**CONTACTS**

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Crimping Tool</th>
<th>Crimping Tool</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01 &amp; A01</td>
<td>1291721 - 001</td>
<td>0150121</td>
<td>0150902</td>
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<td></td>
<td>0150120 - 001</td>
<td>0151862</td>
<td>0201111</td>
</tr>
<tr>
<td>P02</td>
<td>0150902</td>
<td>0200422</td>
<td>0201111</td>
</tr>
<tr>
<td>P03</td>
<td>0151862</td>
<td>0151862</td>
<td>0151862</td>
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<tr>
<td>P04</td>
<td>0151862</td>
<td>0151862</td>
<td>0151862</td>
</tr>
</tbody>
</table>

**LAYOUT ARRANGEMENTS**

### Arrangement with socket contacts

**Plastic frame**

| P02 & P03 | 4 - 0.50 mm² to 0.75 mm² (20-18 AWG) |
| P04 | 9 - 2.50 mm² (14 AWG) |
| P05 | 6 - 1.50 mm² (16 AWG) |
| P06 | 7 - 2.50 mm² (14 AWG) |

### Arrangement with pin contacts

**Plastic frame**

| P02 & P03 | 4 - 0.50 mm² to 0.75 mm² (20-18 AWG) |
| P04 | 9 - 2.50 mm² (14 AWG) |
| P05 | 6 - 1.50 mm² (16 AWG) |
| P06 | 7 - 2.50 mm² (14 AWG) |

### Metallic frame (for direct grounding)

| P02 & P03 | 4 - 0.50 mm² to 0.75 mm² (20-18 AWG) |
| P04 | 9 - 2.50 mm² (14 AWG) |
| P05 | 6 - 1.50 mm² (16 AWG) |
| P06 | 7 - 2.50 mm² (14 AWG) |

**Panel Mounting**

- **Contact - Ø 1.5 mm**
- **Contact - Ø 2.0 mm**
- **Contact - High speed quadrax**

**IDEAL FOR RAIL APPLICATIONS**

The HyperMod NG series is the next generation of monobloc insulator rectangular connectors, comprising transverse and longitudinal concepts. They are specifically designed for applications requiring a safe, fast and removable electrical connection, such as electrical control panels, cable harnesses, for applications requiring a safe, fast and removable electrical connection, such as electrical control panels, cable harnesses, and connecting sleeves, and reducing the time and cost of installation.

They also benefit from a very low contact resistance and offer a minimum of 500 mating cycles. In addition, the metal insert for the 7 high speed contacts version allows for direct ground quadrax contacts, thus eliminating the use of connecting sleeves and reducing the time and cost of installation.

**COMPETITIVE SOLUTION**

Their plastic housing ensures the IP65 sealing according to NF F 01-030 (plug projection) and allows for a 35% reduction of the connector's weight. The housing's design ensures ease of cleaning and maintenance, quick access to contacts with the use of a cable clamp in three possible locations and locking system comprising of one central lever.

The HyperMod NG Series allows a reduction of supply chain, maintenance and cabling costs. All contacts are used for cross sections cables of 0.5 mm² to 2.5 mm² according to NF F 01-030 and EN 50-306, using standard tooling.

**HIGH RELIABILITY**

The HyperMod NG connectors use the proven Hypertac hyperboloid technology that improves system reliability by eliminating contact fretting, hence reducing wear rates and avoiding system failures.

The HyperMod NG connectors are CE marked to EN 50022 and comply with EN 61010.  They are also certified to EN 61010-1 (Safety of Electrical Equipment - Safety of Electrical Equipment).
### TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Contacts</th>
<th>High-speed quadrax</th>
<th>Ø 1.5 mm</th>
<th>Ø 2.0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current rating</td>
<td>3 A</td>
<td>10 A</td>
<td>18 A</td>
</tr>
<tr>
<td>Voltage rating</td>
<td>30 V</td>
<td>75 V</td>
<td>125 V</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>&gt; 100 MΩ</td>
<td>&gt; 100 MΩ</td>
<td>&gt; 100 MΩ</td>
</tr>
<tr>
<td>Creepage distance</td>
<td>&gt; 1.7 mm</td>
<td>&gt; 5 mm</td>
<td>&gt; 12 mm</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>&lt; 3 mΩ</td>
<td>&lt; 2.5 mΩ</td>
<td>&lt; 1.5 mΩ</td>
</tr>
</tbody>
</table>

#### ELECTRICAL

#### MECHANICAL

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>7.4 mm</td>
<td>9.4 mm</td>
</tr>
<tr>
<td>Weight of the connector (without contacts)</td>
<td>111 g (P01) - 156 g (A1)</td>
<td>126 g - 174 g</td>
</tr>
<tr>
<td>Weight of the metallic hood</td>
<td>7.4 g</td>
<td>9.4 g</td>
</tr>
</tbody>
</table>

#### ENVIRONMENTAL

| Temperature range | -40°C to +100°C | -21 days according to NF C 20-711 |
| Salt spray | 96h, 5% NaCl according to NF C 20-711 |

#### OTHER DETAILS

- **Polarization**: Not polarized, polarized
- **Housing - Hood**: Plastic hood, double locking system, metallic hood, single locking system
- **Cable Clamp**: Without cable clamp, single cable clamp, double cable clamps
- **Gold Contact Plating**: Other polarizations are also available, please contact us.

---

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>H</th>
<th>M</th>
<th>0</th>
<th>7</th>
<th>N</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>---</td>
<td>1</td>
<td>T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **CONNECTOR FAMILY**
2. **CONNECTOR TYPE**
3. **NUMBER OF MODULES**
4. **ENVIRONMENT**
5. **ARRANGEMENT**
6. **POLARIZATION**
7. **HOUSING - HOOD**
8. **CABLE CLAMP**
9. **GOLD CONTACT PLATING**

### DRAWINGS & DIMENSIONS - SINGLE LEVER

**Receptacle connector (metallic hood)**

**Plug connector (plastic hood)**

### DRAWINGS & DIMENSIONS - DOUBLE LEVERS

**Receptacle connector (metallic hood)**

**Plug connector (plastic hood)**

---

**Note**: Other housing and hood styles are available from the HyperMod modular range and can be mounted with the insulator frame. Please contact us.

---

**Technical specifications**

- **Contacts**: High-speed quadrax Ø 1.5 mm Ø 2.0 mm
- **Current rating**: 3 A 10 A 18 A
- **Voltage rating**: 30 V 75 V 125 V
- **Insulation resistance**: > 100 MΩ > 100 MΩ > 100 MΩ
- **Creepage distance**: > 1.7 mm > 5 mm > 12 mm
- **Contact resistance**: < 3 mΩ < 2.5 mΩ < 1.5 mΩ

---

**Electrical**

- **Diameter**: 7.4 mm 9.4 mm
- **Weight of the connector (without contacts)**: 111 g (P01) - 156 g (A1) 126 g - 174 g
- **Weight of the metallic hood**: 7.4 g 9.4 g

---

**Mechanical**

- **Diameter**: 7.4 mm 9.4 mm
- **Weight of the connector (without contacts)**: 111 g (P01) - 156 g (A1) 126 g - 174 g
- **Weight of the metallic hood**: 7.4 g 9.4 g

---

**Environmental**

- **Temperature range**: -40°C to +100°C -21 days according to NF C 20-711
- **Salt spray**: 96h, 5% NaCl according to NF C 20-711

---

**Other details**

- **Polarization**: Not polarized, polarized
- **Housing - Hood**: Plastic hood, double locking system, metallic hood, single locking system
- **Cable Clamp**: Without cable clamp, single cable clamp, double cable clamps
- **Gold Contact Plating**: Other polarizations are also available, please contact us.
## TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Contacts</th>
<th>High speed quadrax Ø 1.5 mm</th>
<th>Ø 2.0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limiting current</td>
<td>3 A</td>
<td>10 A</td>
</tr>
<tr>
<td>Voltage rating</td>
<td>38 V</td>
<td>75 V</td>
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<tr>
<td>Overvoltage protection voltage</td>
<td>220 V</td>
<td>220 V</td>
</tr>
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<td>Contact resistance</td>
<td>&lt; 0.2 mΩ</td>
<td>&lt; 1.2 mΩ</td>
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<tr>
<td>Contact resistance</td>
<td>&lt; 0.2 mΩ</td>
<td>&lt; 1.2 mΩ</td>
</tr>
<tr>
<td>Shaft distance</td>
<td>12.7 mm</td>
<td>9.5 mm</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>200 MΩ</td>
<td>70 MΩ</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>200 MΩ</td>
<td>70 MΩ</td>
</tr>
<tr>
<td>Locking force</td>
<td>&gt; 170 N</td>
<td></td>
</tr>
<tr>
<td>Weight of the connector (without contacts)</td>
<td>319 g (P01) - 355 g (A1)</td>
<td>266 g</td>
</tr>
<tr>
<td>Weight of the contact (male)</td>
<td>35 g</td>
<td>1.5 g</td>
</tr>
<tr>
<td>Environment</td>
<td>IP50 with the 2 plastic part hood - IP66 with the metallic hood</td>
<td></td>
</tr>
<tr>
<td>Environmental level</td>
<td>IP50 with the 2 plastic part hood - IP66 with the metallic hood</td>
<td></td>
</tr>
</tbody>
</table>

## DRAWINGS & DIMENSIONS - SINGLE LEVER

### Plug connector (plastic hood)

### Receptacle connector (metallic hood)

### DRAWINGS & DIMENSIONS - DOUBLE LEVERS

### Plug connector (plastic hood)

### Receptacle connector (metallic hood)

## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>H</th>
<th>M</th>
<th>0</th>
<th>7</th>
<th>N</th>
<th>8</th>
<th>9</th>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>-</td>
</tr>
</tbody>
</table>

### 1) CONNECTOR FAMILY

#### Male Receptacle

#### Female Plug

### 2) CONNECTOR TYPE

#### Male Receptacle

#### Female Plug

### 3) NUMBER OF MODULES

### 4) ENVIRONMENT

### 5) ARRANGEMENT

#### Male Receptacle - 7 quadrax male + 6 pin contacts

#### Female Plug - 7 quadrax female + 6 socket contacts

#### Male Receptacle - 108 pin contacts

#### Male Receptacle - 64 pin contacts

#### Male Receptacle - 7 quadrax male, metal frame

### 6) POLARIZATION

#### Not polarized

#### Polarized

### 7) HOUSING - HOOD

#### Plug plastic hood, double locking system

#### Plug plastic hood, single locking system

#### Receptacle metallic hood, single locking system

#### Receptacle plastic hood, double locking system, double locking system

### 8) CABLE CLAMP

#### Without cable clamp

#### Single cable clamp

#### Double cable clamps

### 9) GOLD CONTACT PLATING

Other polarizations are also available, please contact us.

Note: Other housing and hood styles are available from the HyperMod modular range and can be mounted with the insulator frame. Please contact us.

Note: Other housing and hood styles are available from the HyperMod modular range and can be mounted with the insulator frame. Please contact us.
<table>
<thead>
<tr>
<th>CONNECTOR FAMILY</th>
<th>CONNECTOR TYPE</th>
<th>NUMBER OF MODULES</th>
<th>ENVIRONMENT</th>
<th>MECHANICAL</th>
<th>POLARIZATION</th>
<th>HOUSING - HOOD</th>
<th>CABLE CLAMP</th>
<th>GOLD CONTACT PLATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>P</td>
<td>E</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>M</td>
<td>MALE RECEPTACLE</td>
<td>FEMALE PLUG</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>M</td>
<td>108 PIN CONTACTS</td>
<td>108 SOCKET CONTACTS</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>M</td>
<td>M</td>
<td>RECEPTACLE - 7 QUADRAX MALE + 4 PIN CONTACTS</td>
<td>PLUG - 7 QUADRAX FEMALE + 4 SOCKET CONTACTS</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>M</td>
<td>M</td>
<td>RECEPTACLE - 7 QUADRAX MALE, METAL FRAME</td>
<td>PLUG - 7 QUADRAX FEMALE, METAL FRAME</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
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<td>M</td>
<td>PLUG PLASTIC HOOD, DOUBLE LOCKING SYSTEM</td>
<td>PLUG PLASTIC HOOD, SINGLE LOCKING SYSTEM</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
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<tr>
<td>M</td>
<td>M</td>
<td>PLUG METALLIC HOOD, SINGLE LOCKING SYSTEM</td>
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<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
</tr>
</tbody>
</table>

**TECHNICAL CHARACTERISTICS**

- **Contacts**
  - High speed quadrax: Ø 1.5 mm, Ø 2.0 mm

- **Electrical**
  - Contact rating: 3 A, 10 A, 19 A
  - Voltage rating:
    - 10 A: 100 V, 200 V
    - 19 A: 250 V, 400 V
  - Insulation resistance: 2 x 10^6 M
  - Contact resistance: < 3 m, < 2.5 m, < 1.5 m
  - Current density: 1.5 A/mm², 1.2 A/mm², 2 A/mm²

- **Mechanical**
  - Contact force: 200 N, 70 N, 90 N
  - Mating cycles: > 500
  - Locking force: < 170 N

- **Environmental**
  - Temperature range: -40° +100°C
  - Salt spray: 96h, 5% NaCl
  - Fire standards: According to NF F 16-101, NF F 16-102, EN 45545-2:HL3
  - Environmental level: IP50 with the 2 plastic part hood, IP66 with the metallic hood

**ORDERING INFORMATION**

- **1** CONNECTOR FAMILY
- **2** CONNECTOR TYPE
- **3** NUMBER OF MODULES
- **4** ENVIRONMENT
- **5** ARRANGEMENT
- **6** POLARIZATION
- **7** HOUSING - HOOD
- **8** CABLE CLAMP
- **9** GOLD CONTACT PLATING

**Note:** Other housing and hood styles are available from the HyperMod modular range and can be mounted with the insulator frame. Please contact us.

**Technical Characteristics - Single Lever**

- **Plug connector** (plastic hood)
- **Receptacle connector** (metallic hood)

**Technical Characteristics - Double Levers**

- **Plug connector** (plastic hood)
- **Receptacle connector** (metallic hood)

**Electrical**

- Current rating: 3 A, 10 A, 16 A
- Voltage rating: 30 V, 110 V, 220 V
- Withstanding voltage: 750 V, 1500 V, 2550 V
- Insulation resistance: ≥ 5 x 10^3 M
- Contact resistance: < 3 m, < 2.5 m, < 1.5 m
- Creepage distance: 1.7 mm, 5 mm, 12 mm
- Clearance: 1.5 mm, 4.5 mm, 5 mm

**Mechanical**

- Contact retention: 200 N, 70 N, 90 N
- Mating cycles: > 500
- Locking force: < 170 N

**Environmental**

- Temperature range: -40° +100°C
- Salt spray: 96h, 5% NaCl
- Fire standards: According to NF F 16-101, NF F 16-102, EN 45545-2:HL3
- Environmental level: IP50 with the 2 plastic part hood, IP66 with the metallic hood

**Drawings & Dimensions**

- Single Lever
- Double Levers

**Dimensions are in mm**
The HyperMod NG series is the new generation of monobloc insulator rectangular connectors, ideal for trains, intercity trains, trams and locomotives. They are specifically designed for applications requiring a safe, fast and removable electrical connection, such as electrical control panels, cable harnesses, and sensors.

The range includes 3 connector versions:

- **64 ways, 16A power contacts, 2mm pin dia.**
- **108 ways, 10A signal contacts, 1.5mm pin dia.**
- **7 ways, 1.2GHz high speed quadrax contacts**

**HIGH RELIABILITY**

The HyperMod NG connectors use the proven Hypertac hyperboloid technology, that improves system reliability by eliminating contact fretting, hence reducing wear rates and avoiding system failure.

The connectors also benefit from a very low contact resistance and offer a minimum of 500 mating cycles. In addition, the metal insert for the 7 high speed quadrax contacts version allows for direct ground quadrax contacts, thus avoiding the use of connecting sleeves and reducing the time and cost of installation.

**COMPETITIVE SOLUTION**

Their plastic housing ensures the IP50 sealing according to NF F 61-030 (dust protection) and allows for a 30% reduction of the connector's weight. The housing's design ensures easier wiring and maintenance, quick access to contacts with the ability to test without disconnecting them, flexible position of the cable clamp in three possible locations and locking system comprising of one central lever.

The Hypermod NG Series allows a reduction of supply chain, maintenance and cabling costs: one contact only is used for cross section cables of 0.5 mm² to 2.5 mm² according to NFF 63-808 and EN 50-306, using standard tooling.

**IDEAL FOR RAIL APPLICATIONS**

The Hypermod NG connectors use the proven Hypertac hyperboloid technology that improves system reliability by eliminating contact fretting, hence reducing wear rates and avoiding system failure.

They also benefit from a very low contact resistance and offer a minimum of 500 mating cycles. In addition, the metal insert for the 7 high speed quadrax contacts version allows for direct ground quadrax contacts, thus avoiding the use of connecting sleeves and reducing the time and cost of installation.

**CONTACTS**

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Part number</th>
<th>Crimping Test</th>
<th>Test barrel</th>
<th>Position &amp; Wire section</th>
<th>Insertion</th>
<th>Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01 &amp; A01</td>
<td>1289121-QAR01</td>
<td>TSV 270</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
<td>S.132</td>
<td>S.056</td>
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<tr>
<td>P01</td>
<td>1288120-QAR01</td>
<td>TSV 270</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
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<td>S.056</td>
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<td>0153900-2000H</td>
<td>TSV 201</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
<td>S.056</td>
<td>S.056</td>
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<td>P03</td>
<td>0151620-2000H</td>
<td>TSV 201</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
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<td>S.056</td>
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<td>TSV 201</td>
<td>High speed quadrax contact</td>
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<td>S.056</td>
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<td>P05</td>
<td>0150902-20RG0</td>
<td>TSV 201</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
<td>S.056</td>
<td>S.056</td>
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<td>P06</td>
<td>0151862-20RG0</td>
<td>TSV 201</td>
<td>High speed quadrax contact</td>
<td>Position 0.395</td>
<td>S.056</td>
<td>S.056</td>
</tr>
</tbody>
</table>

**LAYOUT ARRANGEMENTS**

<table>
<thead>
<tr>
<th>Arrangement with socket contacts</th>
<th>Plastic frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>P02</td>
<td>2 - 7 quadrax contacts + 2 contacts Ø 1.5</td>
</tr>
<tr>
<td>P03</td>
<td>108 contacts Ø 1.5</td>
</tr>
<tr>
<td>P04</td>
<td>64 contacts Ø 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arrangement with pin contacts</th>
<th>Plastic frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01 &amp; P02</td>
<td>2 - 7 quadrax contacts + 4 contacts Ø 1.5</td>
</tr>
<tr>
<td>P03</td>
<td>108 contacts Ø 1.5</td>
</tr>
<tr>
<td>P04</td>
<td>64 contacts Ø 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metallic frame (for direct grounding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P05</td>
</tr>
</tbody>
</table>

**PANEL MOUNTING**

- **Contact - Ø 1.5 mm**
  - Male: Ref 015 090 2- 20R G0
  - Female: Ref 015 090 2- 20R G0

- **Contact - Ø 2.0 mm**
  - Male: Ref 015 090 2- 20R G0
  - Female: Ref 015 090 2- 20R G0

- **Contact - High speed quadrax**
  - Male: Ref 015 186 2- 20R G0
  - Female: Ref 015 186 2- 20R G0

**FOR MORE INFORMATION | smithsconnectors.com**

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HYPERMOD NG SERIES
Monobloc Insulator Rectangular Connector

IDEAL FOR RAIL APPLICATIONS
The HyperMod NG Series is the new generation of monobloc insulator rectangular connectors ideal for trains, intercity trains, trams and locomotives. They are specifically designed for applications requiring a safe, fast and removable electrical connection, such as electrical control panels, cable harnesses and sensors.

The range includes 3 connector versions:
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- 108 ways, 10A signal contacts, 1.5mm pin dia.
- 7 ways, 1.2GHz high speed quadrax contacts.

HIGH RELIABILITY
The HyperMod NG connectors use the proven Hypertac hyperboloid technology, that improves system reliability by eliminating contact fretting, hence reducing wear rates and avoiding system failure.

They also benefit from a very low contact resistance and offer a minimum of 500 mating cycles. In addition, the metal insert for the 7 high speed quadrax contact allows for direct ground quadrax contacts, thus avoiding the use of connecting sleeves and reducing the time and cost of installation.

COMPETITIVE SOLUTION
Their plastic housing ensures the IP50 sealing according to NF F 61-030 (dust protection) and allows for a 30% reduction of the connector’s weight. The housing’s design ensures easier wiring and maintenance, quick access to contacts with the ability to test without disconnecting them, flexible position of the cable clamp in three possible locations and locking system comprising of one central lever.

They further benefit from a very low contact resistance and offer a minimum of 500 mating cycles. In addition, the metal insert for the 7 high speed quadrax contact allows for direct ground quadrax contacts, thus avoiding the use of connecting sleeves and reducing the time and cost of installation.