electroless nickel per SAE AMS 2404, Class 3; 500 µm min
- Pin Contacts: Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)
- Contact Finish: Localized gold finish per ASTM B486 over nickel per ASTM B699 Type I, 50 µm min
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Hardware (except washers): Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- Washers: Stainless steel per NASM55333 (ASTM A240), passivated per NASM55333 (SAE AMS-2700)
- Solder Paste: Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag lead-free, solder dipped

**PERFORMANCE**

- Contact Rating: 2 amperes maximum
- Operating Temperature: -55°C to 125°C
- Operating Life: 2500 connector mating cycles
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Flashover Voltage: 200 V, RMS, 60 Hz
- Contact Normal Force: 35–40 grams
- Contact Resistance: 1.27 mm (Male)
- Shock: 50 g (EIA-564-27, condition I)
- Vibration: Sinusoidal 20 g (EIA-564-27, condition IV)
- Drop: 25 m/s²

**NOTES**

- Connector potting is standard.
- Consult factory for additional board spacing options.
- No hardware supplied with blank hardware option connectors.
- RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

**Sample Part Number Format:** VRM-04-10-50-02-G
VRF – Vertical Rugged

Pitch: 1.27 mm

VRF signal-integrity connectors are ruggedized versions of the standard VSF female connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

FEATURES

- verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes.
- Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

MATERIALS and FINISHES

- Shell: Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T651 per QQ-A-200/8
- Finish: Electroless nickel per SAE AMS-2404, Class 3; 500 µm min
- Socket Contact: BeCu per ASTM B194
- Contact Finish: Localized gold finish per ASTM B689 over nickel per ASTM B689 Type I, 50 µIN min
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- Washers: Stainless steel per NASM5333 (ASTM A240), passivated per NASM5333 (SAE AMS-2700)
- EMI Gasket (GE, G1E, NE and N1E options only): Conductive Elastomer per MIL-DTL-83528 Type D

PERFORMANCE

- Contact Rating: 2 amperes maximum
- Operating Temperature: -55°C to 125°C
- Contact Normal Force: 1.27 mm (0.050")
- Contact Normal Force: 35-40 grams
- Max Recommended Voltage: 200 V, RMS, 60 Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 2,500 connector mating cycles
- Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
- Shock: 50 g (EIA-364-27, condition E)

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Sample Part Number Format: VRF-04-10-50-04-J

NOTEs

- Connector potting is standard.

No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

SEE OUR WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
VSRAM – Right Angle (Male)

Pitch: 1.27 mm

VSRAM signal-integrity connectors are used in right angle, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

FEATURES

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

NOTES

Connector potting is standard.

‡ No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Complaint; certificate of conformance available upon request with each shipment

Sample Part Number Format: VSRAM-04-10-50-02-G

MATERIALS and FINISHES

Pin Contacts (Mating Face): Phos bronze per ASTM B103
Pin Contacts (Termination): BeCu per ASTM B769 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)
Contact Finish (Mating Face): Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689 Type I, 50 µIN min
Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 µIN min over nickel per ASTM B689 Type I, 50 µIN min (Press Fit) or Localized Gold per ASTM B489 Type I, Code A or C, 10-25 µIN over nickel per ASTM B689 Type I, 50 µIN min (PIH or PTH)
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co. insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel per NASM53333 (ASTM A240), passivated per NASM53333 (SAE AMS-2700)

PERFORMANCE

Contact Rating: 2 amperes maximum
Operating Temperature: -55° C to 125° C
Min. Contact Wipe: 0.5 mm (0.050”)
Contact Normal Force: 35-40 grams
Max Recommended Voltage: 200 V RMS, 60 Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 2,500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)

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(512) 863-5585
Guide hardware is optional.

Single-ended, differential pair, power, and ground are all available in one connector design.

Four points of contact. The open-pin field design allows for flexibility in termination schemes.

**FEATURES**

- VerSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes.
- Single-ended, differential pair, power, and ground are all available in one connector design.
- Guide hardware is optional.

**NOTES**

1. Shells & hardware supplied uninstalled.
2. Connectors come pre-assembled with shells & hardware.
3. AirBorn can manufacture other configurations to your exact specifications.
4. RoHS Complaint; certificate of conformance available upon request with each shipment.

**MATERIALS and FINISHES**

<table>
<thead>
<tr>
<th>Series</th>
<th>Materials and Finishes</th>
</tr>
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<tbody>
<tr>
<td>VRRAM-PNB-1L</td>
<td>Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8</td>
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<tr>
<td>VRRAM-PNB-2L</td>
<td>Electroless nickel per SAE AMS-2404, Class 3, 500 µm min</td>
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<td>VRRAM-PNB-3L</td>
<td>Phos bronze per ASTM B103</td>
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<tr>
<td>VRRAM-PNB-4L</td>
<td>BeCu per ASTM B768 (press-fit contact) or brass alloy per ASTM B36</td>
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<tr>
<td>VRRAM-PNB-5L</td>
<td>Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2</td>
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<td>VRRAM-PNB-6L</td>
<td>Glass-filled liquid crystal polymer (LCP) per ASTM D5138</td>
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<tr>
<td>VRRAM-PNB-7L</td>
<td>Frey Eng. Co. insulating compound CF3003-80</td>
</tr>
<tr>
<td>VRRAM-PNB-8L</td>
<td>Stainless steel per NASM53333 (ASTM A240), passivated per NASM53333 (SAE-AMS-2700)</td>
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</table>

**PERFORMANCE**

- Contact Rating: 2 amperes maximum
- Operating Temperature: -55°C to 125°C
- Min. Contact Wipe: 1.27 mm (0.050")
- Contact Normal Force: 35–40 grams
- Max Recommended Voltage: 200 V, RMS, 60 Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 2500 connector mating cycles
- Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
- Shock: 50 g (EIA-364-27, condition E)

**SI DATA – Simulated (Connectors Only)**

1. Diff. Insertion Loss: -0.25 dB @ 5 GHz
2. Diff. Return Loss: -20 dB @ 5 GHz
3. Diff. Impedance: 100 ohm ±10% @ 50 ps rise time
4. Diff. Skew: < 2 psec

**Sample Part Number Format:**

VRRAM-04-10-50-02-N

**dimensions**

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**Series**

- VRRAM-PNB-1L
- VRRAM-PNB-2L
- VRRAM-PNB-3L
- VRRAM-PNB-4L
- VRRAM-PNB-5L
- VRRAM-PNB-6L
- VRRAM-PNB-7L
- VRRAM-PNB-8L

**Options**

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<tr>
<th>Option</th>
<th>Description</th>
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<td>N</td>
<td>Fixed jacknut/EMI gasket</td>
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<td>Standard/EMI gasket</td>
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<tr>
<td>GE</td>
<td>Guide pin/EMI gasket</td>
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<tr>
<td>G</td>
<td>Guide pin</td>
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<tr>
<td>J</td>
<td>Turning jacknut</td>
</tr>
<tr>
<td>L</td>
<td>Locking screw</td>
</tr>
<tr>
<td>E</td>
<td>Standard/EMI gasket</td>
</tr>
</tbody>
</table>

**Contact Rating:** 2 amperes maximum

**Dimensions:**

- Pitch: 1.27 mm
- Rows: 04 – 4 Rows
- Columns: 10 – 10 Columns
- Contact Plating: 50 – 50 µ ″ Au

**Dimensions (Columns):**

- A
- B
- C
- D
- E
- F

**Dimensions (Rows):**

- 04 – 4 Rows
- 05 – 5 Rows
- 06 – 6 Rows
- 08 – 8 Rows
- 10 – 10 Rows

**Dimensions (Contact Plating):**

- 50 – 50 Columns
- 40 – 40 Columns
- 30 – 30 Columns
- 20 – 20 Columns
- 10 – 10 Columns

**Dimensions (Contact Normal Force):**

- 35–40 grams

**Dimensions (Min Contact Wipe):**

- 1.27 mm (0.050")

**Dimensions (Max Recommended Voltage):**

- 200 V, RMS, 60 Hz

**Dimensions (Insulation Resistance):**

- 5,000 megohms minimum @ 500 VDC

**Dimensions (Durability):**

- 2500 connector mating cycles

**Dimensions (Sinusoidal Vibration):**

- 20 g (EIA-364-28, condition IV)

**Dimensions (Shock):**

- 50 g (EIA-364-27, condition E)
VSRAF – Right Angle (Female)

Pitch: 1.27 mm

VSRAF signal-integrity connectors are used in right angle, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

FEATURES

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

MATERIALS and FINISHES

Socket Contact (Mating Face): BeCu per ASTM B194
Socket Contact (Termination): Brass alloy per ASTM B36 (PIH or PTH) or BeCu per ASTM B768 (press-fit contact)
Contact Finish (Mating Face): Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689 Type I, 50 µm min
Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 µm min over nickel per ASTM B689 Type I, 50 µm min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 µm over nickel per ASTM B689 Type I, 50 µm min (PIH or PTH)
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co. insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700).

NOTES

Connector potting is standard.

‡ No hardware supplied with blank hardware option connectors.
AirBorn can manufacture other configurations to your exact specifications.
RoHS Complaint; certificate of conformance upon request with each shipment.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
Guide hardware is optional.

Single-ended, differential pair, power, and ground are all available in one connector design. The open-pin field design allows for flexibility in termination schemes.

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

FEATURES

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

MATERIALS and FINISHES

Shell: Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
Finish: Electroless nickel per AMS-2404, Class 3; 500 µIN min
Socket Contact (Mating Face): B488, Type 1, Code A or C, 10-25 µIN min over nickel per ASTM B488, Type I, 50 µIN min
Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 µIN min over nickel per ASTM B689, Type I, 50 µIN min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 µIN over nickel per ASTM B689 Type I, 50 µIN min (Press Fit) or localized gold per ASTM B488, Type II, Code C, 50 µIN min over nickel per ASTM B689, Type I, 50 µIN min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 µIN over nickel per ASTM B689 Type I, 50 µIN min (Press Fit)
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, A528/A562M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel & passivated per NASM35333
EMI Gasket (GE and NE options only): Conductive Elastomer per MIL-DTL-83528 Type D

Si DATA – Simulated (Connectors Only)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Insertion Loss</td>
<td>-0.25 dB @ 5 GHz</td>
<td>-3dB @ 16 GHz</td>
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<td>2</td>
<td>Diff. Return Loss</td>
<td>-20 dB @ 5 GHz</td>
<td>-6 dB @ 14 GHz</td>
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<td>Diff. Skew</td>
<td>&lt; 2 psec</td>
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</tbody>
</table>

NOTES

1 Shells & hardware supplied uninstalled.
2 Connectors come pre-assembled with shells & hardware.
AirBorn can manufacture other configurations to your exact specifications.
RoHS Complaint; certificate of conformance available upon request with each shipment.

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VRRAF-PNB-1L
VRD – Differential Pair Twinax Cable Assembly

Pitch: 1.27 mm

VRD cable assemblies are designed for twinax applications. These cable assemblies come in standard lengths but custom lengths and configurations can also be requested. Ruggedized hoods are standard.

Sample Part Number Format: VRD-04-10-05-03-060

* Other cable lengths and configurations available.
AirBorn can manufacture other configurations to your exact specifications.

FEATURES
VerSI connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

MATERIALS and FINISHES
Shell: Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T651 per QQ-A-200/8
Socket Contact: Electroless nickel per SAE AMS-C-26074, Grade B, Class 3
Contact Finish: Phos bronze per ASTM B103
Finishes: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Pin Contacts: Localized gold finish per ASTM B488 over nickel per ASTM B699 Type I
Contact Normal Force: .35–40 grams
Wire: .30 AWG*; .19/42 silver-plated copper
Passivated per SAE AMS-2700
Screws: Stainless steel per ASTM A562/A562M or ASTM A320; passivated per SAE AMS-2700

NOTES
* Other cable lengths and configurations available.
AirBorn can manufacture other configurations to your exact specifications.

SI DATA – Simulated (Connectors Only)

1. Diff. Insertion Loss -0.25 dB @ 5 GHz -3dB @ 16 GHz
2. Diff. Return Loss -20 dB @ 5 GHz -6 dB @ 14 GHz
3. Diff. Impedance 100 ohm ±10% @ 50 ps rise time
4. Diff. Skew < 2 psec

PERFORMANCE
Contact Rating: 2 amperes maximum
Operating Temperature: -55°C to 125°C
Min. Contact Wipe: 1.27 mm (0.050")
Contact Normal Force: .35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 2500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)
VRW – Discrete Wire Cable Assembly with Internal Solder Connection

Pitch: 1.27 mm
VRW cable assemblies come in standard wire lengths but custom wire and length options are available. Ruggedized shells are standard.

Sample Part Number Format: VRW-04-10-50-03J-01J-A030

- **SERIES**: Discrete Wire Cable Assembly 1.27 mm
- **ROWS**: 04 – 4 Rows
- **COLUMNS**: 10 – 10 Columns
- **CONTACT PLATING**: 30 – 50 μ" Au
- **CONNECTOR 1**: 01G – Male with guide pins
- **CONNECTOR 2**: 000 – Flying Leads
- **WIRE CODE**: XXXX

**NOTES**

All VRW part numbers are non-RoHS-compliant.

Wire colors per M83513 are ten (10) solid colors, repeating.

Per M83513, corrosion has been experienced on connectors that are pre-wired with 22759/33 and stored in sealed environments. Caution should be exercised when using this wire.

**FEATURES**

VerSI connectors feature low mating force/high reliability contact system with four points of contact. The open pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

**MATERIALS and FINISHES**

- **Shell**: Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8
- **Finish**: Electroless nickel per SAE AMS-2404, Class 3; 500 μ", min.
- **Socket Contact**: BeCu per ASTM B194
- **Pin Contacts**: Phos bronze per ASTM B103
- **Contact Finish**: Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
- **Molded Insulators**: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- **Embedment**: Frey Eng. Co. insulating compound CF3003-80 and L-II-49 or equiv.
- **Hardware**: Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700

**WIRE CODES**

<table>
<thead>
<tr>
<th>COLOR (per 83513) and GAGE</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEMA HP3X8RB (24 AWG) – Multicolored</td>
<td>A  M FT</td>
</tr>
<tr>
<td>White</td>
<td>010  0.16  0.328</td>
</tr>
<tr>
<td>B  0.20  0.456</td>
<td></td>
</tr>
<tr>
<td>C  0.30  0.694</td>
<td></td>
</tr>
<tr>
<td>D  0.40  1.312</td>
<td></td>
</tr>
<tr>
<td>E  0.50  1.640</td>
<td></td>
</tr>
<tr>
<td>F  0.60  1.969</td>
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<tr>
<td>G  0.70  2.297</td>
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</tr>
<tr>
<td>H  0.80  2.625</td>
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<tr>
<td>I  0.90  2.953</td>
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</tr>
<tr>
<td>J  1.00  3.281</td>
<td></td>
</tr>
<tr>
<td>L  1.50  4.502</td>
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</tr>
<tr>
<td>M  2.00  6.562</td>
<td></td>
</tr>
<tr>
<td>N  3.00  9.843</td>
<td></td>
</tr>
</tbody>
</table>

*AirBorn can manufacture special configurations to your exact specifications.*
VRW DIMENSIONS

Male (Connector 1)

(Dimensional drawings shown with turning hardware)

(Connector with guide pin hardware)

Female (Connector 2)

(Dimensional drawings shown with turning hardware)

(Connector with guide socket hardware)

<table>
<thead>
<tr>
<th>Columns</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Rows</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1.222</td>
<td>0.813</td>
<td>0.450</td>
<td>4</td>
<td>0.470</td>
</tr>
<tr>
<td>20</td>
<td>1.722</td>
<td>1.313</td>
<td>0.950</td>
<td>5</td>
<td>0.520</td>
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<tr>
<td>30</td>
<td>2.222</td>
<td>1.813</td>
<td>1.450</td>
<td>6</td>
<td>0.570</td>
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<tr>
<td>40</td>
<td>2.722</td>
<td>2.313</td>
<td>1.950</td>
<td>8</td>
<td>0.670</td>
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<tr>
<td>50</td>
<td>3.222</td>
<td>2.813</td>
<td>2.450</td>
<td>10</td>
<td>0.770</td>
</tr>
</tbody>
</table>

Tolerances (unless otherwise specified): ±0.010"
## VRW PINOUTS

### 1-TO-1 WIRE CHART FOR JUMPER ASSEMBLIES

(Table illustrates connections for a 4-row, 10-column connector)

<table>
<thead>
<tr>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 — BLK</td>
<td>A1 — BLK</td>
<td>B1 — BLK</td>
<td>B1 — BLK</td>
<td>C1 — BLK</td>
<td>C1 — BLK</td>
<td>D1 — BLK</td>
<td>D1 — BLK</td>
</tr>
<tr>
<td>A3 — RED</td>
<td>A3 — RED</td>
<td>B3 — RED</td>
<td>B3 — RED</td>
<td>C3 — RED</td>
<td>C3 — RED</td>
<td>D3 — RED</td>
<td>D3 — RED</td>
</tr>
<tr>
<td>A4 — ORN</td>
<td>A4 — ORN</td>
<td>B4 — ORN</td>
<td>B4 — ORN</td>
<td>C4 — ORN</td>
<td>C4 — ORN</td>
<td>D4 — ORN</td>
<td>D4 — ORN</td>
</tr>
<tr>
<td>A5 — YEL</td>
<td>A5 — YEL</td>
<td>B5 — YEL</td>
<td>B5 — YEL</td>
<td>C5 — YEL</td>
<td>C5 — YEL</td>
<td>D5 — YEL</td>
<td>D5 — YEL</td>
</tr>
<tr>
<td>A6 — GRN</td>
<td>A6 — GRN</td>
<td>B6 — GRN</td>
<td>B6 — GRN</td>
<td>C6 — GRN</td>
<td>C6 — GRN</td>
<td>D6 — GRN</td>
<td>D6 — GRN</td>
</tr>
<tr>
<td>A7 — BLU</td>
<td>A7 — BLU</td>
<td>B7 — BLU</td>
<td>B7 — BLU</td>
<td>C7 — BLU</td>
<td>C7 — BLU</td>
<td>D7 — BLU</td>
<td>D7 — BLU</td>
</tr>
<tr>
<td>A8 — VIO</td>
<td>A8 — VIO</td>
<td>B8 — VIO</td>
<td>B8 — VIO</td>
<td>C8 — VIO</td>
<td>C8 — VIO</td>
<td>D8 — VIO</td>
<td>D8 — VIO</td>
</tr>
<tr>
<td>A9 — GRY</td>
<td>A9 — GRY</td>
<td>B9 — GRY</td>
<td>B9 — GRY</td>
<td>C9 — GRY</td>
<td>C9 — GRY</td>
<td>D9 — GRY</td>
<td>D9 — GRY</td>
</tr>
<tr>
<td>A10 — WHT</td>
<td>A10 — WHT</td>
<td>B10 — WHT</td>
<td>B10 — WHT</td>
<td>C10 — WHT</td>
<td>C10 — WHT</td>
<td>D10 — WHT</td>
<td>D10 — WHT</td>
</tr>
</tbody>
</table>

Wire colors per M83513 are ten (10) solid colors, repeating when there are more than 10 columns.

### Sample part number:
VRW-04-10-30-01G-03G-A030
VSX – Flexible Circuit Jumper Assembly

Pitch: 1.27 mm

VSX flexible circuit jumpers come in standard lengths and wiring configurations, but custom specifications can be requested.

FEATURES

versi connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

MATERIALS and FINISHES

Socket Contact: BeCu per ASTM B194
Pin Contacts: Phos bronze per ASTM B103 or per BeCu ASTM B768 (press-fit contact)
Contact Finish: Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Hardware: Stainless steel per ASTM A582/A582M or ASTM A320; passivated per ASTM A967, SAE AMS-QQ-P-35

PERFORMANCE

Contact Rating: 2 amperes maximum
Operating Temperature: -55°C to 125°C
Min. Contact Wipe: 1.27 mm (0.050”)
Contact Normal Force: 35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 2,500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)

Sample Part Number Format: VSX-04-10-50-01G-03A-030

SI DATA – Simulated (Connectors Only)

1 Diff. Insertion Loss 22 GHz @ -2 db
2 Diff. Return Loss 7.5 GHz @ -20 db 17.5 GHz @ -10 db
3 Diff. Impedance 100 ohm ±10%
4 Diff. Skew < 2 psec

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