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This 2003 Global Connection Systems Catalog contains information and application guidelines for a representative sample of the available Delphi Connection Systems products. These products are subjected to extensive mechanical, electrical, and environmental testing procedures to assure superior quality and performance. We have made every effort to ensure that the information contained in this document is accurate; however, changes are often made to update our specifications, part numbers, or introduce new product families. An application or sales engineer can help you determine which product best suits your application guidelines. Our global engineering, manufacturing network, and distribution capabilities are available to help you select the most suitable product.

We recommend that you use this catalog as a guide only. For additional part numbers and specifications contact your sales account manager or call your regional support representative at the number listed below.

Specifications subject to change without notice.
EXPERIENCE
Delphi Connection Systems is a leading supplier of electrical and electronic connection systems, building on its reputation as the world leader in the design, development and manufacture of power and signal distribution systems.

Over the past 110 years, we have continually developed innovative connection systems which continue to exceed the most strenuous performance requirements, and which provide solid value for our customers.

In partnership with our customers, we have been able to anticipate their needs for reliable and cost effective connection systems. That kind of customer focus helps us work towards Driving Tomorrow’s Technology.

GLOBAL NETWORK
Today, we can support your needs anywhere in the world. With facilities in more than 30 countries on six continents, we employ nearly 90,000 people to support our customers with quality products and systems delivered to your door.

Our global network of comprehensive services includes design, engineering, manufacturing and logistics support. We also provide assistance in training, quality systems development, program management and ergonomic analysis. We will tailor a program to your needs and utilize any combination of these capabilities. Above all, we respect our customer’s unique requirements and manage each of their programs in strict confidence.

MILESTONES

Packard Electric was founded by William Doud Packard and James Ward Packard, Warren, Ohio

James Ward Packard develops the first Packard automobile.

Ring Terminal - enables faster installation, easier servicing and greater reliability for high current applications.

56 Series - provides detachable electrical connectors between two or more circuits.

Edge board printed circuit - enables integration of electronic modules to wiring systems.

Weather Pack - the first use of low pressure environmental seals. Set the industry standard for sealing technology. First use of connector locks.

Micro-Pack 100 - a family of electronic connection systems designed to meet the needs of low-energy, high-density applications.

Acquired Kabelwerke Reinshagen GmbH, Wuppertal, Germany and its operations across Europe.

http://delphi.com/products/connect
GLOBAL QUALITY SYSTEM
Our customers are assured of consistently high quality and excellent service through disciplined adherence to a comprehensive quality management system. This system surpasses the requirements of internationally recognized quality standards. Throughout the world, our quality system is consistent in each of our locations.

OUR STRENGTH
Nearly 90,000 people around the world employed by Delphi Packard Electric Systems provide both the technical skills and the drive for Excellence needed to be a world leader in Power and Signal Distribution Systems, electrical and electronic systems architecture, and connection systems.

We work to develop partnerships with our customers to clearly identify and exceed their expectations. Our global teams are thorough, responsive, and customer focused.

As a leader in electrical and electronic connection systems, our key is a global communication network linking all of our employees. By leveraging our resources and expertise regionally, we bring the solutions right to your door—wherever that is.

http://delphi.com/products/connect
# Product Family Selection Guide

Use this as a general guide to find the Product Family to meet your product application needs. See pages 6 and 7 for specific product line technical data.

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- [Available](http://delphi.com/products/connect) ▲ This feature is available on some systems.
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http://delphi.com/products/connect
Use this as a guide to find the specific product to meet your product application needs.

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*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model.
## Materials are standard for the designated product line, optional materials may be available.

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<th>Centerline Spacing (mm)</th>
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<th>Male Terminal Material (Plating)</th>
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North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002
GT Series

150, 280 & Lever Lock

The GT Connection System™ features tangless terminals and offers one of the lowest connector engage forces in the industry. Designed for both 1.50 and 2.80mm blade width applications, GT achieves superior electrical performance that meets or exceeds all known customer requirements, including USCAR standards. The unsealed systems are available in cavity variations between 2-way and 16-way. To maintain world class ergonomics, Delphi Packard introduced the GT Lever Lock series. This series provides connector mating forces of less than 50 Newtons for up to 40 terminations per connector.

The sealed GT Connection System™ utilizes a new two-rib cable seal. This seal is smaller and uses less material than traditional three rib seal designs without impacting performance. The sealed systems are available in cavity variations between 2-way and 16-way. To maintain world class ergonomics, Delphi Packard introduced the sealed GT Lever Lock series. This series provides connector mating forces of less than 50 Newtons for up to 40 terminations per connector.

GT Series Features

- Connector Position Assurance (CPA)
- Side Lock Cover (SLC) and Primary Lock Reinforcement (PLR)
- World class ergonomics
- Tangless terminals
- Pump-handle primary lock
- High density, low profile packaging
- Consistent interface for SAE and ISO applications
- Low energy, low voltage capability
- -40°C to 125°C temperature range
Cross Sectional View

### GT 150 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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<tr>
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<td>12191812</td>
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### GT 150 FEMALE CONNECTOR ASSEMBLIES UNSEALED

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<tr>
<td>3</td>
<td>15332132</td>
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<tr>
<td>4</td>
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<tr>
<td>5</td>
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<tr>
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<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>8</td>
<td>15332145</td>
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<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>10</td>
<td>15332153</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>12</td>
<td>15332161</td>
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<td>14</td>
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*Side Lock Covers (SLC) are included in the Connector Assemblies listed in this section.*

http://delphi.com/products/connect
**Unsealed System Application Information**

**GT 150 SERIES TERMINALS—Tin Plated**

- **CABLE RANGE (mm²):** 0.35-1.0
- **CURRENT RANGE (AMPS):** 0-15
- **TEMP RANGE °C:** -40 to 125
- **RESISTANCE:** <10mΩ@20mV
- **VOLTAGE DROP:** <10.0mV/amp
- **CENTERLINE SPACING (mm):** 4.0
- **BLADE WIDTH (mm):** 1.5

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*

---

**GT 150 MALE CONNECTOR ASSEMBLIES UNSEALED**

<table>
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<th># Cavities</th>
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**GT 150 MALE TERMINALS UNSEALED**

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**SECTION NOTES:**

- To rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

---

North American Region  European Region  Asia Pacific Region  South American Region


http://delphi.com/products/connect
## GT Series

### 150

<table>
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Total Mated Length: 52.1mm


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<th>North American Region</th>
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<th>Asia Pacific Region</th>
<th>South American Region</th>
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## GT Series

### Connector Assembly 8F
- **Part No:** 15332145
- **Description:** Connector Assembly 8F
- **Size:** 28.6L x 26.2H x 23.1W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 10

### Connector Assembly 10F
- **Part No:** 15332153
- **Description:** Connector Assembly 10F
- **Size:** 28.6L x 26.2H x 27.1W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 10

### Connector Assembly 12F
- **Part No:** 15332161
- **Description:** Connector Assembly 12F
- **Size:** 28.6L x 26.2H x 31.1W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 10

### Connector Assembly 14F
- **Part No:** 15332169
- **Description:** Connector Assembly 14F
- **Size:** 28.6L x 26.2H x 35.1W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 10

### Connector Assembly 16F
- **Part No:** 15332177
- **Description:** Connector Assembly 16F
- **Size:** 28.6L x 26.2H x 39.1W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 10

### Connector Assembly 8M
- **Part No:** 15332150
- **Description:** Connector Assembly 8M
- **Size:** 36.1L x 22.7H x 20.6W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 11

### Connector Assembly 10M
- **Part No:** 15332158
- **Description:** Connector Assembly 10M
- **Size:** 36.1L x 22.7H x 24.6W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 11

### Connector Assembly 12M
- **Part No:** 15332166
- **Description:** Connector Assembly 12M
- **Size:** 36.1L x 22.7H x 28.6W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 11

### Connector Assembly 14M
- **Part No:** 15332174
- **Description:** Connector Assembly 14M
- **Size:** 36.1L x 22.7H x 32.6W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 11

### Connector Assembly 16M
- **Part No:** 15332182
- **Description:** Connector Assembly 16M
- **Size:** 36.1L x 22.7H x 36.6W
- **Color:** Black
- **Material:** PA6 10% GF & 20% GB
- **Terminals:** See Page 11

### CPA
- **Part No:** 15317832
- **Description:** CPA
- **Color:** Gray
- **Material:** PA6 10% GF & 20% GB

---

**Total Mated Length:** 52.1mm
GT Series

Cross Sectional View

Female Connector Assembly

Male Connector Assembly

GT 150 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191818</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12191819</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
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GT 150 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
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<tr>
<td>12191152</td>
<td>15366021</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12191153</td>
<td>15366060</td>
<td>1.86-2.25</td>
<td>Silicone</td>
<td>Blue</td>
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GT 150 FEMALE CONNECTOR ASSEMBLIES SEALED

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<thead>
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<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
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<tr>
<td>2</td>
<td>15326801</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>3</td>
<td>15326808</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>4</td>
<td>15326815</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>5</td>
<td>15326822</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>6</td>
<td>15326829</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>8</td>
<td>15326835</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>10</td>
<td>15326842</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>12</td>
<td>15326849</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>14</td>
<td>15326856</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326863</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
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</table>

Primary Lock Reinforcement (PLR) and Connector Seals are included in the Connector Assemblies listed in this section.
Sealed System Application Information

GT 150 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326268</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15326269</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

CABLE RANGE (mm²): ........ 0.35-1.0
CURRENT RANGE (AMPS): .......... 0-15
TEMP RANGE °C: ........ -40 to 125
RESISTANCE: .......... <10mΩ@20mV
VOLTAGE DROP: ...... <10.0mV/amp
CENTERLINE SPACING (mm): .......... 4.5
BLADE WIDTH (mm): ................. 1.5

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

GT 150 MALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
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<th>Color</th>
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<td>2</td>
<td>15326806</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>3</td>
<td>15326813</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>4</td>
<td>15326820</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>5</td>
<td>15326827</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>6</td>
<td>15326833</td>
<td>Black</td>
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<td>15326840</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>10</td>
<td>15326847</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>12</td>
<td>15326854</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>14</td>
<td>15326861</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326868</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Primary Lock Reinforcement (PLR) is included in the Connector Assemblies listed in this section.

GT 150 CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Diameter</th>
<th>Material</th>
<th>Color</th>
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<tbody>
<tr>
<td>15305171</td>
<td>4.0mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Primary Lock Reinforcement (PLR) is included in the Connector Assemblies listed in this section.

SECTION NOTES:

• Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

Contact your regional support representative at the number listed below.

http://delphi.com/products/connect
GT Series

PART NO: 15326801
DESCRIPTION: Connector Assembly 2F
SIZE: 29.3L x 23.1H x 23.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326808
DESCRIPTION: Connector Assembly 3F
SIZE: 29.3L x 23.1H x 28.2W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326815
DESCRIPTION: Connector Assembly 4F
SIZE: 29.3L x 23.1H x 32.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326822
DESCRIPTION: Connector Assembly 5F
SIZE: 29.3L x 23.1H x 37.2W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326829
DESCRIPTION: Connector Assembly 6F
SIZE: 29.3L x 23.1H x 41.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326806
DESCRIPTION: Connector Assembly 2M
SIZE: 43.4L x 19.4H x 20.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326813
DESCRIPTION: Connector Assembly 3M
SIZE: 43.4L x 19.4H x 25.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326820
DESCRIPTION: Connector Assembly 4M
SIZE: 43.4L x 19.4H x 29.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326827
DESCRIPTION: Connector Assembly 5M
SIZE: 43.4L x 19.4H x 34.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15326833
DESCRIPTION: Connector Assembly 6M
SIZE: 43.4L x 19.4H x 38.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14
SEALS/PLUGS: See Page 14, 15

PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB

Total Mated Length: 56.7mm

http://delphi.com/products/connect
GT Series

PART NO: 15326835
DESCRIPTION: Connector Assembly 8F
SIZE: 29.3L x 28.2H x 32.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326842
DESCRIPTION: Connector Assembly 10F
SIZE: 29.3L x 28.2H x 37.2W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326849
DESCRIPTION: Connector Assembly 12F
SIZE: 29.3L x 28.2H x 41.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326856
DESCRIPTION: Connector Assembly 14F
SIZE: 29.3L x 28.2H x 46.2W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326863
DESCRIPTION: Connector Assembly 16F
SIZE: 29.3L x 28.2H x 50.7W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB

PART NO: 15326840
DESCRIPTION: Connector Assembly 8M
SIZE: 43.4L x 24.5H x 29.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326847
DESCRIPTION: Connector Assembly 10M
SIZE: 43.4L x 24.5H x 34.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326854
DESCRIPTION: Connector Assembly 12M
SIZE: 43.4L x 24.5H x 38.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326861
DESCRIPTION: Connector Assembly 14M
SIZE: 43.4L x 24.5H x 43.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

PART NO: 15326868
DESCRIPTION: Connector Assembly 16M
SIZE: 43.4L x 24.5H x 47.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 14, 15
SEALS/PLUGS: See Page 14, 15

http://delphi.com/products/connect
Sealed System Application Information

GT 150 SERIES TERMINALS–Tin Plated

CABLE RANGE (mm²): ........ 0.35-1.0
CURRENT RANGE (AMPS): ......... 0-15
TEMP RANGE °C: .......... -40 to 125
RESISTANCE: ......... <10mΩ @ 20mV
VOLTAGE DROP: ......<10.0mV/amp
CENTERLINE SPACING (mm): ....... 3.5
BLADE WIDTH (mm): ............. 1.5

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

CABLE RANGE (mm²): ........ 0.35-1.0
CURRENT RANGE (AMPS): ......... 0-15
TEMP RANGE °C: .......... -40 to 125
RESISTANCE: ......... <10mΩ @ 20mV
VOLTAGE DROP: ......<10.0mV/amp
CENTERLINE SPACING (mm): ....... 3.5
BLADE WIDTH (mm): ............. 1.5

GT 150 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15305350</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Accomodates 1.00 European Ultra Thin Wall Cable. Accomdates 0.80 SAE Ultra Thin Wall Cable

GT 150 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191155</td>
<td>1536022</td>
<td>1.47-1.85</td>
<td>Silicone</td>
<td>Green</td>
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<tr>
<td>—</td>
<td>15305351</td>
<td>1.70-2.10</td>
<td>Silicone</td>
<td>Yellow</td>
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GT 150 CAVITY PLUG*

<table>
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<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15305169</td>
<td>Silicone</td>
<td>Orange</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

GT 150 FEMALE UNSHROUDED CONNECTOR ASSEMBLIES SEALED

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<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Indexing</th>
<th>Color</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
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<td>15336024</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 26% GB</td>
</tr>
<tr>
<td>3</td>
<td>15336027</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 26% GB</td>
</tr>
<tr>
<td>4</td>
<td>15354716</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 26% GB</td>
</tr>
</tbody>
</table>

Unshrouded Female Connector Assembly

GT 150 Family

http://delphi.com/products/connect

North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002
**GT Series**

---

**GT 150 FEMALE SHROUDED CONNECTOR ASSEMBLIES SEALED**

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<th>Conn. Asm.</th>
<th>Indexing</th>
<th>Color</th>
<th>Material</th>
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</thead>
<tbody>
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<td>15336004</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>2</td>
<td>15355317</td>
<td>Mushroom</td>
<td>Black</td>
<td>PBT 20% GF</td>
</tr>
<tr>
<td>3</td>
<td>15336121</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>3</td>
<td>15355323</td>
<td>Mushroom</td>
<td>Black</td>
<td>PBT 20% GF</td>
</tr>
<tr>
<td>3</td>
<td>15355331</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>4</td>
<td>15355331</td>
<td>Mushroom</td>
<td>Black</td>
<td>PBT 20% GF</td>
</tr>
<tr>
<td>5</td>
<td>15326389</td>
<td>Mushroom</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>5</td>
<td>15355268</td>
<td>Mushroom</td>
<td>Black</td>
<td>PBT 20% GF</td>
</tr>
<tr>
<td>6</td>
<td>15336013</td>
<td>Mushroom</td>
<td>Black</td>
<td>PBT 20% GF</td>
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<td>Key</td>
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<tr>
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<td>Key</td>
<td>Black</td>
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</table>

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**Unshrouded Female**

**Mushroom Indexed**

- **PART NO:** 15336024
  - **DESCRIPTION:** Connector Assembly 2F
  - **SIZE:** 26.0L x 18.5H x 17.0W
  - **COLOR:** Black
  - **MATERIAL:** PA6 10% GF & 20% GB
  - **TERMINALS:** See Page 18
  - **SEALS/PLUGS:** See Page 18
  - **NOTE:** Mates to Throttle Body Injector.

- **PART NO:** 15336027
  - **DESCRIPTION:** TBI Connector Assembly 2F
  - **SIZE:** 26.0L x 11.0H x 20.5W
  - **COLOR:** Black
  - **MATERIAL:** PA6 10% GF & 20% GB
  - **TERMINALS:** See Page 18
  - **SEALS/PLUGS:** See Page 18

- **PART NO:** 15336029
  - **DESCRIPTION:** Connector Assembly 3F
  - **SIZE:** 26.0L x 18.5H x 20.5W
  - **COLOR:** Black
  - **MATERIAL:** PA6 10% GF & 20% GB
  - **TERMINALS:** See Page 18
  - **SEALS/PLUGS:** See Page 18

- **PART NO:** 15354716
  - **DESCRIPTION:** Connector Assembly 4F
  - **SIZE:** 26.0L x 18.5H x 24.0W
  - **COLOR:** Black
  - **MATERIAL:** PA6 10% GF & 20% GB
  - **TERMINALS:** See Page 18
  - **SEALS/PLUGS:** See Page 18

---

**GT CONNECTOR ASSEMBLY/METRI-PACK PULL-TO-SEAT REPLACEMENT CROSS REFERENCE**

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<th>Description</th>
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<tbody>
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<td>Connector Assembly 2F</td>
<td>12162193, 12162194, 12162195</td>
</tr>
<tr>
<td>15336027 TBI</td>
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<td>12162204, 12162206, 12162208, 12162215, 12162216, 12162217, 12162218</td>
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<tr>
<td>15336029</td>
<td>Connector Assembly 3F</td>
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<td>15336035</td>
<td>Connector Assembly 4F</td>
<td>12124846, 12129192, 12162188, 12162189, 12162190, 12162191</td>
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**North American Region**

- **1-800-PACKARD**

**European Region**

- **49-202-291-2000**

**Asia Pacific Region**

- **65-730-9900**

**South American Region**

- **55-12-378-2002**

---

GT Series

GT CONNECTOR ASSEMBLY/METRI-PACK SlimLine CROSS REFERENCE

<table>
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<tr>
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<th>Description</th>
<th>Metri-Pack Pull-To-Seat</th>
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<td>Connector Assembly 2F</td>
<td>12162193, 12162194, 12162195</td>
</tr>
<tr>
<td>15336121, 15355323</td>
<td>Connector Assembly 3F</td>
<td>12162182, 12162183, 12162184, 12162185, 12162186</td>
</tr>
<tr>
<td>15326559, 15355331</td>
<td>Connector Assembly 4F</td>
<td>12124846, 12129192, 12162188, 12162189, 12162190, 12162191</td>
</tr>
<tr>
<td>15326389, 15355268</td>
<td>Connector Assembly 5F</td>
<td>12126285, 12126286, 12126287</td>
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<tr>
<td>15336013, 15326829</td>
<td>Connector Assembly 6F</td>
<td>12066317, 12126210, 12126260, 12162261, 12162262</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
GT CONNECTOR ASSEMBLY/METRI-PACK SlimLine CROSS REFERENCE

<table>
<thead>
<tr>
<th>GT Connector Assembly</th>
<th>Description</th>
<th>Metri-Pack Pull-To-Seat</th>
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<tbody>
<tr>
<td>15335987, 15355319</td>
<td>Connector Assembly 2F</td>
<td>12162197, 12162198, 12162199</td>
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<tr>
<td>15326556, 15355325</td>
<td>Connector Assembly 3F</td>
<td>12162278, 12162279, 12162280</td>
</tr>
<tr>
<td>15336001, 15355329</td>
<td>Connector Assembly 4F</td>
<td>12162833, 12162834</td>
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Shrouded Female
Key Indexed

**A**

- **PART NO:** 15336987*
- **DESCRIPTION:** Connector Assembly 2F
- **SIZE:** 29.0L x 22.2H x 21.3W
- **COLOR:** Black
- **MATERIAL:** PA6 10% GF & 20% GB
- **TERMINALS:** See Page 19
- **SEALS/PLUGS:** See Page 19
  *See Page 19 for alternative material

**B**

- **PART NO:** 15317832
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PA6 10% GF & 20% GB

North American Region
= 1-800-PACKARD

European Region
= 49-202-291-2000

Asia Pacific Region
= 65-730-9900

South American Region
= 55-12-378-2002
GT 280 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304710</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
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<td>15304711</td>
<td>1.00-0.75</td>
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<td>Tin</td>
</tr>
<tr>
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<tr>
<td>15304713</td>
<td>5.00-4.00</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
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</table>

GT 280 FEMALE CONNECTOR ASSEMBLIES UNSEALED

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<thead>
<tr>
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<th>Conn. Asm.</th>
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<th>Material</th>
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<tbody>
<tr>
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<td>15326870</td>
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<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>3</td>
<td>15326877</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>4</td>
<td>15326886</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
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<td>15326893</td>
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<td>15326900</td>
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<tr>
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<td>15326924</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>10</td>
<td>15326931</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>12</td>
<td>15326110</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>16</td>
<td>15326952</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Side Lock Covers (SLC) are included in the Connector Assemblies listed in this section.

http://delphi.com/products/connect
### Unsealed System Application Information

#### GT 280 MALE TERMINALS UNSEALED - Tin Plated

| CABLE RANGE (mm²): | ........ 0.35-5.0 |
| CURRENT RANGE (AMPS): | ........ 0-25 |
| TEMP RANGE °C: | ........ -40 to 125 |
| RESISTANCE: | ........ <10mΩ@20mV |
| VOLTAGE DROP: | ........ <4.0mV/amp |
| CENTERLINE SPACING (mm): | ........ 5.5 |
| BLADE WIDTH (mm): | ................. 2.8 |

#### 280 SERIES TERMINALS – Tin Plated

**TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT**

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
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<tbody>
<tr>
<td>TEMPERATURE RISE (°C)</td>
<td>0.50</td>
<td>0.80</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
<td>3.00</td>
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**TEMPERATURE DERATING CURVES**

<table>
<thead>
<tr>
<th>AMBIENT TEMPERATURE (°C)</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
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<tr>
<td>MAXIMUM CURRENT (AMPS)</td>
<td>5.0</td>
<td>5.0</td>
<td>4.0</td>
<td>2.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

#### GT 280 MALE CONNECTOR ASSEMBLIES UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
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<tbody>
<tr>
<td>2</td>
<td>15326874</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>3</td>
<td>15326881</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>4</td>
<td>15326890</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>5</td>
<td>15326897</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>6</td>
<td>15326904</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
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<td>8</td>
<td>15326928</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>10</td>
<td>15326935</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>12</td>
<td>15326942</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326956</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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GT 280 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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<tbody>
<tr>
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<td>0.50-0.35</td>
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<td>15304723</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304724</td>
<td>3.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304725</td>
<td>5.00-4.00</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Special consideration must be used when applying terminals 15304713 and 15304725 due to cavity space limitations.

---

[Contact your regional support representative at the number listed below.](http://delphi.com/products/connect)
GT Series

**PART NO:** 15326870
**DESCRIPTION:** Connector Assembly 2F
**SIZE:** 28.6L x 20.0H x 19.4W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 22

**PART NO:** 15326877
**DESCRIPTION:** Connector Assembly 3F
**SIZE:** 28.6L x 20.0H x 24.9W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 22

**PART NO:** 15326886
**DESCRIPTION:** Connector Assembly 4F
**SIZE:** 28.6L x 20.0H x 30.4W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 22

**PART NO:** 15326893
**DESCRIPTION:** Connector Assembly 5F
**SIZE:** 28.6L x 20.0H x 35.9W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 22

**PART NO:** 15326900
**DESCRIPTION:** Connector Assembly 6F
**SIZE:** 28.6L x 20.0H x 41.4W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 22

**PART NO:** 15317832
**DESCRIPTION:** CPA
**COLOR:** Gray
**MATERIAL:** PA6 10% GF & 20% GB

**PART NO:** 15326874
**DESCRIPTION:** Connector Assembly 2M
**SIZE:** 36.1L x 17.5H x 16.2W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 23

**PART NO:** 15326881
**DESCRIPTION:** Connector Assembly 3M
**SIZE:** 36.1L x 17.5H x 21.7W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 23

**PART NO:** 15326890
**DESCRIPTION:** Connector Assembly 4M
**SIZE:** 36.1L x 17.5H x 27.2W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 23

**PART NO:** 15326897
**DESCRIPTION:** Connector Assembly 5M
**SIZE:** 36.1L x 17.5H x 32.7W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 23

**PART NO:** 15326904
**DESCRIPTION:** Connector Assembly 6M
**SIZE:** 36.1L x 17.5H x 38.2W
**COLOR:** Black
**MATERIAL:** PA6 10% GF & 20% GB
**TERMINALS:** See Page 23

**TOTAL MATED LENGTH:** 48.7mm

http://delphi.com/products/connect
<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>COLOR</th>
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<th>TERMINALS</th>
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<tr>
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<tr>
<td>B</td>
<td>CPA</td>
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<td></td>
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<tr>
<td>C</td>
<td>Connector Assembly 8M</td>
<td>36.1L x 22.5H x 26.6W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 22</td>
</tr>
<tr>
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<tr>
<td>A</td>
<td>Connector Assembly 10F</td>
<td>28.6L x 26.2H x 34.6W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 22</td>
</tr>
<tr>
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<td></td>
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<tr>
<td>A</td>
<td>Connector Assembly 12F</td>
<td>28.6L x 26.2H x 40.1W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 22</td>
</tr>
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<tr>
<td>A</td>
<td>Connector Assembly 16F</td>
<td>28.6L x 26.2H x 51.1W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
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<td>DESCRIPTION: Connector Assembly 8F</td>
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<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
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<td>B</td>
<td>PART NO: 15326931</td>
<td>DESCRIPTION: Connector Assembly 10F</td>
<td>SIZE: 28.6L x 26.2H x 34.6W</td>
<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
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<td>B</td>
<td>PART NO: 15326935</td>
<td>DESCRIPTION: Connector Assembly 10M</td>
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<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>B</td>
<td>PART NO: 15326942</td>
<td>DESCRIPTION: Connector Assembly 12M</td>
<td>SIZE: 36.1L x 22.5H x 37.6W</td>
<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>B</td>
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<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
</tr>
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<td>B</td>
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<tr>
<td>B</td>
<td>PART NO: 15326935</td>
<td>DESCRIPTION: Connector Assembly 10M</td>
<td>SIZE: 36.1L x 22.5H x 32.1W</td>
<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>B</td>
<td>PART NO: 15326942</td>
<td>DESCRIPTION: Connector Assembly 12M</td>
<td>SIZE: 36.1L x 22.5H x 37.6W</td>
<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
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<tr>
<td>B</td>
<td>PART NO: 15326956</td>
<td>DESCRIPTION: Connector Assembly 16M</td>
<td>SIZE: 36.1L x 22.5H x 48.6W</td>
<td>COLOR: Black</td>
<td>MATERIAL: PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Total Mated Length: 48.7mm
GT Series

Cross Sectional View

GT Series

**GT 280 FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Tin Brass</td>
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<td>15304719</td>
<td>1.00-0.75</td>
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<td>Tin</td>
</tr>
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<td>15304720</td>
<td>3.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15328004</td>
<td>5.00-4.00</td>
<td>Beryllium Copper</td>
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**GT 280 CABLE SEALS**

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<th>Loose Part #</th>
<th>Cable Diameter</th>
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</thead>
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<td>12191222</td>
<td>15366066</td>
<td>1.86-2.25</td>
<td>Silicone</td>
<td>Yellow</td>
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<td>12191223</td>
<td>15366067</td>
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<td>Silicone</td>
<td>Tan</td>
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<td>–</td>
<td>12191235</td>
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<td>Silicone</td>
<td>Purple</td>
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**GT 280 FEMALE CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
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<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
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</thead>
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<td>4</td>
<td>15326631</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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<td>5</td>
<td>15326642</td>
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<td>6</td>
<td>15326635</td>
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<td>PA6 10% GF &amp; 20% GB</td>
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</tbody>
</table>

Primary Lock Reinforcement (PLR) and Connector Seals are included in the Connector Assemblies listed in this section.

http://delphi.com/products/connect
Sealed System Application Information

**GT 280 MALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>15304732</td>
<td>3.00-1.50</td>
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**GT 280 MALE CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
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<th>Connector</th>
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<td>PA6 10% GF &amp; 20% GB</td>
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<td>3</td>
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<td>15326661</td>
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<td>14</td>
<td>15326922</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326667</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Primary Lock Reinforcement is included in the Connector Assemblies listed in this section.

**GT 280 CAVITY PLUG**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15305170</td>
<td>5.8mm</td>
<td>Silicone</td>
<td>White</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

**SECTION NOTES:**

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

Contact your regional support representative at the number listed below.
GT Series

**PART NO:** 15326679  
**DESCRIPTION:** Connector Assembly 2F  
**SIZE:** 29.3L x 23.1H x 26.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 26  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326614  
**DESCRIPTION:** Connector Assembly 3F  
**SIZE:** 29.3L x 23.1H x 26.3W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 26  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326631  
**DESCRIPTION:** Connector Assembly 4F  
**SIZE:** 29.3L x 23.1H x 23.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 26  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326642  
**DESCRIPTION:** Connector Assembly 5F  
**SIZE:** 29.3L x 23.1H x 26.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 26  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326635  
**DESCRIPTION:** Connector Assembly 6F  
**SIZE:** 29.3L x 23.1H x 52.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 26  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15317832  
**DESCRIPTION:** CPA  
**COLOR:** Gray  
**MATERIAL:** PA6 10% GF & 20% GB

**PART NO:** 15326678  
**DESCRIPTION:** Connector Assembly 2M  
**SIZE:** 43.4L x 19.4H x 23.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 27  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326623  
**DESCRIPTION:** Connector Assembly 3M  
**SIZE:** 43.4L x 19.4H x 30.3W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 27  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326633  
**DESCRIPTION:** Connector Assembly 4M  
**SIZE:** 43.4L x 19.4H x 36.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 27  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326647  
**DESCRIPTION:** Connector Assembly 5M  
**SIZE:** 43.4L x 19.4H x 43.3W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 27  
**SEALS/PLUGS:** See Page 26, 27

**PART NO:** 15326640  
**DESCRIPTION:** Connector Assembly 6M  
**SIZE:** 43.4L x 19.4H x 49.8W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 27  
**SEALS/PLUGS:** See Page 26, 27

Total Mated Length: 56.7mm

---

North American Region: 1-800-PACKARD  
European Region: 49-202-291-2000  
Asia Pacific Region: 65-730-9900  
South American Region: 55-12-378-2002

http://delphi.com/products/connect
PART NO: 15326654
DESCRIPTION: Connector Assembly 8F
SIZE: 29.3L x 29.0H x 39.9W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 26, 27

PART NO: 15326655
DESCRIPTION: Connector Assembly 8M
SIZE: 43.4L x 25.5H x 36.8W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 27
SEALS/PLUGS: See Page 26, 27

PART NO: 15326660
DESCRIPTION: Connector Assembly 10F
SIZE: 29.3L x 29.0H x 46.4W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 26, 27

PART NO: 15326661
DESCRIPTION: Connector Assembly 10M
SIZE: 43.4L x 25.5H x 43.3W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 27
SEALS/PLUGS: See Page 26, 27

PART NO: 15326910
DESCRIPTION: Connector Assembly 12F
SIZE: 29.3L x 29.0H x 52.9W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 26, 27

PART NO: 15326915
DESCRIPTION: Connector Assembly 12M
SIZE: 43.4L x 25.5H x 49.8W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 27
SEALS/PLUGS: See Page 26, 27

PART NO: 15326917
DESCRIPTION: Connector Assembly 14F
SIZE: 29.3L x 29.0H x 65.4W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 26, 27

PART NO: 15326922
DESCRIPTION: Connector Assembly 14M
SIZE: 43.4L x 25.5H x 66.3W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 27
SEALS/PLUGS: See Page 26, 27

PART NO: 15326666
DESCRIPTION: Connector Assembly 16F
SIZE: 29.3L x 29.0H x 65.9W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 26, 27

PART NO: 15326667
DESCRIPTION: Connector Assembly 16M
SIZE: 43.4L x 25.5H x 62.8W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 27
SEALS/PLUGS: See Page 26, 27

PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB
GT 280 Connection Systems are designed to mate to most headlamps, including a variety of daytime running lamps, high beam, and dual filament bulbs.

A PART NO: 15336116
DESCRIPTION: Connector Assembly 2F
SIZE: 35.8L x 23.8H x 29.4W
COLOR: Black
MATERIAL: PA6 20% GF & 10% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 84, 85

B PART NO: 15336117
DESCRIPTION: Connector Assembly 2F
SIZE: 35.8L x 23.8H x 29.4W
COLOR: Brown
MATERIAL: PA6 20% GF & 10% GB
TERMINALS: See Page 26
SEALS/PLUGS: See Page 84, 85

http://delphi.com/products/connect
GT Series

\textbf{150/280 MIXED}

\textbf{Cross Sectional View}

\begin{itemize}
  \item Female Connector Assembly
  \item Male Connector Assembly
\end{itemize}

\textbf{GT 150 FEMALE TERMINALS UNSEALED}

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm\textsuperscript{2})</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191811</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12191812</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

\textbf{GT 280 FEMALE TERMINALS UNSEALED}

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm\textsuperscript{2})</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304710</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304711</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304712</td>
<td>3.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304713</td>
<td>5.00-4.00</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

\textbf{GT MIXED FEMALE CONNECTOR ASSEMBLIES UNSEALED}

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>15336205</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15336219</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>18</td>
<td>15329982</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Side Lock Covers (SLC) are included in the Connector Assemblies listed in this section.

http://delphi.com/products/connect
Unsealed System Application Information

**GT 150 SERIES TERMINALS—Tin Plated**

![Graph showing temperature rise above ambient (25°C) vs current for 150 series terminals.]

**280 SERIES TERMINALS—Tin Plated**

![Graph showing temperature derating curves for 280 series terminals.]

- **Cable Range (mm²):** 0.35-1.0
- **Current Range (Amps):** 0-15
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <10.0mV/amp
- **Centerline Spacing (mm):** 4.0
- **Blade Width (mm):** 1.5
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <4.0mV/amp
- **Centerline Spacing (mm):** 5.5
- **Blade Width (mm):** 2.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance contact your regional support representative at the number listed below.*

---

**GT MIXED MALE CONNECTOR ASSEMBLIES UNSEALED**

<table>
<thead>
<tr>
<th># CAVITIES</th>
<th>CONNECTOR</th>
<th>COLOR</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>15338209</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15338224</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Side Lock Covers (SLC) are included in the Connector Assemblies listed in this section.

---

**GT 150 MALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>PART #</th>
<th>CABLE RANGE (mm²)</th>
<th>MATERIAL</th>
<th>PLATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304701</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304702</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**GT 280 MALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>PART #</th>
<th>CABLE RANGE (mm²)</th>
<th>MATERIAL</th>
<th>PLATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304722</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304723</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304724</td>
<td>3.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304725</td>
<td>5.00-4.00</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Special consideration must be used when applying terminals 15304713 and 15304725 due to cavity space limitations.

---

http://delphi.com/products/connect
GT Series

150/280 MIXED

PART NO: 15336205
DESCRIPTION: Connector Assembly 12F
SIZE: 28.6L x 26.2H x 34.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 32

PART NO: 15336219
DESCRIPTION: Connector Assembly 16F
SIZE: 28.6L x 26.2H x 42.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 32

PART NO: 15326082
DESCRIPTION: Connector Assembly 18F
SIZE: 28.6L x 26.2H x 46.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 32

PART NO: 15336209
DESCRIPTION: Connector Assembly 12M
SIZE: 36.1L x 22.5H x 32.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 33

PART NO: 15336224
DESCRIPTION: Connector Assembly 16M
SIZE: 36.1L x 22.5H x 40.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 33

A
PART NO: 15336205
DESCRIPTION: Connector Assembly 12F
SIZE: 28.6L x 26.2H x 34.6W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 32

B
PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB

C
PART NO: 15336209
DESCRIPTION: Connector Assembly 12M
SIZE: 36.1L x 22.5H x 32.1W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 33

Total Mated Length: 56.7mm

KEY:
150 SERIES
280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
GT Series

• 150/280 MIXED

Cross Sectional View

GT 150 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191818</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12191819</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

GT 280 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304718</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15304719</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15304720</td>
<td>3.00-1.50</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15328004</td>
<td>5.00-4.00</td>
<td>Beryllium</td>
<td>Copper</td>
</tr>
</tbody>
</table>

GT 150 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191152</td>
<td>15366021</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12191153</td>
<td>15366060</td>
<td>1.86-2.25</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
</tbody>
</table>

GT 280 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
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<tbody>
<tr>
<td>12191221</td>
<td>15366065</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>Orange</td>
</tr>
<tr>
<td>12191222</td>
<td>15366066</td>
<td>1.86-2.25</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12191223</td>
<td>15366067</td>
<td>2.50-3.20</td>
<td>Silicone</td>
<td>Tan</td>
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<td>–</td>
<td>12191235</td>
<td>3.40-3.90</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
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</table>

GT MIXED FEMALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
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<tr>
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<td>15326839</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>14</td>
<td>15336837</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326084</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Primary Lock Reinforcement (PLR) and Connector Seals are included in the Connector Assemblies listed in this section.

http://delphi.com/products/connect
Sealed System Application Information

GT 150 SERIES TERMINALS – Tin Plated

- Temperature Rise Above Ambient (25°C) vs Current
- Temperature Derating Curves

Cable Range (mm²): 0.35-1.0
Current Range (Amps): 0-15
Temp Range °C: -40 to 125
Resistance: <10mΩ @ 20mV

Voltage Drop: <10.0mV/amp
Centerline Spacing (mm): 4.5
Blade Width (mm): 1.5

GT 280 SERIES TERMINALS – Tin Plated

- Temperature Rise Above Ambient (25°C) vs Current
- Temperature Derating Curves

Cable Range (mm²): 0.35-5.0
Current Range (Amps): 0-25
Temp Range °C: -40 to 125
Resistance: <10mΩ @ 20mV

Voltage Drop: <4.0mV/amp
Centerline Spacing (mm): 6.5
Blade Width (mm): 2.8

GT 150 SERIES TERMINALS – Tin Plated

- Temperature Rise Above Ambient (25°C) vs Current
- Temperature Derating Curves

Cable Range (mm²): 0.50-0.35
Current Range (Amps): 0-0.75
Temp Range °C: -40 to 125
Resistance: <10mΩ @ 20mV

Voltage Drop: <10.0mV/amp
Centerline Spacing (mm): 4.5
Blade Width (mm): 1.5

GT 150 MALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326268</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15326269</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

GT 280 MALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304730</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15304731</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
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<tr>
<td>15304732</td>
<td>3.00-1.50</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

GT 150 CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Diameter</th>
<th>Material</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>15305171</td>
<td>4.0mm</td>
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GT 280 CAVITY PLUG*

<table>
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<th>Part #</th>
<th>Cavity Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15305170</td>
<td>5.8mm</td>
<td>Silicone</td>
<td>White</td>
</tr>
</tbody>
</table>

GT MIXED MALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
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<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
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<tbody>
<tr>
<td>12</td>
<td>15338034</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>14</td>
<td>15422562</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>16</td>
<td>15326085</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
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</tbody>
</table>

GT 280 CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15305170</td>
<td>5.8mm</td>
<td>Silicone</td>
<td>White</td>
</tr>
</tbody>
</table>

SECTION NOTES:
- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002

http://delphi.com/products/connect
GT Series

**150/280 MIXED**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Size:</th>
<th>Color:</th>
<th>Material:</th>
<th>Terminals:</th>
<th>Seals/Plugs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326939</td>
<td>Connector Assembly 12F</td>
<td>29.3L x 29.0H x 44.9W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15336037</td>
<td>Connector Assembly 14F</td>
<td>29.3L x 29.0H x 49.4W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15326084</td>
<td>Connector Assembly 16F</td>
<td>29.3L x 29.0H x 53.9W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15317832</td>
<td>CPA</td>
<td></td>
<td>Gray</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15336034</td>
<td>Connector Assembly 12M</td>
<td>43.4L x 25.5H x 41.8W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15422562</td>
<td>Connector Assembly 14M</td>
<td>43.4L x 25.5H x 46.3W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
<tr>
<td>15326085</td>
<td>Connector Assembly 16M</td>
<td>43.4L x 25.5H x 50.8W</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
<td>See Page 36, 37</td>
<td></td>
</tr>
</tbody>
</table>

**KEY:**

- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

Total Mated Length: 56.7mm
**GT Series**

**Leaver Lock**

### Cross Sectional View

- **Terminal**
- **Stabilizer**
- **Lever Lock**
- **Terminal**
- **TPA**

### Female Connectors

**GT 150 Female Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191811</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12191812</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**GT 280 Female Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304710</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304711</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304712</td>
<td>3.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304713</td>
<td>5.00-4.00</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**GT Female Lever Lock Connectors Unsealed**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>15304692</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15304694</td>
</tr>
<tr>
<td>22</td>
<td>15317325</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>15317326</td>
</tr>
<tr>
<td>30</td>
<td>15304908</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15304913</td>
</tr>
<tr>
<td>40</td>
<td>1559287</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15304842</td>
</tr>
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</table>

Unsealed System Application Information

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304701</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304702</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Special consideration must be used when applying terminals 15304713 and 15304725 due to cavity space limitations.

http://delphi.com/products/connect
GT Series

**Lever Lock**

- **Part NO:** 15304692 (Black)
  - **Description:** Connector 18F
  - **Size:** 22.0L x 20.5H x 59.0W
  - **Material:** PA66 HS IM
  - **Terminals:** See Page 40

- **Part NO:** 15304690 (Md. Gray)
  - **Description:** Connector 18F
  - **Size:** 22.0L x 20.5H x 59.0W
  - **Material:** PA66 HS IM
  - **Terminals:** See Page 40

- **Part NO:** 15304694
  - **Description:** TPA
  - **Color:** Blue
  - **Material:** PBT

- **Total Mated Length:** 63.8mm

**Mixed connectors feature a combination of different terminal cavities, as indicated by the key.**

- **Part NO:** 15336468 (Black)
  - **Description:** Connector 18M
  - **Size:** 50.0L x 20.5H x 66.0W
  - **Material:** PA66 HS IM
  - **Terminals:** See Page 41
  - **Clip:** 12084149

- **Part NO:** 15304695
  - **Description:** TPA
  - **Color:** Blue
  - **Material:** PBT

- **Part NO:** 15418982
  - **Description:** Stabilizer
  - **Color:** Natural
  - **Material:** PA66 HS IM

- **Part NO:** 15317550
  - **Description:** Lever Lock
  - **Color:** Purple
  - **Material:** PA66 HS IM

**KEY:**
- 150 SERIES
- 280 SERIES

### GT Series

#### Lever Lock

**KEY:**
- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

<table>
<thead>
<tr>
<th>Component</th>
<th>Part No.</th>
<th>Description</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15317325 (Lt. Gray)</td>
<td>Connector 22F</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td></td>
<td>15326063 (Md. Gray)</td>
<td>Connector 22F</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>B</td>
<td>15317326</td>
<td>TPA</td>
<td>Blue</td>
<td>PBT</td>
</tr>
<tr>
<td>C</td>
<td>15317322 (Lt. Gray)</td>
<td>Connector 22M</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td></td>
<td>15326064 (Md. Gray)</td>
<td>Connector 22M</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>D</td>
<td>15317323</td>
<td>TPA</td>
<td>Blue</td>
<td>PBT</td>
</tr>
<tr>
<td>E</td>
<td>15418983</td>
<td>Stabilizer</td>
<td>Natural</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>F</td>
<td>15317321</td>
<td>Lever Lock</td>
<td>Blue</td>
<td>PA66 HS IM</td>
</tr>
</tbody>
</table>

**Dimensions:**

- **A:** L: 22.0, W: 74.0, H: 20.4
- **B:** L: 49.8, W: 81.8, H: 20.2
- **C:** L: 49.8, W: 20.4, H: 20.2
- **D:** L: 49.8, W: 81.8, H: 20.2
- **E:** L: 22.0, W: 74.0, H: 20.2
- **F:** L: 49.8, W: 81.8, H: 20.2

**Total Mated Length:** 66.0mm

---

http://delphi.com/products/connect

---

**North American Region**
- 1-800-PACKARD

**European Region**

**Asia Pacific Region**
- 65-730-9900

**South American Region**
- 55-12-378-2002

43
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

**KEY:**

- □ 150 SERIES
- ■ 280 SERIES

http://delphi.com/products/connect
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

KEY:
- 150 SERIES
- 280 SERIES

North American Region | European Region | Asia Pacific Region | South American Region
---|---|---|---

http://delphi.com/products/connect
GT Series

**Lever Lock**

### Cross Sectional View

![Cross Sectional View of Lever Lock](image)

### GT 150 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191818</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12191819</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

### GT 280 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304715</td>
<td>15304718</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>15304716</td>
<td>15304719</td>
<td>1.00-0.75</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td>15304717</td>
<td>2.00-1.50</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td>15304720</td>
<td>3.00-1.50</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td>15336177</td>
<td>5.00-4.00</td>
<td>Beryllium Copper</td>
<td>Tin</td>
</tr>
</tbody>
</table>

### GT 150 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191152</td>
<td>15366021</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12191153</td>
<td>15366060</td>
<td>1.88-2.25</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
</tbody>
</table>

### GT 280 CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191221</td>
<td>15366065</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>Orange</td>
</tr>
<tr>
<td>12191222</td>
<td>15366066</td>
<td>1.88-2.25</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12191223</td>
<td>15366067</td>
<td>2.50-3.20</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td></td>
<td>12191235</td>
<td>3.40-3.90</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12191156</td>
<td>15366063</td>
<td>1.20-1.85</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>12191157</td>
<td>15366064</td>
<td>1.88-2.25</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12191154</td>
<td>15366061</td>
<td>2.09-2.66</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

### GT FEMALE LEVER LOCK CONNECTORS SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>PLR</th>
<th>TPA</th>
<th>Seal</th>
<th>Lever Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>15366099</td>
<td>Black</td>
<td>PA6 10%GF &amp; 10% GB</td>
<td>15373422</td>
<td>– 15338177</td>
<td>15366922</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>15338418</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>– 15304904</td>
<td>15304905</td>
<td>15338267</td>
<td></td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
**GT Series**

Sealed System Application Information

GT 150 SERIES TERMINALS - Tin Plated

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326268</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15326269</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT**

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0.50</td>
</tr>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>1.80</td>
</tr>
<tr>
<td>20</td>
<td>2.50</td>
</tr>
</tbody>
</table>

**TEMPERATURE DERATING CURVES**

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
</tr>
</tbody>
</table>

**VOLTAGE DROP**: <10.0mV/amp

**TEMP RANGE**: -40 to 125°C

**RESISTANCE**: <10mΩ/20mV

GT 280 SERIES TERMINALS - Tin Plated

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304727</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304728</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304729</td>
<td>2.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT**

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.50</td>
</tr>
<tr>
<td>5</td>
<td>1.80</td>
</tr>
<tr>
<td>10</td>
<td>3.00</td>
</tr>
<tr>
<td>15</td>
<td>4.50</td>
</tr>
<tr>
<td>20</td>
<td>5.80</td>
</tr>
</tbody>
</table>

**TEMPERATURE DERATING CURVES**

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>75</td>
<td>30</td>
</tr>
<tr>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>125</td>
<td>50</td>
</tr>
</tbody>
</table>

**VOLTAGE DROP**: <4.0mV/amp

**TEMP RANGE**: -40 to 125°C

**RESISTANCE**: <10mΩ/20mV

*Cavity plugs seal unused female and male cavities.

**GT MALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15304727</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304728</td>
<td>1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15304729</td>
<td>2.00-1.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**GT MALE LEVER LOCK CONNECTORS SEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>PLR</th>
<th>TPA</th>
<th>Stabilizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>15336173</td>
<td>Black</td>
<td>PA66 HS IM 14% GF</td>
<td>15355131</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>38</td>
<td>15317380</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>15304903</td>
<td>15304902</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

Contact your regional support representative at the number listed below.

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimension as specified.

http://delphi.com/products/connect

North American Region | European Region | Asia Pacific Region | South American Region
GT Series

**LEVER LOCK**

**A**
- PART NO: 15366099
- DESCRIPTION: Connector 24F
- SIZE: 52.8L x 40.0H x 80.6W
- COLOR: Black
- MATERIAL: PA6 10%GF & 20% GB
- TERMINALS: See Page 46
- SEALS/PLUGS: See Page 46, 47

**B**
- PART NO: 15373422
- DESCRIPTION: PLR
- COLOR: Natural
- MATERIAL: PA66 HS IM

**C**
- PART NO: 15336177
- DESCRIPTION: Connector Seal
- COLOR: Green
- MATERIAL: Silicone

**D**
- PART NO: 15369322
- DESCRIPTION: Lever Lock
- COLOR: Md. Gray
- MATERIAL: PA66 HS IM

**E**
- PART NO: 1536173
- DESCRIPTION: Connector 24M
- SIZE: 48.4L x 37.2H x 74.5W
- COLOR: Black
- MATERIAL: PA66 HS IM 14% GF
- TERMINALS: See Page 47
- SEALS/PLUGS: See Page 46, 47

**F**
- PART NO: 15373421
- DESCRIPTION: PLR
- COLOR: Md. Gray
- MATERIAL: PA66 HS IM

**Key:**
- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

System Note:
For 280 Series sealed cavities use 5.8mm cavity diameter terminals and seals from pages 46 and 47.

http://delphi.com/products/connect
**GT Series**

**Lever Lock**

*North American Region*

1-800-PACKARD

*European Region*

49-202-291-2000

*Asia Pacific Region*

65-730-9900

*South American Region*

55-12-378-2002

---

**A**

**PART NO:** 15336418  
**DESCRIPTION:** Connector 38F  
**SIZE:** 52.8L x 46.1H x 93.3W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 46  
**SEALS/PLUGS:** See Page 46, 47

**B**

**PART NO:** 15304904  
**DESCRIPTION:** TPA  
**NUMBER REQ.:** 2  
**COLOR:** Lt. Gray  
**MATERIAL:** PBT

**C**

**PART NO:** 15304905  
**DESCRIPTION:** Connector Seal  
**COLOR:** Green  
**MATERIAL:** Silicone

**D**

**PART NO:** 15336267  
**DESCRIPTION:** Lever Lock  
**COLOR:** Dk. Gray  
**MATERIAL:** PA66 HS IM 14% GF

**E**

**PART NO:** 15317380  
**DESCRIPTION:** Connector 38M  
**SIZE:** 48.4L x 38.6H x 85.7W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 47  
**SEALS/PLUGS:** See Page 46, 47  
**CLIP:** 12084149

**F**

**PART NO:** 15304903  
**DESCRIPTION:** TPA  
**NUMBER REQ.:** 2  
**COLOR:** Lt. Gray  
**MATERIAL:** PBT

**G**

**PART NO:** 15304902  
**DESCRIPTION:** Stabilizer  
**COLOR:** Natural  
**MATERIAL:** PA66 HS IM

---

**KEY:**

- 150 SERIES
- 280 SERIES
- Blocked Cavity

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

**System Note:**
For 280 Series sealed cavities use 5.2mm cavity diameter terminals and seals from pages 46 and 47.

---

http://delphi.com/products/connect
GT MALE LEVER LOCK CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
<th>Stabilizer</th>
<th>Lever Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>15317735</td>
<td>Brown</td>
<td>PA66 HS IM</td>
<td>15317828</td>
<td>15418984</td>
<td>15326799</td>
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<tr>
<td>40</td>
<td>15317694</td>
<td>Brown</td>
<td>PA66 HS IM</td>
<td>15555380</td>
<td>15326177</td>
<td>15336387</td>
</tr>
</tbody>
</table>

GT 150 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15317814</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

GT 280 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15317815</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

SECTION NOTES:

- Contact your regional support representative at the number listed below.
- Flex Circuit Systems mate to conventional female connection systems.

http://delphi.com/products/connect
**SYSTEM NOTES:**

- Conventional mating connector 15305216 (Female) Brown
- 15304913 (TPA) Blue
- Terminals See Page 40.

**PART NO:** 15317735  
**DESCRIPTION:** Connector 30M  
**SIZE:** 49.8L x 24.3H x 89.4W  
**COLOR:** Brown  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 50

**PART NO:** 15317828  
**DESCRIPTION:** TPA  
**COLOR:** Green  
**MATERIAL:** PBT

**PART NO:** 15418984  
**DESCRIPTION:** Stabilizer  
**COLOR:** Natural  
**MATERIAL:** PA66 HS IM

**PART NO:** 15326799  
**DESCRIPTION:** Lever Lock  
**COLOR:** Natural  
**MATERIAL:** PA66 HS IM 14% GF

**KEY:**

- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
GT Series

LEVER LOCK
FLEXIBLE PRINTED CIRCUIT APPLICATION

SYSTEM NOTES:
- Conventional mating connector
  - 15305218 (Female) Brown
  - 15304342 (TPA) Blue
- Terminals See Page 40.

A
PART NO: 15317694
DESCRIPTION: Connector 40M
SIZE: 47.3L x 32.4H x 64.9W
COLOR: Brown
MATERIAL: PA66 HS IM
TERMINALS: See Page 50

B
PART NO: 15356380
DESCRIPTION: TPA
NUMBER REQ.: 2
COLOR: Green
MATERIAL: PBT HM IS

C
PART NO: 15326177
DESCRIPTION: Stabilizer
COLOR: Natural
MATERIAL: PA66 HS IM

D
PART NO: 15336387
DESCRIPTION: Lever Lock
COLOR: Natural
MATERIAL: PA66 HS IM 14% GF

KEY:
- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
Available in device and in-line connections for vehicle applications, Metri-Pack 150 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for limited space applications that do not require environmental protection, Metri-Pack 150 Series products are extremely versatile.

Available in device and in-line connections for underhood vehicle applications, Metri-Pack 150 Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Utilizing triple-rib peripheral silicone rubber seals, Metri-Pack 150 Series sealed systems are ideally suited for critical, low-energy electronic applications that require protection from environmental hazards.

150 Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 14 Amps continuous maximum current rating
- Small overall dimensions
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
**Metri-Pack Series**

**North American Region**
1-800-PACKARD

**European Region**
49-202-291-2000

**Asia Pacific Region**
65-730-9900

**South American Region**
55-12-378-2002

---

### Cross Sectional View

#### 150 Female Connectors Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>12047767</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
<td></td>
</tr>
<tr>
<td>12064971</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
<td></td>
</tr>
</tbody>
</table>

#### 150 Tangleless Female Connectors Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>12129484</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
<td></td>
</tr>
<tr>
<td>12129373</td>
<td>0.5-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
<td></td>
</tr>
</tbody>
</table>

---

http://delphi.com/products/connect
Unsealed System Application Information

150 SERIES TERMINALS—Tin Plated

CABLE RANGE (mm²): .......... 0.35-1.0
CURRENT RANGE (AMPS): ........ 0-14
TEMP RANGE °C: ........... -40 to 125
RESISTANCE: ........ <10mΩ@20mV
VOLTAGE DROP: ...... <10.0 mV/amp
CENTERLINE SPACING (mm): ....... 3.5
BLADE WIDTH (mm): .............. 1.5

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

150 MALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12047683</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>12047663</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12047665</td>
</tr>
<tr>
<td>2</td>
<td>12052833</td>
<td>Black</td>
<td>PBT</td>
<td>12047665</td>
</tr>
<tr>
<td>3</td>
<td>12047782</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12047784</td>
</tr>
<tr>
<td>3</td>
<td>12064795</td>
<td>Black</td>
<td>PBT</td>
<td>12047784</td>
</tr>
<tr>
<td>4</td>
<td>12047786</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12047787</td>
</tr>
<tr>
<td>4</td>
<td>12064761</td>
<td>Black</td>
<td>PBT</td>
<td>12047787</td>
</tr>
<tr>
<td>4</td>
<td>12092163</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12092164</td>
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<tr>
<td>6</td>
<td>12064763</td>
<td>Gray</td>
<td>PBT</td>
<td>12064765</td>
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<tr>
<td>8</td>
<td>12045688</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12045690</td>
</tr>
<tr>
<td>8</td>
<td>12064767</td>
<td>Blue</td>
<td>PBT</td>
<td>12045690</td>
</tr>
<tr>
<td>10</td>
<td>12064770</td>
<td>Natural</td>
<td>PBT</td>
<td>12064772</td>
</tr>
</tbody>
</table>

150 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12047581</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12059894</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

SECTION NOTES:

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 74.

http://delphi.com/products/connect

North American Region  European Region  Asia Pacific Region  South American Region
Metri-Pack Series 150

A PART NO: 12047682
DESCRIPTION: Connector 1F
SIZE: 17.0L x 7.0H x 6.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

B PART NO: 12047683
DESCRIPTION: Connector 1M
SIZE: 33.0L x 7.7H x 9.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 57

C PART NO: 12047662 (Black)
12059249 (Natural)
DESCRIPTION: Connector 2F
SIZE: 17.0L x 8.7H x 8.3W
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

D PART NO: 12047664
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

E PART NO: 12047663 (Black)
12059250 (Natural)
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 33.0L x 10.3H x 11.9W
MATERIAL: PA66 HS IM
TERMINALS: See Page 57

F PART NO: 12047665
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

Total Mated Length: 38.1mm

Total Mated Length: 41.0mm

http://delphi.com/products/connect
Metri-Pack Series

A PART NO: 12052832
DESCRIPTION: Connector 2F
SIZE: 21.4L x 17.3H x 12.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

B PART NO: 12047664
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

C PART NO: 12052834
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 33.0L x 17.3H x 14.9W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 57

D PART NO: 120652833
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 33.0L x 17.3H x 14.9W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 57

E PART NO: 12047665
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

F PART NO: 12047781
DESCRIPTION: Connector 3F
SIZE: 17.0L x 9.0H x 11.8W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

G PART NO: 12047783
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

H PART NO: 12047782
DESCRIPTION: Connector 3M (Clip Slot)
SIZE: 33.0L x 10.1H x 15.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 57

J PART NO: 12047784
DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PBT

Total Mated Length: 43.1mm

Total Mated Length: 41.3mm

http://delphi.com/products/connect
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Size</th>
<th>Color</th>
<th>Material</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>12064758</td>
<td>Connector 3F</td>
<td>21.4L x 17.3H x 11.8W</td>
<td>Black</td>
<td>PA66 HS IM</td>
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</tr>
<tr>
<td>12047783</td>
<td>TPA</td>
<td></td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
<tr>
<td>12052834</td>
<td>CPA</td>
<td></td>
<td>Green</td>
<td>PP</td>
<td></td>
</tr>
<tr>
<td>12047785</td>
<td>Connector 4F</td>
<td>17.0L x 10.4H x 12.4W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
<tr>
<td>12047664</td>
<td>TPA</td>
<td></td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
<tr>
<td>12047786</td>
<td>Connector 4M (Clip Slot)</td>
<td>33.0L x 11.9H x 16.0W</td>
<td>Blue</td>
<td>PBT</td>
<td></td>
</tr>
<tr>
<td>12047787</td>
<td>TPA</td>
<td></td>
<td>Blue</td>
<td>PBT</td>
<td></td>
</tr>
</tbody>
</table>

Total Mated Length: 47.1mm

http://delphi.com/products/connect
Metri-Pack Series

A PART NO: 12064760
DESCRIPTION: Connector 4F
SIZE: 21.4L x 16.5H x 15.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

B PART NO: 12047664
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Md. Gray
MATERIAL: PA66 HS IM

C PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

D PART NO: 12064761
DESCRIPTION: Connector 4M (Clip Slot)
SIZE: 33.0L x 19.0H x 19.0W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 57

E PART NO: 12047787
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PBT

F PART NO: 12092162
DESCRIPTION: Connector 4F
SIZE: 17.0L x 7.3H x 20.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

G PART NO: 12092164
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Blue
MATERIAL: PA66

H PART NO: 12092163
DESCRIPTION: Connector 4M (Clip Slot)
SIZE: 41.5L x 13.0H x 22.1W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 57

Total Mated Length: 47.9mm

Total Mated Length: 43.3mm

http://delphi.com/products/connect
Metri-Pack Series

**150**

**A**
- **PART NO:** 12131283
- **DESCRIPTION:** Connector 4F
- **SIZE:** 17.0L x 10.5H x 14.5W
- **COLOR:** Black
- **MATERIAL:** PA66
- **TERMINALS:** See Page 56

**B**
- **PART NO:** 12131361
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Yellow
- **MATERIAL:** PA66 25% GF

**C**
- **PART NO:** 12131285
- **DESCRIPTION:** Connector 4M (Clip Slot)
- **SIZE:** 33.0L x 14.4H x 16.4W
- **COLOR:** Black
- **MATERIAL:** PA66
- **TERMINALS:** See Page 57

**D**
- **PART NO:** 12131372
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Yellow
- **MATERIAL:** PA66 25% GF
- **NOTE:** M Clip-on Connector also available

**E**
- **PART NO:** 12147054
- **DESCRIPTION:** Connector 5F
- **SIZE:** 17.0L x 8.0H x 20.0W
- **COLOR:** Black
- **MATERIAL:** PA66
- **TERMINALS:** See Page 56

**F**
- **PART NO:** 12147055
- **DESCRIPTION:** Secondary Lock
- **NUMBER REQ:** 2
- **COLOR:** Yellow
- **MATERIAL:** PA66 25% GF

**G**
- **PART NO:** 12185636
- **DESCRIPTION:** Connector 5M (Clip Slot)
- **SIZE:** 33.0L x 11.3H x 22.3W
- **COLOR:** Black
- **MATERIAL:** PA66
- **TERMINALS:** See Page 57
- **NOTE:** Clip Version available

http://delphi.com/products/connect
A  PART NO: 12064762
DESCRIPTION: Connector 6F
SIZE: 21.5L x 20.6H x 16.4W
COLOR: Gray
MATERIAL: PBT
TERMINALS: See Page 56

B  PART NO: 12064764
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Blue
MATERIAL: PBT

C  PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

D  PART NO: 12064763
DESCRIPTION: Connector 6M (Clip Slot)
SIZE: 33.0L x 23.1H x 18.4W
COLOR: Gray
MATERIAL: PBT
TERMINALS: See Page 57

E  PART NO: 12064765
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PBT

F  PART NO: 15396848
DESCRIPTION: Connector 6F
SIZE: 17.0L x 14.5H x 14.5W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 56

G  PART NO: 12131358
DESCRIPTION: Secondary Lock
COLOR: Yellow
MATERIAL: PA66 25% GF

H  PART NO: 15396849
DESCRIPTION: Connector 6M
SIZE: 33.0L x 18.4H x 16.4W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 57

J  PART NO: 12131370
DESCRIPTION: Secondary Lock
COLOR: Yellow
MATERIAL: PA66 25% GF

Total Mated Length: 50.1mm

http://delphi.com/products/connect
Metri-Pack Series

A PART NO: 12047886
DESCRIPTION: Connector 8F
SIZE: 17.0L x 14.9H x 15.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 56

B PART NO: 12045689
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Md. Gray
MATERIAL: PA66 HS IM

C PART NO: 12045688
DESCRIPTION: Connector 8M (Clip Slot)
SIZE: 33.0L x 15.9H x 18.9W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 57

D PART NO: 12045690
DESCRIPTION: TPA
COLOR: Natural
MATERIAL: PBT

Total Mated Length: 41.2mm

E PART NO: 12064766
DESCRIPTION: Connector 8F
SIZE: 21.5L x 20.6H x 19.9W
COLOR: Blue
MATERIAL: PBT
TERMINALS: See Page 56

F PART NO: 12064768
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Black
MATERIAL: PBT

G PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

H PART NO: 12064767
DESCRIPTION: Connector 8M (Clip Slot)
SIZE: 33.0L x 23.1H x 21.9W
COLOR: Blue
MATERIAL: PBT
TERMINALS: See Page 57

J PART NO: 12045690
DESCRIPTION: TPA
COLOR: Natural
MATERIAL: PBT

Total Mated Length: 48.3mm

http://delphi.com/products/connect
Metri-Pack Series

**A**
- **PART NO:** 12064769
- **DESCRIPTION:** Connector 10F
- **SIZE:** 21.5L x 20.6H x 23.4W
- **COLOR:** Natural
- **MATERIAL:** PBT
- **TERMINALS:** See Page 56

**B**
- **PART NO:** 12064771
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 2
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

**C**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**D**
- **PART NO:** 12064770
- **DESCRIPTION:** Connector 10M (Clip Slot)
- **SIZE:** 33.0L x 23.1H x 25.4W
- **COLOR:** Natural
- **MATERIAL:** PBT
- **TERMINALS:** See Page 57

**E**
- **PART NO:** 12064772
- **DESCRIPTION:** TPA
- **COLOR:** Black
- **MATERIAL:** PBT

Total Mated Length: 48.3mm

http://delphi.com/products/connect
**Cross Sectional View**

### 150 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12048074</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12084200</td>
<td>0.50-0.35</td>
<td>Silicone Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12160223</td>
<td>1.0-0.80</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12160222</td>
<td>0.50-0.35</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

### 150 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052924</td>
<td>12048086</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12089442</td>
<td>12089678</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052925</td>
<td>12048087</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12124669</td>
<td>12084193</td>
<td>1.009-0.995</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

### 150 FEMALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12052641</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12052634</td>
</tr>
<tr>
<td>3</td>
<td>12110293</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12052646</td>
</tr>
<tr>
<td>5</td>
<td>12146045</td>
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<td>PA6</td>
<td>12092844</td>
</tr>
<tr>
<td>6</td>
<td>12047937</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12052650</td>
</tr>
<tr>
<td>8</td>
<td>12065425</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12066304</td>
</tr>
</tbody>
</table>

*To be used with female connections, see page 76
Sealed System Application Information

**150 SERIES TERMINALS—Tin Plated**

![Temperature Rise Above Ambient (25°C) vs Current](image1)

![Temperature Derating Curves](image2)

- The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**150 MALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12045773</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12077628</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**150 METRI-PACK CAVITY PLUG**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059168</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Different color and connector indexing features are also available.
- Female connections for device applications, see page 75.
Metri-Pack Series

- **A**
  - **PART NO:** 12052641 (Black)
  - **PART NO:** 12052644 (Lt. Gray)
  - **DESCRIPTION:** Connector Assembly 2F
  - **SIZE:** 26.0L x 18.6H x 23.0W
  - **MATERIAL:** PA66 HS IM
  - **TERMINALS:** See Page 66
  - **SEALS/PLUGS:** See Page 66, 67

- **B**
  - **PART NO:** 12052634
  - **DESCRIPTION:** TPA
  - **NUMBER REQUIRED:** 2
  - **COLOR:** Blue
  - **MATERIAL:** PA66 HS IM

- **C**
  - **PART NO:** 12162000 (Black)
  - **PART NO:** 12162343 (Lt. Gray)
  - **DESCRIPTION:** Connector 2M (Clip Slot–Self Locking)
  - **SIZE:** 45.5L x 18.6H x 23.0W
  - **MATERIAL:** PA66 HS IM
  - **TERMINALS:** See Page 66, 67
  - **SEALS/PLUGS:** See Page 66, 67

- **D**
  - **PART NO:** 15327799 (Optional)
  - **DESCRIPTION:** Conduit TPA
  - **NUMBER REQUIRED:** 2
  - **COLOR:** Black
  - **MATERIAL:** PA66 HS IM

- **E**
  - **PART NO:** 12110293
  - **DESCRIPTION:** Connector Assembly 3F
  - **SIZE:** 26.0L x 22.3H x 29.0W
  - **COLOR:** Black
  - **MATERIAL:** PA66 HS IM
  - **TERMINALS:** See Page 66
  - **SEALS/PLUGS:** See Page 66, 67

- **F**
  - **PART NO:** 12052845
  - **DESCRIPTION:** TPA
  - **NUMBER REQUIRED:** 2
  - **COLOR:** Natural
  - **MATERIAL:** PA66 HS IM

- **G**
  - **PART NO:** 12129615
  - **DESCRIPTION:** Connector 3M (Clip Slot–Self Locking)
  - **SIZE:** 45.5L x 22.0H x 29.0W
  - **COLOR:** Black
  - **MATERIAL:** PA66 HS IM
  - **TERMINALS:** See Page 66, 67
  - **SEALS/PLUGS:** See Page 66, 67

- **H**
  - **PART NO:** 12020833
  - **DESCRIPTION:** CPA
  - **COLOR:** Gray
  - **MATERIAL:** PBT

- **J**
  - **PART NO:** 10740397 (Optional)
  - **DESCRIPTION:** Conduit TPA
  - **NUMBER REQUIRED:** 2
  - **COLOR:** Black
  - **MATERIAL:** PA6
**Metri-Pack Series**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Number Req</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>12162144</td>
<td>Connector Assembly 4F</td>
<td>2</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>12047948</td>
<td>TPA</td>
<td>2</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>12162102</td>
<td>Connector 4M (Clip Slot–Self Locking)</td>
<td>2</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>10719337</td>
<td>Conduit TPA</td>
<td>2</td>
<td>Black</td>
<td>PA6</td>
</tr>
<tr>
<td>12146045</td>
<td>Connector Assembly 5F</td>
<td>2</td>
<td>Natural</td>
<td>PA6</td>
</tr>
<tr>
<td>12092844</td>
<td>TPA</td>
<td>2</td>
<td>Blue</td>
<td>PA6</td>
</tr>
<tr>
<td>12103974</td>
<td>Connector 5M</td>
<td>2</td>
<td>Natural</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>12020833</td>
<td>CPA</td>
<td>2</td>
<td>Gray</td>
<td>PBT</td>
</tr>
</tbody>
</table>

**Total Mated Length:**
- 58.4mm
- 60.5mm

**Dimensions:**
- L: 26.0, W: 35.0, H: 21.8
- L: 45.5, W: 34.6, H: 22.2
- L: 27.4, W: 29.0, H: 27.5
- L: 45.5, W: 29.0, H: 27.0

**http://delphi.com/products/connect**
Metri-Pack Series 150

North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002

PART NO: 12052848
DESCRIPTION: Connector Assembly 6F
SIZE: 27.4L x 28.7H x 29.8W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

PART NO: 12052850
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Md. Gray
MATERIAL: PA6

PART NO: 12047931 (Black)
DESCRIPTION: Connector Assembly 8M (Clip Slot)
SIZE: 27.4L x 28.8H x 35.2W
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

PART NO: 12052880
DESCRIPTION: Connector Assembly 7F
SIZE: 27.4L x 28.7H x 29.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

PART NO: 12052600 (Md. Gray)
DESCRIPTION: Connector Assembly 5F
SIZE: 27.4L x 28.7H x 29.0W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

PART NO: 12052480 (Dk. Gray)
DESCRIPTION: Connector  5M (Clip Slot)
SIZE: 44.6L x 27.3H x 35.2W
MATERIAL: PBT 30% GF
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

PART NO: 12047933 (Lt. Gray)
DESCRIPTION: Connector 7M (Clip Slot)
SIZE: 27.4L x 28.7H x 29.8W
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

PART NO: 12020833
DESCRIPTION: Connector 6M (Clip Slot–Self Locking)
SIZE: 45.5L x 28.1H x 29.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

PART NO: 12020833
DESCRIPTION: Connector 6M (Clip Slot–Self Locking)
SIZE: 45.5L x 28.1H x 29.0W
COLOR: Gray
MATERIAL: PBT

PART NO: 12066304
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

PART NO: 12052848
DESCRIPTION: Connector Assembly 6F
SIZE: 45.5L x 28.1H x 29.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

PART NO: 12047931 (Black)
DESCRIPTION: Connector 8M (Clip Slot)
SIZE: 44.6L x 27.3H x 35.2W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

PART NO: 15324525
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PBT

PART NO: 12020833
DESCRIPTION: Connector 6M (Clip Slot–Self Locking)
SIZE: 45.5L x 28.1H x 29.0W
COLOR: Gray
MATERIAL: PBT

TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

http://delphi.com/products/connect
150 • Metri-Pack Series

A PART NO: 12065425 (Black)
12065426 (Md. Gray)
DESCRIPTION: Connector Assembly 10F
SIZE: 26.0L x 28.4H x 42.2W
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67

B PART NO: 12124264
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Md. Gray
MATERIAL: PA6

C PART NO: 12045808 (Black)
12052189 (Lt. Gray)
DESCRIPTION: Connector 10M (Clip Slot)
SIZE: 44.6L x 27.0H x 42.2W
MATERIAL: PBT 30% GF
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

D PART NO: 12020833
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PBT

E PART NO: 10719339 (Optional)
DESCRIPTION: Conduit TPA
NUMBER REQ: 2
COLOR: Black
MATERIAL: PA6

Total Mated Length: 60.0mm

http://delphi.com/products/connect
**Metri-Pack OBD II—On-Board Diagnostic Connection System**

The On-Board Diagnostic Connection System is designed to meet SAE J1962 specifications using ISO standard male terminals. The 16 Terminal Male Test Equipment Connector includes a nylon insulator with ISO standard copper alloy male terminals. The Female Vehicle Connector is designed for under dash application, and accepts 150 Series Metri-Pack tangless female terminals available in silicon bronze.

---

**Part A**

- **PART NO:** 12110250
- **DESCRIPTION:** Connector 16F (Fastener Mounting)
- **SIZE:** 27.0L x 23.2H x 69.1W
- **PART NO:** 15317576
- **DESCRIPTION:** Connector 16F (Snap Mounting)
- **SIZE:** 17.0L x 23.2H x 52.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 56

**Part B**

- **PART NO:** 12146933
- **DESCRIPTION:** Cover
- **COLOR:** Black
- **MATERIAL:** PP

**Part C**

- **PART NO:** 12160437
- **DESCRIPTION:** TPA
- **NUMBER REG:** 2
- **COLOR:** Blue
- **MATERIAL:** PA6

**Part D**

- **PART NO:** 12110252
- **DESCRIPTION:** Connector 16M
- **SIZE:** 32.5L x 19.0H x 41.1W
- **COLOR:** Red
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 57
- **NOTE:** For molding details refer to drawing 12110256

**Part E**

- **PART NO:** 12110254
- **DESCRIPTION:** Clip
- **MATERIAL:** Stainless Steel

---

**Part F**

- **PART NO:** 12185280
- **DESCRIPTION:** Connector 16F
- **SIZE:** 28.0L x 23.0H x 61.0W
- **COLOR:** White
- **MATERIAL:** PA66
- **TERMINALS:** See Page 56

**Part G**

- **PART NO:** 12185279
- **DESCRIPTION:** Cover
- **COLOR:** Black
- **MATERIAL:** PA66

---

A DESCRIPTION: Connector Assembly 16M OBD II

<table>
<thead>
<tr>
<th>PART NO</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>12143692</td>
<td>3 Feet (915mm)</td>
</tr>
<tr>
<td>12143693</td>
<td>8 Feet (2440mm)</td>
</tr>
<tr>
<td>12143694</td>
<td>12 Feet (3660mm)</td>
</tr>
</tbody>
</table>

Total Molded System Length: 100.0mm
**Metri-Pack Series**

---

**150 DEVICE CONNECTIONS**

---

**A**

- **PART NO:** 12059800
- **DESCRIPTION:** Connector 5F
- **SIZE:** 17.0L x 7.4H x 24.1W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 56
- **TYPICAL APP:** Motor

---

**B**

- **PART NO:** 12059801
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

---

**C**

- **PART NO:** 12064860
- **DESCRIPTION:** Connector 6F
- **SIZE:** 25.0L x 14.7H x 22.3W
- **COLOR:** Black
- **MATERIAL:** PBT
- **TERMINALS:** See Page 56
- **TYPICAL APP:** Switch

---

**D**

- **PART NO:** 12064861
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

---

**E**

- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

---

**F**

- **PART NO:** 12064862
- **DESCRIPTION:** Connector 8F
- **SIZE:** 17.0L x 18.5H x 28.9W
- **COLOR:** Black
- **MATERIAL:** PBT
- **TERMINALS:** See Page 56
- **TYPICAL APP:** Mirror Switch

---

**G**

- **PART NO:** 12064863
- **DESCRIPTION:** TPA
- **COLOR:** Lt. Gray
- **MATERIAL:** PA6

---

**H**

- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

---

http://delphi.com/products/connect
Metri-Pack Series

A
PART NO: 12162017
DESCRIPTION: Connector Assembly 2F
SIZE: 26.0L x 12.1H x 24.2W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67
TYPICAL APP: Compressor

B
PART NO: 12124824
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA66 HS IM

C
PART NO: 12065298
DESCRIPTION: Connector Assembly 4F
SIZE: 26.0L x 24.8H x 22.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67
TYPICAL APP: Switch

D
PART NO: 12066176
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA66 HS IM

E
PART NO: 12077591
DESCRIPTION: Connector Assembly 5F
SIZE: 26.0L x 28.0H x 27.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 66
SEALS/PLUGS: See Page 66, 67
TYPICAL APP: EGR Valve

F
PART NO: 12052898
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA66 HS IM

http://delphi.com/products/connect
### Metri-Pack Series

**150.2 Pull-to-Seat**

#### A
PART NO: 12162193 (Black/Green Seal)
- 2.66 - 2.00 Cable O.D.
- Description: Connector Assembly 2F
- Size: 27.1L x 18.4H x 16.0W
- Material: PA66 HS IM
- Typical App: Temperature Sensors

#### B
PART NO: 12162215 (Black/Brown Seal)
- 2.66 - 2.00 Cable O.D.
- Description: Connector Assembly 2F
- Size: 22.1L x 11.0H x 19.4W
- Material: PA66 HS IM
- Typical App: Throttle Body Injector

#### C
PART NO: 12162182 (Black/Green Seal)
- 2.66 - 2.00 Cable O.D.
- Description: Connector Assembly 3F
- Size: 27.1L x 17.4H x 19.5W
- Material: PA66 HS IM
- Typical App: Crankshaft Sensor

#### D
PART NO: 12162188 (Black/Green Seal)
- 2.66 - 2.00 Cable O.D.
- Description: Connector Assembly 4F
- Size: 27.1L x 18.4H x 23.0W
- Material: PA66 HS IM
- Typical App: Distributor Module

#### E
PART NO: 12162210 (Black/Green Seal)
- 2.66 - 2.00 Cable O.D.
- Description: Connector Assembly 6F
- Size: 27.1L x 17.7H x 30.0W
- Material: PA66 HS IM
- Typical App: Various

---

http://delphi.com/products/connect
Metri-Pack Series

Available in device and in-line connections for vehicle applications, Metri-Pack 280 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for limited space applications that do not require environmental protection, Metri-Pack 280 Series products are extremely versatile.

Available in device and in-line connections for underhood vehicle applications, Metri-Pack 280 Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Utilizing triple-rib peripheral silicone rubber seals, Metri-Pack 280 Series sealed systems are ideally suited for critical, low-energy electronic applications that require protection from environmental hazards.

280 Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 30 Amps continuous maximum current rating
- Small overall dimensions
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- Standard ISO 2.8mm configuration
- -40°C to 125°C temperature range
## Metri-Pack Series

### 280 Cross Sectional View

![Cross Sectional View of 280 Metri-Pack Series](image)

### 280 TANGLESS FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12129425</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129663</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129424</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110842*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110844*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110843*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129061*</td>
<td>0.35 (2 Req’d)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

### 280 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015858</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129494</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12066214</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
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<tr>
<td>12034046</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052217</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12162597*</td>
<td>3.0-2.0</td>
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<td>Tin</td>
</tr>
<tr>
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<td>12162596*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

### 280 FLEXLOCK FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12129081</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12129083</td>
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<tr>
<td>3</td>
<td>12129489</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12129491</td>
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<tr>
<td>4</td>
<td>12129136</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12129138</td>
</tr>
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### 280 FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>12064752</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12064753</td>
</tr>
<tr>
<td>8</td>
<td>12064998</td>
<td>Black</td>
<td>PBT</td>
<td>12064999</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect

---

North American Region

1-800-PACKARD

European Region

49-202-291-2000

Asia Pacific Region

65-730-9900

South American Region

55-12-378-2002
Unsealed System Application Information

### 280 SERIES TERMINALS - Tin Plated

- **CABLE RANGE (mm²):** 0.35-5.0
- **CURRENT RANGE (AMPS):** 0-30
- **TEMP RANGE °C:** -40 to 125
- **RESISTANCE:** <10mΩ@20mV
- **VOLTAGE DROP:** <3.0mV/amp
- **CENTERLINE SPACING (mm):** 5.0
- **BLADE WIDTH (mm):** 2.8

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084586</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129498</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020116</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12034047</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12066271</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020782</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**
- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Different color and connector indexing features are also available.
- Female connections for device applications, see page 91.

http://delphi.com/products/connect
Metri-Pack Series

A PART NO: 12129081 (Black)
DESCRIPTION: Connector 2F
SIZE: 23.7L x 17.2H x 16.2W
MATERIAL: PA66 HS IM
TERMINALS: See Page 78

PART NO: 12129082 (Md. Gray)
DESCRIPTION: Connector 2F
SIZE: 23.7L x 17.2H x 16.2W
MATERIAL: PA66 HS IM
TERMINALS: See Page 78

B PART NO: 12129083
DESCRIPTION: TPA
COLOR: Lt. Gray
MATERIAL: PA66 HS IM

C PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

D PART NO: 12129155 (Black)
DESCRIPTION: Connector 2M (Clip Slot-Self Locking)
SIZE: 40.0L x 22.0H x 17.3W
MATERIAL: PA66 HS IM
TERMINALS: See Page 79

PART NO: 12129156 (Md. Gray)
DESCRIPTION: Connector 2M (Clip Slot-Self Locking)
SIZE: 40.0L x 22.0H x 17.3W
MATERIAL: PA66 HS IM
TERMINALS: See Page 79

E PART NO: 12129157
DESCRIPTION: TPA
COLOR: Lt. Gray
MATERIAL: PA66 HS IM

F PART NO: 12147503 (Black)
DESCRIPTION: Connector 2F
SIZE: 23.0L x 10.5H x 14.5W
MATERIAL: PA6
TERMINALS: See Page 78

PART NO: 12147506 (Green)
DESCRIPTION: Connector 2F
SIZE: 23.0L x 10.5H x 14.5W
MATERIAL: PA6
TERMINALS: See Page 78

G PART NO: 12147502
DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PA6 % GF

H PART NO: 12147517 (Black)
DESCRIPTION: Connector 2M
SIZE: 40.0L x 14.3H x 16.4W
MATERIAL: PA6
TERMINALS: See Page 79

PART NO: 10717650 (Green)
DESCRIPTION: Connector 2M
SIZE: 40.0L x 14.3H x 16.4W
MATERIAL: PA6
TERMINALS: See Page 79

J PART NO: 12147771
DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PA6 % GF

Total Mated Length: 54.3mm

http://delphi.com/products/connect
<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>COLOR</th>
<th>MATERIAL</th>
<th>TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12129489</td>
<td>4M Connector (Clip Slot–Self Locking)</td>
<td>23.7L x 24.4H x 20.7W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>See Page 78</td>
</tr>
<tr>
<td>12129491</td>
<td>TPA</td>
<td></td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
<tr>
<td>12052834</td>
<td>CPA</td>
<td></td>
<td>Green</td>
<td>PP</td>
<td></td>
</tr>
<tr>
<td>12129136</td>
<td>4F Connector (Clip Slot–Self Locking)</td>
<td>23.7L x 30.4H x 16.5W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>See Page 78</td>
</tr>
<tr>
<td>12129138</td>
<td>TPA</td>
<td></td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
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<td>12052834</td>
<td>CPA</td>
<td></td>
<td>Green</td>
<td>PP</td>
<td></td>
</tr>
<tr>
<td>12129135</td>
<td>4M Connector (Clip Slot–Self Locking)</td>
<td>40.0L x 22.0H x 20.3W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>See Page 79</td>
</tr>
<tr>
<td>12129137</td>
<td>TPA</td>
<td></td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td></td>
</tr>
</tbody>
</table>

**TANGLELESS**

Total Mated Length: 54.3mm

**Total Mated Length: 54.0mm**

http://delphi.com/products/connect
**Metri-Pack Series**

**PART NO:** 15318080
**DESCRIPTION:** Connector 2F
**SIZE:** 23.0L x 10.5H x 14.5W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 78

**PART NO:** 12147502
**DESCRIPTION:** Secondary Lock
**SIZE:** 2.6L x 2.3H x 12.6W
**COLOR:** Gray
**MATERIAL:** PA6%GF

**PART NO:** 12147517
**DESCRIPTION:** Connector 2M
**SIZE:** 40.0L x 14.3H x 16.4W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 79

**PART NO:** 12064754
**DESCRIPTION:** Connector 6M (Clip Slot–Self Locking)
**SIZE:** 40.0L x 29.1H x 23.5W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 79

**PART NO:** 12064755
**DESCRIPTION:** TPA
**NUMBER REQ.:** 2
**COLOR:** Blue
**MATERIAL:** PA66 HS IM

**PART NO:** 12052834
**DESCRIPTION:** CPA
**COLOR:** Green
**MATERIAL:** PP

**PART NO:** 12064752
**DESCRIPTION:** Connector 6F
**SIZE:** 23.0L x 26.6H x 20.6W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 78

**PART NO:** 12064753
**DESCRIPTION:** CPA
**NUMBER REQ.:** 2
**COLOR:** Md. Gray
**MATERIAL:** PA66 HS IM

**PART NO:** 12052834
**DESCRIPTION:** CPA
**COLOR:** Green
**MATERIAL:** PP

**PART NO:** 12064755
**DESCRIPTION:** TPA
**NUMBER REQ.:** 2
**COLOR:** Blue
**MATERIAL:** PA66 HS IM

**PART NO:** 12064754
**DESCRIPTION:** Connector 6M (Clip Slot–Self Locking)
**SIZE:** 40.0L x 29.1H x 23.5W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 79

**PART NO:** 12064755
**DESCRIPTION:** TPA
**NUMBER REQ.:** 2
**COLOR:** Blue
**MATERIAL:** PA66 HS IM

**PART NO:** 12052834
**DESCRIPTION:** CPA
**COLOR:** Green
**MATERIAL:** PP

---

**North American Region**
1-800-PACKARD

**European Region**
49-202-291-2000

**Asia Pacific Region**
65-730-9900

**South American Region**
55-12-378-2002

http://delphi.com/products/connect
### Metri-Pack Series

**280**

**A**
- **PART NO:** 12064998
- **DESCRIPTION:** Connector 8F
- **SIZE:** 23.0L x 24.8H x 25.5W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 78

**B**
- **PART NO:** 12064999
- **DESCRIPTION:** TPA
- **NUMBER REQ.:** 2
- **COLOR:** Blue
- **MATERIAL:** PBT

**C**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**D**
- **PART NO:** 12066195
- **DESCRIPTION:** Connector 8M (Clip Slot)
- **SIZE:** 40.0L x 25.6H x 26.5W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 79

**E**
- **PART NO:** 12065141
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

---

**Total Mated Length:** 54.0mm

---

### Metri-Pack Series 280

#### Cross Sectional View

![Cross Sectional View Diagram](image)

**Female Connector Assembly**

**Male Connector**

#### TANGLESS

**280 TANGLESS FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110853</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129409</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110845*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110847*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

#### TANGLESS

**280 FLEXLOCK FEMALE CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>12110751</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12110754</td>
</tr>
<tr>
<td>15</td>
<td>12161188</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12176865</td>
</tr>
</tbody>
</table>

#### 280 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12077413</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129493</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12077411</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12084201</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12178387</td>
<td>5.0</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12178388</td>
<td>3.0-2.0</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12178389</td>
<td>1.0-0.80</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

#### 280 FEMALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12075172</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12085249</td>
</tr>
<tr>
<td>2</td>
<td>12128419</td>
<td>Black</td>
<td>PBT</td>
<td>12020807</td>
</tr>
<tr>
<td>3</td>
<td>12040977</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12034145</td>
</tr>
<tr>
<td>4</td>
<td>12129565</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td>15300016</td>
</tr>
<tr>
<td>5</td>
<td>12084891</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td>15300017</td>
</tr>
</tbody>
</table>

#### 280 FEMALE PULL-TO-SEAT TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12077939</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>1203360</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 280 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015360</td>
<td>12015193</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12015359</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt Gray</td>
</tr>
<tr>
<td>12015264</td>
<td>12015323</td>
<td>2.45-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td>12089444</td>
<td>12089679</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

---

http://delphi.com/products/connect
**Sealed System Application Information**

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*

**280 Series Terminals – Tin Plated**

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-30
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** 7.7
- **Blade Width (mm):** 2.8

![Graphs showing Temperature Rise and Derating Curves](#)

**280 Male Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12068254</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129497</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>1208159</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124977</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**280 Male Connectors Sealed**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12065171</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12065249</td>
</tr>
<tr>
<td>2</td>
<td>1530002</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15300014</td>
</tr>
<tr>
<td>2</td>
<td>12059450</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12059450</td>
</tr>
<tr>
<td>3</td>
<td>1530003</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15300015</td>
</tr>
<tr>
<td>4</td>
<td>12129600</td>
<td>Dk. Gray</td>
<td>PBT 30% GF</td>
<td>12129600</td>
</tr>
<tr>
<td>5</td>
<td>12186400</td>
<td>Gray</td>
<td>PBT 30% GF</td>
<td>12186400</td>
</tr>
<tr>
<td>7</td>
<td>12110753</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12110753</td>
</tr>
<tr>
<td>15</td>
<td>12161187</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12161187</td>
</tr>
</tbody>
</table>

**280 Metri-Pack Cavity Plug**

<table>
<thead>
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<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12010300</td>
<td>6.7mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.*

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female Connections for device applications, see page 92.

![Images of Male Connector, Male Terminal, and Male Seal](#)

http://delphi.com/products/connect
Metri-Pack Series

**PART NO:** 12065172
**DESCRIPTION:** Connector Assembly 1F
**SIZE:** 30.5L x 20.7H x 18.3W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 84
**SEALS/PLUGS:** See Page 84, 85

**PART NO:** 12065171
**DESCRIPTION:** Connector 1M
**SIZE:** 55.0L x 23.8H x 18.3W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 85
**SEALS/PLUGS:** See Page 84, 85

**PART NO:** 12052834
**DESCRIPTION:** Connector Assembly 2F
**SIZE:** 32.0L x 13.7H x 28.5W
**COLOR:** Black
**MATERIAL:** PBT
**TERMINALS:** See Page 84
**SEALS/PLUGS:** See Page 84, 85

**PART NO:** 12065279
**DESCRIPTION:** Connector Assembly 1F (Clip Slot)
**SIZE:** 49.0L x 21.3H x 28.3W
**COLOR:** Black
**MATERIAL:** PA66

**PART NO:** 12059450
**DESCRIPTION:** Connector 1M (Clip Slot)
**SIZE:** 49.0L x 21.3H x 28.3W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 85
**SEALS/PLUGS:** See Page 84, 85

**PART NO:** 12052834
**DESCRIPTION:** Connector 2M
**SIZE:** 49.0L x 21.3H x 28.3W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 85
**SEALS/PLUGS:** See Page 84, 85

**PART NO:** 12020807
**DESCRIPTION:** TPA
**COLOR:** Md. Gray
**MATERIAL:** PA6

**PART NO:** 12020807
**DESCRIPTION:** TPA
**COLOR:** Black
**MATERIAL:** PA6

**PART NO:** 12020807
**DESCRIPTION:** TPA
**COLOR:** Black
**MATERIAL:** PP

http://delphi.com/products/connect
Metri-Pack Series

PART NO: 15300027
DESCRIPTION: Connector Assembly 2F
SIZE: 29.9L x 25.0H x 25.2W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

PART NO: 15300014
DESCRIPTION: TPA
NUMBER REQ.: 2
COLOR: Blue
MATERIAL: PA6

PART NO: 1530003
DESCRIPTION: Connector Assembly 3F
SIZE: 36.7L x 26.5H x 32.9W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

PART NO: 15300002
DESCRIPTION: Connector 2M
SIZE: 53.0L x 20.0H x 25.2W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

PART NO: 15300015
DESCRIPTION: TPA
COLOR: Natural
MATERIAL: PA6

PART NO: 15300003
DESCRIPTION: Connector 3M (Clip Slot)
SIZE: 53.0L x 26.5H x 32.9W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

PART NO: 12034145
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA6

PART NO: 12040977
DESCRIPTION: Connector Assembly 3F
SIZE: 36.7L x 26.5H x 30.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

PART NO: 12030833
DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PBT

http://delphi.com/products/connect
Metri-Pack Series

**280**

**A**
- **PART NO:** 12129565
- **DESCRIPTION:** Connector Assembly 4F
- **SIZE:** 29.9L x 25.0H x 40.6W
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 84, 85
- **SEALS/PLUGS:** See Page 84, 85

**B**
- **PART NO:** 15300016
- **DESCRIPTION:** TPA
- **COLOR:** Black
- **MATERIAL:** PA6

**C**
- **PART NO:** 12129600
- **DESCRIPTION:** Connector 4M (Clip Slot–Self Locking)
- **SIZE:** 53.0L x 25.4H x 44.0W
- **COLOR:** Dk. Gray
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 85
- **SEALS/PLUGS:** See Page 84, 85

**D**
- **PART NO:** 15324063
- **DESCRIPTION:** TPA
- **COLOR:** Blue
- **MATERIAL:** PA6

**E**
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

**F**
- **PART NO:** 12084981
- **DESCRIPTION:** Connector Assembly 5F
- **SIZE:** 29.9L x 25.0H x 48.3W
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 84, 85

**G**
- **PART NO:** 15324857
- **DESCRIPTION:** TPA
- **COLOR:** Black
- **MATERIAL:** PA6

**H**
- **PART NO:** 12186400
- **DESCRIPTION:** Connector 5M (Clip Slot–Self Locking)
- **SIZE:** 53.0L x 23.8H x 49.6W
- **COLOR:** Gray
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 85
- **SEALS/PLUGS:** See Page 84, 85

**J**
- **PART NO:** 12084673
- **DESCRIPTION:** TPA
- **COLOR:** Black
- **MATERIAL:** PA6

**K**
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

**Total Mated Length:** 66.7mm

**Total Mated Length:** 67.3mm

## Metri-Pack Series

**A**
- **PART NO:** 12110751 (Black), 12129613 (Md. Gray), 12146841 (Natural)
- **DESCRIPTION:** Connector Assembly 7F
- **SIZE:** 32.1L x 43.5H x 36.4W
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 84
- **SEALS/PLUGS:** See Page 84, 85

**B**
- **PART NO:** 12110754
- **DESCRIPTION:** TPA
- **NUMBER REQ.:** 2
- **COLOR:** Lt. Gray
- **MATERIAL:** PA6

**C**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**D**
- **PART NO:** 12110753 (Black), 12129614 (Md. Gray), 12146840 (Natural)
- **DESCRIPTION:** Connector 7M (Clip Slot–Self Locking)
- **SIZE:** 57.3L x 41.5H x 35.0W
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 84
- **SEALS/PLUGS:** See Page 84, 85

**TANGLESS**
- **PART NO:** 12110754
- **DESCRIPTION:** Connector Assembly 7F
- **SIZE:** 32.1L x 43.5H x 36.4W
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 84
- **SEALS/PLUGS:** See Page 84, 85

Total Mated Length: 77.3mm

---

http://delphi.com/products/connect
## Metri-Pack Series

**280**

### Total Mated Length: 76.6mm

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>SIZE:</th>
<th>COLOR:</th>
<th>MATERIAL:</th>
<th>TERMINALS:</th>
<th>SEALS/PLUGS:</th>
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<tbody>
<tr>
<td>A 12161186</td>
<td>Connector 15F</td>
<td>32.5L x 44.4H x 63.2W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>See Page 84</td>
<td>See Page 84, 85</td>
</tr>
<tr>
<td>B 12110782</td>
<td>TPA</td>
<td>Md. Gray</td>
<td>PA6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>C 12110822</td>
<td>Connector Seal</td>
<td>Green</td>
<td>Silicone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D 12161185</td>
<td>CPA Slide Lock Assist</td>
<td>Dk. Gray</td>
<td>PA66 HS IM 14% GF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E 12176640</td>
<td>Spacer Lock</td>
<td>Black</td>
<td>PP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F 12161187</td>
<td>Connector 15M (Clip Slot–Self Locking)</td>
<td>57.5L x 39.2H x 53.0W</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>See Page 85</td>
<td>See Page 84, 85</td>
</tr>
<tr>
<td>G 12176685</td>
<td>TPA</td>
<td>Lt. Gray</td>
<td>PA6</td>
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</table>

**http://delphi.com/products/connect**
A PART NO: 12052856
DESCRIPTION: Connector 4F
SIZE: 24.0L x 14.1H x 23.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 78
TYPICAL APP: Dimmer Switch

B PART NO: 15324456
DESCRIPTION: TPA
COLOR: Lt. Gray
MATERIAL: PA6

C PART NO: 12064890
DESCRIPTION: Connector 5F
SIZE: 29.9L x 24.2H x 48.3W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 78
TYPICAL APP: Tail Lamp Module

D PART NO: 15324857
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA6

E PART NO: 12041301*
DESCRIPTION: Connector 6F
SIZE: 23.0L x 11.7H x 46.1W
COLOR: Black
MATERIAL: PP
TERMINALS: See Page 78
TYPICAL APP: Various
*HINGED SECONDARY LOCK.

F PART NO: 12092254
DESCRIPTION: Connector 6F
SIZE: 23.0L x 18.0H x 31.6W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 78
TYPICAL APP: Wiper Switch

G PART NO: 12162298
DESCRIPTION: TPA
COLOR: Cream
MATERIAL: PA6

H PART NO: 12052834
DESCRIPTION: TPA
COLOR: Green
MATERIAL: PP

I PART NO: 12084890
DESCRIPTION: Connector 5F
SIZE: 29.9L x 24.2H x 48.3W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 78
TYPICAL APP: Tail Lamp Module

J PART NO: 12052854
DESCRIPTION: Connector 7F
SIZE: 24.0L x 13.9H x 39.6W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 78
TYPICAL APP: Wiper Switch

K PART NO: 12124811
DESCRIPTION: TPA
COLOR: Natural
MATERIAL: PA6
Metri-Pack Series

PART NO: 12129487
DESCRIPTION: Connector Assembly 2F
SIZE: 30.6L x 20.9H x 26.0W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85
TYPICAL APP: Window Lift Motor

PART NO: 12077904
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

PART NO: 12124634
DESCRIPTION: Connector Assembly 5F
SIZE: 29.9L x 32.2H x 38.5W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85
TYPICAL APP: Wiper Switch

PART NO: 12052816
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA6

PART NO: 12020833
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PBT

PART NO: 12059573
DESCRIPTION: Connector Assembly 6F
SIZE: 29.9L x 18.7H x 56.8W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85
TYPICAL APP: Various

PART NO: 12059195
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

http://delphi.com/products/connect
**280.1 Pull-to-Seat**

**Metri-Pack Series**

- **North American Region**: 1-800-PACKARD
- **European Region**: 49-202-291-2000
- **Asia Pacific Region**: 65-730-9900
- **South American Region**: 55-12-378-2002

---

**Multiple Cable Seal (Included)**

**PART NO:**
- **12129142** (Black/Gray Seal)
  - 2.66 - 2.0 Cable O.D.
- **12129140** (Black/Purple Seal)
  - 2.15 - 1.65 Cable O.D.
- **12110179** (Black/Red Seal)
  - 1.85 - 1.47 Cable O.D.

**DESCRIPTION:** Connector Assembly 2F
**SIZE:** 27.8L x 20.0H x 29.6W
**MATERIAL:** PA66 HS 33% GF
**TERMINALS:** See Page 84
**TYPICAL APP:** Fuel Injector

---

Available in device and in-line connections for vehicle applications, Metri-Pack 480 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for high current applications that do not require environmental protection, Metri-Pack 480 Series products are extremely rugged and versatile.

Available in device and in-line connections for underhood vehicle applications, Metri-Pack 480 Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Utilizing triple-rib peripheral silicone rubber seals, Metri-Pack 480 Series sealed systems are ideally suited for high current applications that require protection from environmental hazards.

480 Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 42 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
Cross Sectional View

<table>
<thead>
<tr>
<th>480 FEMALE TERMINALS UNSEALED</th>
<th>480 FEMALE CONNECTORS UNSEALED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part #</strong></td>
<td><strong>Cable Range (mm²)</strong></td>
</tr>
<tr>
<td>12084595</td>
<td>5.0</td>
</tr>
<tr>
<td>12052221</td>
<td>3.0</td>
</tr>
<tr>
<td>12124304</td>
<td>2.0-1.0</td>
</tr>
<tr>
<td>12015860</td>
<td>0.80</td>
</tr>
<tr>
<td>12052219</td>
<td>0.50-0.35</td>
</tr>
<tr>
<td>12020366</td>
<td>1.0-0.50 (1 Req’d.)</td>
</tr>
<tr>
<td></td>
<td>0.80-0.50 (1 Req’d.)</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Unsealed System Application Information

**480 SERIES TERMINALS—Tin Plated**

CABLE RANGE (mm²): ...... 0.35-5.0
CURRENT RANGE (AMPS): ...... 0-42
TEMP RANGE °C: .......... -40 to 125
RESISTANCE: ...... <10mΩ@20mV
VOLTAGE DROP: ...... <3.0mV/amp
CENTERLINE SPACING (mm):........ 6.9
BLADE WIDTH (mm): ............... 4.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**SECTION NOTES:**
- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 103.

---

**480 MALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12033820</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12052827</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020120</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020119</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12066269</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020784</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
</tbody>
</table>

**480 MALE CONNECTORS UNSEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12015987</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>12064750</td>
<td>Black</td>
<td>PA6</td>
<td>12064751</td>
</tr>
</tbody>
</table>

---

http://delphi.com/products/connect
### Metri-Pack Series 480

**A**
- **PART NO:** 12015952*
- **DESCRIPTION:** Connector 1F
- **SIZE:** 23.0L x 13.1H x 13.0W
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 96
- **HINGED SECONDARY LOCK**

**B**
- **PART NO:** 12015987*
- **DESCRIPTION:** Connector 1M
- **SIZE:** 37.0L x 17.3H x 14.7W
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 97
- **HINGED SECONDARY LOCK**

Total Mated Length: 49.6mm

---

*For more information and specifications, visit [delphi.com/products/connect](http://delphi.com/products/connect)
Metri-Pack Series

A PART NO: 12064749
DESCRIPTION: Connector 2F
SIZE: 23.0L x 18.0H x 17.4W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 96

B PART NO: 12059860
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

C PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

D PART NO: 12064750
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 40.0L x 21.2H x 18.8W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 97

E PART NO: 12064751
DESCRIPTION: TPA
COLOR: Natural
MATERIAL: PA66 HS IM

Total Mated Length: 53.9mm

http://delphi.com/products/connect
**Cross Sectional View**

**Female Connector Assembly**

**Male Connector**

---

### 480 Metri-Pack Cables

**480 Female Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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</thead>
<tbody>
<tr>
<td>12052139</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048451</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048450</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
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</tbody>
</table>

**480 Female Terminal Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12065703</td>
<td>5.16-4.40</td>
<td>Silicone</td>
<td>Orange</td>
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<tr>
<td>12052453</td>
<td>4.50-3.61</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12052452</td>
<td>3.75-2.81</td>
<td>Silicone</td>
<td>Red</td>
</tr>
<tr>
<td>12048433</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052931</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12162068</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Pink</td>
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</table>

**480 Female Connector Assembly Sealed**

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<td>2</td>
<td>12052613</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12059897</td>
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</table>
Sealed System Application Information

480 SERIES TERMINALS—Tin Plated

CABLE RANGE (mm²): ....... 0.50-5.0
CURRENT RANGE (AMPS): ....... 0-42
TEMP RANGE °C: .......... -40 to 125
RESISTANCE: ...... <10mΩ@20mV
VOLTAGE DROP: ...... <3.0mV/amp
CENTERLINE SPACING (mm): ...... 9.5
BLADE WIDTH (mm): ............... 4.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

---

480 MALE TERMINALS SEALED

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<thead>
<tr>
<th>Part #</th>
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<td>Tin</td>
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<tr>
<td>12065197</td>
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<td>Tin</td>
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<tr>
<td>12065196</td>
<td>2.0-1.0</td>
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<td>Tin</td>
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480 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
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<tr>
<td>12066082</td>
<td>8.5mm</td>
<td>Silicone</td>
<td>Lt Green</td>
</tr>
</tbody>
</table>

*Contact your regional support representative at the number listed below.

SECTION NOTES:
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 104.

http://delphi.com/products/connect
**Metri-Pack Series**

**PART NO:** 12052613  
**DESCRIPTION:** Connector Assembly 2F  
**SIZE:** 31.0L x 24.8H x 30.5W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 100  
**SEALS/PLUGS:** See Page 100, 101

**PART NO:** 12059897  
**DESCRIPTION:** TPA  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM

**PART NO:** 12131592  
**DESCRIPTION:** Connector Assembly 3F  
**SIZE:** 30.0L x 24.8H x 31.6W  
**COLOR:** Black  
**MATERIAL:** PA66  
**TERMINALS:** See Page 100  
**SEALS/PLUGS:** See Page 100, 101

**PART NO:** 12131543  
**DESCRIPTION:** TPA  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** PA66

**PART NO:** 12066863  
**DESCRIPTION:** Connector 2M (Clip Slot)  
**SIZE:** 53.0L x 24.5H x 30.5W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 101  
**SEALS/PLUGS:** See Page 100, 101

**PART NO:** 12020833  
**DESCRIPTION:** CPA  
**COLOR:** Gray  
**MATERIAL:** PBT

**PART NO:** 15344628  
**DESCRIPTION:** Connector 3M  
**SIZE:** 53.0L x 32.5H x 31.6W  
**COLOR:** Black  
**MATERIAL:** PA66 25% GF  
**TERMINALS:** See Page 101  
**SEALS/PLUGS:** See Page 100, 101

Total Mated Length: 69.2mm

http://delphi.com/products/connect
**A**
- **PART NO:** 12162512*
- **DESCRIPTION:** Connector 3F
- **SIZE:** 23.0L x 17.0H x 27.0W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 96
- **TYPICAL APP:** Switch
- **HINGED SECONDARY LOCK**

**B**
- **PART NO:** 12066571
- **DESCRIPTION:** Connector 4F
- **SIZE:** 23.0L x 16.0H x 29.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 96
- **TYPICAL APP:** Various

**C**
- **PART NO:** 12066572
- **DESCRIPTION:** CPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

**D**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**E**
- **PART NO:** 12059296
- **DESCRIPTION:** Connector 5F
- **SIZE:** 27.0L x 18.0H x 41.0W
- **COLOR:** Red
- **MATERIAL:** PA6
- **TERMINALS:** See Page 96
- **TYPICAL APP:** Switch

**F**
- **PART NO:** 12059297
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Natural
- **MATERIAL:** PBT

**G**
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

**H**
- **PART NO:** 12034061*
- **DESCRIPTION:** Connector 6F
- **SIZE:** 28.0L x 18.0H x 51.0W
- **COLOR:** Natural
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 96
- **TYPICAL APP:** Switch
- **HINGED SECONDARY LOCK**
A PART NO: 12048412
DESCRIPTION: Connector Assembly 4F
SIZE: 30.0L x 25.0H x 50.0W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 100
SEALS/PLUGS: See Page 100, 101
TYPICAL APP: Resistor Pack

B PART NO: 12048413
DESCRIPTION: TPA
COLOR: Black
MATERIAL: PA6

C PART NO: 12020833
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PBT
Available in device and in-line connections for vehicle applications, Metri-Pack 630 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for high current applications that do not require environmental protection, Metri-Pack 630 Series products are extremely rugged and versatile.

Available in device and in-line connections for underhood vehicle applications, Metri-Pack 630 Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Utilizing triple-rib peripheral silicone rubber seals, Metri-Pack 630 Series sealed systems are ideally suited for high current applications that require protection from environmental hazards.

630 Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 46 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
## Cross Sectional View

**Female Connector**

- Cable
- Terminal
- TPA

**Male Connector**

- Cable
- Terminal
- TPA

### 630 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052224</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12084596</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015870</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015869</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020035</td>
<td>0.80-0.50 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052222</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

### 630 FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td>12129939</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12129940</td>
</tr>
<tr>
<td>4</td>
<td>12015864</td>
<td>Black</td>
<td>PA6</td>
<td>–</td>
</tr>
</tbody>
</table>

Unsealed System Application Information

630 SERIES TERMINALS—Tin Plated

CABLE RANGE (mm²): ....... 0.35-5.0
CURRENT RANGE (AMPS): ....... 0-46
TEMP RANGE °C: .......... -40 to 125
RESISTANCE: ....... <10mΩ@20mV
VOLTAGE DROP: ....... <3.0mV/amp
CENTERLINE SPACING (mm): ....... 8.5
BLADE WIDTH (mm): ................. 6.3

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

630 SERIES TERMINALS—Tin Plated

630 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12066493</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12052826</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020365</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020126</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020125</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12039372</td>
<td>0.80-0.50 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12086454</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
</tbody>
</table>

SECTION NOTES:

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

http://delphi.com/products/connect
A PART NO: 12129939
DESCRIPTION: Connector 2F
SIZE: 23.0L x 18.0H x 24.8W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 106

B PART NO: 12129940
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Blue
MATERIAL: PA6

C PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

D PART NO: 12129938
DESCRIPTION: Connector 2M (Clip Slot–Self Locking)
SIZE: 40.0L x 21.5H x 25.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 107

Total Mated Length: 53.0mm
**Metri-Pack Series**

A  *PART NO:* 12015664*  
  **DESCRIPTION:** Connector 4F  
  **SIZE:** 24.3L x 32.5H x 16.5W  
  **COLOR:** Black  
  **MATERIAL:** PA6  
  **TERMINALS:** See Page 106  
  *HINGED SECONDARY LOCK.*

B  *PART NO:* 12052623*  
  **DESCRIPTION:** Connector 4M  
  **SIZE:** 39.8L x 37.6H x 18.5W  
  **COLOR:** Black  
  **MATERIAL:** PA6  
  **TERMINALS:** See Page 107  
  *HINGED SECONDARY LOCK.*

Total Mated Length: 53.1mm
Metri-Pack Series • 630

Cross Sectional View

Female Connector Assembly

Male Connector

630 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052456</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052455</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052457</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

630 FEMALE PULL-TO-SEAT TERMINALS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12033997</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12066614</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020156</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

630 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059257</td>
<td>12052386</td>
<td>5.15-4.40</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12059260</td>
<td>12052668</td>
<td>4.50-3.51</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12059258</td>
<td>12052387</td>
<td>3.75-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12059259</td>
<td>12052388</td>
<td>2.65-2.01</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12077760</td>
<td>12077759</td>
<td>2.15-1.65</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
**Sealed System Application Information**

### 630 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50</td>
<td>0.80</td>
</tr>
<tr>
<td>0.80</td>
<td>1.0</td>
</tr>
<tr>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>3.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

#### Temperature Derating Curves*

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>5.0</td>
</tr>
<tr>
<td>50</td>
<td>5.0</td>
</tr>
<tr>
<td>75</td>
<td>4.0</td>
</tr>
<tr>
<td>100</td>
<td>3.0</td>
</tr>
<tr>
<td>125</td>
<td>2.0</td>
</tr>
</tbody>
</table>

- *The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

### Part # 630 MALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12064736</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064737</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064735</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064734</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

### Part # 630 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059255</td>
<td>9.8mm</td>
<td>Silicone</td>
<td>Lt. Green</td>
</tr>
</tbody>
</table>

- *Cavity plugs seal unused female and male cavities.

### SECTION NOTES:

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

http://delphi.com/products/connect
Metri-Pack Series

A PART NO: 12033769
DESCRIPTION: Connector Assembly 2F
SIZE: 31.5L x 20.0H x 27.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 110, Pull-To-Seat Terminals

B PART NO: 12034269
DESCRIPTION: Connector 2M
SIZE: 56.1L x 21.7H x 28.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 111

C PART NO: 12034363
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

D PART NO: 12034364
DESCRIPTION: Seal
COLOR: Gray
MATERIAL: Silicone

Multiple Cable Seal (Included)

Total Mated Length: 67.5mm

http://delphi.com/products/connect
**Metri-Pack Series**

**A**
- **PART NO:** 12124685
- **DESCRIPTION:** Connector Assembly 3F
- **SIZE:** 31.0L x 27.4H x 44.6W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 110
- **SEALS/PLUGS:** See Page 110, 111

**B**
- **PART NO:** 12045699
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 2
- **COLOR:** Black
- **MATERIAL:** PA6

**C**
- **PART NO:** 12124686
- **DESCRIPTION:** Connector 3M (Clip Slot)
- **SIZE:** 52.3L x 25.6H x 43.6W
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 111
- **SEALS/PLUGS:** See Page 110, 111

**D**
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT
Metri-Pack Series 800

Available in device and in-line connections for vehicle applications, Metri-Pack 800 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for high current applications that do not require environmental protection, Metri-Pack 800 Series products are extremely rugged and versatile.

800 Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 60 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
Cross Sectional View

Female Connector

Male Connector

TPA (Terminal Position Assurance)

Female Terminal

800 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110127</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12092445</td>
<td>5.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12092444</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12065916</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

800 FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1way: 1</td>
<td>12160893</td>
<td>Black</td>
<td>PA6</td>
<td>12160895</td>
</tr>
<tr>
<td>6way: 3</td>
<td>12092399</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>12092401</td>
</tr>
<tr>
<td>: 3</td>
<td>12092400</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12092401</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
### Unsealed System Application Information

<table>
<thead>
<tr>
<th>CABLE RANGE (mm²):</th>
<th>.......... 2.0-5.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RANGE (AMPS):</td>
<td>.......... 0-60</td>
</tr>
<tr>
<td>TEMP RANGE °C:</td>
<td>......... -40 to 125</td>
</tr>
<tr>
<td>RESISTANCE:</td>
<td>........... &lt;10mΩ@20mV</td>
</tr>
<tr>
<td>VOLTAGE DROP:</td>
<td>........... &lt;3.0mV/amp</td>
</tr>
<tr>
<td>CENTERLINE SPACING (mm):</td>
<td>...... 10.3</td>
</tr>
<tr>
<td>BLADE WIDTH (mm):</td>
<td>................. 8.0</td>
</tr>
</tbody>
</table>

#### 800 SERIES TERMINALS – Tin Plated

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 20 30 40 50 60 70 80 90 100 110 120</td>
<td></td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12160894</td>
<td>Black</td>
<td>PA6</td>
<td>12160895</td>
</tr>
<tr>
<td>6</td>
<td>12110698</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12092401</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

---

http://delphi.com/products/connect
### Metri-Pack Series

#### 800 Maxi-Fuse

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Size</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>12160893</td>
<td>Connector 1F</td>
<td>34.0L x 24.3H x 12.8W</td>
<td>Black</td>
<td>PA6</td>
</tr>
<tr>
<td>12160894</td>
<td>Connector 1M (Clip Slot–Self Locking)</td>
<td>46.4L x 24.7H x 15.8W</td>
<td>Black</td>
<td>PA6</td>
</tr>
<tr>
<td>12160895</td>
<td>TP A</td>
<td></td>
<td>Md. Gray</td>
<td>PA6</td>
</tr>
<tr>
<td>12052834</td>
<td>CPA</td>
<td></td>
<td>Green</td>
<td>PP</td>
</tr>
</tbody>
</table>

**Part A**
- **Description:** Connector 1F
- **Size:** 34.0L x 24.3H x 12.8W
- **Color:** Black
- **Material:** PA6
- **Terminals:** See Page 116

**Part B**
- **Description:** TP A
- **Number Req:** 2
- **Color:** Md. Gray
- **Material:** PA6

**Part C**
- **Description:** CPA
- **Color:** Green
- **Material:** PP

**Part D**
- **Description:** Connector 1M (Clip Slot–Self Locking)
- **Size:** 46.4L x 24.7H x 15.8W
- **Color:** Black
- **Material:** PA6
- **Terminals:** See Page 117

Total Mated Length: 65.7mm

---

http://delphi.com/products/connect
**800 Maxi-Fuse**

**Metri-Pack Series**

---

**A**
- **PART NO:** 12092399
- **DESCRIPTION:** Connector 3F
- **SIZE:** 34.0L x 25.5H x 31.0W
- **COLOR:** Lt. Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 116

**B**
- **PART NO:** 12092400
- **DESCRIPTION:** Connector 3F
- **SIZE:** 34.0L x 25.5H x 31.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 116

**C**
- **PART NO:** 12092401
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 4
- **COLOR:** Blue
- **MATERIAL:** PA66 HS IM

**D**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **NUMBER REQ:** 2
- **COLOR:** Green
- **MATERIAL:** PP

**E**
- **PART NO:** 12110698
- **DESCRIPTION:** Connector 6M (Clip Slot–Self Locking)
- **SIZE:** 46.4L x 26.2H x 64.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 117

---

**Total Mated Length:** 65.8mm

---

**http://delphi.com/products/connect**

---

**North American Region**
- **1-800-PACKARD**

**European Region**
- **49-202-291-2000**

**Asia Pacific Region**
- **65-730-9900**

**South American Region**
- **55-12-378-2002**

---
Metri-Pack Series

Mixed

Available in device and in-line connections for vehicle applications, Metri-Pack Mixed Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for combination low energy and high current applications that do not require environmental protection, Metri-Pack Mixed Series products are extremely versatile.

Available in device and in-line connections for underhood vehicle applications, Metri-Pack Mixed Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Utilizing triple-rib peripheral silicone rubber seals, Metri-Pack Mixed Series sealed systems are ideally suited for combination, low-energy electronic, and high current applications that require protection from environmental hazards.

Mixed Metri-Pack Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- Both low and high voltage circuit capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
Unsealed System Application Information

**280 SERIES TERMINALS – Tin Plated**

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50</td>
<td>1.0</td>
</tr>
<tr>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>4.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**TEMPERATURE DERATING CURVES**

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
</tr>
</tbody>
</table>

**CABLE RANGE (mm²):** 0.35-5.0
**CURRENT RANGE (AMPS):** 0-30
**TEMP RANGE °C:** -40 to 125
**RESISTANCE:** <10mΩ@20mV

**VOLTAGE DROP:** <3.0mV/amp
**CENTERLINE SPACING (mm):** Connector Dependent
**BLADE WIDTH (mm):** 2.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**Mixed Metri-Pack Female Connector Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015858</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12129494</td>
<td>3.0-2.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>1206214</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12034046</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052217</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>1212587*</td>
<td>0.2-2.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>1212595*</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>1212596*</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions may apply, contact your regional support representative at the number listed below.

**480 Female Terminals**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052224</td>
<td>3.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12124304</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12015860</td>
<td>0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052219</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12020366</td>
<td>1.0-0.50 (1 Req’d.)</td>
<td>0.80-0.50 (1 Req’d.)</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**630 Female Terminals**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052224</td>
<td>3.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12084596</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12015870</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12015869</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12026355</td>
<td>0.80-0.50 (2 Req’d.)</td>
<td>0.80-0.35 (2 Req’d.)</td>
<td>Tin</td>
</tr>
<tr>
<td>12052222</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
</tbody>
</table>

---

**Metri-Pack Series**

**Unsealed System Application Information**

- **North American Region**: 1-800-PACKARD
- **European Region**: 49-202-291-2000
- **Asia Pacific Region**: 65-730-9900
- **South American Region**: 55-12-378-2002

---

**280 Female Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052224</td>
<td>3.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12124304</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12015860</td>
<td>0.80</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12052219</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass</td>
</tr>
<tr>
<td>12020366</td>
<td>1.0-0.50 (1 Req’d.)</td>
<td>0.80-0.50 (1 Req’d.)</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**Female Terminals**

- **280**: Female
- **480**: Female
- **630**: Female
## Unsealed System Application Information

### 280 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084586</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
<tr>
<td>12129498</td>
<td>3.0-2.0</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
<tr>
<td>12020116</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
<tr>
<td>12034047</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
<tr>
<td>12066271</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
<tr>
<td>12020782</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin</td>
<td>Brass Tin</td>
</tr>
</tbody>
</table>

### 480 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12033820</td>
<td>5.0</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
<tr>
<td>12052827</td>
<td>3.0</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
<tr>
<td>12020120</td>
<td>2.0-1.0</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
<tr>
<td>12020119</td>
<td>1.0-0.80</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
<tr>
<td>12066269</td>
<td>0.50-0.35</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
<tr>
<td>12020784</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin</td>
<td>Brass Tin over Copper</td>
</tr>
</tbody>
</table>

### SECTION NOTES:

Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 130.
Metri-Pack Series

**• Mixed**

A PART NO: 12020014*
DESCRIPTION: Connector 3F
SIZE: 27.6L x 14.5H x 25.5W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 122
*HINGED SECONDARY LOCK.

B PART NO: 12045681*
DESCRIPTION: Connector 3M (Clip Slot)
SIZE: 39.1L x 17.4H x 27.9W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 123
*HINGED SECONDARY LOCK.

Total Mated Length: 55.6mm

KEY:
- ■ 280 SERIES
- ● 480 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
Sealed System Application Information

**150 SERIES TERMINALS—Tin Plated**

- **CABLE RANGE (mm²):** .......... 0.35-1.0
- **CURRENT RANGE (AMPS):** .......... 0-14
- **TEMP RANGE °C:** .......... -40 to 125
- **RESISTANCE:** .......... <10mΩ@20mV

**280 SERIES TERMINALS—Tin Plated**

- **CABLE RANGE (mm²):** .......... 0.35-6.0
- **CURRENT RANGE (AMPS):** .......... 0-30
- **TEMP RANGE °C:** .......... -40 to 125
- **RESISTANCE:** .......... <10mΩ@20mV

**TEMPERATURE RISE ABOVE AMBIENT (25 °C) VS CURRENT***

**TEMPERATURE DERATING CURVES***

**AMBIENT TEMPERATURE (°C):**

- **MAXIMUM CURRENT (AMPS):**
  - 25: 1.0
  - 50: 2.0
  - 75: 3.0
  - 100: 4.0
  - 125: 5.0

**CURRENT (AMPS):**

- **TEMPERATURE RISE (°C):**
  - 0: 0.50
  - 5: 1.0
  - 10: 1.5
  - 15: 2.0
  - 20: 2.5

**CABLE SEALS**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1204874</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12084200</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12160223</td>
<td>1.0-0.80</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12160222</td>
<td>0.50-0.35</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

**FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12077413</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129493</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12074411</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12084201</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
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</table>

**480 FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052139</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048451</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048450</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
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</tbody>
</table>

**630 FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052456</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052455</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052457</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.
**Sealed System Application Information**

### 480 SERIES TERMINALS—Tin Plated

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-42
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 4.8

### 630 SERIES TERMINALS—Tin Plated

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-46
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 6.3

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**SECTION NOTES:**

Contact your regional support representative at the number listed below.

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see pages 131 and 132.

---

http://delphi.com/products/connect
### Cross Sectional View

**Female Connector Assembly**

- Terminal
- Connector Seal
- TPA
- Cable
- Seal

**Male Connector**

- Terminal
- TPA
- Cable
- Seal

### 150 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part#</th>
<th>Loose Part#</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052924</td>
<td>12048086</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12089442</td>
<td>12089678</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052925</td>
<td>12048087</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12124697</td>
<td>12084193</td>
<td>1.008-0.995</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

### 150 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part#</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059188</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 280 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part#</th>
<th>Loose Part#</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015360</td>
<td>12015193</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12015359</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td>12089444</td>
<td>12089679</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

### 280 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part#</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12010300</td>
<td>6.7mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 480 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part#</th>
<th>Loose Part#</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12065703</td>
<td>12034170</td>
<td>5.16-4.40</td>
<td>Silicone</td>
<td>Orange</td>
</tr>
<tr>
<td>12052453</td>
<td>12048443</td>
<td>4.50-3.61</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12052452</td>
<td>12048442</td>
<td>3.76-2.81</td>
<td>Silicone</td>
<td>Red</td>
</tr>
<tr>
<td>12048433</td>
<td>12048441</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052931</td>
<td>12052930</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12162068</td>
<td>12162067</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Pink</td>
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### 480 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part#</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12066082</td>
<td>8.5mm</td>
<td>Silicone</td>
<td>Lt. Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 630 METRI-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part#</th>
<th>Loose Part#</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059257</td>
<td>12052386</td>
<td>5.15-4.40</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12059260</td>
<td>12052668</td>
<td>4.50-3.61</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12059258</td>
<td>12052387</td>
<td>3.75-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12059259</td>
<td>12052288</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12077760</td>
<td>12077759</td>
<td>2.15-1.65</td>
<td>Silicone</td>
<td>Tan</td>
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</table>

### 630 METRI-PACK CAVITY PLUG*

<table>
<thead>
<tr>
<th>Part#</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059255</td>
<td>9.8mm</td>
<td>Silicone</td>
<td>Lt. Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

---

Mixed Connectors feature a combination of different terminal cavities, as indicated by the key.

A
PART NO: 12059472
DESCRIPTION: Connector Assembly 7F
SIZE: 31.0L x 33.5H x 35.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 126
SEALS/PLUGS: See Page 128

B
PART NO: 12052486
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

C
PART NO: 12052200
DESCRIPTION: Connector 7M (Clip Slot)
SIZE: 53.8L x 31.5H x 35.0W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 127
SEALS/PLUGS: See Page 128

D
PART NO: 12052199
DESCRIPTION: CPA
COLOR: Black
MATERIAL: PA6

E
PART NO: 12020833
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PBT

Total Mated Length: 69.3mm
Metri-Pack Series

**MIXED DEVICE CONNECTIONS**

**A**
- **PART NO:** 12128842
- **DESCRIPTION:** Connector 6F
- **SIZE:** 23.0L x 22.0H x 30.0W
- **COLOR:** Natural
- **MATERIAL:** PA66 HS IM
- **TYPICAL APP:** Switch

**B**
- **PART NO:** 12162301
- **DESCRIPTION:** TPA
- **COLOR:** Lt. Gray
- **MATERIAL:** PA6

**C**
- **PART NO:** 12162300
- **DESCRIPTION:** TPA
- **COLOR:** Blue
- **MATERIAL:** PA6

**D**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**E**
- **PART NO:** 12162229 (Black)
- **DESCRIPTION:** Connector 6F
- **SIZE:** 23.0L x 18.2H x 37.4W
- **COLOR:** Lt. Gray
- **MATERIAL:** PA66 HS IM
- **TYPICAL APP:** Switch

**F**
- **PART NO:** 12162300
- **DESCRIPTION:** TPA
- **COLOR:** Blue
- **MATERIAL:** PA6

**G**
- **PART NO:** 12162299
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA6

**H**
- **PART NO:** 12052834
- **DESCRIPTION:** CPA
- **COLOR:** Green
- **MATERIAL:** PP

**KEY:**
- ■ 280 SERIES
- ▲ 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
### Metri-Pack Series

**PART NO:** 12124898  
**DESCRIPTION:** Connector Assembly 4F  
**SIZE:** 31.3L x 21.8H x 29.7W  
**COLOR:** Black  
**MATERIAL:** PBT  
**TERMINALS:** See Page 126  
**SEALS/PLUGS:** See Page 128  
**TYPICAL APP:** Alternator

**PART NO:** 12045897  
**DESCRIPTION:** Secondary Lock  
**COLOR:** Natural  
**MATERIAL:** PBT

**PART NO:** 12052287  
**DESCRIPTION:** Connector Assembly 5F  
**SIZE:** 32.0L x 40.0H x 40.4W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 126  
**SEALS/PLUGS:** See Page 128  
**TYPICAL APP:** Switch

**PART NO:** 12020833  
**DESCRIPTION:**  
**COLOR:** Gray  
**MATERIAL:** PBT

---

**KEY:**
- ■ 150 SERIES
- ▲ 280 SERIES
- ▲ 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

---

http://delphi.com/products/connect
Metri-Pack Series

**Mixed Device Connections**

**A**
PART NO: 12186347
DESCRIPTION: Connector Assembly 6F
SIZE: 30.5L x 26.8H x 34.2W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 126
SEALS/PLUGS: See Page 128
TYPICAL APP: Wiper Motor

**B**
PART NO: 12129124
DESCRIPTION: TPA
COLOR: Lt. Gray
MATERIAL: PA6

**C**
PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

**KEY:**
- 150 SERIES
- 280 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.
Metri-Pack Series

Junction Systems

Available in pass-through and in-line connections, Metri-Pack Junction System Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Ideally suited for combination low energy and high current applications that do not require environmental protection, Metri-Pack Junction System Series products are extremely versatile.

Available in pass-through and in-line connections for underhood vehicle applications, Metri-Pack Junction System Series sealed connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

Metri-Pack Junction Series sealed systems are ideally suited for combination, low-energy electronic, and high current applications that require protection from environmental hazards.

Metri-Pack Junction Features

- Terminal Position Assurance (TPA)
- Bolt assisted connector to connector lock
- Both low and high voltage circuit capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range
Metri-Pack Series

**JUNCTION SYSTEMS**

Female Unsealed System

---

## JUNCTION SYSTEMS FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>42way: 42</td>
<td>12015508</td>
<td>Black</td>
<td>PA6</td>
<td>12015510</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12015511</td>
</tr>
<tr>
<td>48way: 18</td>
<td>12084183</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12047838</td>
</tr>
<tr>
<td>: 17</td>
<td>12047842</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12047843</td>
</tr>
<tr>
<td>: 13</td>
<td>12047840</td>
<td>Gray</td>
<td>PPE</td>
<td>12047841</td>
</tr>
<tr>
<td>56way: 56</td>
<td>15394027</td>
<td>Black</td>
<td>PA6</td>
<td>15324764</td>
</tr>
<tr>
<td>116way: 116</td>
<td>12162463</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>14% GF</td>
</tr>
</tbody>
</table>

---

Female Terminal
Secondary Lock
Female Connector

---

http://delphi.com/products/connect
**Junction Systems • Metri-Pack Series**

**Male Unsealed System**

---

**JUNCTION SYSTEMS MALE CONNECTOR ASSEMBLIES UNSEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
<th>Stabilizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>42way: 25</td>
<td>12015509</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12015510</td>
<td>12162412</td>
</tr>
<tr>
<td>17</td>
<td>12020629</td>
<td>Black</td>
<td>PA6</td>
<td>12015511</td>
<td>12162413</td>
</tr>
<tr>
<td>48way: 48</td>
<td>12077822</td>
<td>Black</td>
<td>PA6</td>
<td>12047845</td>
<td>12186880</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>12047846</td>
<td></td>
</tr>
<tr>
<td>56way: 56</td>
<td>12059735</td>
<td>Md. Gray</td>
<td>PA66 HS IM</td>
<td>15324764</td>
<td>12186869</td>
</tr>
<tr>
<td>116way: 116</td>
<td>12085705</td>
<td>Black</td>
<td>PPE</td>
<td>12047752</td>
<td>12124732</td>
</tr>
</tbody>
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- North American Region: 1-800-PACKARD
- Asia Pacific Region: 65-730-9900
- South American Region: 55-12-378-2002

### Unsealed System Application Information

#### 150 Series Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12047767</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12064971</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 280 Series Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015858</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129494</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12034046</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052217</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12162597*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12162595*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12162596*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 480 Series Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020366</td>
<td>1.0-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 630 Series Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084590</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12084596</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052224</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015870</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015869</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020365</td>
<td>0.80-0.50 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052222</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

* Thin Stock—Electrical current restrictions may apply, contact your regional support representative at the number listed below for specifications.

---

**Cable Range (mm²):**
- 150 Series: 0.35-1.0
- 280 Series: 0.35-5.0
- 480 Series: 0.35-5.0
- 630 Series: 0.35-5.0

**Current Range (Amps):**
- 150 Series: 0-14
- 280 Series: 0-14
- 480 Series: 0-30
- 630 Series: 0-30

**Resistance:**
- 150 Series: <10mΩ @ 20mV
- 280 Series: <10mΩ @ 20mV
- 480 Series: <10mΩ @ 20mV
- 630 Series: <10mΩ @ 20mV

**Voltage Drop:**
- 150 Series: <10.0mV/amp
- 280 Series: <10.0mV/amp
- 480 Series: <10.0mV/amp
- 630 Series: <10.0mV/amp

**Temperature Rise Above Ambient (°C):**
- 150 Series: 0 to 125
- 280 Series: 0 to 125
- 480 Series: 0 to 125
- 630 Series: 0 to 125

**Centerline Spacing (mm):**
- Connector Dependent

**Blade Width (mm):**
- 150 Series: 1.5
- 280 Series: 2.8
- 480 Series: Connector Dependent
- 630 Series: Connector Dependent

---

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*
### Metri-Pack Series

#### Unsealed System Application Information

**480 Series Male Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12033820</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12052827</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020120</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020119</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12066269</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020784</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
</tbody>
</table>

**630 Series Male Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12066493</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12052826</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020365</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020126</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12020125</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12033972</td>
<td>0.80-0.50 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
<tr>
<td>12066454</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin over Copper</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*

---

**150 Series Male Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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<tbody>
<tr>
<td>12047581</td>
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<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12059894</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**280 Series Male Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084586</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129498</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020116</td>
<td>1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12034047</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12066271</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020782</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
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**310 Series Male Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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</thead>
<tbody>
<tr>
<td>12052871</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
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<tr>
<td>12020120</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020119</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12066269</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020784</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
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</table>

**Temperature Rise Above Ambient (°C) vs Current**

<table>
<thead>
<tr>
<th>Current (AMPS)</th>
<th>Temperature Rise (°C)</th>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>2</td>
<td>4</td>
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<td>3</td>
<td>6</td>
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<td>4</td>
<td>8</td>
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**Temperature Derating Curves**

**Current (AMPs)**

<table>
<thead>
<tr>
<th>Current (AMPS)</th>
<th>Temperature (°C)</th>
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<td>25</td>
<td>50</td>
</tr>
<tr>
<td>50</td>
<td>070</td>
</tr>
<tr>
<td>75</td>
<td>090</td>
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<tr>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td>125</td>
<td>130</td>
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**U.S. SEALDED**

**Unsealed System Application Information**

<table>
<thead>
<tr>
<th>Cable Range (mm²):</th>
<th>Voltage Drop:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.35-5.0</td>
<td>&lt;3.0mV/amp</td>
</tr>
</tbody>
</table>

**Current Range (AMPS):**

<table>
<thead>
<tr>
<th>Current Range (AMPS)</th>
<th>Temperature Range (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-42</td>
<td>-40 to 125</td>
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**Resistance:**

<table>
<thead>
<tr>
<th>Resistance (Ω) @ 20mV</th>
<th>Voltage Drop (mV/amp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10mΩ</td>
<td>&lt;3.0mV/amp</td>
</tr>
</tbody>
</table>

**Centerline Spacing (mm):**

<table>
<thead>
<tr>
<th>Centerline Spacing (mm)</th>
<th>Blade Width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Dependent</td>
<td>4.8</td>
</tr>
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</table>

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**Europe Region**

<table>
<thead>
<tr>
<th>European Region</th>
<th>Contact Number</th>
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<tbody>
<tr>
<td>49-202-291-2000</td>
<td>1-800-PACKARD</td>
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</table>

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**North American Region**

<table>
<thead>
<tr>
<th>Region</th>
<th>Contact Number</th>
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</thead>
<tbody>
<tr>
<td>South American Region</td>
<td>55-12-378-2002</td>
</tr>
<tr>
<td>Asia Pacific Region</td>
<td>65-730-9900</td>
</tr>
<tr>
<td>European Region</td>
<td>49-202-291-2000</td>
</tr>
<tr>
<td>North American Region</td>
<td>1-800-PACKARD</td>
</tr>
</tbody>
</table>

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**http://delphi.com/products/connect**
Metri-Pack Series

**JUNCTION SYSTEMS**

**PART NO:** 12015508  
**DESCRIPTION:** Connector Assembly 42F  
**SIZE:** 43.7L x 83.8H x 109.0W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 138  
**NOTE:** Available with Grease Covers 12015513 and 12033602

**PART NO:** 12015510  
**DESCRIPTION:** Connector Assembly 25M  
**SIZE:** 46.6L x 63.0H x 70.6W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 139

**PART NO:** 12015511  
**DESCRIPTION:** Connector 17M  
**SIZE:** 46.6L x 63.8H x 28.8W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 139  
**NOTE:** Available with Grease Cover 12033601

**PART NO:** 12162412  
**DESCRIPTION:** Stabilizer  
**COLOR:** Natural  
**MATERIAL:** Mylar

**PART NO:** 12162413  
**DESCRIPTION:** Stabilizer  
**COLOR:** Natural  
**MATERIAL:** Mylar

**KEY:**  
- ■ 280 SERIES  
- ● 480 SERIES  
- ▲ 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

**http://delphi.com/products/connect**
### Part A
- **Part No:** 12084183
- **Description:** Connector Assembly 18F
- **Size:** 25.0L x 38.9H x 82.2W
- **Color:** Black
- **Material:** PA66 HS IM
- **Terminals:** See Page 138

### Part B
- **Part No:** 12047840
- **Description:** Connector 13F
- **Size:** 23.0L x 8.0H x 71.3W
- **Color:** Gray
- **Material:** PPE
- **Terminals:** See Page 138

### Part C
- **Part No:** 12047842
- **Description:** Connector 17F
- **Size:** 17.5L x 8.2H x 73.5W
- **Color:** Black
- **Material:** PA66 HS IM
- **Terminals:** See Page 138

### Part D
- **Part No:** 12047838
- **Description:** Secondary Lock
- **Number Req:** 4
- **Color:** Blue
- **Material:** PBT

### Part E
- **Part No:** 12047841
- **Description:** TPA
- **Color:** Blue
- **Material:** PBT

### Part F
- **Part No:** 12047843
- **Description:** TPA
- **Color:** Natural
- **Material:** PBT

### Part G
- **Part No:** 12077822
- **Description:** Connector Assembly 48M
- **Size:** 43.5L x 48.2H x 92.1W
- **Color:** Black
- **Material:** PA6
- **Terminals:** See Page 139

### Part H
- **Part No:** 12047845
- **Description:** TPA
- **Color:** Natural
- **Material:** PBT IM

### Part I
- **Part No:** 12047846
- **Description:** TPA
- **Color:** Blue
- **Material:** PBT IM

### Part J
- **Part No:** 12186880
- **Description:** Stabilizer
- **Color:** Natural
- **Material:** Mylar

---

**KEY:**
- 150 SERIES
- 280 SERIES
- 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

---

For more information, visit [http://delphi.com/products/connect](http://delphi.com/products/connect)
Metri-Pack Series

**JUNCTION SYSTEMS**

**KEY:**
- 280 SERIES
- 480 SERIES
- 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

**PART NO:** 15394027
**DESCRIPTION:** Connector Assembly 56F
**SIZE:** 24.0L x 53.9H x 88.8W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 138

**PART NO:** 15324764
**DESCRIPTION:** Secondary Lock
**NUMBER REQ:** 4
**COLOR:** Blue
**MATERIAL:** PBT

**PART NO:** 12059735
**DESCRIPTION:** Connector Assembly 56M
**SIZE:** 40.0L x 60.8H x 70.9W
**COLOR:** Md. Gray
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 139

**PART NO:** 12186869
**DESCRIPTION:** Stabilizer
**COLOR:** Natural
**MATERIAL:** Mylar

**PART NO:** 15394027
**DESCRIPTION:** Connector Assembly 56F
**SIZE:** 24.0L x 53.9H x 88.8W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 138

**PART NO:** 15324764
**DESCRIPTION:** Secondary Lock
**NUMBER REQ:** 4
**COLOR:** Blue
**MATERIAL:** PBT

**PART NO:** 12059735
**DESCRIPTION:** Connector Assembly 56M
**SIZE:** 40.0L x 60.8H x 70.9W
**COLOR:** Md. Gray
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 139

**PART NO:** 12186869
**DESCRIPTION:** Stabilizer
**COLOR:** Natural
**MATERIAL:** Mylar

**Total Mated Length:** 60.4mm
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

KEY:
- 150 SERIES
- 280 SERIES

A PART NO: 12162463
DESCRIPTION: Connector Assembly 116F
SIZE: 26.2L x 65.1H x 108.8W
COLOR: Black
MATERIAL: PA66 HS IM 14% GF
TERMINALS: See Page 138

B PART NO: 12047751
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Natural
MATERIAL: PBT

C PART NO: 12065705
DESCRIPTION: Connector Assembly 116M
SIZE: 43.6L x 61.4H x 72.2W
COLOR: Black
MATERIAL: PPE
TERMINALS: See Page 139
NOTE: See product print for assembly information

D PART NO: 12047752
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Blue
MATERIAL: PBT

E PART NO: 12124732
DESCRIPTION: Stabilizer
COLOR: Natural
MATERIAL: Mylar

http://delphi.com/products/connect
## Metri-Pack Series

### Junction Systems

#### Female Sealed System

**JUNCTION SYSTEMS FEMALE CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>12065850</td>
<td>Black</td>
<td>PBT</td>
<td>12066050</td>
</tr>
<tr>
<td>36</td>
<td>12092491*</td>
<td>Black</td>
<td>PBT</td>
<td>12064835</td>
</tr>
<tr>
<td>38</td>
<td>12191499</td>
<td>Black</td>
<td>PA66 15% GF &amp; 25% MF</td>
<td>12129669</td>
</tr>
<tr>
<td>78</td>
<td>12129206</td>
<td>Black</td>
<td>PA66 HS 33% GF</td>
<td>12129214</td>
</tr>
</tbody>
</table>

*Note: 12092491 (F) is unsealed for use in a protected environment.*
Male Sealed System

### JUNCTION SYSTEMS MALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Conn. Asm.</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
<th>Stabilizer</th>
<th>Shroud</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>12160959</td>
<td>Black</td>
<td>PBT</td>
<td>12065848</td>
<td>–</td>
<td>12176538</td>
<td>12065849</td>
</tr>
<tr>
<td>36</td>
<td>12064839</td>
<td>Black</td>
<td>PBT</td>
<td>12064834</td>
<td>–</td>
<td>12066590</td>
<td>12064837</td>
</tr>
<tr>
<td>38</td>
<td>12191487</td>
<td>Dk. Gray</td>
<td>PA66 HS IM 14% GF</td>
<td>12129670</td>
<td>15317352</td>
<td>12161191</td>
<td>12129672</td>
</tr>
<tr>
<td>78</td>
<td>12176690</td>
<td>Black</td>
<td>PA66 HS 33% GF</td>
<td>12129213</td>
<td>12162573</td>
<td>12162527</td>
<td>–</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
### Sealed System Application Information

**150 SERIES TERMINALS—Tin Plated**

- **Cable Range (mm²):** 0.35-1.0
- **Current Range (Amps):** 0-14
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <10mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 1.5

**280 SERIES TERMINALS—Tin Plated**

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-30
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 2.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

### Temperature Rise Above Ambient

#### 150 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>10</td>
<td>1.0</td>
</tr>
<tr>
<td>15</td>
<td>2.0</td>
</tr>
<tr>
<td>20</td>
<td>3.0</td>
</tr>
</tbody>
</table>

#### 280 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Current (Amps)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>15</td>
<td>7.0</td>
</tr>
<tr>
<td>20</td>
<td>10.0</td>
</tr>
</tbody>
</table>

### Temperature Derating Curves

#### 150 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1.0</td>
</tr>
<tr>
<td>50</td>
<td>2.0</td>
</tr>
<tr>
<td>75</td>
<td>3.0</td>
</tr>
<tr>
<td>100</td>
<td>4.0</td>
</tr>
<tr>
<td>125</td>
<td>5.0</td>
</tr>
</tbody>
</table>

#### 280 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Maximum Current (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>5.0</td>
</tr>
<tr>
<td>50</td>
<td>10.0</td>
</tr>
<tr>
<td>75</td>
<td>15.0</td>
</tr>
<tr>
<td>100</td>
<td>20.0</td>
</tr>
<tr>
<td>125</td>
<td>25.0</td>
</tr>
</tbody>
</table>

### Female Terminals Sealed

#### 150 SERIES FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12048074</td>
<td>1.0-0.8</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12048200</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12160223</td>
<td>1.0-0.8</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12160222</td>
<td>0.50-0.35</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

#### 480 SERIES FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052139</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048451</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048450</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 630 SERIES FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052456</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052455</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12052457</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

#### 280 SERIES FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12077413</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129493</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12077411</td>
<td>1.0-0.8</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12084201</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12176387</td>
<td>5.0</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12176388</td>
<td>3.0-2.0</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12176389</td>
<td>1.0-0.8</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

#### 280 TANGLELESS SERIES FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110853</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129409</td>
<td>2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110845*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110847*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110846*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

* Thin Stock—Electrical current restrictions may apply, contact your regional support representative at the number listed below.

---

http://delphi.com/products/connect
Sealed System Application Information

### 480 Series Terminals - Tin Plated

<table>
<thead>
<tr>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
<th>Maximum Current (Amps)</th>
<th>Temperature Derating Curves*</th>
</tr>
</thead>
</table>

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-42
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 4.8

### 630 Series Terminals - Tin Plated

<table>
<thead>
<tr>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
<th>Maximum Current (Amps)</th>
<th>Temperature Derating Curves*</th>
</tr>
</thead>
</table>

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-46
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <3.0mV/amp
- **Centerline Spacing (mm):** Connector Dependent
- **Blade Width (mm):** 6.3

* The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

---

**150 Series Male Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12045773</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12077628</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**480 Series Male Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052172</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12065197</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12065196</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**280 Series Male Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12048254</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129487</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12048159</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124977</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**630 Series Male Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12064736</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064737</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064735</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12064734</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

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For more information, visit [http://delphi.com/products/connect](http://delphi.com/products/connect)
Sealed System Cable Seals & Cavity Plugs

### 150 METRI-PACK CABLE SEALs

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052934</td>
<td>12048086</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12089444</td>
<td>12089678</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052925</td>
<td>12048087</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12124669</td>
<td>12084193</td>
<td>1.009-0.995</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

### 150 METRI-PACK CAVITY PLUG

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059168</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 280 METRI-PACK CABLE SEALs

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015380</td>
<td>12015193</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12015359</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td>12094444</td>
<td>12089679</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

### 280 METRI-PACK CAVITY PLUG

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12010300</td>
<td>6.7mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 480 METRI-PACK CABLE SEALs

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12065703</td>
<td>12034170</td>
<td>5.16-4.40</td>
<td>Silicone</td>
<td>Orange</td>
</tr>
<tr>
<td>12052453</td>
<td>12048443</td>
<td>4.50-3.61</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12052452</td>
<td>12048442</td>
<td>3.75-2.81</td>
<td>Silicone</td>
<td>Red</td>
</tr>
<tr>
<td>12048433</td>
<td>12048441</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052931</td>
<td>12052930</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12162068</td>
<td>12162067</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Pink</td>
</tr>
</tbody>
</table>

### 480 METRI-PACK CAVITY PLUG

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12066082</td>
<td>8.5mm</td>
<td>Silicone</td>
<td>Lt. Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

### 630 METRI-PACK CABLE SEALs

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059257</td>
<td>12052386</td>
<td>5.15-4.40</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12059260</td>
<td>12052668</td>
<td>4.50-3.61</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12059258</td>
<td>12052387</td>
<td>3.75-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12059259</td>
<td>12052388</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12077760</td>
<td>12077759</td>
<td>2.15-1.65</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

### 630 METRI-PACK CAVITY PLUG

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059255</td>
<td>9.8mm</td>
<td>Silicone</td>
<td>Lt. Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

http://delphi.com/products/connect
Metri-Pack Series

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

http://delphi.com/products/connect
Metri-Pack Series

**JUNCTION SYSTEMS**

---

**A** PART NO: 12092491
DESCRIPTION: Connector Assembly 36F (Unsealed)
SIZE: 33.0L x 59.0H x 98.4W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 138 for Unsealed terminals

**B** PART NO: 12064835
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Natural
MATERIAL: PBT

**C** PART NO: 12064839
DESCRIPTION: Connector Assembly 36M
SIZE: 70.5L x 57.2H x 110.0W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 147
SEALS/PLUGS: See Page 148

**D** PART NO: 12064834
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Blue
MATERIAL: PBT

**E** PART NO: 12064837
DESCRIPTION: Connector Seal
COLOR: Green
MATERIAL: Silicone

**F** PART NO: 12066590
DESCRIPTION: Sliding Shroud
SIZE: 43.8L x 73.0H x 123.1W
COLOR: Black
MATERIAL: PBT 30% GF

---

**KEY:**
- 150 SERIES
- 280 SERIES
- 480 SERIES
- 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

---

http://delphi.com/products/connect
**PART NO:** 12191499  
**DESCRIPTION:** Connector Assembly 38F  
**SIZE:** 45.5L x 60.1H x 99.4W  
**COLOR:** Black  
**MATERIAL:** PA66 15% GF & 25% MF  
**TERMINALS:** See Page 146 - 280 Tangless  
**SEALS/PLUGS:** See Page 148

**PART NO:** 12129669  
**DESCRIPTION:** Secondary Lock  
**NUMBER REQ:** 2  
**COLOR:** Natural  
**MATERIAL:** PBT

**PART NO:** 12191487  
**DESCRIPTION:** Connector 38M  
**SIZE:** 41.7L x 60.1H x 106.0W  
**COLOR:** Dk. Gray  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 147  
**SEALS/PLUGS:** See Page 148

**PART NO:** 12129672  
**DESCRIPTION:** Secondary Lock  
**NUMBER REQ:** 2  
**COLOR:** Natural  
**MATERIAL:** PBT

**PART NO:** 15317352  
**DESCRIPTION:** Stabilizer  
**COLOR:** Natural  
**MATERIAL:** Mylar

**PART NO:** 12161191  
**DESCRIPTION:** Pass-Through Shroud  
**SIZE:** 45.3L x 80.0H x 120.0W  
**COLOR:** Black  
**MATERIAL:** PBT 15% GF  
**NOTE:** Body mount shroud 12160809 is available.

**KEY:**

- **TANGLELESS**
- **280 SERIES**
- **630 SERIES**

Mixed terminal connectors feature a combination of different terminal cavities, as indicated by the key.
Metri-Pack Series

**JUNCTION SYSTEMS**

---

**KEY:**
- 150 SERIES
- 280 SERIES
- 630 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

---

**A**
- **PART NO:** 12129206
- **DESCRIPTION:** Connector Assembly 78F
- **SIZE:** 56.5L x 66.6H x 106.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS 33% GF
- **TERMINALS:** See Page 146
- **SEALS/PLUGS:** See Page 148

**B**
- **PART NO:** 12129214
- **DESCRIPTION:** Secondary Lock
- **NUMBER REQ:** 2
- **COLOR:** Natural
- **MATERIAL:** PBT

**C**
- **PART NO:** 12176690
- **DESCRIPTION:** Connector Assembly 78M
- **SIZE:** 67.2L x 66.6H x 112.8W
- **COLOR:** Black
- **MATERIAL:** PA66 HS 33% GF
- **TERMINALS:** See Page 147
- **SEALS/PLUGS:** See Page 148

**D**
- **PART NO:** 12129213
- **DESCRIPTION:** Secondary Lock
- **NUMBER REQ:** 2
- **COLOR:** Blue
- **MATERIAL:** PBT

**E**
- **PART NO:** 12162573
- **DESCRIPTION:** Stabilizer
- **NUMBER REQ:** 2
- **COLOR:** Natural
- **MATERIAL:** Mylar

**F**
- **PART NO:** 12162527
- **DESCRIPTION:** Sliding Shroud
- **SIZE:** 50.2L x 62.6H x 179.9W
- **COLOR:** Black
- **MATERIAL:** PBT IM

---

For more information, visit [http://delphi.com/products/connect](http://delphi.com/products/connect)
Metri-Pack Series

The Metri-Pack 280 Series unsealed electronic header is a versatile, and extremely rugged system designed to meet customer’s power circuit needs. This system offers the combination of excellent low energy electronic circuits and power circuit capability in a single connection.

The Metri-Pack 150 Series sealed electronic header is a rugged system designed for severe underhood environments. This system offers the combination of excellent low energy electronic circuits and power circuit capability in a single connection.

Metri-Pack 150 Series sealed header systems are ideally suited for critical, low-energy electronic applications that require protection from environmental hazards.

Metri-Pack Header Features

- Terminal Position Assurance (TPA)
- 14 Amps continuous maximum current rating for 150 Metri-Pack Series
- 30 Amps continuous maximum current rating for 280 Metri-Pack Series
- Low energy, low voltage capability
- Small overall dimensions
- Bolt assist connector to connector lock
- -40°C to 125°C temperature range
**Cross Sectional View**

Female Connector Assembly

<table>
<thead>
<tr>
<th>150 PULL-TO-SEAT FEMALE TERMINALS SEALED</th>
<th>150 METRI-PACK FEMALE CONNECTOR ASSEMBLIES SEALED*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part #</td>
<td>Cable Range (mm²)</td>
</tr>
<tr>
<td>12089290</td>
<td>0.50-0.35</td>
</tr>
<tr>
<td>12103881</td>
<td>1.0-0.80</td>
</tr>
<tr>
<td>12110236</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple cable seal is included in connector assembly.

http://delphi.com/products/connect
Sealed System Application Information

CABLE RANGE (mm²): .......... 0.35-1.0
CURRENT RANGE (AMPS): .......... 0-14
TEMP RANGE °C: ........... -40 to 125
RESISTANCE: ........ <10mΩ@20mV
VOLTAGE DROP: .......... <10mV/amp
CENTERLINE SPACING (mm): ............. Connector Dependent
BLADE WIDTH (mm): .............. 1.5

150 SERIES TERMINALS—Tin Plated

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

Male Header Connector Assembly

150 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Seal Hole Diameter (mm)</th>
<th>Material</th>
<th>Color</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>12065266</td>
<td>1.85-1.85</td>
<td>PA6</td>
<td>Md. Gray</td>
<td>Machine Insertion</td>
</tr>
<tr>
<td>12034413</td>
<td>1.85-1.10</td>
<td>PA66 HS IM</td>
<td>Black</td>
<td>Hand Insertion</td>
</tr>
</tbody>
</table>

CABLE SEAL PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Seal Hole Diameter (mm)</th>
<th>Material</th>
<th>Color</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>12065266</td>
<td>1.85-1.85</td>
<td>PA6</td>
<td>Md. Gray</td>
<td>Machine Insertion</td>
</tr>
<tr>
<td>12034413</td>
<td>1.85-1.10</td>
<td>PA66 HS IM</td>
<td>Black</td>
<td>Hand Insertion</td>
</tr>
</tbody>
</table>

SECTION NOTES:

- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Overall mated length varies with bolt measurement.
- Inner connector seal included in Male Header Connector Assemblies where applicable.

http://delphi.com/products/connect
Metri-Pack Series

150 HEADER

A PART NO: 12048455
DESCRIPTION: Connector Assembly 30F
SIZE: 26.1L x 25.1H x 59.8W
COLOR: Dk. Gray
MATERIAL: PET 30% GF
PLUGS: See Page 154, 150 Pull-To-Seat Female
TERMINALS: See Page 154, 150 Pull-To-Seat Female

PART NO: 12048453
DESCRIPTION: Connector Assembly 30M
SIZE: 39.5L x 37.2H x 70.0W
COLOR: Dk. Gray
MATERIAL: PET 30% GF
NOTE: Shipping cover 12040542 included.

PART NO: 12048456
DESCRIPTION: Flange Seal
COLOR: Green
MATERIAL: Silicone

PART NO: 12040921
DESCRIPTION: Connector Assembly 18F
SIZE: 26.1L x 25.4H x 44.3W
COLOR: Black
MATERIAL: PBT 30% GF
PLUGS: See Page 155, Cable Seal Plugs
TERMINALS: See Page 154, 150 Pull-To-Seat Female

PART NO: 12040923
DESCRIPTION: Connector Assembly 18M
SIZE: 39.5L x 37.2H x 54.0W
COLOR: Black
MATERIAL: PET 30% GF
NOTE: Shipping cover 12040940 included.

PART NO: 12040938
DESCRIPTION: Flange Seal
COLOR: Green
MATERIAL: Silicone

http://delphi.com/products/connect
**150 HEADER**

**Metri-Pack Series**

<table>
<thead>
<tr>
<th>PART NO:</th>
<th>DESCRIPTION</th>
<th>SIZE:</th>
<th>COLOR:</th>
<th>MATERIAL:</th>
<th>TERMINALS:</th>
<th>PLUGS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>12034398</td>
<td>Connector Assembly 30F</td>
<td>26.1L x 25.4H x 59.8W</td>
<td>Black</td>
<td>PET 30% GF</td>
<td>See Page 154, 150 Pull-To-Seat Female</td>
<td>See Page 155, Cable Seal Plugs</td>
</tr>
<tr>
<td>12040921</td>
<td>Connector Assembly 18F</td>
<td>26.1L x 25.4H x 44.3W</td>
<td>Black</td>
<td>PBT 30% GF</td>
<td>See Page 154, 150 Pull-To-Seat Female</td>
<td>See Page 155, Cable Seal Plugs</td>
</tr>
<tr>
<td>12052130</td>
<td>Connector Assembly 48M</td>
<td>39.5L x 37.2H x 114.0W</td>
<td>Black</td>
<td>PET 30% GF</td>
<td></td>
<td>Shipping covers 12040940 and 12040942 included.</td>
</tr>
<tr>
<td>12052131</td>
<td>Flange Seal</td>
<td></td>
<td>Green</td>
<td>Silicone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Mated Length:** 57.8mm

Metri-Pack Series

150 HEADER

**PART NO:** 12034398  
**DESCRIPTION:** Connector Assembly 30F  
**SIZE:** 26.1L x 25.1H x 59.8W  
**COLOR:** Black  
**MATERIAL:** PET 30% GF  
**TERMINALS:** See Page 154, 150 Pull-To-Seat Female  
**PLUGS:** See Page 155, Cable Seal Plugs

**PART NO:** 12034400  
**DESCRIPTION:** Connector Assembly 30F  
**SIZE:** 26.1L x 25.1H x 59.8W  
**COLOR:** Black  
**MATERIAL:** PET 30% GF  
**TERMINALS:** See Page 154, 150 Pull-To-Seat Female  
**PLUGS:** See Page 155, Cable Seal Plugs

**PART NO:** 12034396  
**DESCRIPTION:** Connector Assembly 60M  
**SIZE:** 39.5L x 37.2H x 130.0W  
**COLOR:** Black  
**MATERIAL:** PET 30% GF  
**NOTE:** Shipping cover 12040542 (2 Req’d.) included

**PART NO:** 12040780  
**DESCRIPTION:** Flange Seal  
**COLOR:** Green  
**MATERIAL:** Silicone

**http://delphi.com/products/connector**

**North American Region**  
**1-800-PACKARD**

**European Region**  
**49-202-291-2000**

**Asia Pacific Region**  
**65-730-9900**

**South American Region**  
**55-12-378-2002**
**150 HEADER • Metri-Pack Series**

**A**
- **PART NO:** 12065425
- **DESCRIPTION:** Connector Assembly 10F
- **SIZE:** 28.0L x 28.4H x 42.2W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See below, 150 Female Push to Seat
- **SEALS/PLUGS:** See below, 150 Metri-Pack

**B**
- **PART NO:** 12124264
- **DESCRIPTION:** TPA
- **COLOR:** Gray
- **MATERIAL:** PA6

**C**
- **PART NO:** 12160446
- **DESCRIPTION:** Connector Assembly 10M
- **SIZE:** 26.8L x 21.5H x 40.5W
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF
- **NOTE:** Sealing Shroud and Locking Feature for Connector Assembly must be designed into mating device housing.

---

**150 FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12048074</td>
<td>1.0-0.80</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12084200</td>
<td>0.50-0.35</td>
<td>Silicon Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12160223</td>
<td>1.0-0.80</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12160222</td>
<td>0.50-0.35</td>
<td>Beryllium Copper</td>
<td>Silver/Nickel</td>
</tr>
</tbody>
</table>

**150 METRI-PACK CAVITY PLUG**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059168</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.*

**150 METRI-PACK CABLE SEALS**

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052924</td>
<td>12048086</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>12089442</td>
<td>12089678</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052925</td>
<td>12048087</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12124669</td>
<td>12084193</td>
<td>1.009-0.995</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

**Metri-Pack Series**

### Cross Sectional View

- **Female Connector**
- **Male Header Connector Assembly**

---

#### 280 TANGLELESS FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12129425</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129663</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129424</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110842*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110844*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110843*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129061*</td>
<td>0.35 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

---

#### 280 METRI-PACK FEMALE CONNECTOR UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12052856</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>15324456</td>
</tr>
</tbody>
</table>

TANGLESS

---

#### 280 METRI-PACK FLEXLOCK FEMALE CONNECTOR UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>15357040</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>15324332</td>
</tr>
</tbody>
</table>

*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

---

http://delphi.com/products/connect
**Unsealed System Application Information**

- **280 SERIES TERMINALS** - Tin Plated

  - **TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT**
  - **TEMPERATURE DERATING CURVES**

  - **CABLE RANGE** (mm²): ........ 0.35-5.0
  - **CURRENT RANGE (AMPS)**: .......... 0-30
  - **TEMP RANGE °C**: ........... -40 to 125
  - **RESISTANCE**: .......... <10mΩ@20mV
  - **VOLTAGE DROP**: .......... <3.0mV/amp
  - **CENTERLINE SPACING (mm)**: ...... 6.9
  - **BLADE WIDTH (mm)**: ............... 2.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

---

**280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED**

<table>
<thead>
<tr>
<th>Pins</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12110440</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
</tbody>
</table>

**280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED**

<table>
<thead>
<tr>
<th>Pins</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>12146724</td>
<td>Gray</td>
<td>PBT 30% GF</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.

---

http://delphi.com/products/connect
**Metri-Pack Series**

**280 Header**

- **A**
  - **PART NO:** 12052856
  - **DESCRIPTION:** Connector 4F
  - **SIZE:** 24.0L x 14.0H x 23.3W
  - **COLOR:** Black
  - **MATERIAL:** PA66 HS IM
  - **TERMINALS:** See Page 160, 280 Female

- **B**
  - **PART NO:** 15324456
  - **DESCRIPTION:** TPA
  - **COLOR:** Lt. Gray
  - **MATERIAL:** PA6

- **C**
  - **PART NO:** 12110440
  - **DESCRIPTION:** Connector 4M
  - **SIZE:** 25.7L x 17.9H x 26.7W
  - **COLOR:** Black
  - **MATERIAL:** PA66 HS IM

- **D**
  - **PART NO:** 15357040
  - **DESCRIPTION:** Connector 8F (Lt. Gray)
  - **NUMBER REQ:** 2
  - **SIZE:** 23.7L x 24.7H x 34.4W
  - **COLOR:** Natural
  - **MATERIAL:** PA66 HS IM

- **E**
  - **PART NO:** 15324332
  - **DESCRIPTION:** TPA
  - **COLOR:** Lt. Gray
  - **MATERIAL:** PA66 HS IM

- **F**
  - **PART NO:** 12052834
  - **DESCRIPTION:** CPA
  - **COLOR:** Green
  - **MATERIAL:** PP

- **G**
  - **PART NO:** 12146724 (Gray)
  - **PART NO:** 12146735 (Black)

---

**Total Mated Length:**
- **Part A:** 40.4mm
- **Part C:** 50.8mm

---

**http://delphi.com/products/connect**
Micro-Pack Series

100 In-Line, 100 Header & 100W Header

Available in electronic header and in-line connections, Micro-Pack Series connector is an excellent low energy system designed to meet the needs of high density applications. Header connectors are available in straight, 90°, and 180° mounting to either flexible or hard board circuits. While inlines are ideally suited for limited space applications that do not require environmental protection, Micro-Pack Series products are extremely versatile.

The 100W series is available in both electronic header and in-line connection systems. This Micro-Pack series connection is an excellent low energy system designed to meet the needs of high density applications, requiring protection from environmental hazards. Delphi Packard’s 100W header connector mates to either flexible or hard circuit board applications.

Micro-Pack Series Features

- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 5 Amps continuous maximum current rating for Micro-Pack 100 series
- 7.5 Amps continuous maximum current rating for Micro-Pack 100W series
- Small overall dimensions
- High circuit density
- Low energy, low voltage capability
- -40°C to 85°C temperature range for Micro-Pack 100 series
- -40°C to 125°C temperature range for Micro-Pack 100W series
Cross Sectional View

**Micro-Pack Series**

- **Female Connector**
  - Terminal
  - Cable
  - TPA (Terminal Position Assurance)

- **Male Connector**
  - Terminal
  - Cable
  - Button Lock

---

**Micro-Pack Female Terminals Unsealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12146448</td>
<td>1.0-0.80</td>
<td>Copper Nickel Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12146447</td>
<td>0.50-0.35</td>
<td>Copper Nickel Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**Micro-Pack Female Connectors Unsealed**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12066189</td>
<td>Natural</td>
<td>PBT</td>
<td>12059160</td>
</tr>
<tr>
<td>5</td>
<td>12064982</td>
<td>Black</td>
<td>PBT</td>
<td>12064987</td>
</tr>
<tr>
<td>7</td>
<td>12065873</td>
<td>Black</td>
<td>PBT</td>
<td>12065943</td>
</tr>
<tr>
<td>9</td>
<td>12064980</td>
<td>Black</td>
<td>PBT</td>
<td>12064986</td>
</tr>
<tr>
<td>10</td>
<td>12047531</td>
<td>Black</td>
<td>PA66 HS IM Button Lock</td>
<td></td>
</tr>
</tbody>
</table>

---

Unsealed System Application Information

**MICRO-PACK 100 TERMINALS—Tin Plated**

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>0.35</td>
<td>0.05</td>
</tr>
<tr>
<td>0.80</td>
<td>0.15</td>
</tr>
<tr>
<td>1.0</td>
<td>0.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAXIMUM CURRENT (AMPS)</th>
<th>TEMPERATURE DERATING CURVES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>75</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
</tr>
</tbody>
</table>

*C The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**CABLE RANGE (mm²):** ............ 0.35-1.0  
**CURRENT RANGE (AMPS):** ............ 0-5  
**TEMP RANGE °C:** ............ -40 to 85  
**RESISTANCE:** ............ <10mΩ@20mV  
**VOLTAGE DROP:** ............ <10.0mV/amp  
**CENTERLINE SPACING (mm):** ............ 3.0  
**TERMINAL DIAMETER (mm):** ............ 1.0

**MICRO-PACK MALE CONNECTORS UNSEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12040903</td>
<td>Natural</td>
<td>PBT</td>
<td>Button Lock</td>
</tr>
<tr>
<td>5</td>
<td>12047829</td>
<td>Black</td>
<td>PBT</td>
<td>Button Lock</td>
</tr>
<tr>
<td>7</td>
<td>12065874</td>
<td>Black</td>
<td>PBT</td>
<td>Button Lock</td>
</tr>
<tr>
<td>9</td>
<td>12040905</td>
<td>Black</td>
<td>PBT</td>
<td>Button Lock</td>
</tr>
<tr>
<td>10</td>
<td>12047814</td>
<td>Black</td>
<td>PBT</td>
<td>Button Lock</td>
</tr>
</tbody>
</table>

**MICRO-PACK MALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084449</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12040902</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

Contact your regional support representative at the number listed below.

* Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
Micro-Pack Series

A PART NO: 12066189
DESCRIPTION: Connector 4F
SIZE: 26.3L x 13.5H x 12.7W
COLOR: Natural
MATERIAL: PBT
TERMINALS: See Page 164

B PART NO: 12059160
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

C PART NO: 12064989
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

D PART NO: 12040903
DESCRIPTION: Connector 4M - with Button Lock
SIZE: 37.5L x 15.0H x 21.0W
COLOR: Natural
MATERIAL: PBT
TERMINALS: See Page 165

E PART NO: 12064982 (Black)
12064983 (Natural)
DESCRIPTION: Connector 5F
SIZE: 27.0L x 14.2H x 15.7W
MATERIAL: PBT
TERMINALS: See Page 164

F PART NO: 12064987
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

G PART NO: 12064989
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

H PART NO: 12047829 (Black)
12047815 (Natural)
DESCRIPTION: Connector 5M - with Button Lock
SIZE: 37.5L x 14.5H x 24.2W
MATERIAL: PBT
TERMINALS: See Page 165

Total Mated Length: 50.9mm

Total Mated Length: 53.0mm

http://delphi.com/products/connect
Micro-Pack Series

100 In-Line

PART NO: 12065873
DESCRIPTION: Connector 7F
SIZE: 27.0L x 13.5H x 21.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 164

PART NO: 12065874
DESCRIPTION: Connector 7M - with Button Lock
SIZE: 37.5L x 18.0H x 30.2W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 165

PART NO: 12064989
DESCRIPTION: Connector 7F
SIZE: 27.0L x 13.5H x 21.7W
COLOR: Orange
MATERIAL: PBT
TERMINALS: See Page 164

PART NO: 12065943
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

PART NO: 12064989
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

PART NO: 12040905
DESCRIPTION: Connector 9M - with Button Lock
SIZE: 37.5L x 14.5H x 36.2W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 165

PART NO: 12064980
DESCRIPTION: Connector 9F
SIZE: 27.0L x 13.5H x 27.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 164

PART NO: 12064986
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

PART NO: 12064988
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

Total Mated Length: 52.0mm
Micro-Pack Series

100 In-Line

A PART NO: 12047531
DESCRIPTION: Connector 10F - with Button Lock
SIZE: 25.2L x 12.9H x 48.2W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 164

B PART NO: 12064989
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

C PART NO: 12047814
DESCRIPTION: Connector 10M - with Button Lock
SIZE: 37.5L x 17.0H x 42.2W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 165

Total Mated Length: 48.0mm
Cross Sectional View

Female Connector

Male Header Connector Assembly

TPA-A
(Terminal Position Assurance)

TPA-B
(Terminal Position Assurance)

Cable

Terminal

Female Terminal

Micro-Pack Series

North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002

http://delphi.com/products/connect
**Micro-Pack Series**

**Unsealed System Application Information**

**Micro-Pack 100 Terminals – Tin Plated**

- **Current Range (amps):** 0-5
- **Temp Range °C:** -40 to 85
- **Resistance:** <10mΩ@20mV
- **Voltage Drop:** <10.0mV/amp
- **Centerline Spacing (mm):** 3.0
- **Terminal Diameter (mm):** 1.0

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*

---

**CPA**
(Connector Position Assurance)

**Male Header Connector Assembly**

**Micro-Pack Male Header Connector Assemblies Unsealed**

<table>
<thead>
<tr>
<th># Pins</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>12065870</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>10</td>
<td>12065647</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>12</td>
<td>12064798</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>13</td>
<td>12066307</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>15</td>
<td>12059915</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>16</td>
<td>12110261</td>
<td>Green</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>20*</td>
<td>12089852</td>
<td>Gray</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>24</td>
<td>12092886</td>
<td>Gray</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>32*</td>
<td>12129340</td>
<td>Dk. Red</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>32*</td>
<td>12110323</td>
<td>Lt. Blue</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>40</td>
<td>12191050</td>
<td>Gray</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>48</td>
<td>12191140</td>
<td>Natural</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>56*</td>
<td>12110209</td>
<td>Lt. Blue</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>64</td>
<td>12160861</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Mixed</td>
<td>15357042</td>
<td>Gray</td>
<td>PBT 30% GF</td>
</tr>
</tbody>
</table>

*Gold plating available.*

---

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Different color and connector indexing features are also available.
- Low profile and right angle TPAs also available.

---

**http://delphi.com/products/connect**
Micro-Pack Series

100 Header

A
PART NO: 12064993
DESCRIPTION: Connector 6F
SIZE: 29.7L x 13.5H x 21.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 170

B
PART NO: 12066170
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

C
PART NO: 12064989
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

D
PART NO: 12065870
DESCRIPTION: Connector Assembly 6M
SIZE: 26.5L x 11.9H x 44.1W
COLOR: Black
MATERIAL: PBT 30% GF

Total Mated Length: 49.7mm

http://delphi.com/products/connect
A PART NO: 12066189
DESCRIPTION: Connector 4F
SIZE: 26.3L x 13.5H x 12.7W
COLOR: Natural
MATERIAL: PBT
TERMINALS: See Page 170

B PART NO: 12064993
DESCRIPTION: Connector 6F
SIZE: 29.7L x 13.5H x 21.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 170

C PART NO: 12059160
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

D PART NO: 12066170
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

E PART NO: 12064989
DESCRIPTION: CPA
NUMBER REQ: 2
COLOR: Orange
MATERIAL: PP

F PART NO: 12065647
DESCRIPTION: Connector Assembly 10M
SIZE: 26.5L x 11.9H x 59.1W
COLOR: Black
MATERIAL: PBT 30% GF

Total Mated Length: 49.4mm
Micro-Pack Series

**100 Header**

[Image of connector diagrams]

### A PART NO: 12064799
- DESCRIPTION: Connector 12F
- SIZE: 28.0L x 23.9H x 21.3W
- COLOR: Black
- MATERIAL: PBT 30% GF
- TERMINALS: See Page 170

### B PART NO: 12064822
- DESCRIPTION: TPA
- COLOR: Blue
- MATERIAL: PA6

### C PART NO: 12064823
- DESCRIPTION: TPA
- COLOR: Blue
- MATERIAL: PA6

### D PART NO: 12064798
- DESCRIPTION: Connector Assembly 12M
- SIZE: 33.6L x 24.8H x 44.1W
- COLOR: Black
- MATERIAL: PBT 30% GF

### E PART NO: 12077899
- DESCRIPTION: CPA
- COLOR: Orange
- MATERIAL: PP

Total Mated Length: 39.1mm

http://delphi.com/products/connect
**Micro-Pack Series**

**A**
- **PART NO:** 12066189
- **DESCRIPTION:** Connector 4F
- **SIZE:** 26.3L x 13.5H x 12.7W
- **COLOR:** Natural
- **MATERIAL:** PBT
- **TERMINAL:** See Page 170

**B**
- **PART NO:** 12066130
- **DESCRIPTION:** Connector 9F
- **SIZE:** 27.0L x 13.5H x 27.7W
- **COLOR:** Natural
- **MATERIAL:** PBT
- **TERMINALS:** See Page 170

**C**
- **PART NO:** 12059160
- **DESCRIPTION:** TPA
- **COLOR:** Natural
- **MATERIAL:** PA6

**D**
- **PART NO:** 12064986
- **DESCRIPTION:** TPA
- **COLOR:** Red
- **MATERIAL:** PA6

**E**
- **PART NO:** 12064989
- **DESCRIPTION:** CPA
- **NUMBER REQ:** 2
- **COLOR:** Orange
- **MATERIAL:** PP

**F**
- **PART NO:** 12066307
- **DESCRIPTION:** Connector Assembly 13M
- **SIZE:** 26.5L x 11.9H x 66.7W
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF

---

**North American Region**
- **1-800-PACKARD**

**European Region**
- **49-202-291-2000**

**Asia Pacific Region**
- **65-730-9900**

**South American Region**
- **55-12-378-2002**

Micro-Pack Series

100 Header

A PART NO: 12064980
DESCRIPTION: Connector 9F
SIZE: 27.0L x 13.5H x 27.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See Page 170

B PART NO: 12064978
DESCRIPTION: Connector 6F
SIZE: 29.7L x 13.5H x 21.7W
COLOR: Gray
MATERIAL: PBT
TERMINALS: See Page 170

C PART NO: 12064986
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

D PART NO: 12066170
DESCRIPTION: TPA
COLOR: Red
MATERIAL: PA6

E PART NO: 12064989
DESCRIPTION: CPA
NUMBER REQ: 2
COLOR: Orange
MATERIAL: PP

F PART NO: 12059915
DESCRIPTION: Connector Assembly 15M
SIZE: 25.0L x 33.8H x 81.3W
COLOR: Black
MATERIAL: PBT 30% GF

Total Mated Length: 46.8mm

http://delphi.com/products/connect

PART NO: 12110259* (Green)
12084944* (Black)
12084945* (Gray)
DESCRIPTION: Connector 16F
SIZE: 28.0L x 23.9H x 27.8W
MATERIAL: PBT 30% GF
TERMINALS: See Page 170
*DIFERENT INDEXING FEATURE.

PART NO: 12048344
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12048345
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12110261* (Green)
12084948* (Black)
12084949* (Gray)
DESCRIPTION: Connector Assembly 16M
SIZE: 39.0L x 17.9H x 57.5W
MATERIAL: PBT 30% GF
*DIFERENT INDEXING FEATURE.
Micro-Pack Series

**100 Header**

A

**PART NO:** 12065785
**DESCRIPTION:** Connector 10F - with Button Lock
**SIZE:** 25.2L x 14.2H x 45.7W
**COLOR:** Gray
**MATERIAL:** PBT
**TERMINALS:** See Page 170

B

**PART NO:** 12047531
**DESCRIPTION:** Connector 10F - with Button Lock
**SIZE:** 25.2L x 12.9H x 49.0W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 170

C

**PART NO:** 12064989
**DESCRIPTION:** CPA
**COLOR:** Orange
**MATERIAL:** PP

D

**PART NO:** 12089852
**DESCRIPTION:** Connector Assembly 20M
**SIZE:** 30.8L x 33.0H x 41.4W
**COLOR:** Gray
**MATERIAL:** PBT 30% GF

Total Mated Length: 55.3mm

http://delphi.com/products/connect
PART NO: 12110088
DESCRIPTION: Connector 24F
SIZE: 28.0L x 24.9H x 40.3W
COLOR: Lt. Gray
MATERIAL: PBT 30% GF
TERMINALS: See Page 170

PART NO: 12047900
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12047901
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12092886
DESCRIPTION: Connector Assembly 24M
SIZE: 33.5L x 24.8H x 53.1W
COLOR: Gray
MATERIAL: PBT 30% GF

PART NO: 12077899
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

http://delphi.com/products/connect
**Micro-Pack Series**

**100 Header**

---

**A**

**PART NO:**
- 12110113* (Dk. Red)
- 12110114* (White)
- 12110115* (Dk. Blue)
- 12110112* (Tan)

**DESCRIPTION:** Connector 32F

**SIZE:** 28.0L x 24.9H x 51.7W

**MATERIAL:** PBT 30% GF

**TERMINALS:** See Page 170

*DIFFERENT INDEXING FEATURE.

---

**B**

**PART NO:** 12045889

**DESCRIPTION:** TPA

**COLOR:** Blue

**MATERIAL:** PA6

---

**C**

**PART NO:** 12045890

**DESCRIPTION:** TPA

**COLOR:** Md. Gray

**MATERIAL:** PA6

---

**D**

**PART NO:**
- 12129340* (Dk. Red)
- 12129341* (Natural)
- 12129342* (Dk. Blue)
- 12129349* (Tan)

**DESCRIPTION:** Connector Assembly 32M

**SIZE:** 33.5L x 24.7H x 65.4W

**MATERIAL:** PBT 30% GF

*DIFFERENT INDEXING FEATURE.

---

**E**

**PART NO:** 12077899

**DESCRIPTION:** CPA

**COLOR:** Orange

**MATERIAL:** PP

---

**Total Mated Length:** 59.3mm

---

http://delphi.com/products/connect

---

**North American Region**

1-800-PACKARD

---

**European Region**

49-202-291-2000

---

**Asia Pacific Region**

65-730-9900

---

**South American Region**

55-12-378-2002
Micro-Pack Series

A  PART NO: 12110207  
DESCRIPTION: Connector 32F  
SIZE: 28.0L x 22.6H x 51.7W  
COLOR: Lt. Blue  
MATERIAL: PBT 30% GF  
TERMINALS: See Page 170

B  PART NO: 12045889  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

C  PART NO: 12045890  
DESCRIPTION: TPA  
COLOR: Md. Gray  
MATERIAL: PA6

D  PART NO: 12110323  
DESCRIPTION: Connector Assembly 32M  
SIZE: 33.5L x 24.8H x 74.3W  
COLOR: Lt. Blue  
MATERIAL: PBT 30% GF

E  PART NO: 12077899  
DESCRIPTION: CPA  
COLOR: Orange  
MATERIAL: PP

Total Mated Length: 59.3mm

http://delphi.com/products/connect
Micro-Pack Series

100 Header

A PART NO: 12084945
DESCRIPTION: Connector 16F
SIZE: 28.0L x 23.9H x 27.8W
COLOR: Gray
MATERIAL: PBT 30% GF
TERMINALS: See Page 170

B PART NO: 12110088
DESCRIPTION: Connector 24F
SIZE: 28.0L x 24.9H x 40.3W
COLOR: Lt. Gray
MATERIAL: PBT 30% GF
TERMINALS: See Page 170

C PART NO: 12048344
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

D PART NO: 12048345
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

E PART NO: 12047900
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

F PART NO: 12047901
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

G PART NO: 12191050
DESCRIPTION: Connector Assembly 40M
SIZE: 32.6L x 24.4H x 92.0W
COLOR: Gray
MATERIAL: PBT 30% GF

H PART NO: 12077899
DESCRIPTION: CPA
NUMBER REQ: 2
COLOR: Orange
MATERIAL: PP

PART NO: 12048344
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12048345
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12047900
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12047901
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

Total Mated Length: 56.3mm

http://delphi.com/products/connect
**Micro-Pack Series**

**100 Header**

**PART NO:** 12110244
- **DESCRIPTION:** Connector 24F
- **SIZE:** 28.0L x 24.2H x 40.9W
- **COLOR:** Pink
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 170

**PART NO:** 12110206
- **DESCRIPTION:** Connector 24F
- **SIZE:** 28.0L x 24.2H x 40.9W
- **COLOR:** Lt. Blue
- **MATERIAL:** PBT 30% GF
- **TERMINALS:** See Page 170

**PART NO:** 12047900
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 2
- **COLOR:** Blue
- **MATERIAL:** PA6

**PART NO:** 12047901
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 2
- **COLOR:** Blue
- **MATERIAL:** PA6

**PART NO:** 12191140
- **DESCRIPTION:** Connector Assembly 48M
- **SIZE:** 32.6L x 24.4H x 104.1W
- **COLOR:** Natural
- **MATERIAL:** PBT 30% GF

**PART NO:** 12077899
- **DESCRIPTION:** CPA
- **NUMBER REQ:** 2
- **COLOR:** Orange
- **MATERIAL:** PP

**TOTAL MATED LENGTH:** 56.3mm

---

North American Region: 1-800-PACKARD  
European Region: 49-202-291-2000  
Asia Pacific Region: 65-730-9900  
South American Region: 55-12-378-2002

http://delphi.com/products/connect
Micro-Pack Series

A PART NO: 12110207* (Lt. Blue)  
12110246* (Pink)  
12160779* (Brown)  
DESCRIPTION: Connector 32F  
SIZE: 28.0L x 22.6H x 51.7W  
MATERIAL: PBT 30% GF  
TERMINALS: See Page 170  
*DIFFERENT INDEXING FEATURE.

B PART NO: 12110206* (Lt. Blue)  
12110244* (Pink)  
12160778* (Brown)  
DESCRIPTION: Connector 24F  
SIZE: 28.0L x 24.2H x 40.9W  
MATERIAL: PBT 30% GF  
TERMINALS: See Page 170  
*DIFFERENT INDEXING FEATURE.

C PART NO: 12045889  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

D PART NO: 12045890  
DESCRIPTION: TPA  
COLOR: Md. Gray  
MATERIAL: PA6

E PART NO: 12047900  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

F PART NO: 12047901  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

G PART NO: 12110209* (Lt. Blue)  
12110241* (Pink)  
12160777* (Brown)  
DESCRIPTION: Connector Assembly 56M  
SIZE: 33.0L x 30.7H x 116.4W  
COLOR: Lt. Blue  
MATERIAL: PBT 30% GF  
*DIFFERENT INDEXING FEATURE.

H PART NO: 12077899  
DESCRIPTION: CPA  
NUMBER REQ: 2  
COLOR: Orange  
MATERIAL: PP

http://delphi.com/products/connect
A  PART NO: 12084945* (Gray)  
               12191375* (Purple)  
  DESCRIPTION: Connector 16F  
  SIZE: 28.0L x 23.9H x 27.8W  
  COLOR: Gray  
  MATERIAL: PBT 30% GF  
  TERMINALS: See Page 170  
  *DIFFERENT INDEXING FEATURE.

B  PART NO: 12110088* (Lt. Gray)  
       12110206* (Lt. Blue)  
  DESCRIPTION: Connector 24F  
  SIZE: 28.0L x 24.9H x 40.3W  
  MATERIAL: PBT 30% GF  
  TERMINALS: See Page 170  
  *DIFFERENT INDEXING FEATURE.

C  PART NO: 12110244* (Pink)  
       12160778* (Brown)  
  DESCRIPTION: Connector 24F  
  SIZE: 28.0L x 24.9H x 40.3W  
  MATERIAL: PBT 30% GF  
  TERMINALS: See Page 170  
  *DIFFERENT INDEXING FEATURE.

D  PART NO: 12048344  
  DESCRIPTION: TPA  
  COLOR: Blue  
  MATERIAL: PA6

E  PART NO: 12048345  
  DESCRIPTION: TPA  
  COLOR: Blue  
  MATERIAL: PA6

F  PART NO: 12047900  
  DESCRIPTION: TPA  
  NUMBER REQ: 2  
  COLOR: Blue  
  MATERIAL: PA6

G  PART NO: 12047901  
  DESCRIPTION: TPA  
  NUMBER REQ: 2  
  COLOR: Blue  
  MATERIAL: PA6

H  PART NO: 12160861* (Black)  
       12191293* (Dk. Blue)  
  DESCRIPTION: Connector Assembly 64M  
  SIZE: 32.6L x 24.4H x 119.2W  
  MATERIAL: PBT 30% GF  
  *DIFFERENT INDEXING FEATURE.

J  PART NO: 12077899  
  DESCRIPTION: CPA  
  NUMBER REQ: 3  
  COLOR: Orange  
  MATERIAL: PP

http://delphi.com/products/connect
Micro-Pack Series

PART NO: 12110088* (Lt. Gray)
12110206* (Lt. Blue)
12110244* (Pink)

DESCRIPTION: Connector 24F
SIZE: 28.0L x 24.9H x 40.3W
MATERIAL: PBT 30% GF
TERMINALS: See Page 170

PART NO: 15357040
DESCRIPTION: Connector 8F
SIZE: 23.7L x 24.9H x 34.4W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 160, 280 Metri-Pack Tangless

PART NO: 12047900
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 12047901
DESCRIPTION: TPA
COLOR: Blue
MATERIAL: PA6

PART NO: 15324332
DESCRIPTION: CPA
NUMBER REQ: 2
COLOR: Natural
MATERIAL: PA66 HS IM

PART NO: 12052834
DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

G PART NO: 15357042* (Gray)
15357044* (Lt. Blue)
15357046* (Pink)

DESCRIPTION: Connector Assembly 32M
SIZE: 41.9L x 21.5H x 88.5W
MATERIAL: PBT 30% GF
DIFFERENT INDEXING FEATURE.

PART NO: 12077899
DESCRIPTION: CPA
COLOR: Orange
MATERIAL: PP

Total Mated Length: 59.7mm

http://delphi.com/products/connect
# Micro-Pack Female Connectors Sealed

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
<th>Retainer**</th>
<th>Seal</th>
<th>Strain Relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>12129225</td>
<td>Natural</td>
<td>PBT</td>
<td>–</td>
<td>12129183</td>
<td>12110403*</td>
<td>12160848</td>
</tr>
<tr>
<td>32</td>
<td>12129025</td>
<td>Natural</td>
<td>PBT</td>
<td>–</td>
<td>12129023</td>
<td>12129026*</td>
<td>12129030</td>
</tr>
<tr>
<td>36</td>
<td>12110487</td>
<td>Black</td>
<td>PBT</td>
<td>–</td>
<td>12110488</td>
<td>12110489*</td>
<td>12110490</td>
</tr>
<tr>
<td>Mixed</td>
<td>12160423</td>
<td>Black</td>
<td>PBT</td>
<td>12160419</td>
<td>12160418</td>
<td>12160425</td>
<td>12160424</td>
</tr>
</tbody>
</table>

*Validated for 0.80-0.50 cable.
**Retainers provide terminal position assurance.

# Micro-Pack Female Terminals Sealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12084912</td>
<td>0.80</td>
<td>Phosphor Bronze</td>
<td>Gold/Nickel</td>
</tr>
<tr>
<td>12084913</td>
<td>0.50-0.35</td>
<td>Phosphor Bronze</td>
<td>Gold/Nickel</td>
</tr>
</tbody>
</table>

# CPA (Connector Position Assurance)

---

Sealed System Application Information

CABLE RANGE (mm²): ....... 0.35-0.8
CURRENT RANGE (AMPS): ....... 0-7.5
TEMP RANGE °C: ........... -40 to 125
RESISTANCE: ........ <10mΩ@20mV
VOLTAGE DROP: .... <10.0mV/amp
CENTERLINE SPACING (mm): ........ 3.5
TERMINAL DIAMETER (mm): ........ 1.0

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

Micro-Pack Series

100W HEADER

Male Header Connector Assembly

MICRO-PACK MALE HEADER CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>12092320</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>32</td>
<td>12129008</td>
<td>Blue</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>36</td>
<td>12110485</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Mixed</td>
<td>32</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
</tbody>
</table>

Terminals included in connector assembly.

SECTION NOTES:

- Sealing shroud and locking feature for connector assembly must be designed into mating device housing.

http://delphi.com/products/connect
**Micro-Pack Series**

### 100W Header

#### A
- **Part No:** 12129225
- **Description:** Connector 24F
- **Size:** 32.0L x 10.0H x 44.5
- **Color:** Natural
- **Material:** PBT
- **Terminals:** See Page 188

#### B
- **Part No:** 12129183
- **Description:** Retainer 24F
- **Color:** Black
- **Material:** PC

#### C
- **Part No:** 12110403
- **Description:** Seal 24F
- **Color:** Green
- **Material:** Silicone

#### D
- **Part No:** 12160848 (Black (Right Wire Dress))
- **Part No:** 12129858 (Gray (Straight Wire Dress))
- **Part No:** 12129811 (Gray (Right Wire Dress))
- **Description:** Strain Relief 24F
- **Size:** 33.9L x 28.9H x 55.2W
- **Material:** TEE

#### E
- **Part No:** 12110299
- **Description:** CPA
- **Color:** Red
- **Material:** PBT

#### F
- **Part No:** 12092320
- **Description:** Connector Assembly 24M
- **Size:** 25.7L x 20.0H x 53.8W
- **Color:** Black
- **Material:** PBT 30% GF

**Total Mated Length: 61.2mm**

---

Micro-Pack Series

PART NO: 12129025
DESCRIPTION: Connector 32F
SIZE: 31.5L x 10.0H x 56.5W
COLOR: Natural
MATERIAL: PBT
TERMINALS: See Page 188

PART NO: 12129023* (Md. Blue)
12129021* (Black)
12129022* (Clear)
DESCRIPTION: Retainer 32F
MATERIAL: PC
*DIFFERENT INDEXING FEATURE.

PART NO: 12129026
DESCRIPTION: Seal 32F
COLOR: Green
MATERIAL: Silicone

PART NO: 12129030 (Right Wire Dress)
12129028 (Left Wire Dress)
DESCRIPTION: Strain Relief 32F
SIZE: 29.6L x 29.9H x 67.3W
COLOR: Gray
MATERIAL: TEEE

PART NO: 12110299
DESCRIPTION: CPA
COLOR: Red
MATERIAL: PBT

PART NO: 12129008* (Blue)
12186041* (Black)
12186043* (Gray)
DESCRIPTION: Connector Assembly 32M
SIZE: 26.1L x 20.0H x 66.8W
MATERIAL: PBT 30% GF
*DIFFERENT INDEXING FEATURE.

Total Mated Length: 57.6mm
Micro-Pack Series

**100W Header**

![Header Diagram]

**A**
- **PART NO:** 12110487
- **DESCRIPTION:** Connector 36F
- **SIZE:** 32.0L x 10.0H x 62.5W
- **COLOR:** Black
- **MATERIAL:** PBT
- **TERMINALS:** See Page 188

**B**
- **PART NO:** 12110488
- **DESCRIPTION:** Retainer 36F
- **COLOR:** Clear
- **MATERIAL:** PC

**C**
- **PART NO:** 12110489
- **DESCRIPTION:** Seal 36F
- **COLOR:** Green
- **MATERIAL:** Silicone

**D**
- **PART NO:** 12110490 (Right Wire Dress)
- **DESCRIPTION:** Strain Relief 36F
- **SIZE:** 39.2L x 28.9H x 85.5W
- **COLOR:** Gray
- **MATERIAL:** TEEE

**E**
- **PART NO:** 12110299
- **DESCRIPTION:** CPA
- **COLOR:** Red
- **MATERIAL:** PBT

**F**
- **PART NO:** 12110485
- **DESCRIPTION:** Connector Assembly 36M
- **SIZE:** 25.7L x 20.0H x 71.8W
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF

Total Mated Length: 66.0mm

http://delphi.com/products/connect

---

North American Region
- **1-800-PACKARD**

European Region
- **49-202-291-2000**

Asia Pacific Region
- **65-730-9900**

South American Region
- **55-12-378-2002**
Micro-Pack Series

PART NO: 12160423
DESCRIPTION: Connector 32F
SIZE: 33.1L x 28.8H x 103.7W
COLOR: Black
MATERIAL: PBT
TERMINALS: See page 188, Micro-Pack Sealed

PART NO: 12160418
DESCRIPTION: Retainer 24F
COLOR: Red
MATERIAL: PC

PART NO: 12160425
DESCRIPTION: Connector Seal
COLOR: Green
MATERIAL: Silicone

PART NO: 12160426
DESCRIPTION: Seal 32F
COLOR: Green
MATERIAL: Silicone

PART NO: 12160424
DESCRIPTION: Strain Relief
SIZE: 25.9L x 28.7H x 98.6W
COLOR: Black
MATERIAL: PA66 HS IM 14% GF

PART NO: 12160427
DESCRIPTION: Bolt
SIZE: M4 Hex Head
MATERIAL: Zinc Plated Steel

PART NO: 12103406
DESCRIPTION: Bolt Retainer
MATERIAL: Zinc Plated Steel

PART NO: 12160419
DESCRIPTION: TPA
COLOR: Md. Gray
MATERIAL: PA66 HS IM

PART NO: 12161104
DESCRIPTION: Vent Tube
COLOR: Black
MATERIAL: PA6
LENGTH: 1180mm
APPLICATION: Vents Air Pressure inside Module.

PART NO: 12160420
DESCRIPTION: Wire Dress Cover
COLOR: Black
MATERIAL: PA66 HS IM 14% GF

PART NO: 12160421
DESCRIPTION: Connector Assembly 32M
SIZE: 26.9L x 23.5H x 108.0W
COLOR: Black
MATERIAL: PBT 30% GF

Total Mated Length: 65.6mm

TANGLELESS

280 TANGLELESS FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110853</td>
<td>5.0-3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12129409</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110845*</td>
<td>3.0-2.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110847*</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12110846*</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

* Thin Stock—Electrical current restrictions may apply, contact your regional support representative at the number listed below.

http://delphi.com/products/connect
Ducon Series

0.8, 1.5, 2.8, 4.8, 6.3 & Mixed

Available in both in-line and device connections for all underhood vehicle applications. By utilizing multiple contact points, the system offers exceptional electrical stability, even in high vibration applications.

Available in both device and in-line connection systems for all vehicle applications. Exceptional performance in both high and low current applications.

Ducon Features

- High current performance
- Multiple contact points
- Small overall dimensions
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals, abrasion and vibration
- Terminal Position Assurance (TPA)
- Rugged two piece terminal construction
Ducon Series

Cross Sectional View

Female Connector

- Secondary Lock
- Terminal
- Cable

Male Connector

- Terminal
- Secondary Lock
- Cable

<table>
<thead>
<tr>
<th>0.8 FEMALE TERMINAL UNSEALED</th>
<th>0.8 FEMALE CONNECTOR UNSEALED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part #</td>
<td>Cable Range (mm²)</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------</td>
</tr>
<tr>
<td>12131423</td>
<td>1.0-0.5</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Unsealed System Application Information

**CABLE RANGE (mm²):** 0.5-1.0

**CURRENT RANGE (AMPS):** 0-15

**TEMP RANGE °C:** -40 to 135

**RESISTANCE:** <10mΩ@20mV

**VOLTAGE DROP:** <4.0mV/amp

**CENTERLINE SPACING (mm):** 3.0

**BLADE WIDTH (mm):** 0.8

---

**0.8 SERIES TERMINALS–Tin Plated**

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional representative at the number listed below.

---

**SECTION NOTES:**

Contact your regional support representative at the number listed below.

- Ducon Connection Systems have been validated using DIN Cable Standards.

---

**0.8 MALE CONNECTOR UNSEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>15344038</td>
<td>Black</td>
<td>PA6</td>
</tr>
</tbody>
</table>

**0.8 MALE TERMINAL UNSEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15327159</td>
<td>1.0-0.50</td>
<td>Copper Nickel Silicn Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

---

Hinged Secondary Lock

Male Terminal

Male Connector

http://delphi.com/products/connect
**Ducon Series**

**PART NO:** 15344037
**DESCRIPTION:** Connector 20F
**SIZE:** 23.0L x 10.0H x 31.0W
**COLOR:** Gray
**MATERIAL:** PA6
**TERMINALS:** See Page 198

**PART NO:** 15344038
**DESCRIPTION:** Connector 20M
**SIZE:** 36.5L x 13.1H x 34.3W
**COLOR:** Black
**MATERIAL:** PA6
**TERMINALS:** See Page 199

Total Mated Length: 44.5mm
**PART NO:** 15327190  
**DESCRIPTION:** Connector 8F  
**SIZE:** 25.8L x 15.5H x 13.0W  
**COLOR:** Gray  
**MATERIAL:** PA66  
**TERMINALS:** See Page 198

[Diagram of connector with dimensions L: 25.8, W: 13.0, H: 15.5]
1.5 Female Connectors Unsealed

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>15336766</td>
<td>Blue</td>
<td>PA6</td>
<td>15354674</td>
</tr>
<tr>
<td>12</td>
<td>12185284</td>
<td>Green</td>
<td>PA6</td>
<td>12185333</td>
</tr>
<tr>
<td>15</td>
<td>12185081</td>
<td>Black</td>
<td>PA6</td>
<td>12185080</td>
</tr>
</tbody>
</table>

1.5 Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12147302</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147303</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

Cross Sectional View

- Female Connector
- Male Connector
- Female Terminal
- Secondary Lock
- Terminal
- Cable

http://delphi.com/products/connect
Unsealed System Application Information

**1.5 SERIES TERMINALS—Tin Plated**

<table>
<thead>
<tr>
<th>CABLE RANGE (mm²)</th>
<th>CURRENT RANGE (AMPS)</th>
<th>TEMP RANGE °C</th>
<th>RESISTANCE</th>
<th>VOLTAGE DROP</th>
<th>CENTERLINE SPACING (mm)</th>
<th>BLADE WIDTH (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-2.5</td>
<td>25</td>
<td>-40 to 135</td>
<td>&lt;10mΩ@20mV</td>
<td>&lt;4.0mV/amp</td>
<td>4.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>12185085</td>
<td>Blue</td>
<td>PA6</td>
<td>15354674</td>
</tr>
<tr>
<td>12</td>
<td>12184963</td>
<td>Green</td>
<td>PA6</td>
<td>12188533</td>
</tr>
<tr>
<td>15</td>
<td>12184934</td>
<td>Black</td>
<td>PA6</td>
<td>12184935</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**
Contact your regional support representative at the number listed below.
- Ducon Connection Systems have been validated using DIN Cable Standards.

http://delphi.com/products/connect
Ducon Series

PART NO: 15336766
DESCRIPTION: Connector 9F
SIZE: 27.5L x 17.7H x 16.8W
COLOR: Blue
MATERIAL: PA6
TERMINALS: See Page 202

PART NO: 15354674
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Gray
MATERIAL: PA6 15% GF

PART NO: 12185085
DESCRIPTION: Connector 9M (Clip Slot)
SIZE: 44.0L x 18.9H x 17.4W
COLOR: Blue
MATERIAL: PA6
TERMINALS: See Page 203

PART NO: 12185284
DESCRIPTION: Connector 12F
SIZE: 27.5L x 21.3H x 16.9W
COLOR: Green
MATERIAL: PA6
TERMINALS: See Page 202

PART NO: 12198533
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Gray
MATERIAL: PA6 15% GF

PART NO: 12184963
DESCRIPTION: Connector 12M (Clip Slot)
SIZE: 44.0L x 24.0H x 17.4W
COLOR: Green
MATERIAL: PA6
TERMINALS: See Page 203

http://delphi.com/products/connect
Ducon Series

PART NO: 12185081
DESCRIPTION: Connector 15F
SIZE: 23.2L x 27.4H x 26.6W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 202

PART NO: 12184934
DESCRIPTION: Connector 15M
SIZE: 38.0L x 27.3H x 28.2W
COLOR: Gray
MATERIAL: PA6 15% GF
TERMINALS: See Page 203

PART NO: 12185080
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PA6 15% GF

PART NO: 12184935
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PA6 15% GF

Total Mated Length: 47.0mm

http://delphi.com/products/connect
Ducon Series

Cross Sectional View

Female Connector Assembly

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12158098</td>
<td>1.5-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12185008</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

Optional Conduit TPA Cap

Female Terminal

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12089442</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>10720769</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>15363992</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

Cable Seal

Terminal

TPA (Terminal Position Assurance)

2.8 FEMALE TERMINALS SEALED

2.8 FEMALE CONNECTOR ASSEMBLY SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>15344052</td>
<td>Black</td>
<td>PA6</td>
<td>12185000</td>
</tr>
<tr>
<td>Optional Conduit TPA Cap</td>
<td>Black</td>
<td>PA6</td>
<td>10717815</td>
<td></td>
</tr>
</tbody>
</table>

2.8 DUCON CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12089442</td>
<td>12048087</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>10720769</td>
<td>15363981</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>15363992</td>
<td>12048086</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Sealed System Application Information

2.8 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.75</td>
</tr>
<tr>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>10</td>
<td>1.5</td>
</tr>
<tr>
<td>20</td>
<td>2.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMBIENT TEMPERATURE (°C)</th>
<th>MAXIMUM CURRENT (AMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>20</td>
<td>75</td>
</tr>
<tr>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>40</td>
<td>125</td>
</tr>
<tr>
<td>50</td>
<td>150</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

CABLE RANGE (mm²): ........... 0.5-2.5
CURRENT RANGE (AMPS): ......... 33
TEMP RANGE °C: ........... -40 to 135
RESISTANCE: ........... <10mΩ@20mV
VOLTAGE DROP: ........... <4.0mV/amp
CENTERLINE SPACING (mm): ........... 6.0
BLADE WIDTH (mm): ........... 2.8

2.8 MALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12185129</td>
<td>1.5-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12185237</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

2.8 DUCON CAVITY PLUGS*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15337197</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>10730124</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

SECTION NOTES:
- Contact your regional support representative at the number listed below.
- Ducon Connection Systems have been validated using DIN Cable Standards.
**Ducon Series**

**PART NO:** 15344052  
**DESCRIPTION:** Connector Assembly 6F  
**SIZE:** 30.4L x 22.2H x 29.0W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 206

**PART NO:** 12185000  
**DESCRIPTION:** TPA  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** PA6

**PART NO:** 12185126  
**DESCRIPTION:** Connector 6M (Clip Slot)  
**SIZE:** 53.6L x 22.0H x 29.0W  
**COLOR:** Gray  
**MATERIAL:** PA6  
**TERMINALS:** See Page 207

**PART NO:** 10717815 (Optional)  
**DESCRIPTION:** Conduit TPA Cap  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** PA6

Total Mated Length: 67.0mm

http://delphi.com/products/connect
**Ducon Series**

**PART NO:** 12185026 *(Black)*  
15344040 *(Blue)*  
15344042 *(White)*

**DESCRIPTION:** Connector 2F  
**SIZE:** 30.3L x 16.9H x 29.0W  
**MATERIAL:** PA6  
**TERMINALS:** See Page 206  
*DIFFERENT INDEXING FEATURES.*

**PART NO:** 12185027

**DESCRIPTION:** TPA  
**COLOR:** Black  
**MATERIAL:** PA6
Unsealed System Application Information

4.8 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*</td>
<td>0°C</td>
<td>5°C</td>
<td>10°C</td>
<td>15°C</td>
<td>20°C</td>
<td>25°C</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td></td>
</tr>
</tbody>
</table>

**TEMPERATURE DERATING CURVES***

<table>
<thead>
<tr>
<th>AMBIENT TEMPERATURE (°C)</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM CURRENT (AMPS)</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

**CABLE RANGE (mm²):** ........ 0.5-6.0
**CURRENT RANGE (AMPS):** ........ 45
**TEMP RANGE °C:** ........ -40 to 135
**RESISTANCE:** ........ <10mΩ/20mV
**VOLTAGE DROP:** ........ <4.0mV/amp
**CENTERLINE SPACING (mm):** ........ 6.8
**BLADE WIDTH (mm):** ................. 4.8

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

4.8 FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12185227</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147596</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147597</td>
<td>6.0-4.0</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

4.8 FEMALE CONNECTORS UNSEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>12147099</td>
<td>Black</td>
<td>PA6</td>
<td>12147098</td>
</tr>
<tr>
<td>6</td>
<td>15344072</td>
<td>Black</td>
<td>PA6</td>
<td>10717827</td>
</tr>
<tr>
<td>9</td>
<td>10740403</td>
<td>Black</td>
<td>PA6</td>
<td>10740404</td>
</tr>
<tr>
<td>12</td>
<td>10717711</td>
<td>Black</td>
<td>PA6</td>
<td>10717826</td>
</tr>
</tbody>
</table>

CABLE RANGE (mm²): ......... 0.5-6.0
CURRENT RANGE (AMPS): ........ 45
TEMP RANGE °C: ........ -40 to 135
RESISTANCE: ...... <10mΩ/20mV
VOLTAGE DROP: ...... <4.0mV/amp
CENTERLINE SPACING (mm): ...... 6.8
BLADE WIDTH (mm): ................. 4.8

http://delphi.com/products/connect
**Ducon Series**

**A**
- **PART NO:** 12147089
- **DESCRIPTION:** Connector 5F
- **SIZE:** 27.0L x 19.0H x 25.0W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 210
- **TYPICAL APP:** Blower Switch, Heater

**B**
- **PART NO:** 12147088
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Gray
- **MATERIAL:** PA6 15% GF

**C**
- **PART NO:** 15344072
- **DESCRIPTION:** Connector 6F
- **SIZE:** 29.0L x 19.0H x 27.6W
- **COLOR:** Blue
- **MATERIAL:** PA6
- **TERMINALS:** See Page 210
- **TYPICAL APP:** Blower Switch, Heater

**D**
- **PART NO:** 10717827
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Gray
- **MATERIAL:** PA6 15% GF

**E**
- **PART NO:** 10740403
- **DESCRIPTION:** Connector 9F
- **SIZE:** 28.5L x 32.8H x 52.1W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 210
- **TYPICAL APP:** Blower Switch

**F**
- **PART NO:** 10740404
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Gray
- **MATERIAL:** PA6 15% GF

**G**
- **PART NO:** 10717711
- **DESCRIPTION:** Connector 12F
- **SIZE:** 28.5L x 32.8H x 52.1W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 210
- **TYPICAL APP:** Blower Switch

**H**
- **PART NO:** 10717826
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Gray
- **MATERIAL:** PA6 15% GF

---

North American Region: 1-800-PACKARD
European Region: 49-202-291-2000
Asia Pacific Region: 65-730-9900
South American Region: 55-12-378-2002

[http://delphi.com/products/connect]
6.3 Ducon Series

Cross Sectional View

Female Connector Assembly

Male Connector

6.3 Female Terminals Sealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12147473</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147474</td>
<td>6.0-4.0</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

6.3 Female Connector Assembly Sealed

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12147067</td>
<td>Gray</td>
<td>PA66</td>
<td>12147060</td>
</tr>
</tbody>
</table>

6.3 Ducon Cable Seals

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>10730240</td>
<td>10720847</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>Lt. Brown</td>
</tr>
<tr>
<td>12059259</td>
<td>10720844</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>10730241</td>
<td>10738785</td>
<td>3.80-2.80</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>15344032</td>
<td>10738786</td>
<td>4.50-3.60</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Sealed System Application Information

**6.3 SERIES TERMINALS—Tin Plated**

<table>
<thead>
<tr>
<th>Current (amps)</th>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>20</td>
<td>65</td>
</tr>
<tr>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>40</td>
<td>125</td>
</tr>
<tr>
<td>50</td>
<td>155</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**6.3 SERIES TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15344632</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>15344631</td>
<td>6.0-4.0</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**6.3 DUCON CAVITY PLUG**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059255</td>
<td>9.8mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Ducon Connection Systems have been validated using DIN Cable Standards.

http://delphi.com/products/connect
Ducon Series

A PART NO: 12147067
DESCRIPTION: Connector 2F Assembly
SIZE: 37.6L x 28.0H x 33.0W
COLOR: Gray
MATERIAL: PA66
TERMINALS: See Page 212

B PART NO: 12147060
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Black
MATERIAL: PA6

C PART NO: 15344054
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 57.6L x 25.8H x 33.1W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 213

Total Mated Length: 80.0mm
Sealed System Application Information

1.5 SERIES TERMINALS—Tin Plated

CABLE RANGE (mm²): .......... 0.5-1.0
CURRENT RANGE (AMPS): ........... 25
TEMP RANGE °C: ........... -40 to 135
RESISTANCE: ........... <10mΩ@20mV

VOLTAGE DROP: .......... <4.0mV/amp
CENTERLINE SPACING (mm): .......... Connector Dependent
BLADE WIDTH (mm): .......... 1.5

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

1.5 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12158097</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>10717964</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

2.8 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12158098</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12185008</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

4.8 FEMALE TERMINALS SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12185009</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12185550</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>10717927</td>
<td>6.0-4.0</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

1.5 & 2.8 DUCON CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12089442</td>
<td>12048087</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>10720769</td>
<td>15363981</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>15363992</td>
<td>12048086</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

MIXED FEMALE CONNECTOR ASSEMBLIES SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Orange PA66</td>
<td>15344069</td>
<td>12185005</td>
</tr>
<tr>
<td>20</td>
<td>Blue PA66</td>
<td>12158095</td>
<td>12158096</td>
</tr>
</tbody>
</table>

4.8 DUCON CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12052931</td>
<td>12052930</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12048433</td>
<td>12048441</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052452</td>
<td>12048442</td>
<td>3.80-2.80</td>
<td>Silicone</td>
<td>Red</td>
</tr>
<tr>
<td>12052453</td>
<td>12048443</td>
<td>4.50-3.80</td>
<td>Silicone</td>
<td>Violet</td>
</tr>
</tbody>
</table>
**Sealed System Application Information**

### 2.8 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Current (AMPS)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>4.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

- Cable Range (mm²): 0.5 - 1.0
- Voltage Drop: <4.0mV/amp
- Centerline Spacing (mm): Connector Dependent
- Blade Width (mm): 2.8
- Resistance: <10mΩ @ 20mV
- Temperature Derating Curves

### 4.8 SERIES TERMINALS—Tin Plated

<table>
<thead>
<tr>
<th>Current (AMPS)</th>
<th>Temperature Rise (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>4.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

- Cable Range (mm²): 0.5 - 2.5
- Voltage Drop: <4.0mV/amp
- Centerline Spacing (mm): Connector Dependent
- Blade Width (mm): 4.8
- Resistance: <10mΩ @ 20mV
- Temperature Derating Curves

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

### Mixed MALE CONNECTORS SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>10740396</td>
<td>Orange</td>
<td>PA66</td>
<td>12185005</td>
</tr>
<tr>
<td>20</td>
<td>10717689</td>
<td>Blue</td>
<td>PA66</td>
<td>12158096</td>
</tr>
</tbody>
</table>

### 1.5 & 2.8 DUCON CAVITY PLUGS*

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cavity Inside Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15337197</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>10730124</td>
<td>5.2mm</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

### 4.8 DUCON CAVITY PLUG*

| 12066082 | 8.5mm | Silicone | Green |

*Contact your regional support representative at the number listed below.

- Ducon Connection Systems have been validated using DIN Cable Standards.

---

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Ducon Connection Systems have been validated using DIN Cable Standards.

---

**Contact Information:**

- North American Region
  - 1-800-PACKARD
- European Region
- Asia Pacific Region
  - 65-730-9900
- South American Region
  - 55-12-378-2002
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

**KEY:**
- 2.8 SERIES
- 4.8 SERIES

PART NO: 15344069 (Orange)
DESCRIPTION: Connector 15F
PART NO: 12185004 (Green)
DESCRIPTION: Connector 11F
PART NO: 15344061 (Brown)
DESCRIPTION: Connector 6F
SIZE: 36.5L x 47.4H x 47.4W
MATERIAL: PA66
TERMINALS: See Page 216
SEALS/PLUGS: See Page 216

PART NO: 12185005
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Gray
MATERIAL: PA6 15% GF

PART NO: 12197134 (Optional)
DESCRIPTION: Cover
NUMBER REQ: 2
COLOR: Black
MATERIAL: PA6
NOTE: Optional 90° Cover Available.

PART NO: 10740396 (Orange)
DESCRIPTION: Connector 15M
PART NO: 12185278 (Green)
DESCRIPTION: Connector 11M
PART NO: 15344060 (Brown)
DESCRIPTION: Connector 6M
SIZE: 56.7L x 48.0H x 46.0W
MATERIAL: PA66
TERMINALS: See Page 217

PART NO: 12185277 (Optional)
DESCRIPTION: Holder
COLOR: Black
MATERIAL: PA6 15% GF
NOTE: Other holders available.

Total Mated Length: 148.0mm
A PART NO: 12158095
DESCRIPTION: Connector 20F
SIZE: 36.5L x 47.5H x 47.5W
COLOR: Blue
MATERIAL: PA66
TERMINALS: See Page 216
SEALS/PLUGS: See Page 216

B PART NO: 12158096
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Gray
MATERIAL: PA6 15% GF

C PART NO: 12197134 (Optional)
DESCRIPTION: Cover
NUMBER REQ: 2
COLOR: Black
MATERIAL: PA6
NOTE: Optional 90˚ Cover Available.

D PART NO: 10717689
DESCRIPTION: Connector 20M
SIZE: 56.7L x 48.0H x 46.0W
COLOR: Blue
MATERIAL: PA66
TERMINALS: See Page 217
SEALS/PLUGS: See Page 217

E PART NO: 12185277 (Optional)
DESCRIPTION: Holder
COLOR: Black
MATERIAL: PA6 15% GF
NOTE: Other holders available.

KEY:
✦ 1.5 SERIES
✧ 2.8 SERIES
✻ 4.8 SERIES

Ducon Series

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

Total Mated Length: 148.0mm

http://delphi.com/products/connect
Sealed System Application Information

**Door Connections**

Door connectors provide environmental sealing in two ways:
1. Using sealed terminal systems.
2. Using unsealed terminal systems and protective grommets.
Contact your regional support representative for assistance in choosing the proper design for your application.

**Sealed System Application Information**

**0.8 SERIES TERMINALS—Tin Plated**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12131423</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**CABLE RANGE (mm²): ……… 0.5-1.0**
**CURRENT RANGE (AMPS): ……… 0-15**
**TEMP RANGE °C: ……… -40 to 135**
**RESISTANCE: ……… <10mΩ@20mV**

**VOLTAGE DROP: ……… <4.0mV/amp**
**CENTERLINE SPACING (mm): ……… 3.0**
**BLADE WIDTH (mm): ………… 0.8**

**TEMPERATURE DERATING CURVES**

<table>
<thead>
<tr>
<th>Ambient Temperature (°C)</th>
<th>Max Current (AMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>125</td>
<td>0</td>
</tr>
</tbody>
</table>

**0.8 SERIES TERMINALS—Tin Plated**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12147451</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147452</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**0.8 DUCON CABLE SEAL**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15344324</td>
<td>2.1-1.2</td>
<td>Silicon</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

**MIXED FEMALE CONNECTORS SEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>12147161</td>
<td>Black</td>
<td>PA66</td>
</tr>
<tr>
<td>40</td>
<td>15327160</td>
<td>Black</td>
<td>PA66 15% GF</td>
</tr>
</tbody>
</table>
Sealed System Application Information

1.5 SERIES TERMINALS–Tin Plated

<table>
<thead>
<tr>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current (Amps)</td>
</tr>
<tr>
<td>Temperature Rise</td>
</tr>
</tbody>
</table>

2.8 SERIES TERMINALS–Tin Plated

<table>
<thead>
<tr>
<th>Temperature Rise Above Ambient (25°C) vs Current*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current (Amps)</td>
</tr>
<tr>
<td>Temperature Rise</td>
</tr>
</tbody>
</table>

VOLTAGE DROP: ≤4.0mV/amp
CENTERLINE SPACING (mm): Connector Dependent
BLADE WIDTH (mm): 1.5
RESISTANCE: <10mΩ @ 20mV

0.5-1.0 CABLE RANGE (mm²): 0.5 to 1.0
CURRENT RANGE (AMPS): 25
TEMPERATURE °C: -40 to 135
RESISTANCE: <10mΩ @ 20mV

0.5-2.5 CABLE RANGE (mm²): 0.5 to 2.5
CURRENT RANGE (AMPS): 33
TEMPERATURE °C: -40 to 135
RESISTANCE: <10mΩ @ 20mV

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representatives at the number listed below.

0.8 MALE TERMINAL UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15327159</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

0.8 MALE TERMINAL SEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10724459</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

1.5 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12147299</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147300</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

2.8 MALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12147400</td>
<td>1.0-0.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
<tr>
<td>12147301</td>
<td>2.5-1.5</td>
<td>Copper Nickel Silicon Alloy</td>
<td>Tin</td>
</tr>
</tbody>
</table>

MIXED MALE CONNECTORS SEALED

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>12147066</td>
<td>Black</td>
<td>PA66</td>
</tr>
<tr>
<td>40</td>
<td>10730244</td>
<td>Black</td>
<td>PA66 15% GF</td>
</tr>
</tbody>
</table>

0.8 DUCON CABLE SEAL

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15343324</td>
<td>2.1-1.2</td>
<td>Silicon</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.
**Section Notes:**
Contact your regional support representative at the number listed below.
• Door grommets available from manufacturer.

**Key:**
- 1.5 SERIES
- 2.8 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

---

### Part A: 12185088
- **Description:** 1.5/2.8 Connector 30F
- **Size:** 36.0L x 40.0H x 40.0W
- **Color:** Black
- **Material:** PA66
- **Terminals:** See Page 220

### Part B: 12185079
- **Description:** Ring
- **Color:** Black
- **Material:** PA6 15% GF

### Part C: 12185082
- **Description:** Connector Ring
- **Color:** Black
- **Material:** PA6 15% GF

### Part D: 12147066
- **Description:** 1.5/2.8 Connector 30M
- **Size:** 45.0L x 48.0H x 46.0W
- **Color:** Black
- **Material:** PA66
- **Terminals:** See Page 221
Ducon Series

- **Door Connections**

**A**
- **PART NO:** 15327160
- **DESCRIPTION:** Connector 40F (8,16,16)
- **SIZE:** 36.1L x 45.0H x 45.0W
- **COLOR:** Black
- **MATERIAL:** PA66 15% GF
- **TERMINALS:** 8F, 2.8F, See Page 220
- **SEALS:** See Page 220

**B**
- **PART NO:** 15327654
- **DESCRIPTION:** Connector Module 1 16F
- **COLOR:** Black
- **MATERIAL:** PA66

**C**
- **PART NO:** 15327655
- **DESCRIPTION:** Connector Module 2 16F
- **COLOR:** Black
- **MATERIAL:** PA66

**D**
- **PART NO:** 10717849
- **DESCRIPTION:** TPA
- **NUMBER REQ:** 2
- **COLOR:** Yellow
- **MATERIAL:** PA66

**E**
- **PART NO:** 10717837
- **DESCRIPTION:** CPA
- **COLOR:** Red
- **MATERIAL:** PA66

**F**
- **PART NO:** 15327164
- **DESCRIPTION:** Connector Ring
- **COLOR:** Black
- **MATERIAL:** PA66 15% GF

**G**
- **PART NO:** 10730244
- **DESCRIPTION:** Connector 40M (8,16,16)
- **SIZE:** 46.0L x 44.5H x 44.5W
- **COLOR:** Black
- **MATERIAL:** PA66 15% GF
- **TERMINALS:** 8M, 2.8M, See Page 221
- **SEALS:** See Page 221

**H**
- **PART NO:** 15327154
- **DESCRIPTION:** Connector Module 1 16M
- **COLOR:** Black
- **MATERIAL:** PA66

**J**
- **PART NO:** 15327155
- **DESCRIPTION:** Connector Module 2 16M
- **COLOR:** Black
- **MATERIAL:** PA66

**K**
- **PART NO:** 15327153
- **DESCRIPTION:** Cover
- **COLOR:** Black
- **MATERIAL:** PA66 15% GF

**L**
- **PART NO:** 10728148
- **DESCRIPTION:** TMS Cover
- **COLOR:** Black
- **MATERIAL:** PA66 15% GF

**KEY:**
- ○ 0.8 SERIES (Sealed)
- ✻ 0.8 SERIES (Unsealed)
- ◇ 2.8 SERIES

Mixed connectors feature a combination of different terminal cavities, as indicated by the key.


North American Region: 1-800-PACKARD
European Region: 49-202-291-2000
Asia Pacific Region: 65-730-9900
South American Region: 55-12-378-2002
**Special Products**

**Lamp Sockets, Splice Savers, Weather-Pack, VF Connections & DS Connections**

**Lamp Socket Features**
- Advanced bulb to terminal interface technology
- Accomodates a wide variety of bulbs—B1, C2 bayonet, W2, W3 wedge, H4 and H7 with GT280 interface
- Available sealed or unsealed systems
- Multiple focal lengths
- Right angle or axial mounting features with easy assembly and release provisions

**Weather-Pack Features**
- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 20 Amps continuous maximum current rating
- Sealed system
- Pin and Sleeve configuration
- Dual locking tabs on terminals
- Low energy, low voltage capability
- -40°C to 125°C temperature range

**VF Series Features**
- Accomodates a wide variety of devices
- Small overall dimensions
- Terminal Position Assurance (TPA)
- Connector Position Assurance (CPA)

**DS Series Features**
- Fuel injector applications
- High sealing protection
- Reliable electrical interface
- Secure locking mechanism

**Splice Saver Features**
- Eliminates the need for solder
- Flexible configuration
- Uses 280 Metri-Pack or 150 GT terminals
- Uses ISO or SAE compatible terminals
- Low profile connector with cap lock
- Available in sealed/unsealed and grounded/non-grounded versions
Lamp Sockets are a comprehensive and diverse product line featuring sophisticated connection systems technology. Available connection systems accommodate virtually every size and type of light bulb, as well as all varieties of bulb mounting features.

**LAMP SOCKET APPLICATION GUIDELINES**

<table>
<thead>
<tr>
<th>Primary Use</th>
<th>Application</th>
<th>Socket Style</th>
<th>Bulb Base Type</th>
<th>Bulb Size</th>
<th>Typical Lamp Part Number(s)</th>
<th>Page Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop, Turn, Backup and Cornering Lights</td>
<td>Sealed</td>
<td>Right Angle</td>
<td>W-3 Wedge</td>
<td>S-8</td>
<td>3156</td>
<td>12160383</td>
<td>200 Single Filament</td>
</tr>
<tr>
<td>Stop/Tail, Park/Turn, Backup Lights and</td>
<td>Sealed</td>
<td>Right Angle</td>
<td>W-3 Wedge</td>
<td>S-8</td>
<td>3057</td>
<td>12160394, 12160395</td>
<td>200 Dual Filament</td>
</tr>
<tr>
<td>Cornering Lights</td>
<td>Sealed</td>
<td>Axial</td>
<td>W-3 Wedge</td>
<td>S-8</td>
<td>3057</td>
<td>12191243, 12092379</td>
<td>201 Dual Filament</td>
</tr>
<tr>
<td>Glove Box, Ash Tray Instrument Illumination and Courtesy Lights</td>
<td>Unsealed</td>
<td>Axial</td>
<td>W-2 Wedge</td>
<td>T-3 1/4</td>
<td>194</td>
<td>12162223, 12059952</td>
<td>202 Single Filament</td>
</tr>
<tr>
<td>Side Marker Lamps, Backup and Center High Mounted Stop Lights</td>
<td>Sealed</td>
<td>Axial</td>
<td>W-2 Wedge</td>
<td>T-3 1/4</td>
<td>168</td>
<td>15317651, 12110053</td>
<td>203 Single Filament</td>
</tr>
<tr>
<td>Side Marker Lamps, Backup and Center High Mounted Stop Lights</td>
<td>Sealed</td>
<td>Right Angle</td>
<td>W-2 Wedge</td>
<td>T-3 1/4</td>
<td>168</td>
<td>12146418</td>
<td>203 Single Filament</td>
</tr>
<tr>
<td>Stop, Turn, Backup and Cornering Lights</td>
<td>Sealed</td>
<td>Right Angle</td>
<td>B-1 Bayonet</td>
<td>S-8</td>
<td>1156</td>
<td>12160386</td>
<td>204 Single Filament</td>
</tr>
<tr>
<td>Stop/Tail, Park/Turn, Backup Lights and</td>
<td>Sealed</td>
<td>Right Angle</td>
<td>C-2 Bayonet</td>
<td>S-8</td>
<td>2057</td>
<td>12160390, 12160392</td>
<td>204 Dual Filament</td>
</tr>
</tbody>
</table>

**LAMP SOCKET BASES**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Application</th>
<th>Description</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
<th>Insert</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>21210035</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210036</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210037</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS 33% GF</td>
<td>12110054</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210038</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS 33% GF</td>
<td>12191522</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210039</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210040</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>21210041</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>–</td>
<td>–</td>
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<tr>
<td>21210042</td>
<td>Sealed</td>
<td>W-2 Axial Wedge Base</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
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Special Products

### LAMP SOCKET TERMINALS

<table>
<thead>
<tr>
<th>Series</th>
<th>Type</th>
<th>Application</th>
<th>Cable Seal Series</th>
<th>Terminal Part #</th>
<th>Cable Range</th>
<th>Material</th>
<th>Plating</th>
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<tbody>
<tr>
<td>A</td>
<td>W-2, W-3 Right Angle</td>
<td>Sealed</td>
<td>280</td>
<td>12066639</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
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<td>A</td>
<td>W-2, W-3 Right Angle</td>
<td>Sealed</td>
<td>280</td>
<td>12066638</td>
<td>0.80-0.50</td>
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<td>Tin</td>
</tr>
<tr>
<td>A</td>
<td>W-2, W-3 Right Angle</td>
<td>Sealed</td>
<td>280</td>
<td>12186320</td>
<td>0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
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<td>B</td>
<td>W-2 Axial</td>
<td>Unsealed</td>
<td>–</td>
<td>12089139</td>
<td>0.80-0.50</td>
<td>Brass</td>
<td>Copper/Tin</td>
</tr>
<tr>
<td>B</td>
<td>W-2 Axial</td>
<td>Unsealed</td>
<td>–</td>
<td>12089137</td>
<td>1.0 (2 Req’d.)</td>
<td>Brass</td>
<td>Copper/Tin</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>0.80 (2 Req’d.)</td>
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<td>C</td>
<td>W-2 Axial</td>
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<td>280</td>
<td>12176852</td>
<td>0.80</td>
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<td>Tin</td>
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<td>C</td>
<td>W-2 Axial</td>
<td>Sealed</td>
<td>280</td>
<td>12176853</td>
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<td>Brass</td>
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<td>D</td>
<td>W-2 Axial</td>
<td>Sealed</td>
<td>480</td>
<td>12124471</td>
<td>1.0-0.80</td>
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<td>Copper/Tin</td>
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<tr>
<td>D</td>
<td>W-2 Axial</td>
<td>Sealed</td>
<td>480</td>
<td>12124598</td>
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<td>Copper/Tin</td>
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<td>W-3 Axial</td>
<td>Contact</td>
<td>Sealed</td>
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<td>E</td>
<td>W-3 Axial</td>
<td>Contact</td>
<td>Sealed</td>
<td>12088187</td>
<td>0.50-0.35</td>
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<tr>
<td>E</td>
<td>W-3 Axial</td>
<td>Ground</td>
<td>Sealed</td>
<td>630</td>
<td>12093030</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
</tr>
<tr>
<td>F</td>
<td>B-1, C-2</td>
<td>Contact</td>
<td>Sealed</td>
<td>12129052</td>
<td>1.0-0.80</td>
<td>Stainless Steel</td>
<td>Tin</td>
</tr>
<tr>
<td>F</td>
<td>B-1, C-2</td>
<td>Contact</td>
<td>Sealed</td>
<td>15304622</td>
<td>0.50-0.35</td>
<td>Stainless Steel</td>
<td>Tin</td>
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<tr>
<td>F</td>
<td>B-1, C-2</td>
<td>Ground</td>
<td>Sealed</td>
<td>280</td>
<td>12129053</td>
<td>1.0-0.80</td>
<td>Tin Brass</td>
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<tr>
<td>F</td>
<td>B-1, C-2</td>
<td>Ground</td>
<td>Sealed</td>
<td>280</td>
<td>15304621</td>
<td>0.50-0.35</td>
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### METRI-PACK CABLE SEAL CHART

<table>
<thead>
<tr>
<th>Series</th>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
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<tbody>
<tr>
<td>280</td>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>280</td>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
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<tr>
<td>280</td>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
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<tr>
<td>280</td>
<td>12089444</td>
<td>12089679</td>
<td>2.15-1.60</td>
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<td>Purple</td>
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<td>480</td>
<td>12048433</td>
<td>12048441</td>
<td>2.85-2.01</td>
<td>Silicone</td>
<td>White</td>
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<td>480</td>
<td>12052931</td>
<td>12052930</td>
<td>2.15-1.80</td>
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<td>Yellow</td>
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<td>630</td>
<td>12077780</td>
<td>12077759</td>
<td>2.15-1.65</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
</tbody>
</table>

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- When an unsealed application is required use 12020720 gasket in place of seal 12129909.
**Lamp Sockets**

### Special Products

<table>
<thead>
<tr>
<th><strong>A</strong></th>
<th>PART NO: 12160393 (Lt. Gray) 15326290 (Lt. Green) 15326291* (Natural)</th>
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</thead>
<tbody>
<tr>
<td><strong>DESCRIPTION:</strong></td>
<td>W-3 Right Angle Wedge Base</td>
</tr>
<tr>
<td><strong>SIZE:</strong></td>
<td>26.7 Hole Dia. x 31.9L x 51.7H x 40.0W</td>
</tr>
<tr>
<td><strong>MATERIAL:</strong></td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td><strong>TERMINALS:</strong></td>
<td>See A, Page 229</td>
</tr>
<tr>
<td><strong>SEALS:</strong></td>
<td>280 Metri-Pack Cable Seals</td>
</tr>
<tr>
<td><strong>TYPICAL LAMP:</strong></td>
<td>#3156</td>
</tr>
<tr>
<td><em>NOTE:</em></td>
<td>Focal Length: 29.1mm.</td>
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</tbody>
</table>

| **PART NO:** | 12129909 |
| **DESCRIPTION:** | Seal |
| **COLOR:** | Black |
| **MATERIAL:** | EPDM |

| **C** | PART NO: 12177161 |
| **DESCRIPTION:** | Insert with Terminals |
| **COLOR:** | Lt. Gray |
| **MATERIAL:** | PA66 HS IM |

| **D** | PART NO: 12160394 |
| **DESCRIPTION:** | W-3 Right Angle Wedge Base |
| **SIZE:** | 26.7 Hole Dia. x 31.9L x 51.7H x 40.0W |
| **COLOR:** | Natural |
| **MATERIAL:** | PA66 HS IM |
| **TERMINALS:** | See A, Page 229 |
| **SEALS:** | 280 Metri-Pack Cable Seals |
| **TYPICAL LAMP:** | #3057 |

| **E** | PART NO: 12129909 |
| **DESCRIPTION:** | Seal |
| **COLOR:** | Black |
| **MATERIAL:** | EPDM |

| **F** | PART NO: 12177163 |
| **DESCRIPTION:** | Insert with Terminals |
| **COLOR:** | Beige |
| **MATERIAL:** | PA66 HS IM |

| **G** | PART NO: 12160395 |
| **DESCRIPTION:** | W-3 Right Angle Wedge Base |
| **SIZE:** | 26.7 Hole Dia. x 31.9L x 51.7H x 40.0W |
| **COLOR:** | Md. Gray |
| **MATERIAL:** | PA66 HS IM |
| **TERMINALS:** | See A, Page 229 |
| **SEALS:** | 280 Metri-Pack Cable Seals |
| **TYPICAL LAMP:** | #3057 |

| **H** | PART NO: 12129909 |
| **DESCRIPTION:** | Seal |
| **COLOR:** | Black |
| **MATERIAL:** | EPDM |

| **J** | PART NO: 12177163 |
| **DESCRIPTION:** | Insert |
| **COLOR:** | Beige |
| **MATERIAL:** | PA66 HS IM |

http://delphi.com/products/connect
### Lamp Sockets

**PART NO:** 12191243  
**DESCRIPTION:** W-3 Axial Wedge Base  
**SIZE:** 26.7 Hole Dia. x 40.0L x 35.6H x 35.6W  
**COLOR:** Dk. Gray  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See E, Page 229 (2 Contacts, 1 Ground)  
**SEALS:** 280 and 630 Metri-Pack Cable Seals  
**TYPICAL LAMP:** #3057

**PART NO:** 12020720  
**DESCRIPTION:** Gasket  
**COLOR:** Black  
**MATERIAL:** EPDM (Foam)

**PART NO:** 15305473  
**DESCRIPTION:** TPA  
**COLOR:** Lt. Gray  
**MATERIAL:** PA6

### SECTION NOTES:

- Contact your regional support representative at the number listed below.
- **When an unsealed application is required use 12020720 gasket in place of seal 12129909.**
### Lamp Sockets

**A**
- **PART NO:** 12162223 (Clear)  
  12162222 (White)
- **DESCRIPTION:** W-2 Axial Wedge Base
- **SIZE:** 10.4 Hole Dia. x 53.0L x 18.0H x 32.6W
- **MATERIAL:** PC
- **TERMINALS:** See B, Page 229
- **TYPICAL LAMP:** #194

**B**
- **PART NO:** 12052490
- **DESCRIPTION:** TPA
- **COLOR:** Black
- **MATERIAL:** PA6

**C**
- **PART NO:** 12059952
- **DESCRIPTION:** W-2 Axial Wedge Base
- **SIZE:** 15.7 Hole Dia. x 27.0L x 24.6H x 24.6W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See B, Page 229
- **TYPICAL LAMP:** #194

**D**
- **PART NO:** 15324722
- **DESCRIPTION:** TPA
- **COLOR:** Red
- **MATERIAL:** PBT HS IM

### Special Products

**Lamp Sockets**

#### Lamp Socket Specifications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Size</th>
<th>Color</th>
<th>Material</th>
<th>Terminals</th>
<th>Seals</th>
<th>Typical Lamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110053</td>
<td>W-2 Axial Wedge Base</td>
<td>15.9 Hole Dia. x 31.9L x 27.9H x 27.9W</td>
<td>Lt. Gray</td>
<td>PA66 HS 33% GF</td>
<td>See D, Page 229</td>
<td>480 Metri-Pack Cable Seals</td>
<td>#168 or #912</td>
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<tr>
<td>12110054</td>
<td>TPA</td>
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<td>Black</td>
<td>PA66 HS IM</td>
<td></td>
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<tr>
<td>15317651</td>
<td>W-2 Axial Wedge Base</td>
<td>15.3 Hole Dia. x 31.9L x 20.5H x 20.5W</td>
<td>Lt. Gray</td>
<td>PA66 HS 33% GF</td>
<td>See C, Page 229</td>
<td>280 Metri-Pack Cable Seals</td>
<td>#194</td>
</tr>
<tr>
<td>15317652</td>
<td>O-Ring</td>
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<td>Black</td>
<td>EPDM</td>
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<tr>
<td>12191522</td>
<td>TPA</td>
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<td>Blue</td>
<td>PA66 HS IM</td>
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<tr>
<td>12146418</td>
<td>W-2 Right Angle Wedge Base</td>
<td>15.9 Hole Dia. x 32.0L x 38.3H x 27.9W</td>
<td>Lt. Gray</td>
<td>PA66 HS IM</td>
<td>See A, Page 229</td>
<td>280 Metri-Pack Cable Seals</td>
<td>#168</td>
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<td>12146398</td>
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<td>Black</td>
<td>Santoprene</td>
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<tr>
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<td>Lt. Gray</td>
<td>PA66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact Information**

- **North American Region**: 1-800-PACKARD
- **European Region**: 49-202-291-2000
- **Asia Pacific Region**: 65-730-9900
- **South American Region**: 55-12-378-2002

A  PART NO: 12160386  
DESCRIPTION: B-1 Right Angle Bayonet Base  
SIZE: 26.8 Hole Dia. x 27.2L x 62.6H x 41.1W  
COLOR: Lt. Gray  
MATERIAL: PA66 HS IM  
TERMINALS: See F, Page 229 (1 Contact, 1 Ground)  
SEALS: 280 Metri-Pack Cable Seals  
TYPICAL LAMP: #1156

B  PART NO: 12129909  
DESCRIPTION: Seal  
COLOR: Black  
MATERIAL: EPDM

C  PART NO: 12129057  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

D  PART NO: 12160380  
DESCRIPTION: C-2 Right Angle Bayonet Base  
SIZE: 26.8 Hole Dia. x 27.2L x 62.6H x 41.1W  
COLOR: Natural  
MATERIAL: PA66 HS IM  
TERMINALS: See F, Page 229 (1 Contact, 1 Ground)  
SEALS: 280 Metri-Pack Cable Seals  
TYPICAL LAMP: #2057

E  PART NO: 12129909  
DESCRIPTION: Seal  
COLOR: Black  
MATERIAL: EPDM

F  PART NO: 12129051  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

G  PART NO: 12160392  
DESCRIPTION: C-2 Right Angle Bayonet Base  
SIZE: 26.8 Hole Dia. x 21.6L x 62.6H x 41.1W  
COLOR: Md. Gray  
MATERIAL: PA66 HS IM  
TERMINALS: See F, Page 229 (2 Contacts, 1 Ground)  
SEALS: 280 Metri-Pack Cable Seals  
TYPICAL LAMP: #2057

H  PART NO: 12129909  
DESCRIPTION: Seal  
COLOR: Black  
MATERIAL: EPDM

J  PART NO: 12129051  
DESCRIPTION: TPA  
COLOR: Blue  
MATERIAL: PA6

http://delphi.com/products/connect
**Unsealed System Application Information**

**GT 150 SERIES TERMINALS—Tin Plated**

- **Cable Range (mm²):** 0.35-1.0
- **Current Range (Amps):** 0-15
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Voltage Drop:** <10.0mV/amp
- **Centerline Spacing (mm):** 3.4
- **Blade Width (mm):** 2.8

**280 SERIES TERMINALS—Tin Plated**

- **Cable Range (mm²):** 0.35-5.0
- **Current Range (Amps):** 0-30
- **Temp Range °C:** -40 to 125
- **Resistance:** <5.0mΩ/amp
- **Centerline Spacing (mm):** 5.0/6.3
- **Blade Width (mm):** 2.8

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.*
Splice Saver connectors are capable of providing one or several splices within a single connection assembly. Splicing is accomplished within the male cap assembly using a segmented bus blade.

**A**
- **PART NO:** 12191216 (Lt. Gray) 12176460 (Black)
- **DESCRIPTION:** Connector GT 150 12F
- **SIZE:** 27.0L x 13.9H x 46.7W
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 236, GT 150

**B**
- **PART NO:** 12176462
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

**C**
- **PART NO:** 12191217
- **DESCRIPTION:** Cap Assembly 1-12M
- **SIZE:** 15.0L x 7.8H x 53.0W
- **COLOR:** Lt. Gray
- **MATERIAL:** PA66 HS IM

**D**
- **PART NO:** 12176473
- **DESCRIPTION:** Connector Metri-Pack 280 12F (Large Cavity)
- **SIZE:** 29.7L x 19.6H x 44.6W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 236, 280 Metri-Pack Tangless

**E**
- **PART NO:** 12176475
- **DESCRIPTION:** TPA
- **COLOR:** Gray
- **MATERIAL:** PA66 HS IM

**F**
- **PART NO:** 12176478
- **DESCRIPTION:** Cap Assembly 4-3M
- **SIZE:** 17.8L x 16.1H x 41.0W
- **COLOR:** Brown
- **MATERIAL:** PA66 HS IM

Total Mated Length: 30.6mm

Total Mated Length: 34.0mm

http://delphi.com/products/connector
### Special Products

#### A - PART NO: 15305288
- **DESCRIPTION:** Connector 280 Metri-Pack 12F
- **SIZE:** 27.9L x 21.1H x 38.1W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 236, 280 Metri-Pack Tangless

#### B - PART NO: 12176513
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

#### C - PART NO: 15305289 (Green 2-6M)
##### 15305292 (Cream 1-12M)
- **DESCRIPTION:** Connector 280 Metri-Pack 12F
- **SIZE:** 17.9L x 16.1H x 34.5W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM

#### D - PART NO: 15305294
- **DESCRIPTION:** Connector 280 Metri-Pack 12F
- **SIZE:** 29.7L x 21.1H x 38.1W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 236, 280 Metri-Pack Tangless

#### E - PART NO: 12176513
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

#### F - PART NO: 15305300 (Black M6 Bolt Included)
##### 15305295 (Beige M10 Hole)
- **DESCRIPTION:** Cap Assembly 1-12M
- **SIZE:** 39.8L x 17.7H x 34.5W
- **COLOR:** Black, Beige
- **MATERIAL:** PA66 HS IM

---

**http://delphi.com/products/connect**
### Sealed System Application Information

#### GT 150 SERIES TERMINALS - Tin Plated

- **Cable Range (mm²):** 0.35-1.0
- **Current Range (Amps):** 0-15
- **Temp Range °C:** -40 to 125
- **Resistance:** <10mΩ @ 20mV
- **Volatile Drop:** <10.0mV/amp
- **Centerline Spacing (mm):** 4.5
- **Blade Width (mm):** 1.5

#### GT 150 Female Terminals Sealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
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<tbody>
<tr>
<td>12191818</td>
<td>0.50 - 0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12191819</td>
<td>1.0 - 0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
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</table>

#### 150 GT Cable Seals

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>1219152</td>
<td>12191226</td>
<td>1.20 - 1.85</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>1219153</td>
<td>12191227</td>
<td>1.86 - 2.25</td>
<td>Silicone</td>
<td>Blue</td>
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#### 150 GT Cavity Plugs*

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Cavity Diameter (mm)</th>
<th>Material</th>
<th>Color</th>
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<tbody>
<tr>
<td>15305171</td>
<td>4.0</td>
<td>Silicone</td>
<td>Green</td>
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</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

#### Splice Saver Connections Sealed

<table>
<thead>
<tr>
<th>Cavity Description</th>
<th>Part #</th>
<th>Color</th>
<th>Material</th>
<th>TPA</th>
<th>Cap Assembly</th>
<th>Splice Configuration</th>
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<tbody>
<tr>
<td>6Way GT 150</td>
<td>12191910</td>
<td>Black</td>
<td>PA66 HS IM 14% GF</td>
<td>12191911</td>
<td>12191914</td>
<td>1-6 Way</td>
</tr>
<tr>
<td>12Way GT 150</td>
<td>12191900</td>
<td>Black</td>
<td>PA66 HS IM14% GF</td>
<td>12191901</td>
<td>12191904</td>
<td>1-12 Way</td>
</tr>
<tr>
<td>12Way GT 150</td>
<td>12191905</td>
<td>Black</td>
<td>PA66 HS IM14% GF</td>
<td>12191901</td>
<td>12191908</td>
<td>3-4 Ways</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
### Special Products

**SEAL ED**

**SPLICE SAVERS**

A **PART NO:** 12191910  
**DESCRIPTION:** Connector 150 GT 6F  
**SIZE:** 37.6L x 19.5H x 38.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

B **PART NO:** 12191911  
**DESCRIPTION:** TPA  
**COLOR:** Md. Gray  
**MATERIAL:** PA66 HS IM

C **PART NO:** 12191914  
**DESCRIPTION:** Cap Assembly 1-6M (w/Seal)  
**SIZE:** 19.7L x 16.2H x 38.0W  
**COLOR:** Lt. Green  
**MATERIAL:** PA66 HS IM

D **PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

E **PART NO:** 12191901  
**DESCRIPTION:** TPA  
**COLOR:** Md. Gray  
**MATERIAL:** PA66 HS IM

F **PART NO:** 12191904 (Cream 1-12M w/Seal)  
**DESCRIPTION:** Cap Assembly 1-12M w/Seal  
**SIZE:** 19.7L x 16.2H x 38.0W  
**COLOR:** Lt. Green  
**MATERIAL:** PA66 HS IM

**PART NO:** 12191908 (Blue 3-4M w/Seal)  
**DESCRIPTION:** Cap Assembly 3-4M w/Seal  
**SIZE:** 19.7L x 16.2H x 38.0W  
**COLOR:** Lt. Green  
**MATERIAL:** PA66 HS IM

**PART NO:** 12191910  
**DESCRIPTION:** Connector 150 GT 6F  
**SIZE:** 37.6L x 19.5H x 38.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191914  
**DESCRIPTION:** Cap Assembly 1-6M (w/Seal)  
**SIZE:** 19.7L x 16.2H x 38.0W  
**COLOR:** Lt. Green  
**MATERIAL:** PA66 HS IM

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905

**PART NO:** 12191900  
**DESCRIPTION:** Connector 150 GT 12F  
**SIZE:** 37.6L x 19.5H x 65.1W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM 14% GF  
**TERMINALS:** See Page 239  
**SEALS/PLUGS:** See Page 239

**PART NO:** 12191905
WEATHER-PACK FEMALE TERMINALS (SLEEVE) SEALED*

<table>
<thead>
<tr>
<th>Sleeve Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12124581</td>
<td>3.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124580</td>
<td>2.0-1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15408312</td>
<td>0.80-0.50</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020801</td>
<td>0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Use of the Weather-Pack 6060 gage as a process control aid is recommended for Weather-Pack terminals. See page 327 in the Application Tooling section for details.

WEATHER-PACK CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12015360</td>
<td>12015193</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12015359</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td>12089444</td>
<td>12089679</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>
Sealed System Application Information

**WEATHER-PACK TERMINALS** - Tin Plated

- **TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT**

- **TEMPERATURE DERATING CURVES**

- The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**WEATHER-PACK MALE TERMINALS** (PIN) SEALED* 

- Pin Part # | Cable Range (mm²) | Material | Plating |
- 12124587   | 3.0            | Tin Brass | Tin    |
- 12124582   | 2.0-1.0        | Tin Brass | Tin    |
- 12089040   | 0.80-0.50      | Tin Brass | Tin    |
- 12089307   | 0.35           | Tin Brass | Tin    |

*Use of the Weather-Pack 6060 gage as a process control aid is recommended for Weather-Pack terminals. See page 327 in the Application Tooling section for details.

**WEATHER-PACK MALE CONNECTORS SEALED**

- # Cavities | Connector | Color | Material
- 1          | 12010996  | Black | PA66 HS IM |
- 2          | 12010973  | Black | PA6       |
- 3          | 12020827  | Black | PA6       |
- 4          | 12015024  | Black | PA6       |
- 4          | 12020830  | Black | PA6       |
- 6          | 12020786  | Black | PA6       |
- 22         | 12020005  | Black | PA6       |

**WEATHER-PACK CAVITY PLUG**

- Part # | Cavity Inside Diameter | Material | Color
- 12010300 | 6.7mm            | Silicone | Green |

* Cavity plugs seal unused female and male cavities.

**SECTION NOTES:**
- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Different color and connector indexing features are also available.

http://delphi.com/products/connect
An environmentally sealed connection system that utilizes triple-rib peripheral silicone rubber seals and individual towers to provide terminal isolation for connector alignment. Weather-Pack sealed systems are ideally suited for critical applications that require protection from environmental hazards.

A PART NO: 12015791
DESCRIPTION: Connector Assembly 1F
SIZE: 40.5L x 20.8H x 13.6W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 242
SEALS/PLUGS: See Page 242, 243

B PART NO: 12010996
DESCRIPTION: Connector 1M
SIZE: 47.6L x 17.3H x 16.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 243
SEALS/PLUGS: See Page 242, 243

C PART NO: 12015792 (Black)
12103784 (Gray)
DESCRIPTION: Connector Assembly 2F
SIZE: 40.8L x 20.8H x 21.5W
MATERIAL: PA6
TERMINALS: See Page 242
SEALS/PLUGS: See Page 242, 243

D PART NO: 12010973 (Black)
12034074 (Gray)
DESCRIPTION: Connector 2M (Clip Slot)
SIZE: 47.0L x 17.5H x 23.9W
MATERIAL: PA6
TERMINALS: See Page 243
SEALS/PLUGS: See Page 242, 243

http://delphi.com/products/connect
WEATHER-PACK Special Products

PART NO: 12020829
DESCRIPTION: Connector Assembly 3F
SIZE: 39.2L x 23.5H x 29.2W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 242
SEALS/PLUGS: See Page 242, 243

PART NO: 12020827
DESCRIPTION: Connector 3M (Clip Slot)
SIZE: 46.1L x 20.5H x 31.9W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 243
SEALS/PLUGS: See Page 242, 243

PART NO: 12020833
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PBT

PART NO: 12015798
DESCRIPTION: Connector Assembly 4F
SIZE: 40.3L x 28.5H x 21.7W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 242
SEALS/PLUGS: See Page 242, 243

PART NO: 12015024
DESCRIPTION: Connector 4M (Clip Slot)
SIZE: 47.0L x 24.9H x 24.1W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 243
SEALS/PLUGS: See Page 242, 243
### A
- **PART NO:** 12020832
- **DESCRIPTION:** Connector Assembly 4F
- **SIZE:** 39.0L x 23.5H x 37.6W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 242
- **SEALS/PLUGS:** See Page 242, 243

### B
- **PART NO:** 12020830
- **DESCRIPTION:** Connector 4M (Clip Slot)
- **SIZE:** 45.9L x 20.4H x 39.9W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 243
- **SEALS/PLUGS:** See Page 242, 243

### C
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

### D
- **PART NO:** 12020926
- **DESCRIPTION:** Connector Assembly 6F
- **SIZE:** 39.1L x 23.5H x 52.1W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 242
- **SEALS/PLUGS:** See Page 242, 243

### E
- **PART NO:** 12020786
- **DESCRIPTION:** Connector 6M (Clip Slot)
- **SIZE:** 46.2L x 20.7H x 55.5W
- **COLOR:** Black
- **MATERIAL:** PA6
- **TERMINALS:** See Page 243
- **SEALS/PLUGS:** See Page 242, 243

### F
- **PART NO:** 12020833
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PBT

---

**Total Mated Length:** 65.8mm

**Total Mated Length:** 66.4mm

---

A PART NO: 12020991
DESCRIPTION: Connector Assembly 22F
SIZE: 45.0L x 63.5H x 91.0W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 242
SEALS/PLUGS: See Page 242, 243
APPLICATION: Pass-Through

B PART NO: 12010852
DESCRIPTION: Secondary Lock
NUMBER REQ: 4
COLOR: Natural
MATERIAL: PA6

C PART NO: 12020005
DESCRIPTION: Connector Assembly 22M
SIZE: 69.9L x 62.0H x 55.2W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 243
SEALS/PLUGS: See Page 242, 243
APPLICATION: Pass-Through

Total Mated Length: 77.3mm

http://delphi.com/products/connect
Unsealed System Application Information

**VF 280 FEMALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12157735</td>
<td>1.0-0.50</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12197559</td>
<td>2.5-1.0</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12198151</td>
<td>1.0-0.50</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12157736</td>
<td>2.5-1.0</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**VF 630 FEMALE TERMINALS UNSEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15327398</td>
<td>1.0-0.50</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>15327399</td>
<td>1.0-0.50</td>
<td>STOL 76</td>
<td>Tin</td>
</tr>
<tr>
<td>15327400</td>
<td>2.5-1.0</td>
<td>STOL 76</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**VF FEMALE CONNECTOR ASSEMBLIES UNSEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector Assembly</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>12198409</td>
<td>Black</td>
<td>PA66 15% GF</td>
</tr>
<tr>
<td>12</td>
<td>15327221</td>
<td>Black</td>
<td>PA66 HS 1M</td>
</tr>
<tr>
<td>16</td>
<td>15363852</td>
<td>Black</td>
<td>PA66</td>
</tr>
<tr>
<td>25</td>
<td>15363846</td>
<td>Yellow</td>
<td>PA66</td>
</tr>
<tr>
<td>26</td>
<td>15327416</td>
<td>Black</td>
<td>PA66</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a “Lumped Resistance” model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.
A PART NO: 12198409
DESCRIPTION: Connector Assembly 9F
SIZE: 27.0L x 26.2H x 25.3W
COLOR: Black
MATERIAL: PA66 15% GF
TERMINALS: See Page 248
TYPICAL APP: Relay Base

B PART NO: 15327221
DESCRIPTION: Connector Assembly 12F
SIZE: 63.9L x 22.0H x 11.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 248
TYPICAL APP: Turn Lights

C PART NO: 15363852
DESCRIPTION: Connector Assembly 16F
SIZE: 31.0L x 35.5H x 23.0W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 248
TYPICAL APP: Radio

http://delphi.com/products/connect
**A**

**PART NO:** 15363846  
**DESCRIPTION:** Connector 25F  
**SIZE:** 93.0L x 22.0H x 11.7W  
**COLOR:** Yellow  
**MATERIAL:** PA66  
**TERMINALS:** See Page 248  
**TYPICAL APP:** Alarm

---

**B**

**PART NO:** 15327416  
**DESCRIPTION:** Connector Assembly 26F  
**SIZE:** 44.5L x 35.5H x 23.0W  
**COLOR:** Black  
**MATERIAL:** PA66  
**TERMINALS:** See Page 248  
**TYPICAL APP:** Radio

---

A PART NO: 15344630
DESCRIPTION: Connector 5F
SIZE: 22.0L x 25.4H x 21.0W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 248
TYPICAL APP: 5-Way Switch

B PART NO: 12147500
DESCRIPTION: Secondary Lock
COLOR: Yellow
MATERIAL: PA66 25% GF

C PART NO: 12147496
DESCRIPTION: Connector Assembly 10F
SIZE: 24.2L x 25.2H x 59.0W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 248
TYPICAL APP: Double 5-Way Switch

D PART NO: 12147497
DESCRIPTION: Connector Assembly 15F
SIZE: 23.0L x 25.4H x 68.7W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 248
TYPICAL APP: Triple 5-Way Switch

E PART NO: 12185521
DESCRIPTION: Connector 10F
SIZE: 22.5L x 25.0H x 53.0W
COLOR: Blue
MATERIAL: PA6
TERMINALS: See Page 248
TYPICAL APP: Double 6-Way Switch

F PART NO: 12185243
DESCRIPTION: Secondary Lock
NUMBER REQ: 2
COLOR: Gray
MATERIAL: PA6 15% GF

G PART NO: 10740413
DESCRIPTION: Connector Assembly 15F
SIZE: 23.5L x 25.0H x 81.0W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 248
TYPICAL APP: Triple 5-Way Switch

http://delphi.com/products/connect
The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

**North American Region**
1-800-PACKARD

**European Region**
49-202-291-2000

**Asia Pacific Region**
65-730-9900

**South American Region**
55-12-378-2002

---

**Sealed System Application Information**

**280 SERIES TERMINALS - Tin Plated**

<table>
<thead>
<tr>
<th>CURRENT (AMPS)</th>
<th>TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.50</td>
</tr>
<tr>
<td>1</td>
<td>0.80</td>
</tr>
<tr>
<td>2</td>
<td>1.0</td>
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<tr>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

*The test data are based on single circuits in free space and were generated using a "Lumped Resistance" model. This model does not account for all of the variables that would be present in an actual application. For actual product performance, contact your regional support representative at the number listed below.

---

**DS 280 FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12157739</td>
<td>1.0-0.50</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12157740</td>
<td>2.5-1.0</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12198102</td>
<td>1.0-0.50</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
<tr>
<td>12198103</td>
<td>2.5-1.0</td>
<td>Bronze</td>
<td>Tin</td>
</tr>
</tbody>
</table>

**DS 280 CABLE SEALS**

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter (mm)</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1205365</td>
<td>10720851</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>1205359</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
</tr>
<tr>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>12041352</td>
<td>12041351</td>
<td>2.42-2.03</td>
<td>Silicone</td>
<td>Tan</td>
</tr>
<tr>
<td>12089444</td>
<td>12089679</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
</tr>
<tr>
<td>12034365</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
</tbody>
</table>

**DS FEMALE CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
<tr>
<th># Cavities</th>
<th>Connector Assembly</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12196895</td>
<td>Black</td>
<td>PA66 30% GF</td>
</tr>
<tr>
<td>2</td>
<td>15364399</td>
<td>Black</td>
<td>PA66 30% GF</td>
</tr>
<tr>
<td>3</td>
<td>12158456</td>
<td>Black</td>
<td>PA66 30% GF</td>
</tr>
<tr>
<td>3</td>
<td>15364318</td>
<td>Yellow</td>
<td>PA66 30% GF</td>
</tr>
<tr>
<td>5</td>
<td>12158457</td>
<td>Black</td>
<td>PA66 30% GF</td>
</tr>
</tbody>
</table>

---

http://delphi.com/products/connect
**A** PART NO: 12196895  
DESCRIPTION: Connector Assembly 2F  
SIZE: 31.4L x 24.0H x 21.0W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Injector

**B** PART NO: 15364309  
DESCRIPTION: Connector Assembly 2F  
SIZE: 34.0L x 27.0H x 22.4W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Injector

**C** PART NO: 12084126  
DESCRIPTION: Connector Assembly 2F  
SIZE: 34.0L x 18.8H x 31.0W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Injector

**D** PART NO: 12158456  
DESCRIPTION: Connector Assembly 3F  
SIZE: 31.4L x 29.0H x 21.0W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Injector

**E** PART NO: 15364318  
DESCRIPTION: Connector Assembly 3F  
SIZE: 34.0L x 32.0H x 23.4W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Injector

**F** PART NO: 12158457  
DESCRIPTION: Connector Assembly 5F  
SIZE: 31.4L x 39.0H x 21.0W  
COLOR: Black  
MATERIAL: PA66 30% GF  
TERMINALS: See Page 252  
SEALS: See Page 252  
TYPICAL APP: Ignition System
Delphi Connection Systems designs and manufactures various types of electrical centers to meet all unique customer requirements. Delphi Packard’s Electrical Centers can be custom designed or supplied from existing designs to meet your needs. Centers are available in Modular and Traditional style, and have the flexibility to accept both SAE and ISO approved device footprints.

Electrical Center Features

- Centralizes all circuit protection within a wiring system
- Accommodates Mini-Relay and Micro-Relays as well as MINI® Fuses and MAXI™ Fuses
- Modular Electrical Centers create a unique electrical center by combining appropriate modules into a standardized base
**Electrical Centers**

**Modular**

**SECTION NOTES:**
Contact your regional support representative at the number listed below for assistance in selecting the appropriate Electrical Center to meet your need.

- Diodes and Fuses may be purchased directly from the manufacturer.

---

**North American Region**
1-800-PACKARD

**European Region**
49-202-291-2000

**Asia Pacific Region**
65-730-9900

**South American Region**
55-12-378-2002
### MINIFUSE MODULES

<table>
<thead>
<tr>
<th>Part#</th>
<th>Application</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
<th>Cover</th>
<th>Latch</th>
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### MAXIFUSE MODULES

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<td>12092231</td>
<td>8 MAXI™ Fuses RT Battery Feed</td>
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<td>12077574</td>
<td>2 Mini-Relays</td>
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### HYBRID MODULES (Combination of Fuse and Relay Cavities)

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<th>Material</th>
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<td>12191848</td>
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### ELECTRICAL CENTER BASES

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<td>12092741</td>
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<td>12092328</td>
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<td>12129121</td>
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<td>12110041</td>
<td>4 Modules</td>
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<td>12077534</td>
<td>1 Module w/Battery Feed</td>
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http://delphi.com/products/connect
### 280 METRI-PACK BUS BAR FEMALE TERMINALS UNSEALED

#### 15.0mm CENTERLINE SPACING

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<th>Base Part # to Order</th>
<th>Type</th>
<th>Cable Range (mm²)</th>
<th>Part # After Termination</th>
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<td>Tin</td>
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<td>12160644</td>
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<tr>
<td>12160638</td>
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#### 280 METRI-PACK BUS BAR FEMALE TERMINALS UNSEALED

#### 16.2mm CENTERLINE SPACING

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<tr>
<th>Base Part # to Order</th>
<th>Type</th>
<th>Cable Range (mm²)</th>
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#### 280 METRI-PACK FEMALE TERMINALS UNSEALED

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## 280 METRI-PACK TANGLESS FEMALE TERMINALS UNSEALED
### 16.2mm CENTERLINE SPACING

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<th>Type</th>
<th>Cable Range (mm²)</th>
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<th>Material</th>
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## TANGLESS

### 280 METRI-PACK TANGLESS FEMALE TERMINALS UNSEALED

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<th>Material</th>
<th>Plating</th>
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### 480 METRI-PACK RELAY FEMALE TERMINALS UNSEALED

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<td>Ti</td>
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### 630 METRI-PACK RELAY FEMALE TERMINALS UNSEALED

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<th>Material</th>
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</tr>
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<tbody>
<tr>
<td>12084588</td>
<td>5.0</td>
<td>Ti Brass</td>
<td>Ti</td>
</tr>
<tr>
<td>12052227</td>
<td>3.0</td>
<td>Ti Brass</td>
<td>Ti</td>
</tr>
<tr>
<td>12015865</td>
<td>2.0 - 1.0</td>
<td>Ti Brass</td>
<td>Ti</td>
</tr>
<tr>
<td>12015864</td>
<td>1.0 - 0.80</td>
<td>Ti Brass</td>
<td>Ti</td>
</tr>
<tr>
<td>12052225</td>
<td>0.50 - 0.35</td>
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<td>Ti</td>
</tr>
<tr>
<td>12124559</td>
<td>0.80 - 0.50 (2 Req’d.)</td>
<td>Ti Brass</td>
<td>Ti</td>
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### 630 METRI-PACK FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
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<td>12052224</td>
<td>3.0</td>
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<td>Tin</td>
</tr>
<tr>
<td>12084596</td>
<td>3.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015870</td>
<td>2.0 - 1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12015869</td>
<td>1.0 - 0.80</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020035</td>
<td>0.80 - 0.50 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
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<td>12052222</td>
<td>0.50 - 0.35</td>
<td>Tin Brass</td>
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### 800 MAXI-FUSE FEMALE TERMINALS UNSEALED

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>12110127</td>
<td>5.0</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
</tr>
<tr>
<td>12092445</td>
<td>5.0 (2 Req’d.)</td>
<td>Tin Brass</td>
<td>Silver/Nickel</td>
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<tr>
<td>12059196</td>
<td>3.0 - 2.0</td>
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<td>Silver/Nickel</td>
</tr>
<tr>
<td>12059194</td>
<td>3.0 (2 Req’d.)</td>
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<td>Silver/Nickel</td>
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<td>12110252</td>
<td>2.0 (2 Req’d.)</td>
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<td>12059193</td>
<td>1.0 - 0.80</td>
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### 800 MAXI-FUSE BUS BAR FEMALE TERMINALS UNSEALED

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<tr>
<td>12146564</td>
<td>Copper Alloy/SST</td>
<td>Silver/Nickel</td>
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<tr>
<td>12065930</td>
<td>Copper Alloy/SST</td>
<td>Silver/Nickel</td>
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*Both required for Electrical Center 12146281, page 275*

### RING TERMINALS

<table>
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<tr>
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<th>Hole Dia.</th>
<th>Part #</th>
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<td>12103965</td>
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<td>M6</td>
<td>6.70</td>
<td>12103511</td>
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<td>Tin</td>
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<td>M6</td>
<td>6.70</td>
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<td>M6</td>
<td>6.70</td>
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<td>3.0 - 2.0</td>
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<td>M6</td>
<td>6.70</td>
<td>12103514</td>
<td>1.0 - 0.80</td>
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<td>Tin</td>
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<td>M8</td>
<td>8.50</td>
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<td>M8</td>
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<td>M8</td>
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<td>M8</td>
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<td>12103508</td>
<td>1.0 - 0.80</td>
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http://delphi.com/products/connect
### 6.3 VF Female Terminals Unsealed

<table>
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<tr>
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<td>12185269</td>
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<tr>
<td>12157764</td>
<td>4.0</td>
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### AF Female Terminals Unsealed

<table>
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<td>12131456</td>
<td>1.0-0.50</td>
<td>CuZn 30</td>
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<tr>
<td>12131448</td>
<td>2.5-1.5</td>
<td>CuZn 30</td>
</tr>
<tr>
<td>12131455</td>
<td>6.0-4.0</td>
<td>CuZn 30</td>
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### 280 Metri-Pack Tangless Female Terminals Sealed

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<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
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<td>12015183</td>
<td>4.30-3.45</td>
<td>Silicone</td>
<td>Blue</td>
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<tr>
<td>12015259</td>
<td>12010293</td>
<td>3.49-2.81</td>
<td>Silicone</td>
<td>Lt. Gray</td>
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<tr>
<td>12015284</td>
<td>12015323</td>
<td>2.85-2.03</td>
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<td>Green</td>
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<td>12041352</td>
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<td>Tan</td>
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<td>12089444</td>
<td>12089697</td>
<td>2.15-1.60</td>
<td>Silicone</td>
<td>Purple</td>
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<td>12034385</td>
<td>12015899</td>
<td>1.70-1.29</td>
<td>Silicone</td>
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### 280 Metri-Pack Cable Seals

<table>
<thead>
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<tr>
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<td>Tin Brass</td>
<td>Tin</td>
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<td>12066614</td>
<td>2.0 - 1.0</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12020156</td>
<td>0.80 - 0.50</td>
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<td>Tin</td>
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### 280 Metri-Pack Cavity Plug*

<table>
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<th>Cavity Inside Diameter</th>
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<tr>
<td>12010300</td>
<td>6.7mm</td>
<td>Silicone</td>
<td>Green</td>
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</table>

*Cavity plugs seal unused female and male cavities.

### Pull-to-Seat Cable Seal Plugs*

<table>
<thead>
<tr>
<th>Part #</th>
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<tbody>
<tr>
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<td>Seal Plug</td>
<td>PA6</td>
<td>Md. Gray</td>
<td>Machine Insertion</td>
</tr>
<tr>
<td>12034413</td>
<td>Seal Plug</td>
<td>PA66 HS IM</td>
<td>Black</td>
<td>Hand Insertion</td>
</tr>
</tbody>
</table>

*Cavity plugs seal unused female and male cavities.
## MiniFuse Modules

### A
- **Part No:** 12191544
- **Description:** MiniFuse Module
- **Size:** 69.2L x 94.5H x 38.2W
- **Color:** Black
- **Material:** PA66 HS IM 14% GF
- **Terminals:** See Page 260 Bus Bar
- **Application:** 20 MINI® Fuses

### B
- **Part No:** 12146947
- **Description:** Secondary Lock
- **Color:** Blue
- **Material:** PA66 HS

### C
- **Part No:** 15324032
- **Description:** Cover
- **Size:** 53.4L x 102.0H x 45.9W
- **Color:** Black
- **Material:** PA66

### D
- **Part No:** 12177145
- **Description:** MiniFuse Module
- **Size:** 69.2L x 113.0H x 38.2W
- **Color:** Black
- **Material:** PA66 HS IM 14% GF
- **Terminals:** See Page 260 Bus Bar
- **Application:** 28 MINI® Fuses

### E
- **Part No:** 12092507
- **Description:** Secondary Lock
- **Color:** Blue
- **Material:** PBT IM

### F
- **Part No:** 12077530
- **Description:** Latch
- **Number Req:** 2
- **Color:** Black
- **Material:** 1050 Steel Annealed

### G
- **Part No:** 12110043
- **Description:** Cover
- **Size:** 43.2L x 112.8H x 48.5W
- **Color:** Black
- **Material:** PA66 HS IM 14% GF

---

**Total Mated Length:**
- **88.0mm**
- **77.6mm**

---

**North American Region**
**European Region**
**Asia Pacific Region**
**South American Region**

**1-800-PACKARD**
**49-202-291-2000**
**65-730-9900**
**55-12-378-2002**

---

**http://delphi.com/products/connect**
**MaxiFuse Modules**

---

**A**
- **PART NO:** 12110129 (Right Battery Feed) 12077569 (Left Battery Feed) 12160829 (w/o Bus Bar)
- **DESCRIPTION:** MaxiFuse Assembly Module
- **SIZE:** 56.0L x 102.2H x 38.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS 33% GF
- **TERMINALS:** See Page 262, 800 MaxiFuse Female
- **APPLICATION:** 6 MAXI™ Fuses

**B**
- **PART NO:** 12077563
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Natural
- **MATERIAL:** PA66 HS

**C**
- **PART NO:** 12092231 (Right Battery Feed) 12092220 (Left Battery Feed. Base Design Req’d.) 12110415 (w/o Bus Bar)
- **DESCRIPTION:** MaxiFuse Assembly Module
- **SIZE:** 56.0L x 129.6H x 38.0W
- **COLOR:** Black
- **MATERIAL:** PA66 HS 33% GF
- **TERMINALS:** See Page 262, 800 MaxiFuse Female
- **APPLICATION:** 8 MAXI™ Fuses

**D**
- **PART NO:** 12077532
- **DESCRIPTION:** Latch
- **NUMBER REQ:** 2
- **COLOR:** Black
- **MATERIAL:** 1050 Steel Annealed

**E**
- **PART NO:** 12077530
- **DESCRIPTION:** Cover
- **SIZE:** 49.1L x 105.8H x 43.6W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM 14% GF

---

**http://delphi.com/products/connect**
**Relay Modules**

**PART NO:** 12077571  
**DESCRIPTION:** Relay Module  
**SIZE:** 50.0L x 86.2H x 38.2W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 261, 262, 480 Metri-Pack Relay and 630 Metri-Pack Female  
**APPLICATION:** 6 Micro-Relays (ISO)

**PART NO:** 12077572  
**DESCRIPTION:** Secondary Lock  
**NUMBER REQ:** 2  
**COLOR:** Blue  
**MATERIAL:** PBT HS IM

**PART NO:** 12077530  
**DESCRIPTION:** Latch  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** 1050 Steel Annealed

**PART NO:** 12160897  
**DESCRIPTION:** Cover  
**SIZE:** 49.0L x 82.6H x 43.0W  
**COLOR:** Black  
**MATERIAL:** PA6

**PART NO:** 12077574  
**DESCRIPTION:** Relay Module  
**SIZE:** 50.0L x 86.8H x 37.6W  
**COLOR:** Black  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 261, 630 Metri-Pack Relay  
**APPLICATION:** 2 Mini-Relays (ISO)

**PART NO:** 12033872  
**DESCRIPTION:** TPA  
**NUMBER REQ:** 2  
**COLOR:** Natural  
**MATERIAL:** PA6

**PART NO:** 12077530  
**DESCRIPTION:** Latch  
**NUMBER REQ:** 2  
**COLOR:** Black  
**MATERIAL:** 1050 Steel Annealed

**PART NO:** 12160897  
**DESCRIPTION:** Cover  
**SIZE:** 49.0L x 82.6H x 43.0W  
**COLOR:** Black  
**MATERIAL:** PA6

---

http://delphi.com/products/connect
**Modular**

**Relay Modules**

**A**
- **PART NO:** 12146836
- **DESCRIPTION:** Relay Module
- **SIZE:** 53.2L x 84.3H x 38.2W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 261, 280 Metri-Pack Tangless
- **APPLICATION:** 1 Mini-Relay / 2 Micro-Relays

**B**
- **PART NO:** 12146835
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Blue
- **MATERIAL:** PA66 HS IM

**C**
- **PART NO:** 15324032
- **DESCRIPTION:** Cover
- **SIZE:** 53.4L x 102.0H x 45.9W
- **COLOR:** Black
- **MATERIAL:** PA6

---

**Total Mated Length:** 82.1mm

---

Hybrid Modules

A PART NO: 12160504
DESCRIPTION: Hybrid Module
SIZE: 52.2L x 85.9H x 42.2W
COLOR: Black
MATERIAL: PA66 HS IM 14% GF
TERMINALS: See Page 261, 280 Bus Bar 16.2mm Centerline Tangless
APPLICATION: MINI® Fuse, Mini-Relay, Micro-Relay
NOTE: Mylar overlays available upon request

B PART NO: 12160551
DESCRIPTION: Secondary Lock
COLOR: Blue
MATERIAL: PA66 HS IM

C PART NO: 12077530
DESCRIPTION: Latch
NUMBER REQ: 2
COLOR: Black
MATERIAL: 1050 Steel Annealed

D PART NO: 12160897
DESCRIPTION: Cover
SIZE: 49.0L x 82.6H x 43.0W
COLOR: Black
MATERIAL: PA66 HS IM

E PART NO: 12110594
DESCRIPTION: Hybrid Module
SIZE: 67.3L x 75.5H x 38.2W
COLOR: Black
MATERIAL: PA66 HS IM 14% GF
TERMINALS: See Page 220-262, 280 Bus Bar 15.0mm Centerline, 480 Metri-Pack Relay and 630 Metri-Pack Female
APPLICATION: 6 MINI® Fuses / 4 Micro-Relays (ISO)

F PART NO: 12110595
DESCRIPTION: Secondary Lock
COLOR: Blue
MATERIAL: PA66 HS IM

G PART NO: 12077530
DESCRIPTION: Latch
NUMBER REQ: 2
COLOR: Black
MATERIAL: 1050 Steel Annealed

H PART NO: 12110602
DESCRIPTION: Cover
SIZE: 49.0L x 82.6H x 43.0W
COLOR: Black
MATERIAL: PA66 HS IM

http://delphi.com/products/connect
**Hybrid Modules**

**PART NO:** 12146815
**DESCRIPTION:** Hybrid Module
**SIZE:** 65.8L x 83.1H x 39.7W
**COLOR:** Black
**MATERIAL:** PA66 HS IM 14% GF
**TERMINALS:** See Page 261, 280 Bus Bar 16.2mm Centerline Tangless and 280 Metri-Tangle Pack

**APPLICATION:** 12 MINITM Fuses / 1 Mini-Relay and 2 Micro-Relays

**PART NO:** 12146816
**DESCRIPTION:** Secondary Lock
**COLOR:** Blue
**MATERIAL:** PA66 HS IM

**PART NO:** 12146817
**DESCRIPTION:** Secondary Lock
**COLOR:** Blue
**MATERIAL:** PA66 HS IM

**PART NO:** 15324032
**DESCRIPTION:** Cover
**SIZE:** 53.4L x 102.0H x 45.9W
**COLOR:** Black
**MATERIAL:** PA66 HS IM

**PART NO:** 12191848
**DESCRIPTION:** Hybrid Assembly Module
**SIZE:** 56.0L x 131.5H x 38.8W
**COLOR:** Black
**MATERIAL:** PA66 HS IM 14% GF
**TERMINALS:** See Page 260, 262, 280 Bus Bar 15.0mm Centerline and 800 MaxiFuse Female

**APPLICATION:** MINITM Fuse, MAXITM Fuse, Mini-Relay, Micro-Relay

**PART NO:** 12191849
**DESCRIPTION:** Secondary Lock
**COLOR:** Blue
**MATERIAL:** PBT

**PART NO:** 12077630
**DESCRIPTION:** Latch
**NUMBER REQ:** 2
**COLOR:** Black
**MATERIAL:** 1050 Steel Annealed

**PART NO:** 15305152
**DESCRIPTION:** Cover
**SIZE:** 82.0L x 113.7H x 49.8W
**COLOR:** Black
**MATERIAL:** PP

**PART NO:** 12160674
**DESCRIPTION:** Shunt
**COLOR:** Black
**MATERIAL:** PA66 HS IM

**NOTE:** Provides Bussing to MINITM Fuses from MAXITM Fuses

---

**Electrical Centers**

**North American Region**
1-800-PACKARD

**European Region**
49-202-291-2000

**Asia Pacific Region**
65-730-9900

**South American Region**
55-12-378-2002

---

### Electrical Center Base Application Guide

Use this guide to choose the proper base in combining your fuse, relay, and hybrid module assemblies.

<table>
<thead>
<tr>
<th>BASE STYLE</th>
<th>FUSE MODULES</th>
<th>RELAY MODULES</th>
<th>HYBRID MODULES</th>
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</thead>
<tbody>
<tr>
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<td>MiniFuse</td>
<td>MaxiFuse</td>
<td>(Fuses &amp; Relays)</td>
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<tr>
<td></td>
<td>12146846</td>
<td>12177145</td>
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<tr>
<td>A</td>
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<tr>
<td>(1 WAY)</td>
<td>Page 264</td>
<td>Page 264</td>
<td>Page 265</td>
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<tr>
<td>B</td>
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<tr>
<td>(1 WAY)</td>
<td>Page 265</td>
<td>Page 265</td>
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<td>Page 266</td>
<td>Page 266</td>
<td>Page 267</td>
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<tr>
<td>(3 WAY)</td>
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<td>Page 270</td>
<td>Page 270</td>
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<tr>
<td>(4 WAY)</td>
<td>Page 271</td>
<td>Page 271</td>
<td>Page 271</td>
</tr>
</tbody>
</table>

*Note: 1 MiniFuse Module (12177145) and a combination of 3 other modules.

---

**A**

**PART NO:** 12084910  
**DESCRIPTION:** 1 Way Electrical Center Base  
**SIZE:** 35.7L x 118.5H x 47.2W  
**COLOR:** Black  
**MATERIAL:** PA6  
**APPLICATION:** 1 Module

**B**

**PART NO:** 12191497  
**DESCRIPTION:** 1 Way Electrical Center Base  
**SIZE:** 37.0L x 144.0H x 45.7W  
**COLOR:** Black  
**MATERIAL:** PA6  
**APPLICATION:** 1 Module

---

**C PART NO:** 12077534  
**DESCRIPTION:** 1 Way Electrical Center Base Assembly  
**SIZE:** 45.7L x 162.5H x 48.6W  
**COLOR:** Black  
**MATERIAL:** PA6  
**APPLICATION:** 1 Module (w/ Battery Feed)

**C1 PART NO:** 12092332 (Horizontal Wire Feed)  
12092669 (Vertical Wire Feed)  
**DESCRIPTION:** Battery Terminal Cover  
**SIZE:** 35.0L x 27.7H x 42.1W  
**COLOR:** Red  
**MATERIAL:** PA6

**C PART NO:** 12082741  
**DESCRIPTION:** 3 Way Electrical Center Base  
**SIZE:** 42.0L x 129.4H x 138.8W  
**COLOR:** Black  
**MATERIAL:** PA6  
**APPLICATION:** 3 Modules

**C1 PART NO:** 12092328  
**DESCRIPTION:** 3 Way Electrical Center Base Assembly  
**SIZE:** 42.0L x 129.4H x 138.8W  
**COLOR:** Black  
**MATERIAL:** PA6  
**APPLICATION:** 3 Modules (w/ Battery Feed)
**TRADITIONAL ELECTRICAL CENTERS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Application</th>
<th>Color</th>
<th>Material</th>
<th>Secondary Lock</th>
<th>Cover</th>
<th>Retainer</th>
</tr>
</thead>
<tbody>
<tr>
<td>12129833</td>
<td>12 MINI® Fuses, 14 Relays</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12128835</td>
<td>12160906</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12128834</td>
<td>12160277</td>
<td></td>
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<td>12128836</td>
<td>12160277</td>
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<td>12128837</td>
<td></td>
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<tr>
<td>12177037</td>
<td>28 MINI® Fuses, 1 Relay, 2 Circuit Breakers</td>
<td>Black</td>
<td>PA66 HS IM 14%GF</td>
<td>12160677</td>
<td>12092748</td>
<td></td>
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<tr>
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<td></td>
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<td>12160678</td>
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<td></td>
<td></td>
<td>12160679</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12146281</td>
<td>10 MAXI™ Fuses, 16 MINI® Fuses, Micro-Relays, Mini-Relays, 2 Diodes</td>
<td>Black</td>
<td>PA66 HS IM</td>
<td>12146805</td>
<td>12146286</td>
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<td>12146284</td>
<td>12162365</td>
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<td>12160765</td>
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<td></td>
<td></td>
<td></td>
<td>12146283</td>
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</tbody>
</table>

**SECTION NOTES:**

Contact your regional support representative at the number listed below for assistance in selecting the appropriate Electrical Center to meet your need.

- Circuit breakers, fuses and diodes may be purchased directly from the manufacturer.

### Electrical Centers

**Key:**
- B – 280 Metri-Pack Bus Bar 16.2mm Centerline
- F – 280 Metri-Pack

Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 12129833</td>
<td>Convenience Center</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
<tr>
<td>B 12129835</td>
<td>Secondary Lock</td>
<td>Natural</td>
<td>PBT</td>
</tr>
<tr>
<td>C 12129834</td>
<td>Secondary Lock</td>
<td>Natural</td>
<td>PBT</td>
</tr>
<tr>
<td>D 12129836</td>
<td>Secondary Lock</td>
<td>Natural</td>
<td>PBT</td>
</tr>
<tr>
<td>E 12129837</td>
<td>Secondary Lock</td>
<td>Natural</td>
<td>PBT</td>
</tr>
<tr>
<td>F 12160906</td>
<td>Cover</td>
<td>Black</td>
<td>PA66 HS IM</td>
</tr>
</tbody>
</table>

**Dimensions:**
- L: 51.6
- W: 74.8
- H: 191.1
- Total Mated Length: 54.3mm

**Applications:**
- 12 MINI® Fuses, 14 Relays
- 12160277 Shipping Cover available.

**Website:**
http://delphi.com/products/connect
Electrical Centers

**Traditional**

**A**
- **PART NO:** 12177037
- **DESCRIPTION:** Fuseblock
- **SIZE:** 51.8L x 102.0H x 127.5W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM 14% GF
- **TERMINALS:** See Page 260
- **APPLICATIONS:** 28 MINI® Fuses, 1 Relay, 2 Circuit Breakers

**B**
- **PART NO:** 12160677
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Blue
- **MATERIAL:** PBT

**C**
- **PART NO:** 12160678
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Blue
- **MATERIAL:** PBT

**D**
- **PART NO:** 12160679
- **DESCRIPTION:** Secondary Lock
- **COLOR:** Blue
- **MATERIAL:** PBT

**E**
- **PART NO:** 12084791
- **DESCRIPTION:** Fuse Extractor
- **COLOR:** White
- **MATERIAL:** PA66

**F**
- **PART NO:** 12092748
- **DESCRIPTION:** Device Position Assurance
- **NUMBER REQ:** 2
- **COLOR:** Red
- **MATERIAL:** PP

**KEY:**
- B – 280 Metri-Pack Bus Bar 16.2mm Centerline
- M – 280 Metri-Pack Bus Bar 15.0mm Centerline
- T – 280 Metri-Pack

Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

http://delphi.com/products/connect
Traditional Electrical Centers

PART NO: 12146281
DESCRIPTION: Electrical Center
SIZE: 52.2L x 115.7H x 191.5W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 261, 262
APPLICATIONS: 10 MAX™ Fuses, 16 MINI® Fuses, 2 Diodes, Micro-Relays, Mini-Relays

PART NO: 12146284
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PBT

PART NO: 12077532
DESCRIPTION: Secondary Lock
COLOR: Natural
MATERIAL: PA66 HS IM

PART NO: 12146283
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PBT

PART NO: 12084791
DESCRIPTION: Fuse Extractor
COLOR: White
MATERIAL: PA66

PART NO: 12146341
DESCRIPTION: Bus Stud Terminal Assembly
COLOR: Black
MATERIAL: PA66 HS IM 14% GF
TERMINALS: See Page 262, M8 Ring

PART NO: 12160759
DESCRIPTION: Bolt
COLOR: Steel
MATERIAL: See Page 262, M6 Ring

PART NO: 12146805
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PBT

PART NO: 12162365
DESCRIPTION: Top Cover
COLOR: Black
MATERIAL: PA66 HS IM

PART NO: 12160765
DESCRIPTION: Bus Stud Assembly Cover
COLOR: Black
MATERIAL: PP IM

KEY:
- 280 Metri-Pack Bus Bar 16.2 Centerline Tangless
- 280 Metri-Pack Tangless
- 800 MaxiFuse Bus Bar
- 800 MaxiFuse
- Spare MINI® Fuse Cavity

To assemble this electrical system, informational drawing 12146337 is available.

http://delphi.com/products/connect
**Electrical Centers**

**Traditional**

**PART NO:** 10740483  
**DESCRIPTION:** Fuseblock  
**SIZE:** 43.0L x 110.0H x 102.2W  
**COLOR:** Black  
**MATERIAL:** PA66 HS  
**TERMINALS:** See Page 263  
**APPLICATIONS:** 32 ATO® Fuses, 3 MAXITM Fuses

**PART NO:** 10740484  
**DESCRIPTION:** Secondary Lock  
**COLOR:** Gray  
**MATERIAL:** PA6 15% GF

**PART NO:** 10717812  
**DESCRIPTION:** Secondary Lock  
**NUMBER REQ:** 2  
**COLOR:** Gray  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740485  
**DESCRIPTION:** Secondary Lock  
**COLOR:** Gray  
**MATERIAL:** PA6 15% GF

**PART NO:** 12185643 (Optional)  
**DESCRIPTION:** Fuse Extractor  
**COLOR:** Black  
**MATERIAL:** PA6

**PART NO:** 10718038  
**DESCRIPTION:** Hinge  
**COLOR:** Black  
**MATERIAL:** PP

**KEY:**
- ▼ 800 Metri-Pack
- ▲ 6.3 VF

Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

Traditional Electrical Centers

**PART NO:** 10740486  
**DESCRIPTION:** Relay Block  
**SIZE:** 49.0L x 111.0H x 102.0W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF 20% GB  
**TERMINALS:** See Page 263  
**APPLICATIONS:** 2 Mini Relays, 4 Standard Relays, 1 Relay, OBD II

**PART NO:** 10740487  
**DESCRIPTION:** TPA  
**NUMBER REQ:** 2  
**COLOR:** Gray  
**MATERIAL:** PA6 15% GF

**C PART NO:** 10718038  
**DESCRIPTION:** Hinge  
**COLOR:** Black  
**MATERIAL:** PP

**SECTION NOTES:**  
Contact your regional support representative at the number listed below.  
• Terminals available from manufacturer.

Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

KEY:  
- 150 Metri-Pack  
- 280 Metri-Pack  
- 630 Metri-Pack  
- 4.8 Faston  
- 6.3 Faston  
- 9.5 Faston

http://delphi.com/products/connect
Electrical Centers

**UNSEALED**

**T R A D I T I O N A L**

A PART NO: 10718620
DESCRIPTION: Fuse Module
SIZE: 74.0L x 83.0H x 206.0W
COLOR: Gray
MATERIAL: PA6 10% GF 20% GB
TERMINALS: See Page 260
APPLICATIONS: 26 ATO® Fuses, 2 MAXI™ Fuses

B PART NO: 10720018
DESCRIPTION: Cover
COLOR: Black
MATERIAL: ABS

C PART NO: 15327645
DESCRIPTION: OBD II Connector 16F
COLOR: Gray
MATERIAL: PA6

D PART NO: 15327646
DESCRIPTION: TPA
NUMBER REQ: 2
COLOR: Black
MATERIAL: PA6 15% GF

E PART NO: 10718621
DESCRIPTION: Relay Module
SIZE: 55.0L x 71.5H x 70.0W
COLOR: Gray
MATERIAL: PA6 10% GF 20% GB
APPLICATION: 4 Standard Relays

F PART NO: 10720017
DESCRIPTION: Cover
COLOR: Black
MATERIAL: ABS

**KEY:**
- □ 150 Metri-Pack
- ▲ 800 Metri-Pack
- □ 280 Metri-Pack
- ▲ 630 Metri-Pack
- ▽ 6.3 VF

Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

http://delphi.com/products/connect
Traditional Electrical Centers feature a combination of different terminal cavities, as indicated by the Key.

**KEY:**
- 150 Metri-Pack
- 280 Metri-Pack
- 630 Metri-Pack
- 800 Metri-Pack
- 6.3 VF
- 4.8 Faston
- 6.3 Faston
- 9.5 Faston

**SECTION NOTES:**
Contact your regional support representative at the number listed below.
- Terminals available from manufacturer.

**PART NO:** 15344665
**DESCRIPTION:** Electrical Center
**SIZE:** 72.0L x 153.0H x 204.0W
**COLOR:** Gray
**MATERIAL:** PA6 20% GF 10% GB
**APPLICATIONS:** 28 ATO® Fuses, 2 MAXI™ fuses, 2 Mini Relays, 9 Standard Relays, 1 Relay

**PART NO:** 10719976 (Optional)
**DESCRIPTION:** Holder
**COLOR:** Black
**MATERIAL:** PA6 30% GF
**APPLICATIONS:** 5 Position Carrier Relay

**PART NO:** 15327645
**DESCRIPTION:** OBD II Connector 16F
**COLOR:** Gray
**MATERIAL:** PA6

**PART NO:** 15327646
**DESCRIPTION:** TPA
**NUMBER REQ:** 2
**COLOR:** Black
**MATERIAL:** PA6 15% GF
**Electrical Centers**

**Traditional**

**A**
- **PART NO:** 15327622
- **DESCRIPTION:** Module Assembly 8F
- **SIZE:** 79.5L x 33.3H x 116.4W
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM

**B**
- **PART NO:** 15327626
- **DESCRIPTION:** Connector 1F
- **SIZE:** 39.5L x 17.5H x 10.8W
- **COLOR:** Gray
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See page 262
- **APPLICATION:** 1 MAXI™ Fuse

Total Mated Length: 104.0mm

http://delphi.com/products/connect
C  PART NO: 15327625  
DESCRIPTION: Connector 1F  
SIZE: 39.5L x 17.5H x 10.8W  
COLOR: Yellow  
MATERIAL: PA66 HS IM  
TERMINALS: 1 MAXI™ Fuse  
APPLICATION: 1 MAXI™ Fuse

D  PART NO: 15327627  
DESCRIPTION: Connector 2F  
SIZE: 39.5L x 17.5H x 22.8W  
COLOR: Blue  
MATERIAL: PA66 HS IM  
TERMINALS: See page 262  
APPLICATION: 2 MAXI™ Fuses

E  PART NO: 15327628  
DESCRIPTION: Connector 3F  
SIZE: 39.5L x 17.5H x 34.7W  
COLOR: Blue  
MATERIAL: PA66 HS IM  
TERMINALS: See page 262  
APPLICATION: 3 MAXI™ Fuses

F  PART NO: 15327694  
DESCRIPTION: Cover  
COLOR: Black  
MATERIAL: PA66 HS 15% GF

http://delphi.com/products/connect
**Electrical Centers**

**PART NO:** 12110541 (Black)  
**PART NO:** 12129715 (Md. Gray)

**DESCRIPTION:** 280 Metri-Pack Connector 6F  
**SIZE:** 27.3L x 40.2H x 28.6W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 261, 280 Metri-Pack Tangless  
**APPLICATION:** Relay

**PART NO:** 12110542

**DESCRIPTION:** Secondary Lock  
**COLOR:** Md. Gray  
**MATERIAL:** PA66 HS IM

**PART NO:** 12052834

**DESCRIPTION:** CPA  
**COLOR:** Green  
**MATERIAL:** PP

**PART NO:** 12034003

**DESCRIPTION:** 630 Metri-Pack Connector 5F  
**SIZE:** 28.1L x 36.1H x 27.6W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 261, 630 Metri-Pack Relay Series  
**APPLICATION:** Relay (ISO)

**PART NO:** 12033872

**DESCRIPTION:** TPA  
**COLOR:** Natural  
**MATERIAL:** PA6

**PART NO:** 12033871

**DESCRIPTION:** 630 Metri-Pack Connector 5F  
**SIZE:** 37.3L x 38.3H x 33.3W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 261, 630 Metri-Pack Relay Series  
**APPLICATION:** Relay (ISO)

**NOTE:** Interlocking multiple connectors form a Relay module.

**PART NO:** 12033872

**DESCRIPTION:** TPA  
**COLOR:** Natural  
**MATERIAL:** PA6

**http://delphi.com/products/connect**
**PART NO:** 12131317  
**DESCRIPTION:** 280/630 Metri-Pack Mixed Connector 9F  
**SIZE:** 25.0L x 28.5H x 38.6W  
**COLOR:** Black  
**MATERIAL:** PA6 15% GF  
**TERMINALS:** See Page 261, 630 Metri-Pack, 280 MP Relay Series  
**APPLICATION:** Standard Relay Socket

**PART NO:** 10719968 (Optional)  
**DESCRIPTION:** Clip Adapter  
**COLOR:** Black  
**MATERIAL:** PA6

**PART NO:** 10740407 (Gray)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10720098  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740408  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 12162998  
**DESCRIPTION:** 280/630 M/P 9.5 Faston Connector Assembly 9F  
**SIZE:** 32.5L x 31.0H x 38.0W  
**COLOR:** Black  
**MATERIAL:** PA6 15% GF  
**TERMINALS:** See Page 261, 630 Metri-Pack, 280 MP Relay Series  
**APPLICATION:** Power Relay Socket

**PART NO:** 10719968 (Optional)  
**DESCRIPTION:** Clip Adapter  
**COLOR:** Black  
**MATERIAL:** PA6

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740408 (Brown)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740407  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740410 (Black)  
**DESCRIPTION:** Standard Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 2.8, 6.3mm  
**MATERIAL:** PA6 15% GF

**PART NO:** 10740409 (Green)  
**DESCRIPTION:** Power Bridging Relay  
**SIZE:** 29.2L x 28.5H x 29.5W  
**BLADE SIZE:** 9.5mm  
**MATERIAL:** PA6 15% GF
A  PART NO: 12110057
DESCRIPTION: 800 MAXI™ Fuse Connector 2F
SIZE: 37.4L x 20.2H x 37.3W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 262, 800 MaxiFuse
APPLICATION: 1 MAXI™ Fuse
NOTE: Interlocking multiple connectors form a MaxiFuse module.

B  PART NO: 12110058
DESCRIPTION: Secondary Lock
COLOR: Yellow
MATERIAL: PA66

C  PART NO: 12147079
DESCRIPTION: ATO® Fuse Connector 2F
SIZE: 34.0L x 21.0H x 22.0W
COLOR: Black
MATERIAL: PA6
TERMINALS: See Page 263, 800 MaxiFuse,
APPLICATION: 1 ATO® Fuse

D  PART NO: 12131359
DESCRIPTION: Secondary Lock
COLOR: Yellow
MATERIAL: PA66 25% GF

E  PART NO: 15339818
DESCRIPTION: 800 MAXI™ Fuse Connector 4F
SIZE: 37.4L x 22.0H x 40.0W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 262, 800 MaxiFuse
APPLICATION: 2 MAXI™ Fuses

F  PART NO: 15337249
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PA6 30% GF

G  PART NO: 12158100
DESCRIPTION: MAXI™/ATO Fuse Connector 4F
SIZE: 37.4L x 21.0H x 40.0W
COLOR: Black
MATERIAL: PA66
TERMINALS: See Page 263, 800 MaxiFuse,
APPLICATION: 1 MAXI™ Fuse, 1 ATO Fuse

H  PART NO: 12158101
DESCRIPTION: Secondary Lock
COLOR: Gray
MATERIAL: PA6 30% GF
**PART NO:** 15305003  
**DESCRIPTION:** Connector (MEGA® Fuse)  
**SIZE:** 53.0L x 101.0H x 49.9W  
**COLOR:** Black  
**MATERIAL:** PP IM  
**TERMINALS:** See Page 262, M8 Ring  
**APPLICATION:** 1 MEGA® Fuse (100 - 200 AMPS)  
**NOTE:** Bolt thread size M8 X 1.25.
Electrical Centers

**PART NO: 12129716**
**DESCRIPTION:** 280 Metri-Pack Connector Assembly 4F
**SIZE:** 30.6L x 41.5H x 35.5W
**COLOR:** Md. Gray
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 263, 280 Metri-Pack Tangless Sealed
**SEALS/PLUGS:** See page 263
**APPLICATION:** Relay

**PART NO: 12110540**
**DESCRIPTION:** TPA
**COLOR:** Dk. Green
**MATERIAL:** PA6

**PART NO: 12052834**
**DESCRIPTION:** CPA
**COLOR:** Green
**MATERIAL:** PP

**PART NO: 12110539**
**DESCRIPTION:** 280 Metri-Pack Connector Assembly 5F
**SIZE:** 30.6L x 41.5H x 35.5W
**COLOR:** Black
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 263, 280 Metri-Pack Tangless Sealed
**SEALS/PLUGS:** See page 263
**APPLICATION:** Relay

**PART NO: 12110540**
**DESCRIPTION:** TPA
**COLOR:** Dk. Green
**MATERIAL:** PA6

**PART NO: 12052834**
**DESCRIPTION:** CPA
**COLOR:** Green
**MATERIAL:** PP

**PART NO: 12085030 (Black/Lt. Orange Seal)**
4.48-3.72 CABLE O.D.
12033769 (Black/Green Seal)
3.65-2.89 CABLE O.D.
12103172 (Gray/Green Seal)
3.65-2.89 CABLE O.D.
12066681 (Black/Lt. Gray Seal)
2.64-1.90 CABLE O.D.
**DESCRIPTION:** 630 Pull-To-Seat Connector Assembly 2F
**SIZE:** 31.5L x 20.5H x 27.3W
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 263, 630 Metri-Pack Pull-To-Seat
**APPLICATION:** 1 ATO® Fuse

**PART NO: 12033731 (Black)**
12146104 (Red)
12059426 (Black—Dual)
**DESCRIPTION:** Cover
**SIZE:** 38.2L x 22.6H x 45.0W
**SIZE (DUAL):** 38.2L x 23.5H x 56.3W
**MATERIAL:** PA66 HS IM

http://delphi.com/products/connect
**A**

**PART NO:** 12092605  
12065686  12065685  
**DESCRIPTION:** 630 Pull-to-Seat Connector Assembly  
**SIZE:** 31.5L x 41.3H x 34.7W  
**COLOR:** Black  
**MATERIAL:** PA6  
**TERMINALS:** See Page 263, 630 Metri-Pack Pull-to-Seat  
**PLUGS:** See Page 263  
**APPLICATION:** Relay (ISO)

---

**B**

**PART NO:** 12052834  
**DESCRIPTION:** CPA  
**COLOR:** Green  
**MATERIAL:** PP

---

## Cable O.D. (mm)

<table>
<thead>
<tr>
<th>Conn. Asm. Part Number</th>
<th>Cable Seal Color</th>
<th>Cavity 1</th>
<th>Cavity 2</th>
<th>Cavity 3</th>
<th>Cavity 4</th>
<th>Cavity 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>12092605</td>
<td>Orange</td>
<td>1.60-2.12</td>
<td>1.60-2.12</td>
<td>1.60-2.12</td>
<td>Blocked</td>
<td>1.60-2.12</td>
</tr>
<tr>
<td>12065686</td>
<td>Lt. Gray</td>
<td>3.49-3.88</td>
<td>2.03-2.44</td>
<td>Blocked</td>
<td>3.49-3.88</td>
<td>2.03-2.44</td>
</tr>
<tr>
<td>12065685</td>
<td>Green</td>
<td>3.49-3.88</td>
<td>2.03-2.44</td>
<td>2.03-2.44</td>
<td>3.49-3.88</td>
<td>2.03-2.44</td>
</tr>
</tbody>
</table>

Multiple Cavity Cable Seal (Included)
Temperature Sensors

Flexible, Affordable and Fast to Market

Delphi Connection Systems’ growing line of temperature sensors is a perfect integration of product and process technologies. Our crimpless conductive path design enables automatic processing for efficient, cost-effective sensor manufacturing.

Our sensor product line offers a variety of designs for various sensing applications. In addition, we are currently developing high-temperature sensor products, multifunction sensors, sensors for non-temperature applications, and sensors that integrate electronics into the packaging.

Temperature Sensor Features

- Rugged housing design
- Customized electrical and mechanical mounting
- Design flexibility
- Few components, cost effective
**DESCRIPTION**

Air temperature sensors are continuous function devices that change resistance inversely proportional to temperature. These sensors consist of two major components: the high temperature thermoplastic shell and a thermistor pre-mold sub-assembly. The plastic shell is custom designed to meet specific mounting and packaging requirements. Containing an NTC thermistor, the patented pre-mold assembly is inserted into the shell.

**TYPICAL APPLICATION**

The air sensors measure the engine intake air temperature in the manifold, in the intake air duct, and in the air cleaner. They provide a signal to the Powertrain Control Module (PCM).

---

**Mating options, 150.2 Metri-Pack Pull-to-Seat Connectors:**

12162193, 12162194, 12162195, 12162197, 12162198, 12162199.

---

**AIR TEMPERATURE SENSORS**

<table>
<thead>
<tr>
<th>Cavity Indexing</th>
<th>Air Temperature Sensor</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushroom</td>
<td>12110446</td>
<td>Black</td>
<td>PEI 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12146830</td>
<td>Gray</td>
<td>PEI 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12129596</td>
<td>Black</td>
<td>PA66 HS 33% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160244</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160245</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160246</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
</tbody>
</table>

---

**150 GT CONNECTOR ASSEMBLIES SEALED**

<table>
<thead>
<tr>
<th>Cavities</th>
<th>Connector Part #</th>
<th>Cover/Indexing</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>15336004</td>
<td>Shrouded/Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>2</td>
<td>15335987</td>
<td>Shrouded/Key</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>2</td>
<td>15336024</td>
<td>Unshrouded/Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

**AIR TEMPERATURE SENSORS**

<table>
<thead>
<tr>
<th>Cavity Indexing</th>
<th>Air Temperature Sensor</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushroom</td>
<td>12110446</td>
<td>Black</td>
<td>PEI 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12146830</td>
<td>Gray</td>
<td>PEI 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12129596</td>
<td>Black</td>
<td>PA66 HS 33% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160244</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160245</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
<tr>
<td>Key</td>
<td>12160246</td>
<td>Black</td>
<td>PBT 30% GF</td>
</tr>
</tbody>
</table>

---

**150 GT FEMALE TERMINALS SEALED**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326266</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15305350</td>
<td>*1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

* Accommodates 1.00 European Ultra Thin Wall Cable.
Accommodates 0.80 SAE Ultra Thin Wall Cable.

---

**GT CABLE SEALS**

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191155</td>
<td>15366022</td>
<td>1.47-1.85</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>-</td>
<td>15305351</td>
<td>1.70-2.10</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

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**Sensors**

**North American Region**

1-800-PACKARD

**European Region**

49-202-291-2000

**Asia Pacific Region**

65-730-9900

**South American Region**

55-12-378-2002

---

**http://delphi.com/products/connect**
Sensors

A

PART NO: 15336004
(Shrouded)
15336024
(Unshrouded)

DESCRIPTION: 150 GT Connector Assembly 2F

SIZE: 29.0L x 22.2H x 21.3W

COLOR: Black

MATERIAL: PA6 10% GF & 20% GB

TERMINALS: See Page 292

SEALS: See Page 292

MATING OPT: 150.2 Metri-Pack Pull-To-Seat Connectors:
12162193, 12162194, 12162195

B

PART NO: 15317832

DESCRIPTION: Sensor Assembly 2M

COLOR: Gray

MATERIAL: PEI 30% GF

WEIGHT: 13.2g

MOUNTING THREAD SIZE: 3/8" - 18 NPTF

C

PART NO: 12110446

DESCRIPTION: Sensor Assembly 2M

COLOR: Black

MATERIAL: PA6 10% GF & 20% GB

THERMAL & ELECTRICAL PROPERTIES

TYPICAL VOLTAGE SUPPLY: 5V dc

OPERATING TEMPERATURE: -40°C to 135°C

RESISTIVE RANGE (Ω): See Chart A

DISSIPATION CONSTANT: 18mW/˚C

THERMAL TIME CONSTANT: 60 seconds

ACCURACY: See Chart A

http://delphi.com/products/connect
### Sensors

**A**
- **PART NO:** 15335987
- **DESCRIPTION:** 150 GT Connector Assembly 2F
- **SIZE:** 29.0L x 22.2H x 21.3W
- **COLOR:** Black
- **MATERIAL:** PA6 10% GF & 20% GB
- **TERMINALS:** See Page 292
- **SEALS:** See Page 292
- **MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162197, 12162198, 12162199

**B**
- **PART NO:** 15317832
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PA6 10% GF & 20% GB

**C**
- **PART NO:** 12146830
- **DESCRIPTION:** Sensor Assembly 2M
- **COLOR:** Gray
- **WEIGHT:** 13.8g
- **MATERIAL:** PEI 30% GF
- **MOUNTING THREAD SIZE:** 3/8" - 18 NPTF

**D**
- **PART NO:** 15335987
- **DESCRIPTION:** 150 GT Connector Assembly 2F
- **SIZE:** 29.0L x 22.2H x 21.3W
- **COLOR:** Black
- **MATERIAL:** PA6 10% GF & 20% GB
- **TERMINALS:** See Page 292
- **SEALS:** See Page 292
- **MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162197, 12162198, 12162199

**E**
- **PART NO:** 15317832
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PA6 10% GF & 20% GB

**F**
- **PART NO:** 12129596
- **DESCRIPTION:** Sensor Assembly 2M
- **COLOR:** Black
- **WEIGHT:** 8.2g
- **MATERIAL:** PA66 HS 33% GF
- **MOUNTING:** Push

### Thermal & Electrical Properties

**TYPICAL VOLTAGE SUPPLY:** 5V dc

**OPERATING TEMPERATURE:** -40°C to 135°C

**RESISTIVE RANGE (Ω):** See Chart A

**DISSIPATION CONSTANT:** 18mW/˚C

**THERMAL TIME CONSTANT:** 60 seconds

**ACCURACY:** See Chart A

---

http://delphi.com/products/connect
Sensors

**A**
- **PART NO:** 15335987
- **DESCRIPTION:** 150 GT Connector Assembly 2F
- **SIZE:** 29.0L x 22.2H x 21.3W
- **COLOR:** Black
- **MATERIAL:** PA6 10% GF & 20% GB
- **TERMINALS:** See Page 292
- **SEALS:** See Page 292
- **MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162197, 12162198, 12162199

**B**
- **PART NO:** 15317832
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PA6 10% GF & 20% GB

**C**
- **PART NO:** 12160244
- **DESCRIPTION:** Sensor Assembly 2M
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF
- **WEIGHT:** 8.9g
- **MOUNTING:** Clip

**D**
- **PART NO:** 15335987
- **DESCRIPTION:** 150 GT Connector Assembly 2F
- **SIZE:** 29.0L x 22.2H x 21.3W
- **COLOR:** Black
- **MATERIAL:** PA6 10% GF & 20% GB
- **TERMINALS:** See Page 292
- **SEALS:** See Page 292
- **MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162197, 12162198, 12162199

**E**
- **PART NO:** 15317832
- **DESCRIPTION:** CPA
- **COLOR:** Gray
- **MATERIAL:** PA6 10% GF & 20% GB

**F**
- **PART NO:** 12160245
- **DESCRIPTION:** Sensor Assembly 2M
- **COLOR:** Black
- **MATERIAL:** PBT 30% GF
- **WEIGHT:** 5.5g
- **MOUNTING:** Push

**THERMAL & ELECTRICAL PROPERTIES**
- **TYPICAL VOLTAGE SUPPLY:** 5V dc
- **OPERATING TEMPERATURE:** -40˚C to 135˚C
- **RESISTIVE RANGE (Ω):** See Chart B
- **DISSIPATION CONSTANT:** 9mW/˚C
- **THERMAL TIME CONSTANT:** <15 seconds
- **ACCURACY:** See Chart B

**http://delphi.com/products/connect**
Sensors

**A**

**PART NO:** 15335987

**DESCRIPTION:** 150 GT Connector Assembly 2F

**SIZE:** 29.0L x 22.2H x 21.3W

**COLOR:** Black

**MATERIAL:** PA6 10% GF & 20% GB

**TERMINALS:** See Page 292

**SEALS:** See Page 292

**MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162197, 12162198, 12162199

**PART NO:** 15317832

**DESCRIPTION:** Sensor Assembly 2M

**COLOR:** Gray

**MATERIAL:** PBT 30% GF

**WEIGHT:** 9.3g

**MOUNTING:** Twist Lock

**B**

**PART NO:** 12160246

**DESCRIPTION:** Sensor Assembly 2M

**COLOR:** Black

**MATERIAL:** PA6 10% GF & 20% GB

**EXPOSED LENGTH:** 22.8

**PROBE LENGTH:** 19.8

**DIAMETER:** 15.9

**TOTAL MATED LENGTH:** 54.47mm

**THERMAL & ELECTRICAL PROPERTIES**

- **TYPICAL VOLTAGE SUPPLY:** 5V dc
- **OPERATING TEMPERATURE:** -40°C to 135°C
- **RESISTIVE RANGE (Ω):** See Chart B
- **DISSIPATION CONSTANT:** 9mW/˚C
- **THERMAL TIME CONSTANT:** <15 seconds
- **ACCURACY:** See Chart B
The Heating Ventilation Air Conditioning temperature sensor is a continuous function device that changes resistance inversely proportional to temperature. The discharge air sensor consists of an NTC thermistor with a crimpless conductive path protected by a plastic body.

**Typical Application**

The discharge air sensor measures the inside air temperature and provides a signal to the automatic climate control unit.

<table>
<thead>
<tr>
<th>150 METRI-PACK FEMALE CONNECTOR UNSEALED</th>
<th>150 METRI-PACK FEMALE TERMINALS UNSEALED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavities</td>
<td>Part #</td>
</tr>
<tr>
<td>2</td>
<td>12047662</td>
</tr>
<tr>
<td>Part #</td>
<td>Cable Range (mm²)</td>
</tr>
<tr>
<td>12047767</td>
<td>1.0-0.80</td>
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<tr>
<td>12064971</td>
<td>0.50-0.35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HVAC TEMPERATURE SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC Temperature Sensor</td>
</tr>
<tr>
<td>12160947</td>
</tr>
</tbody>
</table>
**Sensors**

**HVAC Air**

**Chart B**

**A**
- **PART NO:** 12047662 (Black)
- **DESCRIPTION:** 150 Metri-Pack Connector 2F
- **SIZE:** 17.0L x 8.7H x 8.3W
- **MATERIAL:** PA66 HS IM
- **TERMINALS:** See Page 297

**B**
- **PART NO:** 12047664
- **DESCRIPTION:** TPA
- **COLOR:** Md. Gray
- **MATERIAL:** PA66 HS IM

**C**
- **PART NO:** 12160947
- **DESCRIPTION:** Sensor Assembly 2M
- **COLOR:** Black
- **MATERIAL:** PA66 HS IM
- **WEIGHT:** 2.2g
- **MOUNTING:** Twist Lock

**THERMAL & ELECTRICAL PROPERTIES**

- **TYPICAL VOLTAGE SUPPLY:** 5V dc
- **OPERATING TEMPERATURE:** -40°C to 125°C
- **RESISTIVE RANGE (Ω):** See Chart B
- **DISSIPATION CONSTANT:** 9mW/˚C
- **THERMAL TIME CONSTANT:** 8 seconds
- **ACCURACY:** See Chart B

**Exposed Length**

**Probe Length**

**9.3 Dia.**

**22.9 Probe Length**

**Total Mated Length: 42.5mm**

**Chart B**

**Unloaded Resistance, Temperature Characteristic**

- **R0 = 28582**
- **R60 = 2795**
- **R100 = 178**

**http://delphi.com/products/connect**
**Coolant/Fluid**

**Description**

Coolant/Fluid temperature sensors are continuous function devices that change resistance inversely proportional to temperature. These brass sensors consist of five major components: the brass shell, thermal grease, insulating sleeve, gasket, and insert molded connector. The shell utilizes customized thread and hex sizes per application requirements and the connector contains an NTC thermistor with a crimpless conductive path.

**Typical Application**

The brass sensors measure the temperature of the engine oil, the fuel or the engine coolant and provide a signal to the Powertrain Control Module (PCM).

---

**150 GT Connector Assemblies Sealed**

<table>
<thead>
<tr>
<th>Cavities</th>
<th>Connector Part #</th>
<th>Cover/Indexing</th>
<th>Color</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>15336004</td>
<td>Shrouded/Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
<tr>
<td>2</td>
<td>15336024</td>
<td>Unshrouded/Mushroom</td>
<td>Black</td>
<td>PA6 10% GF &amp; 20% GB</td>
</tr>
</tbody>
</table>

Mating options, 150.2 Metri-Pack Pull-to-Seat Connectors: 12162193, 12162194, 12162195

---

**Coolant/Fluid Sensors**

<table>
<thead>
<tr>
<th>Cavity</th>
<th>Indexing</th>
<th>Coolant Fluid Sensors</th>
<th>Color</th>
<th>Housing</th>
<th>Material</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushroom</td>
<td>12146312</td>
<td>Black</td>
<td>Brass</td>
<td>PBT 30% GF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mushroom</td>
<td>12146911</td>
<td>Black</td>
<td>Brass</td>
<td>PBT 30% GF</td>
<td></td>
<td></td>
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<tr>
<td>Mushroom</td>
<td>12146897</td>
<td>Black</td>
<td>Brass</td>
<td>PBT 30% GF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**150 GT Female Terminals Sealed**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15326266</td>
<td>0.50-0.35</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>15305350</td>
<td>*1.00-0.75</td>
<td>Tin Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

* Accommodates 1.00 European Ultra Thin Wall Cable.
* Accommodates 0.80 SAE Ultra Thin Wall Cable.

---

**GT Cable Seals**

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12191155</td>
<td>15366022</td>
<td>1.47-1.85</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>-</td>
<td>15305351</td>
<td>1.70-2.10</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

---

http://delphi.com/products/connect
**Sensors**

**Coolant/Fluid**

**Chart A**

**Unloaded Resistance-Temperature Characteristic**

<table>
<thead>
<tr>
<th>Chart</th>
<th>Rs (Ω)</th>
<th>Ra (Ω)</th>
<th>Rb (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2830</td>
<td>1802</td>
<td></td>
</tr>
</tbody>
</table>

**Sensors Coolant/Fluid**

**Chart A**

**PART NO:** 15336004 (Shrouded)  
**DESCRIPTION:** 150 GT Connector Assembly 2F  
**SIZE:** 29.0L x 22.2H x 21.3W  
**COLOR:** Black  
**MATERIAL:** PA6 10% GF & 20% GB  
**TERMINALS:** See Page 299  
**SEALS:** See Page 299  
**MATING OPT:** 150.2 Metri-Pack Pull-To-Seat Connectors 12162193, 12162194, 12162195

**PART NO:** 15317832  
**DESCRIPTION:** Sensor Assembly 2M  
**COLOR:** Gray  
**MATERIAL:** Brass Housing; PBT 30% GF Connector  
**WEIGHT:** 39.5g  
**MOUNTING THREAD SIZE:** 3/8” - 18 NPTF

**PART NO:** 12146312  
**DESCRIPTION:** Sensor Assembly 2M  
**COLOR:** Black  
**MATERIAL:** Brass Housing; PBT 30% GF Connector  
**WEIGHT:** 39.5g  
**MOUNTING THREAD SIZE:** 3/8” - 18 NPTF

**THERMAL & ELECTRICAL PROPERTIES**

**TYPICAL VOLTAGE SUPPLY:** 5V dc  
**OPERATING TEMPERATURE:** -40°C to 135°C  
**RESISTIVE RANGE (Ω):** See Chart A  
**DISSIPATION CONSTANT:** 25mW/°C  
**THERMAL TIME CONSTANT:** 20 to 30 seconds  
**ACCURACY:** See Chart A

**http://delphi.com/products/connect**

---

**North American Region**  
**European Region**  
**Asia Pacific Region**  
**South American Region**

1-800-PACKARD  
49-202-291-2000  
65-730-9900  
55-12-378-2002
A PART NO: 15336004 (Shrouded)
15336024 (Unshrouded)
DESCRIPTION: 150 GT Connector Assembly 2F
SIZE: 29.0L x 22.2H x 21.3W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 299
SEALS: See Page 299
MATING OPT: 150.2 Metri-Pack Pull-To-Seat Connectors 12162193, 12162194, 12162195

B PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB

C PART NO: 12146897
DESCRIPTION: Sensor Assembly 2M
COLOR: Black
MATERIAL: Brass Housing; PBT 30% GF Connector
WEIGHT: 23.2g
MOUNTING THREAD SIZE: M12 X 1.5

D PART NO: 15336004 (Shrouded)
15336024 (Unshrouded)
DESCRIPTION: 150 GT Connector Assembly 2F
SIZE: 29.0L x 22.2H x 21.3W
COLOR: Black
MATERIAL: PA6 10% GF & 20% GB
TERMINALS: See Page 299
SEALS: See Page 299
MATING OPT: 150.2 Metri-Pack Pull-To-Seat Connectors 12162193, 12162194, 12162195

E PART NO: 15317832
DESCRIPTION: CPA
COLOR: Gray
MATERIAL: PA6 10% GF & 20% GB

THERMAL & ELECTRICAL PROPERTIES
TYPICAL VOLTAGE SUPPLY: 5V dc
OPERATING TEMPERATURE: -40˚C to 135˚C
RESISTIVE RANGE (Ω): See Chart A
DISSIPATION CONSTANT: 25mW/˚C
THERMAL TIME CONSTANT: 20 to 30 seconds
ACCURACY: See Chart A

http://delphi.com/products/connect
**DESCRIPTION**

Transmission temperature sensors are continuous function devices that change resistance inversely proportional to temperature. The two primary types of sensors that monitor the automatic transmission fluid are: the metal stator temperature sensor and the plastic sump temperature sensor. The stator sensor consists of a brass or stainless steel shell, thermal grease, insulating sleeve, gasket, and insert-molded connector containing an NTC thermistor. The sump sensor consists of a high temperature plastic shell and a patented pre-mold sub-assembly that contains an NTC thermistor with a crimpless conductive path.

**TYPICAL APPLICATION**

These sensors measure the fluid temperature in two transmission environments: in-line near the stator and the sump tank. A signal is provided to the Powertrain Control Module (PCM).

---

**TRANSMISSION TEMPERATURE SENSORS**

<table>
<thead>
<tr>
<th>Transmission Temp. Sensors</th>
<th>Color</th>
<th>Housing</th>
<th>Material</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>12160855 Black</td>
<td>Brass</td>
<td>PA66 HS IM</td>
<td></td>
<td>–</td>
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<tr>
<td>12129691 Md. Gray</td>
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**150 METRI-PACK FEMALE CONNECTOR UNSEALED**

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<tr>
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**150 METRI-PACK FEMALE TERMINALS UNSEALED**

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---

**PART NO:** 12047662 (Black)
**DESCRIPTION:** 150 Metri-Pack Connector 2F
**SIZE:** 17.0L x 8.7H x 8.3W
**MATERIAL:** PA66 HS IM
**TERMINALS:** See Page 302

**PART NO:** 12059249 (Natural)
**DESCRIPTION:** TPA
**COLOR:** Md. Gray
**MATERIAL:** PA66 HS IM

**PART NO:** 12047664
**DESCRIPTION:** Sensor Assembly 2M
**COLOR:** Black
**MATERIAL:** Brass Housing; PA66 HS IM Connector
**WEIGHT:** 12.2g
**MOUNTING THREAD SIZE:** 1/8”-27 PTF

**THERMAL & ELECTRICAL PROPERTIES**
- **TYPICAL VOLTAGE SUPPLY:** 5V dc
- **OPERATING TEMPERATURE:**
  - SENSOR TIP: -40˚C to 200˚C
  - CONNECTOR: -40˚C to 150˚C
- **RESISTIVE RANGE (Ω):** See Chart C
- **DISSIPATION CONSTANT:** 12mW/˚C
- **THERMAL TIME CONSTANT:** 10 seconds
- **ACCURACY:** See Chart C
### Sensors

**Part A**: 12047662 (Black)  
Part No: 12059249 (Natural)  
Part No: 12047664  
**Description**: 150 Metri-Pack Connector 2F  
**Size**: 17.0L x 8.7H x 8.3W  
**Material**: PA66 HS IM  
**Terminals**: See Page 302

**Part B**: 12047664  
**Description**: TPA  
**Color**: Md. Gray  
**Material**: PA66 HS IM

**Part C**: 12129691  
**Description**: Sensor Assembly 2M  
**Color**: Md. Gray  
**Material**: PA66 HS IM  
**Weight**: 2.8g  
**Mounting**: Clip/Tie

**Thermal & Electrical Properties**

- **Typical Voltage Supply**: 5V dc  
- **Operating Temperature**: -40°C to 135°C  
- **Resistive Range (Ω)**: See Chart B  
- **Dissipation Constant**: 12mW/°C  
- **Thermal Time Constant**: 5 seconds  
- **Accuracy**: See Chart B

---

Supplemental Products

Ring Terminals, Battery Terminals, 56 Series Device Connections, Connector Carriers & Clips

Ring Terminal Features
- Advanced crimp wing design
- Complete selection of English and Metric stud-hole sizes
- Wide variety of locking and orientation features

Battery Terminal Features
- State of the art crimp interface technology
- Designed for all appropriate battery and starter cable gage sizes and cable types
- Battery terminals mate to: side post, top post, or top stud batteries
- Starter terminals have anti-rotation features for ease of installation

56 Series Device Features
- Proven connection systems reliability
- Compatible connection systems to most devices
- State of the art crimp interface technology

Clip Features
- Broad product selection
- Clips attach easily and securely to connectors via mechanical locking design
- Proven anti-rattle design features
A wide selection of basic washer style and spade style terminals with design features to accommodate various application requirements. These terminals are designed with both core and insulation crimp wings and employ the same state of the art crimp design features as our entire connection systems family.

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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Anti-Rotation terminals are designed in a straight configuration. A crimp and bend die is available for terminal application.

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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http://delphi.com/products/connect
**RING TERMINALS**

### SMALL RING TERMINALS

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
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<td>M5</td>
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### RING TERMINALS

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### RING TERMINALS

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</table>

**Anti-Rotation terminals are designed in a straight configuration.**

**A crimp and bend die is available for terminal application.**

Delphi Connection Systems offers a complete line of top and side mounted battery terminals for all applications. Anti-rotation tabs are included for ease of installation and assembly. Stamped and serrated crimp wings offer unparalleled crimp reliability and durability.

**SHORT NECK RING TERMINALS**

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**STANDARD NECK RING TERMINALS**

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<th>Hole Dia.</th>
<th>Cable Range (mm²)</th>
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<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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</table>

Delphi Packard Electric offers battery cable assemblies for applications requiring an angled terminal. Contact your regional support representative at the number listed below.

http://delphi.com/products/connect
# Battery Terminals

## Heavy Duty Terminals

### Standard Neck Starter Terminals

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Tab Position</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
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### Standard Neck Starter Terminals

<table>
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<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Tab Position</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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### Standard Neck Starter Terminals

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<th>Tab Position</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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### Standard Neck Starter Terminals

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<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
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### STANDARD NECK STARTER TERMINALS

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<th>Tab Position</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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</tr>
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<td>150° Up</td>
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<td>19.0-13.0</td>
<td>12146718</td>
<td>Copper</td>
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### STANDARD NECK STARTER TERMINALS

<table>
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<th>Tab Position</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
</tr>
</thead>
<tbody>
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<td>12191787</td>
<td>Copper</td>
<td>Tin</td>
<td>1.83</td>
</tr>
<tr>
<td>M10</td>
<td>10.34</td>
<td>-150° Down</td>
<td>32.0</td>
<td>15318209</td>
<td>Copper</td>
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### TOP POST BATTERY TERMINALS

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<th>Application</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
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</thead>
<tbody>
<tr>
<td>Negative</td>
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<td>Copper</td>
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<tr>
<td>Negative</td>
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<td>Copper</td>
<td>Tin</td>
<td>1.52</td>
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<tr>
<td>Negative</td>
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<td>15305119</td>
<td>Copper</td>
<td>Tin</td>
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</table>

Fastener Bolt (12177293) and nut (12177294) are available from the manufacturer.

### BATTERY BOLTS & SPACER

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Plating</th>
<th>Spacer</th>
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<tbody>
<tr>
<td>08917444</td>
<td>Steel</td>
<td>Zinc Gold Chromate</td>
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<tr>
<td>12004188</td>
<td>Steel</td>
<td>Zinc Gold Chromate</td>
<td>12004189</td>
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</table>

Coated with “Pavco” sealer to provide corrosion protection.

http://delphi.com/products/connect
## Side Post Battery Terminals & Covers

### Side Post Battery Terminals

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Hole Dia.</th>
<th>Cable Range (mm²)</th>
<th>Part #</th>
<th>Barbs*</th>
<th>Material</th>
<th>Plating</th>
<th>Stock Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10</td>
<td>9.90</td>
<td>62.0</td>
<td>12129221</td>
<td>Yes</td>
<td>Copper</td>
<td>Tin</td>
<td>1.83</td>
</tr>
<tr>
<td>M10</td>
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<td>50.0</td>
<td>12129465</td>
<td>Yes</td>
<td>Copper</td>
<td>Tin</td>
<td>1.83</td>
</tr>
<tr>
<td>M10</td>
<td>9.90</td>
<td>32.0</td>
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<td>Tin</td>
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<td>Tin</td>
<td>1.52</td>
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*Barbs (indentations in center hole) in terminals are used to prevent rotation after assembly. Bolts ordered separately.

### Battery Terminal Covers

<table>
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<th>Part #</th>
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<th>Overall Length</th>
<th>Height</th>
<th>Width</th>
<th>Application</th>
<th>Material</th>
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<tbody>
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<td>12160209</td>
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<td>Vinyl</td>
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<tr>
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<td>Red</td>
<td>75.7</td>
<td>25.5</td>
<td>35.0</td>
<td>Single</td>
<td>Vinyl</td>
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Used with battery bolt 08917444 or equivalent

### Battery Terminal Cover Assembly*

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<th>Width</th>
<th>Application</th>
<th>Material</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>15304876</td>
<td>Red</td>
<td>115.6</td>
<td>27.5</td>
<td>35.1</td>
<td>(2) Stackable</td>
<td>Vinyl</td>
</tr>
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</table>

Used with battery bolt 12004188 or equivalent. * Includes 12004189 Spacer.

### Section Notes:

- Contact your regional support representative at the number listed below.
- Covers protect the interface between the cable and the battery.

---

North American Region

1-800-PACKARD

European Region

49-202-291-2000

Asia Pacific Region

65-730-9900

South American Region

55-12-378-2002

http://delphi.com/products/connect
Delphi Packard Electric designs and manufactures a wide selection of cable seals and cavity plugs for a variety of connection systems applications. The following chart captures only a few of the diverse sealing products available for your design needs. Please contact your Delphi Packard Electric representative for additional product selections and application information.

### 3.6mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>–</td>
<td>15327913</td>
<td>1.60-1.20</td>
<td>Silicone</td>
<td>Red</td>
</tr>
<tr>
<td>15344666</td>
<td>15327918</td>
<td>2.00-1.40</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>–</td>
<td>15339412</td>
<td>2.10-1.90</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>–</td>
<td>15344324</td>
<td>2.10-1.20</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>–</td>
<td>15366022</td>
<td>1.85-1.47</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>–</td>
<td>15305351</td>
<td>2.10-1.70</td>
<td>Silicone</td>
<td>Yellow</td>
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### 3.6mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
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<tr>
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### 4.0mm INTERNAL CAVITY DIAMETER CABLE SEALS

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<th>Material</th>
<th>Color</th>
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<tbody>
<tr>
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<td>1.85-1.20</td>
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<tr>
<td>15366060</td>
<td>2.25-1.86</td>
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### 5.2mm INTERNAL CAVITY DIAMETER CABLE SEALS

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<th>Cable Diameter</th>
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<th>Color</th>
</tr>
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<tbody>
<tr>
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<td>2.15-1.60</td>
<td>Silicone</td>
<td>White</td>
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<tr>
<td>10731091</td>
<td>10737671</td>
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<td>Red</td>
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<tr>
<td>–</td>
<td>10720833</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>15344643</td>
<td>15327863</td>
<td>2.70-2.00</td>
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<td>15363992</td>
<td>15344715</td>
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<td>10737670</td>
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<td>10727065</td>
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<td>Silicone</td>
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### 5.2mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

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<td>10730124</td>
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<td>12059168</td>
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### 5.7mm INTERNAL CAVITY DIAMETER CABLE SEALS

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<tr>
<td>10720941</td>
<td>2.00-1.20</td>
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<td>2.90-2.10</td>
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### 5.8mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
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<td>10727066</td>
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<td>15344103</td>
<td>3.70-3.40</td>
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</table>

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Cable seals and cavity plugs are designed using multiple internal configurations. These design variations do not affect sealability.
- Your regional support representative will help you select the appropriate cable seal based on: cavity diameter, cable diameter, and crimp configuration requirements.
### 6.7mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
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<tr>
<td>12034365</td>
<td>12015899</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>15338470</td>
<td>15337207</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>Violet</td>
</tr>
<tr>
<td>15363980</td>
<td>15344642</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>10733035</td>
<td>10741351</td>
<td>2.40-2.00</td>
<td>Silicone</td>
<td>Lt. Brown</td>
</tr>
<tr>
<td>15363991</td>
<td>10737704</td>
<td>3.50-2.80</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>15344102</td>
<td>10720851</td>
<td>4.20-3.50</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
</tbody>
</table>

### 6.7mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12010300</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

### 6.8mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>10717456</td>
<td>10720611</td>
<td>2.30-1.50</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>10718234</td>
<td>10720613</td>
<td>3.00-2.20</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>10731103</td>
<td>10720615</td>
<td>3.70-3.40</td>
<td>Silicone</td>
<td>White</td>
</tr>
</tbody>
</table>

### 6.8mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>10720617</td>
<td>Silicone</td>
<td>Red</td>
</tr>
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</table>

### 8.5mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15344644</td>
<td>15363779</td>
<td>2.00-1.20</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>12052931</td>
<td>12052630</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>Yellow</td>
</tr>
<tr>
<td>-</td>
<td>15327998</td>
<td>2.70-2.00</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12048433</td>
<td>12048441</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>White</td>
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<tr>
<td>15344645</td>
<td>15363604</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>White</td>
</tr>
<tr>
<td>12052452</td>
<td>12048442</td>
<td>3.90-2.80</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>15337204</td>
<td>15327664</td>
<td>2.80-3.80</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>15344646</td>
<td>15363605</td>
<td>3.60-4.50</td>
<td>Silicone</td>
<td>Green</td>
</tr>
<tr>
<td>10733034</td>
<td>10733145</td>
<td>4.40-5.10</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>15344104</td>
<td>15344647</td>
<td>4.40-5.10</td>
<td>Silicone</td>
<td>Gray</td>
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</table>

### 8.5mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>12066802</td>
<td>Silicone</td>
<td>Lt. Green</td>
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### 9.8mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Reel Part #</th>
<th>Loose Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>10730240</td>
<td>10720847</td>
<td>2.40-1.60</td>
<td>Silicone</td>
<td>Lt. Brown</td>
</tr>
<tr>
<td>12059259</td>
<td>12070844</td>
<td>2.90-2.00</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>10730241</td>
<td>10738785</td>
<td>3.80-2.80</td>
<td>Silicone</td>
<td>Gray</td>
</tr>
<tr>
<td>15344032</td>
<td>10738786</td>
<td>4.50-3.60</td>
<td>Silicone</td>
<td>Blue</td>
</tr>
<tr>
<td>12059257</td>
<td>12052386</td>
<td>5.10-4.40</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

### 9.8mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>12059255</td>
<td>Silicone</td>
<td>Lt. Green</td>
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### 13.75mm INTERNAL CAVITY DIAMETER CABLE SEALS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Diameter</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15327126</td>
<td>4.30-3.40</td>
<td>Silicone</td>
<td>Dk. Red</td>
</tr>
<tr>
<td>10720883</td>
<td>6.40-6.00</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

### 13.75mm INTERNAL CAVITY DIAMETER CAVITY PLUGS

<table>
<thead>
<tr>
<th>Part #</th>
<th>Material</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>10720907</td>
<td>Silicone</td>
<td>Green</td>
</tr>
</tbody>
</table>

http://delphi.com/products/connect
Using a proven terminal interface technology and an enhanced crimp configuration, 56 Series Device Connections remain an industry standard. A number of standard industry device connection systems are immediately available.

### 56 Series Female Terminals Unsealed

<table>
<thead>
<tr>
<th>Part #</th>
<th>Cable Range (mm²)</th>
<th>Material</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12124512*</td>
<td>0.80-0.50</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124513</td>
<td>0.80-0.50</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124515*</td>
<td>2.0-1.0</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124517</td>
<td>2.0-1.0</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124518*</td>
<td>3.0</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124519</td>
<td>3.0</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124520*</td>
<td>0.80-0.50 (2 Req’d)</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124522*</td>
<td>2.0-1.0 (2 Req’d)</td>
<td>Brass</td>
<td>Tin</td>
</tr>
<tr>
<td>12124523</td>
<td>2.0-1.0 (2 Req’d)</td>
<td>Brass</td>
<td>Tin</td>
</tr>
</tbody>
</table>

### A
**Part No:** 12015306  
**Description:** Connector 1F  
**Size:** 24.8L x 13.6H x 10.7W  
**Color:** Gray  
**Material:** PA66 HS IM  
**Terminals:** See Above, 56 Series  
**Typical App:** Various

### B
**Part No:** 12004267  
**Description:** Connector 1F  
**Size:** 24.8L x 13.6H x 10.2W  
**Color:** Black  
**Material:** PP IM  
**Terminals:** See Above, 56 Series  
**Typical App:** Horn

### C
**Part No:** 08900863  
**Description:** Connector 2F  
**Size:** 24.8L x 10.6H x 19.2W  
**Color:** Black  
**Material:** PP  
**Terminals:** See Above, 56 Series  
**Typical App:** Switch

### D
**Part No:** 02873407  
**Description:** Connector 2F  
**Size:** 24.8L x 9.8H x 21.7W  
**Color:** Black  
**Material:** PP  
**Terminals:** See Above, 56 Series  
**Typical App:** Various

### Section Notes:
- Contact your regional support representative at the number listed below.
- Nib on terminal provides increased retention when used with specific mating blade.
### A
**PART NO:** 02973385  
**DESCRIPTION:** Connector 2F  
**SIZE:** 24.2L x 16.8H x 16.7W  
**COLOR:** Black  
**MATERIAL:** PP  
**TERMINALS:** See Page 314  
**TYPICAL APP:** Various

### B
**PART NO:** 02984959  
**DESCRIPTION:** Connector 3F  
**SIZE:** 24.8L x 8.4H x 32.0W  
**COLOR:** Black  
**MATERIAL:** PP  
**TERMINALS:** See Page 314  
**TYPICAL APP:** Various

### C
**PART NO:** 08905790  
**DESCRIPTION:** Connector 3F  
**SIZE:** 24.8L x 10.4H x 40.6W  
**COLOR:** Black  
**MATERIAL:** PP  
**TERMINALS:** See Page 314  
**TYPICAL APP:** Switch

### D
**PART NO:** 02965019  
**DESCRIPTION:** Connector 4F  
**SIZE:** 24.8L x 12.9H x 40.9W  
**COLOR:** Gray  
**MATERIAL:** PP 40% TF  
**TERMINALS:** See Page 314  
**TYPICAL APP:** Relay

---

http://delphi.com/products/connect
A PART NO: 12004327
DESCRIPTION: Connector 5F
SIZE: 25.0L x 16.0H x 31.3W
COLOR: Brown
MATERIAL: PP
TERMINALS: See Page 314
TYPICAL APP: Various

B PART NO: 12052978
DESCRIPTION: Connector 6F
SIZE: 24.8L x 31.7H x 31.3W
COLOR: Natural
MATERIAL: PP
TERMINALS: See Page 314
TYPICAL APP: Switch

C PART NO: 02984017
DESCRIPTION: Connector 6F
SIZE: 24.8L x 34.5H x 29.6W
COLOR: Black
MATERIAL: PP
TERMINALS: See Page 314
TYPICAL APP: Switch

D PART NO: 02965977
DESCRIPTION: Connector 8F
SIZE: 24.8L x 17.2H x 41.4W
COLOR: Black
MATERIAL: PP
TERMINALS: See Page 314
TYPICAL APP: Various

http://delphi.com/products/connect
Connectors are positively positioned within the vehicle via the use of Delphi Packard’s integral connector clips. These clips are easily assembled to the connectors and reliably remain in position. Designs incorporate features that prevent movement or rattling regardless of driving conditions.

A  PART NO: 12186353
DESCRIPTION: Clip (Self Locking)
SIZE: 25.4L x 24.8H x 8.5W
COLOR: Black
MATERIAL: PA66 HS IM

B  PART NO: 12047835
DESCRIPTION: Clip
SIZE: 12.2L x 23.8H x 8.4W
COLOR: Black
MATERIAL: PA6
NOTE: Attach by sonic weld (preferred) or adhesive.

C  PART NO: 12084149 (Black)
MATERIAL: PP IM
PART NO: 12110290 (Gray)
MATERIAL: PA66 HS IM
DESCRIPTION: Clip (Self Locking)
SIZE: 25.4L x 19.5H x 8.5W

D  PART NO: 12110517
DESCRIPTION: Clip (Self Locking)
SIZE: 32.3L x 26.8H x 25.4W
COLOR: Black
MATERIAL: PA66 HS IM

E  PART NO: 12110783
DESCRIPTION: Clip (Self Locking)
SIZE: 25.4L x 25.8H x 16.0W
COLOR: Black
MATERIAL: PA66 HS IM

SECTION NOTES:
Contact your regionl support representative at the number listed below.
• Product information shown is a representative sample of the available plastic and metal clips.
• Self-locking clips require connectors with self-locking features.

http://delphi.com/products/connect
A PART NO: 08905563
DESCRIPTION: Clip
SIZE: 12.2L x 18.6H x 10.1W
COLOR: Black
MATERIAL: PP IM
NOTE: Attach by sonic weld (preferred) or adhesive.

B PART NO: 12084561
DESCRIPTION: Clip
SIZE: 12.2L x 17.4H x 10.1W
COLOR: Gray
MATERIAL: PA66 HS IM
NOTE: Attach by sonic weld (preferred) or adhesive.

C PART NO: 10717452
DESCRIPTION: Clip (Self-Locking)
SIZE: 19.0L x 13.0H x 13.0W
COLOR: Black
MATERIAL: PA66

D PART NO: 15439875
DESCRIPTION: Clip (Self-Locking)
SIZE: 23.0L x 12.8H x 21.4W
COLOR: Black
MATERIAL: PA66

E PART NO: 15427170
DESCRIPTION: Clip (Self-Locking)
SIZE: 23.0L x 12.8H x 21.4W
COLOR: Black
MATERIAL: PA66

F PART NO: 10720007
DESCRIPTION: Tube Clip (Self-Locking)
SIZE: 19.5L x 24.0H x 21.0W
COLOR: Black
MATERIAL: PA66

http://delphi.com/products/connect
### A
- **PART NO.:** 12147875
- **DESCRIPTION:** Harness Clip
- **SIZE:** 9.0L x 13.2H x 42.2W
- **COLOR:** Black
- **MATERIAL:** PA66

### B
- **PART NO.:** 15344856
- **DESCRIPTION:** Harness Clip
- **SIZE:** 9.0L x 14.2H x 36.2W
- **COLOR:** Natural
- **MATERIAL:** PP

### C
- **PART NO.:** 10719204
- **DESCRIPTION:** Fixing Clip
- **SIZE:** 11.5L x 17.0H x 20.0W
- **COLOR:** Black
- **MATERIAL:** PA66

---

**SECTION NOTES:**

- Contact your regional support representative at the number listed below.
- Product information shown is a representative sample of the available plastic and metal clips.
- Self-locking clips require connectors with self-locking features.
- Attach by Hand Arbor or air assist machine.

---

**Supplemental**

- **North American Region:** 1-800-PACKARD
- **European Region:** 49-202-291-2000
- **Asia Pacific Region:** 65-730-9900
- **South American Region:** 55-12-378-2002

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http://delphi.com/products/connect
### Supplemental

#### Connector Carriers

<table>
<thead>
<tr>
<th>PART NO</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>COLOR</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>12185083</td>
<td>2 Position Carrier</td>
<td>21.0L x 25.8H x 32.0W</td>
<td>Black</td>
<td>PA6 15% GF</td>
</tr>
<tr>
<td>10719975</td>
<td>4 Position Carrier</td>
<td>53.0L x 36.4H x 142.0W</td>
<td>Black</td>
<td>PA6 15% GF</td>
</tr>
<tr>
<td>10740405</td>
<td>5 Position Carrier</td>
<td>33.0L x 27.3H x 82.0W</td>
<td>Black</td>
<td>PP 20% GF</td>
</tr>
<tr>
<td>10720086</td>
<td>8 Position Carrier</td>
<td>98.0L x 37.5H x 194.5W</td>
<td>Black</td>
<td>PA6 15% GF</td>
</tr>
</tbody>
</table>

*6 STANDARD, 2 NON-STANDARD.
Application Tooling

Delphi Connection Systems offers application tooling for both automatic and hand tool operations. This section highlights various presses and dies as well as some of our more common hand tools.

Additional information on our automatic dies and presses is available by calling North American Regional Sales and Service number: 1-800-DIE-INFO (343-4636)
(All other regions contact regional support representative)

Additional information on our hand tools is available by contacting your regional support representative at the number listed at the bottom of each page.
**DELPHI PACKARD PRESSES:**

Delphi Packard offers two bench-style Speed-O-Matic presses.

- **5-TON USED FOR:** 56/58/59 series terminals and ring terminals.

**SAFETY FEATURE:**
- An optional single stroke mechanism will prevent the press from recycling if the electrical anti-repeat should fail.

**MOTOR FEATURES:**
- 1/2 H.P. (5-Ton) or 1/3 H.P. (3-Ton), 115V, 1750 rpm, single phase, 60 cycle.

Presses may be purchased, leased or rented. Contact your account representative.

**DELPHI PACKARD SPEED-O-MATIC DIES:**

Delphi Packard Speed-O-Matic dies used together with our Speed-O-Matic 3-Ton or 5-Ton press will allow a maximum application rate of up to 4,000 terminals per hour. Speed-O-Matic dies can be set up to run a variety of applications.

Therefore, when ordering an applicator die, please provide Delphi Packard with the following information:

- Terminal part number
- Gauge of cable to be crimped
- Type of cable insulation

Speed-O-Matic dies may be purchased, and certain dies are also available for rental or lease. Contact your account representative.

Please see cross-reference sheet for terminal-to-die information. See Page 336.
DELPHI PACKARD E-Z PACK DIE:

E-Z Pack Die can best be described as an advanced and flexible terminal application system.

FEATURES:
- This die consists of a die base, quick change module (terminal specific), and a conversion kit that adapts the base to various presses.
- This die may be installed in Delphi Packard’s 3 or 5-ton press, or into other manufacturers’ presses with an adapter kit.
- This die may be bench mounted or installed on wire processing cutter equipment.

ADVANTAGES:
- Reduces changeover time and downtime.
- Die changes are performed quickly and easily, without a need for special tools. Simply remove the tool module and insert the next module into the die base.

E-Z Pack Dies may be purchased, leased or rented. Contact your account representative. Please see cross reference sheet for terminal-to-die information. See Page 336.

DELPHI PACKARD LOW PROFILE SPLICE DIE AND STAND:

This air operated press and die allows splicing of two or more wire leads and provides good visibility to crimping area.

Die & stand sold as a unit.

SPECIFICATIONS:
- OVERALL HEIGHT: 1143mm (45 inches)
- OVERALL WIDTH: 914mm (36 inches)
- OVERALL DEPTH: 610mm (24 inches)
**DELPHI PACKARD FLEX-GUARD CONDUIT CUTTER:**

This versatile machine is designed for use both as a production line machine and for bulk conduit cutting operations.

**FOR PRODUCTION LINE OPERATIONS:**

- With machine modifications, will cut up to three different lengths of conduit in any pre-determined sequence.

**FOR BULK CUTTING OPERATIONS:**

- Will cut as many as 99,999 pieces of conduit of the same length in one continuous operation.

This cutter requires both electrical and pneumatic connections.

**SPECIFICATIONS:**

- **OVERALL HEIGHT:** 1854mm (73 inches)
- **OVERALL WIDTH:** 787mm (31 inches)
- **OVERALL DEPTH:** 330mm (13 inches)
- **POWER REQUIREMENTS:** Electrical-440 volt, 60 cycle AC, 110 volt may be requested.

---

**DELPHI PACKARD AUTOMATIC CABLE SEAL APPLICATOR:**

This tool is designed to automatically apply cable seals from a continuous mylar carrier strip onto unstripped cable. Cable may range in size from 0.22mm² gauge (thin wall) to 5.0mm² gauge (heavy wall).

This applicator is designed for use on automatic cable processing equipment.

**Cuts Various Lengths**

**Versatile**

**Easy to Operate**

**No Progression Adjustment**

**Quick Change Tooling**

**Efficient**

**DELPHI Packard Manual Cable Seal Insertion Block:**

This block is a machined piece of aluminum, approximately 1" thick, 6" wide, and 12" long. There are 80 holes drilled to correspond to the dimensions of Delphi Packard's various cable seals. Seals may be inserted into the block as loose piece or on mylar tape if desired. This Seal Insertion Block is designed for lower volume applications.

---

**WEATHER-Pack 6060 Gauge as a Process Control Aid:**

**Specifications:**
- **Weight:** 480g (1.05 lb.)
- **Length:** 102mm (4 inches)
- **Width:** 38mm (1-1/2 inches)
- **Height:** 35mm (1-3/8 inches)

This gauge is used as a process aid to verify that terminals are crimped and mated properly.
A  PART NO: 12040070
APPLICATION: Unsealed Doubles
Core and Insulation
CABLE RANGE (mm²): 2.0-0.50

B  PART NO: 06285847
APPLICATION: Unsealed All Purpose
Core and Insulation
CABLE RANGE (mm²): 2.0-0.50 (5.0-3.0 Core Only)

C  PART NO: 12018777
APPLICATION: Unsealed All Purpose
Core and Insulation
CABLE RANGE (mm²): 0.35

D  PART NO: 12014254
APPLICATION: Sealed Weather Pack Pin and Sleeve
Core and Insulation
CABLE RANGE (mm²): 2.0-0.50

E  PART NO: 12039500
APPLICATION: Unsealed 150 Metri-Pack, 150.1 and 150.2
Pull-To-Seat
Core and Insulation
CABLE RANGE (mm²): 1.0-0.35

http://delphi.com/products/connect
A **PART NO:** 12070948  
**APPLICATION:** Unsealed Micro-Pack 100, Female only  
Core and Insulation  
**CABLE RANGE (mm²):** 2.0-0.35

B **PART NO:** 12070947  
**APPLICATION:** Unsealed Metri-Pack, Female only  
Core and Insulation  
**CABLE RANGE (mm²):** 5.0-3.0

C **PART NO:** 12071687  
**APPLICATION:** Sealed 450 & 630 Metri-Pack  
Core and Insulation  
**CABLE RANGE (mm²):** 5.0-3.0

D **PART NO:** 12125080  
**APPLICATION:** Micro-Pack 100W  
Core and Insulation  
**CABLE RANGE (mm²):** 0.80-0.35

E **PART NO:** 12155975  
**APPLICATION:** Sealed 150 & 280 Metri-Pack  
Core and Insulation  
**CABLE RANGE (mm²):** 2.0-0.50

**SECTION NOTES:**  
- Hand crimp tools are designed for repair, prototype or low volume usage.  
- Solder with resin core solder to guarantee crimp integrity.
PART NO: 12014012
APPLICATION: Weather-Pack Male and Female
HANDLE COLOR: Clear Yellow
BUTTON COLOR: White

PART NO: 12031876
APPLICATION: Micro-Pack 100 Female
HANDLE COLOR: Red
BUTTON COLOR: Black

PART NO: 12094429
APPLICATION: GT 150; GT 280; 150 Metri-Pack; 280 Metri-Pack; 280 Tangleless & 280 Bus Bar; 630 Pull-To-Seat; Lamp Socket Bases, B-1 & W-3; 800 Metri-Pack Female
HANDLE COLOR: Green
BUTTON COLOR: White

PART NO: 12094430
APPLICATION: 56 Series; 280 Metri-Pack; 480 Metri-Pack; 630 Metri-Pack; 800 Metri-Pack Male Tangleless; Lamp Socket Bases, W-2 & C-2
HANDLE COLOR: Blue
BUTTON COLOR: White

PART NO: 12122523
APPLICATION: Micro-Pack 100W; 24Way Female 12129225; 32Way Female 12129025 and 12160423; 36Way Female 12110487
HANDLE COLOR: Gray
BUTTON COLOR: Black

PART NO: 12150860
APPLICATION: 800 Maxi-Fuse Female
HANDLE COLOR: Blue
BUTTON COLOR: Blue

http://delphi.com/products/connect
## Tooling

### Part A
- **Part No:** 12151195
- **Application:** 280 Metri-Pack 2Way Bus Bar
- **Handle Color:** Clear
- **Button Color:** Black

### Part B
- **Part No:** 12151194
- **Application:** 280 Metri-Pack 3Way Bus Bar
- **Handle Color:** Clear
- **Button Color:** Red

### Part C
- **Part No:** 12151193
- **Application:** 280 Metri-Pack 4Way Bus Bar
- **Handle Color:** Clear
- **Button Color:** Blue

### Part D
- **Part No:** 12152395
- **Application:** 280 Metri-Pack 5Way Bus Bar
- **Handle Color:** Clear
- **Button Color:** Green (Flat)

---

[Visit Delphi's website](http://delphi.com/products/connect)
### Tooling

#### TERMINAL REMOVAL

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<td>Ducon 1.5 and 2.8 One Tang</td>
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**North American Region**

- 1-800-PACKARD

**European Region**


**Asia Pacific Region**

- 65-730-9900

**South American Region**

- 55-12-378-2002

**Part A**: Part No: 10739585  
Application: Ducon 4.8 and 6.3  
Handle Color: Black

**Part B**: Part No: 10714774  
Application: VF 2.8  
Handle Color: Black

**Part C**: Part No: 10714792  
Application: VF 6.3  
Handle Color: Black

PART NO: 12122727
APPLICATION: Cavity Plug Insertion Tool
150 Metri-Pack Series
HANDLE COLOR: Clear
BUTTON COLOR: Green

PART NO: 12121897
APPLICATION: Cavity Plug Insertion Tool
280 Metri-Pack Series
HANDLE COLOR: Yellow
BUTTON COLOR: Blue

PART NO: 12123162
APPLICATION: Cavity Plug Insertion Tool
480 Metri-Pack Series
HANDLE COLOR: Yellow
BUTTON COLOR: Green

PART NO: 12122584
APPLICATION: Cavity Plug Insertion Tool
630 Metri-Pack Series
HANDLE COLOR: Clear
BUTTON COLOR: Red

PART NO: 12150547
APPLICATION: Cavity Plug Removal Tool
630 Metri-Pack Series
HANDLE COLOR: Blue
BUTTON COLOR: Green

PART NO: 12075402
APPLICATION: Lamp Socket Insert Removal Tool
for W-3 Right Angle Wedge Base

North American Region 1-800-PACKARD
European Region 49-202-291-2000
Asia Pacific Region 65-730-9900
South American Region 55-12-378-2002

http://delphi.com/products/connect
A  PART NO: 12180082
APPLICATION: Retainer Removal Tool for 100W Connector 24Way 12129225
HANDLE COLOR: Blue
BUTTON COLOR: Red

B  PART NO: 12152019
APPLICATION: Retainer Removal Tool for 100W Connector 32Way 12129025
HANDLE COLOR: Gray
BUTTON COLOR: Black

C  PART NO: 15313882
APPLICATION: GT Male Terminal Stabilizer Removal Tool
HANDLE COLOR: Blue
BUTTON COLOR: White

D  PART NO: 12094441
APPLICATION: All Purpose Large Secondary Lock/TPA Removal Tool
HANDLE COLOR: Red
BUTTON COLOR: White

E  PART NO: 12122647
APPLICATION: All Purpose Small Secondary Lock/TPA Removal Tool
HANDLE COLOR: Red
BUTTON COLOR: Red

F  PART NO: 12018256
APPLICATION: Wire Insulation Stripper
HANDLE COLOR: Blue
CABLE RANGE (mm²): 8.0-0.35

http://delphi.com/products/connect
## Terminal/Crimp Applicator Cross Reference

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After Speed-O-Matic E-Z Part Termination Die Part Pack Die

http://delphi.com/products/connect
### TERMINAL/CRIMP APPLICATOR

#### CROSS REFERENCE

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ABBREVIATIONS

ABS ........ Acrylonitrile Butadiene Styrene
amps ........................................ Amperes
App ........................................ Application
°C ........................................ Degrees Centigrade
cm ........................................ Centimeter
CPA ........ Connector Position Assurance
dc ........................................ Direct Current
DIN .... Deutsche Industry Norm (Standard)
Dk ........................................ Dark
DS .................................. Double Sping
EPDM .. Ethylene Propylene Diene Monomer
EMS ...... Engine Management Systems
°F ......................................... Degrees Fahrenheit
F ........................................ Female
GB ....................................... Glass Bead
GF ...................................... Glass Fiber
g ........................................ Grams
GT .................................. Global Terminal
H ........................................ Height
HS .................................. Heat Stabilized
HVAC .. Heating Ventilation Air Conditioning
IM .................................. Impact Modified
IMLD ................... Insert Molded
ISO ...... International Standards Organization
JIS .................. Japanese Industry Standard
K ........................................ Length
Lt ...................................... Light
M ........................................ Male
Max .................................. Maximum
Md .................................. Medium
Min .................................. Minimum
mm ................................ Millimeter
MF .................................. Mineral Filled
N ........................................ Newtons
mV ................................ Millivolt
mV/amp .............. Millivolt per amp
mW ................................ Milliwatts
Nm .................................. Newtons Meter
No. ...................... Number
NPTF .................. National Pipe Thread Fine
NTC .................. Negative Temperature Coefficient
OBD ............. On Board Diagnostics
O.D. .................... Outside Diameter
PA66 .................. Polyamide 66
PA66 .. Polyamide 66
PA6 .................. Polyamide 6
PA12 .................. Polyamide 12
PBT ........ Polybutylene Terephthalate (Polyester)
P/C ................ Printed Circuit
PC .................. Polycarbonate
PEI .................. Polyetherimide
PET .......... Polyethylene Terephthalate Polyester
PLR ........ Primary Lock Reinforcement
PP .................. Polypropylene
PPE ............... Polyphenylene Ether
PVC .......... Polyvinyl Chloride
Ref ................ Reference
RT ................ Right
SAE ........ Society of Automotive Engineers
SST ................ Stainless Steel
TF .................. Talc Filled
TEE ........... Thermoplastic Polyester Olefinic
TPA ........... Terminal Position Assurance
V ................ Volt
W ................ Width

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