

# Metri-Pack Series

# 150



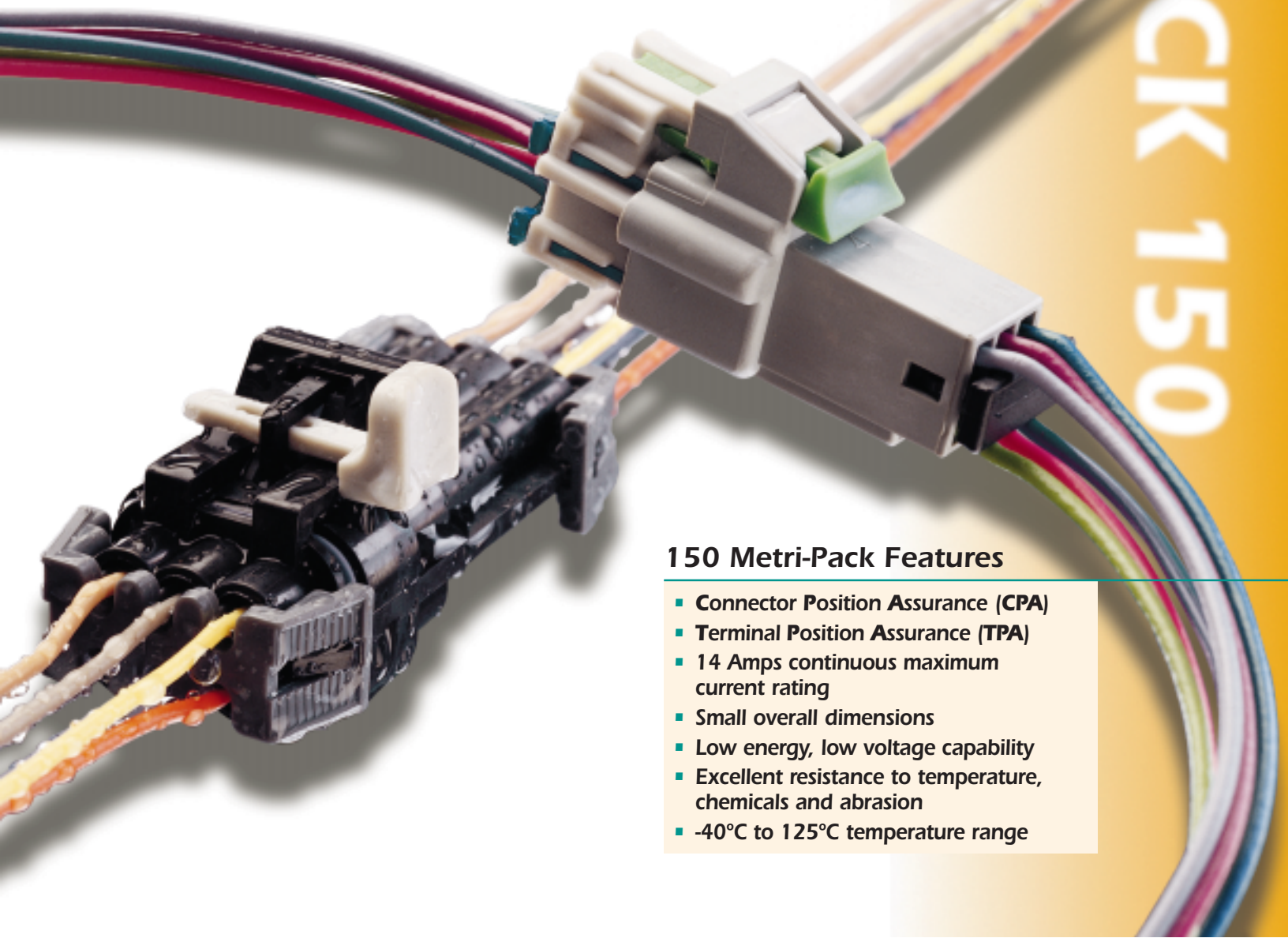
Available in device and in-line connections for vehicle applications, Metri-Pack 150 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

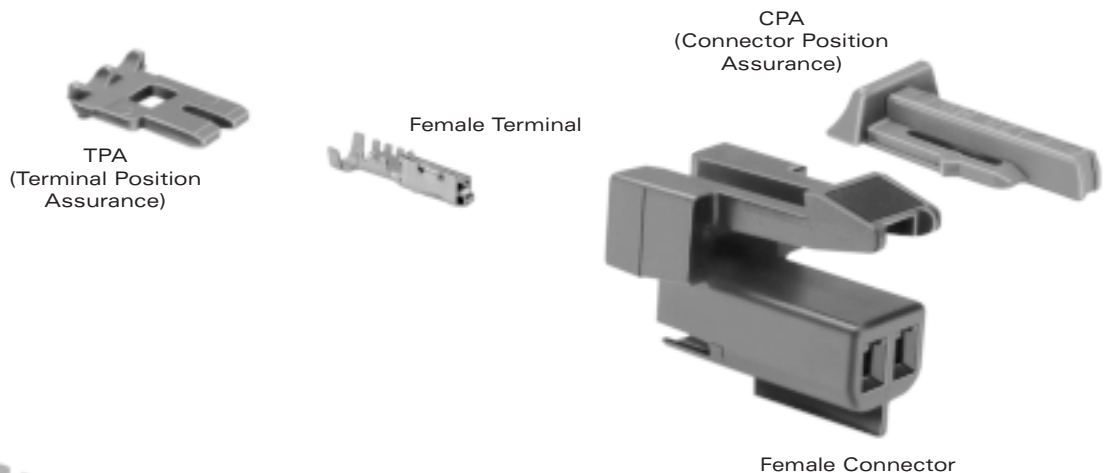
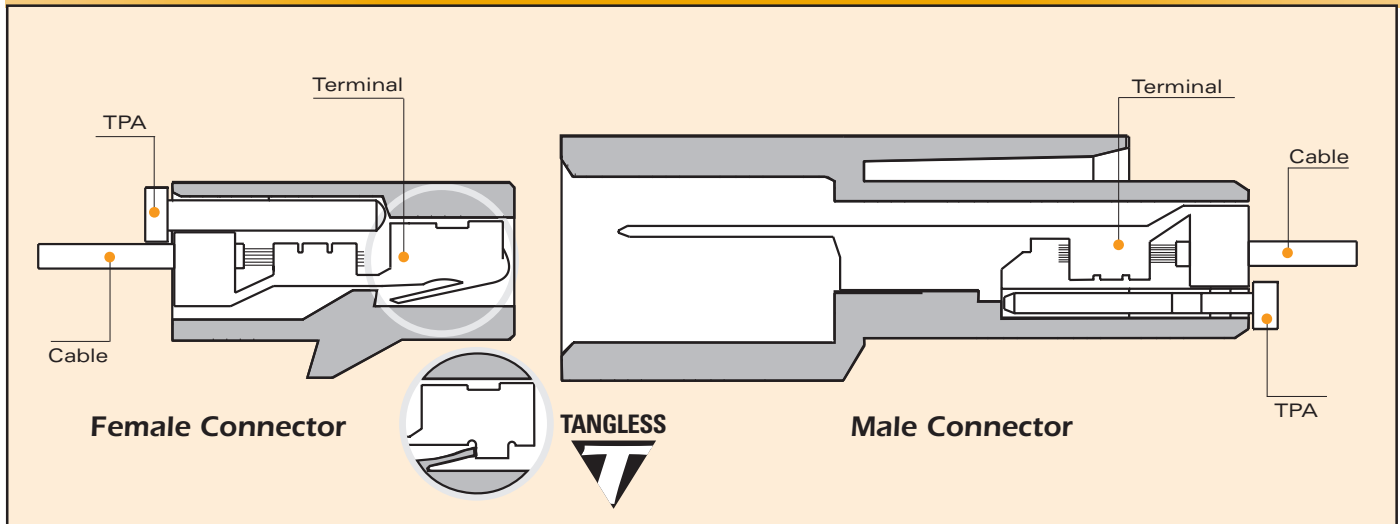


## 150 Metri-Pack Features

- **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



## Cross Sectional View



### 150 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material       | Plating |
|----------|--------------------------------|----------------|---------|
| 12047767 | 1.0-0.80                       | Silicon Bronze | Tin     |
| 12064971 | 0.50-0.35                      | Silicon Bronze | Tin     |

TANGLESS

### 150 TANGLESS FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material       | Plating |
|----------|--------------------------------|----------------|---------|
| 12129484 | 1.0-0.80                       | Silicon Bronze | Tin     |
| 12129373 | 0.5-0.35                       | Silicon Bronze | Tin     |

### 150 FEMALE CONNECTORS UNSEALED

| # Cavities | Connector | Color   | Material   | TPA      |
|------------|-----------|---------|------------|----------|
| 1          | 12047682  | Black   | PA66 HS IM | —        |
| 2          | 12047662  | Black   | PA66 HS IM | 12047664 |
| 2          | 12052832  | Black   | PA66 HS IM | 12047664 |
| 3          | 12047781  | Black   | PA66 HS IM | 12047783 |
| 3          | 12064758  | Black   | PA66 HS IM | 12047783 |
| 4          | 12047785  | Black   | PA66 HS IM | 12047664 |
| 4          | 12064760  | Black   | PA66 HS IM | 12047664 |
| 4          | 12092162  | Black   | PA66 HS IM | 12092164 |
| 6          | 12064762  | Gray    | PBT        | 12064764 |
| 8          | 12047886  | Black   | PA66 HS IM | 12045689 |
| 8          | 12064766  | Blue    | PBT        | 12064768 |
| 10         | 12064769  | Natural | PBT        | 12064771 |

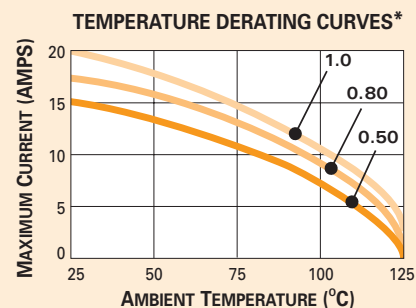
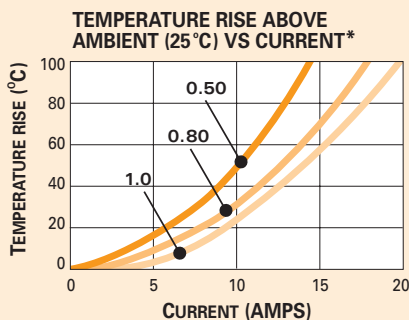
<http://delphi.com/products/connect>



## Unsealed System Application Information

**CABLE RANGE (mm<sup>2</sup>):** ..... 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

### 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 Connector

Male Terminal



TPA  
(Terminal Position Assurance)



### 150 MALE CONNECTORS UNSEALED

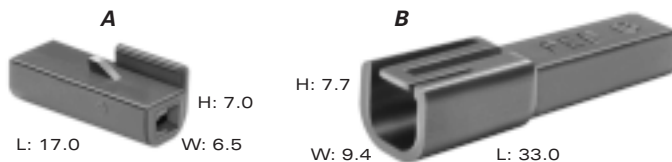
| # Cavities | Connector | Color   | Material   | TPA      |
|------------|-----------|---------|------------|----------|
| 1          | 12047683  | Black   | PA66 HS IM | —        |
| 2          | 12047663  | Black   | PA66 HS IM | 12047665 |
| 2          | 12052833  | Black   | PBT        | 12047665 |
| 3          | 12047782  | Black   | PA66 HS IM | 12047784 |
| 3          | 12064759  | Black   | PBT        | 12047784 |
| 4          | 12047786  | Black   | PA66 HS IM | 12047787 |
| 4          | 12064761  | Black   | PBT        | 12047787 |
| 4          | 12092163  | Black   | PA66 HS IM | 12092164 |
| 6          | 12064763  | Gray    | PBT        | 12064765 |
| 8          | 12045688  | Black   | PA66 HS IM | 12045690 |
| 8          | 12064767  | Blue    | PBT        | 12045690 |
| 10         | 12064770  | Natural | PBT        | 12064772 |

### 150 MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12047581 | 1.0-0.80                       | Tin Brass | Tin     |
| 12059894 | 0.50-0.35                      | Tin Brass | Tin     |

### SECTION NOTES:

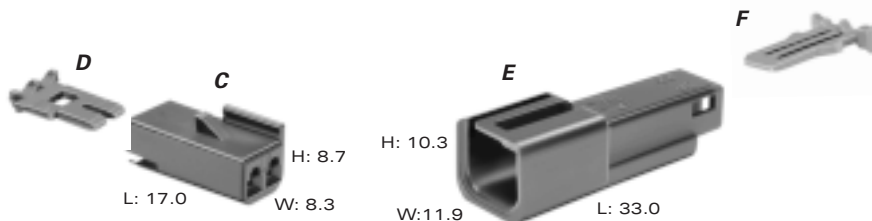
- Contact your regional support representative at the number listed below.
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 74.



Total Mated Length: 38.1mm

**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



Total Mated Length: 41.0mm

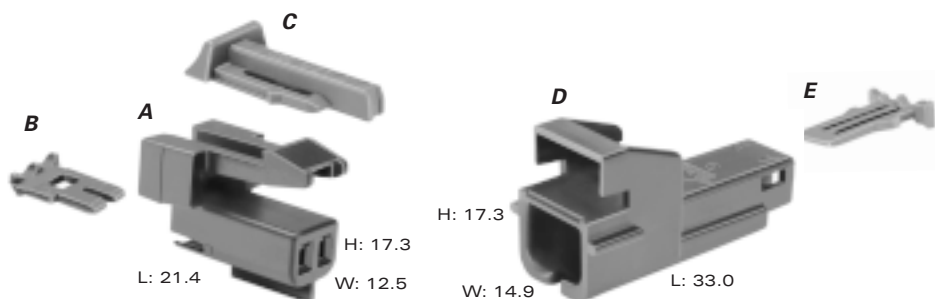
**C** PART NO: **12047662 (Black)**  
**12059249 (Natural)**  
 DESCRIPTION: Connector 2F  
 SIZE: 17.0L x 8.7H x 8.3W  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 56

**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

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

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





Total Mated Length: 43.1mm

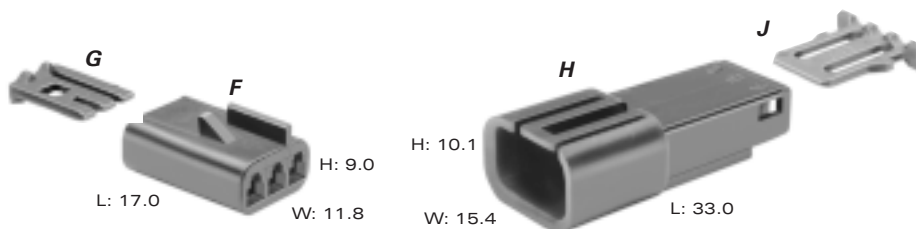
**A PART NO: 12052832**  
 DESCRIPTION: Connector 2F  
 SIZE: 21.4L x 17.3H x 12.5W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 56

**D PART NO: 12052833**  
 DESCRIPTION: Connector 2M (Clip Slot)  
 SIZE: 33.0L x 17.3H x 14.9W  
 COLOR: Black  
 MATERIAL: PBT  
 TERMINALS: See Page 57

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

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

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



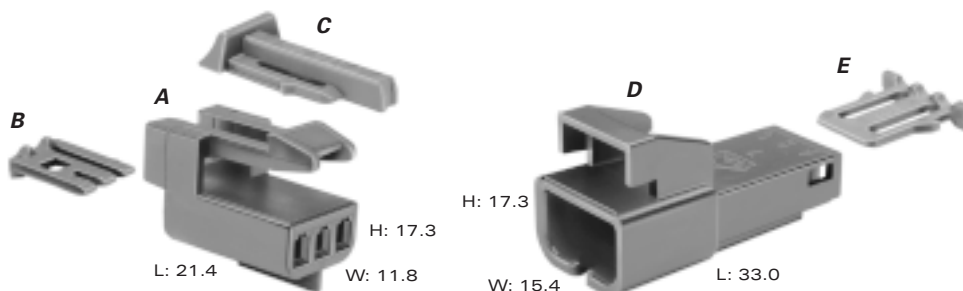
Total Mated Length: 41.3mm

**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

**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

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

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



Total Mated Length: 47.1mm

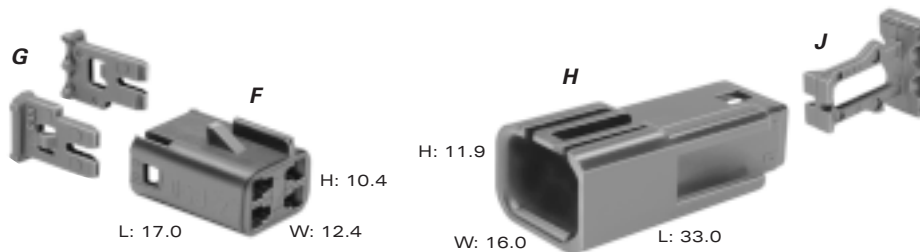
**A PART NO: 12064758**  
 DESCRIPTION: Connector 3F  
 SIZE: 21.4L x 17.3H x 11.8W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 56

**D PART NO: 12064759**  
 DESCRIPTION: Connector 3M (Clip Slot)  
 SIZE: 33.0L x 17.3H x 15.4W  
 COLOR: Black  
 MATERIAL: PBT  
 TERMINALS: See Page 57

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

**E PART NO: 12047784**  
 DESCRIPTION: TPA  
 COLOR: Gray  
 MATERIAL: PBT

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



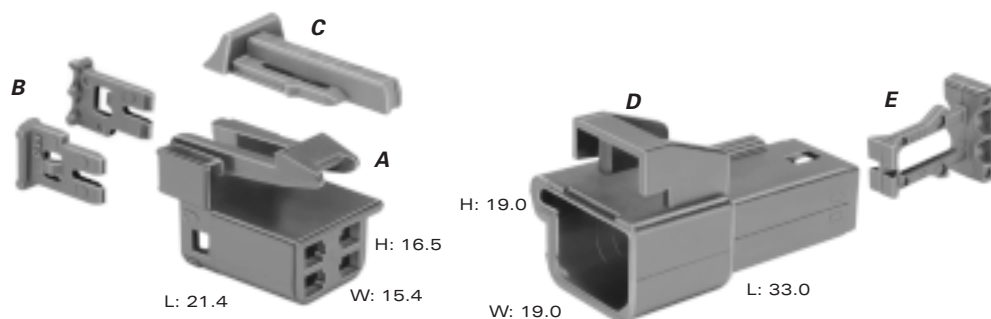
Total Mated Length: 42.2mm

**F PART NO: 12047785**  
 DESCRIPTION: Connector 4F  
 SIZE: 17.0L x 10.4H x 12.4W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 56

**H PART NO: 12047786**  
 DESCRIPTION: Connector 4M (Clip Slot)  
 SIZE: 33.0L x 11.9H x 16.0W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 57

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

**J PART NO: 12047787**  
 DESCRIPTION: TPA  
 COLOR: Blue  
 MATERIAL: PBT



Total Mated Length: 47.9mm

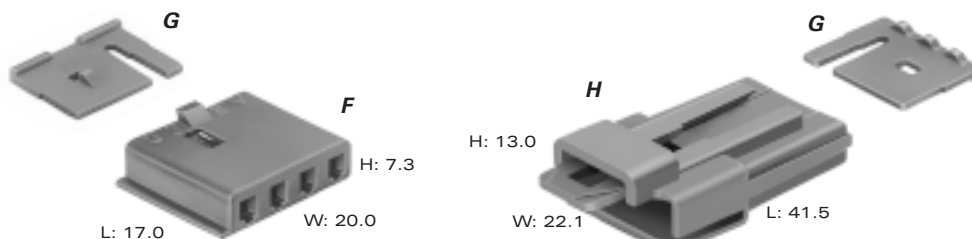
**A** PART NO: 12064760  
DESCRIPTION: Connector 4F  
SIZE: 21.4L x 16.5H x 15.4W  
COLOR: Black  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 56

**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

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

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

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

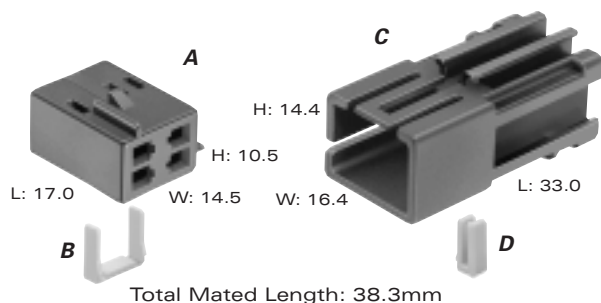


Total Mated Length: 43.3mm

**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

**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

**G** PART NO: 12092164  
DESCRIPTION: TPA  
NUMBER REQ: 2  
COLOR: Blue  
MATERIAL: PA6

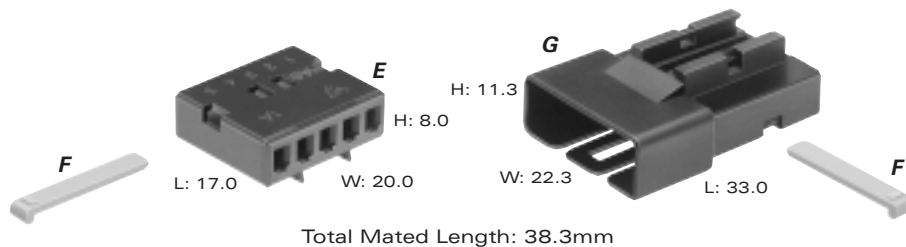


**A** PART NO: **12131283**  
 DESCRIPTION: Connector 4F  
 SIZE: 17.0L x 10.5H x 14.5W  
 COLOR: Black  
 MATERIAL: PA66  
 TERMINALS: See Page 56

**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

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

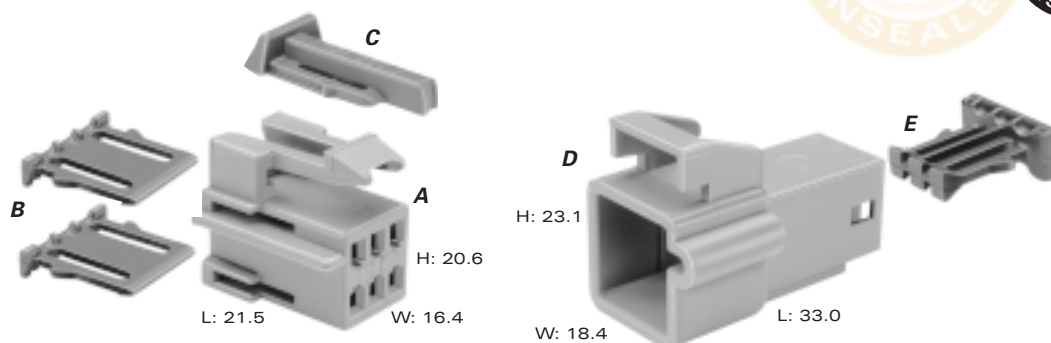
**D** PART NO: **12131372**  
 DESCRIPTION: Secondary Lock  
 COLOR: Yellow  
 MATERIAL: PA66 25% GF  
 NOTE: M Clip-on Connector also available



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

**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

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



Total Mated Length: 50.1mm

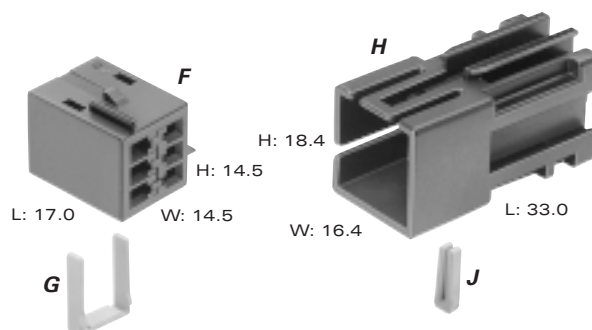
**A PART NO: 12064762**  
 DESCRIPTION: Connector 6F  
 SIZE: 21.5L x 20.6H x 16.4W  
 COLOR: Gray  
 MATERIAL: PBT  
 TERMINALS: See Page 56

**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



Total Mated Length: 38.3mm

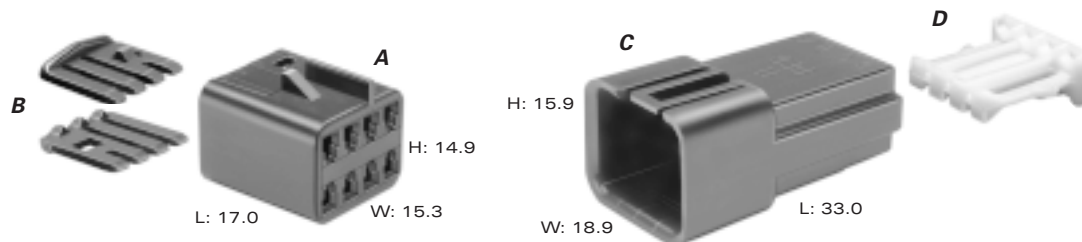
**F PART NO: 15396848**  
 DESCRIPTION: Connector 6F  
 SIZE: 17.0L x 14.5H x 14.5W  
 COLOR: Black  
 MATERIAL: PA66  
 TERMINALS: See Page 56

**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





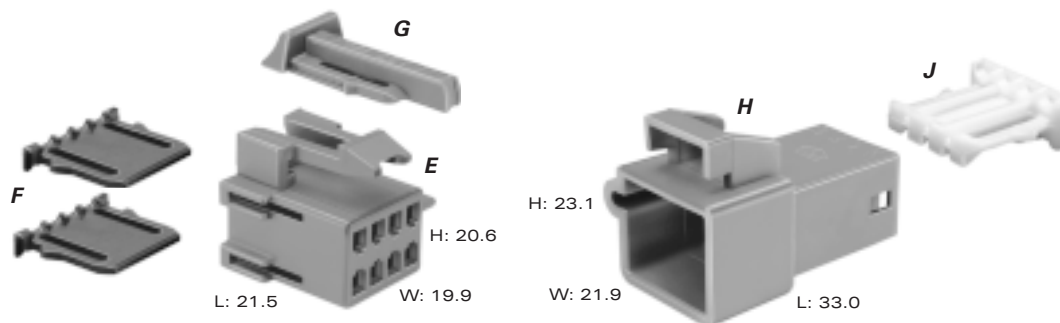
Total Mated Length: 41.2mm

**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

**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

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

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



Total Mated Length: 48.3mm

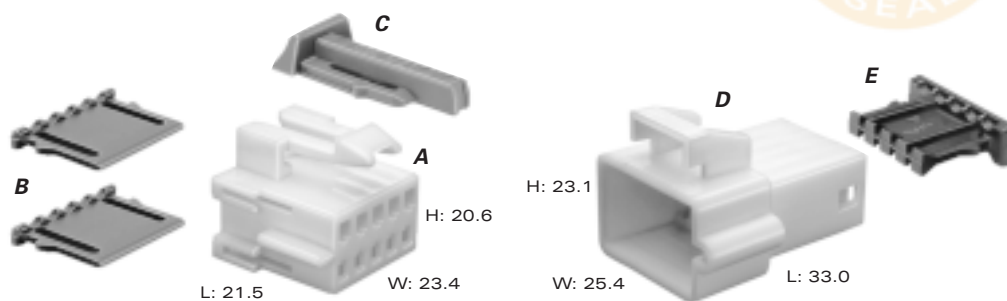
**E PART NO: 12064766**  
 DESCRIPTION: Connector 8F  
 SIZE: 21.5L x 20.6H x 19.9W  
 COLOR: Blue  
 MATERIAL: PBT  
 TERMINALS: See Page 56

**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

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

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

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



Total Mated Length: 48.3mm

**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

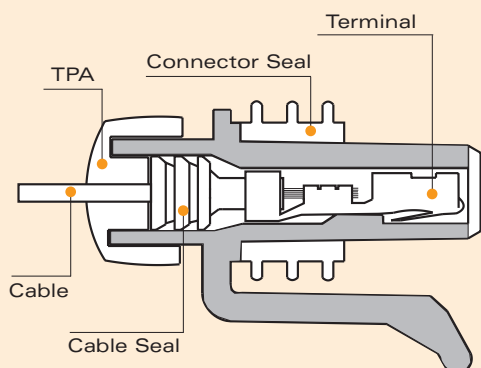
**C** PART NO: **12052834**  
 DESCRIPTION: CPA  
 COLOR: Green  
 MATERIAL: PP

**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

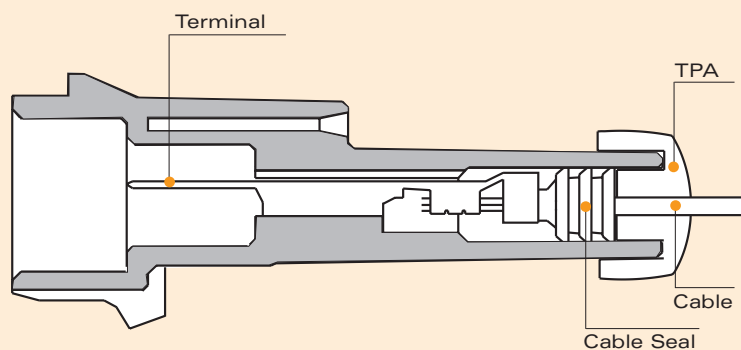
**E** PART NO: **12064772**  
 DESCRIPTION: TPA  
 COLOR: Black  
 MATERIAL: PBT



## Cross Sectional View



Female Connector Assembly



Male Connector



## 150 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12048074 | 1.0-0.80                       | Silicon Bronze   | Tin           |
| 12084200 | 0.50-0.35                      | Silicon Bronze   | Tin           |
| 12160223 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |
| 12160222 | 0.50-0.35                      | Beryllium Copper | Silver/Nickel |



## 150.2 PULL-TO-SEAT FEMALE TERMINALS\*

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12124075 | 1.0-0.80                       | Silicon Bronze   | Tin           |
| 12124076 | 0.50-0.35                      | Silicon Bronze   | Tin           |
| 12161184 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |

\* To be used with female connections, see page 76



## 150 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color   |
|-------------|--------------|----------------|----------|---------|
| 12052924    | 12048086     | 2.85-2.03      | Silicone | Dk. Red |
| 12089442    | 12089678     | 2.15-1.60      | Silicone | White   |
| 12052925    | 12048087     | 1.70-1.29      | Silicone | Blue    |
| 12124669    | 12084193     | 1.009-0.995    | Silicone | Tan     |

TPA  
(Terminal Position Assurance)

Female Terminal



Female Connector Assembly

## 150 FEMALE CONNECTOR ASSEMBLIES SEALED

| # Cavities | Conn. Asm. | Color   | Material   | TPA      |
|------------|------------|---------|------------|----------|
| 2          | 12052641   | Black   | PA66 HS IM | 12052634 |
| 3          | 12110293   | Black   | PA66 HS IM | 12052845 |
| 4          | 12162144   | Black   | PA66 HS IM | 12047948 |
| 5          | 12146045   | Natural | PA6        | 12092844 |
| 6          | 12052848   | Black   | PA6        | 12052850 |
| 8          | 12047937   | Black   | PA66 HS IM | 12066304 |
| 10         | 12065425   | Black   | PA66 HS IM | 12124264 |

<http://delphi.com/products/connect>

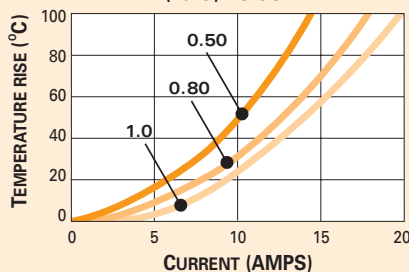


## Sealed System Application Information

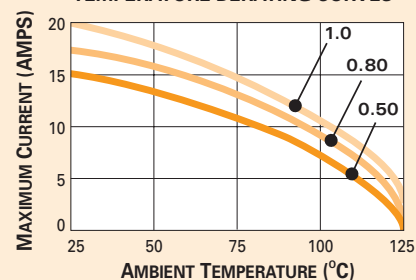
CABLE RANGE (mm<sup>2</sup>): ..... 0.35-1.0  
 CURRENT RANGE (AMPS): ..... 0-14  
 TEMP RANGE °C: ..... -40 to 125  
 RESISTANCE: ..... <10mΩ@20mV  
 VOLTAGE DROP: .... <10.0 mV/amp  
 CENTERLINE SPACING (mm): ..... 6.0  
 BLADE WIDTH (mm): ..... 1.5

### 150 SERIES 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.



CPA  
(Connector Position  
Assurance)



Male Connector

Male Terminal



Cable Seal



TPA  
(Terminal Position  
Assurance)



### 150 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12045773 | 1.0-0.80                       | Tin Brass | Tin     |
| 12077628 | 0.50-0.35                      | Tin Brass | Tin     |



### 150 MALE CONNECTORS SEALED

| # Cavities | Connector | Color   | Material   | TPA      |
|------------|-----------|---------|------------|----------|
| 2          | 12162000  | Black   | PA66 HS IM | 12052634 |
| 3          | 12129615  | Black   | PA66 HS IM | 12052845 |
| 4          | 12162102  | Black   | PBT 30% GF | 12047948 |
| 5          | 12103974  | Natural | PBT 30% GF | 12092844 |
| 6          | 12124107  | Black   | PA66 HS IM | 12052850 |
| 8          | 12047931  | Black   | PBT 30% GF | 15324525 |
| 10         | 12045808  | Black   | PBT 30% GF | 12124264 |

### 150 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color   |
|----------|------------------------|----------|---------|
| 12059168 | 5.2mm                  | Silicone | Dk. Red |

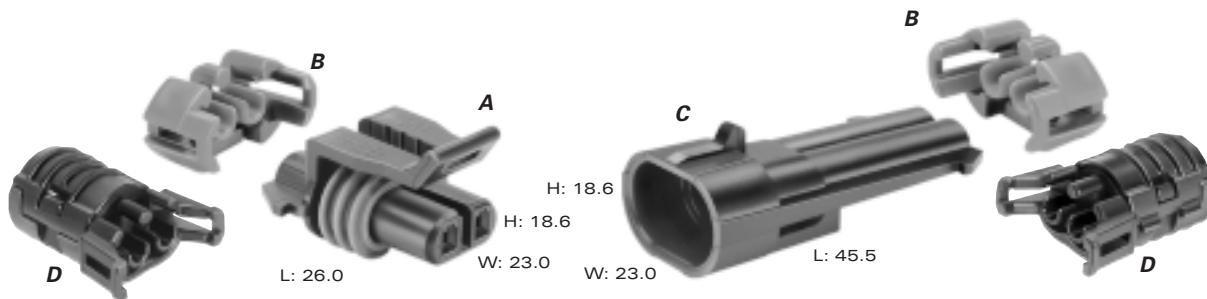
\*Cavity plugs seal unused female and male cavities

### 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.

<http://delphi.com/products/connect>



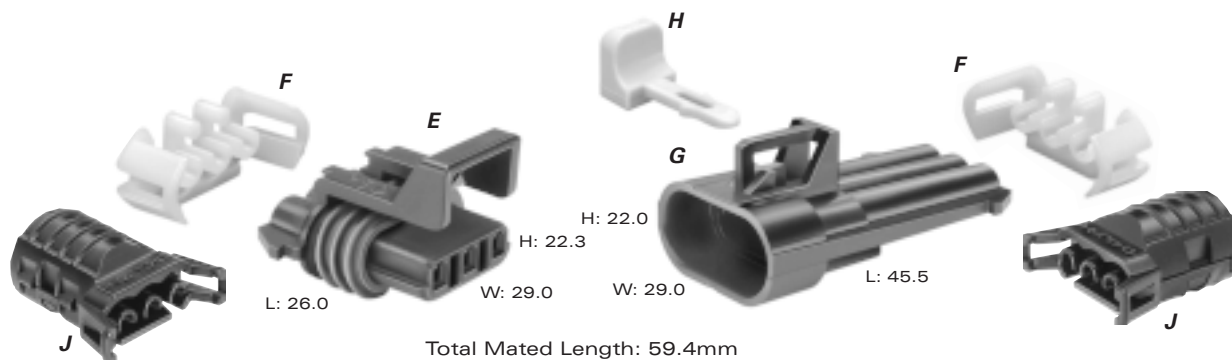
Total Mated Length: 58.5mm

**A PART NO: 12052641 (Black)  
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

**C PART NO: 12162000 (Black)  
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 67  
SEALS/PLUGS: See Page 66, 67

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

**D PART NO: 15327799 (Optional)**  
DESCRIPTION: Conduit TPA  
NUMBER REQ: 2  
COLOR: Black  
MATERIAL: PA6



Total Mated Length: 59.4mm

**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

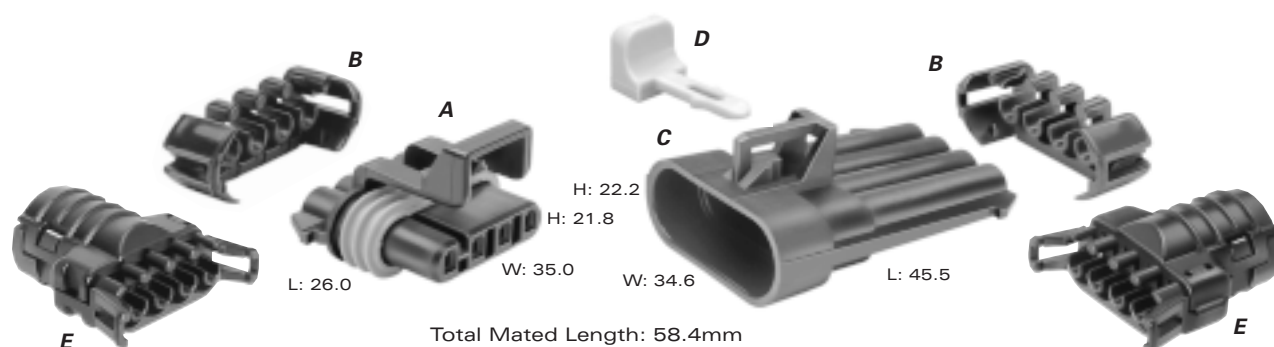
**G PART NO: 12129615**  
DESCRIPTION: Connector 3M (Clip Slot-Self Locking)  
SIZE: 45.5L x 22.0H x 29.0W  
COLOR: Black  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 67  
SEALS/PLUGS: See Page 66, 67

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

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

**J PART NO: 10740397 (Optional)**  
DESCRIPTION: Conduit TPA  
NUMBER REQ: 2  
COLOR: Black  
MATERIAL: PA6

<http://delphi.com/products/connect>



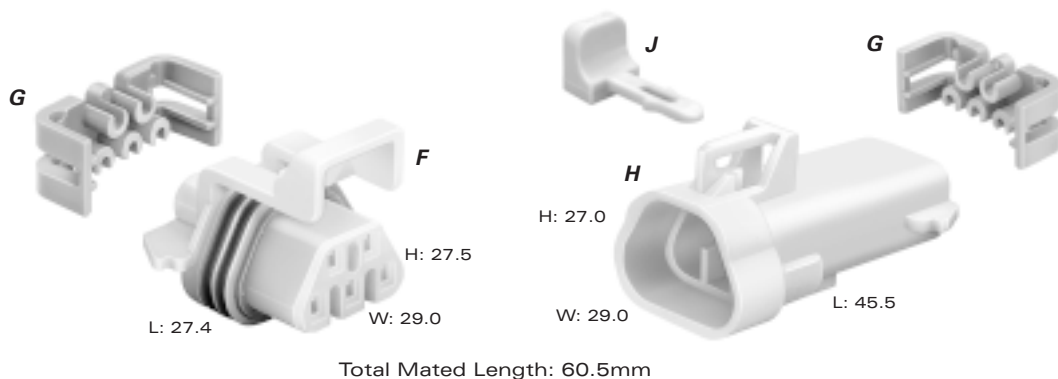
**A PART NO: 12162144**  
 DESCRIPTION: Connector Assembly 4F  
 SIZE: 26.0L x 21.8H x 35.0W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 66  
 SEALS/PLUGS: See Page 66, 67

**C PART NO: 12162102**  
 DESCRIPTION: Connector 4M (Clip Slot-Self Locking)  
 SIZE: 45.5L x 22.2H x 34.6W  
 COLOR: Black  
 MATERIAL: PBT 30% GF  
 TERMINALS: See Page 67  
 SEALS/PLUGS: See Page 66, 67

**B PART NO: 12047948**  
 DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Black  
 MATERIAL: PA66 HS IM

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

**E PART NO: 10719337 (Optional)**  
 DESCRIPTION: Conduit TPA  
 NUMBER REQ: 2  
 COLOR: Black  
 MATERIAL: PA6



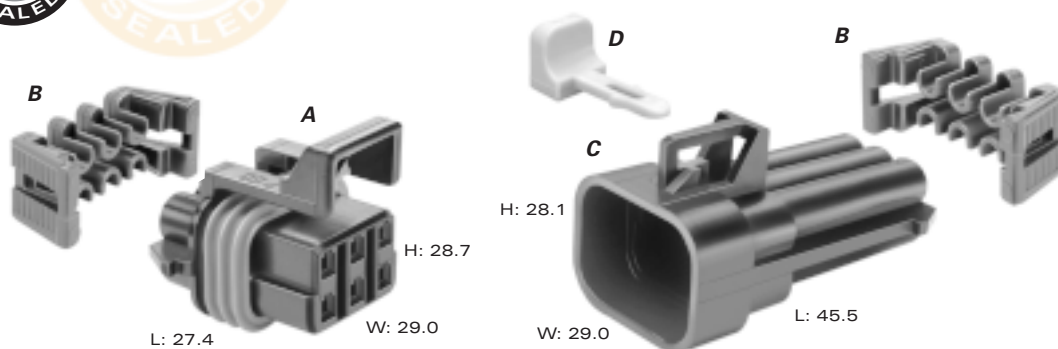
**F PART NO: 12146045**  
 DESCRIPTION: Connector Assembly 5F  
 SIZE: 27.4L x 27.5H x 29.0W  
 COLOR: Natural  
 MATERIAL: PA6  
 TERMINALS: See Page 66  
 SEALS/PLUGS: See Page 66, 67

**H PART NO: 12103974**  
 DESCRIPTION: Connector 5M  
 SIZE: 45.5L x 27.0H x 29.0W  
 COLOR: Natural  
 MATERIAL: PBT 30% GF  
 TERMINALS: See Page 67  
 SEALS/PLUGS: See Page 66, 67

**G PART NO: 12092844**  
 DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PA6

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





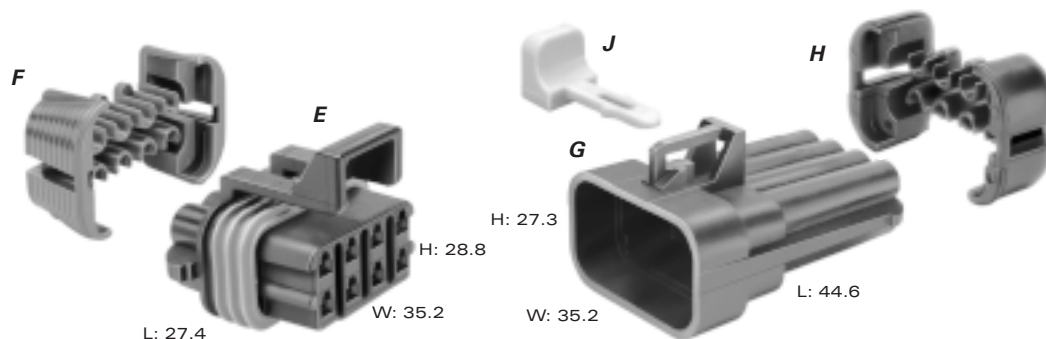
Total Mated Length: 60.5mm

**A PART NO: 12052848**  
DESCRIPTION: Connector Assembly 6F  
SIZE: 27.4L x 28.7H x 29.0W  
COLOR: Black  
MATERIAL: PA6  
TERMINALS: See Page 66  
SEALS/PLUGS: See Page 66, 67

**C PART NO: 12124107**  
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

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

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



Total Mated Length: 60.4mm

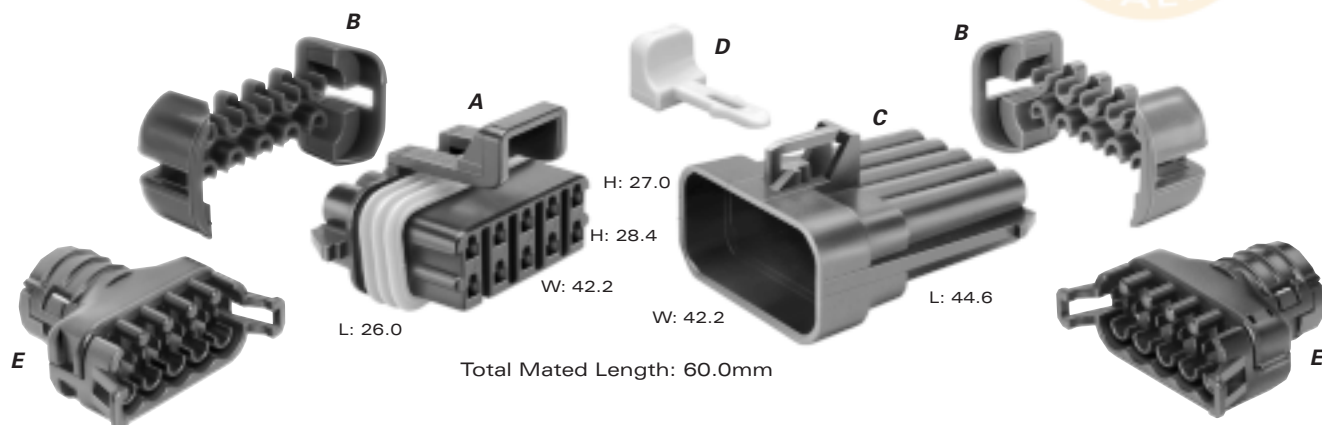
**E PART NO: 12047937 (Black)**  
DESCRIPTION: Connector Assembly 8F  
**PART NO: 12047938 (Lt. Gray)**  
DESCRIPTION: Connector Assembly 7F  
**PART NO: 12052600 (Md. Gray)**  
DESCRIPTION: Connector Assembly 5F  
SIZE: 27.4L x 28.8H x 35.2W  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 66  
SEALS/PLUGS: See Page 66, 67

**G PART NO: 12047931 (Black)**  
DESCRIPTION: Connector 8M (Clip Slot)  
**PART NO: 12047933 (Lt. Gray)**  
DESCRIPTION: Connector 7M (Clip Slot)  
**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

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

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

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



**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

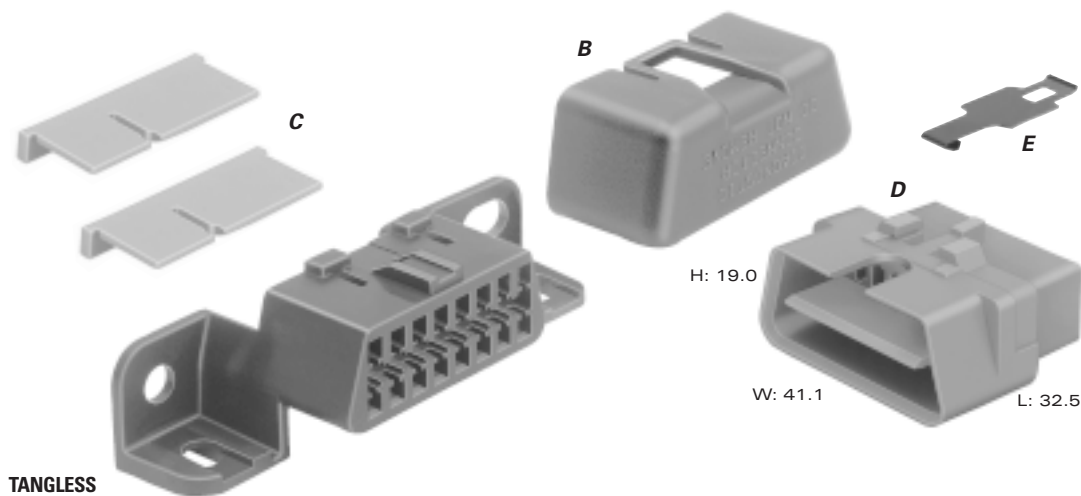
**E PART NO: 10719339 (Optional)**

DESCRIPTION: Conduit TPA  
NUMBER REQ: 2  
COLOR: Black  
MATERIAL: PA6



### 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.



**A PART NO: 12110250**  
 DESCRIPTION: Connector 16F (Fastener Mounting)  
 SIZE: 27.0L x 23.2H x 69.1W  
**PART NO: 15317575**  
 DESCRIPTION: Connector 16F (Snap Mounting)  
 SIZE: 17.0L x 23.2H x 52.0W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 56

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

**C PART NO: 12160437**  
 DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PA6

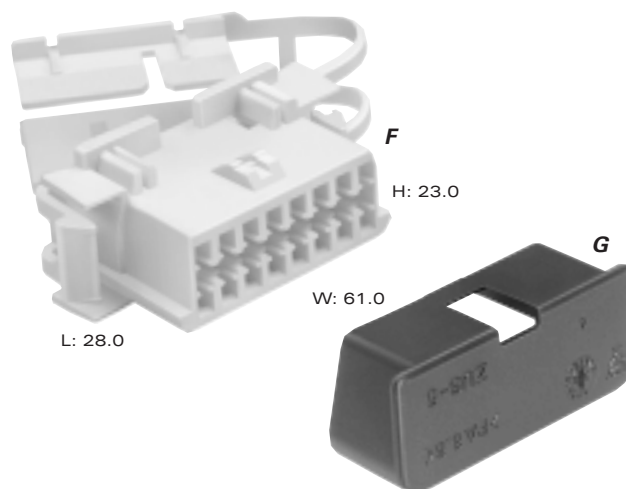
**D PART NO: 12110252**  
 DESCRIPTION: Connector 16M  
 SIZE: 32.5L x 19.0H x 41.1W  
 COLOR: Red  
 MATERIAL: PBT 30% GF  
 TERMINALS: See Page 57  
 NOTE: For molding details refer to drawing 12110256

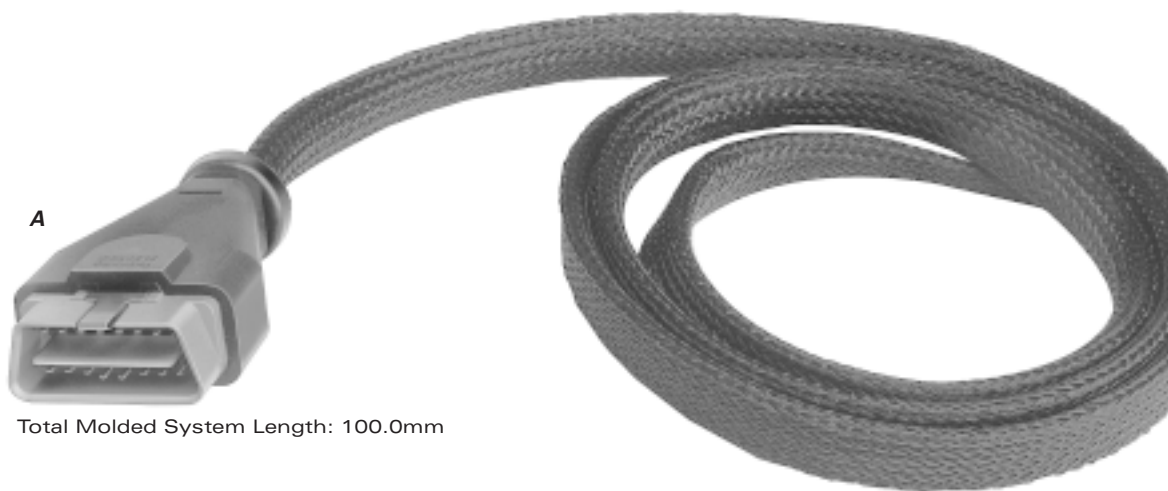
**E PART NO: 12110254**  
 DESCRIPTION: Clip  
 MATERIAL: Stainless Steel



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

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



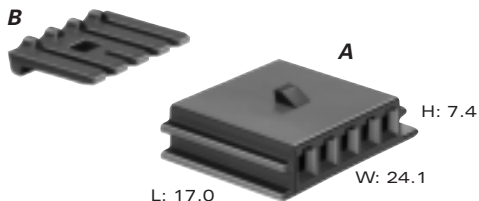


A

Total Molded System Length: 100.0mm

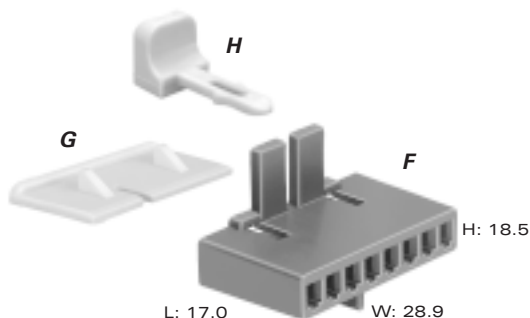
**A** DESCRIPTION: Connector Assembly 16M OBD II

|          |                  |
|----------|------------------|
| PART NO: | <b>12143692</b>  |
| LENGTH:  | 3 Feet (915mm)   |
| PART NO: | <b>12143693</b>  |
| LENGTH:  | 8 Feet (2440mm)  |
| PART NO: | <b>12143694</b>  |
| LENGTH:  | 12 Feet (3660mm) |



**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

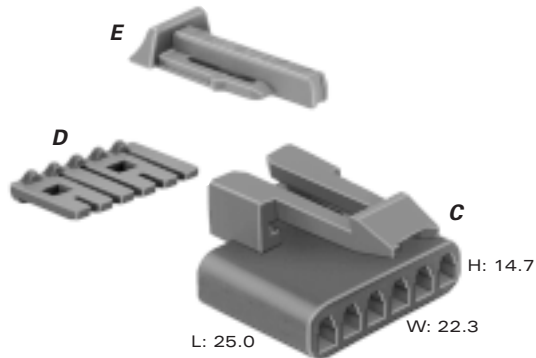
**B PART NO: 12059801**  
 DESCRIPTION: TPA  
 COLOR: Md. Gray  
 MATERIAL: PA66 HS IM



**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

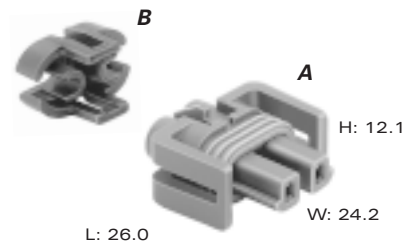
**H PART NO: 12020833**  
 DESCRIPTION: CPA  
 COLOR: Gray  
 MATERIAL: PBT



**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

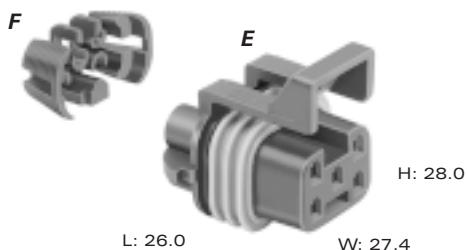
**D PART NO: 12064861**  
 DESCRIPTION: TPA  
 COLOR: Md. Gray  
 MATERIAL: PA66 HS IM

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



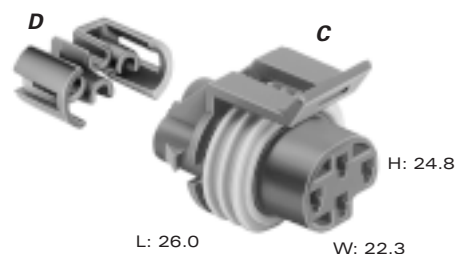
**A PART NO: 12162017**  
 DESCRIPTION: Connector Assembly 2F  
 SIZE: 26.0L x 12.1H x 24.2W  
 COLOR: Md. Gray  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 66  
 SEALS/PLUGS: See Page 66, 67  
 TYPICAL APP: Compressor

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



**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

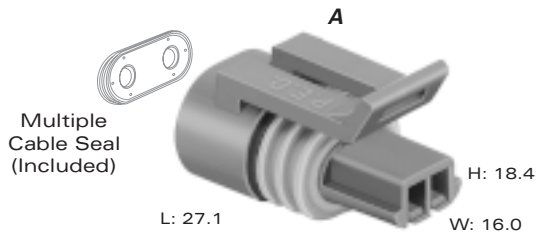
**F PART NO: 12052898**  
 DESCRIPTION: TPA  
 COLOR: Black  
 MATERIAL: PA66 HS IM



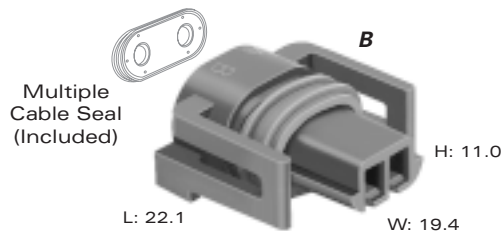
**C PART NO: 12065298**  
 DESCRIPTION: Connector Assembly 4F  
 SIZE: 26.0L x 24.8H x 22.3W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 66  
 SEALS/PLUGS: See Page 66, 67  
 TYPICAL APP: Switch

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

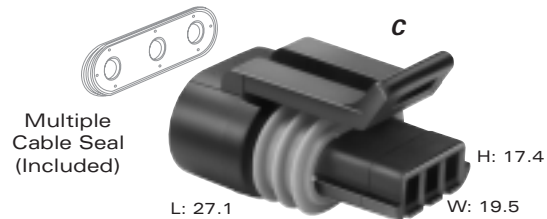
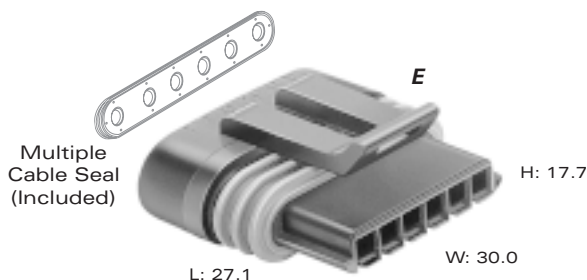




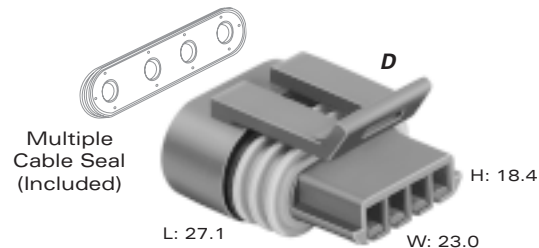
- A PART NO: 12162193 (Black/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162197 (Gray/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162194 (Black/Tan Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162198 (Gray/Tan Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162195 (Black/Orange Seal)**  
1.85 -1.47 Cable O.D.
- PART NO: 12162199 (Gray/Orange Seal)**  
1.85 -1.47 Cable O.D.
- DESCRIPTION:** Connector Assembly 2F  
**SIZE:** 27.1L x 18.4H x 16.0W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 66  
**TYPICAL APP:** Temperature Sensors



- B PART NO: 12162215 (Black/Brown Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162216 (Black/Lt. Gray Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162217 (Black/Gray Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162218 (Gray/Yellow Seal)**  
2.15 -1.65 Cable O.D.
- DESCRIPTION:** Connector Assembly 2F  
**SIZE:** 22.1L x 11.0H x 19.4W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 66  
**TYPICAL APP:** Throttle Body Injector



- C PART NO: 12162182 (Black/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162280 (Gray/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162185 (Black/Lt. Gray Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162279 (Gray/Lt. Gray Seal)**  
2.15 -1.65 Cable O.D.
- DESCRIPTION:** Connector Assembly 3F  
**SIZE:** 27.1L x 17.4H x 19.5W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 66  
**TYPICAL APP:** Crankshaft Sensor



- D PART NO: 12162188 (Black/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162191 (Black/Blue Seal)**  
2.45 -2.00 Cable O.D.
- PART NO: 12162189 (Black/Tan Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162190 (Black/Orange Seal)**  
1.85 -1.47 Cable O.D.
- DESCRIPTION:** Connector Assembly 4F  
**SIZE:** 27.1L x 18.4H x 23.0W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 66  
**TYPICAL APP:** Distributor Module

- E PART NO: 12162210 (Black/Green Seal)**  
2.66 -2.00 Cable O.D.
- PART NO: 12162260 (Black/Tan Seal)**  
2.15 -1.65 Cable O.D.
- PART NO: 12162261 (Black/Lt. Gray Seal)**  
1.85 -1.47 Cable O.D.
- DESCRIPTION:** Connector Assembly 6F  
**SIZE:** 27.1L x 17.7H x 30.0W  
**MATERIAL:** PA66 HS IM  
**TERMINALS:** See Page 66  
**TYPICAL APP:** Various

# METRI-PACK SERIES 280



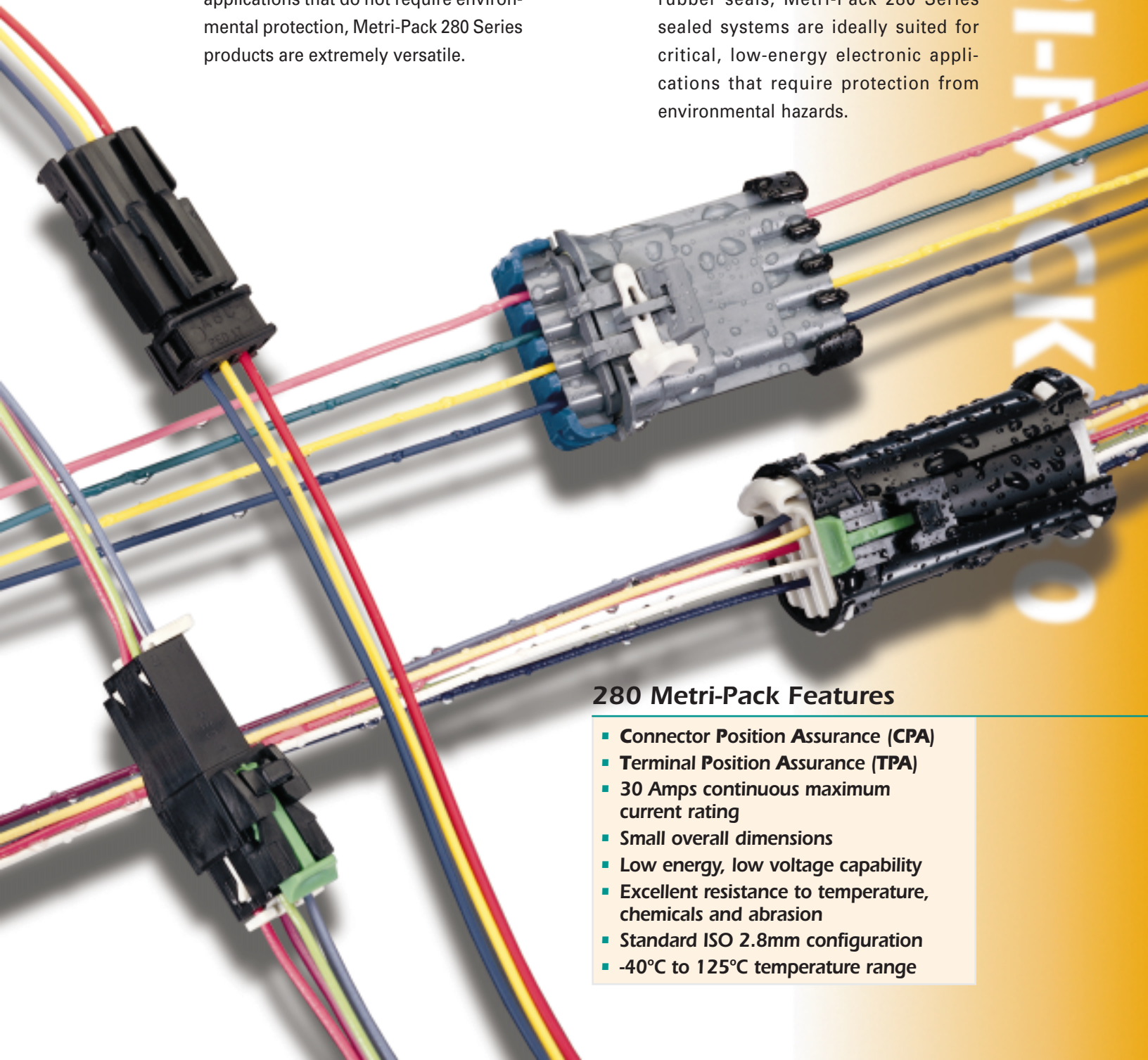
Available in device and in-line connections for vehicle applications, Metri-Pack 280 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

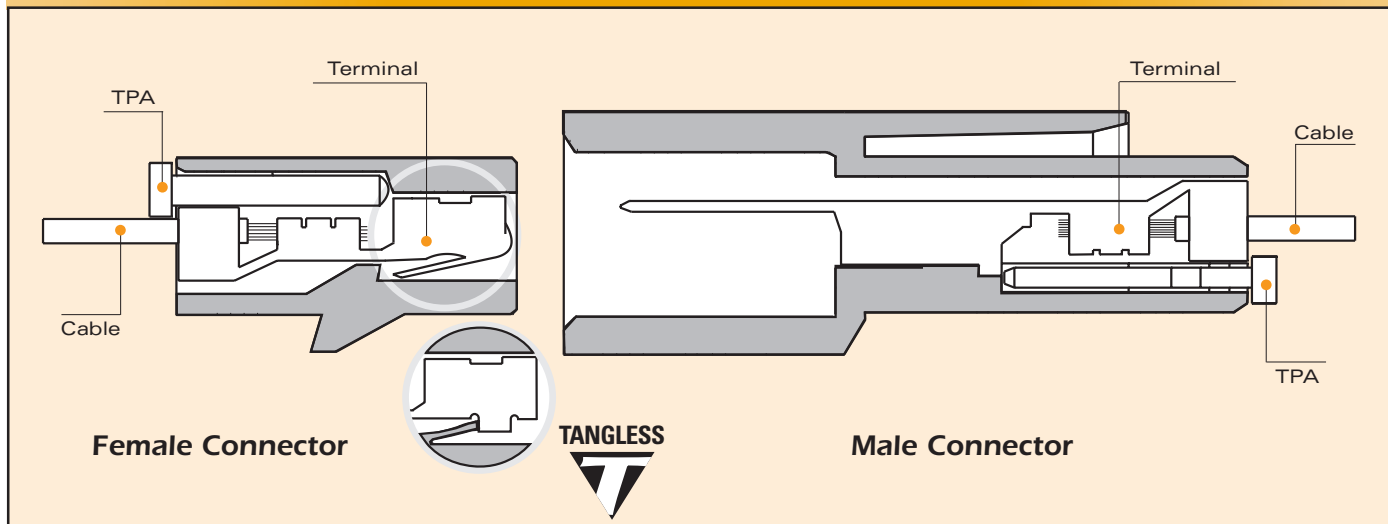


## 280 Metri-Pack Features

- 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



## Cross Sectional View



TANGLESS

### 280 TANGLESS FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12129425  | 5.0                            | Tin Brass | Tin     |
| 12129663  | 3.0                            | Tin Brass | Tin     |
| 12129424  | 2.0-1.0                        | Tin Brass | Tin     |
| 12110842* | 3.0-2.0                        | Tin Brass | Tin     |
| 12110844* | 1.0-0.80                       | Tin Brass | Tin     |
| 12110843* | 0.50-0.35                      | Tin Brass | Tin     |
| 12129061* | 0.35 (2 Req'd.)                | Tin Brass | Tin     |

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

TPA  
(Terminal Position Assurance)

Tangless Female Terminal

CPA  
(Connector Position Assurance)

Female Connector

### 280 FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12015858  | 5.0                            | Tin Brass | Tin     |
| 12129494  | 3.0-2.0                        | Tin Brass | Tin     |
| 12066214  | 2.0-1.0                        | Tin Brass | Tin     |
| 12034046  | 1.0-0.80                       | Tin Brass | Tin     |
| 12052217  | 0.50-0.35                      | Tin Brass | Tin     |
| 12162597* | 3.0-2.0                        | Tin Brass | Tin     |
| 12162595* | 1.0-0.80                       | Tin Brass | Tin     |
| 12162596* | 0.50-0.35                      | Tin Brass | Tin     |

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

<http://delphi.com/products/connect>

TANGLESS

### 280 FLEXLOCK FEMALE CONNECTORS UNSEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 2          | 12129081  | Black | PA66 HS IM | 12129083 |
| 3          | 12129489  | Black | PA66 HS IM | 12129491 |
| 4          | 12129136  | Black | PA66 HS IM | 12129138 |

### 280 FEMALE CONNECTORS UNSEALED

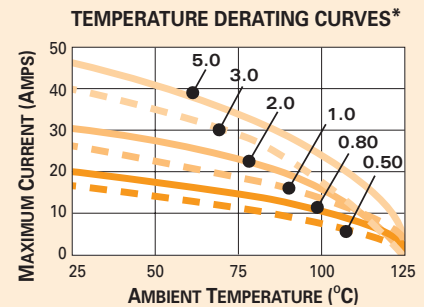
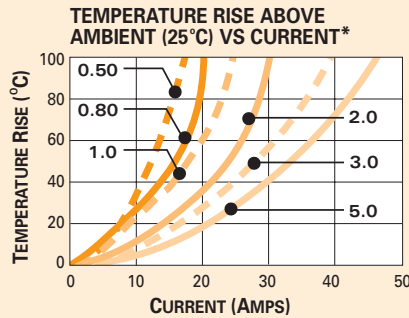
| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 6          | 12064752  | Black | PA66 HS IM | 12064753 |
| 8          | 12064998  | Black | PBT        | 12064999 |



## Unsealed System Application Information

**CABLE RANGE (mm<sup>2</sup>):** ..... 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

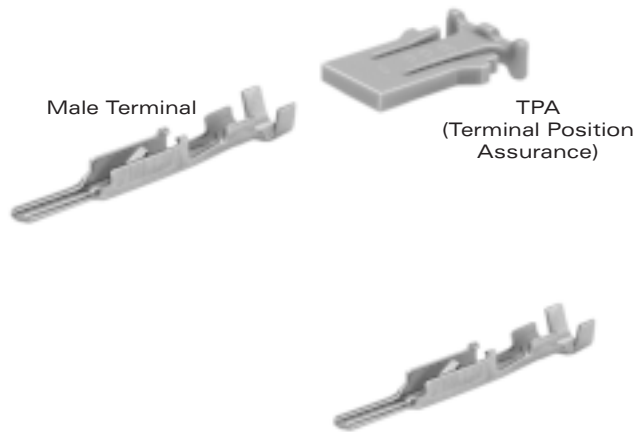
### 280 SERIES TERMINALS - Tin Plated



\*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 Connector



### 280 MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084586 | 5.0                            | Tin Brass | Tin     |
| 12129498 | 3.0-2.0                        | Tin Brass | Tin     |
| 12020116 | 2.0-1.0                        | Tin Brass | Tin     |
| 12034047 | 1.0-0.80                       | Tin Brass | Tin     |
| 12066271 | 0.50-0.35                      | Tin Brass | Tin     |
| 12020782 | 0.35 (2 Req'd.)                | Tin Brass | Tin     |

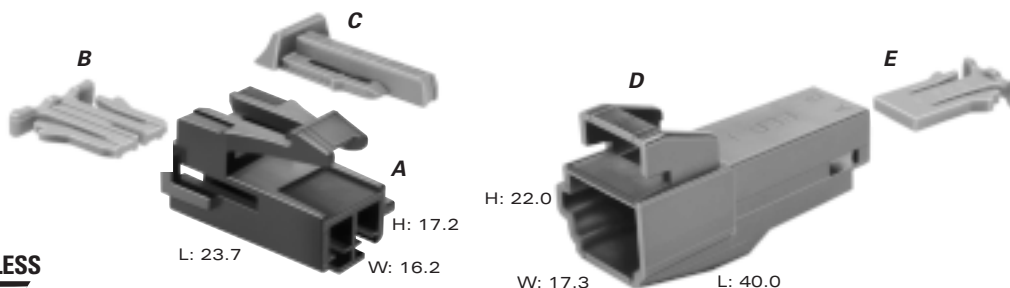
### 280 MALE CONNECTORS UNSEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 2          | 12129155  | Black | PA66 HS IM | 12129157 |
| 3          | 12129490  | Black | PA66 HS IM | 12129492 |
| 4          | 12129135  | Black | PA66 HS IM | 12129137 |
| 6          | 12064754  | Black | PA6        | 12064755 |
| 8          | 12066195  | Black | PBT        | 12065141 |

### 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.





Total Mated Length: 54.3mm

**A PART NO: 12129081 (Black)  
12129082 (Md. Gray)**

DESCRIPTION: Connector 2F  
SIZE: 23.7L x 17.2H x 16.2W  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 78

**D PART NO: 12129155 (Black)  
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

**B PART NO: 12129083**

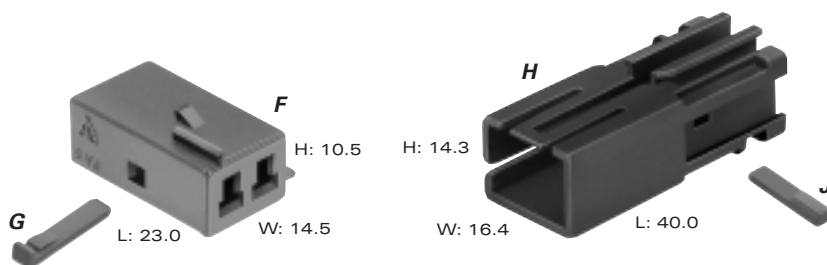
DESCRIPTION: TPA  
COLOR: Lt. Gray  
MATERIAL: PA66 HS IM

**E PART NO: 12129157**

DESCRIPTION: TPA  
COLOR: Lt. Gray  
MATERIAL: PA66 HS IM

**C PART NO: 12052834**

DESCRIPTION: CPA  
COLOR: Green  
MATERIAL: PP



Total Mated Length: 49.3mm

**F PART NO: 12147503 (Black)  
12111456 (Green)**

DESCRIPTION: Connector 2F  
SIZE: 23.0L x 10.5H x 14.5W  
MATERIAL: PA6  
TERMINALS: See Page 78

**H PART NO: 12147517 (Black)  
10717650 (Green)**

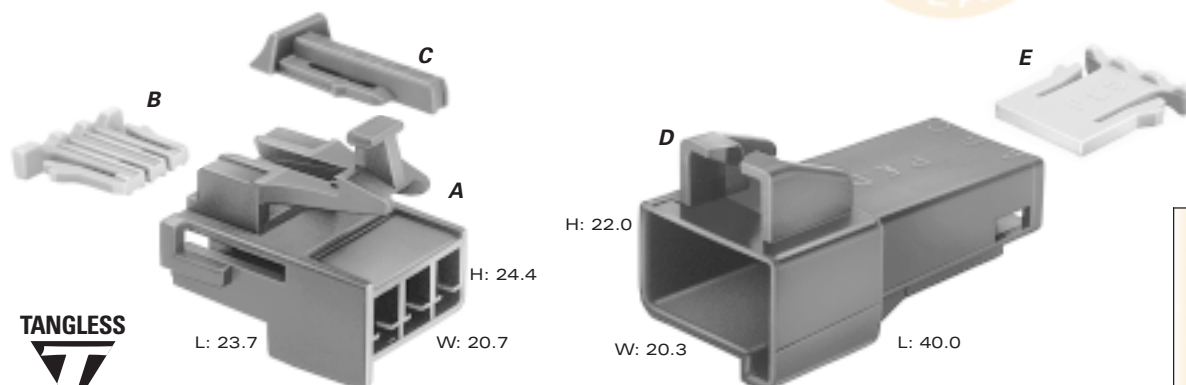
DESCRIPTION: Connector 2M  
SIZE: 40.0L x 14.3H x 16.4W  
MATERIAL: PA6  
TERMINALS: See Page 79

**G PART NO: 12147502**

DESCRIPTION: TPA  
COLOR: Gray  
MATERIAL: PA6 % GF

**J PART NO: 12147771**

DESCRIPTION: TPA  
COLOR: Gray  
MATERIAL: PA6 % GF



Total Mated Length: 54.3mm

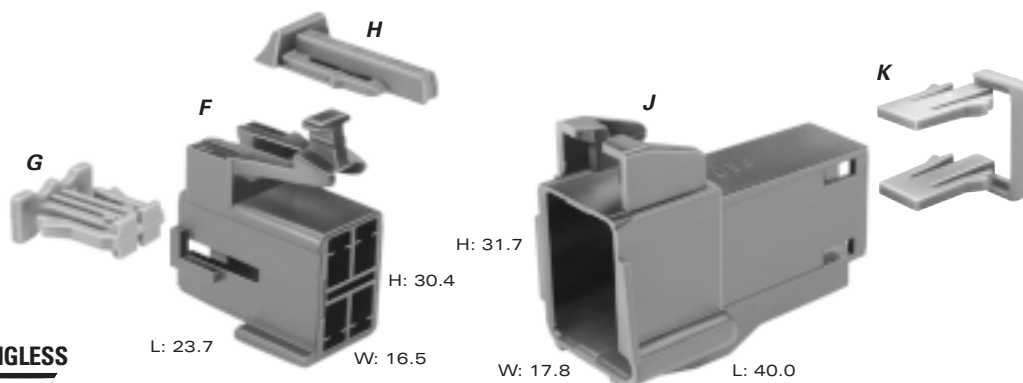
**A PART NO: 12129489**  
 DESCRIPTION: Connector 3F  
 SIZE: 23.7L x 24.4H x 20.7W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 78

**D PART NO: 12129490**  
 DESCRIPTION: Connector 3M  
 SIZE: 40.0L x 22.0H x 20.3W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 79

**B PART NO: 12129491**  
 DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA66 HS IM

**E PART NO: 12129492**  
 DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA66 HS IM

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



Total Mated Length: 54.0mm

**F PART NO: 12129136**  
 DESCRIPTION: Connector 4F  
 SIZE: 23.7L x 30.4H x 16.5W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 78

**J PART NO: 12129135**  
 DESCRIPTION: Connector 4M (Clip Slot-Self Locking)  
 SIZE: 40.0L x 31.7H x 17.8W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 79

**G PART NO: 12129138**  
 DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA66 HS IM

**K PART NO: 12129137**  
 DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA66 HS IM

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



A

H: 10.5

W: 14.5

L: 23.0



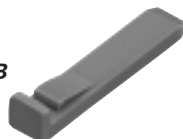
C

H: 14.3

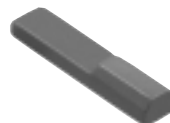
W: 16.4

L: 40.0

B



D



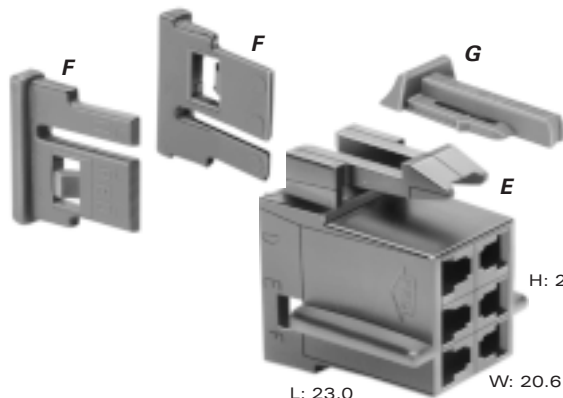
Total Mated Length: 50.0mm

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

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

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

**D PART NO: 12147771**  
DESCRIPTION: Secondary Lock  
SIZE: 2.7L x 2.2H x 11.8W  
COLOR: Gray  
MATERIAL: PA6%GF



H: 26.6

L: 23.0

W: 20.6

H: 29.1

W: 23.5

L: 40.0

Total Mated Length: 57.0mm

**E 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

**H 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

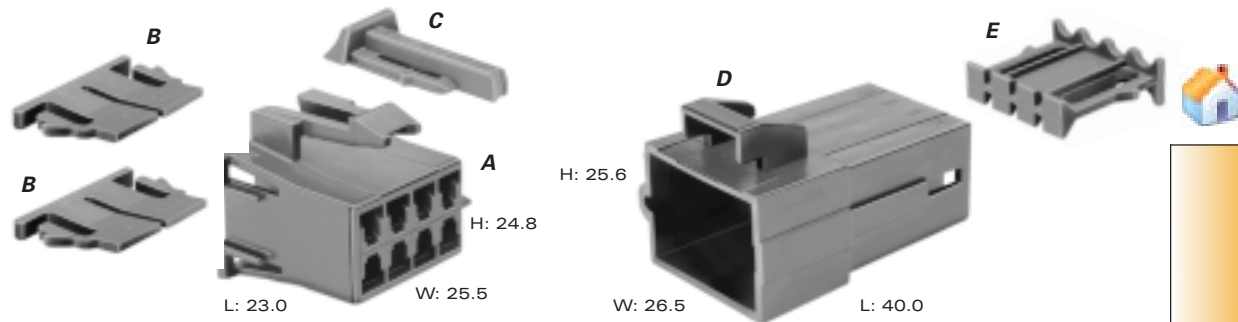
**F PART NO: 12064753**  
DESCRIPTION: TPA  
NUMBER REQ.: 2  
COLOR: Md. Gray  
MATERIAL: PA66 HS IM

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

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

<http://delphi.com/products/connect>





Total Mated Length: 54.0mm

**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

**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

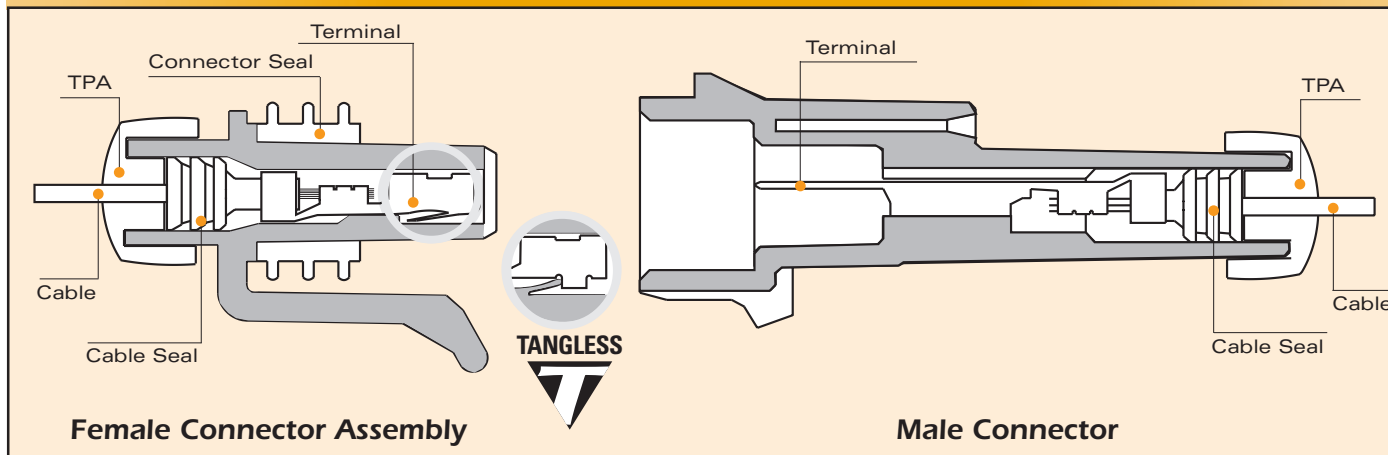
**B PART NO: 12064999**  
 DESCRIPTION: TPA  
 NUMBER REQ.: 2  
 COLOR: Blue  
 MATERIAL: PBT

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

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



## Cross Sectional View



TANGLESS

### 280 TANGLESS FEMALE TERMINALS SEALED

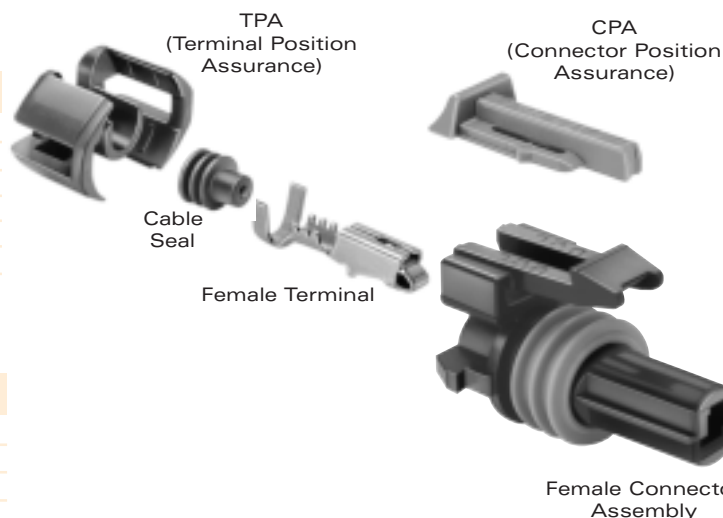
| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12110853  | 5.0-3.0                        | Tin Brass | Tin     |
| 12129409  | 2.0-1.0                        | Tin Brass | Tin     |
| 12110845* | 3.0-2.0                        | Tin Brass | Tin     |
| 12110847* | 1.0-0.80                       | Tin Brass | Tin     |
| 12110846* | 0.50-0.35                      | Tin Brass | Tin     |

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

TANGLESS

### 280 FLEXLOCK FEMALE CONNECTOR ASSEMBLIES SEALED

| # Cavities | Conn. Asm. | Color | Material   | TPA      |
|------------|------------|-------|------------|----------|
| 7          | 12110751   | Black | PA66 HS IM | 12110754 |
| 15         | 12161186   | Black | PA66 HS IM | 12176865 |



### 280 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12077413 | 5.0                            | Tin Brass        | Tin           |
| 12129493 | 3.0-2.0                        | Tin Brass        | Tin           |
| 12077411 | 1.0-0.80                       | Tin Brass        | Tin           |
| 12084201 | 0.50-0.35                      | Tin Brass        | Tin           |
| 12176387 | 5.0                            | Beryllium Copper | Silver/Nickel |
| 12176388 | 3.0-2.0                        | Beryllium Copper | Silver/Nickel |
| 12176389 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |

### 280 FEMALE CONNECTOR ASSEMBLIES SEALED

| # Cavities | Conn. Asm. | Color    | Material   | TPA      |
|------------|------------|----------|------------|----------|
| 1          | 12065172   | Black    | PA66 HS IM | 12065249 |
| 2          | 15300027   | Black    | PA66 HS IM | 15300014 |
| 2          | 12124819   | Black    | PBT        | 12020807 |
| 3          | 12040977   | Black    | PA66 HS IM | 12034145 |
| 4          | 12129565   | Md. Gray | PA66 HS IM | 15300016 |
| 5          | 12084891   | Md. Gray | PA66 HS IM | 15300017 |

### 280 METRI-PACK CABLE SEALS

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

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

| Part #   | Cable Range (mm <sup>2</sup> ) | Material       | Plating |
|----------|--------------------------------|----------------|---------|
| 12077939 | 1.0-0.80                       | Silicon Bronze | Tin     |
| 12103360 | 0.50-0.35                      | Silicon Bronze | Tin     |

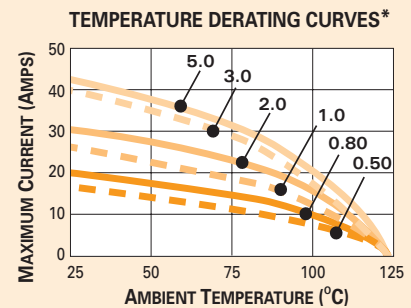
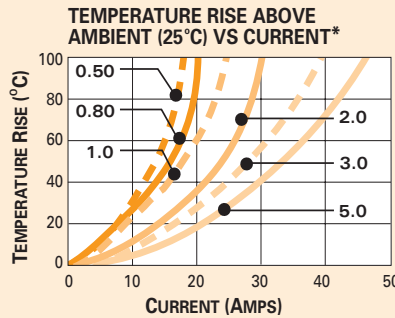
<http://delphi.com/products/connect>



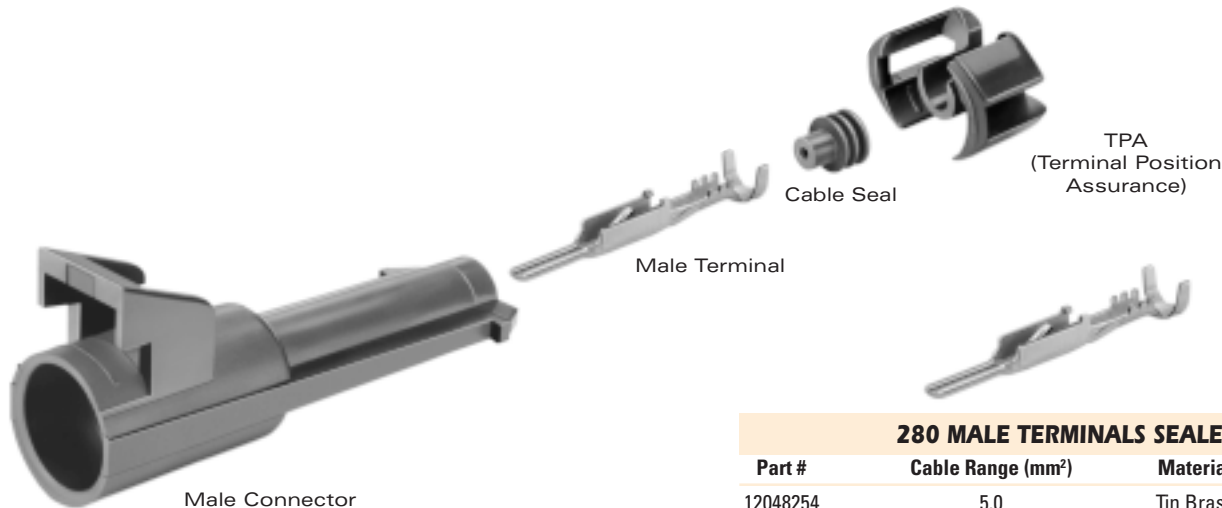
## Sealed System Application Information

CABLE RANGE (mm<sup>2</sup>): ..... 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

### 280 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.



### 280 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12048254 | 5.0                            | Tin Brass | Tin     |
| 12129497 | 3.0-2.0                        | Tin Brass | Tin     |
| 12048159 | 1.0-0.80                       | Tin Brass | Tin     |
| 12124977 | 0.50-0.35                      | Tin Brass | Tin     |

### 280 MALE CONNECTORS SEALED

| # Cavities | Connector | Color    | Material   | TPA      |
|------------|-----------|----------|------------|----------|
| 1          | 12065171  | Black    | PA66 HS IM | 12065249 |
| 2          | 15300002  | Black    | PA66 HS IM | 15300014 |
| 2          | 12059450  | Black    | PA66 HS IM | 12065279 |
| 3          | 15300003  | Black    | PA66 HS IM | 15300015 |
| 4          | 12129600  | Dk. Gray | PBT 30% GF | 12092733 |
| 5          | 12186400  | Gray     | PBT 30% GF | 12084673 |
| 7          | 12110753  | Black    | PA66 HS IM | 12110754 |
| 15         | 12161187  | Black    | PA66 HS IM | 12110782 |

### 280 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color |
|----------|------------------------|----------|-------|
| 12010300 | 6.7mm                  | Silicone | Green |

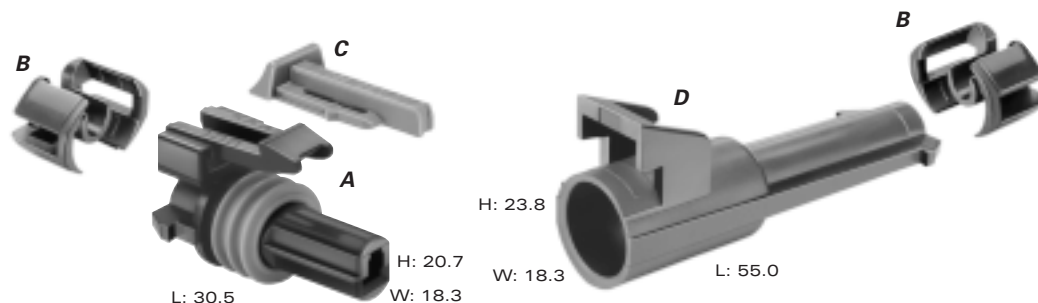
\*Cavity plugs seal unused female and male cavities.

### 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.
- Female Connections for device applications, see page 92.

<http://delphi.com/products/connect>



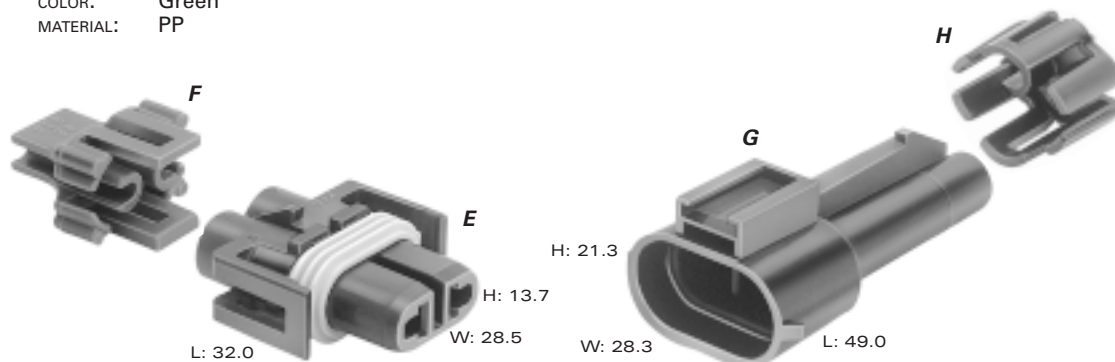
Total Mated Length: 70.3mm

**A 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

**D 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

**B PART NO: 12065249**  
 DESCRIPTION: TPA  
 NUMBER REQ.: 2  
 COLOR: Black  
 MATERIAL: PA66 HS IM

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



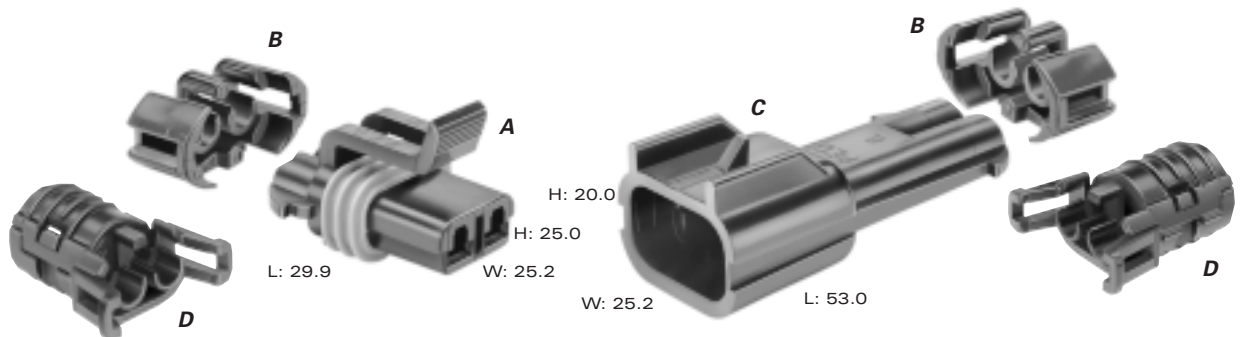
Total Mated Length: 81.9mm

**E PART NO: 12124819**  
 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

**G PART NO: 12059450**  
 DESCRIPTION: Connector 2M (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

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

**H PART NO: 12065279**  
 DESCRIPTION: TPA  
 COLOR: Black  
 MATERIAL: PA6



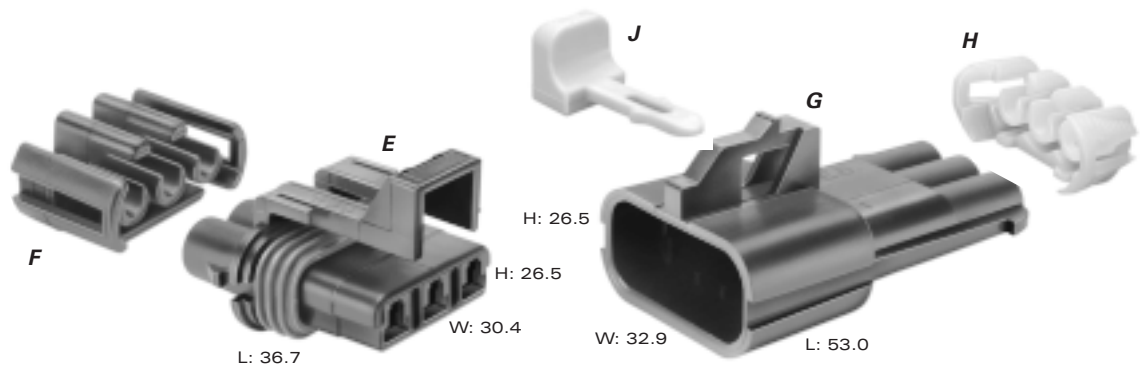
Total Mated Length: 66.8mm

**A 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

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

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

**D PART NO: 15327747 (Optional)**  
 DESCRIPTION: Conduit TPA  
 NUMBER REQ.: 2  
 COLOR: Black  
 MATERIAL: PA6



Total Mated Length: 76.1mm

**E 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

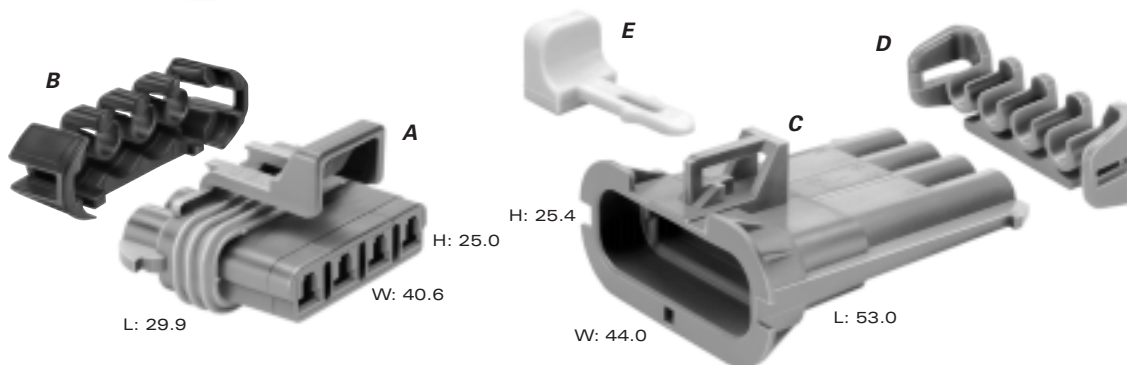
**G PART NO: 15300003**  
 DESCRIPTION: Connector 3M (Clip Slot)  
 SIZE: 53.0L x 26.5H x 32.9W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 85  
 SEALS/PLUGS: See Page 84, 85

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

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

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

<http://delphi.com/products/connect>



Total Mated Length: 66.7mm

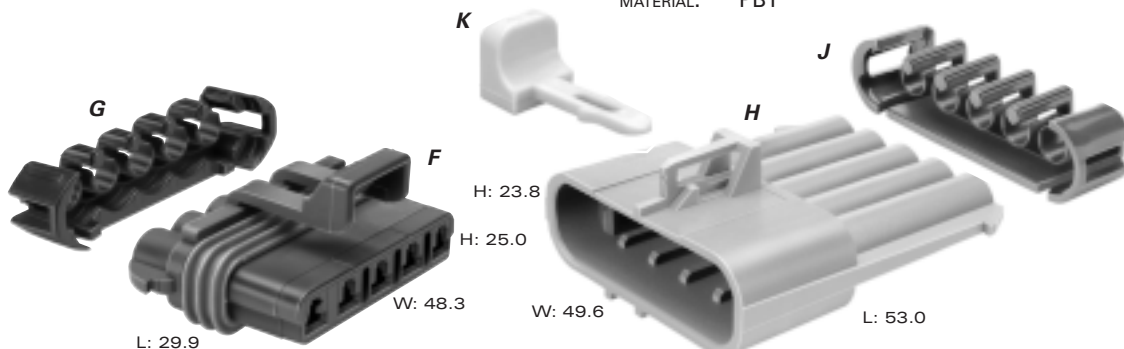
**A** PART NO: **12129565**  
DESCRIPTION: Connector Assembly 4F  
SIZE: 29.9L x 25.0H x 40.6W  
COLOR: Md. Gray  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 84  
SEALS/PLUGS: See Page 84, 85

**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

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

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

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



Total Mated Length: 67.3mm

**F** PART NO: **12084891**  
DESCRIPTION: Connector Assembly 5F  
SIZE: 29.9L x 25.0H x 48.3W  
COLOR: Md. Gray  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 84  
SEALS/PLUGS: See Page 84, 85

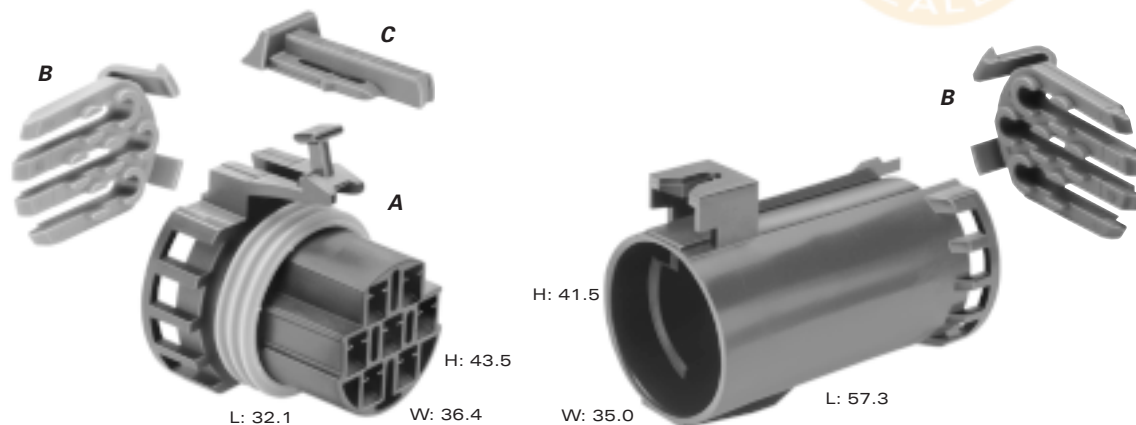
**H** PART NO: **12186400**  
DESCRIPTION: Connector 5M (Clip Slot-Self Locking)  
SIZE: 53.0L x 23.8H x 49.6W  
COLOR: Gray  
MATERIAL: PBT 30% GF  
TERMINALS: See Page 85  
SEALS/PLUGS: See Page 84, 85

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

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

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





Total Mated Length: 77.3mm



**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

**D PART NO:** 12110753 (Black)  
12129614 (Md. Gray)  
12146840 (Natural)

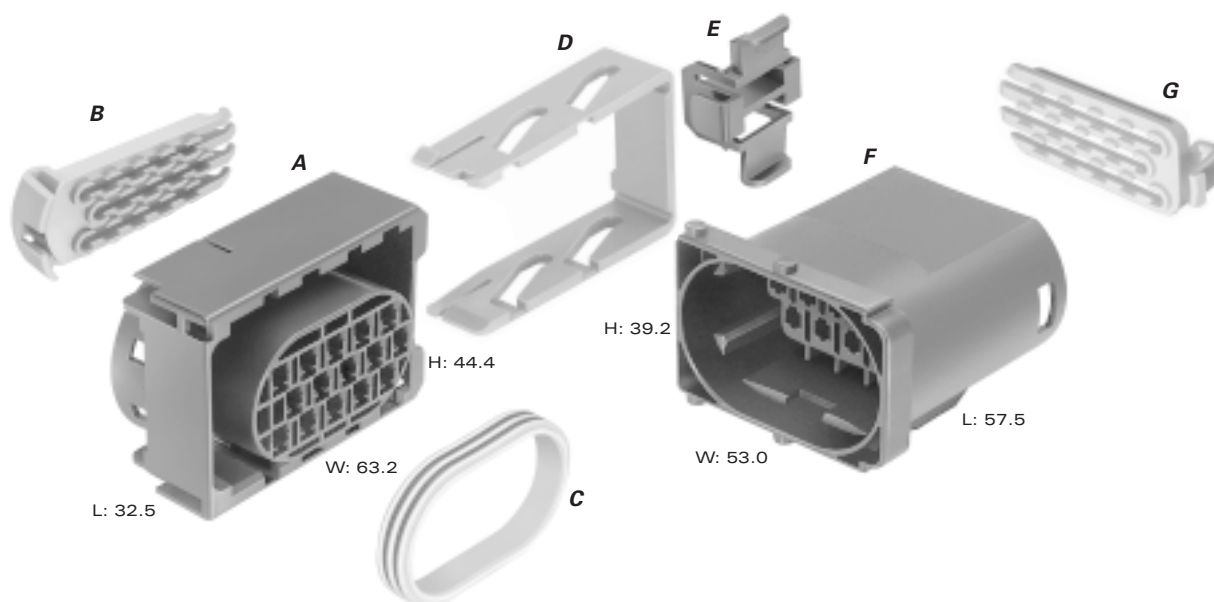
DESCRIPTION: Connector 7M (Clip Slot-Self Locking)  
SIZE: 57.3L x 41.5H x 35.0W  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 85  
SEALS/PLUGS: See Page 84, 85

**B PART NO:** 12110754

DESCRIPTION: TPA  
NUMBER REQ.: 2  
COLOR: Lt. Gray  
MATERIAL: PA6

**C PART NO:** 12052834

DESCRIPTION: CPA  
COLOR: Green  
MATERIAL: PP



Total Mated Length: 76.6mm

**A PART NO: 12161186**

DESCRIPTION: Connector 15F  
 SIZE: 32.5L x 44.4H x 63.2W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 84  
 SEALS/PLUGS: See Page 84, 85

**F PART NO: 12161187**

DESCRIPTION: Connector 15M (Clip Slot-Self Locking)  
 SIZE: 57.5L x 39.2H x 53.0W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 85  
 SEALS/PLUGS: See Page 84, 85

**B PART NO: 12110782**

DESCRIPTION: TPA  
 COLOR: Md. Gray  
 MATERIAL: PA6

**G PART NO: 12176865**

DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA6

**C PART NO: 12110822**

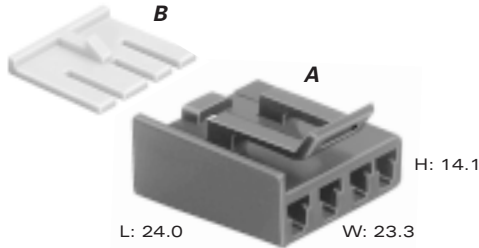
DESCRIPTION: Connector Seal  
 COLOR: Green  
 MATERIAL: Silicone

**D PART NO: 12161185**

DESCRIPTION: CPA Slide Lock Assist  
 COLOR: Dk. Gray  
 MATERIAL: PA66 HS IM 14% GF

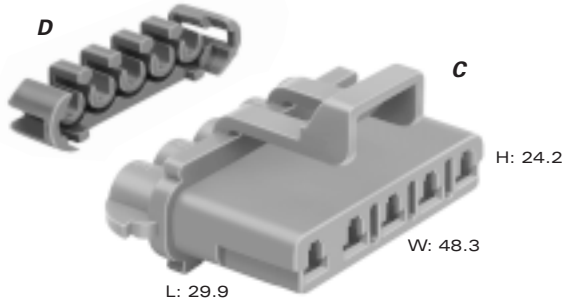
**E PART NO: 12176640**

DESCRIPTION: Spacer Lock  
 COLOR: Black  
 MATERIAL: PP



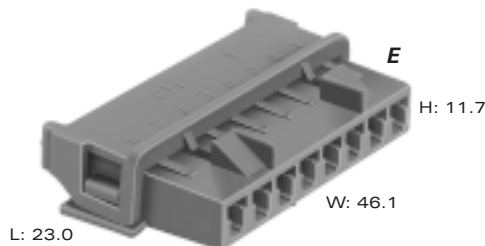
**A PART NO: 12052856**  
 DESCRIPTION: Connector 4F  
 SIZE: 24.0L x 14.1H x 23.3W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 78  
 TYPICAL APP: Dimmer Switch

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

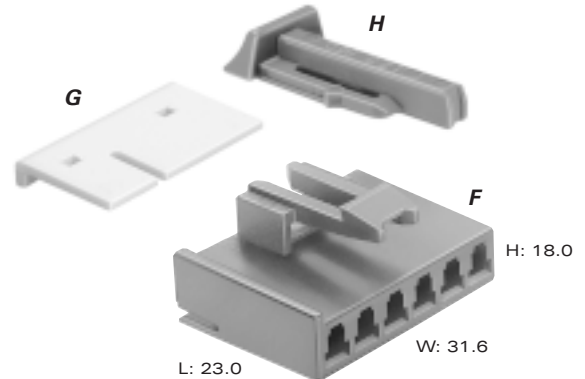


**C PART NO: 12084890**  
 DESCRIPTION: Connector 5F  
 SIZE: 29.9L x 24.2H x 48.3W  
 COLOR: Md. Gray  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 78  
 TYPICAL APP: Tail Lamp Module

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



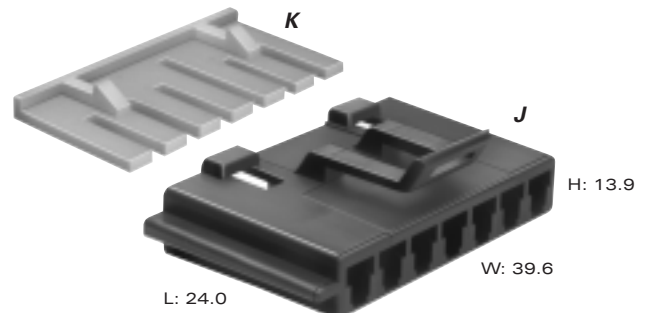
**E PART NO: 12041301\***  
 DESCRIPTION: Connector 8F  
 SIZE: 23.0L x 11.7H x 46.1W  
 COLOR: Black  
 MATERIAL: PP  
 TERMINALS: See Page 78  
 TYPICAL APP: Various  
 \*HINGED SECONDARY LOCK.



**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

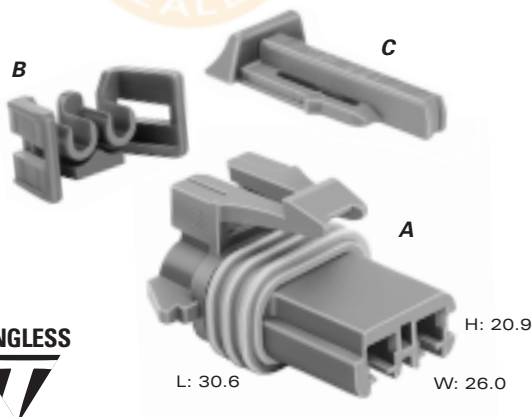
**G PART NO: 12162298**  
 DESCRIPTION: TPA  
 COLOR: Cream  
 MATERIAL: PA6

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



**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

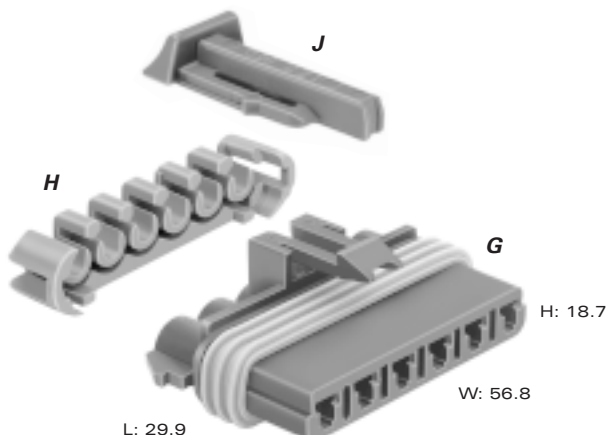
**K PART NO: 12124811**  
 DESCRIPTION: TPA  
 COLOR: Natural  
 MATERIAL: PA6



**A 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

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

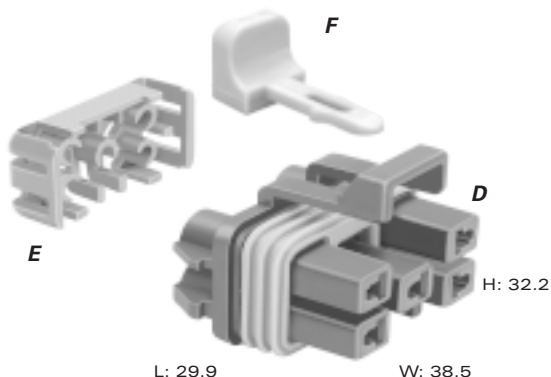
**C PART NO: 12052834**  
 DESCRIPTION: CPA  
 COLOR: Green  
 MATERIAL: PP



**G 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

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

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



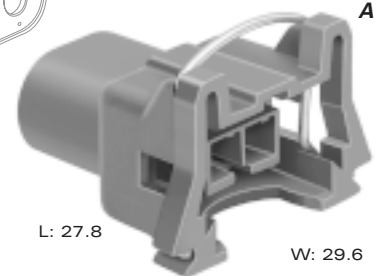
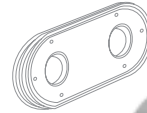
**D PART NO: 12124634**  
 DESCRIPTION: Connector Assembly 5F  
 SIZE: 29.9L x 32.2H x 38.5W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 84  
 SEALS/PLUGS: See Page 84, 85  
 TYPICAL APP: Wiper Switch

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

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



Multiple Cable Seal  
(Included)



H: 20.0

L: 27.8

W: 29.6

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





# METRI-PACK SERIES 480



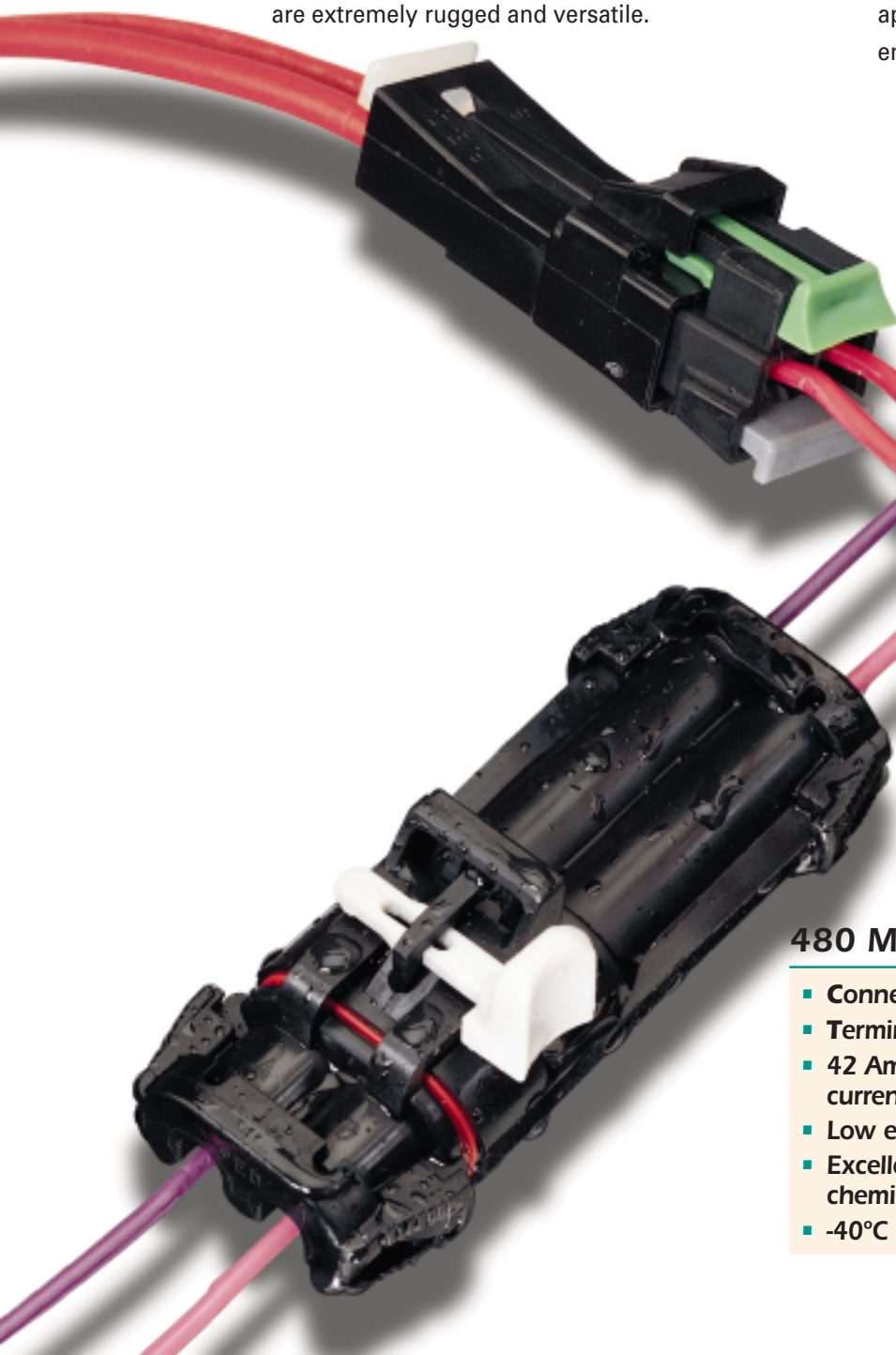
Available in device and in-line connections for vehicle applications, Metri-Pack 480 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

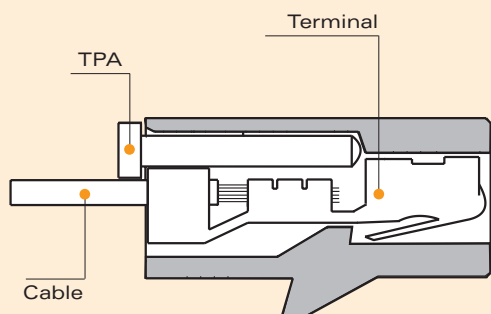


## 480 Metri-Pack Features

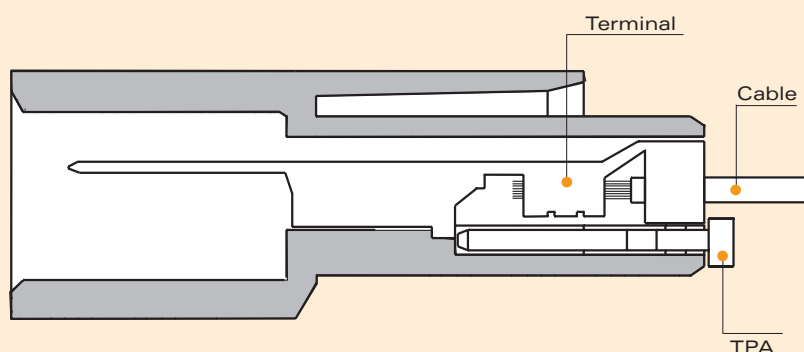
- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 42 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range



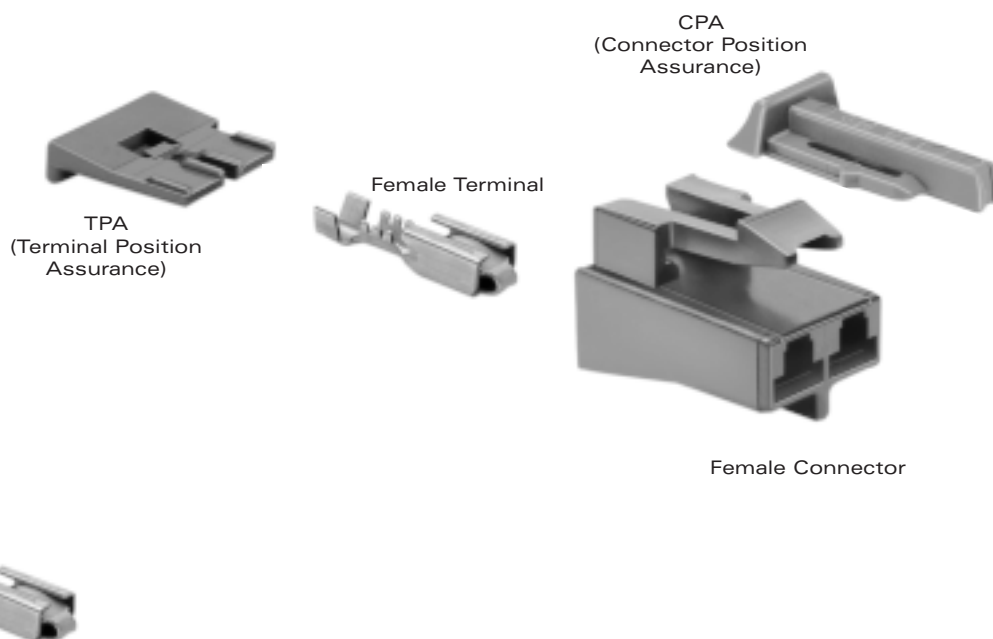
## Cross Sectional View



Female Connector



Male Connector



### 480 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084595 | 5.0                            | Tin Brass | Tin     |
| 12052221 | 3.0                            | Tin Brass | Tin     |
| 12124304 | 2.0-1.0                        | Tin Brass | Tin     |
| 12015860 | 0.80                           | Tin Brass | Tin     |
| 12052219 | 0.50-0.35                      | Tin Brass | Tin     |
| 12020366 | 1.0-0.50 (1 Req'd.)            | Tin Brass | Tin     |
|          | 0.80-0.50 (1 Req'd.)           |           |         |

### 480 FEMALE CONNECTORS UNSEALED

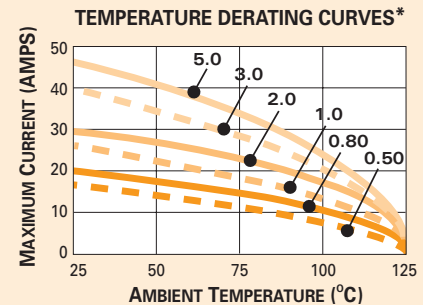
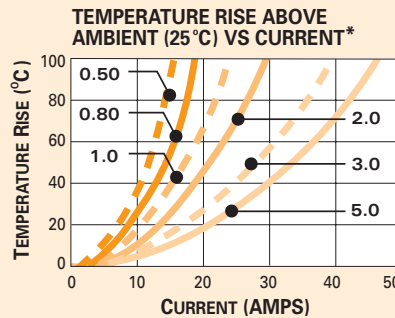
| # Cavities | Connector | Color    | Material   | TPA      |
|------------|-----------|----------|------------|----------|
| 1          | 12015952  | Md. Gray | PA66 HS IM | —        |
| 2          | 12064749  | Black    | PA66 HS IM | 12059860 |



## Unsealed System Application Information

**CABLE RANGE (mm<sup>2</sup>):** ..... 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

### 480 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 Connector

Male Terminal



TPA  
(Terminal Position Assurance)



#### 480 MALE CONNECTORS UNSEALED

| # Cavities | Connector | Color    | Material   | TPA      |
|------------|-----------|----------|------------|----------|
| 1          | 12015987  | Md. Gray | PA66 HS IM | —        |
| 2          | 12064750  | Black    | PA6        | 12064751 |

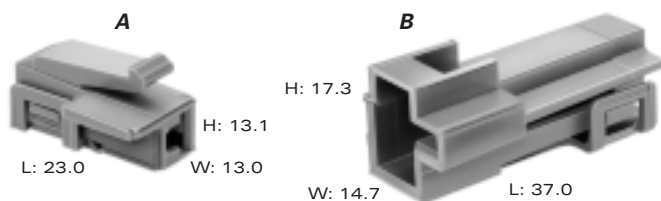
#### 480 MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating         |
|----------|--------------------------------|-----------|-----------------|
| 12033820 | 5.0                            | Tin Brass | Tin over Copper |
| 12052827 | 3.0                            | Tin Brass | Tin over Copper |
| 12020120 | 2.0-1.0                        | Tin Brass | Tin over Copper |
| 12020119 | 1.0-0.80                       | Tin Brass | Tin over Copper |
| 12066269 | 0.50-0.35                      | Tin Brass | Tin over Copper |
| 12020784 | 0.35 (2 Req'd.)                | Tin Brass | Tin over Copper |

#### SECTION NOTES:

Contact your regional support representative at the number listed below.

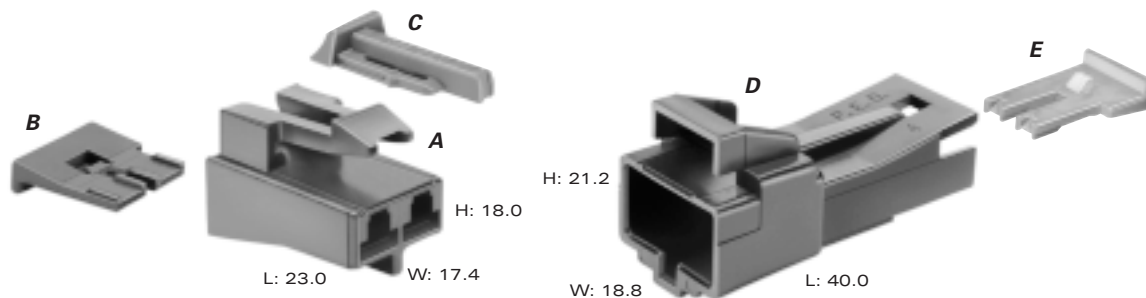
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see page 103.



Total Mated Length: 49.6mm

**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: 53.9mm

**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

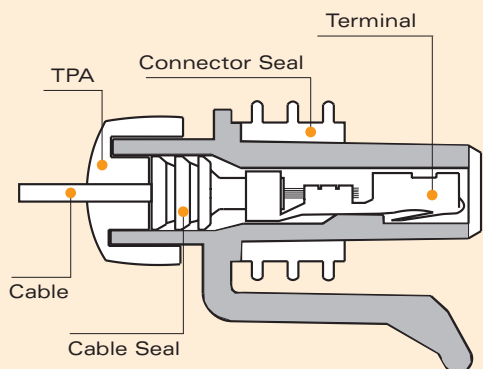
**C PART NO: 12052834**  
 DESCRIPTION: CPA  
 COLOR: Green  
 MATERIAL: PP

**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

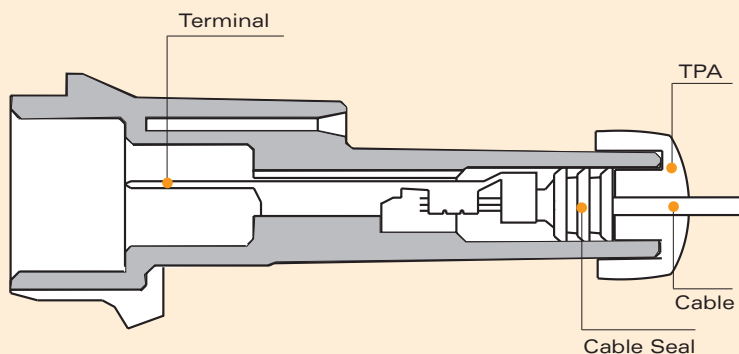
**E PART NO: 12064751**  
 DESCRIPTION: TPA  
 COLOR: Natural  
 MATERIAL: PA66 HS IM



## Cross Sectional View



**Female Connector Assembly**



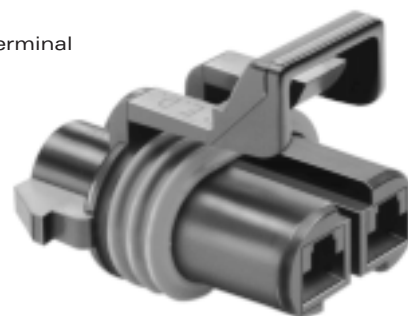
**Male Connector**

TPA  
(Terminal Position Assurance)



Cable Seal

Female Terminal



**Female Connector Assembly**

### 480 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052139 | 5.0-3.0                        | Tin Brass | Tin     |
| 12048451 | 2.0-1.0                        | Tin Brass | Tin     |
| 12048450 | 0.80-0.50                      | Tin Brass | Tin     |



### 480 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color  |
|-------------|--------------|----------------|----------|--------|
| 12065703    | 12034170     | 5.16-4.40      | Silicone | Orange |
| 12052453    | 12048443     | 4.50-3.61      | Silicone | Purple |
| 12052452    | 12048442     | 3.75-2.81      | Silicone | Red    |
| 12048433    | 12048441     | 2.85-2.01      | Silicone | White  |
| 12052931    | 12052930     | 2.15-1.60      | Silicone | Yellow |
| 12162068    | 12162067     | 1.70-1.29      | Silicone | Pink   |

### 480 FEMALE CONNECTOR ASSEMBLY SEALED

| # Cavities | Conn. Asm. | Color | Material   | TPA      |
|------------|------------|-------|------------|----------|
| 2          | 12052613   | Black | PA66 HS IM | 12059897 |

<http://delphi.com/products/connect>

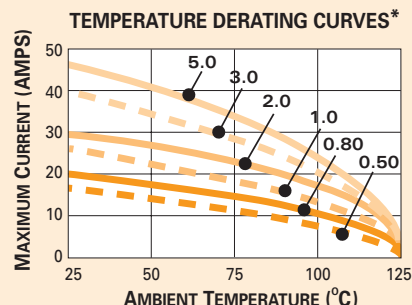
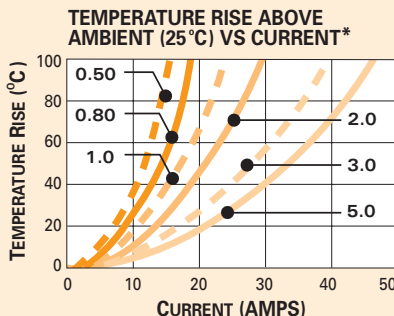




## Sealed System Application Information

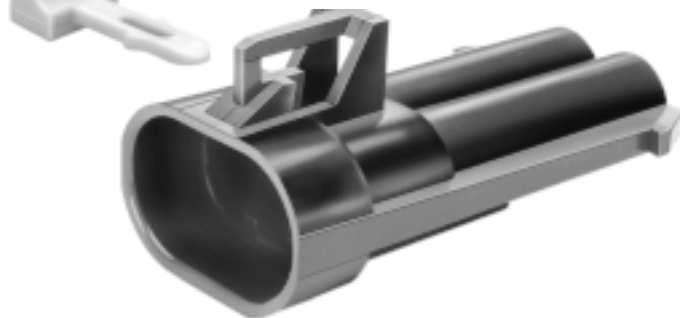
CABLE RANGE (mm<sup>2</sup>): ..... 0.50-5.0  
 CURRENT RANGE (AMPS): ..... 0-42  
 TEMP RANGE °C: ..... -40 to 125  
 RESISTANCE: ..... <10mΩ@20mV  
 VOLTAGE DROP: ..... <3.0mV/amp  
 CENTERLINE SPACING (mm): ..... 9.5  
 BLADE WIDTH (mm): ..... 4.8

### 480 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.

CPA  
(Connector Position Assurance)



Male Connector

Male Terminal



Cable Seal



TPA  
(Terminal Position Assurance)



### 480 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052172 | 5.0                            | Tin Brass | Tin     |
| 12065197 | 3.0                            | Tin Brass | Tin     |
| 12065196 | 2.0-1.0                        | Tin Brass | Tin     |



### 480 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12066082 | 8.5mm                  | Silicone | Lt. Green |

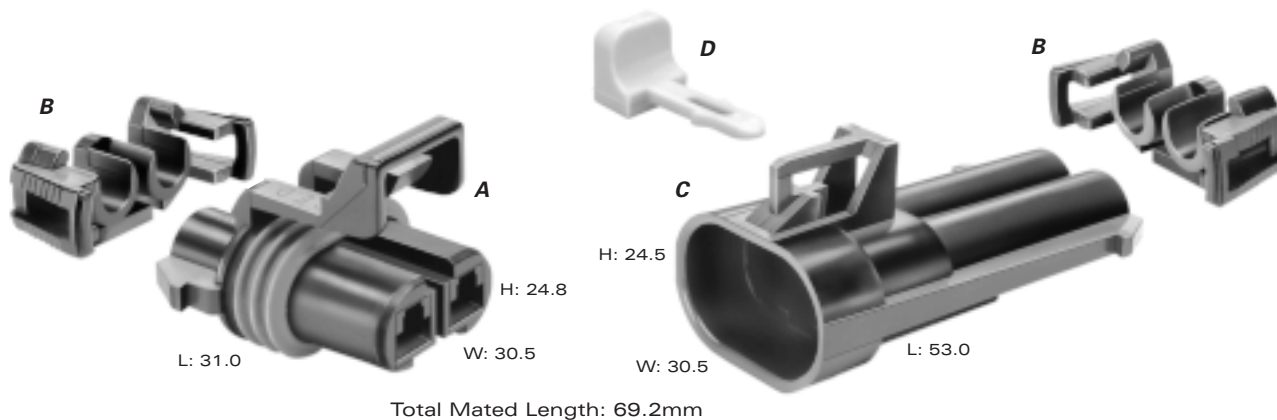
\*Cavity plugs seal unused female and male cavities

### 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.
- Female connections for device applications, see page 104.

### 480 MALE CONNECTOR SEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 2          | 12065863  | Black | PA66 HS IM | 12059897 |

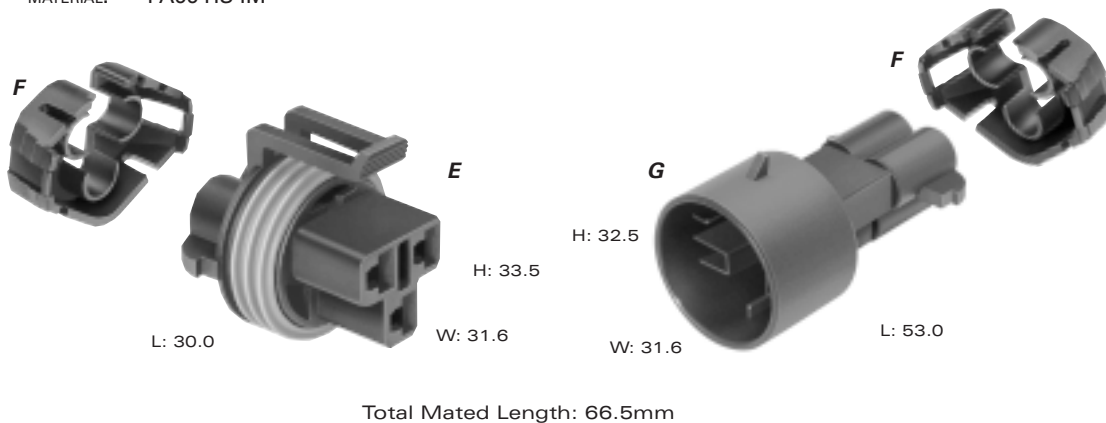


**A PART NO: 12052613**  
 DESCRIPTION: Connector Assembly 2F  
 SIZE: 31.0L x 24.8H x 30.5W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 100  
 SEALS/PLUGS: See Page 100, 101

**C PART NO: 12065863**  
 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

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

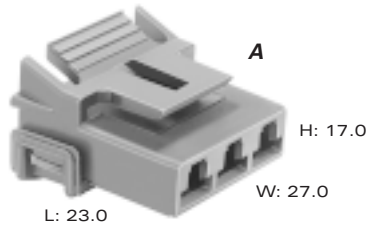
**D PART NO: 12020833**  
 DESCRIPTION: CPA  
 COLOR: Gray  
 MATERIAL: PBT



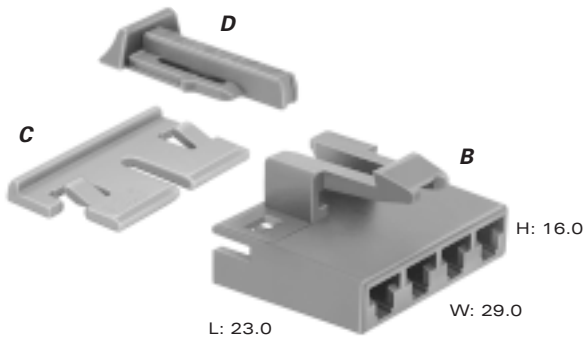
**E PART NO: 12131592**  
 DESCRIPTION: Connector Assembly 3F  
 SIZE: 30.0L x 33.5H x 31.6W  
 COLOR: Black  
 MATERIAL: PA66  
 TERMINALS: See Page 100  
 SEALS/PLUGS: See Page 100, 101

**G 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

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



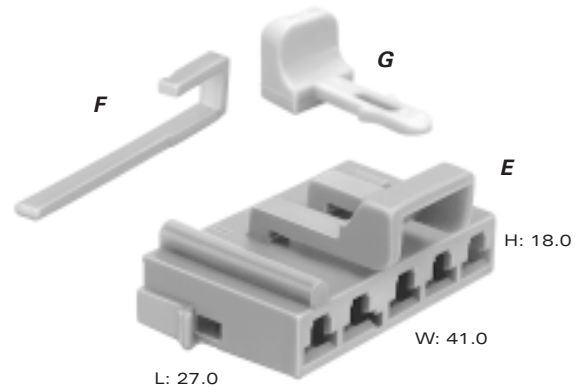
**A PART NO: 12162512\***  
 DESCRIPTION: Connector 3F  
 SIZE: 23.0L x 17.0H x 27.0W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 96  
 TYPICAL APP: Switch  
 \*HINGED SECONDARY LOCK



**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: TPA  
 COLOR: Md. Gray  
 MATERIAL: PA66 HS IM

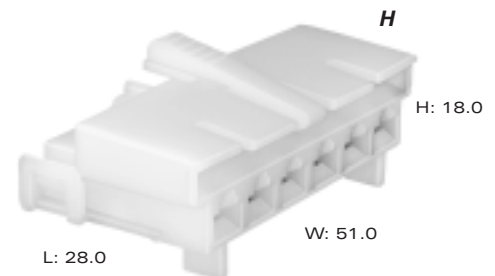
**D PART NO: 12052834**  
 DESCRIPTION: CPA  
 COLOR: Green  
 MATERIAL: PP



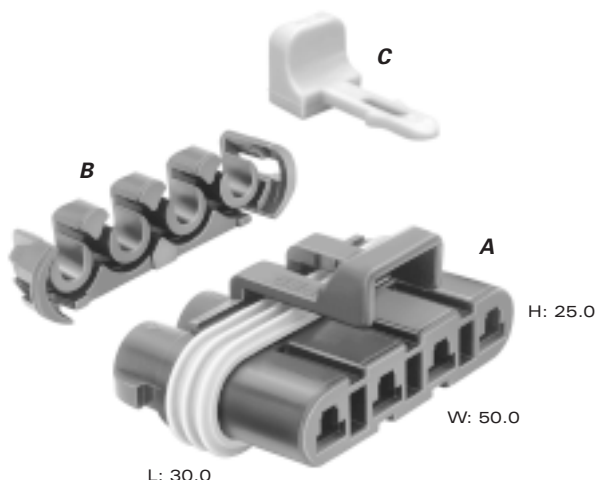
**E PART NO: 12059296**  
 DESCRIPTION: Connector 5F  
 SIZE: 27.0L x 18.0H x 41.0W  
 COLOR: Red  
 MATERIAL: PA6  
 TERMINALS: See Page 96  
 TYPICAL APP: Switch

**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

# Metri-Pack Series

## 630



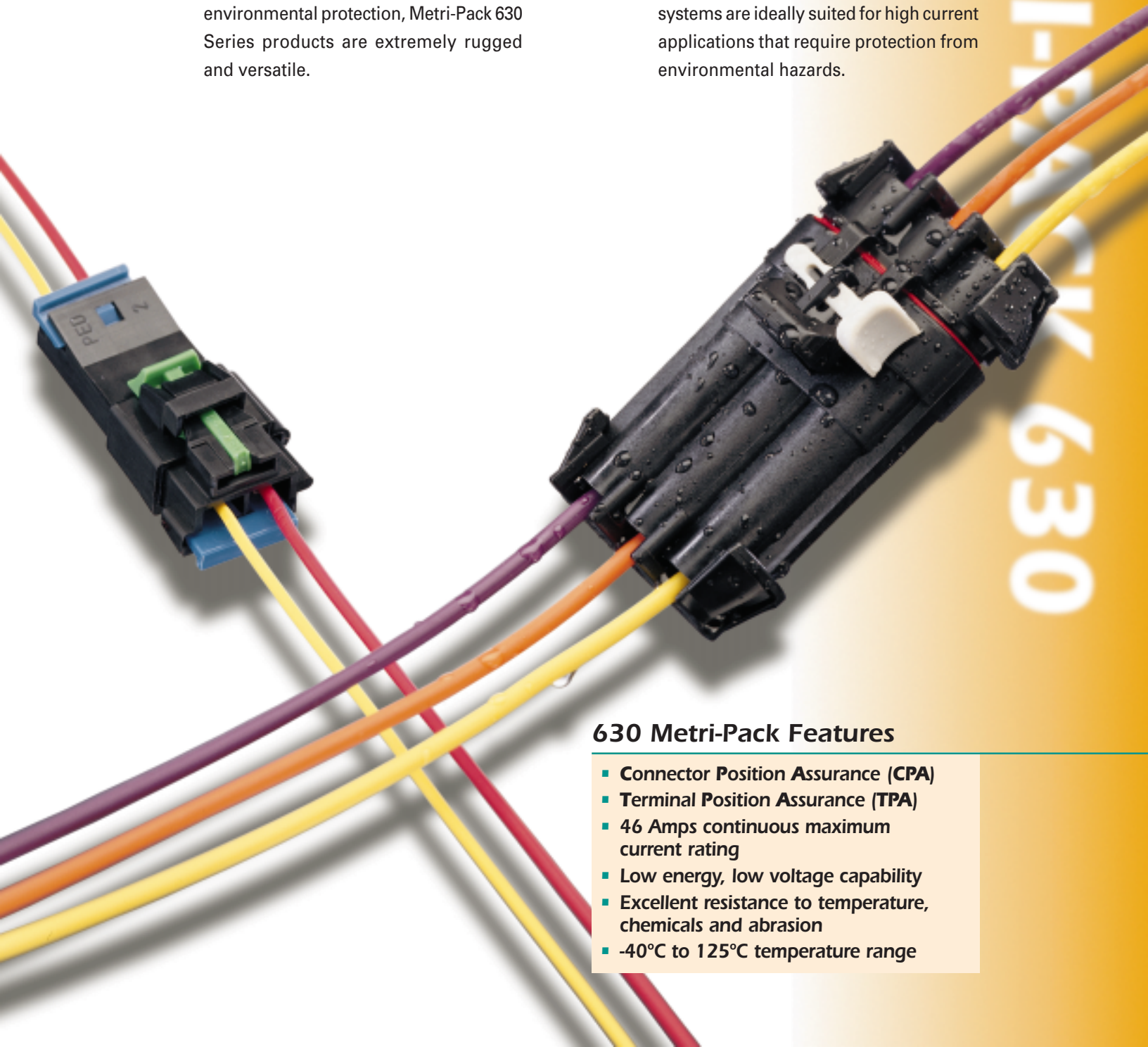
Available in device and in-line connections for vehicle applications, Metri-Pack 630 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.



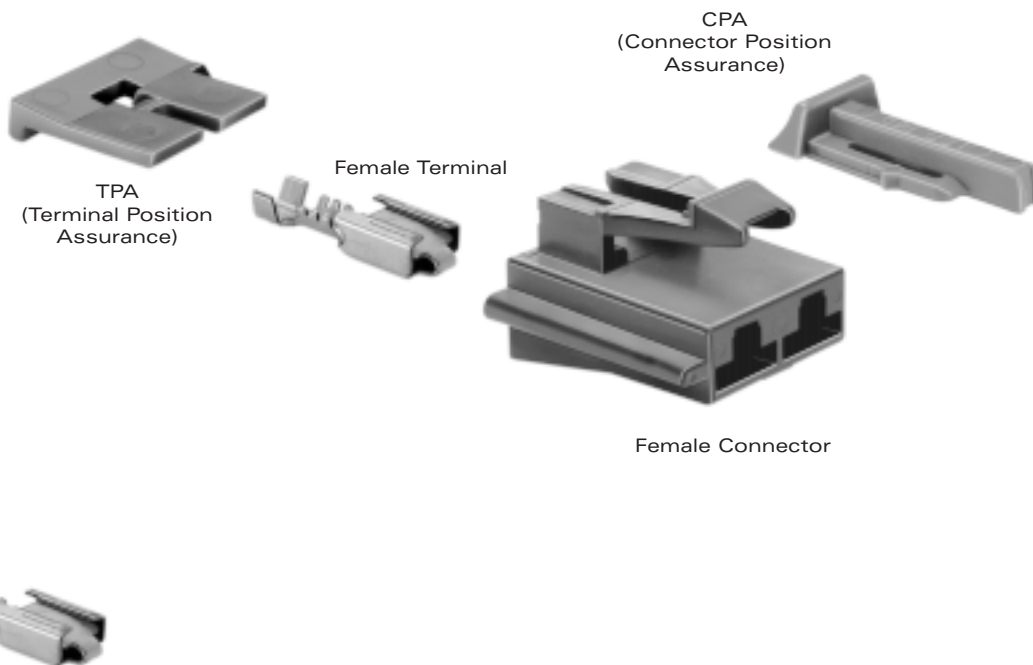
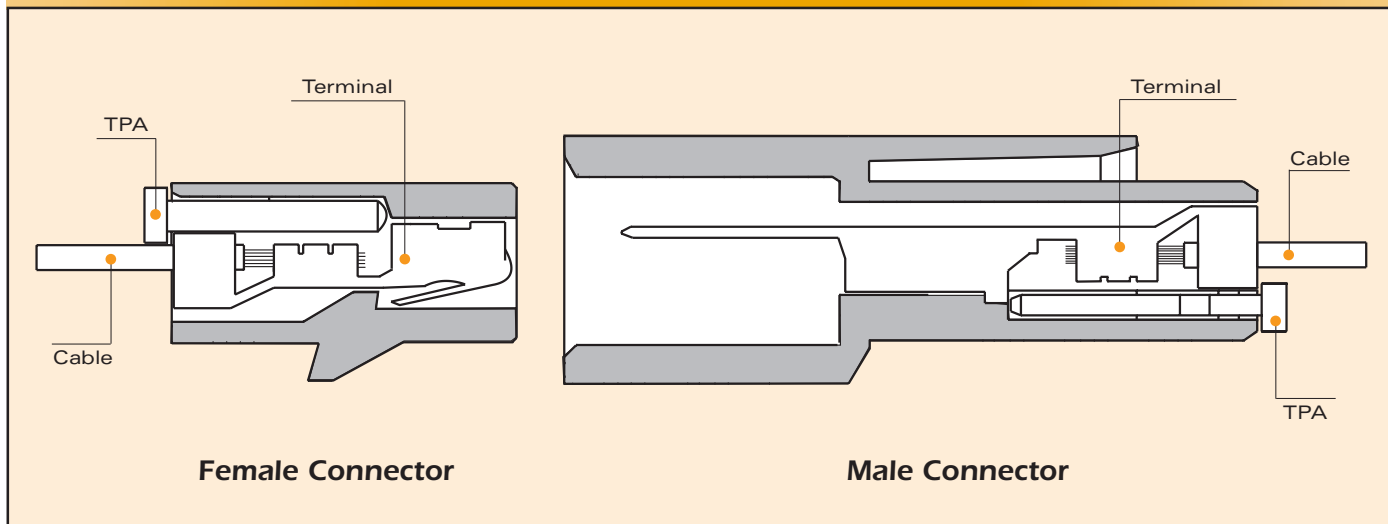
### 630 Metri-Pack Features

- **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



### 630 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084590 | 5.0                            | Tin Brass | Tin     |
| 12052224 | 3.0                            | Tin Brass | Tin     |
| 12084596 | 3.0 (2 Req'd.)                 | Tin Brass | Tin     |
| 12015870 | 2.0-1.0                        | Tin Brass | Tin     |
| 12015869 | 1.0-0.80                       | Tin Brass | Tin     |
| 12020035 | 0.80-0.50 (2 Req'd.)           | Tin Brass | Tin     |
| 12052222 | 0.50-0.35                      | Tin Brass | Tin     |

### 630 FEMALE CONNECTORS UNSEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 2          | 12129939  | Black | PA66 HS IM | 12129940 |
| 4          | 12015664  | Black | PA6        | —        |

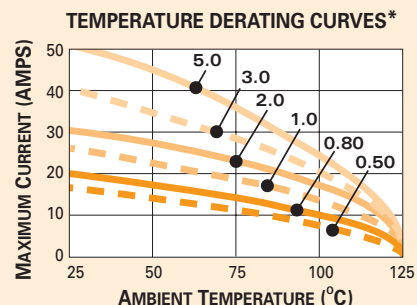
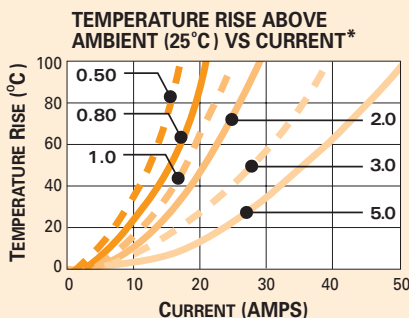




## Unsealed System Application Information

CABLE RANGE (mm<sup>2</sup>): ..... 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

### 630 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 Connector

Male Terminal



TPA  
(Terminal Position Assurance)



### 630 MALE CONNECTORS UNSEALED

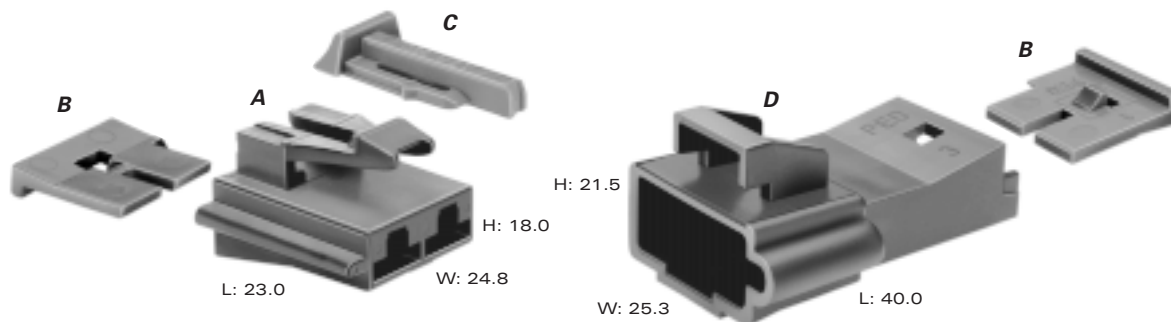
| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 2          | 12129938  | Black | PA66 HS IM | 12129940 |
| 4          | 12052623  | Black | PA6        | —        |

### 630 MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating         |
|----------|--------------------------------|-----------|-----------------|
| 12066493 | 5.0                            | Tin Brass | Tin over Copper |
| 12052826 | 3.0                            | Tin Brass | Tin over Copper |
| 12020365 | 3.0 (2 Req'd.)                 | Tin Brass | Tin over Copper |
| 12020126 | 2.0-1.0                        | Tin Brass | Tin over Copper |
| 12020125 | 1.0-0.80                       | Tin Brass | Tin over Copper |
| 12033972 | 0.80-0.50 (2 Req'd.)           | Tin Brass | Tin over Copper |
| 12066454 | 0.50-0.35                      | Tin Brass | Tin over Copper |

#### 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.



Total Mated Length: 53.0mm

## 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

## D PART NO: 12129938

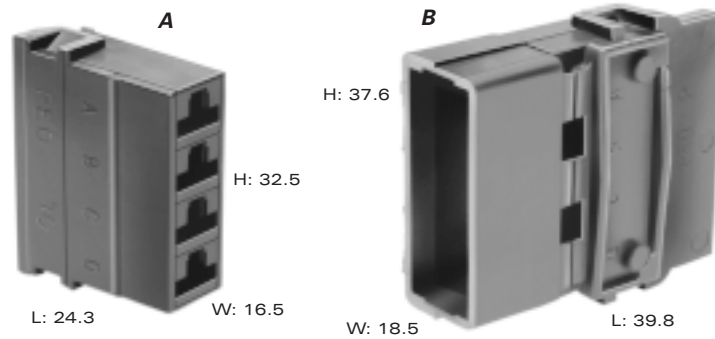
DESCRIPTION: Connector 2M (Clip Slot-Self Locking)  
 SIZE: 40.0L x 21.5H x 25.3W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 107

## B PART NO: 12129940

DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PA6

## C PART NO: 12052834

DESCRIPTION: CPA  
 COLOR: Green  
 MATERIAL: PP



Total Mated Length: 53.1mm

**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.

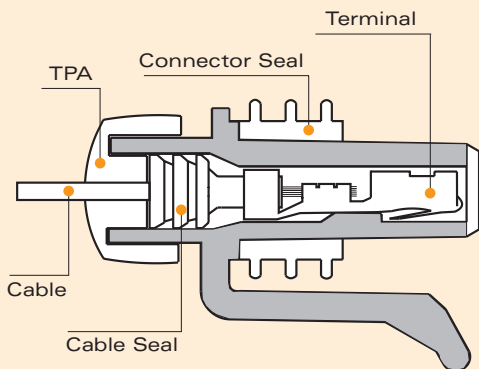
**B PART NO: 12052623\***

DESCRIPTION: Connector 4M  
 SIZE: 39.8L x 37.6H x 18.5W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 107

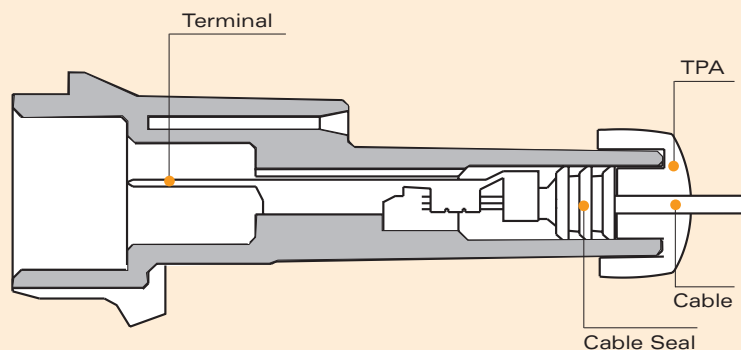
\*HINGED SECONDARY LOCK.



## Cross Sectional View



Female Connector Assembly



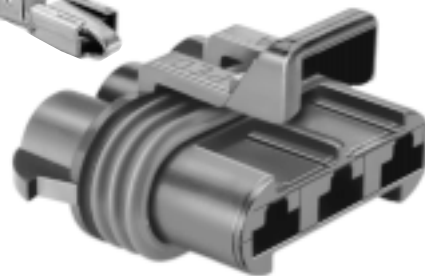
Male Connector

TPA  
(Terminal Position Assurance)



Cable Seal

Female Terminal



Female Connector Assembly

### 630 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052456 | 5.0-3.0                        | Tin Brass | Tin     |
| 12052455 | 2.0-1.0                        | Tin Brass | Tin     |
| 12052457 | 0.80-0.50                      | Tin Brass | Tin     |



### 630 FEMALE PULL-TO-SEAT TERMINALS

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12033997 | 5.0-3.0                        | Tin Brass | Tin     |
| 12066614 | 2.0-1.0                        | Tin Brass | Tin     |
| 12020156 | 0.80-0.50                      | Tin Brass | Tin     |



### 630 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color    |
|-------------|--------------|----------------|----------|----------|
| 12059257    | 12052386     | 5.15-4.40      | Silicone | Green    |
| 12059260    | 12052668     | 4.50-3.61      | Silicone | Blue     |
| 12059258    | 12052387     | 3.75-2.81      | Silicone | Lt. Gray |
| 12059259    | 12052388     | 2.85-2.01      | Silicone | Dk. Red  |
| 12077760    | 12077759     | 2.15-1.65      | Silicone | Tan      |

### 630 FEMALE CONNECTOR ASSEMBLY SEALED

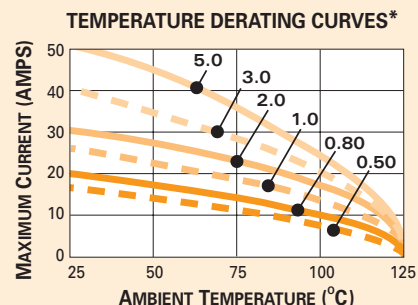
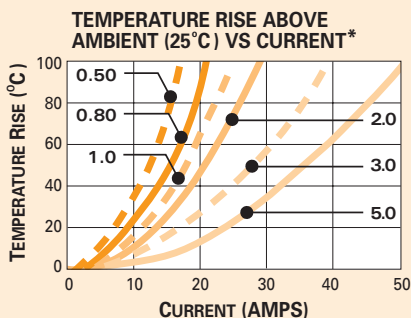
| # Cavities | Conn. Asm. | Color | Material | TPA      |
|------------|------------|-------|----------|----------|
| 3          | 12124685   | Black | PA6      | 12045699 |



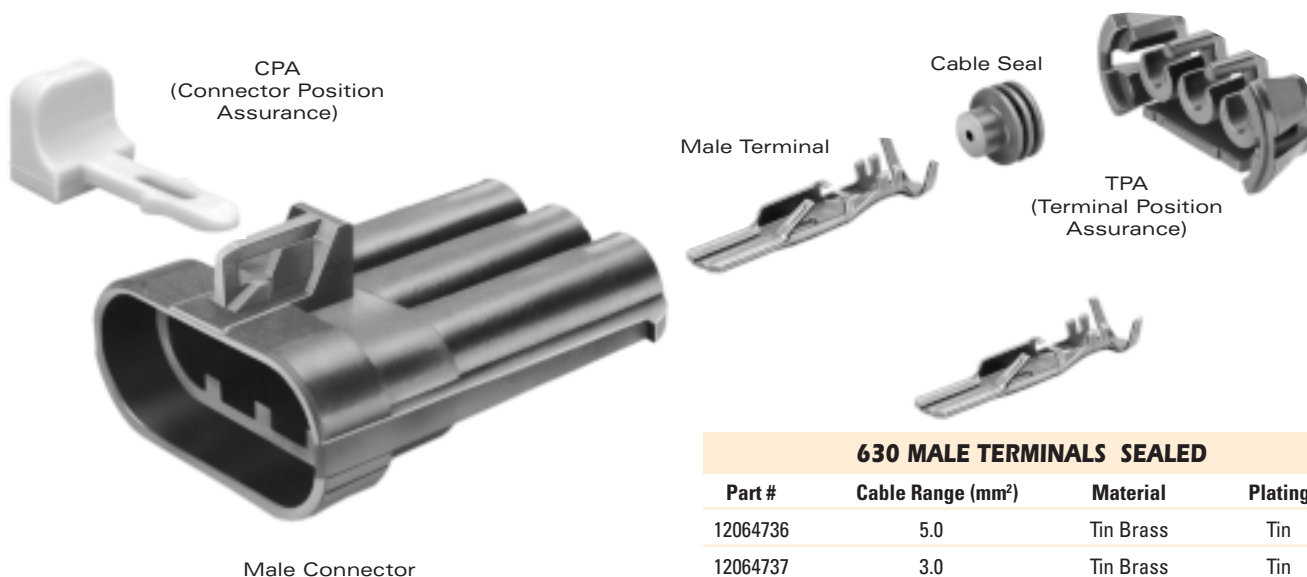
## Sealed System Application Information

CABLE RANGE (mm<sup>2</sup>): ..... 0.50-5.0  
 CURRENT RANGE (AMPS): ..... 0-46  
 TEMP RANGE °C: ..... -40 to 125  
 RESISTANCE: ..... <10mΩ@20mV  
 VOLTAGE DROP: ..... <3.0mV/amp  
 CENTERLINE SPACING (mm): ..... 10.8  
 BLADE WIDTH (mm): ..... 6.3

### 630 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.



#### 630 MALE CONNECTOR SEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 3          | 12124686  | Black | PBT 30% GF | 12045699 |

#### 630 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12064736 | 5.0                            | Tin Brass | Tin     |
| 12064737 | 3.0                            | Tin Brass | Tin     |
| 12064735 | 2.0-1.0                        | Tin Brass | Tin     |
| 12064734 | 0.80-0.50                      | Tin Brass | Tin     |

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

| Part #   | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12059255 | 9.8mm                  | Silicone | Lt. Green |

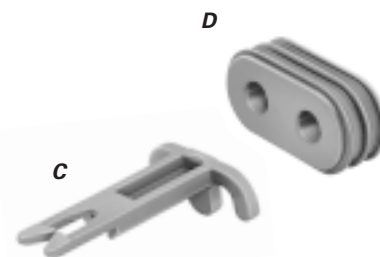
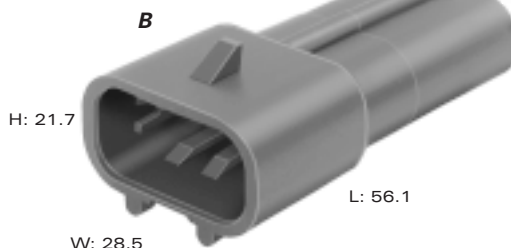
\*Cavity plugs seal unused female and male cavities.

#### 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.



Multiple Cable Seal  
(Included)



Total Mated Length: 67.5mm

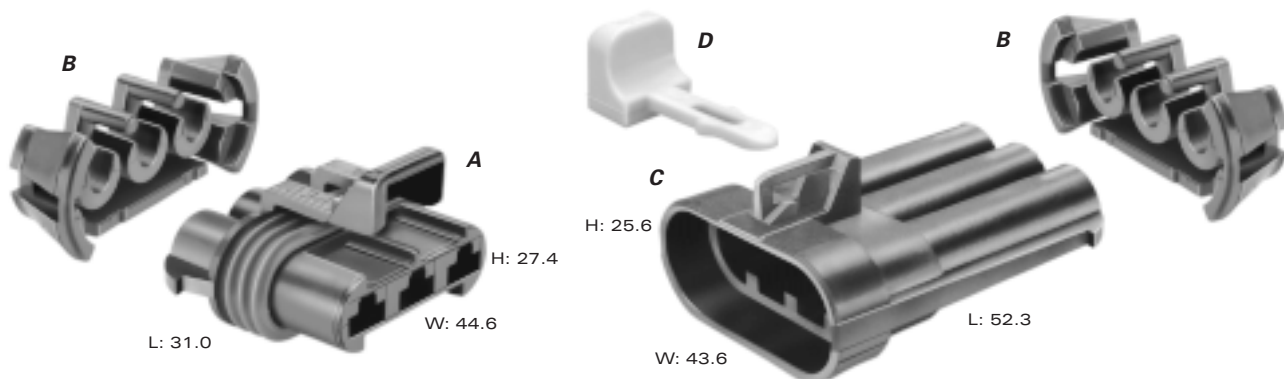
**A PART NO: 12033769**  
DESCRIPTION: Connector Assembly 2F  
SIZE: 31.5L x 20.0H x 27.3W  
COLOR: Black  
MATERIAL: PA66 HS IM  
TERMINALS: See Page 110, Pull-To-Seat Terminals

**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





Total Mated Length: 69.5mm

**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

**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

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

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



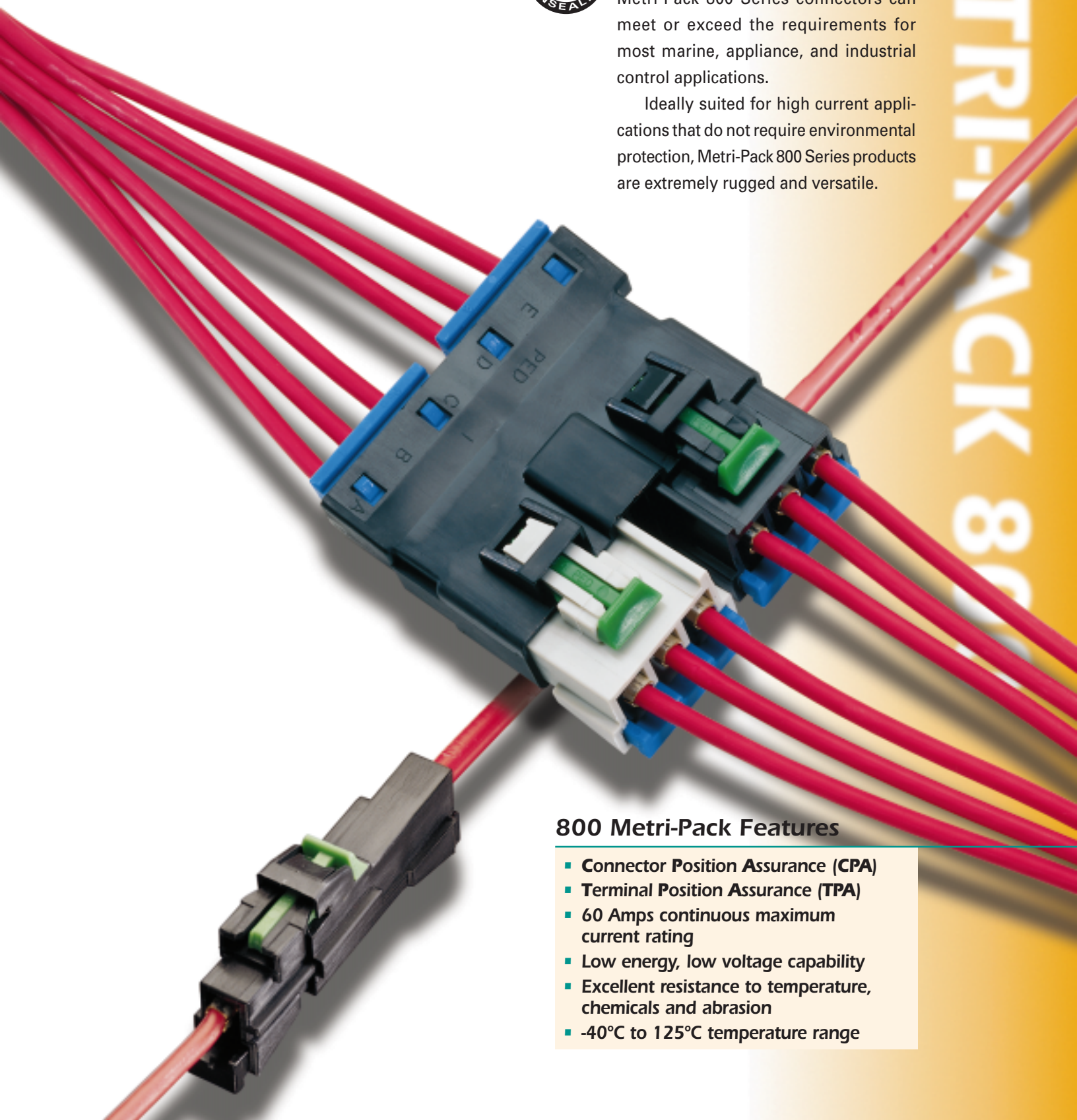
# Metri-Pack Series

## 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.

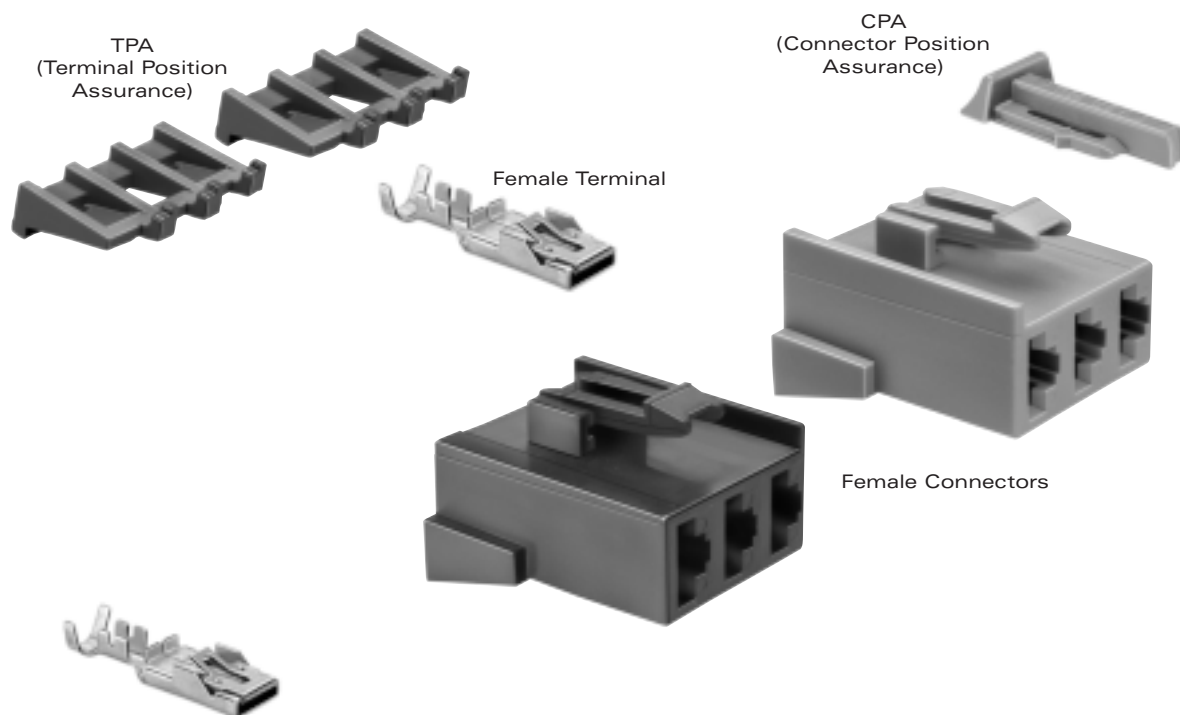
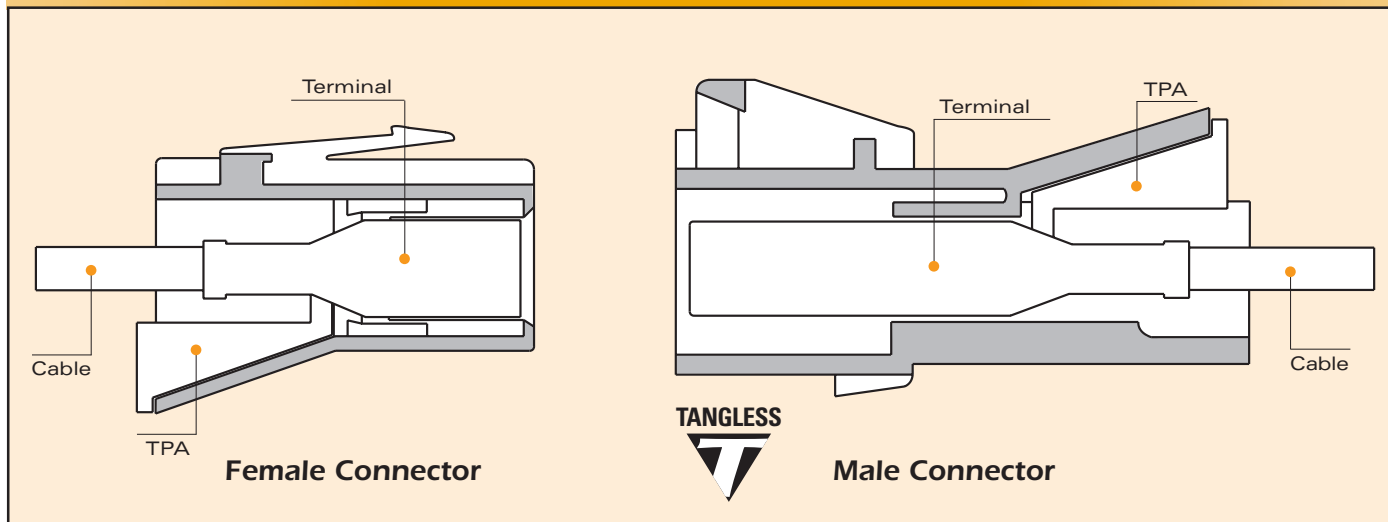


### 800 Metri-Pack Features

- **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



### 800 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating       |
|----------|--------------------------------|-----------|---------------|
| 12110127 | 5.0                            | Tin Brass | Silver/Nickel |
| 12092445 | 5.0 (2 Req'd.)                 | Tin Brass | Silver/Nickel |
| 12092444 | 3.0 (2 Req'd.)                 | Tin Brass | Silver/Nickel |
| 12065916 | 3.0-2.0                        | Tin Brass | Silver/Nickel |

### 800 FEMALE CONNECTORS UNSEALED

| # Cavities | Connector | Color    | Material   | TPA      |
|------------|-----------|----------|------------|----------|
| 1way: 1    | 12160893  | Black    | PA6        | 12160895 |
| 6way: 3    | 12092399  | Lt. Gray | PA66 HS IM | 12092401 |
| : 3        | 12092400  | Black    | PA66 HS IM | 12092401 |

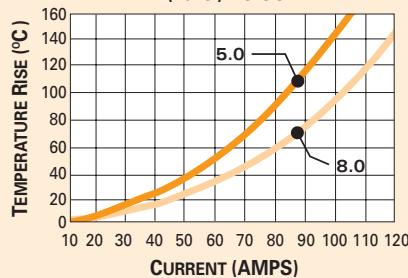


### Unsealed System Application Information

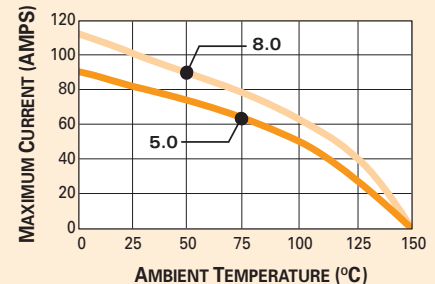
**CABLE RANGE (mm<sup>2</sup>):** ..... 2.0-5.0  
**CURRENT RANGE (AMPS):** ..... 0-60  
**TEMP RANGE °C:** ..... -40 to 125  
**RESISTANCE:** ..... <10mΩ@20mV  
**VOLTAGE DROP:** ..... <3.0mV/amp  
**CENTERLINE SPACING (mm):** ..... 10.3  
**BLADE WIDTH (mm):** ..... 8.0

#### 800 SERIES TERMINALS - Tin Plated

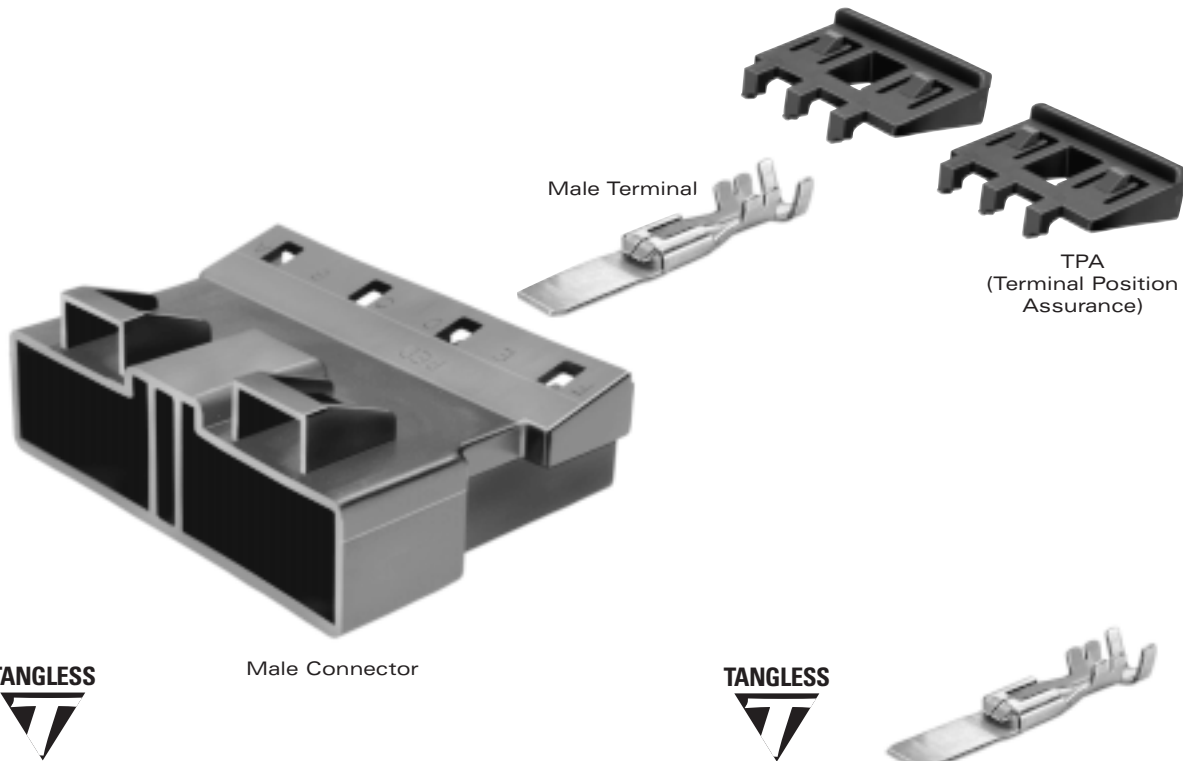
TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT\*



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.



**TANGLESS**



Male Connector

**TANGLESS**



TPA  
(Terminal Position Assurance)

#### 800 MALE CONNECTORS UNSEALED

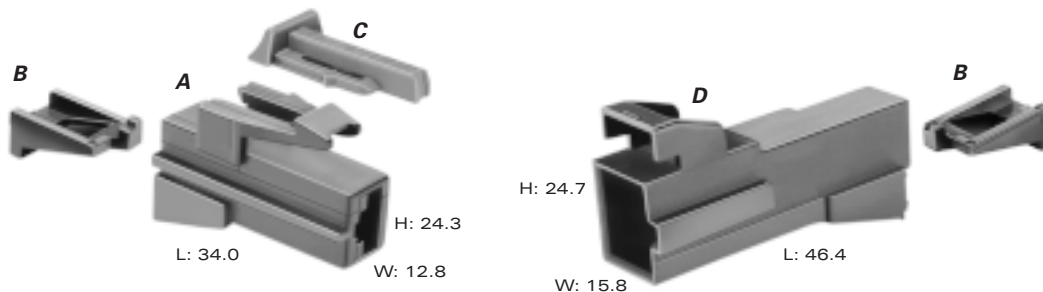
| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 1          | 12160894  | Black | PA6        | 12160895 |
| 6          | 12110698  | Black | PA66 HS IM | 12092401 |

#### 800 MALE TANGLESS TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating       |
|----------|--------------------------------|-----------|---------------|
| 12110700 | 5.0                            | Tin Brass | Silver/Nickel |

#### 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.



Total Mated Length: 65.7mm

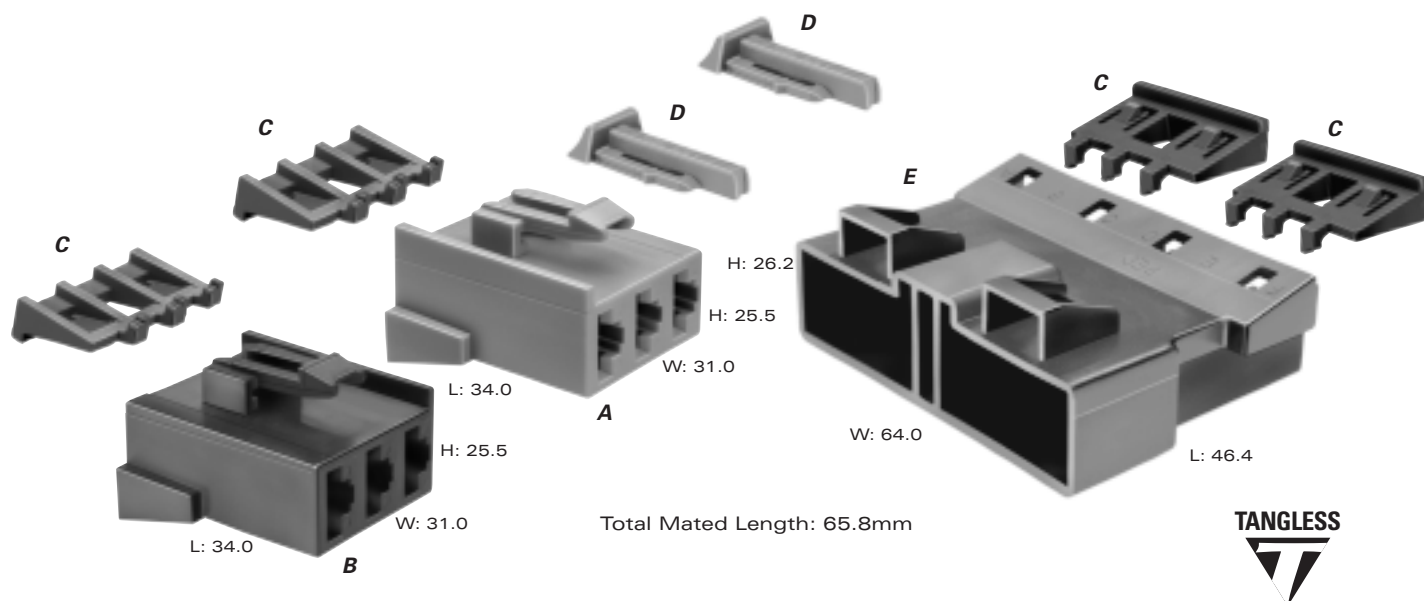
**A PART NO: 12160893**  
 DESCRIPTION: Connector 1F  
 SIZE: 34.0L x 24.3H x 12.8W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 116

**D PART NO: 12160894**  
 DESCRIPTION: Connector 1M (Clip Slot-Self Locking)  
 SIZE: 46.4L x 24.7H x 15.8W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 117

**B PART NO: 12160895**  
 DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Md. Gray  
 MATERIAL: PA6

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





### 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



# METRI-PACK SERIES

## Mixed



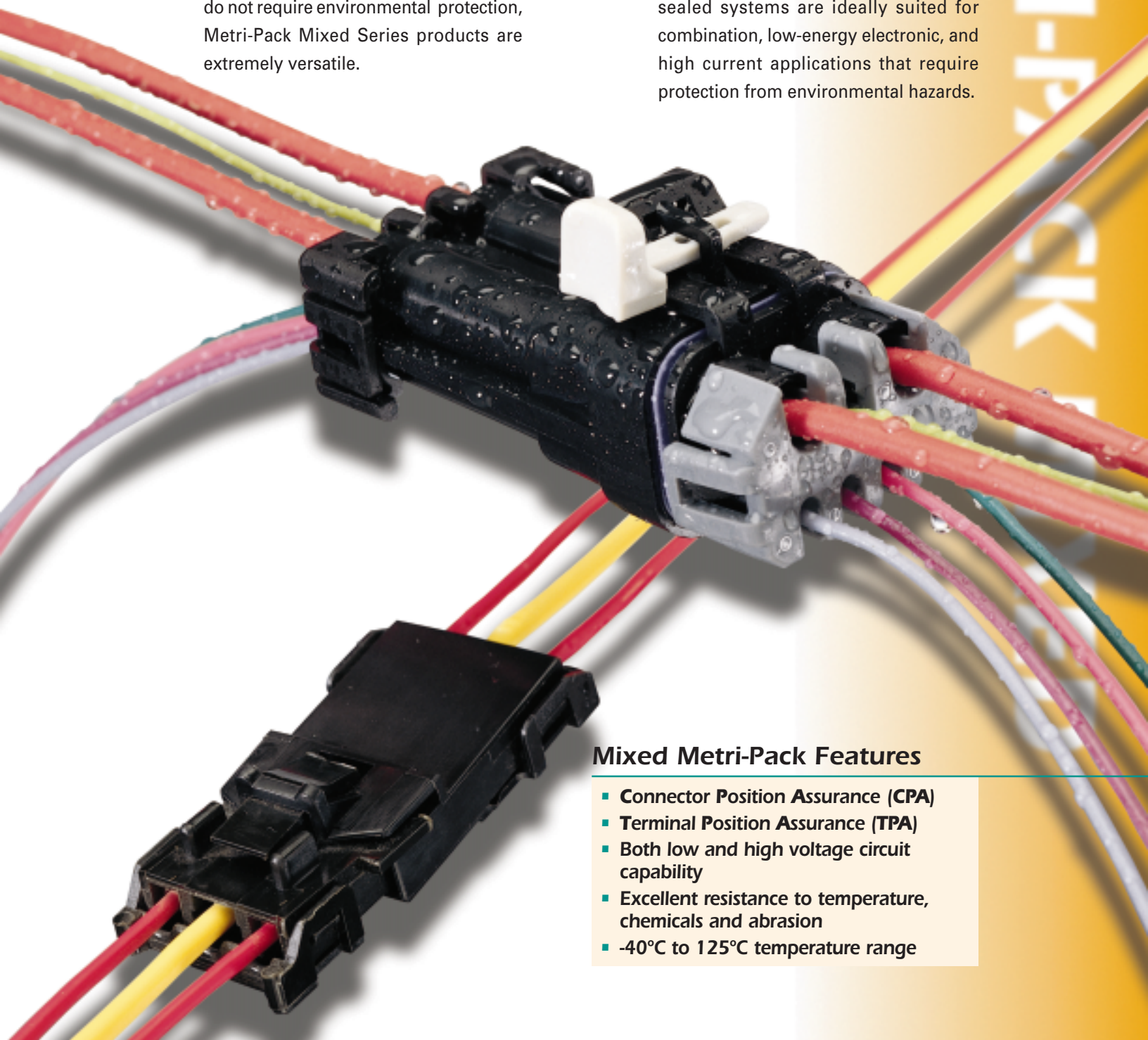
Available in device and in-line connections for vehicle applications, Metri-Pack Mixed Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

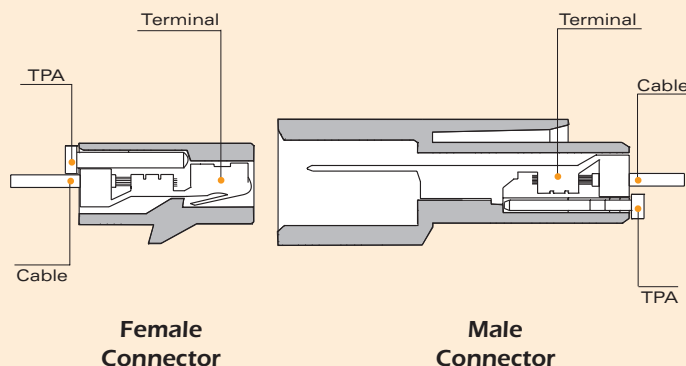


### Mixed Metri-Pack Features

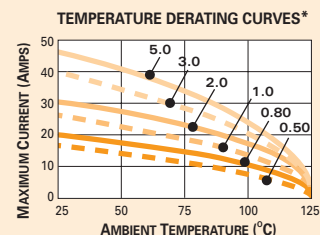
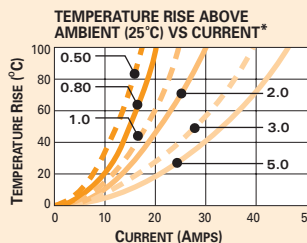
- **Connector Position Assurance (CPA)**
- **Terminal Position Assurance (TPA)**
- Both low and high voltage circuit capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range



## Unsealed System Application Information



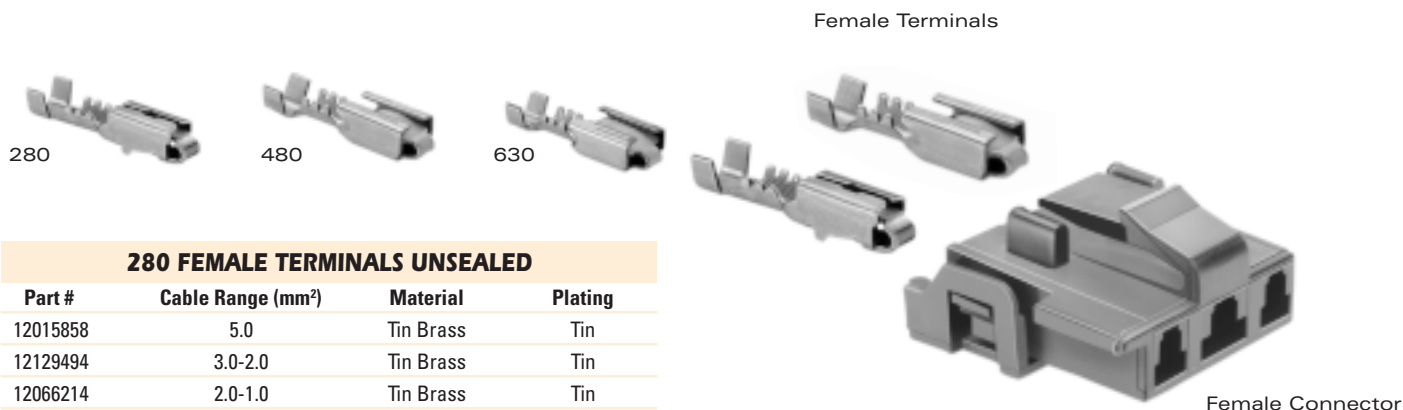
### 280 SERIES TERMINALS - Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 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.



### 280 FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12015858  | 5.0                            | Tin Brass | Tin     |
| 12129494  | 3.0-2.0                        | Tin Brass | Tin     |
| 12066214  | 2.0-1.0                        | Tin Brass | Tin     |
| 12034046  | 1.0-0.80                       | Tin Brass | Tin     |
| 12052217  | 0.50-0.35                      | Tin Brass | Tin     |
| 12162597* | 3.0-2.0                        | Tin Brass | Tin     |
| 12162595* | 1.0-0.80                       | Tin Brass | Tin     |
| 12162596* | 0.50-0.35                      | Tin Brass | Tin     |

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

### 480 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084595 | 5.0                            | Tin Brass | Tin     |
| 12052221 | 3.0                            | Tin Brass | Tin     |
| 12124304 | 2.0-1.0                        | Tin Brass | Tin     |
| 12015860 | 0.80                           | Tin Brass | Tin     |
| 12052219 | 0.50-0.35                      | Tin Brass | Tin     |
| 12020366 | 1.0-0.50 (1 Req'd.)            | Tin Brass | Tin     |
|          | 0.80-0.50 (1 Req'd.)           |           |         |

### MIXED METRI-PACK FEMALE CONNECTOR UNSEALED

| # Cavities | Connector | Color | Material |
|------------|-----------|-------|----------|
| 3          | 12020014  | Black | PA6      |

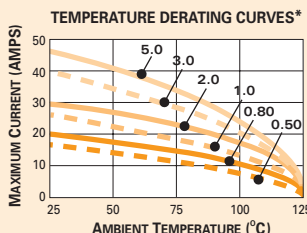
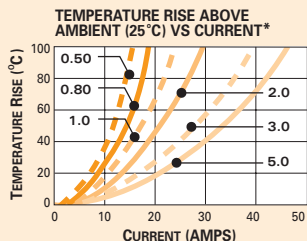
### 630 FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084590 | 5.0                            | Tin Brass | Tin     |
| 12052224 | 3.0                            | Tin Brass | Tin     |
| 12084596 | 3.0 (2 Req'd.)                 | Tin Brass | Tin     |
| 12015870 | 2.0-1.0                        | Tin Brass | Tin     |
| 12015869 | 1.0-0.80                       | Tin Brass | Tin     |
| 12020035 | 0.80-0.50 (2 Req'd.)           | Tin Brass | Tin     |
| 12052222 | 0.50-0.35                      | Tin Brass | Tin     |



### Unsealed System Application Information

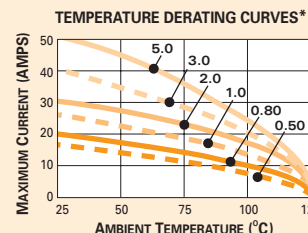
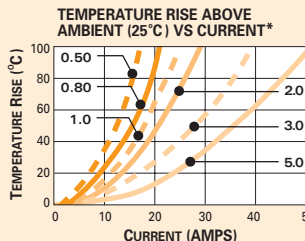
#### 480 SERIES TERMINALS-Tin Plated



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): .....  
..... Connector Dependent  
BLADE WIDTH (mm): ..... 4.8

#### 630 SERIES TERMINALS-Tin Plated

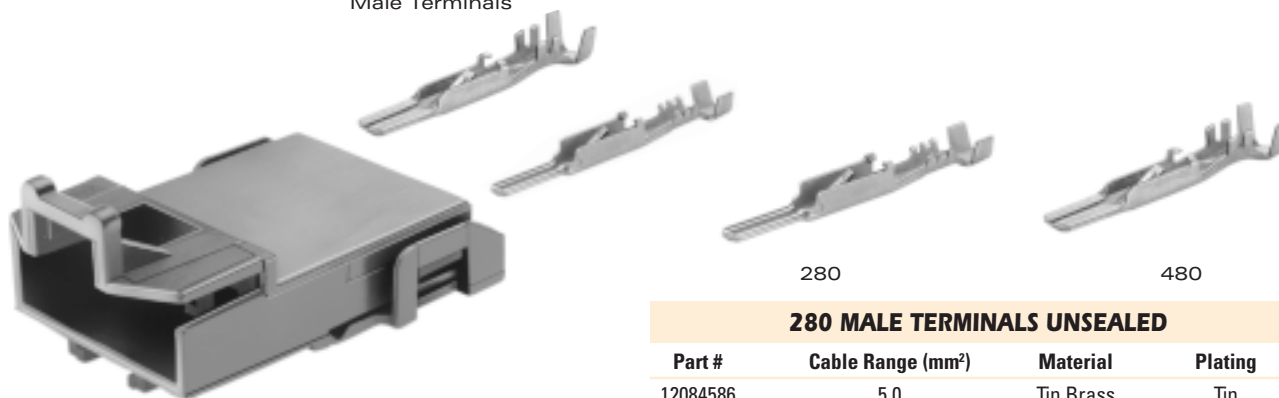


CABLE RANGE (mm²): ..... 0.35-5.0  
CURRENT RANGE (AMPS): ..... 0-46  
TEMP RANGE °C: ..... -40 to 125  
RESISTANCE: ..... <10mΩ@20mV

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.

Male Terminals



Male Connector

#### MIXED METRI-PACK MALE CONNECTOR UNSEALED

| # Cavities | Connector | Color | Material |
|------------|-----------|-------|----------|
| 3          | 12045681  | Black | PA6      |

#### 280 MALE TERMINALS UNSEALED

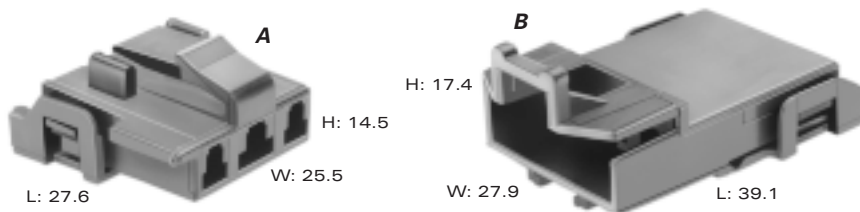
| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12084586 | 5.0               | Tin Brass | Tin     |
| 12129498 | 3.0-2.0           | Tin Brass | Tin     |
| 12020116 | 2.0-1.0           | Tin Brass | Tin     |
| 12034047 | 1.0-0.80          | Tin Brass | Tin     |
| 12066271 | 0.50-0.35         | Tin Brass | Tin     |
| 12020782 | 0.35 (2 Req'd.)   | Tin Brass | Tin     |

#### 480 MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm²) | Material  | Plating         |
|----------|-------------------|-----------|-----------------|
| 12033820 | 5.0               | Tin Brass | Tin over Copper |
| 12052827 | 3.0               | Tin Brass | Tin over Copper |
| 12020120 | 2.0-1.0           | Tin Brass | Tin over Copper |
| 12020119 | 1.0-0.80          | Tin Brass | Tin over Copper |
| 12066269 | 0.50-0.35         | Tin Brass | Tin over Copper |
| 12020784 | 0.35 (2 Req'd.)   | Tin Brass | Tin over Copper |

#### 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.



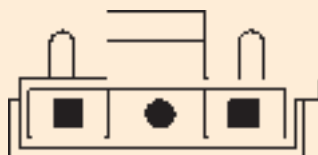
**A PART NO: 12020014\***  
 DESCRIPTION: Connector 3F  
 SIZE: 27.6L x 14.5H x 25.5W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 122  
 \*HINGED SECONDARY LOCK.

**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.

## KEY:

- 280 SERIES
- 480 SERIES

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



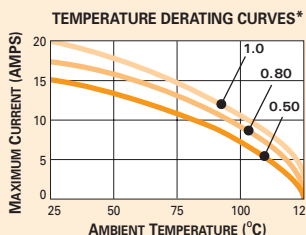
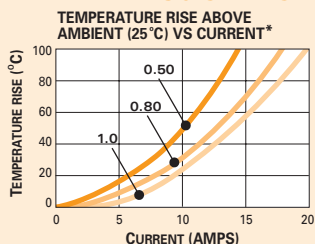






## Sealed System Application Information

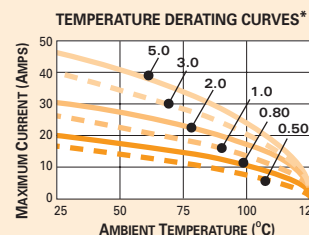
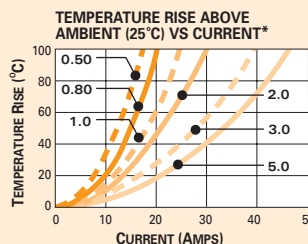
### 150 SERIES TERMINALS-Tin Plated



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

VOLTAGE DROP: .... <10.0mV/amp  
CENTERLINE SPACING (mm): .....  
..... Connector Dependent  
BLADE WIDTH (mm): ..... 1.5

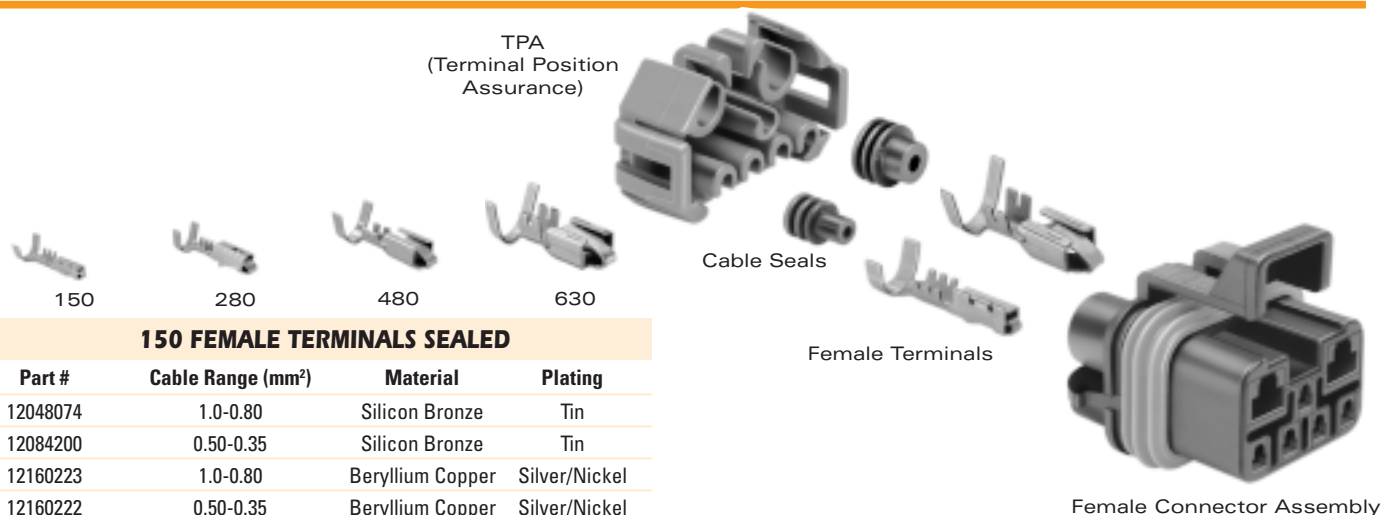
### 280 SERIES TERMINALS - Tin Plated



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.



### 150 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material         | Plating       |
|----------|-------------------|------------------|---------------|
| 12048074 | 1.0-0.80          | Silicon Bronze   | Tin           |
| 12084200 | 0.50-0.35         | Silicon Bronze   | Tin           |
| 12160223 | 1.0-0.80          | Beryllium Copper | Silver/Nickel |
| 12160222 | 0.50-0.35         | Beryllium Copper | Silver/Nickel |

### 280 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12077413 | 5.0               | Tin Brass | Tin     |
| 12129493 | 3.0-2.0           | Tin Brass | Tin     |
| 12077411 | 1.0-0.80          | Tin Brass | Tin     |
| 12084201 | 0.50-0.35         | Tin Brass | Tin     |

### 480 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12052139 | 5.0-3.0           | Tin Brass | Tin     |
| 12048451 | 2.0-1.0           | Tin Brass | Tin     |
| 12048450 | 0.80-0.50         | Tin Brass | Tin     |

### 630 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12052456 | 5.0-3.0           | Tin Brass | Tin     |
| 12052455 | 2.0-1.0           | Tin Brass | Tin     |
| 12052457 | 0.80-0.50         | Tin Brass | Tin     |

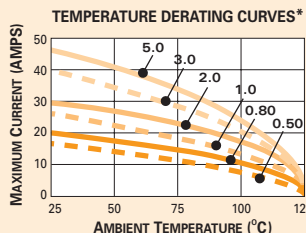
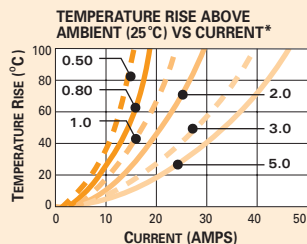
### MIXED METRI-PACK FEMALE CONNECTOR ASSEMBLY SEALED

| # Cavities | Conn. Asm. | Color | Material   | TPA      |
|------------|------------|-------|------------|----------|
| 7          | 12059472   | Black | PA66 HS IM | 12052486 |



### Sealed System Application Information

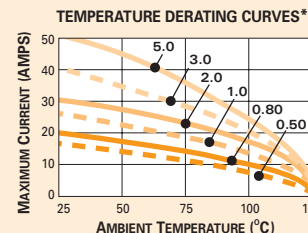
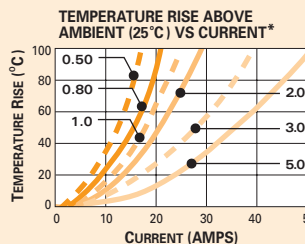
#### 480 SERIES TERMINALS-Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 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 (mm<sup>2</sup>): ..... 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.



CPA  
(Connector Position Assurance)



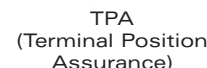
Male Connector



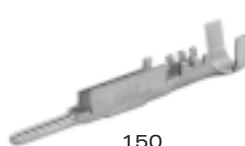
Male Terminals



Cable Seals



TPA  
(Terminal Position Assurance)



150



480

#### MIXED METRI-PACK MALE CONNECTOR SEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 7          | 12052200  | Black | PA66 HS IM | 12052199 |

#### 150 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12045773 | 1.0-0.80                       | Tin Brass | Tin     |
| 12077628 | 0.50-0.35                      | Tin Brass | Tin     |

#### 480 MALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052172 | 5.0                            | Tin Brass | Tin     |
| 12065197 | 3.0                            | Tin Brass | Tin     |
| 12065196 | 2.0-1.0                        | Tin Brass | Tin     |

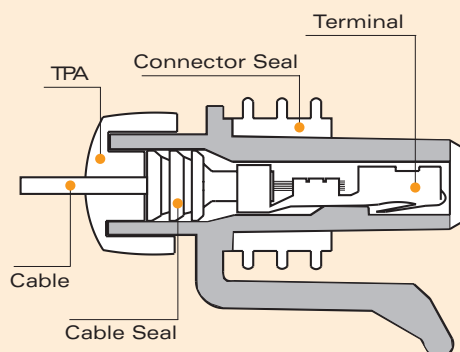
#### SECTION NOTES:

Contact your regional support representative at the number listed below.

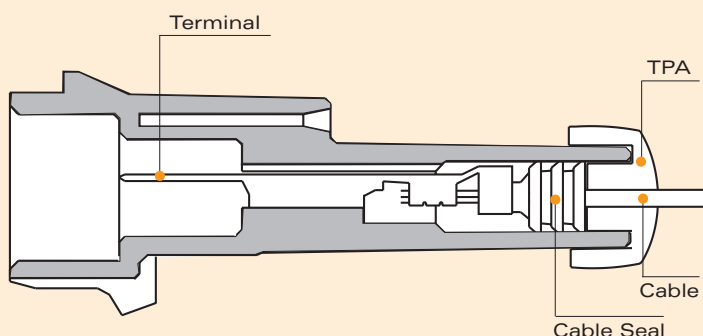
- Due to rigid tolerances of connector cavities, it is critical to meet all crimp dimensions as specified.
- Female connections for device applications, see pages 131 and 132.



## Cross Sectional View



**Female Connector Assembly**



**Male Connector**

### 150 METRI-PACK CABLE SEALS

| Reel Part# | Loose Part# | Cable Diameter | Material | Color   |
|------------|-------------|----------------|----------|---------|
| 12052924   | 12048086    | 2.85-2.03      | Silicone | Dk. Red |
| 12089442   | 12089678    | 2.15-1.60      | Silicone | White   |
| 12052925   | 12048087    | 1.70-1.29      | Silicone | Blue    |
| 12124669   | 12084193    | 1.009-0.995    | Silicone | Tan     |

### 150 METRI-PACK CAVITY PLUG\*

| Part#    | Cavity Inside Diameter | Material | Color   |
|----------|------------------------|----------|---------|
| 12059168 | 5.2mm                  | Silicone | Dk. Red |

\*Cavity plugs seal unused female and male cavities.

### 280 METRI-PACK CABLE SEALS

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

### 280 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color |
|----------|------------------------|----------|-------|
| 12010300 | 6.7mm                  | Silicone | Green |

\*Cavity plugs seal unused female and male cavities.

### 480 METRI-PACK CABLE SEALS

| Reel Part# | Loose Part# | Cable Diameter | Material | Color  |
|------------|-------------|----------------|----------|--------|
| 12065703   | 12034170    | 5.16-4.40      | Silicone | Orange |
| 12052453   | 12048443    | 4.50-3.61      | Silicone | Purple |
| 12052452   | 12048442    | 3.75-2.81      | Silicone | Red    |
| 12048433   | 12048441    | 2.85-2.01      | Silicone | White  |
| 12052931   | 12052930    | 2.15-1.60      | Silicone | Yellow |
| 12162068   | 12162067    | 1.70-1.29      | Silicone | Pink   |

### 480 METRI-PACK CAVITY PLUG\*

| Part#    | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12066082 | 8.5mm                  | Silicone | Lt. Green |

\*Cavity plugs seal unused female and male cavities.

### 630 METRI-PACK CABLE SEALS

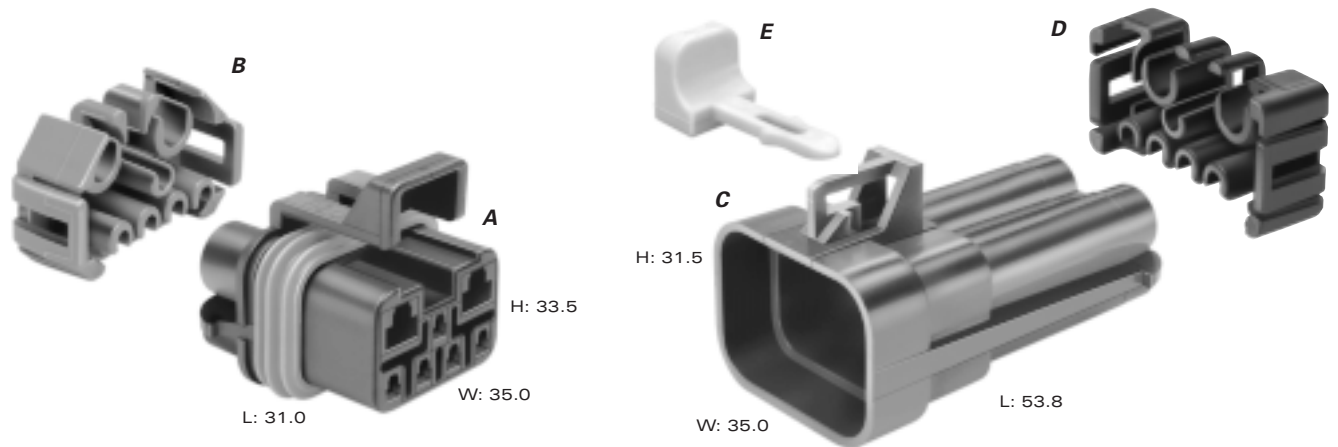
| Reel Part # | Loose Part # | Cable Diameter | Material | Color    |
|-------------|--------------|----------------|----------|----------|
| 12059257    | 12052386     | 5.15-4.40      | Silicone | Green    |
| 12059260    | 12052668     | 4.50-3.61      | Silicone | Blue     |
| 12059258    | 12052387     | 3.75-2.81      | Silicone | Lt. Gray |
| 12059259    | 12052388     | 2.85-2.01      | Silicone | Dk. Red  |
| 12077760    | 12077759     | 2.15-1.65      | Silicone | Tan      |

### 630 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12059255 | 9.8mm                  | Silicone | Lt. Green |

\*Cavity plugs seal unused female and male cavities.

<http://delphi.com/products/connect>



Total Mated Length: 69.3mm

**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

**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

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

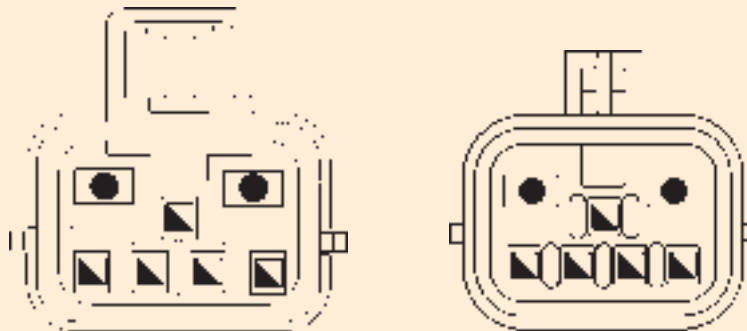
**D PART NO: 12052199**  
 DESCRIPTION: TPA  
 COLOR: Black  
 MATERIAL: PA6

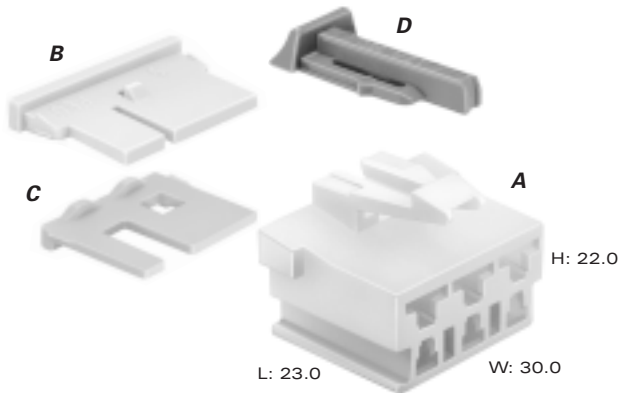
**E PART NO: 12020833**  
 DESCRIPTION: CPA  
 COLOR: Gray  
 MATERIAL: PBT

### KEY:

- 150 SERIES
- 480 SERIES

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



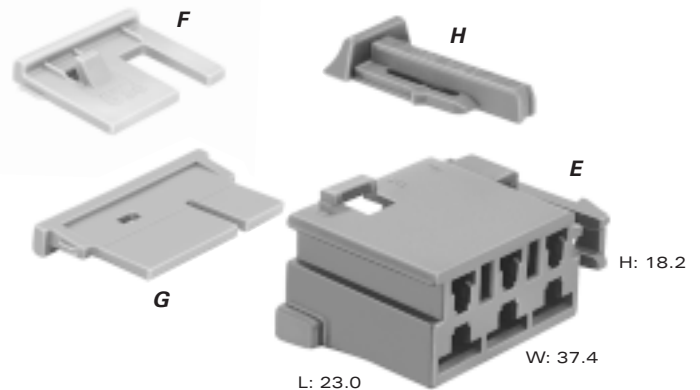


**A PART NO: 12129842**  
 DESCRIPTION: Connector 6F  
 SIZE: 23.0L x 22.0H x 30.0W  
 COLOR: Natural  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 122  
 TYPICAL APP: Switch

**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)  
 12110075 (Natural)\***  
 DESCRIPTION: Connector 6F  
 SIZE: 23.0L x 18.2H x 37.4W  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 122  
 TYPICAL APP: Switch  
 \*REVERSED LOCKING FEATURE.

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

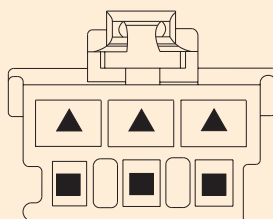
**G PART NO: 12162299**  
 DESCRIPTION: TPA  
 COLOR: Md. Gray  
 MATERIAL: PA6

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

### KEY:

- 280 SERIES
- ▲ 630 SERIES

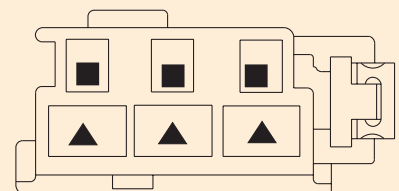
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.



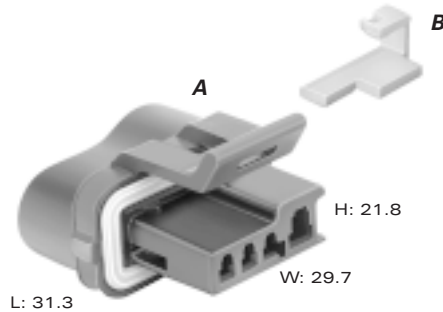
### KEY:

- 280 SERIES
- ▲ 630 SERIES

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

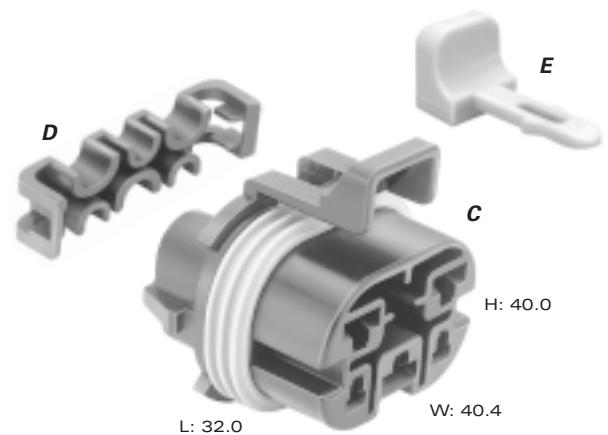






- A PART NO: 12124898**  
 DESCRIPTION: Connector Assembly 4F  
 SIZE: 31.3L x 21.8H x 29.7W  
 COLOR: Black  
 MATERIAL: PBT  
 TERMINALS: See Page 126  
 SEALS/PLUGS: See Page 128  
 TYPICAL APP: Alternator

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



- C 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

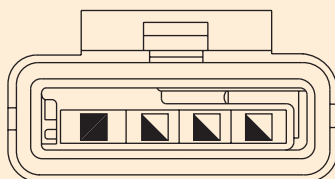
- D PART NO: 12052290**  
 DESCRIPTION: TPA  
 COLOR: Black  
 MATERIAL: PA66 HS IM

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

### KEY:

- 150 SERIES
- 280 SERIES

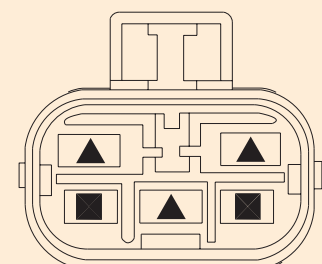
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

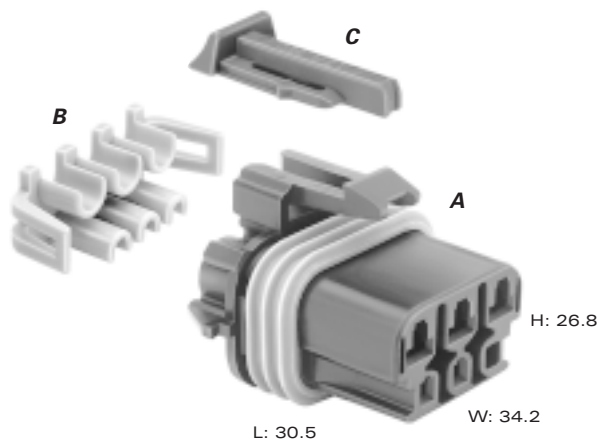


### KEY:

- 280 SERIES
- ▲ 630 SERIES

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





**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

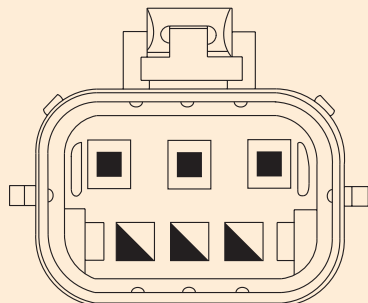
**B PART NO: 12129124**  
 DESCRIPTION: TPA  
 COLOR: Lt. Gray  
 MATERIAL: PA6

**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



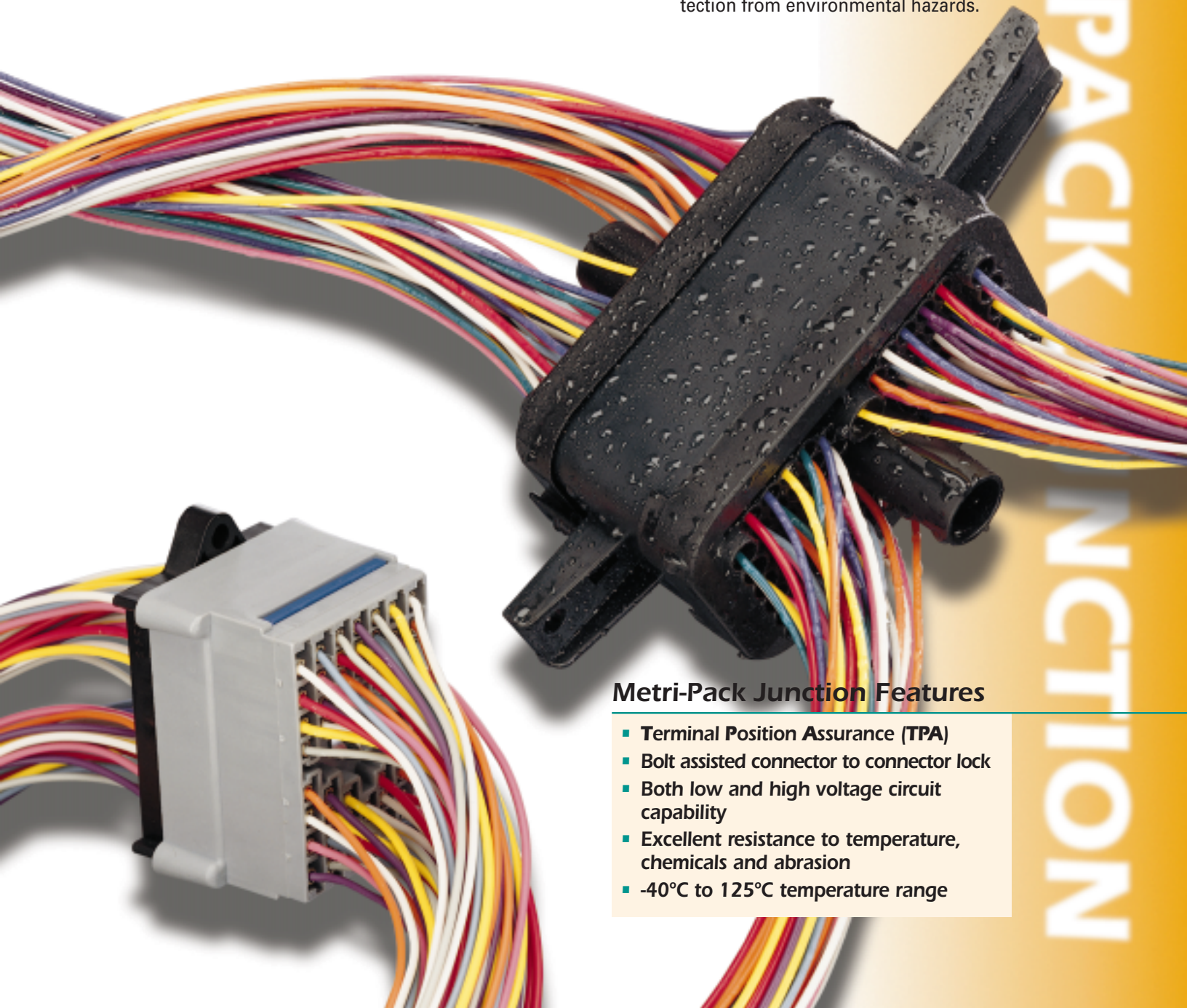
Available in pass-through and in-line connections, Metri-Pack Junction System Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

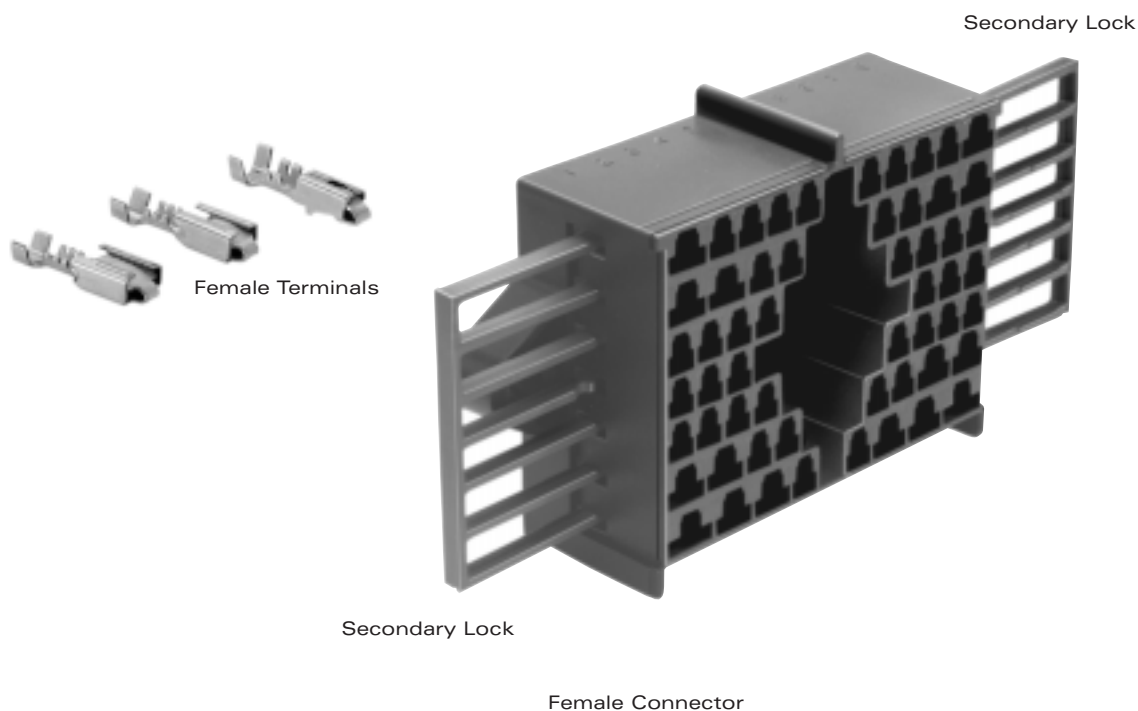


## Metri-Pack Junction Features

- 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



## Female Unsealed System



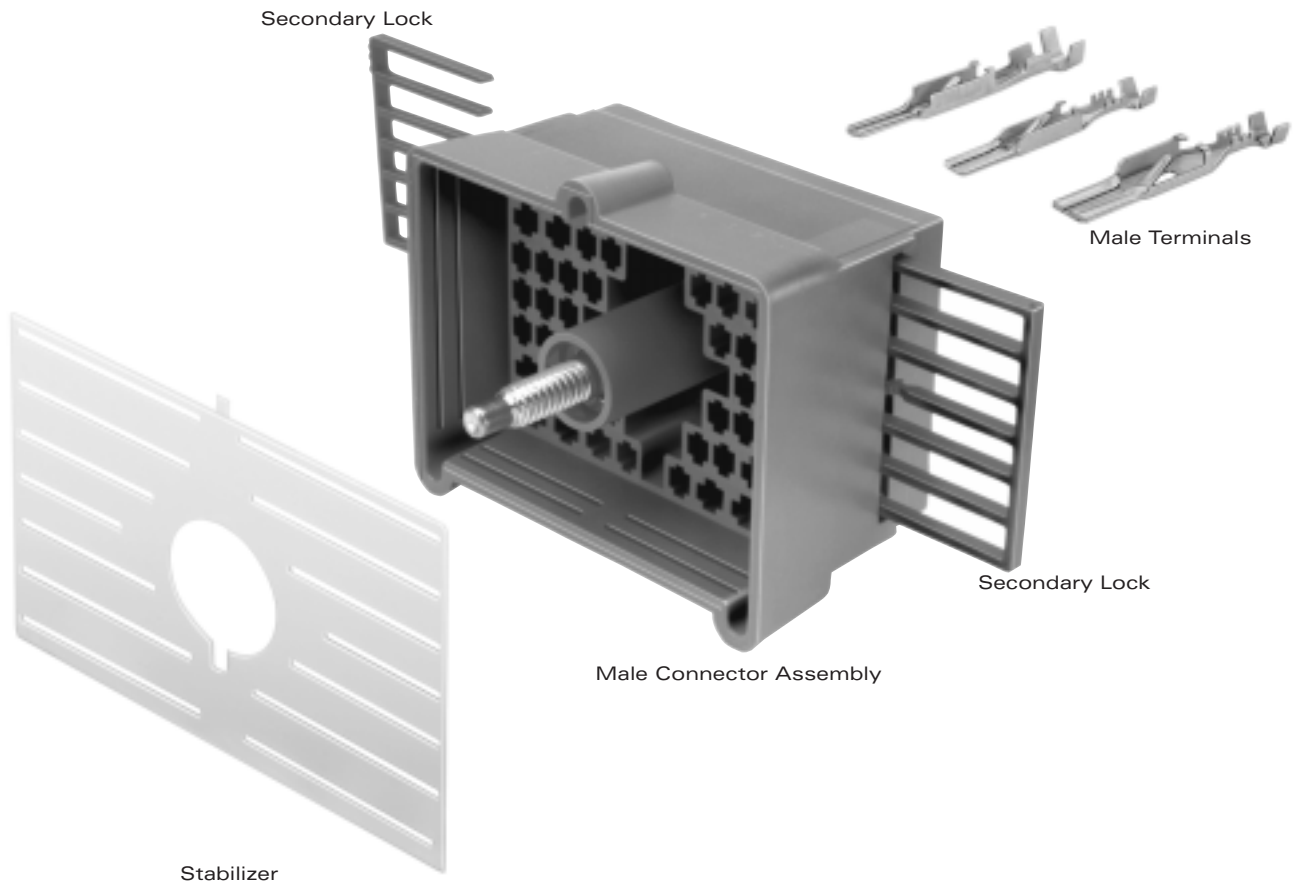
### JUNCTION SYSTEMS FEMALE CONNECTORS UNSEALED

| # Cavities  | Connector | Color | Material          | Secondary Lock |
|-------------|-----------|-------|-------------------|----------------|
| 42way: 42   | 12015508  | Black | PA6               | 12015510       |
|             |           |       |                   | 12015511       |
| 48way: 18   | 12084183  | Black | PA66 HS IM        | 12047838       |
| : 17        | 12047842  | Black | PA66 HS IM        | 12047843       |
| : 13        | 12047840  | Gray  | PPE               | 12047841       |
| 56way: 56   | 15394027  | Black | PA6               | 15324764       |
| 116way: 116 | 12162463  | Black | PA66 HS IM 14% GF | 12047751       |





### Male Unsealed System



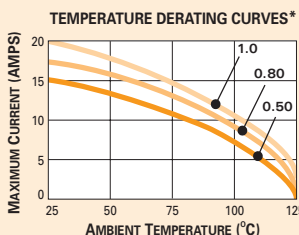
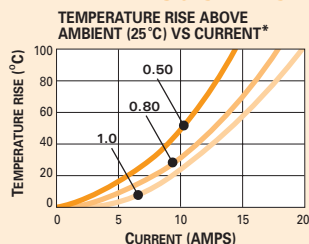
#### JUNCTION SYSTEMS MALE CONNECTOR ASSEMBLIES UNSEALED

| # Cavities  | Conn. Asm. | Color    | Material   | Secondary Lock | Stabilizer |
|-------------|------------|----------|------------|----------------|------------|
| 42way: 25   | 12015509   | Black    | PA66 HS IM | 12015510       | 12162412   |
| : 17        | 12020629   | Black    | PA6        | 12015511       | 12162413   |
| 48way: 48   | 12077822   | Black    | PA6        | 12047845       | 12186880   |
|             |            |          |            | 12047846       |            |
|             |            |          |            | 12047838       |            |
| 56way: 56   | 12059735   | Md. Gray | PA66 HS IM | 15324764       | 12186869   |
| 116way: 116 | 12065705   | Black    | PPE        | 12047752       | 12124732   |



## Unsealed System Application Information

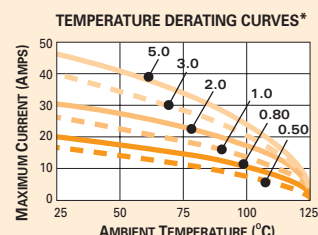
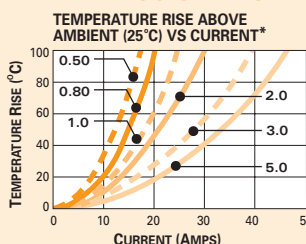
### 150 SERIES TERMINALS-Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 0.35-1.0  
 CURRENT RANGE (AMPS): ..... 0-14  
 TEMP RANGE °C: ..... -40 to 125  
 RESISTANCE: ..... <10mΩ@20mV

VOLTAGE DROP: .... <10.0mV/amp  
 CENTERLINE SPACING (mm): .....  
 ..... Connector Dependent  
 BLADE WIDTH (mm): ..... 1.5

### 280 SERIES TERMINALS - Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 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.



### 150 SERIES FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material       | Plating |
|----------|--------------------------------|----------------|---------|
| 12047767 | 1.0-0.80                       | Silicon Bronze | Tin     |
| 12064971 | 0.50-0.35                      | Silicon Bronze | Tin     |



### 480 SERIES FEMALE TERMINALS UNSEALED

| Part #   | Cable Range (mm <sup>2</sup> )              | Material  | Plating |
|----------|---------------------------------------------|-----------|---------|
| 12084595 | 5.0                                         | Tin Brass | Tin     |
| 12052221 | 3.0                                         | Tin Brass | Tin     |
| 12124304 | 2.0-1.0                                     | Tin Brass | Tin     |
| 12015860 | 0.80                                        | Tin Brass | Tin     |
| 12052219 | 0.50-0.35                                   | Tin Brass | Tin     |
| 12020366 | 1.0-0.50 (1 Req'd.)<br>0.80-0.50 (1 Req'd.) | Tin Brass | Tin     |



### 280 SERIES FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12015858  | 5.0                            | Tin Brass | Tin     |
| 12129494  | 3.0-2.0                        | Tin Brass | Tin     |
| 12034046  | 1.0-0.80                       | Tin Brass | Tin     |
| 12052217  | 0.50-0.35                      | Tin Brass | Tin     |
| 12162597* | 3.0-2.0                        | Tin Brass | Tin     |
| 12162595* | 1.0-0.80                       | Tin Brass | Tin     |
| 12162596* | 0.50-0.35                      | Tin Brass | Tin     |

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



### 630 SERIES FEMALE TERMINALS UNSEALED

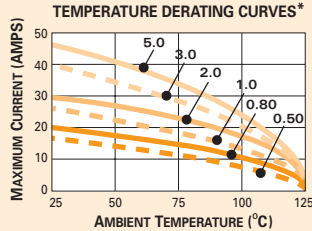
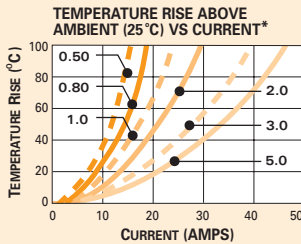
| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12084590 | 5.0                            | Tin Brass | Tin     |
| 12084596 | 3.0 (2 Req'd.)                 | Tin Brass | Tin     |
| 12052224 | 3.0                            | Tin Brass | Tin     |
| 12015870 | 2.0-1.0                        | Tin Brass | Tin     |
| 12015869 | 1.0-0.80                       | Tin Brass | Tin     |
| 12020035 | 0.80-0.50 (2 Req'd.)           | Tin Brass | Tin     |
| 12052222 | 0.50-0.35                      | Tin Brass | Tin     |

<http://delphi.com/products/connect>



### Unsealed System Application Information

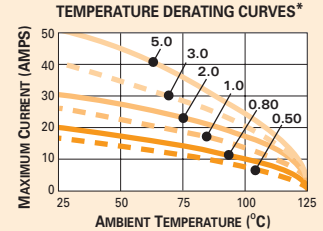
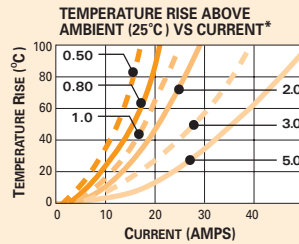
#### 480 SERIES TERMINALS-Tin Plated



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): .....  
 ..... 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.



#### 150 SERIES MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12047581 | 1.0-0.80          | Tin Brass | Tin     |
| 12059894 | 0.50-0.35         | Tin Brass | Tin     |



#### 480 SERIES MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm²) | Material  | Plating         |
|----------|-------------------|-----------|-----------------|
| 12033820 | 5.0               | Tin Brass | Tin over Copper |
| 12052827 | 3.0               | Tin Brass | Tin over Copper |
| 12020120 | 2.0-1.0           | Tin Brass | Tin over Copper |
| 12020119 | 1.0-0.80          | Tin Brass | Tin over Copper |
| 12066269 | 0.50-0.35         | Tin Brass | Tin over Copper |
| 12020784 | 0.35 (2 Req'd.)   | Tin Brass | Tin over Copper |



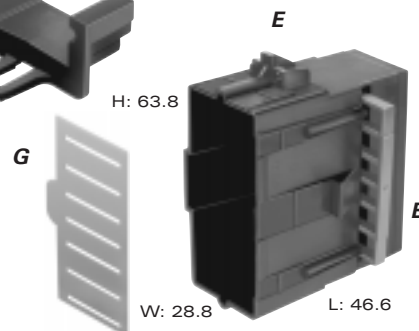
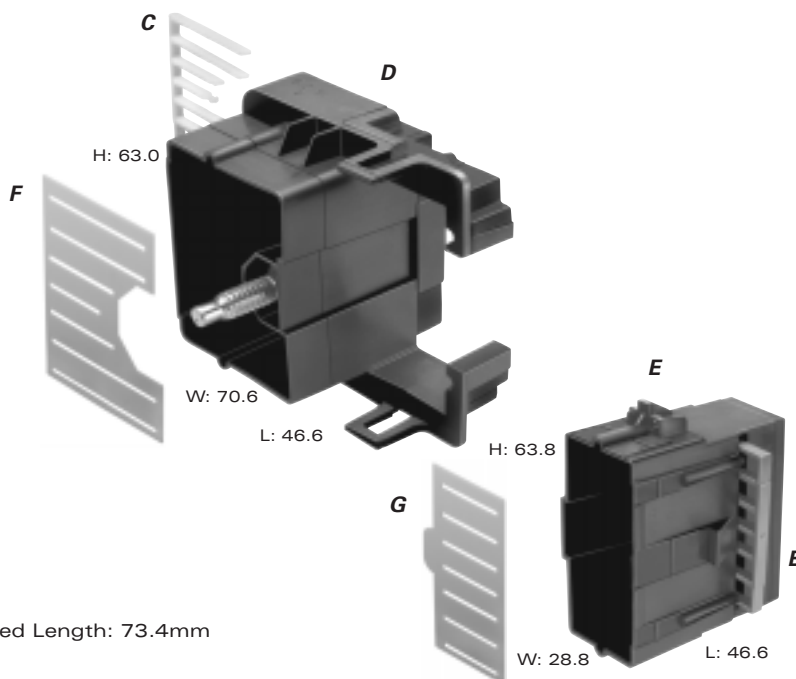
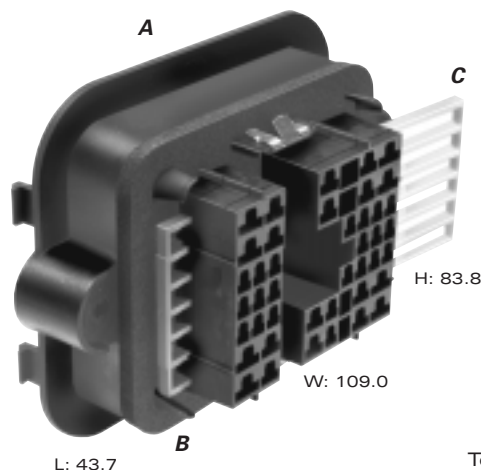
#### 280 SERIES MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12084586 | 5.0               | Tin Brass | Tin     |
| 12129498 | 3.0-2.0           | Tin Brass | Tin     |
| 12020116 | 1.0               | Tin Brass | Tin     |
| 12034047 | 1.0-0.80          | Tin Brass | Tin     |
| 12066271 | 0.50-0.35         | Tin Brass | Tin     |
| 12020782 | 0.35 (2 Req'd.)   | Tin Brass | Tin     |



#### 630 SERIES MALE TERMINALS UNSEALED

| Part #   | Cable Range (mm²)    | Material  | Plating         |
|----------|----------------------|-----------|-----------------|
| 12066493 | 5.0                  | Tin Brass | Tin over Copper |
| 12052826 | 3.0                  | Tin Brass | Tin over Copper |
| 12020365 | 3.0 (2 Req'd.)       | Tin Brass | Tin over Copper |
| 12020126 | 2.0-1.0              | Tin Brass | Tin over Copper |
| 12020125 | 1.0-0.80             | Tin Brass | Tin over Copper |
| 12033972 | 0.80-0.50 (2 Req'd.) | Tin Brass | Tin over Copper |
| 12066454 | 0.50-0.35            | Tin Brass | Tin over Copper |



**A 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

**B PART NO: 12015511**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PBT

**C PART NO: 12015510**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

**D PART NO: 12015509**  
 DESCRIPTION: Connector Assembly 25M  
 SIZE: 46.6L x 63.0H x 70.6W  
 COLOR: Black  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 139

**E PART NO: 12020629**  
 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

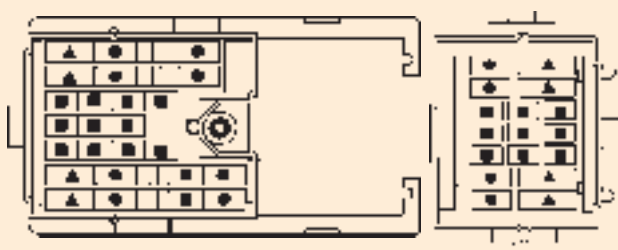
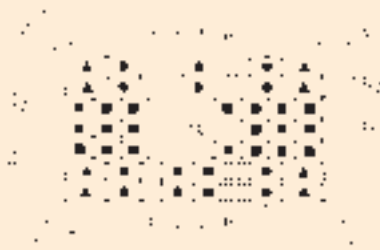
**F PART NO: 12162412**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

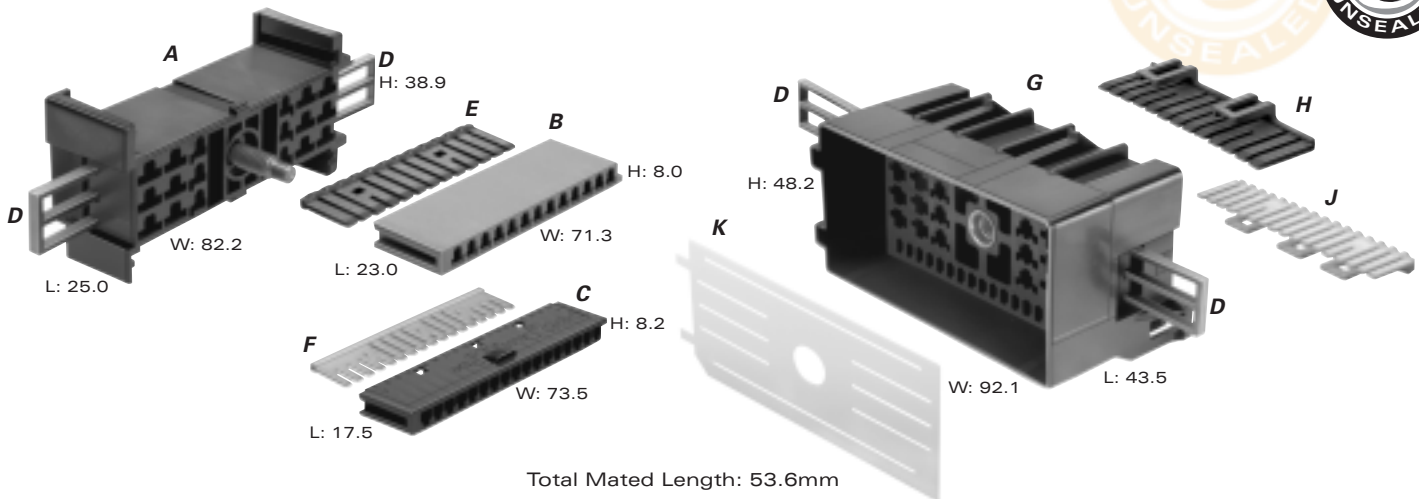
**G PART NO: 12162413**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

## KEY:

- 280 SERIES
- 480 SERIES
- ▲ 630 SERIES

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





**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

**B PART NO: 12047840**  
 DESCRIPTION: Connector 13F  
 SIZE: 23.0L x 8.0H x 71.3W  
 COLOR: Gray  
 MATERIAL: PPE  
 TERMINALS: See Page 138

**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

**D PART NO: 12047838**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 4  
 COLOR: Blue  
 MATERIAL: PBT

**E PART NO: 12047841**  
 DESCRIPTION: TPA  
 COLOR: Blue  
 MATERIAL: PBT

**F PART NO: 12047843**  
 DESCRIPTION: TPA  
 COLOR: Natural  
 MATERIAL: PBT

**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

**H PART NO: 12047845**  
 DESCRIPTION: TPA  
 COLOR: Natural  
 MATERIAL: PBT

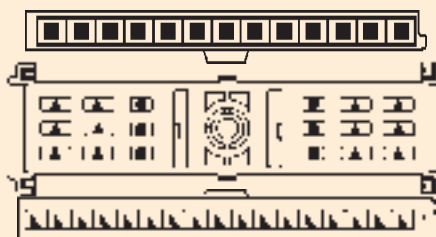
**J PART NO: 12047846**  
 DESCRIPTION: TPA  
 COLOR: Blue  
 MATERIAL: PBT IM

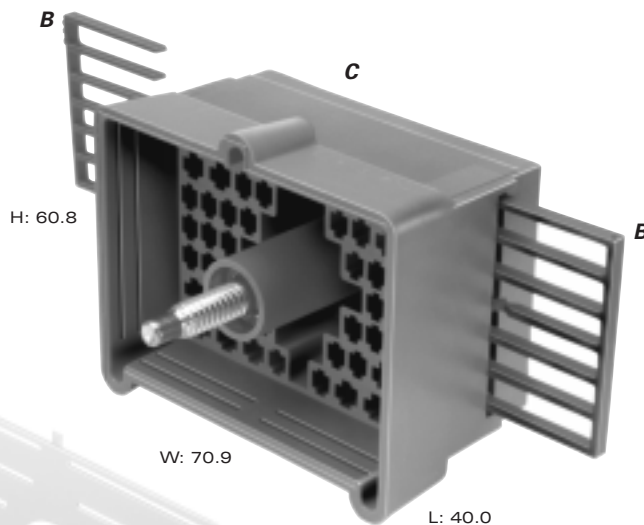
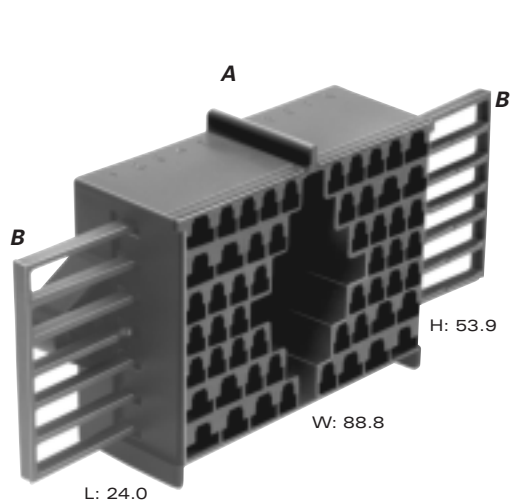
**K PART NO: 12186880**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

### KEY:

- 150 SERIES
- 280 SERIES
- ▲ 630 SERIES

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





Total Mated Length: 60.4mm

**A PART NO: 15394027**  
 DESCRIPTION: Connector Assembly 56F  
 SIZE: 24.0L x 53.9H x 88.8W  
 COLOR: Black  
 MATERIAL: PA6  
 TERMINALS: See Page 138

**C 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

**B PART NO: 15324764**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 4  
 COLOR: Blue  
 MATERIAL: PBT

**D PART NO: 12186869**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

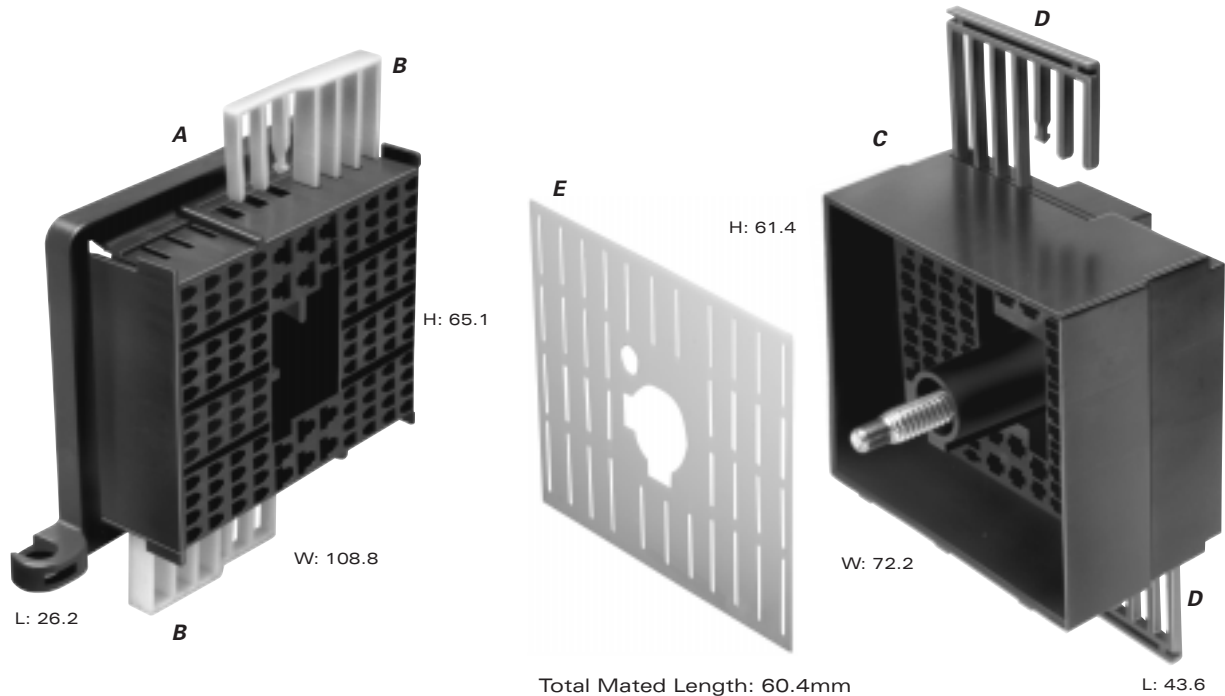
## KEY:

- 280 SERIES
- 480 SERIES
- ▲ 630 SERIES

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







**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

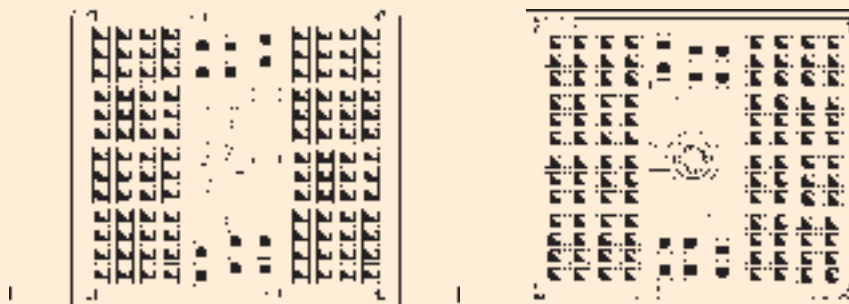
**D PART NO: 12047752**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PBT

**E PART NO: 12124732**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

### KEY:

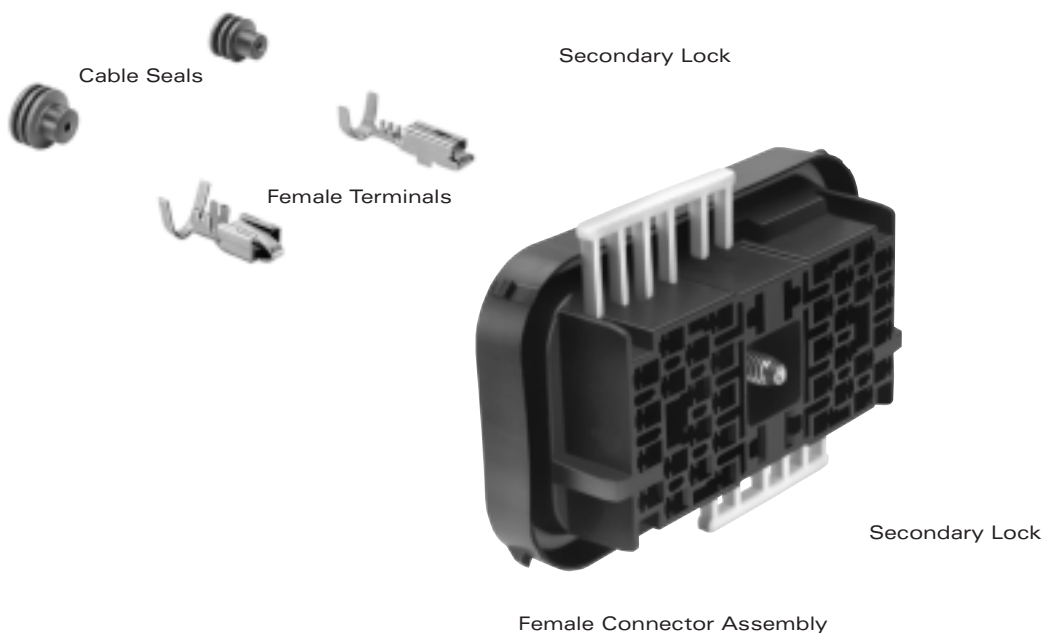
- 150 SERIES
- 280 SERIES

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





## Female Sealed System



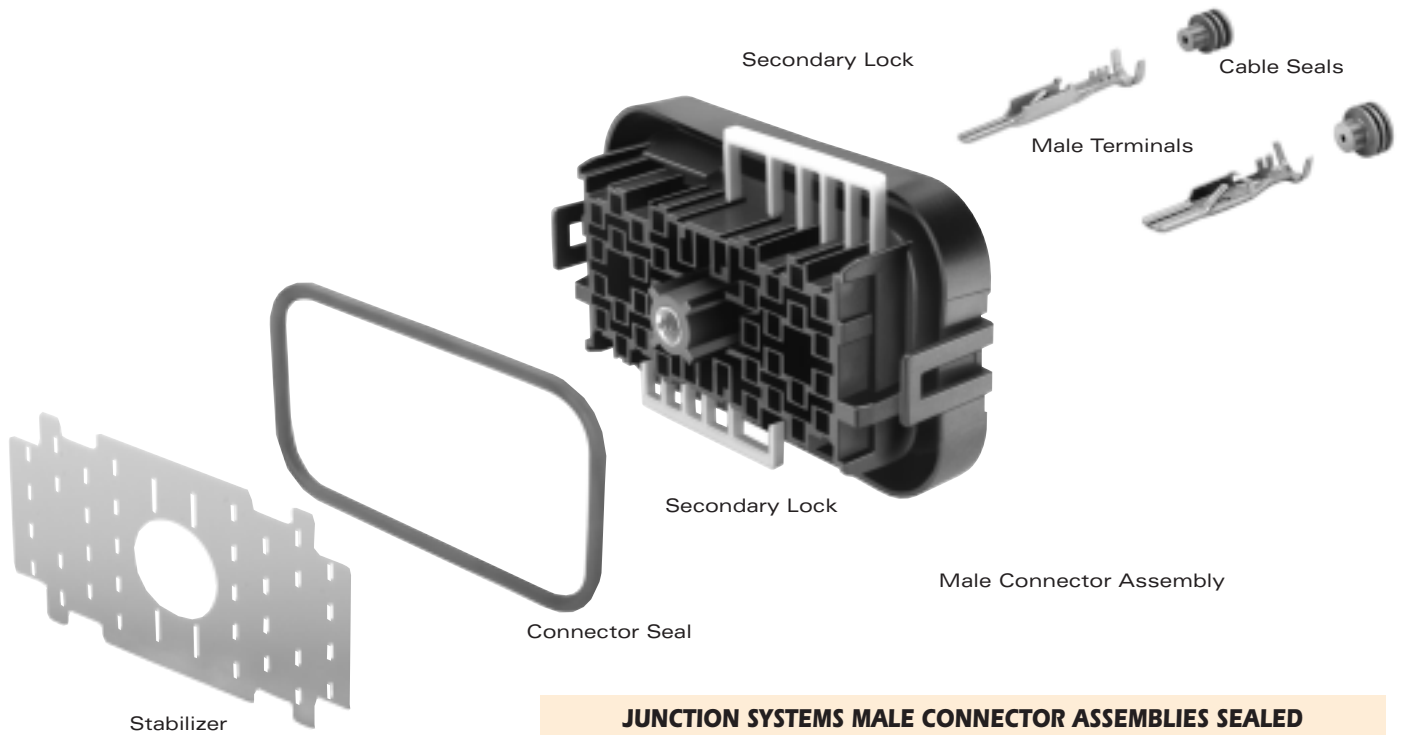
### JUNCTION SYSTEMS FEMALE CONNECTOR ASSEMBLIES SEALED

| # Cavities | Conn. Asm. | Color | Material             | Secondary Lock |
|------------|------------|-------|----------------------|----------------|
| 30         | 12065850   | Black | PBT                  | 12066050       |
| 36         | 12092491*  | Black | PBT                  | 12064835       |
| 38         | 12191499   | Black | PA66 15% GF & 25% MF | 12129669       |
| 78         | 12129206   | Black | PA66 HS 33% GF       | 12129214       |

\*Note: 12092491 (F) is unsealed for use in a protected environment.



### Male Sealed System



#### JUNCTION SYSTEMS MALE CONNECTOR ASSEMBLIES SEALED

| # Cavities | Conn. Asm. | Color    | Material             | Secondary Lock | Stabilizer | Shroud   | Connector Seal |
|------------|------------|----------|----------------------|----------------|------------|----------|----------------|
| 30         | 12160959   | Black    | PBT                  | 12065848       | —          | 12176538 | 12065849       |
| 36         | 12064839   | Black    | PBT                  | 12064834       | —          | 12066590 | 12064837       |
| 38         | 12191487   | Dk. Gray | PA66<br>HS IM 14% GF | 12129670       | 15317352   | 12161191 | 12129672       |
| 78         | 12176690   | Black    | PA66<br>HS 33% GF    | 12129213       | 12162573   | 12162527 | —              |

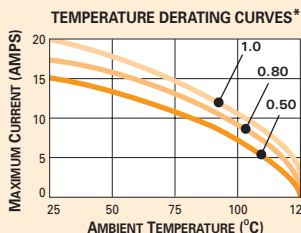
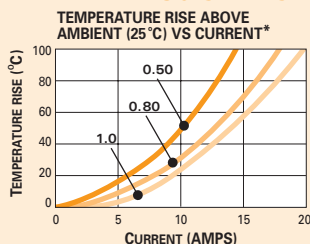


Shroud



## Sealed System Application Information

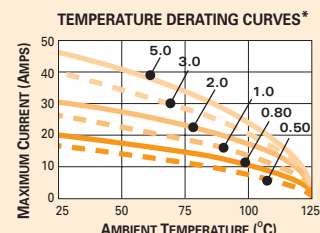
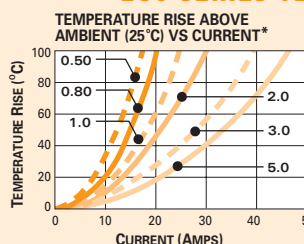
### 150 SERIES TERMINALS-Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 0.35-1.0  
 CURRENT RANGE (AMPS): ..... 0-14  
 TEMP RANGE °C: ..... -40 to 125  
 RESISTANCE: ..... <10mΩ@20mV

VOLTAGE DROP: .... <10.0mV/amp  
 CENTERLINE SPACING (mm): .....  
 ..... Connector Dependent  
 BLADE WIDTH (mm): ..... 1.5

### 280 SERIES TERMINALS - Tin Plated



CABLE RANGE (mm<sup>2</sup>): ..... 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.

### 150 SERIES FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12048074 | 1.0-0.80                       | Silicon Bronze   | Tin           |
| 12084200 | 0.50-0.35                      | Silicon Bronze   | Tin           |
| 12160223 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |
| 12160222 | 0.50-0.35                      | Beryllium Copper | Silver/Nickel |

### 480 SERIES FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052139 | 5.0-3.0                        | Tin Brass | Tin     |
| 12048451 | 2.0-1.0                        | Tin Brass | Tin     |
| 12048450 | 0.80-0.50                      | Tin Brass | Tin     |

### 280 SERIES FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12077413 | 5.0                            | Tin Brass        | Tin           |
| 12129493 | 3.0-2.0                        | Tin Brass        | Tin           |
| 12077411 | 1.0-0.80                       | Tin Brass        | Tin           |
| 12084201 | 0.50-0.35                      | Tin Brass        | Tin           |
| 12176387 | 5.0                            | Beryllium Copper | Silver/Nickel |
| 12176388 | 3.0-2.0                        | Beryllium Copper | Silver/Nickel |
| 12176389 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |

### 630 SERIES FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|----------|--------------------------------|-----------|---------|
| 12052456 | 5.0-3.0                        | Tin Brass | Tin     |
| 12052455 | 2.0-1.0                        | Tin Brass | Tin     |
| 12052457 | 0.80-0.50                      | Tin Brass | Tin     |

### TANGLESS

### 280 TANGLESS SERIES FEMALE TERMINALS SEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12110853  | 5.0-3.0                        | Tin Brass | Tin     |
| 12129409  | 2.0                            | Tin Brass | Tin     |
| 12110845* | 3.0-2.0                        | Tin Brass | Tin     |
| 12110847* | 1.0-0.80                       | Tin Brass | Tin     |
| 12110846* | 0.50-0.35                      | Tin Brass | Tin     |

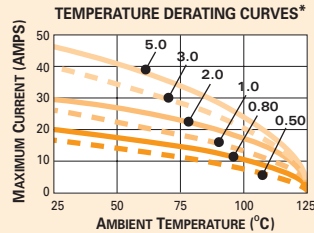
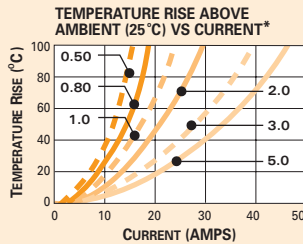
Use for Part No. 12191499 (Shown on Page 151)

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



### Sealed System Application Information

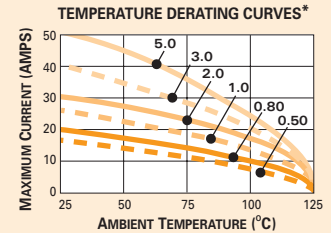
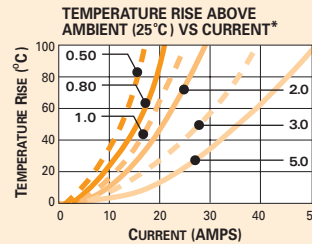
#### 480 SERIES TERMINALS-Tin Plated



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.



#### 150 SERIES MALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12045773 | 1.0-0.80          | Tin Brass | Tin     |
| 12077628 | 0.50-0.35         | Tin Brass | Tin     |



#### 480 SERIES MALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12052172 | 5.0               | Tin Brass | Tin     |
| 12065197 | 3.0               | Tin Brass | Tin     |
| 12065196 | 2.0-1.0           | Tin Brass | Tin     |



#### 280 SERIES MALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12048254 | 5.0               | Tin Brass | Tin     |
| 12129497 | 3.0-2.0           | Tin Brass | Tin     |
| 12048159 | 1.0-0.80          | Tin Brass | Tin     |
| 12124977 | 0.50-0.35         | Tin Brass | Tin     |



#### 630 SERIES MALE TERMINALS SEALED

| Part #   | Cable Range (mm²) | Material  | Plating |
|----------|-------------------|-----------|---------|
| 12064736 | 5.0               | Tin Brass | Tin     |
| 12064737 | 3.0               | Tin Brass | Tin     |
| 12064735 | 2.0-1.0           | Tin Brass | Tin     |
| 12064734 | 0.80-0.50         | Tin Brass | Tin     |



## Sealed System Cable Seals & Cavity Plugs

### 150 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color   |
|-------------|--------------|----------------|----------|---------|
| 12052924    | 12048086     | 2.85-2.03      | Silicone | Dk. Red |
| 12089442    | 12089678     | 2.15-1.60      | Silicone | White   |
| 12052925    | 12048087     | 1.70-1.29      | Silicone | Blue    |
| 12124669    | 12084193     | 1.009-0.995    | Silicone | Tan     |



### 150 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color   |
|----------|------------------------|----------|---------|
| 12059168 | 5.2mm                  | Silicone | Dk. Red |

\*Cavity plugs seal unused female and male cavities.



### 280 METRI-PACK CABLE SEALS

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



### 280 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color |
|----------|------------------------|----------|-------|
| 12010300 | 6.7mm                  | Silicone | Green |

\*Cavity plugs seal unused female and male cavities.



### 480 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color  |
|-------------|--------------|----------------|----------|--------|
| 12065703    | 12034170     | 5.16-4.40      | Silicone | Orange |
| 12052453    | 12048443     | 4.50-3.61      | Silicone | Purple |
| 12052452    | 12048442     | 3.75-2.81      | Silicone | Red    |
| 12048433    | 12048441     | 2.85-2.01      | Silicone | White  |
| 12052931    | 12052930     | 2.15-1.60      | Silicone | Yellow |
| 12162068    | 12162067     | 1.70-1.29      | Silicone | Pink   |



### 480 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12066082 | 8.5mm                  | Silicone | Lt. Green |

\*Cavity plugs seal unused female and male cavities.



### 630 METRI-PACK CABLE SEALS

| Reel Part # | Loose Part # | Cable Diameter | Material | Color    |
|-------------|--------------|----------------|----------|----------|
| 12059257    | 12052386     | 5.15-4.40      | Silicone | Green    |
| 12059260    | 12052668     | 4.50-3.61      | Silicone | Blue     |
| 12059258    | 12052387     | 3.75-2.81      | Silicone | Lt. Gray |
| 12059259    | 12052388     | 2.85-2.01      | Silicone | Dk. Red  |
| 12077760    | 12077759     | 2.15-1.65      | Silicone | Tan      |



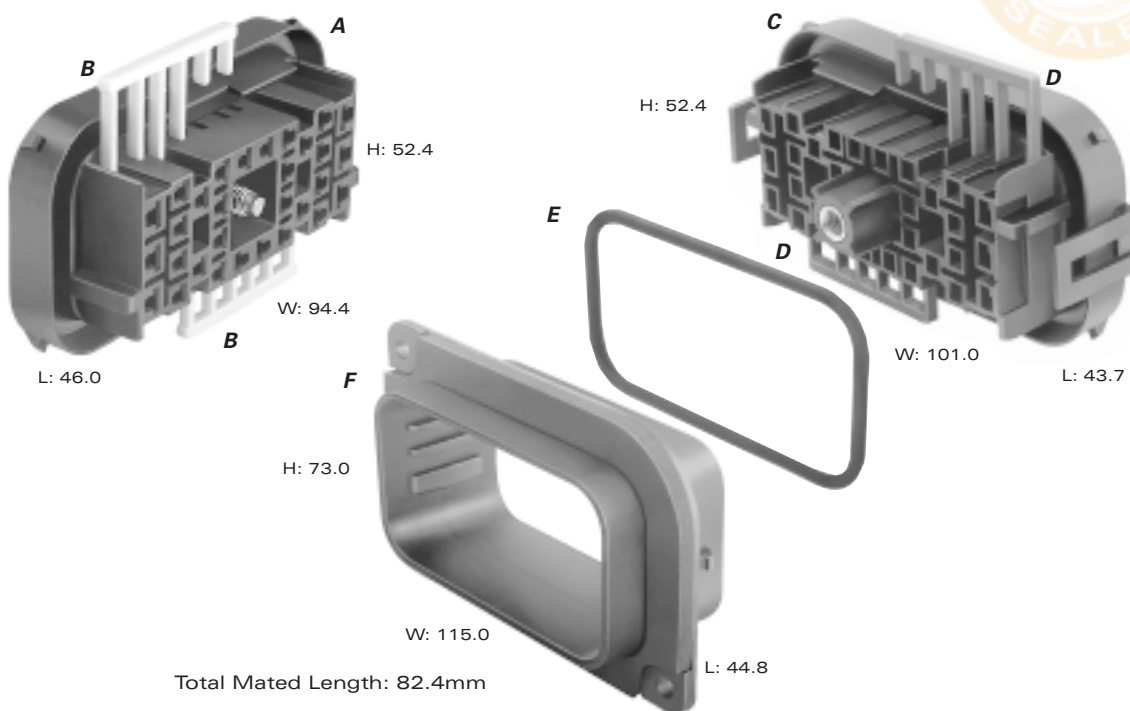
### 630 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color     |
|----------|------------------------|----------|-----------|
| 12059255 | 9.8mm                  | Silicone | Lt. Green |

\*Cavity plugs seal unused female and male cavities.







**A PART NO: 12065850**  
 DESCRIPTION: Connector Assembly 30F  
 SIZE: 46.0L x 52.4H x 94.4W  
 COLOR: Black  
 MATERIAL: PBT  
 TERMINALS: See Page 146  
 SEALS/PLUGS: See Page 148

**B PART NO: 12066050**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

**C PART NO: 12160959**  
 DESCRIPTION: Connector Assembly 30M  
 SIZE: 43.7L x 52.4H x 101.0W  
 COLOR: Black  
 MATERIAL: PBT  
 TERMINALS: See Page 147  
 SEALS/PLUGS: See Page 148  
 NOTE: Wire dress cover 12066129 is available.

**D PART NO: 12065848**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PBT

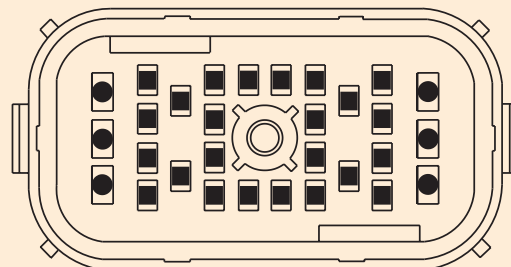
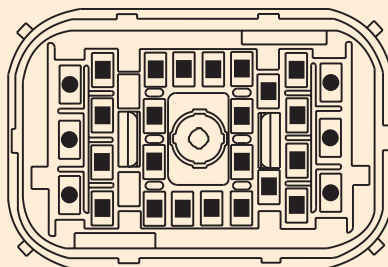
**E PART NO: 12065849**  
 DESCRIPTION: Connector Seal  
 COLOR: Green  
 MATERIAL: Silicone

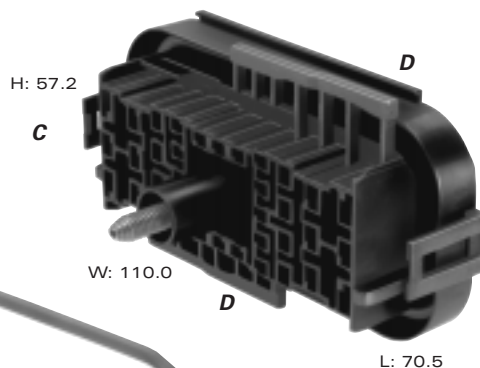
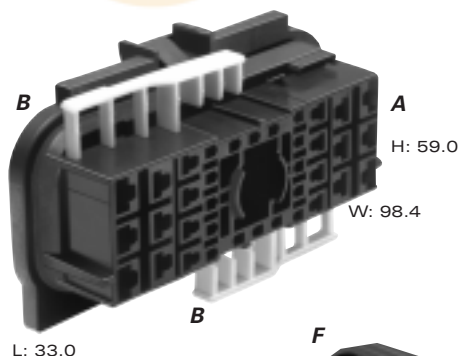
**F PART NO: 12176538**  
 DESCRIPTION: Pass-Through Shroud  
 SIZE: 44.8L x 73.0H x 115.0W  
 COLOR: Black  
 MATERIAL: PBT 15% GF  
 NOTE: Body mount shroud 12065847 is available.

### KEY:

- 280 SERIES
- 480 SERIES

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





Total Mated Length: 88.9mm

**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

**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

**B PART NO: 12064835**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

**D PART NO: 12064834**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Blue  
 MATERIAL: PBT

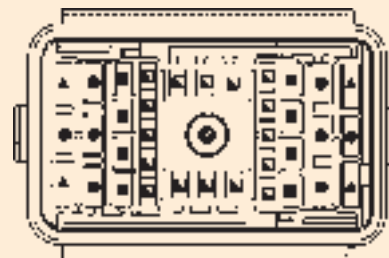
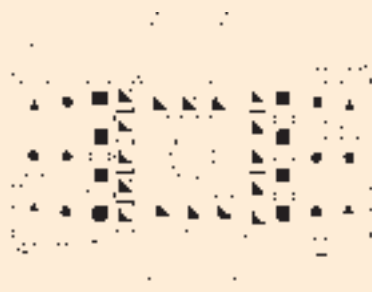
**E PART NO: 12064837**  
 DESCRIPTION: Connector Seal  
 COLOR: Green  
 MATERIAL: Silicone

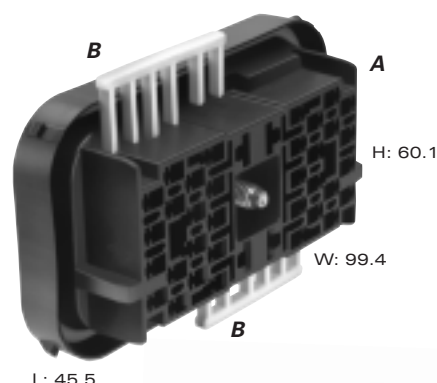
**F PART NO: 12066590**  
 DESCRIPTION: Sliding Shroud  
 SIZE: 43.8L x 73.0H x 123.1W  
 COLOR: Black  
 MATERIAL: PBT 30% GF

## KEY:

- 150 SERIES
- 280 SERIES
- 480 SERIES
- ▲ 630 SERIES

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





L: 45.5

H: 80.0

W: 120.0

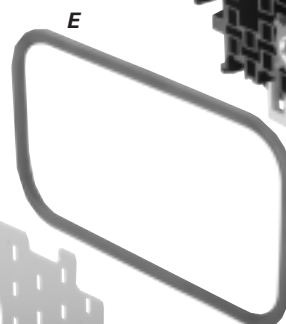
L: 45.3

Total Mated Length: 85.3mm

**A 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  
 See Page 146 - 630 Series  
 SEALS/PLUGS: See Page 148

**B PART NO: 12129669**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

H: 60.1



W: 106.0

L: 41.7

**C 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

**D PART NO: 12129670**  
 DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

**E PART NO: 12129672**  
 DESCRIPTION: Connector Seal  
 COLOR: Green  
 MATERIAL: Silicone

**F PART NO: 15317352**  
 DESCRIPTION: Stabilizer  
 COLOR: Natural  
 MATERIAL: Mylar

**G 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:

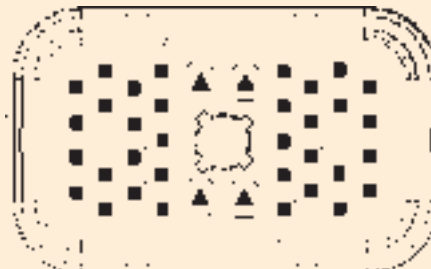
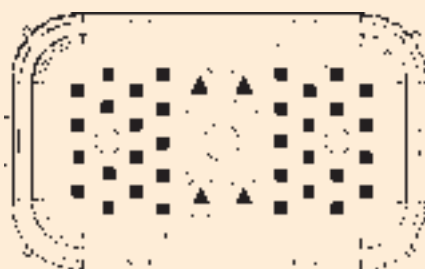
#### TANGLESS

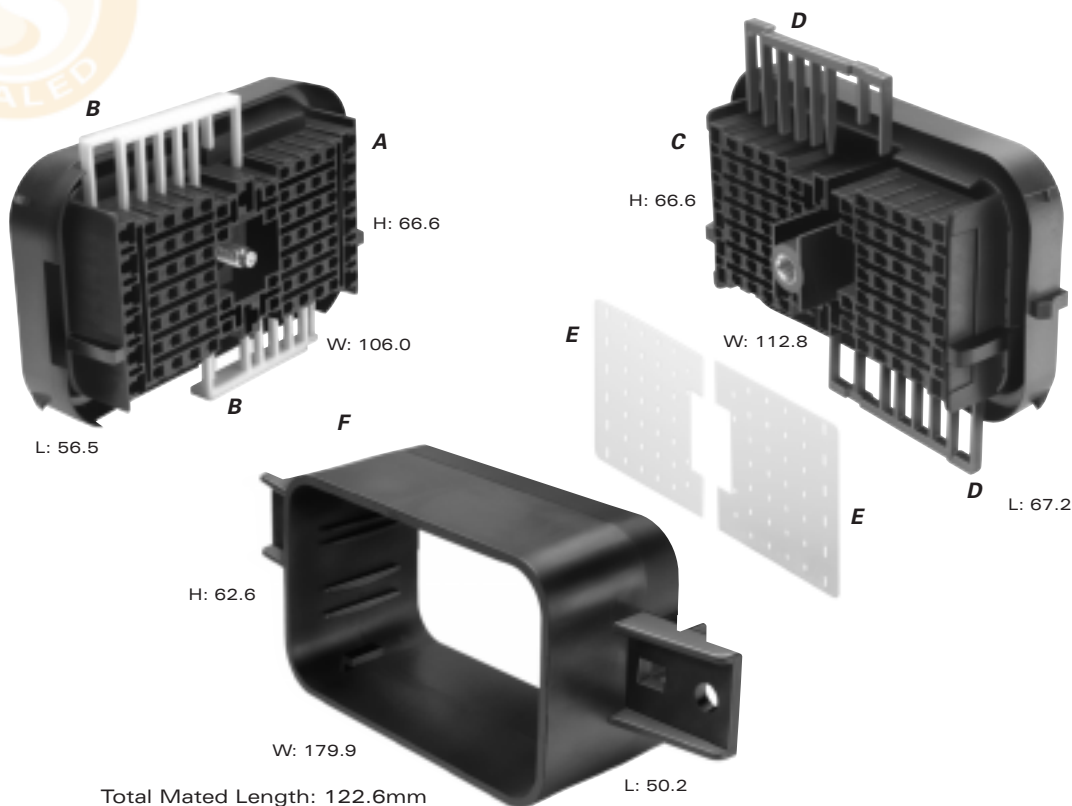


■ 280 SERIES

▲ 630 SERIES

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





Total Mated Length: 122.6mm

## 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

## 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

## B PART NO: 12129214

DESCRIPTION: Secondary Lock  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PBT

## 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

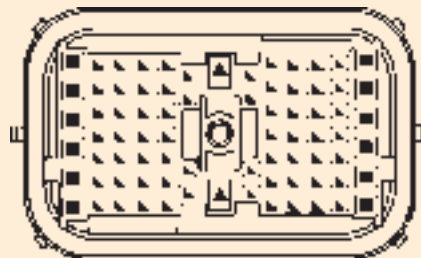
## F PART NO: 12162527

DESCRIPTION: Sliding Shroud  
 SIZE: 50.2L x 62.6H x 179.9W  
 COLOR: Black  
 MATERIAL: PBT IM

### KEY:

- 150 SERIES
- 280 SERIES
- ▲ 630 SERIES

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





# METRI-PACK SERIES Header

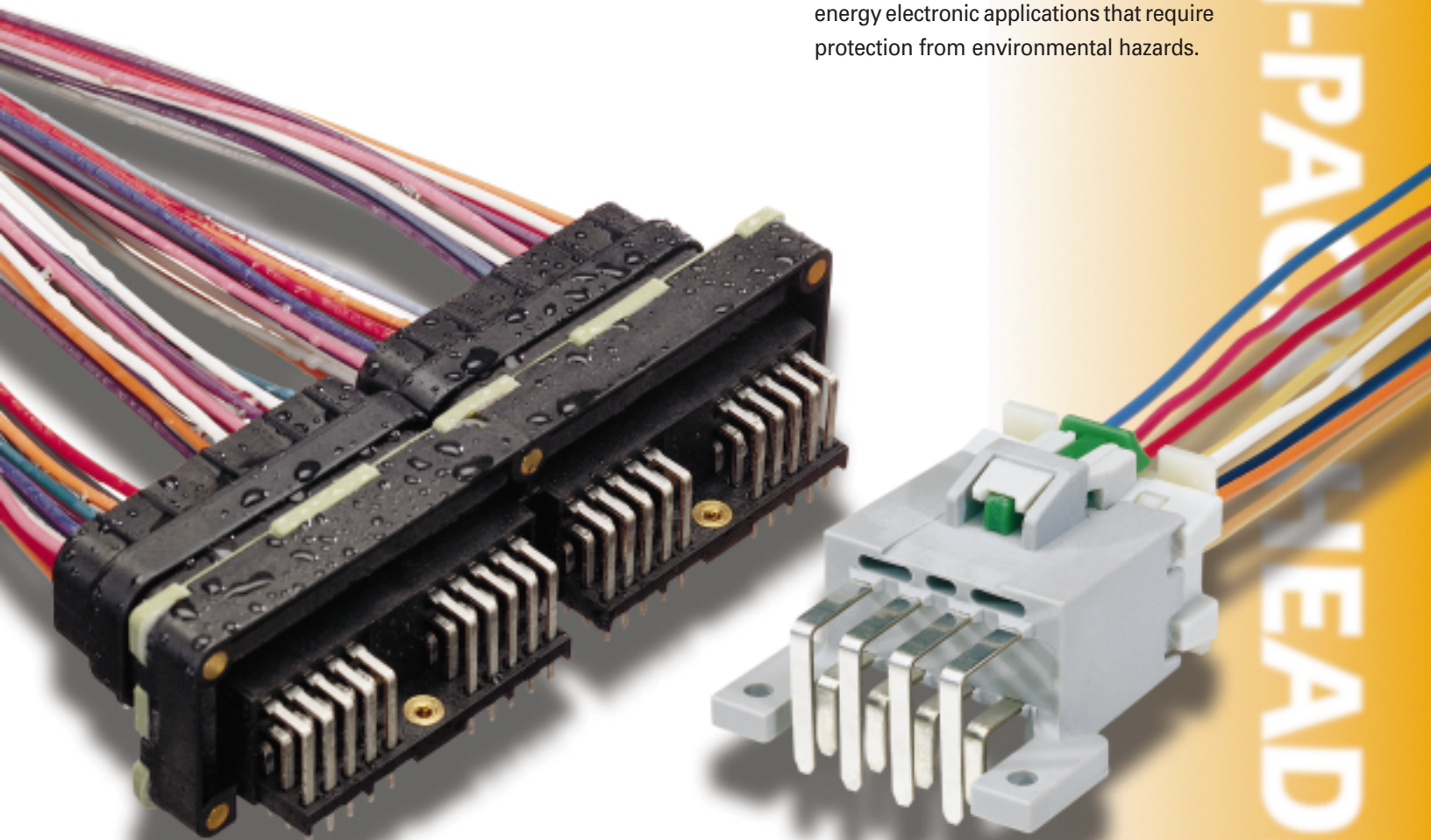


The Metri-Pack 280 Series unsealed electronic header is a versatile, and extremely rugged system designed to meet customer's power circuit needs. This system offers the combination of excellent low energy electronic circuits and power circuit capability in a single connection.



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.

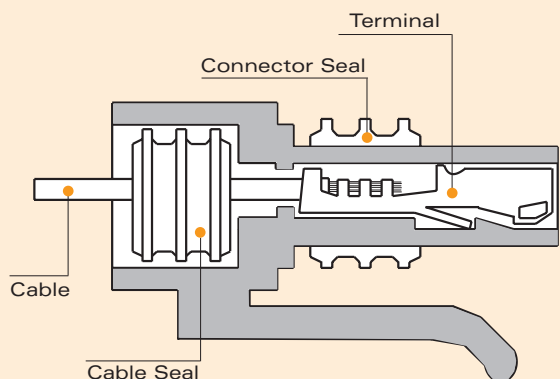


## Metri-Pack Header Features

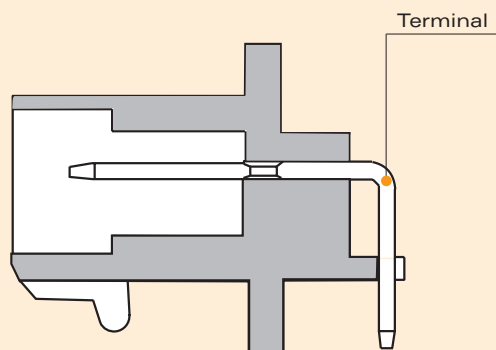
- **Terminal Position Assurance (TPA)**
- 14 Amps continuous maximum current rating for 150 Metri-Pack Series
- 30 Amps continuous maximum current rating for 280 Metri-Pack Series
- Low energy, low voltage capability
- Small overall dimensions
- Bolt assist connector to connector lock
- -40°C to 125°C temperature range



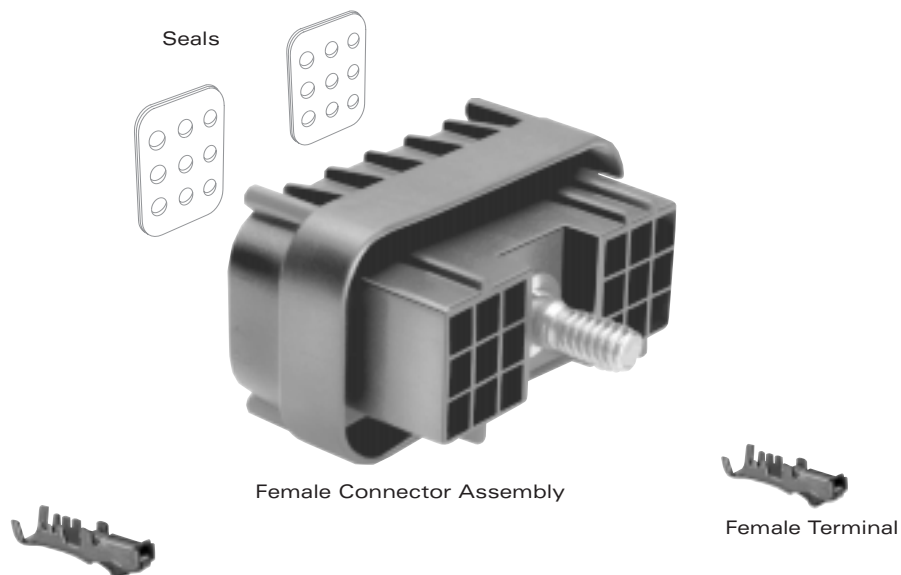
## Cross Sectional View



Female Connector Assembly



Male Header Connector Assembly



Female Connector Assembly

Female Terminal

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

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating |
|----------|--------------------------------|------------------|---------|
| 12089290 | 0.50-0.35                      | Silicon Bronze   | Tin     |
| 12103881 | 1.0-0.80                       | Silicon Bronze   | Tin     |
| 12110236 | 0.80                           | Beryllium Copper | Tin     |

### 150 METRI-PACK FEMALE CONNECTOR ASSEMBLIES SEALED\*

| # Cavities | Connector Assembly | Color    | Material   |
|------------|--------------------|----------|------------|
| 18way: 18  | 12040921           | Black    | PBT 30% GF |
| 30way: 30  | 12048455           | Dk. Gray | PET 30% GF |
| 48way: 18  | 12040921           | Black    | PBT 30% GF |
| : 30       | 12034398           | Black    | PET 30% GF |
| 60way: 30  | 12034398           | Black    | PET 30% GF |
| : 30       | 12034400           | Black    | PET 30% GF |

\*Multiple cable seal is included in connector assembly.

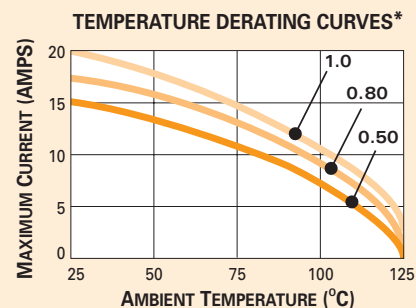
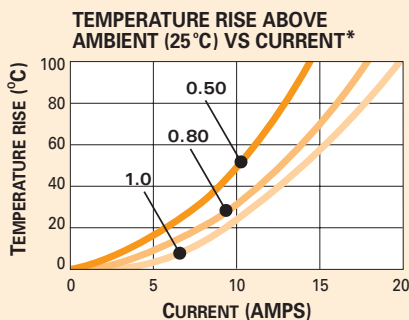




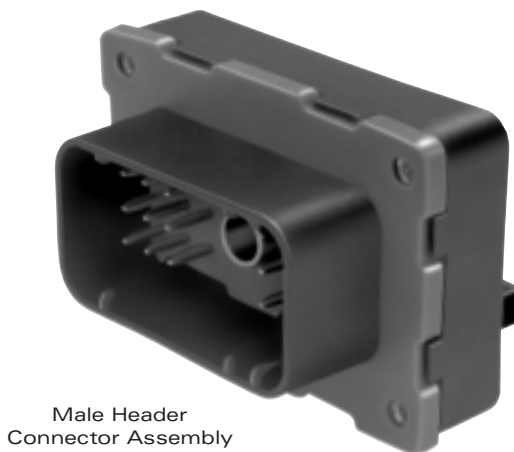
### Sealed System Application Information

**CABLE RANGE (mm<sup>2</sup>):** ..... 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

12065266



12034413



#### 150 METRI-PACK MALE HEADER CONNECTOR ASSEMBLIES SEALED

| Pins | Connector | Color    | Material   |
|------|-----------|----------|------------|
| 18   | 12040923  | Black    | PET 30% GF |
| 30   | 12048453  | Dk. Gray | PET 30% GF |
| 48   | 12052130  | Black    | PET 30% GF |
| 60   | 12034396  | Black    | PET 30% GF |

Terminals Included in Male Header.

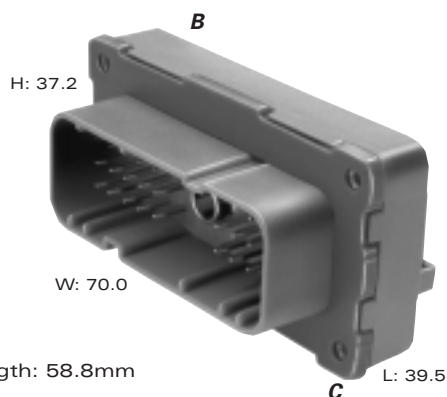
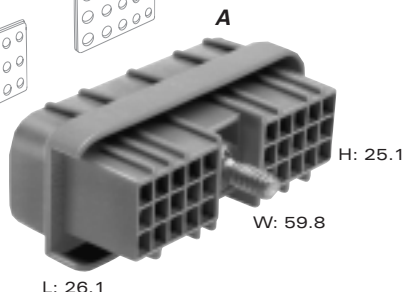
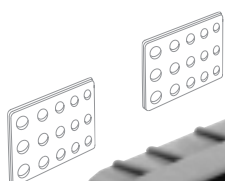
#### CABLE SEAL PLUGS

| Part #   | Cable Seal Hole Diameter (mm) | Material   | Color    | Type              |
|----------|-------------------------------|------------|----------|-------------------|
| 12065266 | 1.85-1.65                     | PA6        | Md. Gray | Machine Insertion |
| 12034413 | 1.85-1.10                     | PA66 HS IM | Black    | Hand Insertion    |

#### 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.
- Overall mated length varies with bolt measurement.
- Inner connector seal included in Male Header Connector Assemblies where applicable.

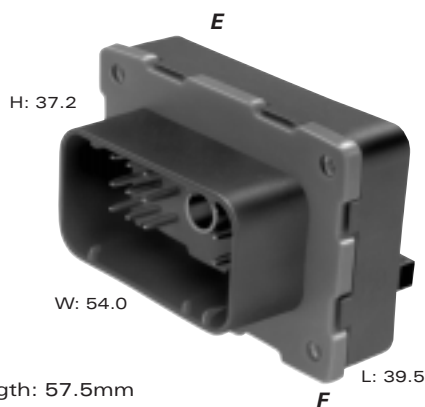
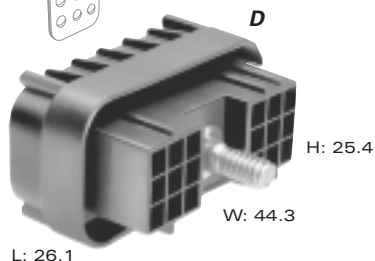
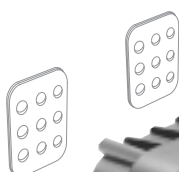


Total Mated Length: 58.8mm

**A PART NO: 12048455**  
 DESCRIPTION: Connector Assembly 30F  
 SIZE: 26.1L x 25.1H x 59.8W  
 COLOR: Dk. Gray  
 MATERIAL: PET 30% GF  
 TERMINALS: See Page 154, 150 Pull-To-Seat Female  
 PLUGS: See Page 155, Cable Seal Plugs

**B 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.

**C PART NO: 12048456**  
 DESCRIPTION: Flange Seal  
 COLOR: Green  
 MATERIAL: Silicone



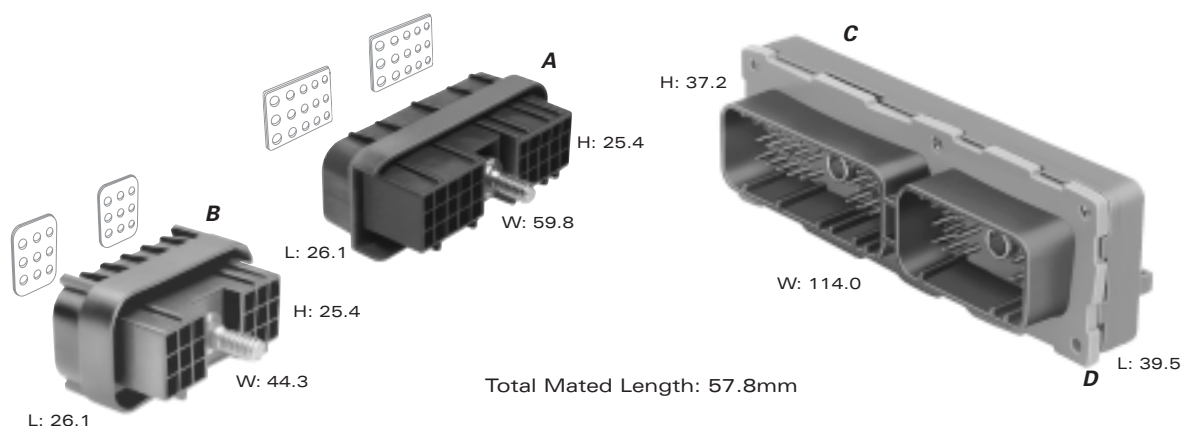
Total Mated Length: 57.5mm

**D PART NO: 12040921**  
 DESCRIPTION: Connector Assembly 18F  
 SIZE: 26.1L x 25.4H x 44.3W  
 COLOR: Black  
 MATERIAL: PBT 30% GF  
 TERMINALS: See Page 154, 150 Pull-To-Seat Female  
 PLUGS: See Page 155, Cable Seal Plugs

**E 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.

**F PART NO: 12040938**  
 DESCRIPTION: Flange Seal  
 COLOR: Green  
 MATERIAL: Silicone

<http://delphi.com/products/connect>

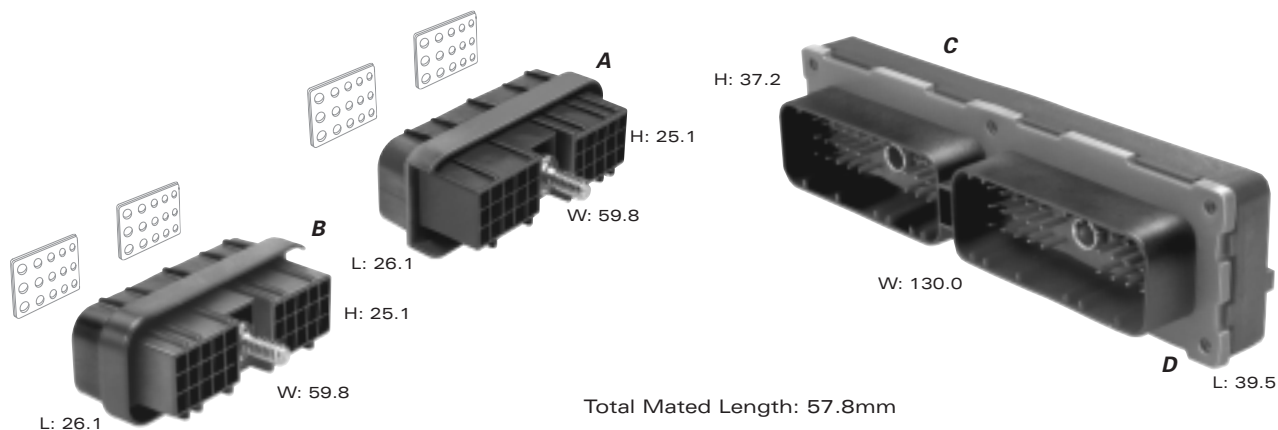


**A PART NO: 12034398**  
 DESCRIPTION: Connector Assembly 30F  
 SIZE: 26.1L x 25.4H x 59.8W  
 COLOR: Black  
 MATERIAL: PET 30% GF  
 TERMINALS: See Page 154, 150 Pull-To-Seat Female  
 PLUGS: See Page 155, Cable Seal Plugs

**B PART NO: 12040921**  
 DESCRIPTION: Connector Assembly 18F  
 SIZE: 26.1L x 25.4H x 44.3W  
 COLOR: Black  
 MATERIAL: PBT 30% GF  
 TERMINALS: See Page 154, 150 Pull-To-Seat Female  
 PLUGS: See Page 155, Cable Seal Plugs

**C PART NO: 12052130**  
 DESCRIPTION: Connector Assembly 48M  
 SIZE: 39.5L x 37.2H x 114.0W  
 COLOR: Black  
 MATERIAL: PET 30% GF  
 NOTE: Shipping covers 12040940 and 12040542 included.

**D PART NO: 12052131**  
 DESCRIPTION: Flange Seal  
 COLOR: Green  
 MATERIAL: Silicone

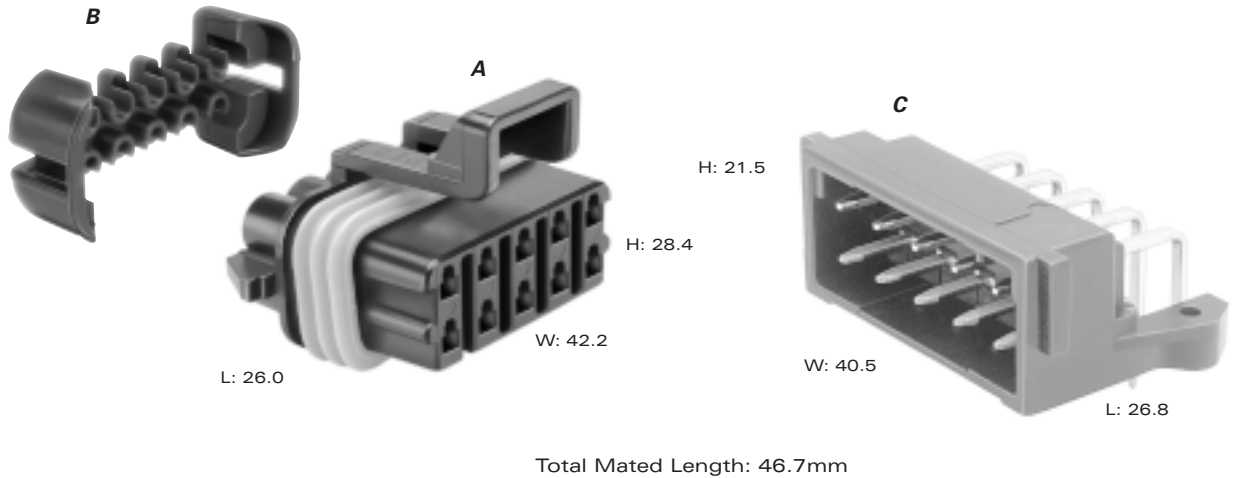


**A PART NO: 12034398**  
 DESCRIPTION: Connector Assembly 30F  
 SIZE: 26.1L x 25.1H x 59.8W  
 COLOR: Black  
 MATERIAL: PET 30% GF  
 TERMINALS: See Page 154, 150 Pull-To-Seat Female  
 PLUGS: See Page 155, Cable Seal Plugs

**C 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

**B 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

**D PART NO: 12040780**  
 DESCRIPTION: Flange Seal  
 COLOR: Green  
 MATERIAL: Silicone



**A PART NO: 12065425**  
 DESCRIPTION: Connector Assembly 10F  
 SIZE: 26.0L 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

**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.

**B PART NO: 12124264**  
 DESCRIPTION: TPA  
 COLOR: Gray  
 MATERIAL: PA6



### 150 FEMALE TERMINALS SEALED

| Part #   | Cable Range (mm <sup>2</sup> ) | Material         | Plating       |
|----------|--------------------------------|------------------|---------------|
| 12048074 | 1.0-0.80                       | Silicon Bronze   | Tin           |
| 12084200 | 0.50-0.35                      | Silicon Bronze   | Tin           |
| 12160223 | 1.0-0.80                       | Beryllium Copper | Silver/Nickel |
| 12160222 | 0.50-0.35                      | Beryllium Copper | Silver/Nickel |



### 150 METRI-PACK CAVITY PLUG\*

| Part #   | Cavity Inside Diameter | Material | Color   |
|----------|------------------------|----------|---------|
| 12059168 | 5.2mm                  | Silicone | Dk. Red |

\*Cavity plugs seal unused female and male cavities.

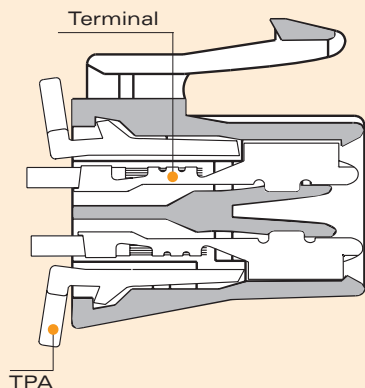


### 150 METRI-PACK CABLE SEALS

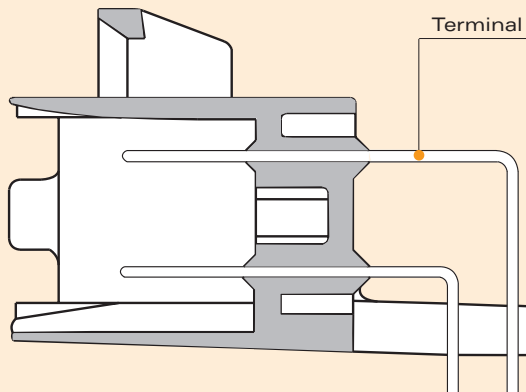
| Reel Part # | Loose Part # | Cable Diameter | Material | Color   |
|-------------|--------------|----------------|----------|---------|
| 12052924    | 12048086     | 2.85-2.03      | Silicone | Dk. Red |
| 12089442    | 12089678     | 2.15-1.60      | Silicone | White   |
| 12052925    | 12048087     | 1.70-1.29      | Silicone | Blue    |
| 12124669    | 12084193     | 1.009-0.995    | Silicone | Tan     |



## Cross Sectional View



Female Connector



Male Header Connector Assembly

TPA  
(Terminal Position Assurance)

CPA  
(Connector Position Assurance)



### 280 TANGLESS FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12129425  | 5.0                            | Tin Brass | Tin     |
| 12129663  | 3.0                            | Tin Brass | Tin     |
| 12129424  | 2.0-1.0                        | Tin Brass | Tin     |
| 12110842* | 3.0-2.0                        | Tin Brass | Tin     |
| 12110844* | 1.0-0.80                       | Tin Brass | Tin     |
| 12110843* | 0.50-0.35                      | Tin Brass | Tin     |
| 12129061* | 0.35 (2 Req'd.)                | Tin Brass | Tin     |

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

### 280 FEMALE TERMINALS UNSEALED

| Part #    | Cable Range (mm <sup>2</sup> ) | Material  | Plating |
|-----------|--------------------------------|-----------|---------|
| 12015858  | 5.0                            | Tin Brass | Tin     |
| 12129494  | 3.0-2.0                        | Tin Brass | Tin     |
| 12034046  | 1.0-0.80                       | Tin Brass | Tin     |
| 12052217  | 0.50-0.35                      | Tin Brass | Tin     |
| 12162597* | 3.0-2.0                        | Tin Brass | Tin     |
| 12162595* | 1.0-0.80                       | Tin Brass | Tin     |
| 12162596* | 0.50-0.35                      | Tin Brass | Tin     |

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

Female Terminal



Female Connector

### 280 METRI-PACK FEMALE CONNECTOR UNSEALED

| # Cavities | Connector | Color | Material   | TPA      |
|------------|-----------|-------|------------|----------|
| 4          | 12052856  | Black | PA66 HS IM | 15324456 |



### 280 METRI-PACK FLEXLOCK FEMALE CONNECTOR UNSEALED

| # Cavities | Connector | Color    | Material   | TPA      |
|------------|-----------|----------|------------|----------|
| 8          | 15357040  | Lt. Gray | PA66 HS IM | 15324332 |

<http://delphi.com/products/connect>

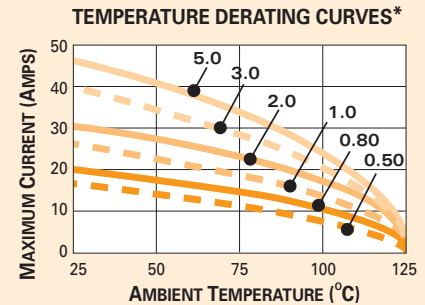
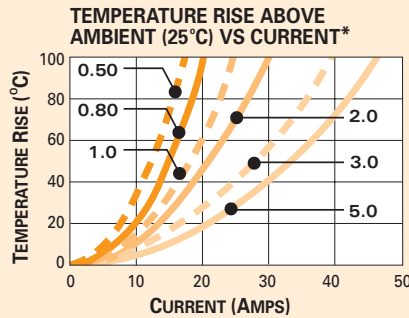




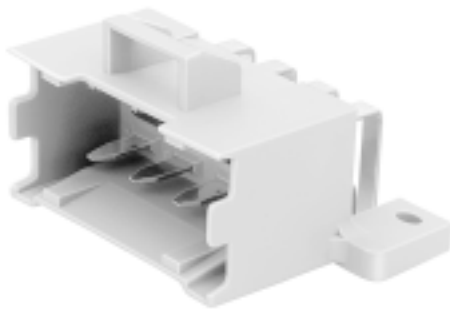
### Unsealed System Application Information

**CABLE RANGE (mm<sup>2</sup>):** ..... 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

#### 280 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

#### 280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED

| Pins | Connector | Color | Material   |
|------|-----------|-------|------------|
| 4    | 12110440  | Black | PA66 HS IM |



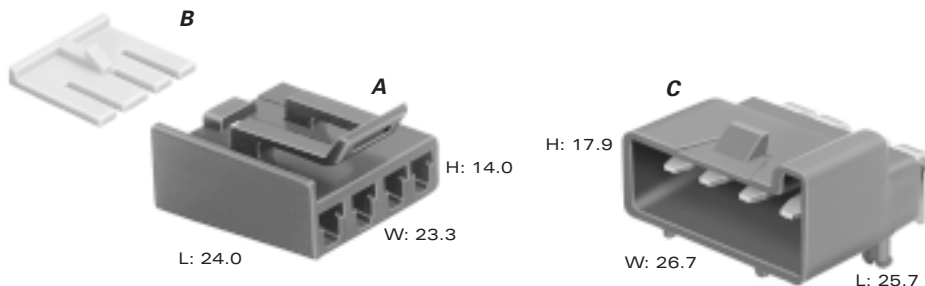
#### 280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED

| Pins | Connector | Color | Material   |
|------|-----------|-------|------------|
| 8    | 12146724  | Gray  | PBT 30% GF |

#### 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>

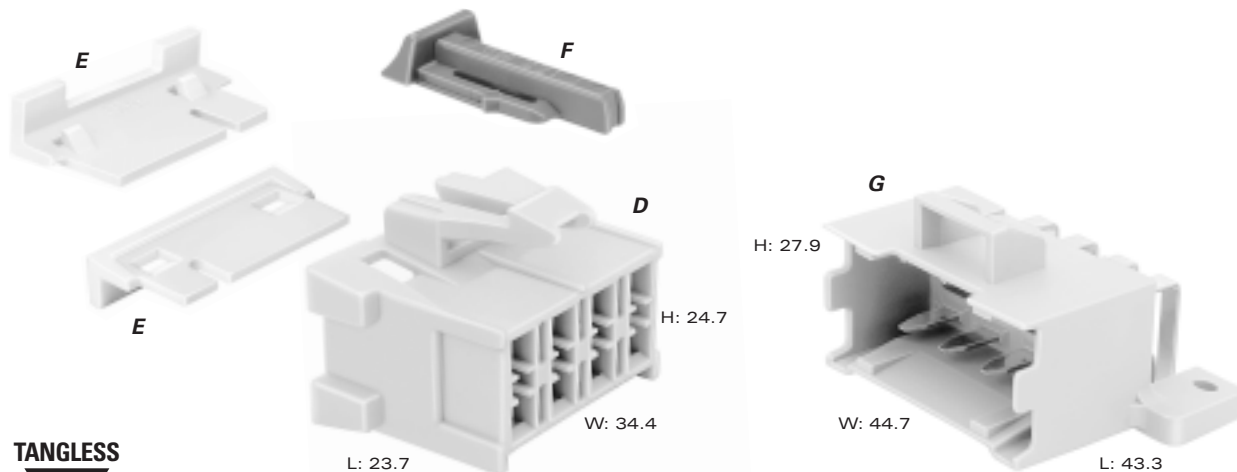


Total Mated Length: 40.4mm

**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

**C** PART NO: **12110440**  
 DESCRIPTION: Connector 4M  
 SIZE: 25.7L x 17.9H x 26.7W  
 COLOR: Black  
 MATERIAL: PA66 HS IM

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



Total Mated Length: 50.8mm

**D** PART NO: **15357040 (Lt. Gray)**  
**12129088 (Black)**  
 DESCRIPTION: Connector 8F  
 SIZE: 23.7L x 24.7H x 34.4W  
 MATERIAL: PA66 HS IM  
 TERMINALS: See Page 160, 280 Tangless Female

**G** PART NO: **12146724 (Gray)**  
**12146735 (Black)**  
 DESCRIPTION: Connector 8M  
 SIZE: 43.3L x 27.9H x 44.7W  
 MATERIAL: PBT 30% GF

**E** PART NO: **15324332**  
 DESCRIPTION: TPA  
 NUMBER REQ: 2  
 COLOR: Natural  
 MATERIAL: PA66 HS IM

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



## Part Number Index



| Part#    | Page                                                    | Part#    | Page           | Part#    | Page           | Part#    | Page                                                                                 |
|----------|---------------------------------------------------------|----------|----------------|----------|----------------|----------|--------------------------------------------------------------------------------------|
| 10717650 | 80                                                      | 12034145 | 87             | 20478411 | 136,141        | 12052453 | 100,128,148                                                                          |
| 10719339 | 69,71                                                   | 12034170 | 100,148        | 12047842 | 136,141        | 12052455 | 110,126,146                                                                          |
| 10740397 | 68                                                      | 12034269 | 112            | 12047843 | 136,141        | 12052456 | 110,126,146                                                                          |
| 12010293 | 84,128,148                                              | 12034363 | 112            | 12047845 | 137,141        | 12052457 | 110,126,146                                                                          |
| 12010300 | 85,128,148                                              | 12034364 | 112            | 12047846 | 137,141        | 12052480 | 70                                                                                   |
| 12015193 | 84,128,148                                              | 12034365 | 84,128,148     | 12047886 | 56,64          | 12052486 | 126,129                                                                              |
| 12015284 | 84,128,148                                              | 12034396 | 155,158        | 12047931 | 67,70          | 12052600 | 70                                                                                   |
| 12015323 | 84,128,148                                              | 12034398 | 154,157,158    | 12047933 | 70             | 12052613 | 100,102                                                                              |
| 12015359 | 84,128,148                                              | 12034400 | 154,158        | 12047937 | 66,70          | 12052623 | 107,109                                                                              |
| 12015360 | 84,128,148                                              | 12034413 | 155            | 12047938 | 70             | 12052634 | 66,67,68                                                                             |
| 12015508 | 136,140                                                 | 12040780 | 158            | 12047948 | 66,67,69       | 12052641 | 66,68                                                                                |
| 12015509 | 137,140                                                 | 12040921 | 154,156,157    | 12048074 | 66,126,146,159 | 12052644 | 68                                                                                   |
| 12015510 | 136,137,140                                             | 12040923 | 155,156        | 12048086 | 66,128,148,159 | 12052668 | 110,128,148                                                                          |
| 12015511 | 136,137,140                                             | 12040938 | 156            | 12048087 | 66,128,148,159 | 12052816 | 92                                                                                   |
| 12015664 | 106,109                                                 | 12040977 | 84,87          | 12048159 | 85,147         | 12052826 | 107,139                                                                              |
| 12015858 | 78,122,138,160                                          | 12041301 | 91             | 12048254 | 85,147         | 12052827 | 97,123,139                                                                           |
| 12015860 | 96,122,138                                              | 12041351 | 84,128,148     | 12048412 | 104            | 12052832 | 56,59                                                                                |
| 12015869 | 106,122,138                                             | 12041352 | 84,128,148     | 12048413 | 104            | 12052833 | 57,59                                                                                |
| 12015870 | 106,122,138                                             | 12045681 | 123,124        | 12048433 | 100,128,148    | 12052834 | 60,61,63,64,65,74,80,<br>81,82,83,86,89,91,92,<br>99,103,108,118,119,<br>130,132,162 |
| 12015899 | 84,128,148                                              | 12045688 | 57,64          | 12048441 | 100,128,148    | 12052845 | 66,67,68                                                                             |
| 12015952 | 96,98                                                   | 12045689 | 56,64          | 12048442 | 100,128,148    | 12052848 | 66,70                                                                                |
| 12015987 | 97,98                                                   | 12045690 | 64             | 12048443 | 100,128,148    | 12052850 | 66,67,70                                                                             |
| 12020014 | 122,124                                                 | 12045699 | 110,113        | 12048450 | 100,126,146    | 12052854 | 91                                                                                   |
| 12020035 | 106,122,138                                             | 12045773 | 67,127,147     | 12048451 | 100,126,146    | 12052856 | 91,162                                                                               |
| 12020116 | 79,123,139                                              | 12045808 | 67,71          | 12048453 | 155,156        | 12052898 | 75                                                                                   |
| 12020119 | 97,123,139                                              | 12045897 | 131            | 12048455 | 154,156        | 12052924 | 66,128,148,159                                                                       |
| 12020120 | 97,123,139                                              | 12047581 | 57,139         | 12048456 | 156            | 12052925 | 66,128,148,159                                                                       |
| 12020125 | 107,139                                                 | 12047662 | 56,58          | 12052130 | 155,157        | 12052930 | 100,128,148                                                                          |
| 12020126 | 107,139                                                 | 12047663 | 57,58          | 12052131 | 157            | 12052931 | 100,128,148                                                                          |
| 12020156 | 110                                                     | 12047664 | 56,58,59,60,61 | 12052139 | 100,126,146    | 12059168 | 47,67,128,148,159                                                                    |
| 12020365 | 107,139                                                 | 12047665 | 58,59          | 12052172 | 101,127,147    | 12059195 | 92                                                                                   |
| 12020366 | 96,122,138                                              | 12047682 | 56,58          | 12052189 | 71             | 12059249 | 58                                                                                   |
| 12020629 | 137,140                                                 | 12047683 | 57,58          | 12052199 | 127,129        | 12059250 | 58                                                                                   |
| 12020782 | 79,123,139                                              | 12047751 | 136,143        | 12052200 | 127,129        | 12059255 | 111,128,148                                                                          |
| 12020784 | 97,123,139                                              | 12047752 | 137,143        | 12052217 | 78,122,138,160 | 12059257 | 110,128,148                                                                          |
| 12020807 | 86                                                      | 12047767 | 56,138         | 12052219 | 96,122,138     | 12059258 | 110,128,148                                                                          |
| 12020833 | 68,69,70,71,74,87,88,<br>92,102,103,104,113,<br>129,131 | 12047781 | 56,59          | 12052221 | 96,122,138     | 12059259 | 110,128,148                                                                          |
| 12033769 | 112                                                     | 12047782 | 57,59          | 12052222 | 106,122,138    | 12059260 | 110,128,148                                                                          |
| 12033820 | 97,123,139                                              | 12047783 | 56,59,60       | 12052224 | 106,122,138    | 12059296 | 103                                                                                  |
| 12033972 | 107,139                                                 | 12047784 | 59,60          | 12052287 | 131            | 12059297 | 103                                                                                  |
| 12033997 | 110                                                     | 12047785 | 56,60          | 12052290 | 131            | 12059450 | 85,86                                                                                |
| 12034046 | 78,122,138,160                                          | 12047786 | 57,60          | 12052386 | 110,128,148    | 12059472 | 126,129                                                                              |
| 12034047 | 79,123,139                                              | 12047787 | 60,61          | 12052387 | 110,128,148    | 12059573 | 92                                                                                   |
| 12034061 | 103                                                     | 12047838 | 136,137,141    | 12052388 | 110,128,148    |          |                                                                                      |
|          |                                                         | 12047840 | 136,141        | 12052452 | 100,128,148    |          |                                                                                      |

<http://delphi.com/products/connect>



| Part#    | Page        |
|----------|-------------|
| 12059735 | 137,142     |
| 12059800 | 74          |
| 12059801 | 74          |
| 12059860 | 96,99       |
| 12059894 | 57,139      |
| 12059897 | 100,101,102 |
| 12064734 | 111,147     |
| 12064735 | 111,147     |
| 12064736 | 111,147     |
| 12064737 | 111,147     |
| 12064749 | 96,99       |
| 12064750 | 97,99       |
| 12064751 | 97,99       |
| 12064752 | 78,82       |
| 12064753 | 78,82       |
| 12064754 | 79,82       |
| 12064755 | 79,82       |
| 12064758 | 56,60       |
| 12064759 | 57,60       |
| 12064760 | 56,61       |
| 12064761 | 57,61       |
| 12064762 | 56,63       |
| 12064763 | 57,63       |
| 12064764 | 56,63       |
| 12064765 | 63          |
| 12064766 | 56,64       |
| 12064767 | 57,64       |
| 12064768 | 56,64       |
| 12064769 | 56,65       |
| 12064770 | 57,65       |
| 12064771 | 56,65       |
| 12064834 | 145,150     |
| 12064835 | 144,150     |
| 12064837 | 145,150     |
| 12064839 | 145,150     |
| 12064860 | 74          |
| 12064861 | 74          |
| 12064862 | 74          |
| 12064863 | 74          |
| 12064971 | 56,138      |
| 12064998 | 78,83       |
| 12064999 | 78,83       |
| 12065141 | 79,83       |
| 12065171 | 85,86       |
| 12065172 | 84,86       |

| Part#    | Page           |
|----------|----------------|
| 12065196 | 101,127,147    |
| 12065197 | 101,127,147    |
| 12065249 | 85,86          |
| 12065266 | 155            |
| 12065279 | 85,86          |
| 12065298 | 75             |
| 12065425 | 66,71,159      |
| 12065426 | 71             |
| 12065703 | 100,128,148    |
| 12065705 | 137,143        |
| 12065848 | 145,149        |
| 12065849 | 145,149        |
| 12065850 | 144,149        |
| 12065863 | 101,102        |
| 12065916 | 116            |
| 12066050 | 144,149        |
| 12066082 | 101,128,148    |
| 12066176 | 75             |
| 12066195 | 79,83          |
| 12066214 | 78,122         |
| 12066269 | 97,123,139     |
| 12066271 | 79,123,139     |
| 12066304 | 66,70          |
| 12066454 | 107,139        |
| 12066493 | 107,139        |
| 12066505 | 110            |
| 12066571 | 103            |
| 12066572 | 103            |
| 12066590 | 145,150        |
| 12077411 | 84,126,146     |
| 12077413 | 84,126,146     |
| 12077591 | 75             |
| 12077628 | 67,127,147     |
| 12077759 | 110,128,148    |
| 12077760 | 110,128,148    |
| 12077822 | 137,141        |
| 12077904 | 92             |
| 12077939 | 84             |
| 12084183 | 136,141        |
| 12084193 | 66,128,148,159 |
| 12084200 | 66,126,146,159 |
| 12084201 | 84,126,146     |
| 12084586 | 79,123,139     |
| 12084590 | 106,122,138    |
| 12084595 | 96,122,138     |

| Part#    | Page           |
|----------|----------------|
| 12084596 | 106,122,138    |
| 12084673 | 85,88          |
| 12084890 | 91             |
| 12084891 | 84,88          |
| 12089290 | 154            |
| 12089442 | 66,128,148,159 |
| 12089444 | 84,128,148     |
| 12089678 | 66,128,148,159 |
| 12089679 | 84,128,148     |
| 12092162 | 56,61          |
| 12092163 | 57,61          |
| 12092164 | 56,61          |
| 12092254 | 91             |
| 12092399 | 116,119        |
| 12092400 | 116,119        |
| 12092401 | 116,117,119    |
| 12092444 | 116            |
| 12092445 | 116            |
| 12092491 | 144,150        |
| 12092844 | 66,67,69       |
| 12103360 | 84             |
| 12103881 | 154            |
| 12103974 | 67,69          |
| 12110075 | 130            |
| 12110127 | 116            |
| 12110179 | 93             |
| 12110236 | 154            |
| 12110250 | 72             |
| 12110252 | 72             |
| 12110254 | 72             |
| 12110293 | 66,68          |
| 12110440 | 161,162        |
| 12110698 | 117,119        |
| 12110700 | 117            |
| 12110751 | 84,89          |
| 12110753 | 85,89          |
| 12110754 | 84,85,89       |
| 12110782 | 85,90          |
| 12110822 | 90             |
| 12110842 | 78,160         |
| 12110843 | 78,160         |
| 12110844 | 78,160         |
| 12110845 | 84,146         |
| 12110846 | 84,146         |
| 12110847 | 84,146         |

| Part#    | Page               |
|----------|--------------------|
| 12110853 | 84,146             |
| 12124075 | 66                 |
| 12124076 | 66                 |
| 12124107 | 67,70              |
| 12124264 | 66,67,71,159       |
| 12124304 | 96,122,138         |
| 12124634 | 92                 |
| 12124669 | 66,128,148,159     |
| 12124685 | 110,113            |
| 12124686 | 111,113            |
| 12124732 | 137,143            |
| 12124811 | 91                 |
| 12124819 | 84,86              |
| 12124824 | 75                 |
| 12124898 | 131                |
| 12124977 | 85,147             |
| 12129061 | 78,160             |
| 12129081 | 78,80              |
| 12129082 | 80                 |
| 12129083 | 78,80              |
| 12129088 | 162                |
| 12129124 | 132                |
| 12129135 | 79,81              |
| 12129136 | 78,81              |
| 12129137 | 79,81              |
| 12129138 | 78,81              |
| 12129140 | 93                 |
| 12129142 | 93                 |
| 12129155 | 79,80              |
| 12129156 | 80                 |
| 12129157 | 79,80              |
| 12129206 | 144,152            |
| 12129213 | 145,152            |
| 12129214 | 144,152            |
| 12129373 | 56                 |
| 12129409 | 84                 |
| 12129424 | 78,160             |
| 12129425 | 78,160             |
| 12129484 | 56                 |
| 12129487 | 92                 |
| 12129489 | 78,81              |
| 12129490 | 79,81              |
| 12129491 | 78,81              |
| 12129492 | 79,81              |
| 12129493 | 84,126,138,146,160 |

## Part Number Index



| Part#    | Page           | Part#    | Page           | Part#    | Page           | Part#    | Page        |
|----------|----------------|----------|----------------|----------|----------------|----------|-------------|
| 12129494 | 78,122,138,160 | 12147054 | 62             | 12162197 | 21,76          | 12176865 | 84,90       |
| 12129497 | 85,147         | 12147055 | 62             | 12162198 | 21,76          | 12185279 | 72          |
| 12129498 | 79,123,139     | 12147502 | 80,82          | 12162199 | 21,76          | 12185280 | 72          |
| 12129565 | 84,88          | 12147517 | 80,82          | 12162210 | 20,76          | 12185636 | 62          |
| 12129600 | 85,88          | 12147771 | 80,82          | 12162215 | 19,76          | 12186347 | 132         |
| 12129613 | 89             | 12160222 | 66,126,146,159 | 12162216 | 19,76          | 12186400 | 85,88       |
| 12129614 | 89             | 12160223 | 66,126,146,159 | 12162217 | 19,76          | 12186869 | 137,142     |
| 12129615 | 67,68          | 12160437 | 72             | 12162218 | 19,76          | 12186880 | 137,141     |
| 12129663 | 78,160         | 12160446 | 159            | 12162229 | 130            | 12191487 | 145,151     |
| 12129669 | 144,151        | 12160893 | 116,118        | 12162260 | 20,76          | 12191499 | 144,151     |
| 12129670 | 145,151        | 12160894 | 117,118        | 12162261 | 20,76          | 15300002 | 85,87       |
| 12129672 | 145,151        | 12160895 | 116,117,118    | 12162279 | 21,76          | 15300003 | 85,87       |
| 12129842 | 130            | 12160959 | 145,149        | 12162280 | 21,76          | 15300014 | 85,87       |
| 12129938 | 107,108        | 12161184 | 66             | 12162298 | 91             | 15300015 | 85,87       |
| 12129939 | 106,108        | 12161185 | 90             | 12162299 | 130            | 15300016 | 88          |
| 12129940 | 106,108        | 12161186 | 84,90          | 12162300 | 130            | 15300027 | 84,87       |
| 12131283 | 62             | 12161187 | 85,90          | 12162301 | 130            | 15317352 | 145,151     |
| 12131285 | 62             | 12161191 | 145,151        | 12162343 | 68             | 15317575 | 72          |
| 12131358 | 63             | 12162000 | 67,68          | 12162412 | 137,140        | 15318080 | 82          |
| 12131361 | 62             | 12162017 | 75             | 12162413 | 137,140        | 15324063 | 85,88       |
| 12131370 | 63             | 12162067 | 100,128,148    | 12162463 | 136,143        | 15324332 | 160,162     |
| 12131372 | 62             | 12162068 | 100,128,148    | 12162512 | 103            | 15324456 | 91,160      |
| 12131543 | 102            | 12162102 | 67,69          | 12162527 | 145,152        | 15324525 | 67,70       |
| 12131592 | 102            | 12162144 | 66,69          | 12162573 | 145,152        | 15324764 | 136,137,142 |
| 12143692 | 73             | 12162182 | 19,20,76       | 12162595 | 78,122,138,160 | 15324857 | 88,91       |
| 12143693 | 73             | 12162185 | 19,20,76       | 12162596 | 78,122,138,160 | 15327747 | 87          |
| 12143694 | 73             | 12162188 | 19,20,76       | 12162597 | 78,122,138,160 | 15327799 | 68          |
| 12146045 | 66,69          | 12162189 | 19,20,76       | 12176387 | 84,146         | 15344628 | 102         |
| 12146724 | 161,162        | 12162190 | 19,20,76       | 12176388 | 84,146         | 15357040 | 160,162     |
| 12146735 | 162            | 12162191 | 19,20,76       | 12176389 | 84,146         | 15394027 | 136,142     |
| 12146840 | 89             | 12162193 | 19,20,76       | 12176538 | 145,149        | 15396848 | 63          |
| 12146841 | 89             | 12162194 | 19,20,76       | 12176640 | 90             | 15396849 | 63          |
| 12146933 | 72             | 12162195 | 19,20,76       | 12176690 | 145,152        |          |             |

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