The AirBorn microSI product line is designed to meet requirements for high-speed/signal integrity applications while still delivering the reliability customers have come to expect from AirBorn. MicroSI delivers flexibility by design, offering vertical board-mount, right angle board-mount, and cable I/O configurations supporting 1X, 4X, and 8X 100 Ω and 85 Ω differential serial buses. Its balanced design limits skew within pairs. The MIL-DTL-83513 (Micro-D) qualified contact system and metal shells ensure ruggedness and durability.
MMSI – Cable I/O (Male)

MMSI cable connectors are used in cable applications where signal integrity is desired. The connector interface controls the polarization of the twinax contact style. Comes with a variety of wiring and hardware options. All cable connectors are available in custom lengths.

**Refer to “Keying Hardware Options” on page 61**

Captivated hardware is factory-installed and non-removable.

Left or right polarization is determined by looking at the male interface with the LONG SIDE

**Option not RoHS-compliant**

1. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length is 6 inches.

2. If overall braid or Halar® is specified, the minimum length is 6 inches.

High-Reliability Contact

MIL-DTL-83513

Sample Part Number Format: MMSI-01L-14B0-006-2810

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

**NOTES**

1. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 3 inches. If overall braid or Halar® is specified, the minimum length is 6 inches.

2. Option not RoHS-compliant

3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.

4. Captivated hardware is factory-installed and non-removable.

5. Factory-installed and non-removable.

6. Refer to “Keying Hardware Options” on page 61.

**MATERIALS and FINISHES**

- **Socket Contact:** Brass
- **Pin Contacts:** BeCu alloy strip, Gold, Sn/Pb
- **Contact Finish:** Gold plate, 50 µ" minimum
- **Shells:** Aluminum alloy 6061-T6
- **Shell Finishes:** Electroless nickel or gold
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP)
- **Embedment:** Frey Eng. Co. compound CF3003-80 & L-II-49
- **Hardware:** Corrosion-resistant steel
- **Interfacial Seal Gaskets:** Fluorocarbon
- **EMI Gaskets:** Corrosion-resistant steel

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Maximum Working Voltage:** 200V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Duty Cycle:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces minimum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

**NOTE:** AirBorn can manufacture special configurations to your exact specifications.

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Maximum Working Voltage:** 200V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Duty Cycle:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

**NOTE:** Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
MMSI DIMENSIONS (PLUG)

ISOMETRIC VIEW
MMSI-01L-1450-006-2810
FOR REFERENCE ONLY

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
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<td>1x</td>
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<td>1.377</td>
<td>.840</td>
<td>1.053</td>
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<td>3.106</td>
<td>2.847</td>
<td>2.310</td>
<td>2.523</td>
</tr>
</tbody>
</table>

1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MMSI DIMENSIONS with HALAR® SLEEVE (PLUG)

1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
**Refer to “Keying Hardware Options” on page 61.**

**Captivated hardware is factory-installed and non-removable.**

Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side. Captivated hardware is factory-installed and non-removable.

**NOTES**

1. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 3 inches. If overall braid or Halar® is specified the minimum length is 6 inches.
2. All microSI females have fluorosilicone interfacial seals installed.
3. All microSI females have fluorosilicone interfacial seals installed.
4. Option not RoHS-compliant

---

**SAMPLE PART NUMBER FORMAT: MMSI-01L-24B0-006-2810**

**MMSI**

- **SERIES**
  - Cable I/O (Female): 1.78 mm

- **STYLE**
  - 21 – Female, Twinax: 100Q 24 AWG
  - 24 – Female, Twinax: 100Q 30 AWG

- **SIZE & INTERFACE POLARIZATION**
  - 01L – 1X Left (23 pins, 4 DP +9SB)
  - 04R – 4X Right (41 pins, 10 DP +9SB)
  - 04L – 4X Left (41 pins, 10 DP +9SB)
  - 08R – 8X Right (65 pins, 18 DP +9SB)
  - 08L – 8X Left (65 pins, 18 DP +9SB)

- **OVERALL****
  - 0 – None
  - 1 – Silver-plated braid
  - 2 – Tin-plated braid
  - 3 – Silver-plated braid, Halar® sleeving
  - 4 – Tin-plated braid, Halar® sleeving
  - 5 – Halar® sleeving (no braid)

- **SIDEWAND WIRES**
  - (color code per MIL-STD-681)
    - A – 22759/11-24
    - B – 22759/11-26
    - C – 22759/11-28
    - D – 22759/33-24
    - E – 22759/33-26
    - F – 22759/33-28
    - G – 22759/33-30
    - H – NEMA HP3-EXBBB 24 AWG
    - J – NEMA HP3-EXBBB 26 AWG
    - K – NEMA HP3-EXBBB 28 AWG
    - L – NEMA HP3-EXBBB 30 AWG

**MATERIALS and FINISHES**

- **Socket Contact:** Brass, BeCu alloy strip
- **Pin Contacts:** Gold plate, 50 µ” minimum
- **Shells:** Aluminum alloy 6061-T6
- **Shell Finishes:** Electroless nickel or gold
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP)
- **Interfacial Seal Gaskets:** Fluorosilicone
- **EMI Gaskets:** Corrosion-resistant steel
- **BODY PLATING, INTERNAL SOLDER**
  - 1 – Electroless nickel, SAC305
  - 2 – Electroless nickel, Sn/Pb
  - 5 – Gold, SAC305
  - 6 – Gold, Sn/Pb

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Maximum Working Voltage:** 200V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10.0 ounces maximum/contact

**NOTE:** AirBorn can manufacture special configurations to your exact specifications.

**CONTACT CUSTOMER SERVICE**

**CALL 512-863-5585**

---

**WIRE LENGTH**

- Inches, 3 digits
- Ex. 018 = 18 inches

**OVERALL****

- 0 – None
- 1 – Silver-plated braid
- 2 – Tin-plated braid
- 3 – Silver-plated braid, Halar® sleeving
- 4 – Tin-plated braid, Halar® sleeving
- 5 – Halar® sleeving (no braid)

**NOTES**

- AirBorn can manufacture special configurations to your exact specifications.

**PRODUCT TESTING**

- Complete testing is complete

---

**SIGNAL INTEGRITY PERFORMANCE (Connectors Only)**

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<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diff. Impedance, filtered</td>
<td>79 ps (20-80%)</td>
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<tr>
<td>Diff. Insertion Loss</td>
<td>10 GHz @ -3 dB</td>
</tr>
<tr>
<td>Diff. Return Loss</td>
<td>7.5 GHz @ -10 dB</td>
</tr>
<tr>
<td>Intra-Pair</td>
<td></td>
</tr>
</tbody>
</table>
**MMSI DIMENSIONS (RECEPTACLE)**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<td>3.106</td>
<td>2.847</td>
<td>2.310</td>
<td>2.523</td>
</tr>
</tbody>
</table>

1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
**MJSI – Cable Assembly**

MJSI cable assemblies are used in jumper applications where signal integrity is desired. They have a wide range of styles, wiring options, and hardware options. All cable assemblies are available in custom lengths.

**NOTES**

1. All microSI females have fluorosilicone interfacial seals installed.
2. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 3 inches. Overall braid or Halar® is specified the minimum length is 6 inches.
3. Hardware is the same for both connectors unless otherwise noted.
4. Option not RoHS-compliant
5. Left or right polarization is determined by looking at the male interface with the LONG angled side. Sidebands are on the non-angled side.
6. Captivated hardware is factory-installed and non-removable.

---

**Sample Part Number Format:** MJSI-01L-24B0-018-2810

**MATERIALS and FINISHES**

- **Socket Contact:** Brass
- **Pin Contacts:** BeCu alloy strip
- **Contact Finish:** Gold plate, 50 µm minimum
- **Shells:** Aluminum alloy 6061-T6
- **Shell Finishes:** Electrotouch nickel or Gold Milled Insulators: Glass-filled liquid crystal polymer (LCP)
- **Embedment:** Frey Eng. Co. compound CP3003-60 & L-III-49 Corrosion-resistant steel
- **Interfacial Seal Gaskets:** Fluorosilicone
- **EMI Gaskets:** Corrosion-resistant steel

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Maximum Working Voltage:** 200V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Dutability:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

**NOTE:** Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MJSI DIMENSIONS with HALAR® SLEEVE

1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MJSI MATING FACE ORIENTATION

MATING FACE ORIENTATION

PLUG TO RECEPTACLE

POS #1

POS #1

RECEPTACLE TO RECEPTACLE

LEFT POLARIZATION SHOWN
(SEE PART NUMBER BUILDUP NOTES FOR DETAILS)
**MKSI – Right Angle (Male)**

MKSI right angle board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

---

**Sample Part Number Format:** MKSI-01R-1000-175-2810

<table>
<thead>
<tr>
<th>SERIES</th>
<th>SIZE &amp; INTERFACE POLARIZATION*</th>
<th>STYLE</th>
<th>PIN TERMINATION (50 μ&quot; Au Contact)</th>
<th>BODY PLATING</th>
<th>HARDWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Angle (Male)</td>
<td>1.78 mm</td>
<td>1000</td>
<td>2 – Electroless nickel</td>
<td>6 – Gold</td>
<td>620 – Fixed jacknut</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>175 – Sn/Pb alloy</td>
<td></td>
<td>810 – Turning jackscrews, captivated**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>178 – SAC305</td>
<td></td>
<td>NXX – Keying jacknuts***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>JXX – Keying jackscrews***</td>
</tr>
</tbody>
</table>

---

**NOTES**

- Option not RoHS-compliant.
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
- Captivated hardware is factory-installed and non-removable.
- Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

---

**MATERIALS and FINISHES**

- Socket Contact: Brass
- Pin Contacts: BeCu alloy strip
- Contact Finish: Gold plate, 50 μ" minimum
- Shells: Aluminum alloy 6061-T6
- Shell Finishes: Electroless nickel or gold
- Molded Insulators: Glass-filled liquid crystal polymer (LCP)
- Embedment: Frey Eng. Co. compound QF3003-80 & Li-L49
- Hardware: Corrosion-resistant steel
- Interfacial Seal Gaskets: Fluorosilicone
- EMI Gaskets: Corrosion-resistant steel

**PERFORMANCE**

- Contact Rating: 3 amperes maximum
- Operating Temperature: -55° C to 125° C
- Maximum Working Voltage: 200V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 3 amperes maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

**NOTE:** Performance values are estimates at this time. Actual values will be determined when final product testing is complete.

---

**CONTACT CUSTOMER SERVICE**

CALL 512-863-5585 x6400

**www.airborn.com**

(512) 863-5585
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Right Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

4X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

MKSIM-PCB-5
ESG6056-R0-P8
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MKSI – Right Angle (Female)

MKSI right angle board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

NOTES

1. All microSI females have fluorosilicone interfacial seals installed.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
4. Captivated hardware is factory-installed and non-removable.
5. Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

MATERIALS and FINISHES

Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 μ" minimum
Sheets: Aluminum alloy 6061-T6
Shell Finishes: Electroless nickel or gold
Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49
Hardware: Corrosion-resistant steel
Interfacial Seal Gaskets: Fluorosilicone
EMI Gaskets: Corrosion-resistant steel

PERFORMANCE

Contact Rating: 3 amperes maximum
Operating Temperature: -55°C to 125°C
Maximum Working Voltage: 200V, RMS, 60Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6-0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.

www.airborn.com
(512) 863-5585

MKSIF-PNB-1D
MKSI DIMENSIONS (RECEPTACLE)

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

1X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

1X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

4X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

4X Sample with Right Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

8X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

8X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
**MLSI – Vertical (Male)**

MLSI vertical board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

---

**General Dimensions**

---

**Sample Part Number Format: MLSI-08L-1000-378-2810**

**SERIES**
- Vertical (Male)
  - 1.78 mm

**SIZE & INTERFACE**

- **POLARIZATION**
  - 01L – 1X Left (23 pins, 4 DP +9SB)
  - 01R – 1X Right (23 pins, 4 DP +9SB)
  - 04L – 4X Left (41 pins, 10 DP +9SB)
  - 04R – 4X Right (41 pins, 10 DP +9SB)
  - 08L – 8X Left (65 pins, 18 DP +9SB)
  - 08R – 8X Right (65 pins, 18 DP +9SB)

**STYLE**
- 1000 – Male

**PIN TERMINATION**
- (50 μ" Au Contact)
  - 375 – Sn/Pb alloy
  - 378 – SAC305

**BODY PLATING**
- 2 – Electroless nickel
- 6 – Gold

**HARDWARE**
- 620 – Fixed jacknut
- 810 – Turning jackscrews, captivated**
- NXX – Keying jacknuts***
- JXX – Keying jackscrews***

---

**Notes**
- Option not RoHS-compliant
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side
- Captivated hardware is factory-installed and non-removable
- Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

---

**Material and Finishes**
- Brass
- BeCu alloy strip
- Gold plate, 50 μ" minimum
- Aluminum alloy 6061-T6
- Electroless nickel or gold
- Glass-filled liquid crystal polymer (LCP)
- Frey Eng. Co. compound CF3003-80 & L-II-49
- Corrosion-resistant steel
- Fluorosilicone
- Corrosion-resistant steel

---

**Performance**
- Contact Rating: 3 amperes maximum
- Operating Temperature: 50°C to 120°C
- Maximum Working Voltage: 200V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6.0 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

---

**Signal Integrity Performance (Connectors Only)**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Impedance, filtered to 79 ps (20-80%)</td>
<td>100 ohm</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Diff. Insertion Loss</td>
<td>10 GHz @ -3 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diff. Return Loss</td>
<td>7.5 GHz @ -10 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Intra-Pair</td>
<td>&lt; 2 ps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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*Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.*

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**www.airborn.com**

(512) 863-5585  

Contact Customer Service  
CALL 512-863-5585  
x6400

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*AirBorn can manufacture special configurations to your exact specifications.*
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

<table>
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MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
1X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

4X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Right Polarization

**NOTE:** ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
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5. See "Keying Hardware Options" on page 61
MLSI – Vertical (Female)

MLSI vertical board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

Sample Part Number Format: MLSI-04L-2000-478-2810

NOTES
1. All microSI females have fluorosilicone interfacial seals installed.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
4. Captivated hardware is factory-installed and non-removable.
5. Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

MATERIALS and FINISHES
Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 μ" minimum
Shells: Aluminum alloy 6061-T6
Shell Finish: Electroless nickel or gold
Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Embedment: Frey Eng. Co. compound GF3003-80 & Li-II-49
Hardware: Corrosion-resistant steel
Interfacial Seal Gaskets: Fluorosilicone
EMI Gaskets: Corrosion-resistant steel

NOTE: AirBorn can manufacture special configurations to your exact specifications.

PERFORMANCE
Contact Rating: 3 amperes maximum
Operating Temperature: -55° C to 125° C
Maximum Working Voltage: 200V, RMS, 60Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
MLSI DIMENSIONS (RECEPTACLE)

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
1X Sample with Left Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MLSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

1X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
**MLSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)**

**4X Sample with Left Polarization**

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

**NOTE:** All pads must be free of solder mask.
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
1. A LEFT plug mates with a LEFT receptacle.
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MLSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

8X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
INTERFACE PINOUT, LEFT POLARIZATION

Plug

Receptacle

Polarization Mating:
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
**INTERFACE PINOUT, RIGHT POLARIZATION**

**Plug**

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<tr>
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**Receptacle**

- G = Ground
- P = Positive
- N = Negative
- SB = Sideband

**Polarization Mating:**
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
POLARIZED KEYING HARDWARE OPTIONS (PLUG)

Select the appropriate two-digit number and include as the last two digits of the hardware code in the part number. Keying hardware is factory-installed and non-removable.
### Polarized Keying Hardware Options (Receptacle)

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</table>

Select the appropriate two-digit number and include as the last two digits of the hardware code in the part number. Keying hardware is factory-installed and non-removable.