Miniature high performance twist pin connectors

Micro-D & Nano-D, Rectangular & Circular
# Rectangular Micro-D Connectors

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## MIL-DTL-83513
*Micro-D QPL - CAGE CODE: OKOJ2*

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</tr>
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<td></td>
</tr>
</tbody>
</table>

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**PIGTAIL CONNECTOR**

**METAL SHELL**
- High performance metal connector and PTFE wire.
- Environmentally sealed.
- Operating temperature: 150°C or 200°C.
- 9 to 100 contacts.

**IDENTIFICATION CODE**

- **SERIES**
  - MDA: Micro-D AXON® standard series.

- **CONNECTOR TYPE**
  - 1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
  - 2: Nickel aluminium shell + potting 150°C.
  - 3: Nickel aluminium shell + potting 200°C.
  - S: Passivated stainless steel shell + potting 200°C.

- **NUMBER OF CONTACTS**
  - 9, 15, 21, 31, 37, 51, 69, 100.
  - See pages 26 & 27 for contact arrangements.

- **CONNECTOR GENDER**
  - P: Male (pin contacts).
  - S: Female (socket contacts).

- **WIRE TYPE**
  - For colour codes F, L, W
    - 1: E 2607, AWG 26, 7 strands, 600V.
    - 2: E 2619, AWG 26, 19 strands, 600V.
    - 3: E 2807, AWG 26, 7 strands, 600V.
    - 4: E 3007, AWG 30, 7 strands, 600V.
    - 5: E 2407, AWG 24, 7 strands, 600V.
    - 6: E 2419, AWG 24, 19 strands, 600V.
    - 7: E 22759/11, AWG26, 19 strands, 600V.
    - 8: E2607, AWG 24, 7 strands, 600V.
    - 9: E 2619, AWG 24, 19 strands, 600V.
    - 10: E 2807, AWG 24, 7 strands, 600V.
  - For colour code V only
    - 3: M22759/11, AWG 26, 19 strands, 600V.
    - 5: AWG 26 gold plated.
    - 6: AWG 24 gold plated.
    - 7: E2607, AWG 24, 7 strands, 600V.
  - Solid uninsulated wires
    - 6: E 2807, AWG 28, 7 strands, 600V.
    - 8: E 3007, AWG 30, 7 strands, 600V.
    - 9: E 2607, AWG 30, 7 strands, 600V.
    - 10: E 2619, AWG 30, 19 strands, 600V.
  - For colour code F only
    - 1: E 2607, AWG 26, 7 strands, 600V.
    - 2: E 2619, AWG 26, 19 strands, 600V.
    - 3: E 2807, AWG 26, 7 strands, 600V.
    - 4: E 3007, AWG 30, 7 strands, 600V.
    - 5: E 2407, AWG 24, 7 strands, 600V.
    - 6: E 2419, AWG 24, 19 strands, 600V.
    - 7: E 22759/11, AWG26, 19 strands, 600V.
    - 8: E2607, AWG 24, 7 strands, 600V.
  - See page 29 for wire types.

- **COLOUR CODE**
  - F: All yellow.
  - L: All white.
  - W: 10 colour repeat.
  - V: MIL-STD-681 striped (only for wire types 3 and F).
  - BLANK: If wire type is G or T.

- **WIRE LENGTH (in cm)**
  - Attention! Wire length in centimetres - (1cm = 10mm = 0.394”).

- **TOLERANCE**
  - L ≤ 10: ±0.5
  - 10 < L ≤ 39.4: ±0.3
  - L > 39.4: ±0.6

- **HARDWARE**
  - B: No hardware.
  - C: U-clips with low profile hex socket head jackscrews (removable).
  - D: U-clips with low profile slot head jackscrews (removable).
  - M: Low profile hex socket head jackscrews (removable).
  - N: Low profile slot head jackscrews (removable).
  - S: Low profile slot head jackscrews (removable).
  - T: High profile slot head jackscrews (removable).
  - P: Jackposts (removable).
  - Px (x: 1 to 5): Panel mount jackposts.
  - K: High profile slot head jackscrews (non removable).
  - L: Low profile hex socket head jackscrews (non removable).
  - F: Float mount, front panel mount (non removable).
  - FR: Float mount, rear panel mount (non removable).
  - See pages 190 to 200 for hardware description.
DIMENSIONS
Dimensions are in millimetres (inches).

MALE connector

FEMALE connector

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
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<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>A ± 0.25 (±0.01)</td>
<td>9.19</td>
<td>10.16</td>
</tr>
<tr>
<td>B max.</td>
<td>8.48</td>
<td>10.16</td>
</tr>
<tr>
<td>C -0.46/+0.25 (-0.018/+0.010)</td>
<td>14.35</td>
<td>.565</td>
</tr>
<tr>
<td>D ± 0.13 (±0.005)</td>
<td>7.57</td>
<td>2.98</td>
</tr>
<tr>
<td>E ± 0.25 (±0.010)</td>
<td>4.69</td>
<td>2.98</td>
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MATERIAL & FINISH

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<td>SHELL</td>
<td>3 A max.</td>
<td>3 A max.</td>
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<tr>
<td>CONTACT RESISTANCE</td>
<td>8 mΩ max.</td>
<td>8 mΩ max.</td>
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<td>INSULATION RESISTANCE</td>
<td>5000 MΩ min.</td>
<td>5000 MΩ min.</td>
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<td>DIELECTRIC WITHSTANDING VOLTAGE</td>
<td>Sea level: 600 V</td>
<td>Sea level: 600 V</td>
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<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>170 g max. (6 oz)</td>
<td>170 g max. (6 oz)</td>
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<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>14 g min. (0.5 oz)</td>
<td>14 g min. (0.5 oz)</td>
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<tr>
<td>CONTACT RETENTION</td>
<td>2.26 kg (5 lbs)</td>
<td>2.26 kg (5 lbs)</td>
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<tr>
<td>DURABILITY</td>
<td>500 mating cycles min.</td>
<td>500 mating cycles min.</td>
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<tr>
<td>VIBRATION</td>
<td>20g’s – No discontinuity &gt; 1 μs</td>
<td>20g’s – No discontinuity &gt; 1 μs</td>
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<tr>
<td>SHOCK</td>
<td>50g’s – No discontinuity &gt; 1 μs</td>
<td>50g’s – No discontinuity &gt; 1 μs</td>
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PIGTAIL CONNECTOR

LOW PROFILE METAL SHELL
- High performance metal connector and PTFE wire.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

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<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>L51</th>
<th>S</th>
<th>4</th>
<th>L</th>
<th>050</th>
<th>B</th>
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<td>MDA: Micro-D AXON® standard series.</td>
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CONNECTOR TYPE

1: Cadmium aluminium shell
2: Black zinc nickel aluminium shell + potting 150°C
3: Nickel aluminium shell + potting 200°C
S: Passivated stainless steel shell + potting 200°C

NUMBER OF CONTACTS

- L09
- L15
- L21
- L25
- L31
- L37
- L51

See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER

P: Male (pin contacts).
S: Female (socket contacts).

WIRE TYPE

For colour codes F, L, W only
1: E 2607, AWG 26, 7 strands, 600V.
4: E 2619, AWG 26, 19 strands, 600V.
6: E 2807, AWG 28, 7 strands, 600V.
8: M22759/11, AWG 26, 19 strands, 600V.
A: E 2407, AWG 24, 7 strands, 600V.
C: E 2419, AWG 24, 19 strands, 600V.
E: M22759/33, AWG 26, 19 strands, 600V.

For colour code V only
3: E 2607, AWG 26, 7 strands, 600V.
5: E 2619, AWG 26, 19 strands, 600V.
6: E 2807, AWG 28, 7 strands, 600V.
F: E 2607, AWG 26, 7 strands, 600V.
T: E 2607, AWG 26, 7 strands, 600V.

See page 29 for wire types.

COLOUR CODE

F: All yellow.
L: All white.
W: 10 colour repeat.
V: MIL-STD-681 striped (only for wire types 3 and F).
See page 30 for colour code.

WIRE LENGTH (in cm)

Attention! Wire length in centimetres - (1cm = 0.394inch).

<table>
<thead>
<tr>
<th>L (in cm)</th>
<th>0 ≤ L ≤ 10</th>
<th>10 &lt; L ≤ 39.40</th>
<th>L &gt; 39.40</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLERANCE</td>
<td>-0 / +0.5</td>
<td>-0 / +3</td>
<td>-0 / +5</td>
</tr>
</tbody>
</table>

HARDWARE

B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
P: Jackposts (removable).
Px (c: 1 to 5): Panel mount jackposts.
K: High profile slot head jackscrews (non-removable).
L: Low profile hex socket head jackscrews (non-removable).
F: Float mount, front panel mount (non-removable).
FR: Float mount, rear panel mount (non-removable).

See pages 190 to 200 for hardware description.

METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

### Dimensions
Dimensions are in millimetres (inches).

#### Male connector
![Male connector diagram]

#### Female connector
![Female connector diagram]

### Table of Dimensions

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>± 0.25 (±.010)</td>
<td>B max.</td>
<td>-0.46/+0.25 (±.018/+.010)</td>
<td>D ± 0.13 (±.005)</td>
<td>E ± 0.25 (±.010)</td>
<td>F max.</td>
<td>G max.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 P / 9 S</td>
<td>19.76</td>
<td>7.47</td>
<td>9.65</td>
<td>10.11</td>
<td>14.35</td>
<td>5.28</td>
<td>3.40</td>
<td>5.53</td>
<td>4.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>.778</td>
<td>.294</td>
<td>.380</td>
<td>.398</td>
<td>.565</td>
<td>.208</td>
<td>.134</td>
<td>.218</td>
<td>.173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 P / 21 S</td>
<td>23.57</td>
<td>11.26</td>
<td>13.46</td>
<td>13.92</td>
<td>18.16</td>
<td>5.28</td>
<td>3.40</td>
<td>5.53</td>
<td>4.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 P / 25 S</td>
<td>.228</td>
<td>.444</td>
<td>.530</td>
<td>.548</td>
<td>.716</td>
<td>.208</td>
<td>.134</td>
<td>.218</td>
<td>.173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 P / 31 S</td>
<td>27.38</td>
<td>15.09</td>
<td>17.27</td>
<td>17.73</td>
<td>21.97</td>
<td>5.28</td>
<td>3.40</td>
<td>5.53</td>
<td>4.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>29.92</td>
<td>17.63</td>
<td>19.81</td>
<td>20.27</td>
<td>24.51</td>
<td>5.28</td>
<td>3.40</td>
<td>5.53</td>
<td>4.39</td>
<td></td>
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</tr>
<tr>
<td>51 P / 51 S</td>
<td>1.178</td>
<td>.694</td>
<td>.780</td>
<td>.798</td>
<td>.965</td>
<td>.208</td>
<td>.134</td>
<td>.218</td>
<td>.173</td>
<td></td>
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</tr>
</tbody>
</table>

### Summary of Characteristics

#### Electrical & Mechanical Performance
- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 Vdc
- **Dielectric Withstanding Voltage**: Sea level: 600 Vdc, Altitude 21 km (70,000 ft): 150 Vdc
- **Contact Engaging Force**: 170 g max. (6 oz)
- **Contact Separating Force**: 14 g min. (0.5 oz)
- **Contact Retention**: 2.26 kg (5 lbs)
- **Durability**: 500 mating cycles min.
- **Vibration**: 20g’s - No discontinuity > 1μs
- **Shock**: 55g’s - No discontinuity > 1μs

#### Material & Finish
- **Shell**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **Moulded Insulator**: Liquid Crystal Polymer (LCP)
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Hardware**: 300 series stainless steel, passivated

---

**Axon Cable**
PIGTAIL CONNECTOR

PLASTIC SHELL
- Low cost plastic connector.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA</td>
<td>Micro-D AXON® standard series.</td>
</tr>
</tbody>
</table>

CONNECTOR TYPE

P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF CONTACTS

09, 15, 21, 25, 31, 37, 51.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER

P: Male (pin contacts).
S: Female (socket contacts).

WIRE TYPE

For colour codes F, L, W
1: E2607, AWS26, 7 strands, 600V.
4: E2619, AWS26, 19 strands, 600V.
6: E2807, AWS28, 7 strands, 600V.
8: E2807, AWS30, 7 strands, 600V.
A: E2407, AWS24, 7 strands, 600V.
B: E2419, AWS24, 19 strands, 600V.
C: M22759/33, AWS26, 19 strands, 600V.

For colour code V only
3: M22759/11, AWS26, 19 strands, 600V.
F: E2607, AWS26, 7 strands, 600V.
Solid uninsulated wires
G: AWS25 gold plated.
T: AWS25 tin plated.
See page 29 for wire types.

COLOUR CODE

F: All yellow.
L: All white.
W: 10 colour repeat.
V: MIL-STD-681 striped (only for wire types 3 and F).
See page 30 for colour code.

WIRE LENGTH (in cm)

Attention! Wire length in centimetres - (1cm = 0.394”).

<table>
<thead>
<tr>
<th>L in cm (inches)</th>
<th>TOLERANCE in cm (inches)</th>
<th>HARDWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L ≤ 10</td>
<td>-0 / +0.5</td>
<td>B: No hardware.</td>
</tr>
<tr>
<td>10 &lt; L ≤ 3.940</td>
<td>-0 / +0.200</td>
<td>C: U-clips with low profile hex socket head jackscrews (removable).</td>
</tr>
<tr>
<td>3.940 &lt; L ≤ 39.40</td>
<td>-0 / +3</td>
<td>D: U-clips with low profile slot head jackscrews (removable).</td>
</tr>
<tr>
<td>L &gt; 39.40</td>
<td>-0 / +5</td>
<td>M: Low profile hex socket head jackscrews (removable).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L in cm (inches)</th>
<th>TOLERANCE in cm (inches)</th>
<th>HARDWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L ≤ 10</td>
<td>-0 / +0.5</td>
<td>P: Jackposts (removable).</td>
</tr>
<tr>
<td>10 &lt; L ≤ 100</td>
<td>-0 / +0.200</td>
<td>Px (x: 1 to 5): Panel mount jackscrews.</td>
</tr>
<tr>
<td>L &gt; 100</td>
<td>-0 / +3</td>
<td>K: High profile slot head jackscrews (non removable).</td>
</tr>
</tbody>
</table>

See pages 190 to 200 for hardware description.
**Rectangular Micro-D Connectors**

**Dimensions**
Dimensions are in millimetres (inches).

**Male Connector**

**Female Connector**

**Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>A ± 0.25 (±.010)</th>
<th>B max.</th>
<th>C -0.46/+0.25 (-.018/+0.010)</th>
<th>D ± 0.13 (±.005)</th>
<th>E ± 0.25 (±.010)</th>
<th>F max.</th>
<th>G max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 P / 21 S</td>
<td>27.38/ 1.078</td>
<td>15.03/ .592</td>
<td>17.27/ .680</td>
<td>17.73/ .698</td>
<td>21.97/ .865</td>
<td>5.28/ .208</td>
<td>3.40/ .134</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.54/ 1.478</td>
<td>25.19/ .992</td>
<td>27.43/ 1.080</td>
<td>27.89/ 1.098</td>
<td>32.13/ 1.265</td>
<td>5.28/ .208</td>
<td>3.40/ .134</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>36.27/ 1.428</td>
<td>23.92/ .942</td>
<td>26.16/ 1.030</td>
<td>26.62/ 1.048</td>
<td>30.86/ 1.215</td>
<td>6.35/ .250</td>
<td>4.50/ .177</td>
</tr>
</tbody>
</table>

**Summary of Characteristics**

**Electrical & Mechanical Performance**

- **Current Rating**: 3 A max.
- **Contact Retention**: 2.26 kg (5 lbs)
- **Contact Retaining Force**: 170 g max. (6 oz)
- **Contact Engaging Force**: 100 N (22 lb)
- **Contact Separating Force**: 14 g min. (0.5 oz)
- **Engaging Force**: 170 g max. (6 oz)
- **Insulation Resistance**: 500 MΩ min. @ 500 V dc
- **Dielectric Withstanding Voltage**: Sea level: 600 V dc
- **Altitude 21 km (70,000 ft): 150 V ac
- **DIELECTRIC WITHSTANDING VOLTAGE**: Altitude 21 km (70,000 ft): 150 V ac
- **DIELECTRIC WITHSTANDING VOLTAGE**: Altitude 21 km (70,000 ft): 150 V ac
- **Vibration**: 20 g’s – No discontinuity > 1 µs
- **Shock**: 50 g’s – No discontinuity > 1 µs

**Material & Finish**

- **Moulded Shell**: Liquid Crystal Polymer (LCP)
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper Alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Hardware**: 300 series stainless steel, passivated

See page 24 for more information.
SOLDER CUP CONNECTOR

METAL SHELL
- High performance metal connector and solder cup contacts.
- Environmentally sealed.
- Ideal for prototyping or where pigtail type connectors cannot be used.
- Operating temperature: 150°C or 200°C.
- 9 to 100 contacts.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON® standard series.

CONNECTOR TYPE
1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

SOLDER CUP

HARDWARE
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
P: Jackposts (removable).
Px (x: 1 to 5): Panel mount jackposts.
K: High profile slot head jackscrews (non removable).
L: Low profile hex socket head jackscrews (non removable).
F: Float mount, front panel mount (non removable).
FR: Float mount, rear panel mount (non removable).
See pages 190 to 200 for hardware description.
**Rectangular Micro-D Connectors**

**Dimensions**
Dimensions are in millimetres (inches).

**Male Connector**
- 2.79 (.110) MAX
- 5.06 (.200) MAX

**Female Connector**
- 2.79 (.110) MAX
- 5.06 (.200) MAX

### Dimensions Table

<table>
<thead>
<tr>
<th>A ± 0.25 (±.010)</th>
<th>B max.</th>
<th>C -0.46/+0.25 (-.018/+.010)</th>
<th>D ± 0.13 (±.005)</th>
<th>E ± 0.25 (±.010)</th>
<th>F max.</th>
<th>G max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>9 P / 9 S</td>
<td>19.69</td>
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<td>.334</td>
<td>.400</td>
<td>.991</td>
<td>14.35</td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>23.50</td>
<td>.925</td>
<td>12.29</td>
<td>14.00</td>
<td>13.72</td>
<td>18.16</td>
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<tr>
<td>21 P / 21 S</td>
<td>27.31</td>
<td>1.075</td>
<td>16.10</td>
<td>17.81</td>
<td>17.53</td>
<td>21.97</td>
</tr>
<tr>
<td>31 P / 31 S</td>
<td>33.66</td>
<td>1.325</td>
<td>22.45</td>
<td>24.16</td>
<td>23.88</td>
<td>28.32</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.47</td>
<td>1.475</td>
<td>26.26</td>
<td>27.96</td>
<td>27.69</td>
<td>32.13</td>
</tr>
<tr>
<td>51DR P / 51DR S</td>
<td>46.36</td>
<td>1.825</td>
<td>35.15</td>
<td>36.83</td>
<td>36.58</td>
<td>41.02</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>42.82</td>
<td>1.425</td>
<td>24.99</td>
<td>26.70</td>
<td>26.42</td>
<td>30.86</td>
</tr>
<tr>
<td>69 P / 69 S</td>
<td>43.82</td>
<td>1.725</td>
<td>32.61</td>
<td>34.29</td>
<td>34.04</td>
<td>38.48</td>
</tr>
<tr>
<td>100 P / 100 S</td>
<td>54.86</td>
<td>2.160</td>
<td>35.15</td>
<td>36.86</td>
<td>36.37</td>
<td>45.72</td>
</tr>
</tbody>
</table>

### Summary of Characteristics

**Electrical & Mechanical Performance**
- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 Vcc
- **Dielectric Withstanding Voltage**: Sea level: 600 Vcc
- **Altitude 21 km (70,000 ft): 150 Vcc
- **Contact Engaging Force**: 170 g max. (6 oz)
- **Contact Separating Force**: 14 g min. (0.5 oz)
- **Contact Retention**: 2.26 kg (5 lbs)
- **Durability**: 500 mating cycles min.
- **Vibration**: 20 g’s – No discontinuity > 1 µs
- **Shock**: 50 g’s – No discontinuity > 1 µs

**Material & Finish**
- **Shell**: Aluminium Alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **Moulded Insulator**: Liquid Crystal Polymer (LCP)
- **Interfacial Seal**: Fluorosilicone rubber
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper alloy, gold over nickel plating
- **Solder Cup**: Copper alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Hardware**: 300 series stainless steel, passivated

**See Page 24 for More Information**
### Rectangular Connectors

#### Solder Cup Connector

**Low Profile Metal Shell**
- High performance metal connector and solder cup contacts.
- Ideal for prototyping or when pigtail type connectors cannot be used.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

### Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>L51</th>
<th>S</th>
<th>FS</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Cadmium shell / Z: Black zinc nickel aluminium shell + potting 150°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: Nickel aluminium shell + potting 150°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3: Nickel aluminium shell + potting 200°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: Passivated stainless steel shell + potting 200°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONNECTOR GENDER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Male (pin contacts).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: Female (socket contacts).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARDWARE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: No hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: U-clips with low profile hex socket head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: U-clips with low profile slot head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M: Low profile hex socket head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N: High profile hex socket head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: Low profile slot head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: High profile slot head jackscrews (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Jackposts (removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K: High profile slot head jackscrews (non-removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L: Low profile hex socket head jackscrews (non-removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: Float mount, front panel mount (non-removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR: Float mount, rear panel mount (non-removable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See pages 190 to 200 for hardware description.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Metal Connectors are supplied with anti-static protective dust caps.

DIMENSIONS
Dimensions are in millimetres (inches).

MALE connector

FEMALE connector

<table>
<thead>
<tr>
<th></th>
<th>A ± 0.25 (±0.010)</th>
<th>B max.</th>
<th>C -0.46/+0.25 (-0.018/+0.010)</th>
<th>D ± 0.13 (±0.005)</th>
<th>E ± 0.25 (±0.010)</th>
<th>F max.</th>
<th>G max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>9 P / 9 S</td>
<td>19.76</td>
<td>7.47</td>
<td>9.65</td>
<td>10.11</td>
<td>14.35</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>23.57</td>
<td>11.26</td>
<td>13.46</td>
<td>13.92</td>
<td>18.16</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>21 P / 21 S</td>
<td>27.38</td>
<td>15.09</td>
<td>17.27</td>
<td>17.73</td>
<td>21.97</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>25 P / 25 S</td>
<td>29.92</td>
<td>17.63</td>
<td>19.81</td>
<td>20.27</td>
<td>24.51</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>31 P / 31 S</td>
<td>33.73</td>
<td>21.44</td>
<td>23.62</td>
<td>24.08</td>
<td>28.32</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.54</td>
<td>25.25</td>
<td>27.43</td>
<td>27.89</td>
<td>32.13</td>
<td>5.28</td>
<td>3.40</td>
</tr>
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<td>51 P / 51 S</td>
<td>36.27</td>
<td>23.98</td>
<td>26.16</td>
<td>26.62</td>
<td>30.86</td>
<td>6.35</td>
<td>4.50</td>
</tr>
</tbody>
</table>

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING</td>
<td>3 A max.</td>
<td></td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>8 mΩ max.</td>
<td></td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>5000 MΩ min. @ 500 Vac</td>
<td></td>
</tr>
<tr>
<td>DIELECTRIC WITHSTANDING VOLTAGE</td>
<td>Sea level: 600 Vac</td>
<td></td>
</tr>
<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>170 g max. (6 oz)</td>
<td></td>
</tr>
<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>14 g min. (0.5 oz)</td>
<td></td>
</tr>
<tr>
<td>CONTACT RETENTION</td>
<td>2.26 kg (5 lbs)</td>
<td></td>
</tr>
<tr>
<td>DURABILITY</td>
<td>500 mating cycles min.</td>
<td></td>
</tr>
<tr>
<td>VIBRATION</td>
<td>20g's - No discontinuity &gt; 1μs</td>
<td></td>
</tr>
<tr>
<td>SHOCK</td>
<td>50g's - No discontinuity &gt; 1μs</td>
<td></td>
</tr>
</tbody>
</table>

MATERIAL & FINISH

|                               | Liquid Crystal Polymer (LCP) |
| MOULDED SHELL                  | Copper and beryllium copper, gold over nickel plating |
| PIN CONTACT                    | Copper alloy, gold over nickel plating |
| SOCKET CONTACT                 | Copper alloy, gold over nickel plating |
| SOLDER CUP                     | Epoxy resin |
| ENCAPSULENT                    | 300 series stainless steel, passivated |
| HARDWARE                       |        |
RECTANGULAR CONNECTORS

SOLDER CUP CONNECTOR

PLASTIC SHELL

- Low cost plastic connector and solder cup contacts.
- Ideal for prototyping or where pigtail type connectors cannot be used.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA: Micro-D AXON® standard series.</th>
</tr>
</thead>
</table>

| CONNECTOR TYPE | P: LCP shell + potting 150°C. |
|                | L: LCP shell + potting 200°C. |

| NUMBER OF CONTACTS | 09, 15, 21, 25, 31, 37, 51. |
|                   | See pages 26 & 27 for contact arrangements. |

| CONNECTOR GENDER | P: Male (pin contacts). |
|                 | S: Female (socket contacts). |

| HARDWARE | B: No hardware. |
|          | C: U-clips with low profile hex socket head jackscrews (removable). |
|          | D: U-clips with low profile slot head jackscrews (removable). |
|          | M: Low profile hex socket head jackscrews (removable). |
|          | N: High profile hex socket head jackscrews (removable). |
|          | S: Low profile slot head jackscrews (removable). |
|          | T: High profile slot head jackscrews (removable). |
|          | P: Jackposts (removable). |
|          | Px (x: 1 to 5): Panel mount jackposts. |
|          | K: High profile slot head jackscrews (non removable). |
|          | L: Low profile hex socket head jackscrews (non removable). |
|          | F: Float mount, front panel mount (non removable). |
|          | FR: Float mount, rear panel mount (non removable). |
|          | See pages 190 to 200 for hardware description. |
**Summary of Characteristics**

**Electrical & Mechanical Performance**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>A ± 0.25 (±.010)</td>
<td>19.76</td>
<td>7.41</td>
</tr>
<tr>
<td>B max. (±.010)</td>
<td>23.57</td>
<td>11.22</td>
</tr>
<tr>
<td>-0.46/+0.25 (-0.018/+0.010)</td>
<td>17.38</td>
<td>15.03</td>
</tr>
<tr>
<td>C ± 0.13 (±.005)</td>
<td>29.92</td>
<td>17.57</td>
</tr>
<tr>
<td>D ± 0.25 (±.010)</td>
<td>33.73</td>
<td>21.38</td>
</tr>
<tr>
<td>E ± 0.25 (±.010)</td>
<td>37.54</td>
<td>25.19</td>
</tr>
<tr>
<td>F max. (±.010)</td>
<td>51.27</td>
<td>23.92</td>
</tr>
</tbody>
</table>

**Material & Finish**

- **Moulded Shell**: Liquid Crystal Polymer (LCP)
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper alloy, gold over nickel plating
- **Solder Cup**: Copper alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Hardware**: 300 series stainless steel, passivated
PCB CONNECTORS OVERVIEW

AXON’ Micro-D Printed Circuit Board connectors are designed for interconnection of PCB’s inside-the-box to external cables. AXON’ Micro-D PCB connectors are available in two layouts (0.100” pitch and 0.075” pitch) and in two configurations (vertical mount and right angle mount connector) for flexible and rigid printed circuit boards.

NOTE: typically, the PCB connector tends to be female, however male versions are equally available.

PCB CONNECTORS 0.100” PITCH

BS 0.100” Vertical mount
Available from 9 to 100 ways
Available in metal and plastic shell
PCB code: BS
Pages 98 & 100

BR 0.100” Right Angle mount
Available from 9 to 100 ways
Available in metal shell
PCB code: BR
Page 92

CBR 0.100” Condensed Right Angle mount
Available from 9 to 100 ways
Available in metal and plastic shell
PCB code: CBR
Pages 78 & 80

CBP 0.100” Condensed Right Angle mount low profile
Available from 9 to 51 ways
Available in metal and plastic shell
PCB code: CBP
Pages 86 & 88

PCB CONNECTORS 0.075” PITCH

BS 0.075” Vertical mount
Available from 9 to 100 ways
Available in metal and plastic shell
PCB code: 75SA / 75SB
Pages 116 & 118

CBR 0.075” Condensed Right Angle mount
Available from 9 to 100 ways
Available in metal shell
PCB code: 75RC
Pages 106 & 112
SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING</td>
<td>3 A max.</td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>8 mΩ max.</td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>5000 MΩ min. @ 500 Vcc</td>
</tr>
<tr>
<td>DIELECTRIC WITHSTANDING</td>
<td>Sea Level: 600 Vcc</td>
</tr>
<tr>
<td>VOLTAGE</td>
<td>Altitude: 21 km (70,000 ft): 150 Vcc</td>
</tr>
<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>170 g max. (6 oz)</td>
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<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>14 g min. (0.5 oz)</td>
</tr>
<tr>
<td>CONTACT RETENTION</td>
<td>2.26 kg (5 lbs)</td>
</tr>
<tr>
<td>DURABILITY</td>
<td>500 mating cycles min.</td>
</tr>
<tr>
<td>VIBRATION</td>
<td>20g’s – No discontinuity &gt; 1 μs</td>
</tr>
<tr>
<td>SHOCK</td>
<td>50g’s – No discontinuity &gt; 1 μs</td>
</tr>
</tbody>
</table>

**MATERIAL & FINISH**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td>Aluminium alloy 6061, 300 series stainless steel or LCP, see ordering info for plating options</td>
</tr>
<tr>
<td>MOULDED INSULATOR</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>INTERFACIAL SEAL</td>
<td>Fluorosilicone rubber (metal version)</td>
</tr>
<tr>
<td>PIN CONTACT</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>SOCKET CONTACT</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>ENCAPSULANT</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>MOULDED TRAY</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB TERMINALS</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

**VERTICAL CONNECTOR**

The 0.075" BS version has more or less the same width as the 0.100" BS version but is shorter in length.

**RIGHT ANGLE CONNECTOR**

The 0.100" CBR connector is a little wider, but substantially shorter than the 0.100" BR connector.

The 0.075" CBR connector is more or less the same length as the 0.100" CBR version, but is narrower in width in comparison to both the CBR and even the BR connectors in the 0.100" format.

Example of the 51 way connectors

The main advantage of the Micro-D PCB connectors with a pitch of 0.075 inch in comparison to the 0.1 inch version is to save space on the PCB layout.
**PCB RECTANGULAR CONNECTORS**

**CBR TYPE**

**0.100" PITCH**

**METAL SHELL**
- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

---

**IDENTIFICATION CODE**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>51</th>
<th>S</th>
<th>CBR</th>
<th>P</th>
<th>G</th>
<th>3</th>
</tr>
</thead>
</table>

**CONNECTOR TYPE**

- MDA: Micro-D AXON® standard series.

**CONNECTOR GENDER**

- P: Male (pin contacts).
- S: Female (socket contacts).

**PCB VERSION**

- CBR: 0.100" Condensed Board Right Angle.

**HARDWARE**

- B: No hardware.
- P: Jackposts.
- Px (x: 1 to 5): Panel mount jackposts.
- T: Threaded inserts installed.
- W: Jackposts and threaded inserts installed.
- Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.

**CONDUCTOR TYPE**

- G: Gold plated solid conductor AWG 25.
- T: Tin plated solid conductor AWG 24.

**TAIL LENGTH**

1. 2.80 mm (0.110")
2. 3.80 mm (0.150")
3. 4.80 mm (0.190")
4. 6.35 mm (0.250")
5. 3.25 mm (0.127")
6. 3.56 mm (0.140")
7. 4.37 mm (0.172")

Tolerance: ± 0.38 mm (0.015").
Other lengths available on request.

---

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**

### Rectangular Micro-D Connectors

#### Dimensions

Dimensions are in millimetres (inches).

#### Female Connector

![Female Connector Diagram]

#### Pigtails, Solder Cup, PCB, SAVERS & Microstrip Connectors

#### Rectangular Micro-D Connectors

#### Dimensions

Dimensions are in millimetres (inches).

### Female Connector

![Female Connector Diagram]

### 9-25 Way Connectors

![9-25 Way Connectors Diagram]

### 31-69 Way Connectors

![31-69 Way Connectors Diagram]

### 100 Way Connectors

![100 Way Connectors Diagram]

### Summary of Characteristics

#### Electrical & Mechanical Performance

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>9 P / 9 S</th>
<th>15 P / 15 S</th>
<th>21 P / 21 S</th>
<th>25 P / 25 S</th>
<th>31 P / 31 S</th>
<th>37 P / 37 S</th>
<th>51DR P / 51DR S</th>
<th>51 P / 51 S</th>
<th>69 P / 69 S</th>
<th>100 P / 100 S</th>
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</thead>
<tbody>
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<td>A max.</td>
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<td>23.75</td>
<td>27.56</td>
<td>30.10</td>
<td>33.91</td>
<td>37.72</td>
<td>46.61</td>
<td>36.45</td>
<td>44.07</td>
<td>55.11</td>
</tr>
<tr>
<td>B ± 0.13 (±0.05)</td>
<td>14.35</td>
<td>18.16</td>
<td>21.97</td>
<td>24.51</td>
<td>28.32</td>
<td>32.13</td>
<td>41.02</td>
<td>30.86</td>
<td>38.48</td>
<td>45.72</td>
</tr>
<tr>
<td>C max. Male Female</td>
<td>8.48</td>
<td>12.29</td>
<td>16.10</td>
<td>18.64</td>
<td>22.45</td>
<td>26.26</td>
<td>35.15</td>
<td>24.99</td>
<td>32.61</td>
<td>45.72</td>
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<tr>
<td>D max. Male Female</td>
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<td>14.00</td>
<td>17.81</td>
<td>20.35</td>
<td>24.16</td>
<td>27.96</td>
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<td>46.80</td>
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<td>E max.</td>
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<td>8.69</td>
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<td>12.50</td>
<td>13.34</td>
<td>13.34</td>
<td>13.34</td>
<td>16.76</td>
<td>19.05</td>
<td>25.65</td>
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<tr>
<td>G ± 0.25 (±0.10)</td>
<td>6.35</td>
<td>7.25</td>
<td>7.25</td>
<td>7.25</td>
<td>7.25</td>
<td>7.25</td>
<td>7.25</td>
<td>6.72</td>
<td>7.62</td>
<td>10.16</td>
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<tr>
<td>H ± 0.25 (±0.10)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L max.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

#### Material & Finish

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Aluminium Alloy 6061 or 300 series stainless steel, see ordering info for plating options</td>
</tr>
<tr>
<td>Moulded Insulator</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>Interfacial Seal</td>
<td>Fluorosilicone rubber</td>
</tr>
<tr>
<td>Pin Contact</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>Socket Contact</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>Encapsulant</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>Moulded Tray</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB Terminals</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>Hardware</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

### Summary

- **Female Connector**
- **9-25 Way Connectors**
- **31-69 Way Connectors**
- **100 Way Connectors**

**Dimensions**

- **Dimensions**
- **Pigtails, Solder Cup, PCB, SAVERS & Microstrip Connectors**

**Technical Specifications**

- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 Vac
- **Dielectric Withstanding Voltage**: Sea level: 600 Vac, Altitude 21 km (70,000 ft): 150 Vac
- **Contact Engaging Force**: 170 g max. (6 oz)
- **Contact Separating Force**: 14 g min. (0.5 oz)
- **Contact Retention**: 2.26 kg (5 lbs)
- **Durability**: 500 mating cycles min.
- **Vibration**: 20g’s – No discontinuity > 1 µs
- **Shock**: 50g’s – No discontinuity > 1 µs

**Contact Layout**

- **Contact Layout on PCB Pages 82 to 85**

**See Page 24 for More Information**

www.axon-cable.com

PCB RECTANGULAR CONNECTORS

CBR TYPE
0.100" PITCH

PLASTIC SHELL
- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON standard series.

CONNECTOR TYPE
P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 25, 31, 37, 51.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION
CBR: 0.100" Condensed Board Right Angle.

HARDWARE
B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE
G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

TAIL LENGTH
1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.
### DIMENSIONS
Dimensions are in millimetres (inches).

#### FEMALE connector

<table>
<thead>
<tr>
<th>9-25 way connectors</th>
</tr>
</thead>
</table>

#### 31-51 way connectors

<table>
<thead>
<tr>
<th>9-25 way connectors</th>
</tr>
</thead>
</table>

### SUMMARY OF CHARACTERISTICS

#### ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING</td>
<td>3 A max.</td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>8 mΩ max.</td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>5000 MΩ min. @ 500 Vdc</td>
</tr>
<tr>
<td>DIELECTRIC WITHSTANDING VOLTAGE</td>
<td>Sea level: 600 Vdc, Altitude 21 km (70,000 ft): 150 Vdc</td>
</tr>
<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>170 g max. (6 oz)</td>
</tr>
<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>14 g min. (0.5 oz)</td>
</tr>
<tr>
<td>CONTACT RETENTION</td>
<td>2.26 kg (5 lbs)</td>
</tr>
<tr>
<td>DURABILITY</td>
<td>500 mating cycles min.</td>
</tr>
<tr>
<td>VIBRATION</td>
<td>20g's – No discontinuity &gt; 1 μs</td>
</tr>
<tr>
<td>SHOCK</td>
<td>50g's – No discontinuity &gt; 1 μs</td>
</tr>
</tbody>
</table>

#### MATERIAL & FINISH

<table>
<thead>
<tr>
<th>Material &amp; Finish</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOULDED SHELL</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PIN CONTACT</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>SOCKET CONTACT</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>ENCAPSULANT</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>MOULDED TRAY</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB TERMINALS</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

See page 24 for more information.

See contact layout on PCB pages 82 to 85.
Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR CBR TYPE
0.100" PITCH - MALE CONNECTORS

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B
PCB LAYOUT FOR CBR TYPE
0.100" PITCH - FEMALE CONNECTORS

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B
RECTANGULAR CONNECTORS

CBP TYPE
LOW PROFILE CBR
0.100" PITCH

METAL SHELL
- Low profile condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON® standard series.

CONNECTOR TYPE
1: Cadmium shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION
CBP: 0.100" Condensed Board Right Angle, low profile.

HARDWARE
B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE
G: Gold plated solid conductor AWG 26.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

TAIL LENGTH
1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).
Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.
### DIMENSIONS
Dimensions are in millimetres (inches).

#### FEMALE connector

#### 9-25 way connectors

#### 31-51 way connectors

### SUMMARY OF CHARACTERISTICS

#### ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
<th>A ± 0.25 (±.010)</th>
<th>B ± 0.13 (±.005)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±.010)</th>
<th>H ± 0.25 (±.010)</th>
<th>L max.</th>
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</thead>
<tbody>
<tr>
<td>9 P / 9 S</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>14.35 .565</td>
<td>7.47 .294</td>
<td>9.65 .380</td>
<td>3.40 .134</td>
<td>5.53 .218</td>
<td>5.70</td>
<td>10.80</td>
<td>6.35</td>
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<td>15 P / 15 S</td>
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<td>18.16 .715</td>
<td>11.28 .594</td>
<td>13.46 .530</td>
<td>3.40 .134</td>
<td>5.53 .218</td>
<td>5.70</td>
<td>10.80</td>
<td>6.35</td>
</tr>
<tr>
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<td>15.09 .594</td>
<td>17.27 .530</td>
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<td>5.53 .218</td>
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<td>10.80</td>
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<td>5.53 .218</td>
<td>5.70</td>
<td>10.80</td>
<td>6.35</td>
</tr>
<tr>
<td>31 P / 31 S</td>
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<td></td>
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<td>5.53 .218</td>
<td>5.70</td>
<td>10.80</td>
<td>6.35</td>
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<td>37 P / 37 S</td>
<td></td>
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<tr>
<td>37.72 1.485</td>
<td>32.13 1.265</td>
<td>25.25 .994</td>
<td>27.43 1.080</td>
<td>3.40 .134</td>
<td>5.53 .218</td>
<td>5.70</td>
<td>10.80</td>
<td>6.35</td>
</tr>
<tr>
<td>51 P / 51 S</td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

#### SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vcc.
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vcc; Altitude 21 km (70,000 ft): 150 Vcc.
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz).
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz).
- **CONTACT RETENTION**: 2,26 kg (5 lbs).
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s - No discontinuity > 1µs
- **SHOCK**: 50g’s - No discontinuity > 1µs

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel; see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

---

**See page 24 for more information**
# PCB Rectangular Connectors

## CBP Type

### Low Profile CBR 0.100" Pitch

**Plastic Shell**
- Low profile condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

## Identification Code

**Series**
- **MDA**: Micro-D AXON® standard series.

**Connector Type**
- **P**: LCP shell + potting 150°C.
- **L**: LCP shell + potting 200°C.

**Number of Contacts**
- 09, 15, 21, 25, 31, 37, 51.
  - See pages 26 & 27 for contact arrangements.

**Connector Gender**
- **P**: Male (pin contacts).
- **S**: Female (socket contacts).

**PCB Version**
- **CBP**: 0.100" Condensed Board Right Angle, low profile.

**Hardware**
- **B**: No hardware.
- **P**: Jackposts.
- **Px** (x: 1 to 5): Panel mount jackposts.
- **T**: Threaded inserts installed.
- **W**: Jackposts and threaded inserts installed.
  - **Wx** (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
  - See pages 190 to 200 for hardware description.

**Conductor Type**
- **G**: Gold plated solid conductor AWG 25.
- **T**: Tin plated solid conductor AWG 24.
  - See page 29 for conductor types.

**Tail Length**
- 1: 2.80 mm (0.110”).
- 2: 3.80 mm (0.150”).
- 3: 4.80 mm (0.190”).
- 4: 6.35 mm (0.250”).
- 5: 3.25 mm (0.127”).
- 6: 3.56 mm (0.140”).
- 7: 4.37 mm (0.172”).
  - Tolerance: ± 0.38 mm (0.015”).
  - Other lengths available on request.
DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

9-25 way connectors

31-51 way connectors

SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>ELECTRICAL &amp; MECHANICAL PERFORMANCE</th>
<th>MATERIAL &amp; FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING 3 A max.</td>
<td>MOULDED SHELL Liquid Crystal Polymer (LCP)</td>
</tr>
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<td>CONTACT RESISTANCE 8 mΩ max.</td>
<td>PIN CONTACT Copper and beryllium copper, Gold over nickel plating</td>
</tr>
<tr>
<td>INSULATION RESISTANCE 5000 MΩ min. @ 500 Vdc</td>
<td>SOCKET CONTACT Copper alloy, gold over nickel plating</td>
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<td>DIELECTRIC WITHSTANDING VOLTAGE Sea level: 600 Vdc</td>
<td>CAPSULANT Epoxy resin</td>
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<td>CONTACT ENGAGING FORCE 170 g max. (6 oz)</td>
<td>MOULDED TRAY Liquid Crystal Polymer (LCP)</td>
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<td>CONTACT SEPARATING FORCE 14 g min. (0.5 oz)</td>
<td>PCB TERMINALS See ordering info for PCB terminals material</td>
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<td>CONTACT RETENTION 2.26 kg (5 lbs)</td>
<td>HARDWARE 300 series stainless steel, passivated</td>
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<td>DURABILITY 500 mating cycles min.</td>
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<td>VIBRATION 20g’s – No discontinuity &gt; 1 µs</td>
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<td>SHOCK 50g’s – No discontinuity &gt; 1 µs</td>
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</tr>
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SEE CONTACT LAYOUT ON PCB PAGES 90 & 91
PCB LAYOUT FOR CBP TYPE
0.100" PITCH - FEMALE CONNECTORS

VIEW A

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B

51 CONTACTS - VIEW B
PCB RECTANGULAR CONNECTORS

BR TYPE

0.100" PITCH

METAL SHELL
- Board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

PLEASE CONTACT US FOR CLASS P (PLASTIC) BR CONNECTORS.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON® standard series.

CONNECTOR TYPE
1: Cadmium al. shell / 2: Black zinc nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION
BR: 0.100" Board Right Angle.

HARDWARE
B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
W: Threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE
G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

TAIL LENGTH
1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.
### DIMENSIONS

Dimensions are in millimetres (inches).

**FEMALE connector**

<table>
<thead>
<tr>
<th>A max.</th>
<th>B ± 0.18 (±.007)</th>
<th>C ± 0.13 (±.005)</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±.010)</th>
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<td>36.86</td>
<td>6.88</td>
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</tbody>
</table>

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vac.
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vuc
- **CONTACT ENGAGING FORCE**: 170 g max. x number of contacts
- **CONTACT SEPARATING FORCE**: 14 g min. x number of contacts
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s = No discontinuity > 1 µs
- **SHOCK**: 50g’s = No discontinuity > 1 µs

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

SEE PAGE 24 FOR MORE INFORMATION
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR BR TYPE
0.100" PITCH - MALE CONNECTORS

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B

PCB LAYOUT FOR BR TYPE
0.100" PITCH - MALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVING & MICROSTRIP CONNECTORS

PCB LAYOUT FOR BR TYPE
0.100" PITCH - FEMALE CONNECTORS

VIEW A

9 CONTACTS - VIEW B

21 CONTACTS - VIEW B

31 CONTACTS - VIEW B

15 CONTACTS - VIEW B

25 CONTACTS - VIEW B

37 CONTACTS - VIEW B
PCB LAYOUT FOR BR TYPE
0.100" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
**PCB RECTANGULAR CONNECTORS**

**BS TYPE**

**0.100" PITCH**

**METAL SHELL**
- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

**IDENTIFICATION CODE**

**SERIES**
- MDA: Micro-D AXON® standard series.

**CONNECTOR TYPE**
- 1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
- 2: Nickel aluminium shell + potting 150°C.
- 3: Nickel aluminium shell + potting 200°C.
- S: Passivated stainless steel shell + potting 200°C.

**NUMBER OF CONTACTS**
09, 15, 21, 31, 37, 51DR, 51, 69, 100. See pages 26 & 27 for contact arrangements.

**CONNECTOR GENDER**
- P: Male (pin contacts).
- S: Female (socket contacts).

**PCB VERSION**
- BS: 0.100" Board Straight.
- B: No hardware.
- P: Jackposts.
- Px (x: 1 to 5): Panel mount jackposts.
- T: Threaded inserts installed.
- W: Jackposts and threaded inserts installed.
- Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed. See pages 190 to 200 for hardware description.

**CONDUCTOR TYPE**
- G: Gold plated solid conductor AWG 25.
- T: Tin plated solid conductor AWG 24. See page 29 for conductor types.

**TAIL LENGTH**
- 1: 2.80 mm (0.110")
- 2: 3.80 mm (0.150")
- 3: 4.80 mm (0.190")
- 4: 6.35 mm (0.250")
- 5: 3.25 mm (0.127")
- 6: 3.56 mm (0.140")
- 7: 4.37 mm (0.172")

Tolerance: ± 0.38 mm (0.015"). Other lengths available on request.

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**


www.axon-cable.com
**DIMENSIONS**

Dimensions are in millimetres (inches).

**FEMALE connector**

![Diagram of female connector]

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>A max.</th>
<th>B ± 0.18 (±.007)</th>
<th>C ± 0.13 (±.005)</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G max.</th>
<th>H max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td></td>
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</tbody>
</table>

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

**DIMENSIONS**

- 9-51 contacts: 4.20 (.165)
- 51DR & 69 contacts: 6.20 (.244)
- 100 contacts: 7.70 (.303)

**SEE CONTACT LAYOUT ON PCB PAGES 102 & 105**

**SUMMARY OF CHARACTERISTICS**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vdc
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vdc, Altitude 21 km: 150 Vdc
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s – No discontinuity > 1 µs
- **SHOCK**: 50g’s – No discontinuity > 1 µs

**SEE PAGE 24 FOR MORE INFORMATION**
### PCB Rectangular Connectors

#### BS Type

**0.100" Pitch**

**Plastic Shell**
- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

### Identification Code

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<th>51</th>
<th>S</th>
<th>BS</th>
<th>P</th>
<th>G</th>
<th>3</th>
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</thead>
</table>

#### Series
- MDA: Micro-D AXON standard series.

#### Connector Type
- **P**: LCP shell + potting 150°C.
- **L**: LCP shell + potting 200°C.

#### Number of Contacts
- 09, 15, 21, 25, 31, 37, 51.
  - See pages 26 & 27 for contact arrangements.

#### Connector Gender
- **P**: Male (pin contacts).
- **S**: Female (socket contacts).

#### PCB Version
- **BS**: 0.100" Board Straight.

#### Hardware
- **B**: No hardware.
- **P**: Jackposts.
- **Px** (x: 1 to 5): Panel mount jackposts.
- **T**: Threaded inserts installed.
- **W**: Jackposts and threaded inserts installed.
  - **Wx** (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
  - See pages 190 to 200 for hardware description.

#### Conductor Type
- **G**: Gold plated solid conductor AWG 25.
- **T**: Tin plated solid conductor AWG 24.
  - See page 29 for conductor types.

#### Tail Length
- **1**: 2.80 mm (0.110")
- **2**: 3.80 mm (0.150")
- **3**: 4.80 mm (0.190")
- **4**: 6.35 mm (0.250")
- **5**: 3.25 mm (0.127")
- **6**: 3.56 mm (0.140")
- **7**: 4.37 mm (0.172")

Tolerance: ± 0.38 mm (0.015").

Other lengths available on request.
### DIMENSIONS

Dimensions are in millimetres (inches).

**FEMALE connector**

### Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

#### DIMENSIONS

Dimensions are in millimetres (inches).

<table>
<thead>
<tr>
<th></th>
<th>A max.</th>
<th>(\pm 0.18 (\pm 0.007))</th>
<th>B</th>
<th>C (\pm 0.13 (\pm 0.005))</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G max.</th>
<th>H max.</th>
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#### SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 VAC
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 VAC
  - Altitude 21 km (70,000 ft): 150 VAC
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s – No discontinuity > 1 µs
- **SHOCK**: 50g’s – No discontinuity > 1 µs

**MATERIAL & FINISH**

- **MOULDED SHELL**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, Gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

---

SEE CONTACT LAYOUT ON PCB PAGES 102 & 105
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

Rectangular Micro-D connectors

PCB LAYOUT FOR BS TYPE
0.100" PITCH - MALE CONNECTORS

VIEW A

9 CONTACTS - VIEW A

15 CONTACTS - VIEW A

21 CONTACTS - VIEW A

25 CONTACTS - VIEW A

31 CONTACTS - VIEW A

37 CONTACTS - VIEW A
**PCB LAYOUT FOR BS TYPE**

**0.100" PITCH - MALE CONNECTORS**

---

**51 CONTACTS (DOUBLE ROW) - VIEW A**

---

**51 CONTACTS - VIEW A**

---

**69 CONTACTS - VIEW A**

---

**100 CONTACTS - VIEW A**
PCB LAYOUT FOR BS TYPE
0.100" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW A

51 CONTACTS - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A
PCB RECTANGULAR CONNECTORS

CBR TYPE

0.075" PITCH

METAL SHELL

- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

PLEASE CONTACT US FOR A PLASTIC VERSION OF 0.075" RIGHT ANGLE CONNECTOR.

IDENTIFICATION CODE

MDA 2 51 S 75RB P G 3

SERIES

MDA: Micro-D AXON standard series.

CONNECTOR TYPE

1: Cadmium shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS

09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER

P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION

75RB: 0.075" pitch condensed board right angle specific layout.
Other option available 75RC see page 112.

HARDWARE

B: No hardware.
P: Jackposts.
P(x): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
W(x): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE

G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

TAIL LENGTH

1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.
### DIMENSIONS

Dimensions are in millimetres (inches).

**FEMALE connector**

---

**9-69 way connectors**

---

**100 way connectors**

---

SEE CONTACT LAYOUT ON PCB PAGES 108 TO 111

---

### SUMMARY OF CHARACTERISTICS

#### ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
<td>3 A max.</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>8 mA max.</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>5000 MΩ min. @ 500 Vdc</td>
</tr>
<tr>
<td>Dielectric Withstanding</td>
<td>Sea Level: 600 Vdc</td>
</tr>
<tr>
<td>Voltage</td>
<td>Attitude: 21 km (70,000 ft) 150 Vdc</td>
</tr>
<tr>
<td>Contact Engaging Force</td>
<td>170 g max. (6 oz)</td>
</tr>
<tr>
<td>Contact Separating Force</td>
<td>14 g min. (0.5 oz)</td>
</tr>
<tr>
<td>Contact Retention</td>
<td>2.26 kg (5 lbs)</td>
</tr>
<tr>
<td>Durability</td>
<td>500 mating cycles min.</td>
</tr>
<tr>
<td>Vibration</td>
<td>20g’s – No discontinuity &gt; 1 μs</td>
</tr>
<tr>
<td>Shock</td>
<td>50g’s – No discontinuity &gt; 1 μs</td>
</tr>
</tbody>
</table>

#### MATERIAL & FINISH

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options</td>
</tr>
<tr>
<td>Moulded Insulator</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>Interfacial Seal</td>
<td>Fluorosilicone rubber</td>
</tr>
<tr>
<td>Pin Contact</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>Socket Contact</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>Encapsulant</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>Moulded Tray</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB Terminals</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>Hardware</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

---

SEE PAGE 24 FOR MORE INFORMATION

---

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

Rectangular Micro-D connectors

**PCB LAYOUT FOR CBR TYPE**

**0.075” PITCH - MALE CONNECTORS**

9 CONTACTS - view B

15 CONTACTS - view B

21 CONTACTS - view B

25 CONTACTS - view B

31 CONTACTS - view B

37 CONTACTS - view B
51 CONTACTS (DOUBLE ROW) - VIEW B

FRONT FACE OF THE FLANGE

69 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE

100 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE
**PCB RECTANGULAR CONNECTORS**

**CBR TYPE**

**0.075" PITCH**

**METAL SHELL BASED ON BS MIL STANDARD LAYOUT**
- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

**IDENTIFICATION CODE**

**SERIES**
MDA: Micro-D AXON® standard series.

**CONNECTOR TYPE**
1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

**NUMBER OF CONTACTS**
09, 15, 21, 25, 31, 37, 51, 69, 100. See pages 26 & 27 for contact arrangements.

**CONNECTOR GENDER**
P: Male (pin contacts).
S: Female (socket contacts).

**PCB VERSION**
75RC: 0.075" pitch condensed board right angle based on BS MIL standard layout.
Other option available 75RB see page 106.

**HARDWARE**
B: No hardware.
P: Jackposts. Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed. Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed. See pages 190 to 200 for hardware description.

**CONDUCTOR TYPE**
G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24. See page 29 for conductor types.

**TAIL LENGTH**
1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**

DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

9-51 way connectors

100 way connectors

SEE CONTACT LAYOUT ON PCB PAGES 114 TO 115

SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>MATERIAL &amp; FINISH</th>
<th>ELECTRICAL &amp; MECHANICAL PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td>Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options</td>
</tr>
<tr>
<td>MOULDED INSULATOR</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>INTERFACIAL SEAL</td>
<td>Florosilicone rubber</td>
</tr>
<tr>
<td>PIN CONTACT</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>SOCKET CONTACT</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>ENCAPSULANT</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>MOULDED TRAY</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB TERMINALS</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

SEE PAGE 24 FOR MORE INFORMATION

PCB LAYOUT FOR CBR TYPE - 0.075" PITCH
BASED ON BS MIL STANDARD LAYOUT - FEMALE CONNECTORS

CONNECTOR MATING FACE

VIEW A

VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B


www.axon-cable.com

Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAvERS & MICROSTRIP CONNECTORS

**PCB RECTANGULAR CONNECTORS**

**BS TYPE**

0.075” PITCH

**METAL SHELL**

- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

**IDENTIFICATION CODE**

**SERIES**

MDA: Micro-D AXON® standard series.

**CONNECTOR TYPE**

1: Cadmium al. shell / Z: Black zinc nickel aluminum shell + potting 150°C.
2: Nickel aluminum shell + potting 150°C.
3: Nickel aluminum shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

**NUMBER OF CONTACTS**

09, 15, 21, 25, 31, 37, 51DR*, 51, 69*, 100.
*: 51DR & 69 ways are available for 75SB PCB version only
See pages 26 & 27 for contact arrangements.

**CONNECTOR GENDER**

P: Male (pin contacts).
S: Female (socket contacts).

**PCB VERSION**

75SA: 0.075” pitch board straight MIL standard layout.
75SB: 0.075” pitch board straight specific layout.

**HARDWARE**

B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 196 to 200 for hardware description.

**CONDUCTOR TYPE**

G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

**TAIL LENGTH**

1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**
DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

![Diagram of a female connector](image)

### DIMENSIONS
- **A** (max.): 9.02 (0.355)
- **B** (± 0.13 ± 0.005): 1.45 (0.099)
- **C** (max.): 7.87 (0.310)
- **D** (max.): 7.87 (0.310)
- **E** (max.): 7.87 (0.310)
- **F** (max.): 7.87 (0.310)

#### SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**
- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 Vdc
- **Dielectric Withstanding Voltage**: Sea level: 600 Vdc, Altitude 21 km (70,000 ft): 150 Vdc
- **Contact Engaging Force**: 170 g max. (6 oz)
- **Contact Separating Force**: 14 g min. (0.5 oz)
- **Contact Retention**: 2.26 kg (5 lbs)
- **Durability**: 500 mating cycles min.
- **Vibration**: 20g’s – No discontinuity > 1 µs
- **Shock**: 50g’s – No discontinuity > 1 µs

**MATERIAL & FINISH**
- **Shell**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **Moulded Insulator**: Liquid Crystal Polymer (LCP)
- **Interfacial Seal**: Fluorosilicone rubber
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Moulded Tray**: Liquid Crystal Polymer (LCP)
- **PCB Terminals**: See ordering info for PCB terminals material
- **Hardware**: 300 series stainless steel, passivated

**See Page 24 for More Information**
PCB RECTANGULAR CONNECTORS

BS TYPE
0.075” PITCH

PLASTIC SHELL

- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>P</th>
<th>37</th>
<th>S</th>
<th>75SB</th>
<th>P</th>
<th>G</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL TYPE</td>
<td>MDA: Micro-D AXON® standard series.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>LCP shell + potting 150°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>LCP shell + potting 200°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td>09, 15, 21, 25, 31, 37, 51.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CONNECTOR GENDER</td>
<td>P: Male (pin contacts).</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>S: Female (socket contacts).</td>
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<td></td>
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</tr>
<tr>
<td>PCB VERSION</td>
<td>75SA: 0.075” pitch board straight Mil standard layout.</td>
<td></td>
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</tr>
<tr>
<td>75SB: 0.075” pitch board straight specific layout.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>HARDWARE</td>
<td>B: No hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Jackposts.</td>
<td></td>
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</tr>
<tr>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
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<tr>
<td>T: Threaded inserts installed.</td>
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<tr>
<td>W: Jackposts and threaded inserts installed.</td>
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<tr>
<td>Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
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<tr>
<td>See pages 190 to 200 for hardware description.</td>
<td></td>
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</tr>
<tr>
<td>CONDUCTOR TYPE</td>
<td>G: Gold plated solid conductor AWS 25.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>T: Tin plated solid conductor AWS 24.</td>
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<tr>
<td>See page 29 for conductor types.</td>
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<td></td>
</tr>
<tr>
<td>TAIL LENGTH</td>
<td>1: 2.80 mm (0.110”).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2: 3.80 mm (0.150”).</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>3: 4.80 mm (0.190”).</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4: 6.35 mm (0.250”).</td>
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<td></td>
</tr>
<tr>
<td>5: 3.25 mm (0.127”).</td>
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<td></td>
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<tr>
<td>6: 3.56 mm (0.140”).</td>
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<tr>
<td>7: 4.37 mm (0.172”).</td>
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<td></td>
</tr>
<tr>
<td>Tolerance: ± 0.38 mm (0.015”).</td>
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</tr>
<tr>
<td>Other lengths available on request.</td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

<table>
<thead>
<tr>
<th>A max.</th>
<th>B ± 0.13 (±0.005)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>9 P / 9 S</td>
<td>19.94</td>
<td>.785</td>
<td>14.35</td>
<td>7.41</td>
<td>9.65</td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>23.75</td>
<td>.935</td>
<td>18.16</td>
<td>11.22</td>
<td>13.46</td>
</tr>
<tr>
<td>21 P / 21 S</td>
<td>27.56</td>
<td>1.085</td>
<td>21.97</td>
<td>15.03</td>
<td>17.27</td>
</tr>
<tr>
<td>25 P / 25 S</td>
<td>30.10</td>
<td>1.185</td>
<td>24.51</td>
<td>17.57</td>
<td>19.81</td>
</tr>
<tr>
<td>31 P / 31 S</td>
<td>33.91</td>
<td>1.335</td>
<td>28.32</td>
<td>21.38</td>
<td>23.62</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.72</td>
<td>1.485</td>
<td>32.13</td>
<td>25.19</td>
<td>27.43</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>36.45</td>
<td>1.435</td>
<td>30.86</td>
<td>23.92</td>
<td>26.16</td>
</tr>
</tbody>
</table>

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE

| CURRENT RATING | 3 A max. |
| CONTACT RESISTANCE | 8 mΩ max. |
| INSULATION RESISTANCE | 5000 MΩ min. Ø 500 Vcc |
| DIELECTRIC WITHSTANDING VOLTAGE | Sea level: 600 Vac |
| Altitude 21 km (70,000 ft): 150 Vac |
| CONTACT ENGAGING FORCE | 170 g max. (6 oz) |
| CONTACT SEPARATING FORCE | 14 g min. (0.5 oz) |
| CONTACT RETENTION | 2.26 kg (5 lbs) |
| DURABILITY | 500 mating cycles min. |
| VIBRATION | 20g’s – No discontinuity > 1 µs |
| SHOCK | 50g’s – No discontinuity > 1 µs |

MATERIAL & FINISH

| MOULDED SHELL | Liquid Crystal Polymer (LCP) |
| PIN CONTACT | Copper and beryllium copper, Gold over nickel plating |
| SOCKET CONTACT | Copper alloy, gold over nickel plating |
| ENCAPSULANT | Epoxy resin |
| MOULDED TRAY | Liquid Crystal Polymer (LCP) |
| PCB TERMINALS | See ordering info for PCB terminals material |
| HARDWARE | 300 series stainless steel, passivated |

SEE CONTACT LAYOUT ON PCB PAGES 120 TO 125
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

RECTANGULAR MICRO-D CONNECTORS

VIEW A

9 CONTACTS - VIEW A

15 CONTACTS - VIEW A

21 CONTACTS - VIEW A

25 CONTACTS - VIEW A

31 CONTACTS - VIEW A

37 CONTACTS - VIEW A

51 CONTACTS - VIEW A

100 CONTACTS - VIEW A

PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SA
MIL STANDARD LAYOUT - FEMALE CONNECTORS

PCB BOARD LAYOUT

CONNECTOR MATING FACE


axon®
cable & interconnect


121

Rectangular Micro-D connectors
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB
SPECIFIC LAYOUT - MALE CONNECTORS

VIEW A
CONNECTOR MATING FACE

9 CONTACTS - view A

15 CONTACTS - view A

21 CONTACTS - view A

25 CONTACTS - view A

31 CONTACTS - view A

37 CONTACTS - view A
51 CONTACTS (DOUBLE ROW) - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A
PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB
SPECIFIC LAYOUT - FEMALE CONNECTORS

VIEW A

9 CONTACTS - VIEW A

15 CONTACTS - VIEW A

21 CONTACTS - VIEW A

25 CONTACTS - VIEW A

31 CONTACTS - VIEW A

37 CONTACTS - VIEW A
PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB
SPECIFIC LAYOUT - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW A

51 CONTACTS - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS
### Connector Savers

**One Piece Design**

**Metal or Plastic Shell**
- One piece design version \( L = 10 \text{ mm (}.394") \) between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

### Identification Code

#### Series
MDA: Micro-D AXON® standard series.

#### Connector Type
- **P**: LCP shell + potting 150°C.
- **L**: LCP shell + potting 200°C.
- **1**: Cadmium al. shell / **Z**: Black zinc nickel aluminium shell + potting 150°C.
- **2**: Nickel aluminium shell + potting 150°C.
- **3**: Nickel aluminium shell + potting 200°C.
- **S**: Passivated stainless steel shell + potting 200°C.

#### Number of Contacts
09, 15, 21, 25, 31, 37, 51DR*, 51, 69*, 100*.
*: 51DR, 69 & 100 way only available for 1, Z, 2, 3 & S connector types. See pages 26 & 27 for contact arrangements.

#### Product Type
- **CS**: Connector saver (plug to receptacle connector).

#### One Piece Design Assembly
- **1**: One piece design assembly. \( L = 10 \text{ mm (}.394") \).

#### Hardware
- **B**: No hardware.
- **P1**: Removable long jackposts on the female connector.
- **P2**: Removable long jackposts on the male connector.

### Hardware P1 Type

- **Female Connector**
- **Male Connector**

### Hardware P2 Type

- **Female Connector**
- **Male Connector**

---

**Metal Connectors are supplied with anti-static protective dust caps**


www.axon-cable.com
**CONNECTOR SAVERS**

**CONNECTOR SAVER**

**ONE PIECE DESIGN**

**LOW PROFILE METAL SHELL**
- One piece design version $L = 10$ mm (0.394") between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

**IDENTIFICATION CODE**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>L51</th>
<th>CS</th>
<th>1</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MDA: Micro-D AXON’ standard series.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1: Cadmium shell / Z: Black zinc nickel aluminium shell + potting 150°C.</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2: Nickel aluminium shell + potting 150°C.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3: Nickel aluminium shell + potting 200°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>S: Passivated stainless steel shell + potting 200°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PRODUCT TYPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS: Connector saver (plug to receptacle connector).</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>ONE PIECE DESIGN ASSEMBLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: One piece design assembly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$L = 10$ mm (0.394”).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARDWARE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: No hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1: Removable long jackposts on the female connector.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2: Removable long jackposts on the male connector.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOW PROFILE METAL SHELL**
- One piece design version $L = 10$ mm (0.394") between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**

# Connector Savers

**CONNECTOR SAVER**

**BACK TO BACK ASSEMBLY**

**METAL OR PLASTIC SHELL**
- Back to back assembly version \((L \geq 50 \text{ mm} / 1.970\)\) between flanges
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

## Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>P</th>
<th>51</th>
<th>CS</th>
<th>010</th>
<th>1</th>
<th>L</th>
<th>B</th>
<th>B</th>
</tr>
</thead>
</table>

## Connector Type

**MDA**: Micro-D AXON® standard series.

### Connector Type
- 1: Cadmium aluminium shell
- 2: Black zinc nickel aluminium shell + potting 150°C.
- P: LCP shell + Potting 150°C.
- L: LCP shell + Potting 200°C.
- 2: Nickel aluminium shell + Potting 200°C.
- 3: Nickel aluminium shell + Potting 200°C.
- S: Passivated stainless steel shell + Potting 200°C.

## Number of Contacts

- 09, 15, 21, 25, 31, 37, 51DR*, 51, 69*, 100*.
  - 51DR, 69 & 100 way only available for 1, 2, 3 & S connector types.

## Product Type

- **CS**: Connector saver (receptacle to plug connector).
- **DS**: Dual Socket connector (receptacle to receptacle connector).

### Back to Back Assembly - Length (in cm)
- Attention! Wire length in centimetres \((1 \text{ cm} = 10 \text{ mm} = 0.394\)\).

<table>
<thead>
<tr>
<th>WIRE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: E2607, AWS 26, 7 strands - 600 V.</td>
</tr>
<tr>
<td>2: E2619, AWS 26, 19 strands - 600 V.</td>
</tr>
<tr>
<td>3: E2807, AWS 26, 7 strands - 600 V.</td>
</tr>
<tr>
<td>4: E2807, AWS 28, 7 strands - 600 V.</td>
</tr>
<tr>
<td>5: E3007, AWS 30, 7 strands - 600 V.</td>
</tr>
<tr>
<td>6: E2807, AWS 28, 7 strands - 600 V.</td>
</tr>
<tr>
<td>7: E2607, AWS 24, 7 strands - 600 V.</td>
</tr>
<tr>
<td>8: E2419, AWS 24, 19 strands - 600 V.</td>
</tr>
<tr>
<td>9: M27559/33, AWS 26, 19 strands - 600 V.</td>
</tr>
</tbody>
</table>

## Wire Type

- **F**: All yellow
- **L**: All white

### Colour Code

<table>
<thead>
<tr>
<th>METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS</th>
<th>METAL OR PLASTIC SHELL</th>
</tr>
</thead>
</table>

## 1st Connector Hardware

- **B**: No hardware.

### U-clips
- C: U-clips with low profile hex socket head jack screws (removable).
- D: U-clips with low profile slot head jack screws (removable).
- M: Low profile hex socket head jack screws (removable).
- N: High profile hex socket head jack screws (removable).
- P: Jackposts (removable).

### Panel Mount Jackposts
- Fx (x: 1 to 5): Panel mount jackposts.

### 2nd Connector Hardware

- **B**: No hardware available on request.

See first connector hardware for the list of choices.

Other hardware available on request.
SERIES
MDA: Micro-D AXON® standard series.

CONNECTOR TYPE
1. Cadmium aluminium shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2. Nickel aluminium shell + potting 150°C.
3. Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
See pages 26 & 27 for contact arrangements.

PRODUCT TYPE
CS: Connector Saver (receptable to plug connector).
DP: Dual Pin connector (plug to plug connector).
DS: Dual Socket connector (receptacle to receptacle connector).

BACK TO BACK ASSEMBLY - LENGTH (in cm)
Attention! Wire length in centimetres (1cm = 10mm = .394”).

WIRE TYPE
1: E 2607, AWG 26, 7 strands - 600V.
A: E 2407, AWG 24, 7 strands - 600V.
B: E 2619, AWG 26, 19 strands - 600V.
C: E 2419, AWG 24, 19 strands - 600V.
D: E 2607, AWG 26, 7 strands - 600V.
E: M22759/33, AWG 26, 19 strands - 600V.
See page 29 for wire types.

COLOUR CODE
F: All yellow.
L: All white.

1st CONNECTOR HARDWARE
(After CS 1st connector is the female one).
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
P: Jackposts (removable).
Px (x: 1 to 5): Panel mount jackposts.
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
See pages 180 to 200 for hardware description.

2nd CONNECTOR HARDWARE
(After CS 1st connector is the female one).
See 1st connector hardware for the list of choices.
Other hardware available on request.

METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS
PIGTAIL & SOLDER CUP ASSEMBLIES

1.27 mm (0.050”) PITCH

- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch box(es) on male connector).

IDENTIFICATION CODE

| SERIES | MSA: Micro Strip AXON® standard series. |
| STRIP TYPE | P: LCP shell + potting 150°C. |
| L: LCP shell + potting 200°C. |
| NUMBER OF ROWS: | 1 |
| MECHANICAL CAVITIES: 02 to 40 |
| CONNECTOR GENDER | P: Male (pin contacts). |
| S: Female (socket contacts). |
| MOUNTING HOLE OPTION | A: With mounting holes. |
| B: No mounting holes. |
| TERMINATION / WIRE TYPE | For colour codes F, L, W |
| T: E 2607, AWG 26, 7 strands, 600V. |
| E 2619, AWG 26, 19 strands, 600V. |
| B: E 2807, AWG 28, 7 strands, 600V. |
| E 3007, AWG 30, 7 strands, 600V. |
| A: E 2407, AWG 24, 7 strands, 600V. |
| E 2419, AWG 24, 19 strands, 600V. |
| E M22759/33, AWG 26, 19 strands, 600V. |
| For colour code V only |
| G06 L2E |
| T: AWG 24 tin plated. |
| FS: solder cup. |
| See page 29 for wire types. |
| COLOUR CODE | F: All yellow. |
| L: All white. |
| W: MIL-STD-881 striped (for wire types 3 and F only). |
| Blank: If wire type is G, T or FS. |
| W: 10 colour repeat. |
| See page 30 for colour code. |
| WIRE LENGTH (in cm) | 5 ≤ L ≤ 10 |
| 1.97 ≤ L ≤ 3.94 |
| 3.94 < L ≤ 39.40 |
| L > 39.40 |
| TOLERANCE | -0 / +0.5 |
| -0 / +0.200 |
| -0 / +1.180 |
| -0 / +1.970 |
| POLARIZATION | G2E: Guide pin / guide hole both ends. |
| GCE: Guide pin / guide hole centered. |
| GXX: Guide pin / guide hole in xx position. |
| L2E: Latch spring / latch box both ends. |
| LCE: Latch spring / latch box centered. |
| LXX: Latch spring / latch box in xx position. |

IF NEEDED, YOU CAN COMBINE SEVERAL HARDWARE OPTIONS

EXAMPLES: 2 GUIDE-PINS OR LATCH-SPRINGS AT 2 PARTICULAR POSITIONS: MSAP109SB4L025 G22 G02 (OR L02 L08)
1 GUIDE-HOLE CENTERED + 1 LATCH-BOX AT A PARTICULAR POSITION: MSA/2P32W9/27 LCE L07
1 GUIDE-PIN CENTERED + LATCH-SPRINGS BOTH ENDS: MSA/117/20/10 LCE L2E

ONLY 2 RULES TO BUILD YOUR P/N:
- DEFINE ALL GUIDE PIN CODES FIRST, FOLLOWED BY LATCH CODES.
- DEFINE STANDARD CODES (G2E / GCE / L2E / LCE) FIRST, FOLLOWED BY SPECIFIC POSITION CODES (GXX / LXX) AFTERWARDS.
DIMENSIONS
Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR

FEMALE MICRO STRIP CONNECTOR

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")

MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050")

ADD 0.25 mm (.010")

ADD 7.62 mm (.300") if mounting hole option is selected

For detailed information concerning microstrip connectors, see pages 134 to 136.

SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>ELECTRICAL &amp; MECHANICAL PERFORMANCE</th>
<th>MATERIAL &amp; FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING</td>
<td>SHELL</td>
</tr>
<tr>
<td>3 A max.</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>PIN CONTACT</td>
</tr>
<tr>
<td>8 mΩ max.</td>
<td>Copper and Beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>SOCKET CONTACT</td>
</tr>
<tr>
<td>5000 MΩ min. @ 500 Vcc</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>DIELECTRIC WITHSTANDING VOLTAGE</td>
<td>ENCAPSULANT</td>
</tr>
<tr>
<td>Sea level: 600 Vcc</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>Altitude 21 km (70,000 ft): 150 Vcc</td>
<td>GUIDE PIN</td>
</tr>
<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>300 series stainless steel, passivated</td>
</tr>
<tr>
<td>170 g max. (6 oz)</td>
<td>LATCH</td>
</tr>
<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>Beryllium copper, nickel plating</td>
</tr>
<tr>
<td>14 g min. (0.5 oz)</td>
<td></td>
</tr>
<tr>
<td>CONTACT RETENTION</td>
<td></td>
</tr>
<tr>
<td>2.26 kg (5 lbs)</td>
<td></td>
</tr>
<tr>
<td>DURABILITY</td>
<td></td>
</tr>
<tr>
<td>500 mating cycles min.</td>
<td></td>
</tr>
</tbody>
</table>

SEE PAGE 24 FOR MORE INFORMATION
Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

SERIES
MSA: Micro Strip AXON standard series.

STRIP TYPE
P: LCP shell + potting 150°C
L: LCP shell + potting 200°C.

NUMBER OF ELECTRICAL CAVITIES: 02 TO 40.
Mechanical cavities are used for polarization, must not be counted here but can reduce the maximum number of available electrical cavities (see page 134).

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

MOUNTING HOLE OPTION
A: with mounting holes.
B: No mounting holes.

VERSION TYPE
S1: Straight.
S2: Straight, 2.54 mm (0.100") offset.
R1: Right-angle in line.
R2: Right-angle, 1.27 mm (0.50") offset.
R3: Right-angle, 2.54 mm (0.100") offset.

CONDUCTOR TYPE
G: Solid conductor 25 AWG, gold plated.
T: Solid conductor 24 AWG, tin plated.
See page 29 for wire types.

TAIL LENGTH
1: 2.80 mm (0.110")
2: 3.80 mm (0.150")
3: 4.80 mm (0.190")
4: 6.35 mm (0.250")
Tolerance: ± 0.38 mm (0.015").
Other lengths upon request.

POLARIZATION
BLANK: NONE.
G2E: GUIDE PIN / GUIDE HOLE BOTH ENDS.
GCE: GUIDE PIN / GUIDE HOLE CENTERED.
GXX: GUIDE PIN / GUIDE HOLE IN XX POSITION.
L2E: LATCH SPRING / LATCH BOX BOTH ENDS.
LDE: LATCH SPRING / LATCH BOX CENTERED.
LXX: LATCH SPRING / LATCH BOX IN XX POSITION.

PCB CONNECTOR
1.27 mm (0.050") PITCH
- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch box(es) on male connector).

IDENTIFICATION CODE

MSAP 1 07 S B R3 G 2 G06 L2E

EXAMPLES:
- 2 GUIDE-PINS OR LATCH SPRINGS AT 2 PARTICULAR POSITIONS: MSAP109SB2G02 G08 L02 L08
- 1 GUIDE-HOLE CENTERED + 1 LATCH-BOX AT A PARTICULAR POSITION: MSAP112PAR2T3 GCE L07
- 1 GUIDE-PIN CENTERED + 1 LATCH-SPRING AT A PARTICULAR POSITION: MSAP117SACF012 GCE L2E

ONLY 2 RULES TO BUILD YOUR P/N:
- DEFINE ALL GUIDE PIN CODES FIRST, FOLLOWED BY LATCH CODES
- DEFINE STANDARD CODES (G2E / GCE / L2E / LCE) FIRST, FOLLOWED BY SPECIFIC POSITION CODES (GXX / LXX) AFTERWARDS.

IF NEEDED, YOU CAN COMBINE SEVERAL HARDWARE OPTIONS
DIMENSIONS
Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR

FEMALE MICRO STRIP CONNECTOR

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>11 CAVITY STRIP WITH MOUNTING HOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050&quot;)</td>
<td></td>
</tr>
<tr>
<td>11 x 1.27 = 13.97</td>
<td></td>
</tr>
<tr>
<td>ADD 0.25 mm (.010&quot;)</td>
<td></td>
</tr>
<tr>
<td>+ 0.25 = 14.22</td>
<td></td>
</tr>
<tr>
<td>ADD 7.62 mm (.300&quot;) if mounting hole option is selected</td>
<td></td>
</tr>
<tr>
<td>+ 7.62 = 21.84</td>
<td></td>
</tr>
</tbody>
</table>

For detailed information concerning microstrip connectors, see pages 134 to 136.
MICROSTRIP GENERAL INFORMATION

- All cavities used, whether for electrical (pin or socket) contacts or for hardware options, (guide pin or latch) are considered as mechanical positions.
  - G2E & L2E: 2 mechanical positions to count.
  - GCE & LCE: 1 mechanical position to count.
  - Gxx & Lxx: 1 mechanical position to count for each occurrence.

NB: If G2E or L2E are chosen, first and last cavities cannot be used for another polarization option (ex: if L2E is chosen, guide pin in position 1 is not possible)

- When specifying the number of ways, only electrical positions (cavities containing pin or socket contacts) are counted.
  Example: a 7 way strip with 2 latches at the end and a guide pin would have 10 mechanical positions, but would still be called a 7 way connector.

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")

<table>
<thead>
<tr>
<th>EXAMPLE: 11 CAVITY STRIP WITH MOUNTING HOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050&quot;)</td>
</tr>
<tr>
<td>ADD 0.25 mm (.010&quot;)</td>
</tr>
<tr>
<td>ADD 7.62 mm (.300&quot;) if mounting hole option is selected</td>
</tr>
</tbody>
</table>

- To determine hardware location number for centered hardware (GCE / LCE):
  - Divide the total number of mechanical cavities by two.
  - Round to the next whole number if result is a fraction.

LATCH BOX WITH FILLED CAVITY

12 3 4 5 6
6/2 = 3 > HARDWARE IN CAVITY N°3

12 3 4 5 6 7
7/2 = 3.5 > HARDWARE IN CAVITY N°4

Hardware options

POLARIZATION BY GUIDE PIN
The guide pin is inserted into the female connector, and there is a guide hole in the opposite cavity in the male connector.

LATCHED RETENTION
The latch spring is mounted on the female connector, with the corresponding latch box installed on the male connector. When the first and/or last mechanical positions are chosen for the latches they will be mounted on the connector edges, making the connector wider but not longer. For all other positions the latches will be mounted on top of the connector, directly above the corresponding mechanical position. Wherever a latch is fitted the corresponding cavity will be filled, and therefore mechanical only in function.
EXAMPLES

Latch box at the end of the strip, with filled cavity
Guiding hole in mechanical position n°6

Latch spring at the end of the strip, with filled cavity
Guide-pin in mechanical position n°6

Electrical position: [Diagram]
Mechanical position: [Diagram]
P/N: MSA P 1 07 P B xxxxx G06 L2E

Electrical position: [Diagram]
Mechanical position: [Diagram]
P/N: MSA P 1 07 S B xxxxx G06 L2E

Latch box on top of the strip, with filled cavity

Latch spring on top of the strip, with filled cavity

Electrical position: [Diagram]
Mechanical position: [Diagram]
P/N: MSA P 1 07 P B R3 xx L04

Electrical position: [Diagram]
Mechanical position: [Diagram]
P/N: MSA P 1 07 S B xxx L04
MOUNTING HOLES OPTION

- Position of holes

Special case: mounting holes + hardware

When mounting holes are selected, first and last mechanical cavities are “after the holes area”.

**EXAMPLE WITH GUIDE PIN**

Hardware code G2E
Guide pin / guide holes to be in first and last mechanical cavities.

**EXAMPLE WITH LATCHING**

Hardware code L2E
Latch spring / latch box to be above first and last mechanical cavities, not on the edges of the strip.
**VERSION S1: STRAIGHT**

<table>
<thead>
<tr>
<th>MALE MICROSTRIP CONNECTOR</th>
<th>EXAMPLE OF A 13 WAY CONNECTOR</th>
<th>FEMALE MICROSTRIP CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mating Face</strong></td>
<td><img src="image1.png" alt="Image of Mating Face" /></td>
<td><img src="image2.png" alt="Image of Mating Face" /></td>
</tr>
<tr>
<td><strong>PCB Layout</strong></td>
<td><img src="image3.png" alt="Image of PCB Layout" /></td>
<td><img src="image4.png" alt="Image of PCB Layout" /></td>
</tr>
<tr>
<td><strong>MALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image5.png" alt="Image of Male Connector" /></td>
<td><img src="image6.png" alt="Image of Male Connector" /></td>
</tr>
<tr>
<td><strong>FEMALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image7.png" alt="Image of Female Connector" /></td>
<td><img src="image8.png" alt="Image of Female Connector" /></td>
</tr>
</tbody>
</table>

**EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES**

<table>
<thead>
<tr>
<th>MALE MICROSTRIP CONNECTOR</th>
<th>EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES</th>
<th>FEMALE MICROSTRIP CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mating Face</strong></td>
<td><img src="image9.png" alt="Image of Mating Face" /></td>
<td><img src="image10.png" alt="Image of Mating Face" /></td>
</tr>
<tr>
<td><strong>PCB Layout</strong></td>
<td><img src="image11.png" alt="Image of PCB Layout" /></td>
<td><img src="image12.png" alt="Image of PCB Layout" /></td>
</tr>
<tr>
<td><strong>MALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image13.png" alt="Image of Male Connector" /></td>
<td><img src="image14.png" alt="Image of Male Connector" /></td>
</tr>
<tr>
<td><strong>FEMALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image15.png" alt="Image of Female Connector" /></td>
<td><img src="image16.png" alt="Image of Female Connector" /></td>
</tr>
</tbody>
</table>

**VERSION S2: STRAIGHT - .100" OFFSET**

<table>
<thead>
<tr>
<th>MALE MICROSTRIP CONNECTOR</th>
<th>EXAMPLE OF A 13 WAY CONNECTOR</th>
<th>FEMALE MICROSTRIP CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mating Face</strong></td>
<td><img src="image17.png" alt="Image of Mating Face" /></td>
<td><img src="image18.png" alt="Image of Mating Face" /></td>
</tr>
<tr>
<td><strong>PCB Layout</strong></td>
<td><img src="image19.png" alt="Image of PCB Layout" /></td>
<td><img src="image20.png" alt="Image of PCB Layout" /></td>
</tr>
<tr>
<td><strong>MALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image21.png" alt="Image of Male Connector" /></td>
<td><img src="image22.png" alt="Image of Male Connector" /></td>
</tr>
<tr>
<td><strong>FEMALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image23.png" alt="Image of Female Connector" /></td>
<td><img src="image24.png" alt="Image of Female Connector" /></td>
</tr>
</tbody>
</table>

**EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES**

<table>
<thead>
<tr>
<th>MALE MICROSTRIP CONNECTOR</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Mating Face</strong></td>
<td><img src="image25.png" alt="Image of Mating Face" /></td>
<td><img src="image26.png" alt="Image of Mating Face" /></td>
</tr>
<tr>
<td><strong>PCB Layout</strong></td>
<td><img src="image27.png" alt="Image of PCB Layout" /></td>
<td><img src="image28.png" alt="Image of PCB Layout" /></td>
</tr>
<tr>
<td><strong>MALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image29.png" alt="Image of Male Connector" /></td>
<td><img src="image30.png" alt="Image of Male Connector" /></td>
</tr>
<tr>
<td><strong>FEMALE MICROSTRIP CONNECTOR</strong></td>
<td><img src="image31.png" alt="Image of Female Connector" /></td>
<td><img src="image32.png" alt="Image of Female Connector" /></td>
</tr>
</tbody>
</table>
### PCB Layout for Microstrip Connectors

#### Version R1: Right Angle in Line

**Example of a 13 Way Connector**

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Male Connector" /></td>
<td><img src="image2" alt="Female Connector" /></td>
</tr>
</tbody>
</table>

#### Example of a 10 Way Connector with Guide-Pin, Latches and Mounting Holes

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Male Connector" /></td>
<td><img src="image4" alt="Female Connector" /></td>
</tr>
</tbody>
</table>

#### Version R2: Right Angle, .050" Offset

**Example of a 13 Way Connector**

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Male Connector" /></td>
<td><img src="image6" alt="Female Connector" /></td>
</tr>
</tbody>
</table>

**Example of a 10 Way Connector with Guide-Pin, Latches and Mounting Holes**

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7" alt="Male Connector" /></td>
<td><img src="image8" alt="Female Connector" /></td>
</tr>
</tbody>
</table>
VERSION R3: RIGHT ANGLE .100" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

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</tr>
</thead>
<tbody>
<tr>
<td>Mating Face</td>
<td>Mating Face</td>
</tr>
<tr>
<td>PCB Layout</td>
<td>PCB Layout</td>
</tr>
<tr>
<td>MSA P 1 13 P B R3 G 2</td>
<td>MSA P 1 13 S B R3 G 2</td>
</tr>
</tbody>
</table>

EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

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</tr>
<tr>
<td>MSA P 1 10 P A R3 G 2 G08 L2E</td>
<td>MSA P 1 10 S A R3 G 2 G08 L2E</td>
</tr>
</tbody>
</table>

PCB LAYOUT FOR MICROSTRIP CONNECTORS

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

Rectangular Micro-D connectors
HIGH DENSITY CONNECTORS

NANO-D PITCH

As the need for increased miniaturisation is becoming even greater, AXON’ has developed an ultra-high density solution within the existing micro connector size. By putting nano contacts and nano pitch spacing into an existing micro shell, extremely compact connectors with very high pin counts can be produced in circular, rectangular, plastic and metal forms.

Optimal cabling density is achieved in a rectangular ultra high density connector made with Nano-D contacts and spacing inside a standard Micro-D shell size. Such a connector can accommodate a very large amount of pins while retaining excellent Micro-D reliability.

Most electrical and environmental performances are comparable to those of standard Nano-D connectors (250 V_ac, 200°C), combined with the robustness and shielding efficiency of the Micro-D metal shell which is compatible with all the hardware types available for Micro-D pigtails.

This same process can be applied to most of the standard and special Micro-D range, making it possible to have ultra high density versions of PCB connectors, wide flange versions, circular, rectangular and combo style versions with a mix of Micro-D and Nano-D contacts.

High density range

All versions are available with 28, 52 or 86 contacts. Please find detailed information about this product range in the Nano-D chapter of the catalogue (page 282).

PIGTAILS

BOARD STRAIGHT TYPE (BS) 0.050” PITCH

CONDENSED BOARD RIGHT ANGLE TYPE (CBR) 0.050” PITCH