

Metri-Pack Series

150



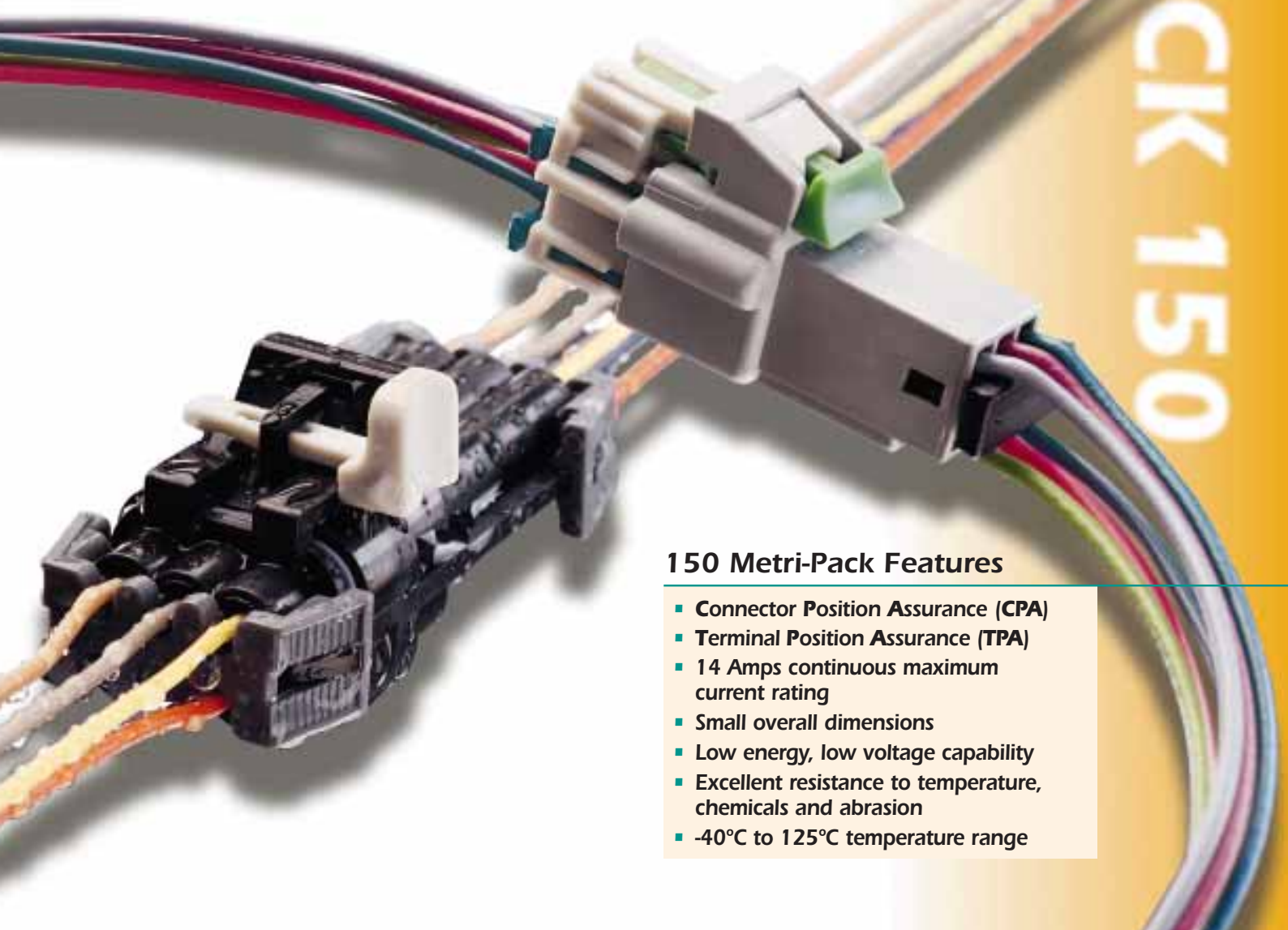
Available in device and in-line connections for vehicle applications, Metri-Pack 150 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

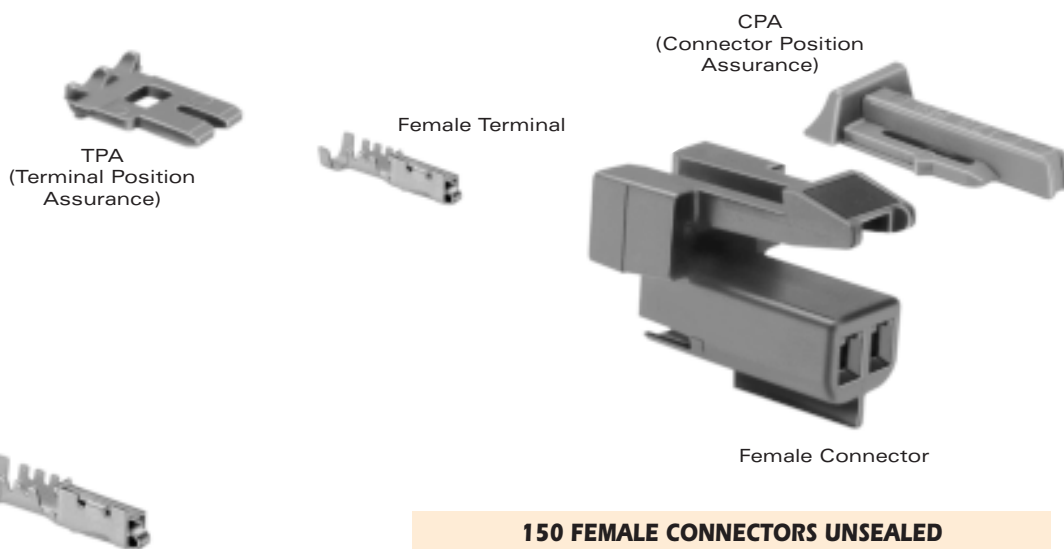
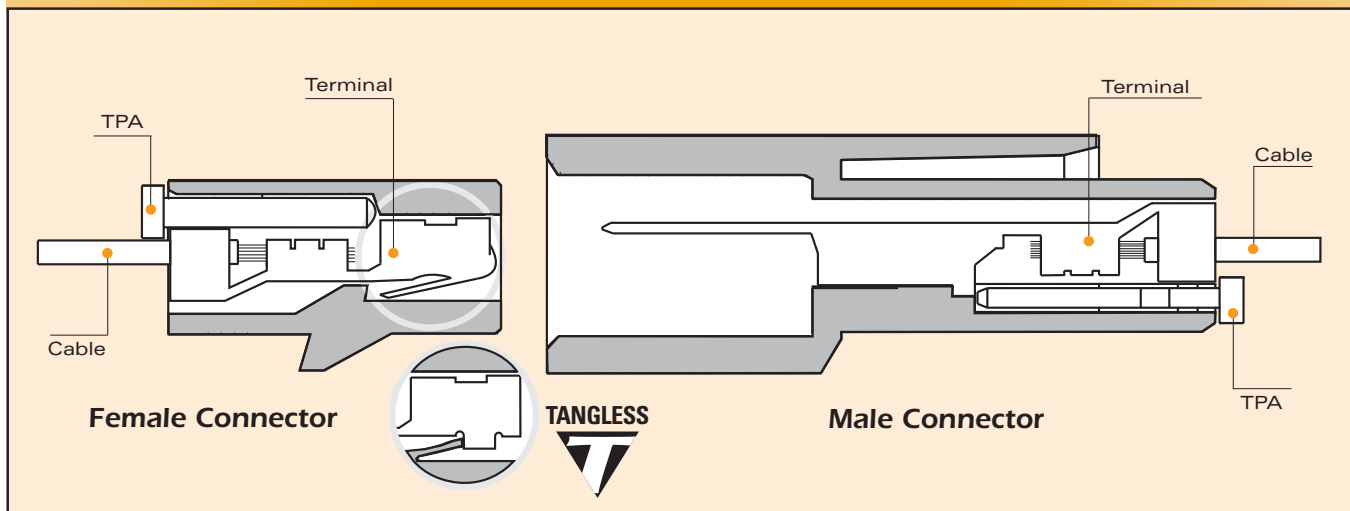


150 Metri-Pack Features

- **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 ²)	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 ²)	Material	Plating
12129484	1.0-0.80	Silicon Bronze	Tin
12129373	0.5-0.35	Silicon Bronze	Tin

150 FEMALE CONNECTORS UNSEALED

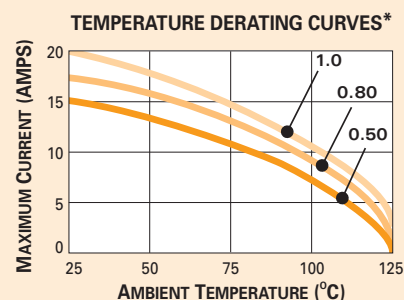
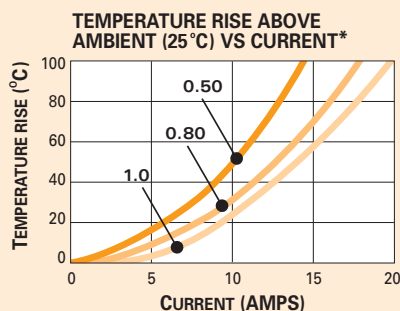
# Cavities	Connector	Color	Material	TPA
1	12047682	Black	PA66 HS IM	—
2	12047662	Black	PA66 HS IM	12047664
2	12052832	Black	PA66 HS IM	12047664
3	12047781	Black	PA66 HS IM	12047783
3	12064758	Black	PA66 HS IM	12047783
4	12047785	Black	PA66 HS IM	12047664
4	12064760	Black	PA66 HS IM	12047664
4	12092162	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



Unsealed System Application Information

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

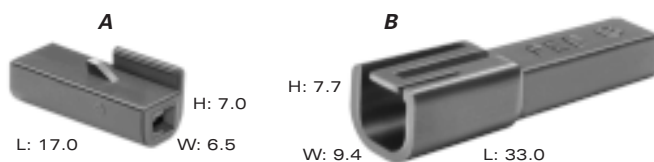
Part #	Cable Range (mm ²)	Material	Plating
12047581	1.0-0.80	Tin Brass	Tin
12059894	0.50-0.35	Tin Brass	Tin

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.

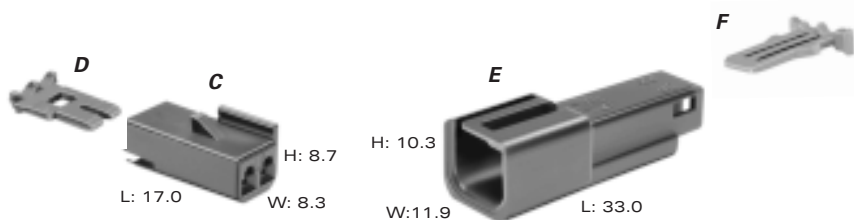
<http://delphi.com/products/connect>



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



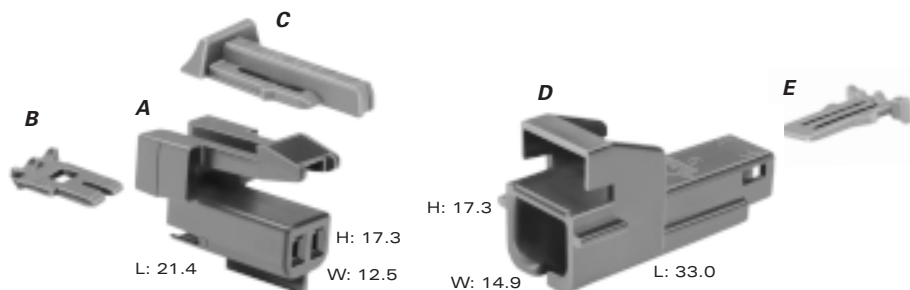
Total Mated Length: 41.0mm

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

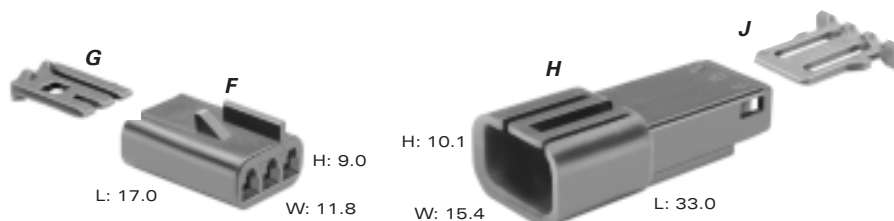
A PART NO: 12052832
 DESCRIPTION: Connector 2F
 SIZE: 21.4L x 17.3H x 12.5W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 56

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



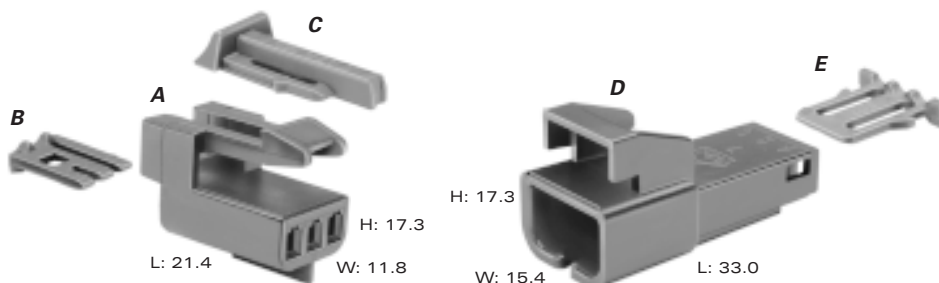
Total Mated Length: 41.3mm

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

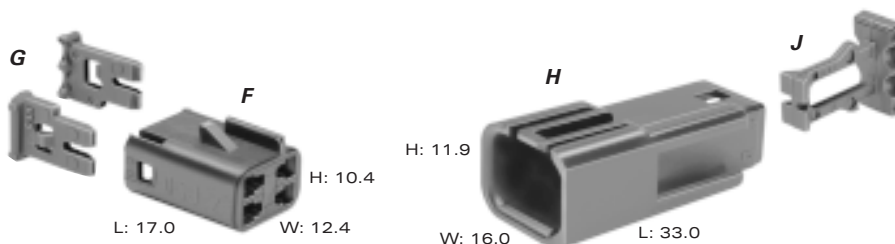
A PART NO: 12064758
 DESCRIPTION: Connector 3F
 SIZE: 21.4L x 17.3H x 11.8W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 56

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



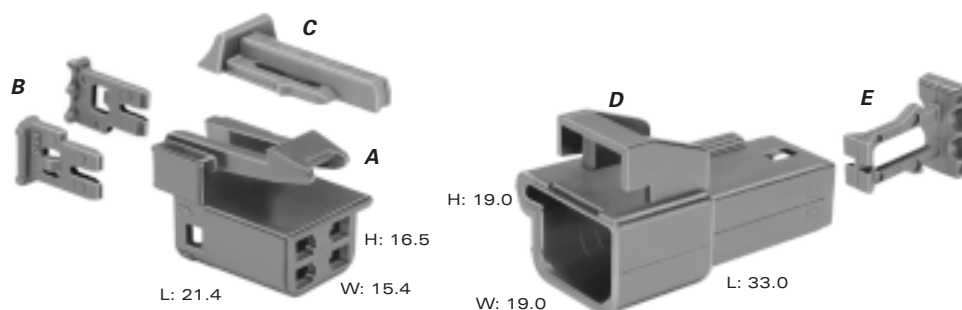
Total Mated Length: 42.2mm

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

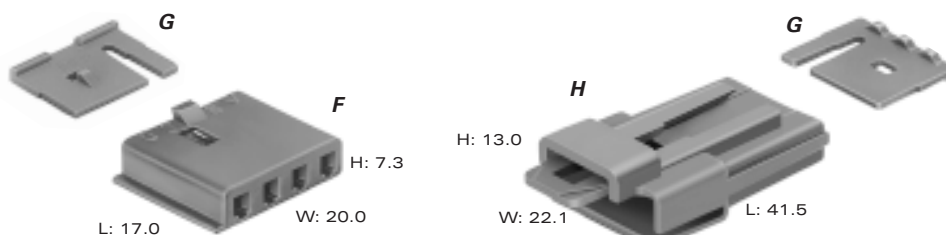
A PART NO: 12064760
 DESCRIPTION: Connector 4F
 SIZE: 21.4L x 16.5H x 15.4W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 56

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

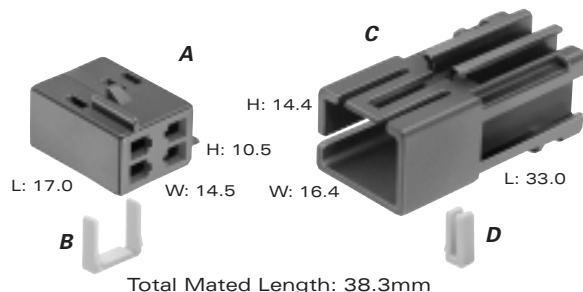


Total Mated Length: 43.3mm

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

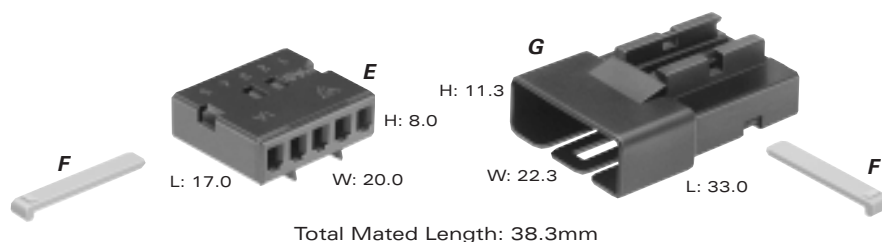


A PART NO: **12131283**
 DESCRIPTION: Connector 4F
 SIZE: 17.0L x 10.5H x 14.5W
 COLOR: Black
 MATERIAL: PA66
 TERMINALS: See Page 56

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

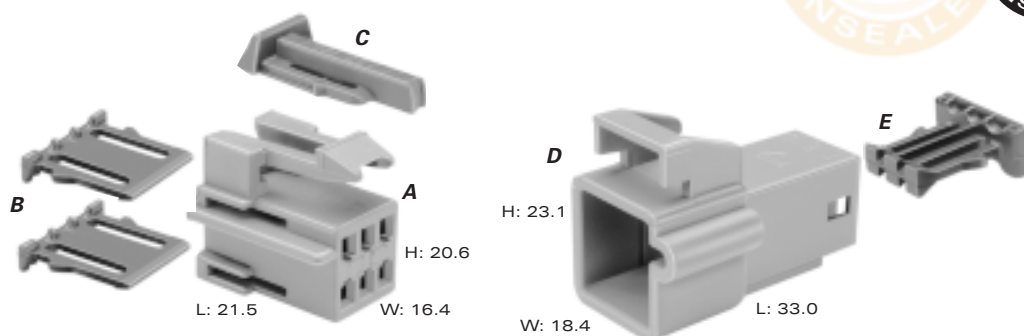
D PART NO: **12131372**
 DESCRIPTION: Secondary Lock
 COLOR: Yellow
 MATERIAL: PA66 25% GF
 NOTE: M Clip-on Connector also available



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

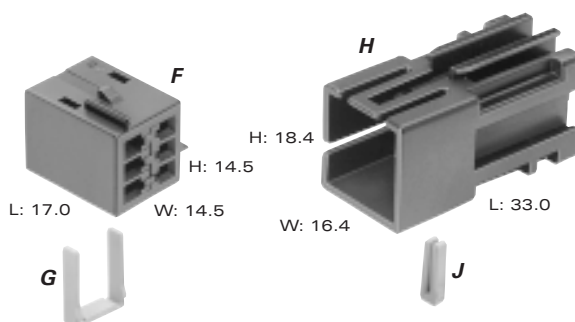
A PART NO: 12064762
 DESCRIPTION: Connector 6F
 SIZE: 21.5L x 20.6H x 16.4W
 COLOR: Gray
 MATERIAL: PBT
 TERMINALS: See Page 56

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

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

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

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



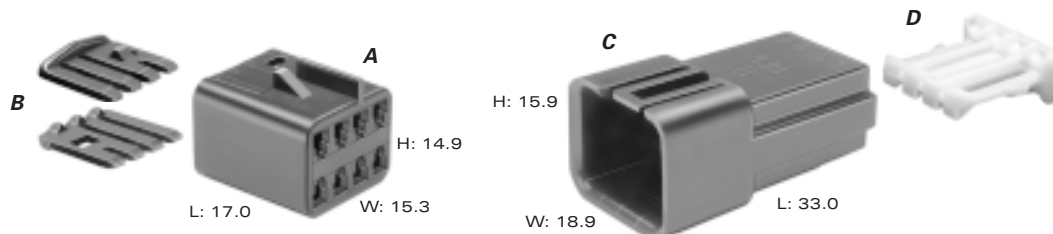
Total Mated Length: 38.3mm

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

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

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

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



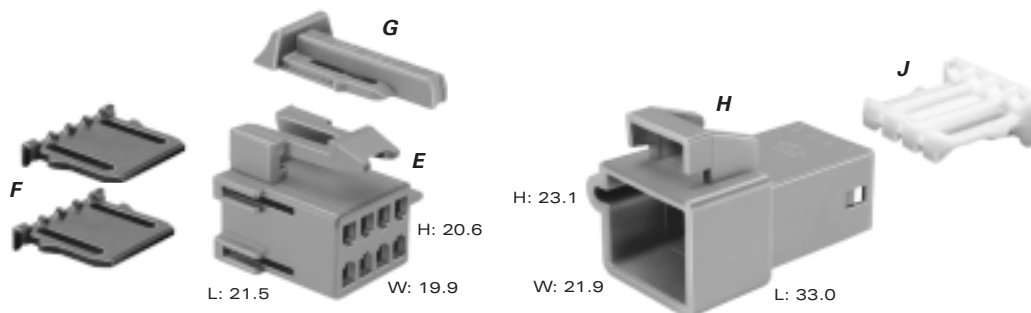
Total Mated Length: 41.2mm

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

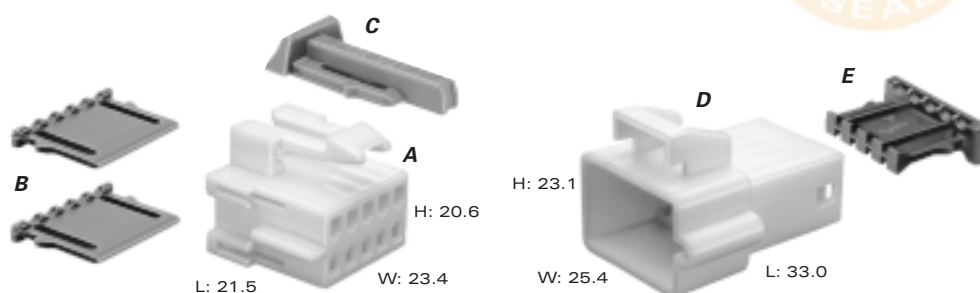
H PART NO: 12064767
DESCRIPTION: Connector 8M (Clip Slot)
SIZE: 33.0L x 23.1H x 21.9W
COLOR: Blue
MATERIAL: PBT
TERMINALS: See Page 57

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

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



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

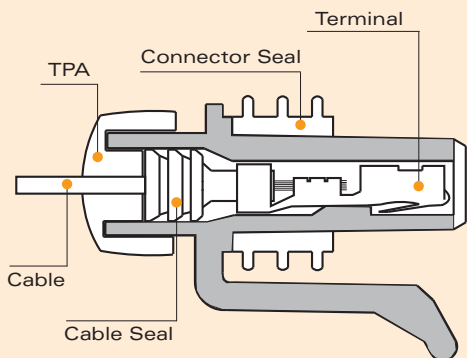
C PART NO: **12052834**
 DESCRIPTION: CPA
 COLOR: Green
 MATERIAL: PP

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

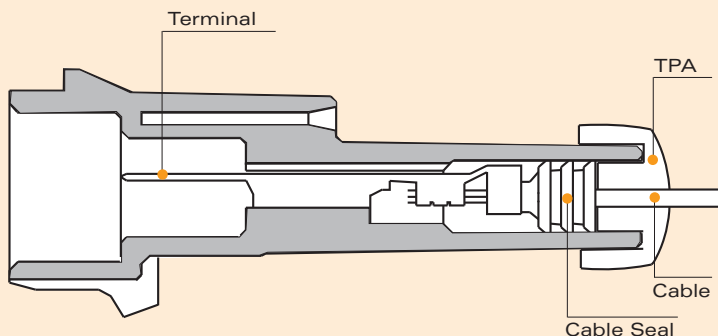
E PART NO: **12064772**
 DESCRIPTION: TPA
 COLOR: Black
 MATERIAL: PBT



Cross Sectional View



Female Connector Assembly



Male Connector



150 FEMALE TERMINALS SEALED

Part #	Cable Range (mm ²)	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 ²)	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
Cable Seal



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>

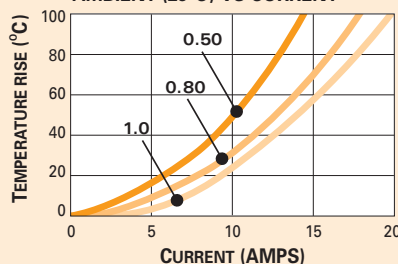


Sealed System Application Information

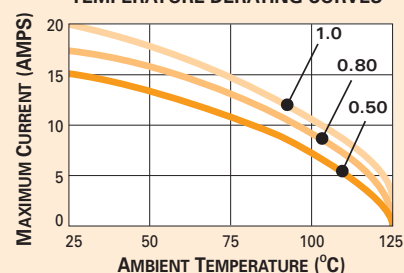
CABLE RANGE (mm²): 0.35-1.0
 CURRENT RANGE (AMPS): 0-14
 TEMP RANGE °C: -40 to 125
 RESISTANCE: <10mΩ@20mV
 VOLTAGE DROP: <10.0 mV/amp
 CENTERLINE SPACING (mm): 6.0
 BLADE WIDTH (mm): 1.5

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 ²)	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

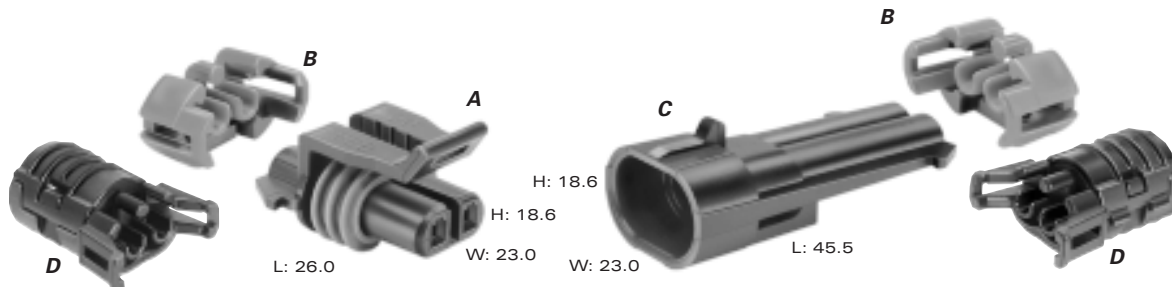
*Cavity plugs seal unused female and male cavities

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)**

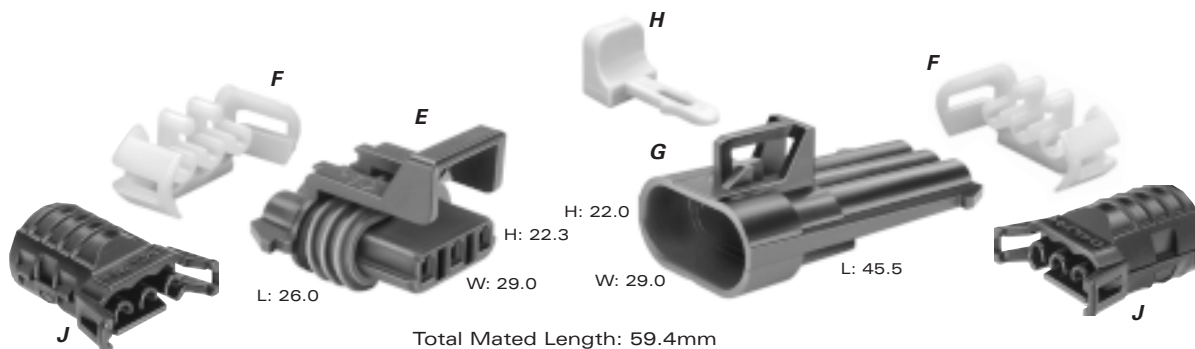
DESCRIPTION: Connector 2M (Clip Slot-Self Locking)
SIZE: 45.5L x 18.6H x 23.0W
MATERIAL: PA66 HS IM
TERMINALS: See Page 67
SEALS/PLUGS: See Page 66, 67

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

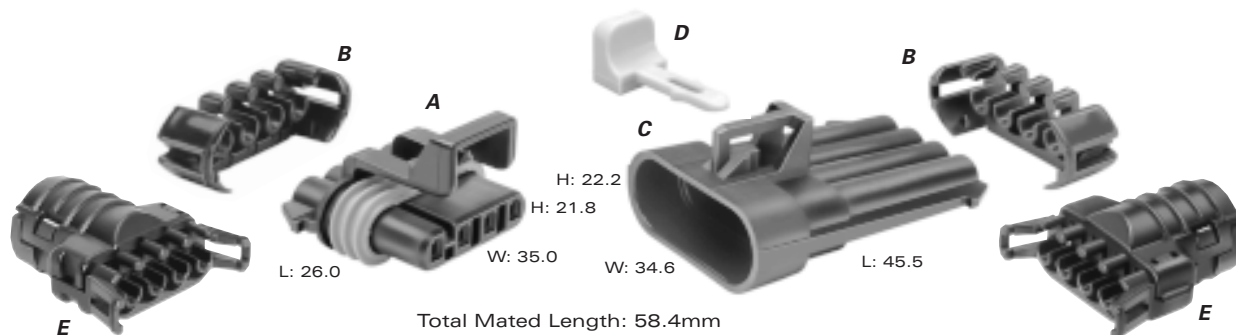
H PART NO: 12020833

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>



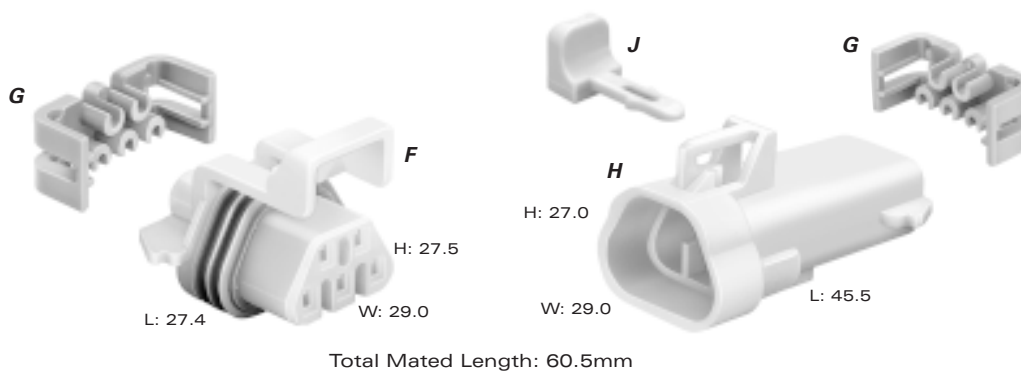
A PART NO: 12162144
 DESCRIPTION: Connector Assembly 4F
 SIZE: 26.0L x 21.8H x 35.0W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 66
 SEALS/PLUGS: See Page 66, 67

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

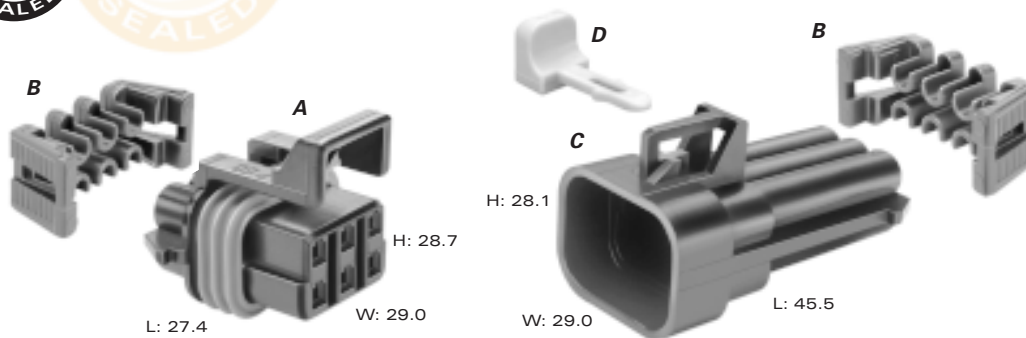


F PART NO: 12146045
 DESCRIPTION: Connector Assembly 5F
 SIZE: 27.4L x 27.5H x 29.0W
 COLOR: Natural
 MATERIAL: PA6
 TERMINALS: See Page 66
 SEALS/PLUGS: See Page 66, 67

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



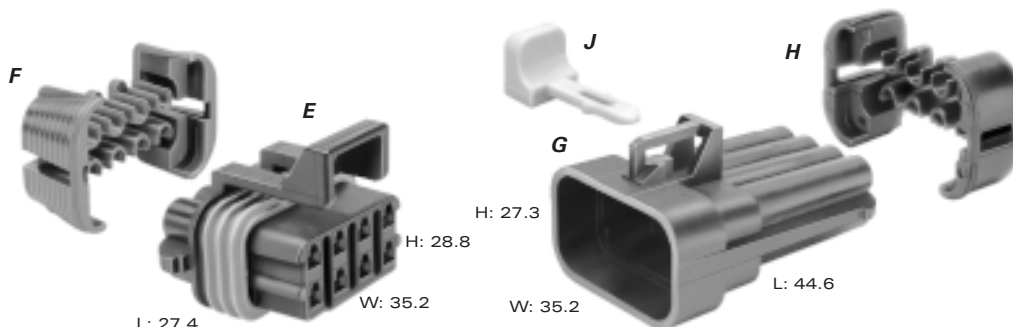
Total Mated Length: 60.5mm

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

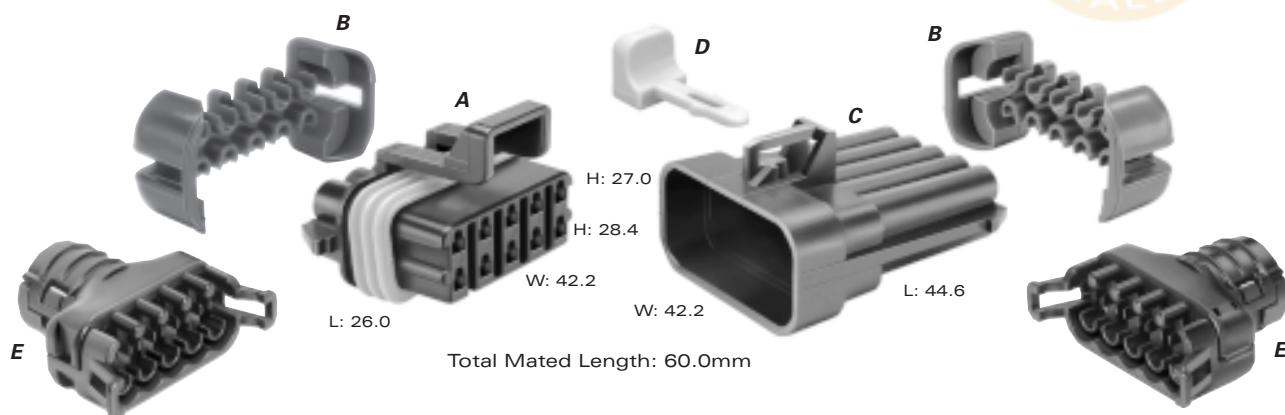
G PART NO: **12047931 (Black)**
DESCRIPTION: Connector 8M (Clip Slot)
PART NO: **12047933 (Lt. Gray)**
DESCRIPTION: Connector 7M (Clip Slot)
PART NO: **12052480 (Dk. Gray)**
DESCRIPTION: Connector 5M (Clip Slot)
SIZE: 44.6L x 27.3H x 35.2W
MATERIAL: PBT 30% GF
TERMINALS: See Page 67
SEALS/PLUGS: See 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

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



**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

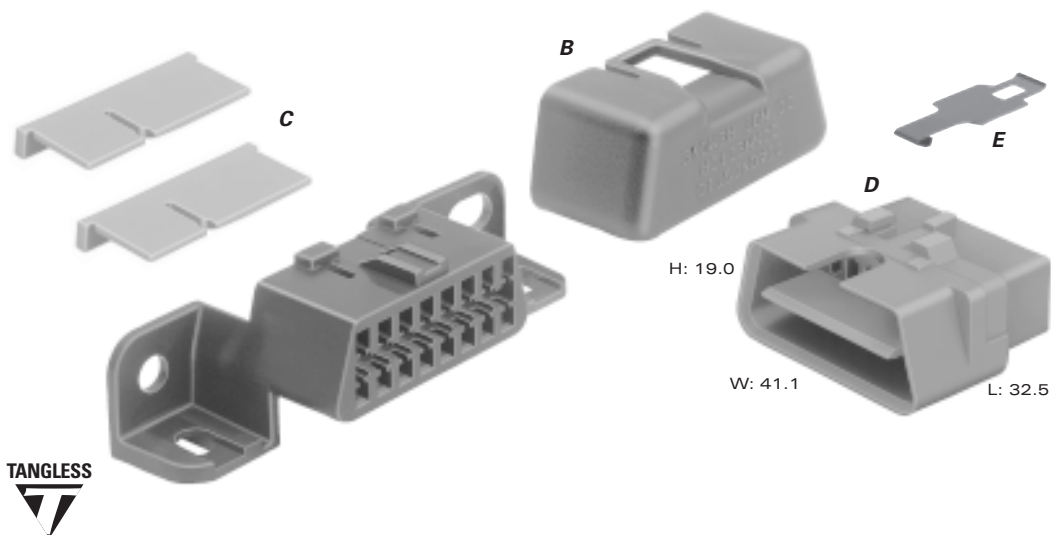
E PART NO: 10719339 (Optional)

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

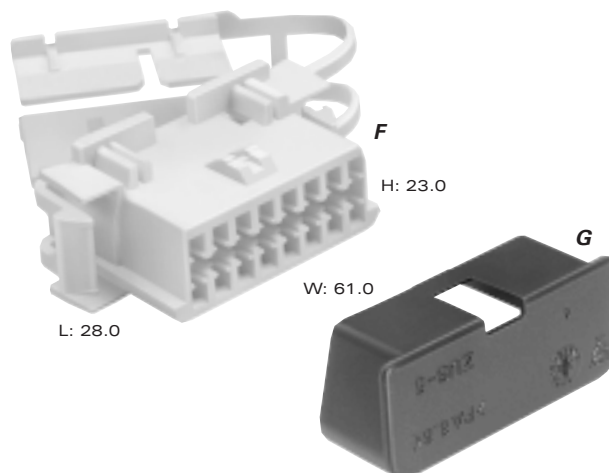
D PART NO: 12110252
 DESCRIPTION: Connector 16M
 SIZE: 32.5L x 19.0H x 41.1W
 COLOR: Red
 MATERIAL: PBT 30% GF
 TERMINALS: See Page 57
 NOTE: For molding details refer to drawing 12110256

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

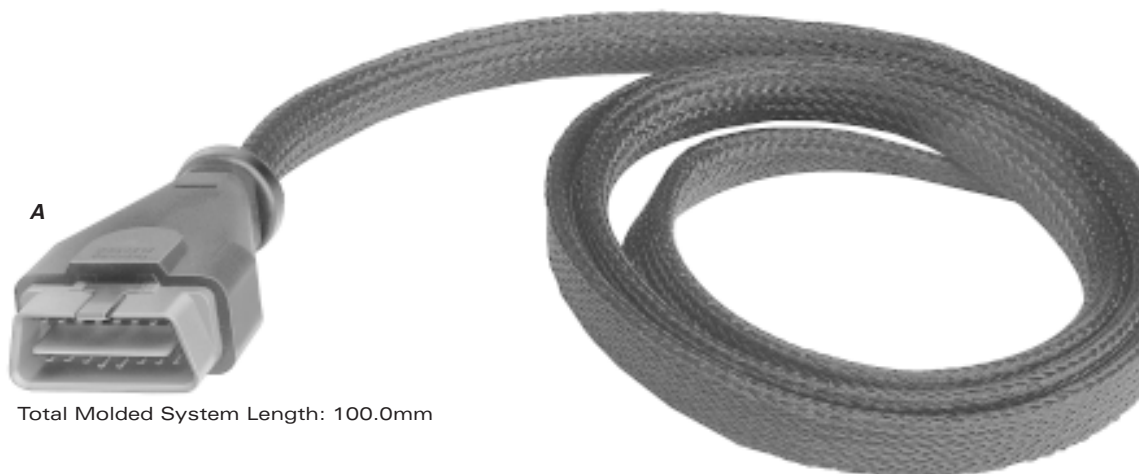


F PART NO: 12185280
 DESCRIPTION: Connector 16F
 SIZE: 28.0L x 23.0H x 61.0W
 COLOR: White
 MATERIAL: PA66
 TERMINALS: See Page 56

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



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

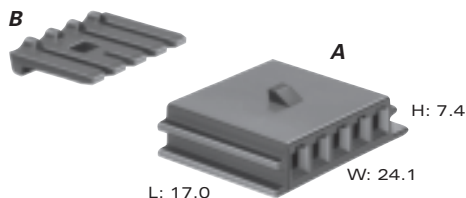


Total Molded System Length: 100.0mm

A DESCRIPTION: Connector Assembly 16M OBD II

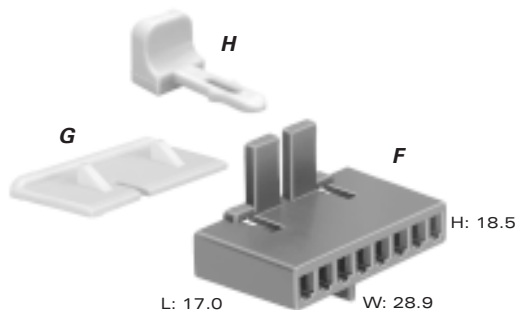
PART NO:	12143692
LENGTH:	3 Feet (915mm)
PART NO:	12143693
LENGTH:	8 Feet (2440mm)
PART NO:	12143694
LENGTH:	12 Feet (3660mm)

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



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

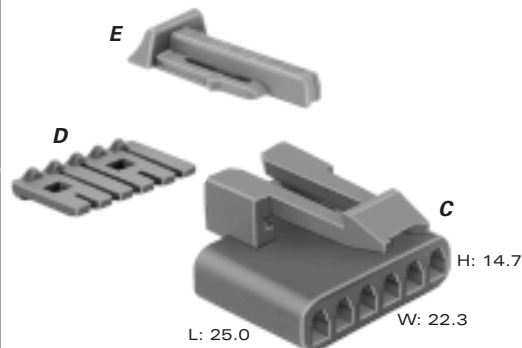
B PART NO: 12059801
 DESCRIPTION: TPA
 COLOR: Md. Gray
 MATERIAL: PA66 HS IM



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

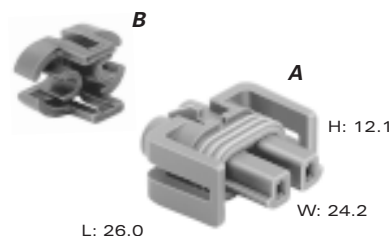
H PART NO: 12020833
 DESCRIPTION: CPA
 COLOR: Gray
 MATERIAL: PBT



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

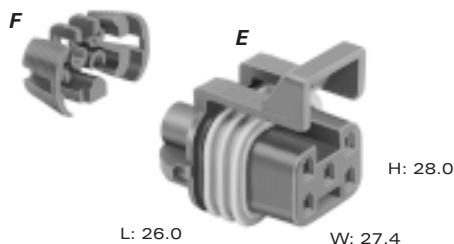
D PART NO: 12064861
 DESCRIPTION: TPA
 COLOR: Md. Gray
 MATERIAL: PA66 HS IM

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



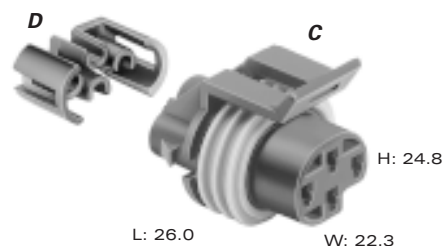
A PART NO: 12162017
 DESCRIPTION: Connector Assembly 2F
 SIZE: 26.0L x 12.1H x 24.2W
 COLOR: Md. Gray
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 66
 SEALS/PLUGS: See Page 66, 67
 TYPICAL APP: Compressor

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

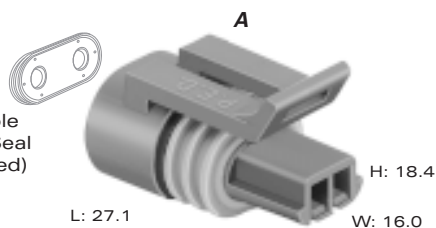


C PART NO: 12065298
 DESCRIPTION: Connector Assembly 4F
 SIZE: 26.0L x 24.8H x 22.3W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 66
 SEALS/PLUGS: See Page 66, 67
 TYPICAL APP: Switch

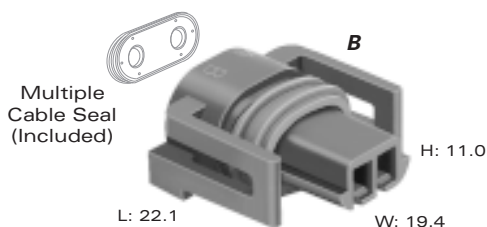
D PART NO: 12066176
 DESCRIPTION: TPA
 COLOR: Black
 MATERIAL: PA66 HS IM



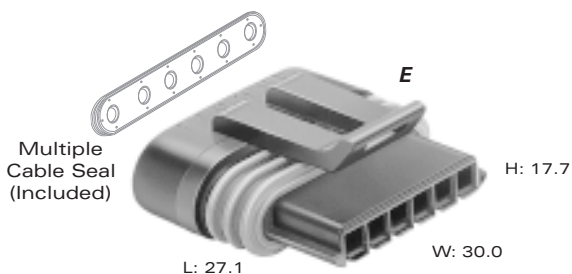
Multiple
Cable Seal
(Included)



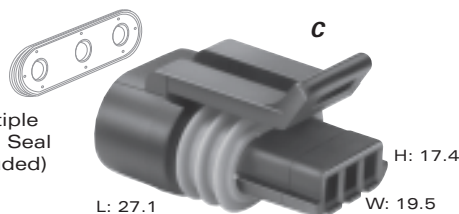
- A** PART NO: **12162193 (Black/Green Seal)**
2.66 -2.00 Cable O.D.
PART NO: **12162197 (Gray/Green Seal)**
2.66 -2.00 Cable O.D.
PART NO: **12162194 (Black/Tan Seal)**
2.15 -1.65 Cable O.D.
PART NO: **12162198 (Gray/Tan Seal)**
2.15 -1.65 Cable O.D.
PART NO: **12162195 (Black/Orange Seal)**
1.85 -1.47 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



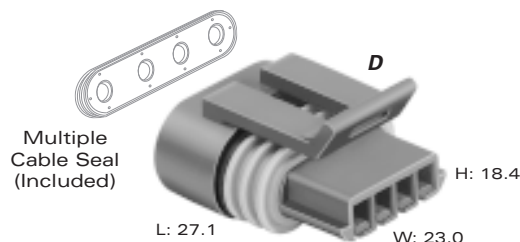
- B** PART NO: **12162215 (Black/Brown Seal)**
2.66 -2.00 Cable O.D.
PART NO: **12162216 (Black/Lt. Gray Seal)**
2.66 -2.00 Cable O.D.
PART NO: **12162217 (Black/Gray Seal)**
2.15 -1.65 Cable O.D.
PART NO: **12162218 (Gray/Yellow Seal)**
2.15 -1.65 Cable O.D.
DESCRIPTION: Connector Assembly 2F
SIZE: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



Multiple
Cable Seal
(Included)



- 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

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

METRI-PACK SERIES 280



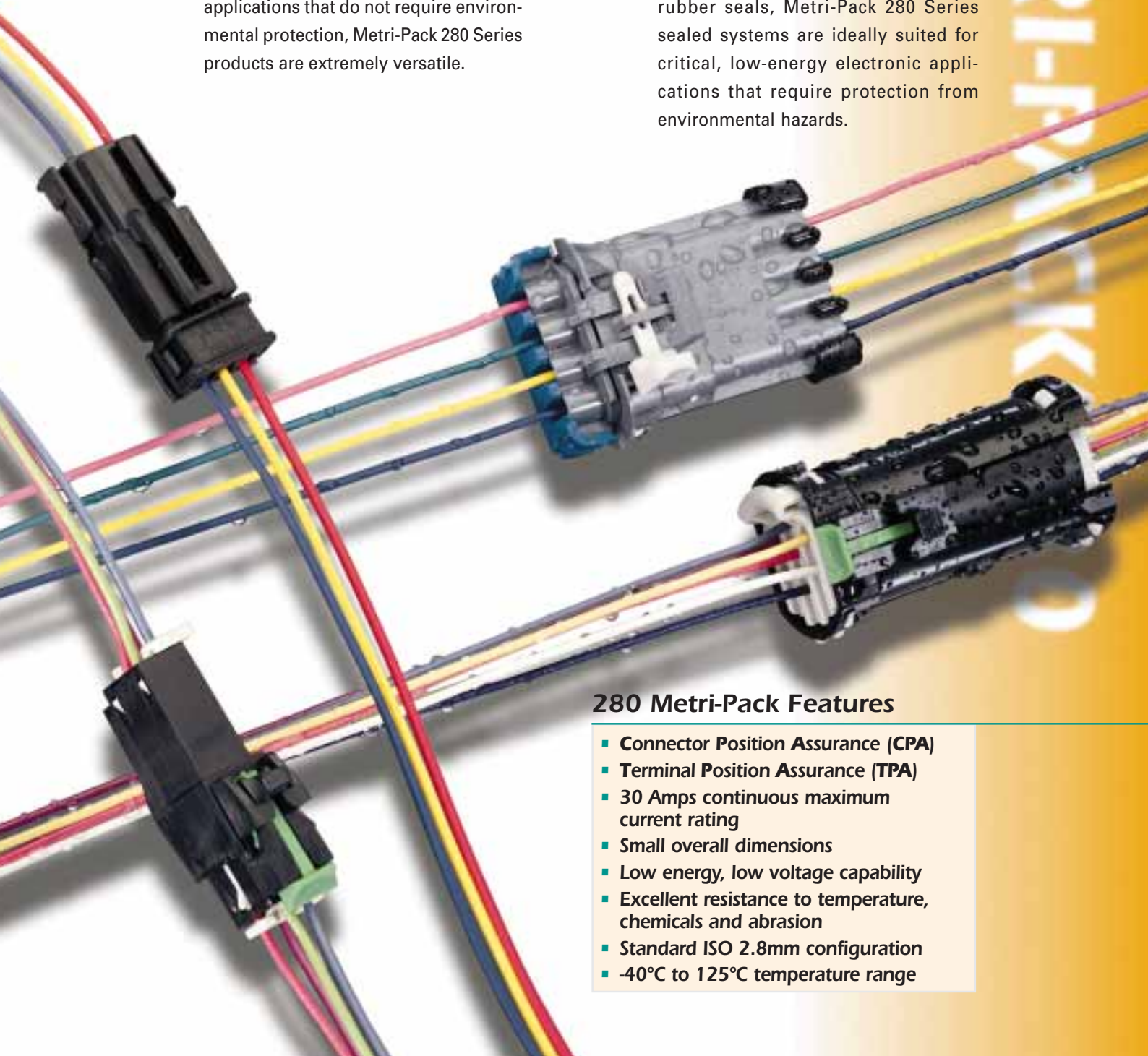
Available in device and in-line connections for vehicle applications, Metri-Pack 280 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

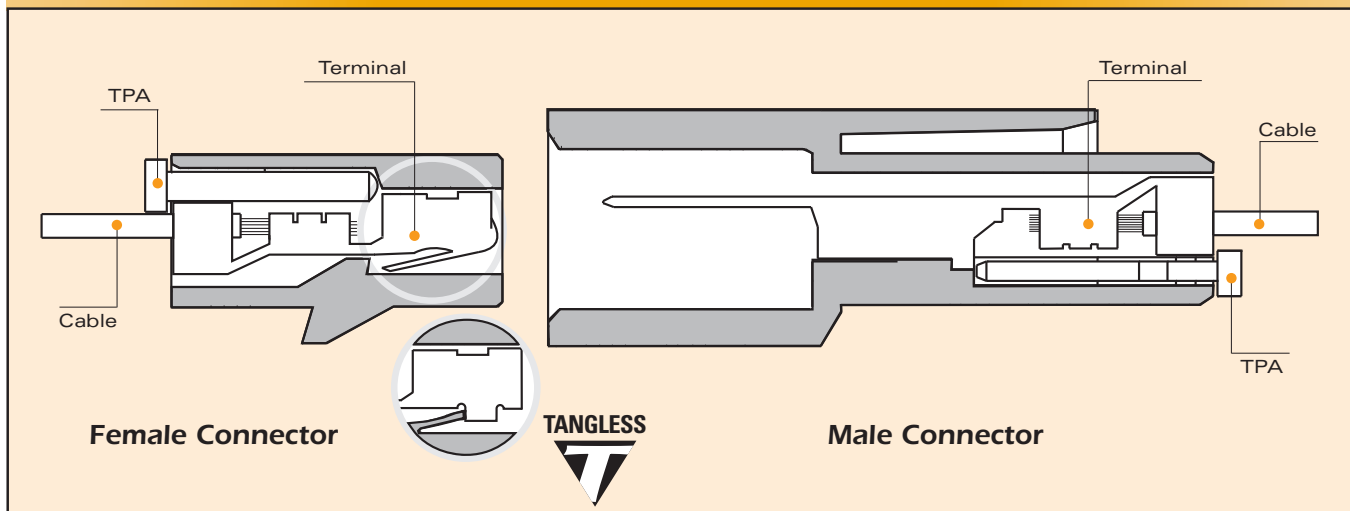


280 Metri-Pack Features

- 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



280 TANGLESS FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

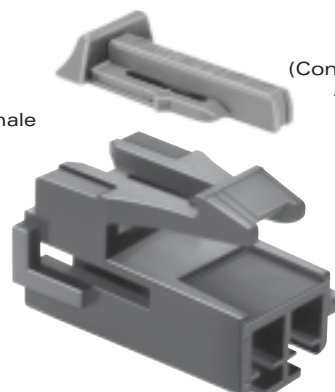
*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.



TPA
(Terminal Position Assurance)

Tangless Female Terminal

CPA
(Connector Position Assurance)



Female Connector



280 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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.

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

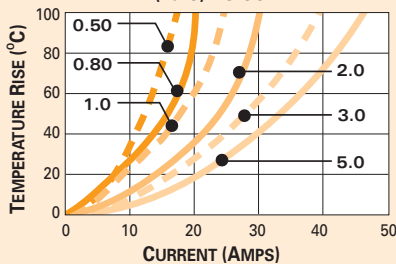


Unsealed System Application Information

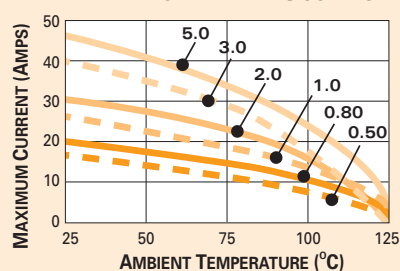
CABLE RANGE (mm²): 0.35-5.0
 CURRENT RANGE (AMPS): 0-30
 TEMP RANGE °C: -40 to 125
 RESISTANCE: <10mΩ@20mV
 VOLTAGE DROP: <3.0mV/amp
 CENTERLINE SPACING (mm): 5.0
 BLADE WIDTH (mm): 2.8

280 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.



Male Connector



Male Terminal



TPA
(Terminal Position Assurance)



280 MALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

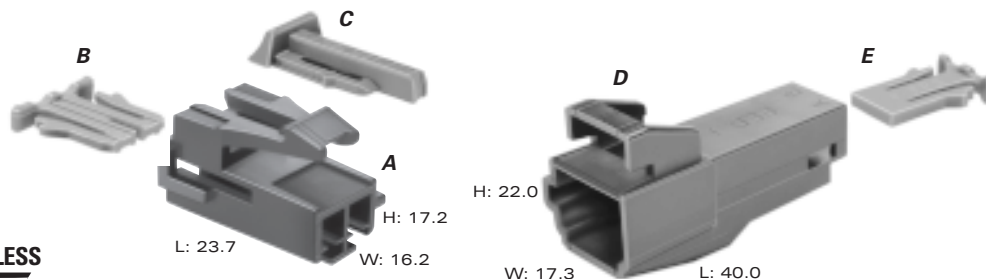
280 MALE CONNECTORS UNSEALED

# 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

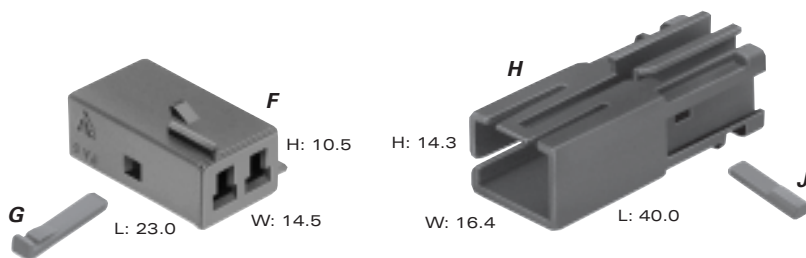
DESCRIPTION: TPA
COLOR: Lt. Gray
MATERIAL: PA66 HS IM

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)**

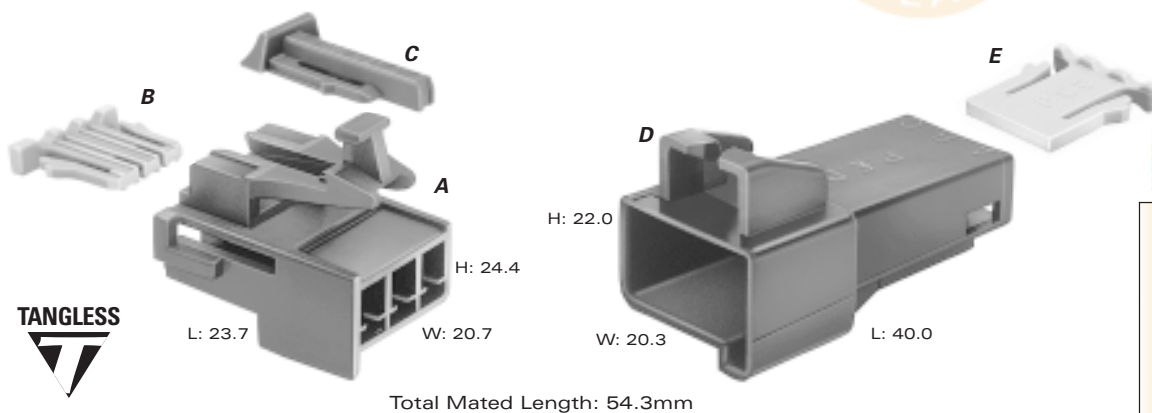
DESCRIPTION: Connector 2M
SIZE: 40.0L x 14.3H x 16.4W
MATERIAL: PA6
TERMINALS: See Page 79

G PART NO: 12147502

DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PA6 % GF

J PART NO: 12147771

DESCRIPTION: TPA
COLOR: Gray
MATERIAL: PA6 % GF



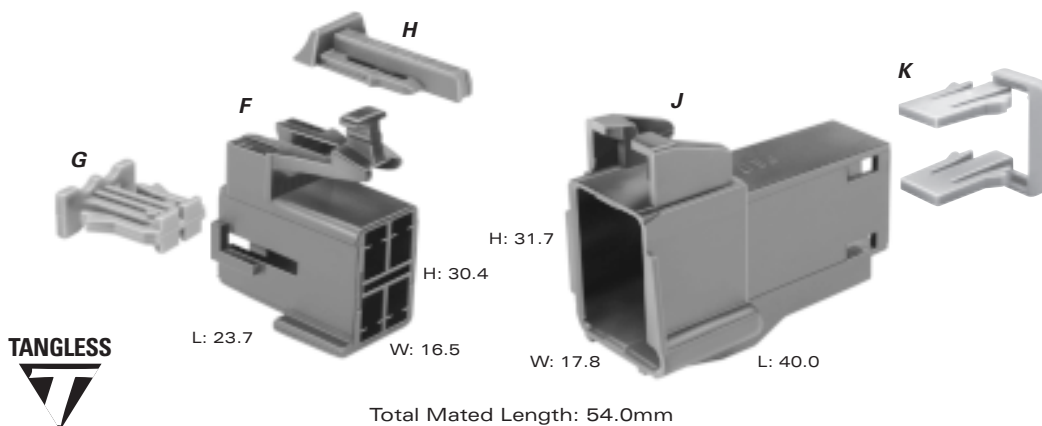
A PART NO: 12129489
 DESCRIPTION: Connector 3F
 SIZE: 23.7L x 24.4H x 20.7W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 78

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



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

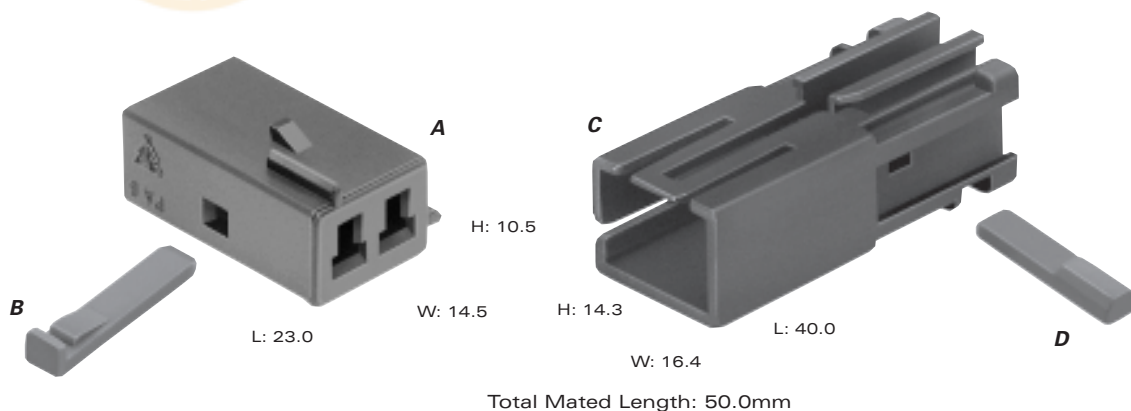
J PART NO: 12129135
 DESCRIPTION: Connector 4M (Clip Slot-Self Locking)
 SIZE: 40.0L x 31.7H x 17.8W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 79

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

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

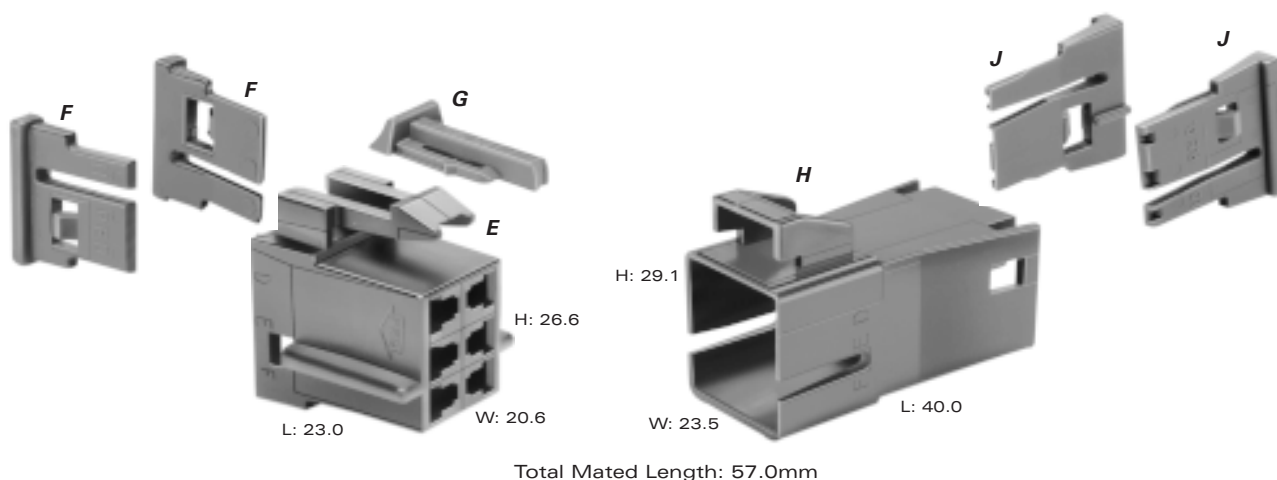


A PART NO: 15318080
 DESCRIPTION: Connector 2F
 SIZE: 23.0L x 10.5H x 14.5W
 COLOR: Black
 MATERIAL: PA6
 TERMINALS: See Page 78

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



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

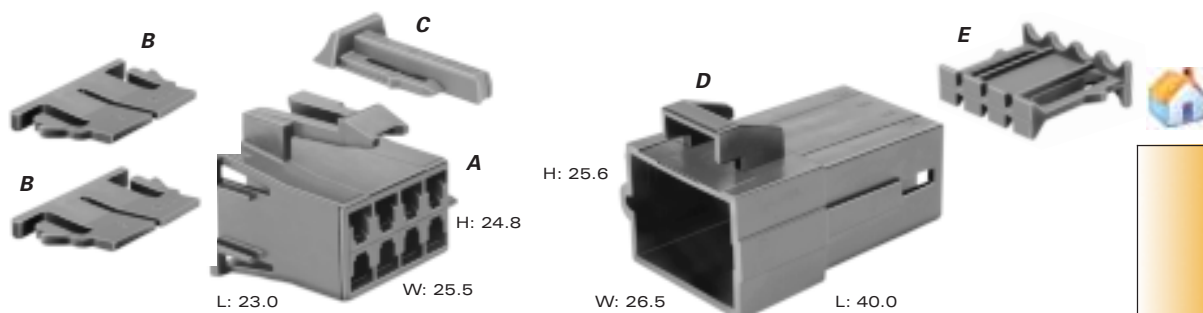
H PART NO: 12064754
 DESCRIPTION: Connector 6M (Clip Slot-Self Locking)
 SIZE: 40.0L x 29.1H x 23.5W
 COLOR: Black
 MATERIAL: PA6
 TERMINALS: See Page 79

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

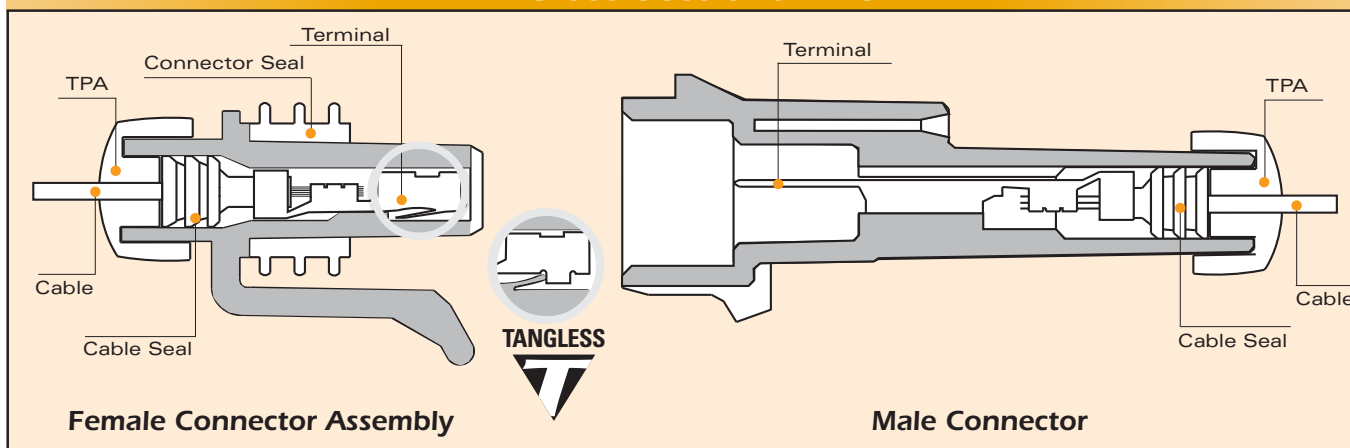
B PART NO: 12064999
 DESCRIPTION: TPA
 NUMBER REQ.: 2
 COLOR: Blue
 MATERIAL: PBT

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

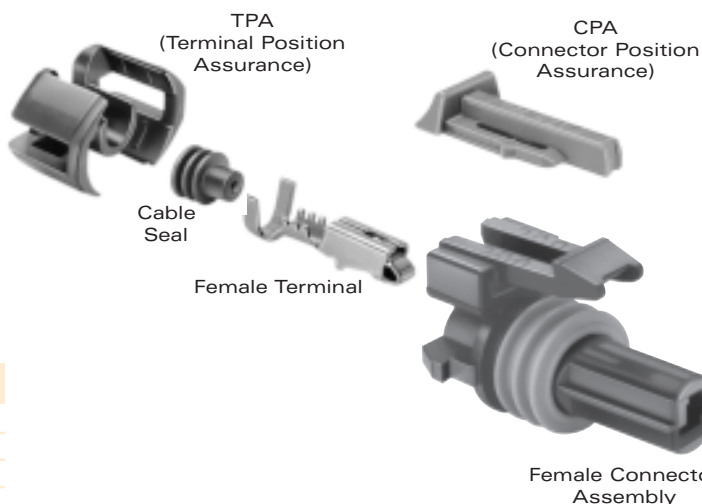
Part #	Cable Range (mm ²)	Material	Plating
12110853	5.0-3.0	Tin Brass	Tin
12129409	2.0-1.0	Tin Brass	Tin
12110845*	3.0-2.0	Tin Brass	Tin
12110847*	1.0-0.80	Tin Brass	Tin
12110846*	0.50-0.35	Tin Brass	Tin

*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 ²)	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 ²)	Material	Plating
12077939	1.0-0.80	Silicon Bronze	Tin
12103360	0.50-0.35	Silicon Bronze	Tin

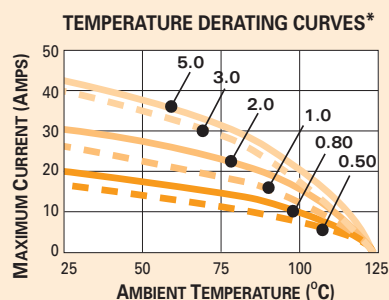
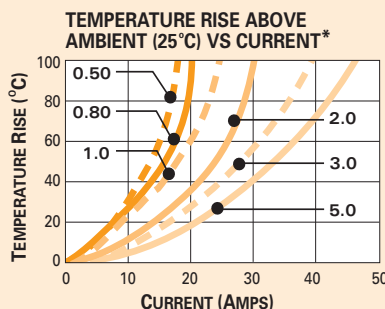
<http://delphi.com/products/connect>



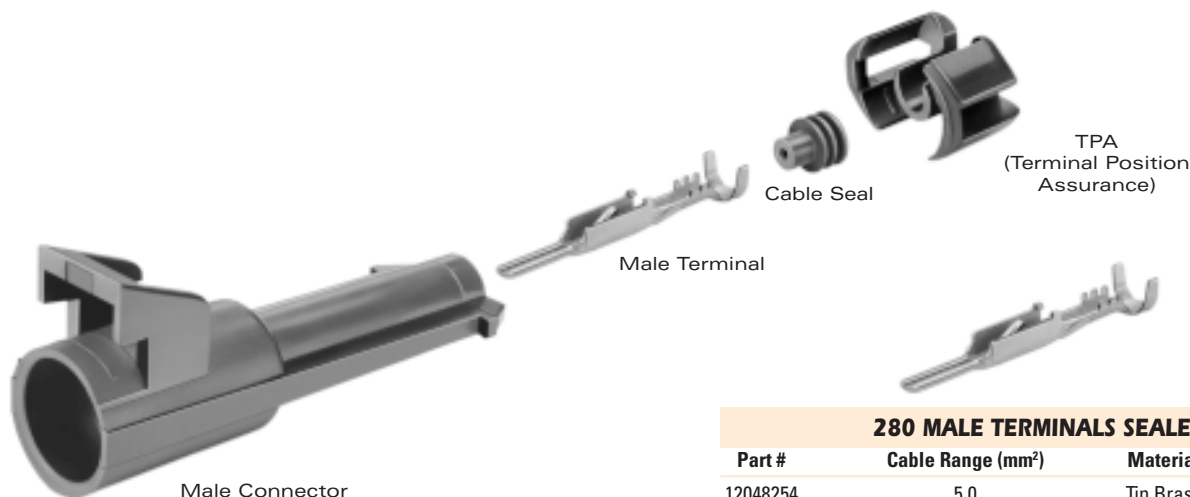
Sealed System Application Information

CABLE RANGE (mm²): 0.35-5.0
 CURRENT RANGE (AMPS): 0-30
 TEMP RANGE °C: -40 to 125
 RESISTANCE: <10mΩ@20mV
 VOLTAGE DROP: <3.0mV/amp
 CENTERLINE SPACING (mm): 7.7
 BLADE WIDTH (mm): 2.8

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 ²)	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

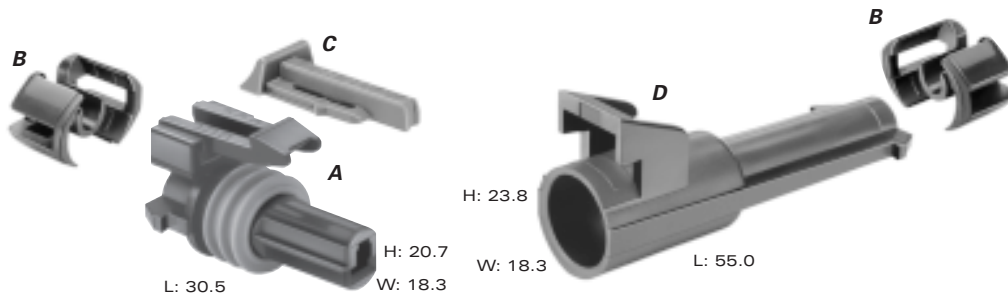
*Cavity plugs seal unused female and male cavities.

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>



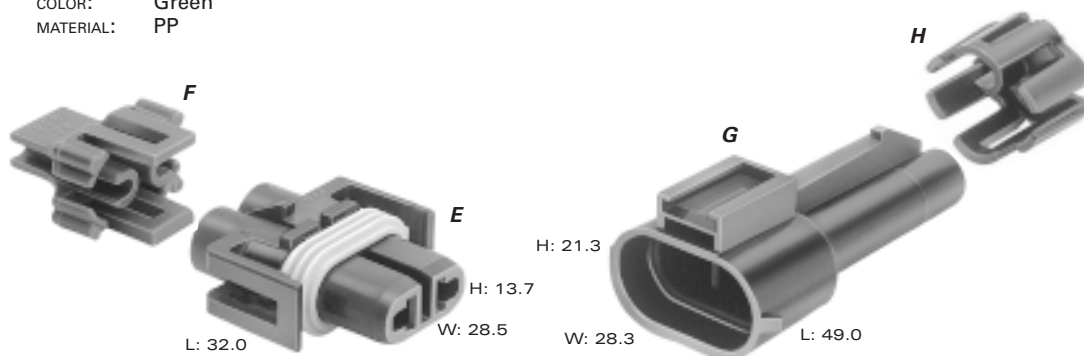
Total Mated Length: 70.3mm

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



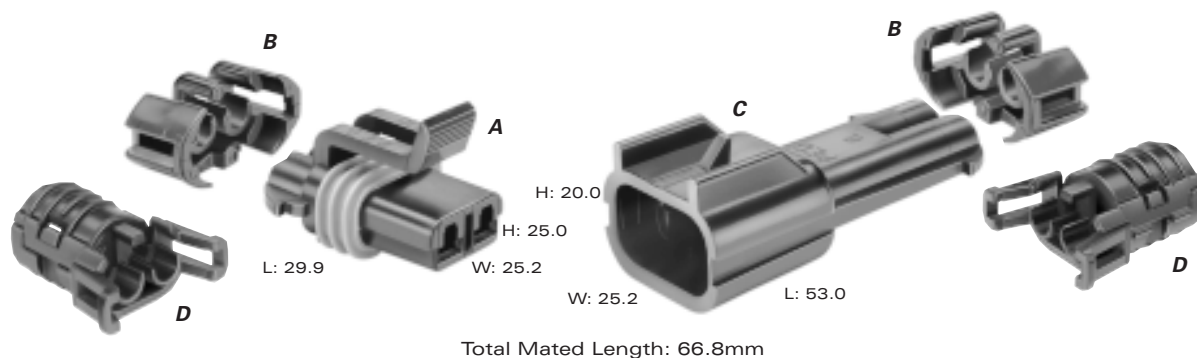
Total Mated Length: 81.9mm

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

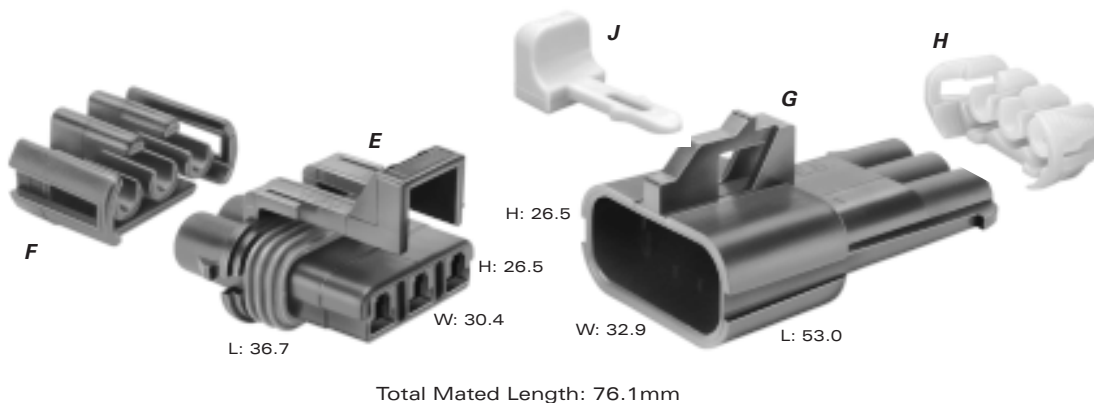


A PART NO: 15300027
 DESCRIPTION: Connector Assembly 2F
 SIZE: 29.9L x 25.0H x 25.2W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 84
 SEALS/PLUGS: See Page 84, 85

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



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

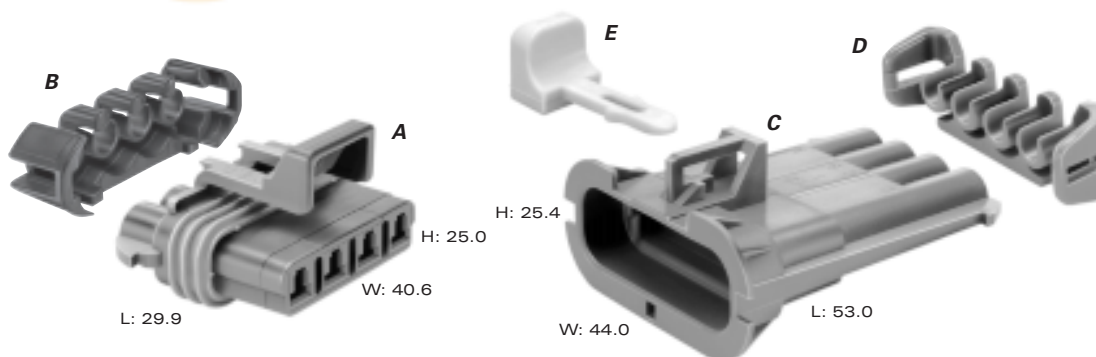
G PART NO: 15300003
 DESCRIPTION: Connector 3M (Clip Slot)
 SIZE: 53.0L x 26.5H x 32.9W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 85
 SEALS/PLUGS: See Page 84, 85

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

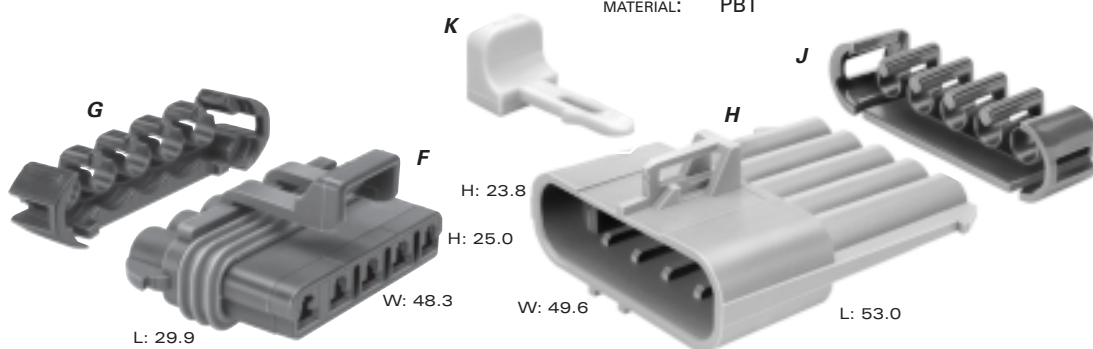
A PART NO: 12129565
 DESCRIPTION: Connector Assembly 4F
 SIZE: 29.9L x 25.0H x 40.6W
 COLOR: Md. Gray
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 84
 SEALS/PLUGS: See Page 84, 85

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

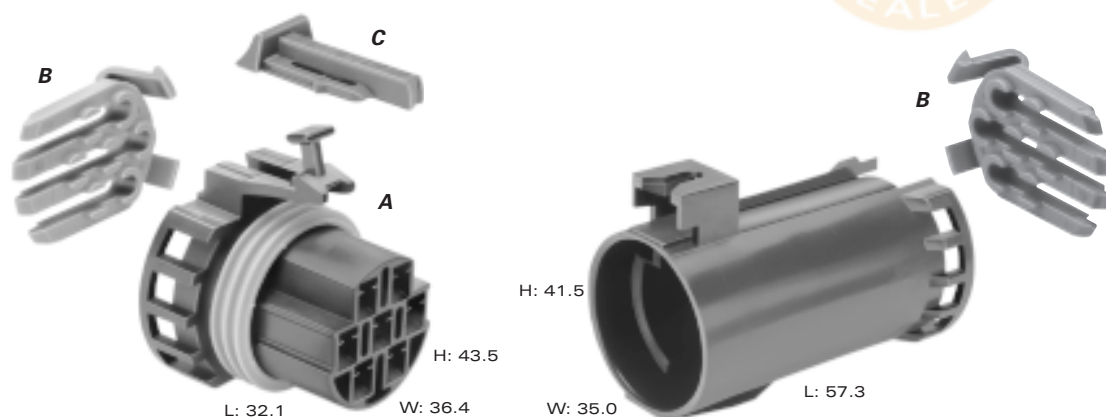
H PART NO: 12186400
 DESCRIPTION: Connector 5M (Clip Slot-Self Locking)
 SIZE: 53.0L x 23.8H x 49.6W
 COLOR: Gray
 MATERIAL: PBT 30% GF
 TERMINALS: See Page 85
 SEALS/PLUGS: See Page 84, 85

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

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



A PART NO: 12110751 (Black)
12129613 (Md. Gray)
12146841 (Natural)

DESCRIPTION: Connector Assembly 7F
SIZE: 32.1L x 43.5H x 36.4W
MATERIAL: PA66 HS IM
TERMINALS: See Page 84
SEALS/PLUGS: See Page 84, 85

B PART NO: 12110754

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

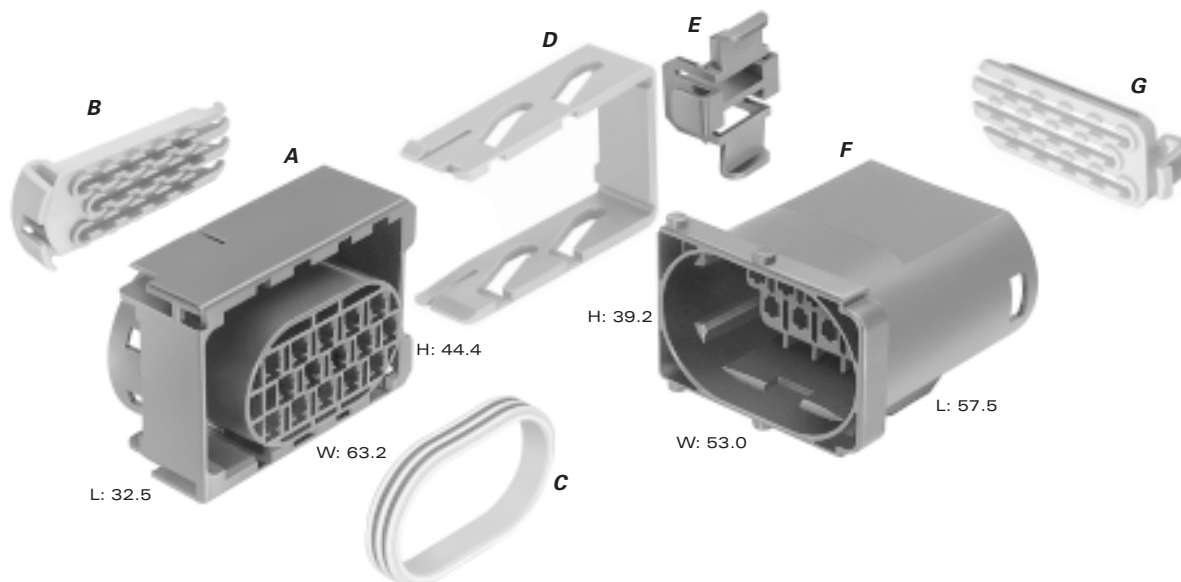
C PART NO: 12052834

DESCRIPTION: CPA
COLOR: Green
MATERIAL: PP

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

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

Total Mated Length: 77.3mm



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

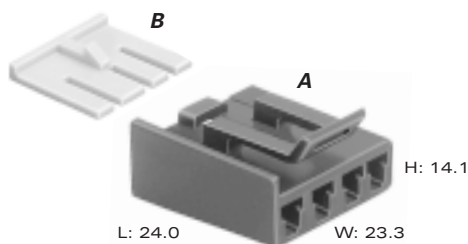
B PART NO: 12110782
 DESCRIPTION: TPA
 COLOR: Md. Gray
 MATERIAL: PA6

G PART NO: 12176865
 DESCRIPTION: TPA
 COLOR: Lt. Gray
 MATERIAL: PA6

C PART NO: 12110822
 DESCRIPTION: Connector Seal
 COLOR: Green
 MATERIAL: Silicone

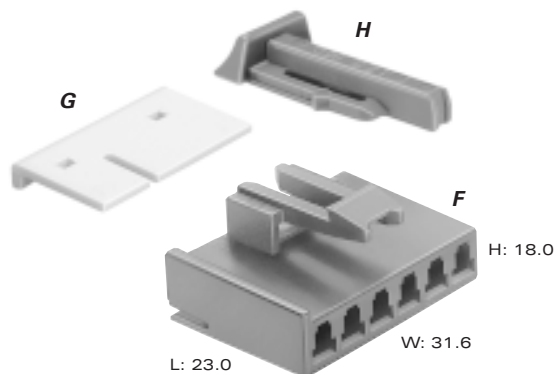
D PART NO: 12161185
 DESCRIPTION: CPA Slide Lock Assist
 COLOR: Dk. Gray
 MATERIAL: PA66 HS IM 14% GF

E PART NO: 12176640
 DESCRIPTION: Spacer Lock
 COLOR: Black
 MATERIAL: PP



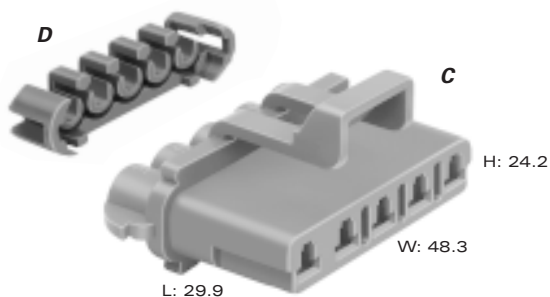
A PART NO: 12052856
 DESCRIPTION: Connector 4F
 SIZE: 24.0L x 14.1H x 23.3W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 78
 TYPICAL APP: Dimmer Switch

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



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

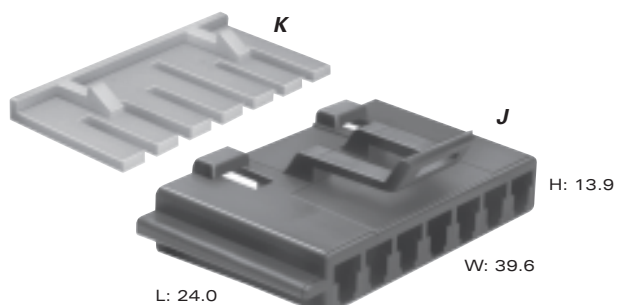
G PART NO: 12162298
 DESCRIPTION: TPA
 COLOR: Cream
 MATERIAL: PA6



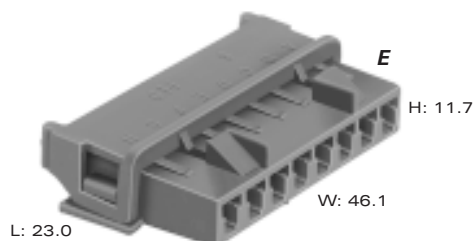
C PART NO: 12084890
 DESCRIPTION: Connector 5F
 SIZE: 29.9L x 24.2H x 48.3W
 COLOR: Md. Gray
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 78
 TYPICAL APP: Tail Lamp Module

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

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

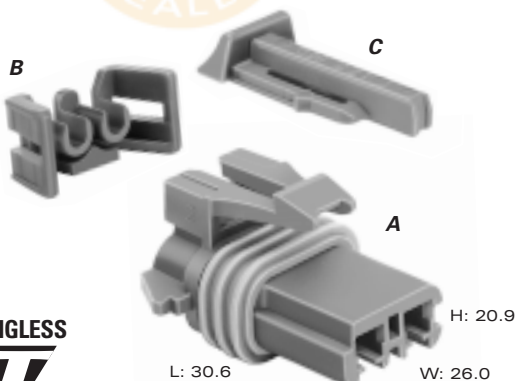


E PART NO: 12041301*
 DESCRIPTION: Connector 8F
 SIZE: 23.0L x 11.7H x 46.1W
 COLOR: Black
 MATERIAL: PP
 TERMINALS: See Page 78
 TYPICAL APP: Various

*HINGED SECONDARY LOCK.

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

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



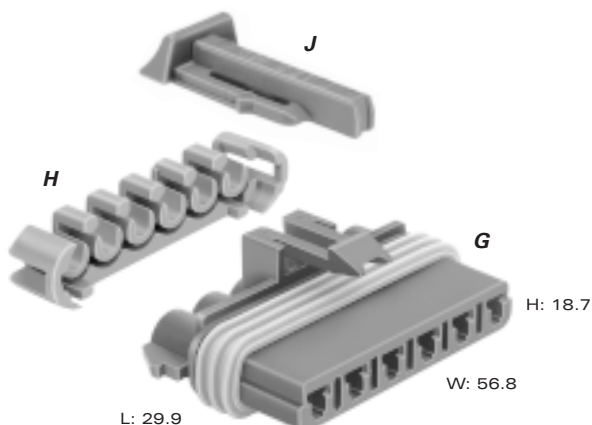
TANGLESS



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

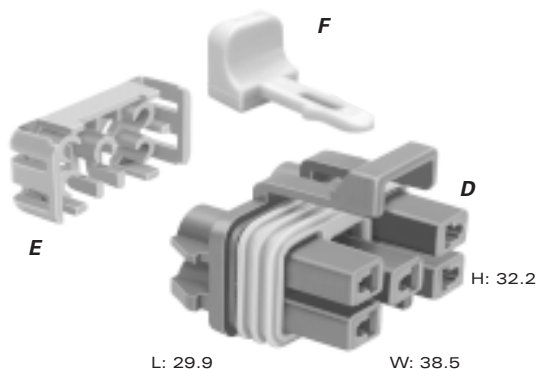
C PART NO: 12052834
 DESCRIPTION: CPA
 COLOR: Green
 MATERIAL: PP



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

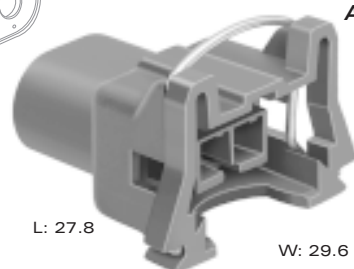
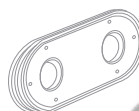
E PART NO: 12052816
 DESCRIPTION: TPA
 COLOR: Md. Gray
 MATERIAL: PA6

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

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



Multiple Cable Seal
(Included)



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



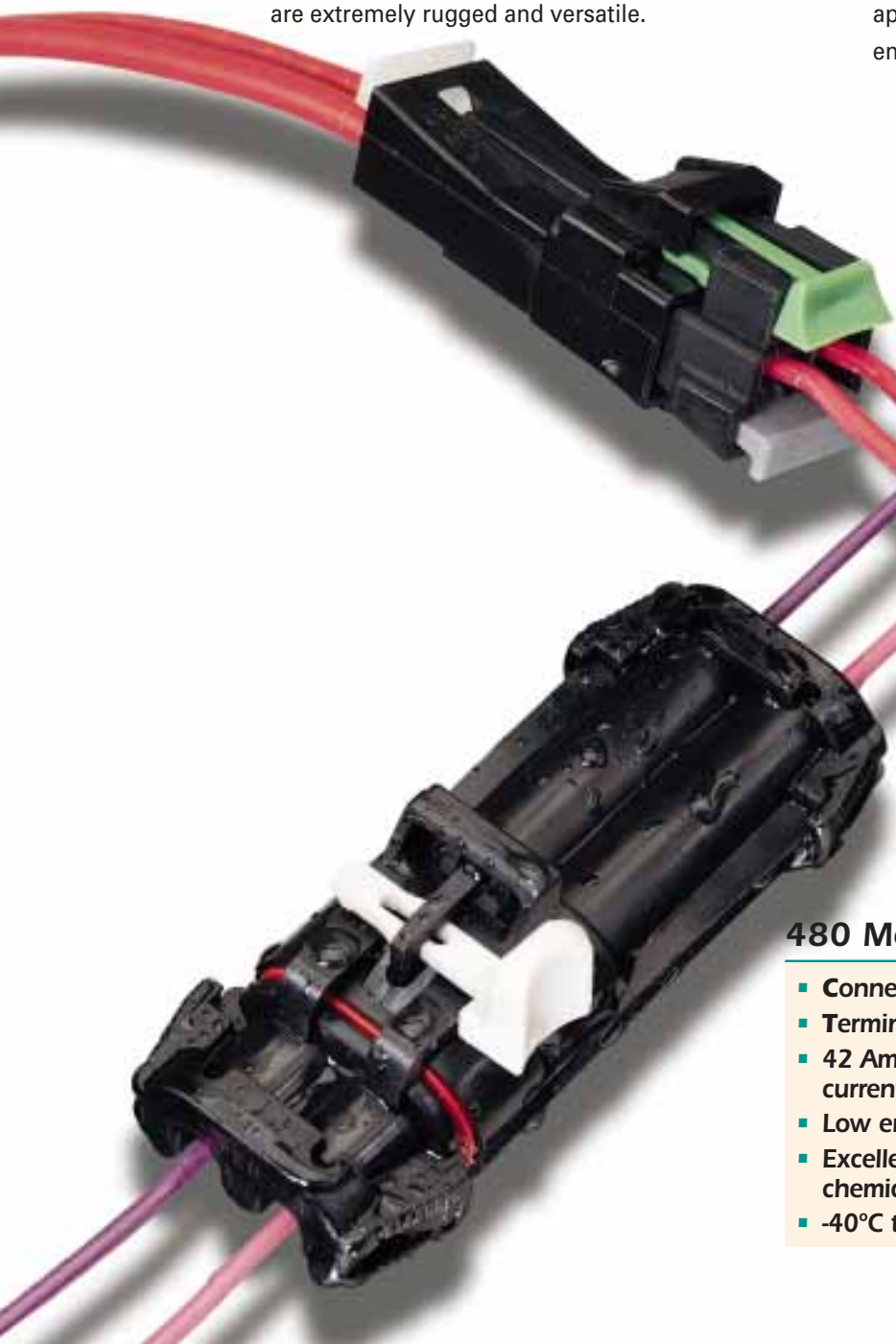
Available in device and in-line connections for vehicle applications, Metri-Pack 480 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

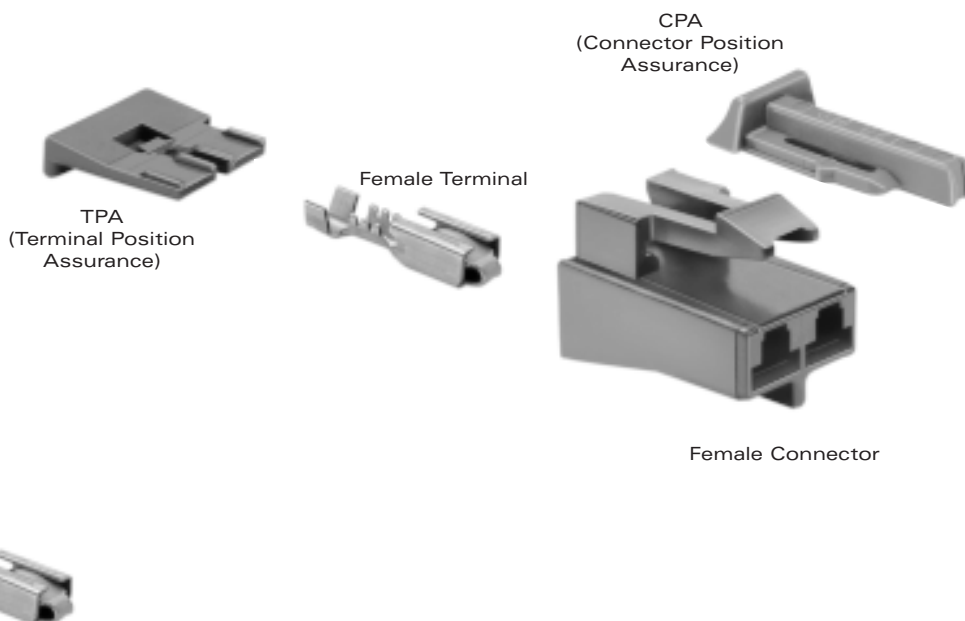
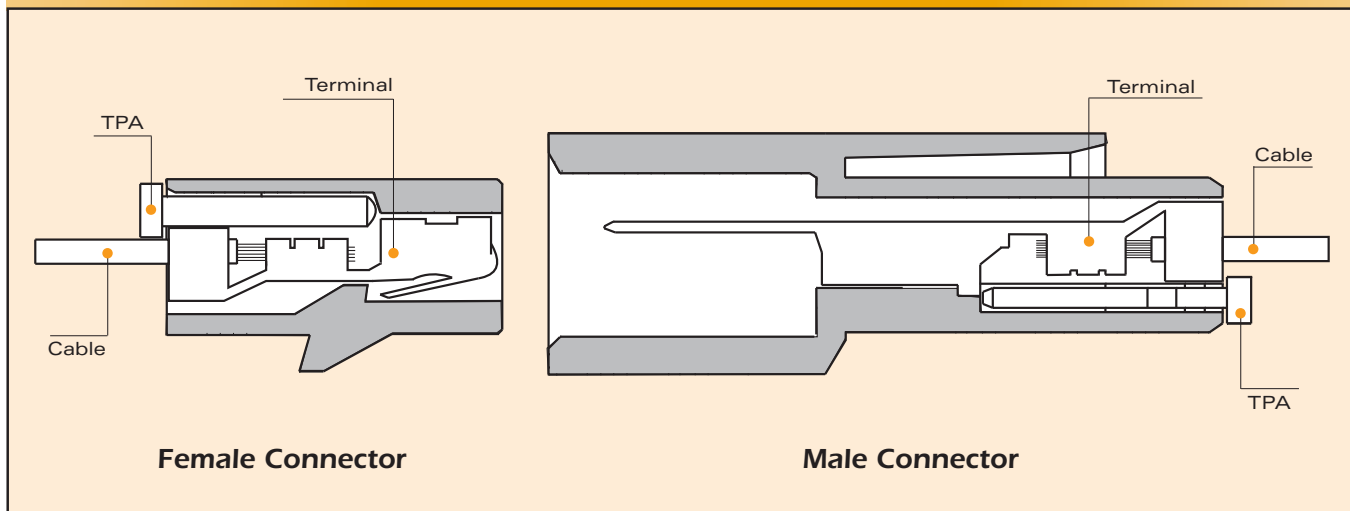


480 Metri-Pack Features

- 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



480 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

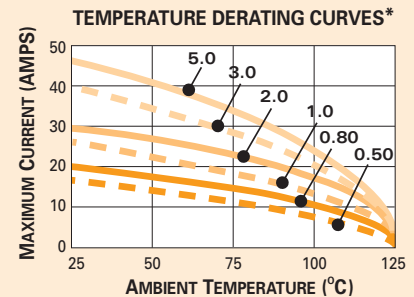
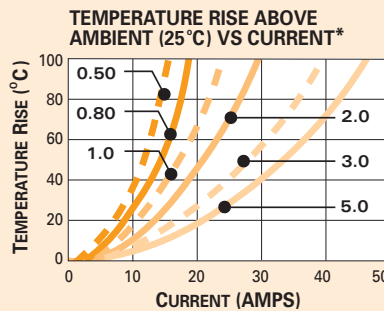
<http://delphi.com/products/connect>



Unsealed System Application Information

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

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

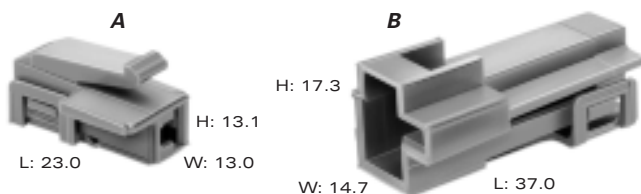
480 MALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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.

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



Total Mated Length: 49.6mm

A PART NO: 12015952*

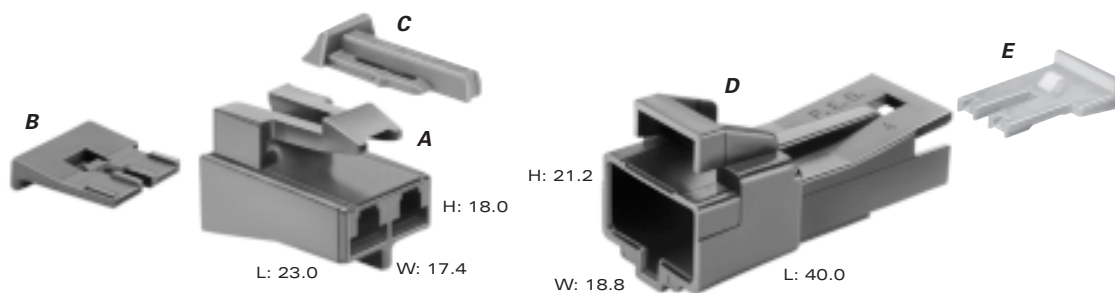
DESCRIPTION: Connector 1F
SIZE: 23.0L x 13.1H x 13.0W
COLOR: Md. Gray
MATERIAL: PA66 HS IM
TERMINALS: See Page 96

*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

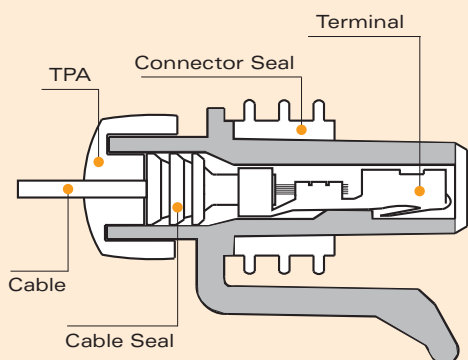
C PART NO: 12052834
 DESCRIPTION: CPA
 COLOR: Green
 MATERIAL: PP

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

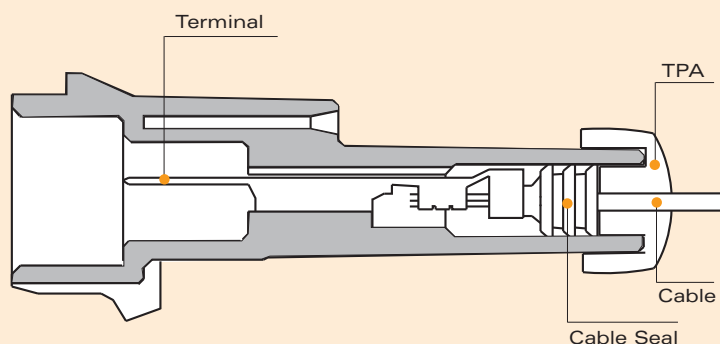
E PART NO: 12064751
 DESCRIPTION: TPA
 COLOR: Natural
 MATERIAL: PA66 HS IM



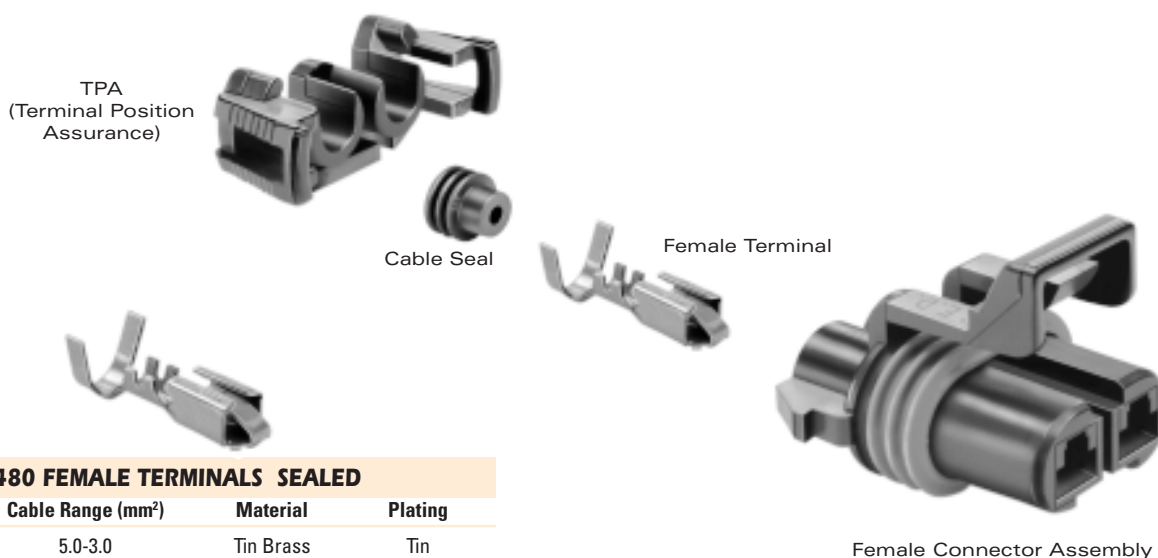
Cross Sectional View



Female Connector Assembly



Male Connector



480 FEMALE TERMINALS SEALED

Part #	Cable Range (mm ²)	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

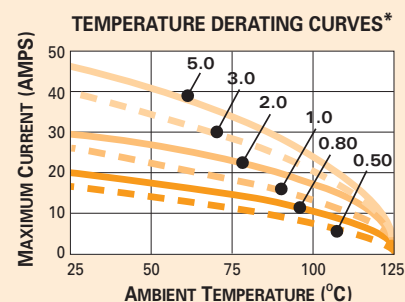
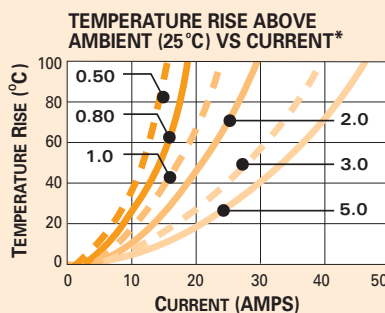
<http://delphi.com/products/connect>



Sealed System Application Information

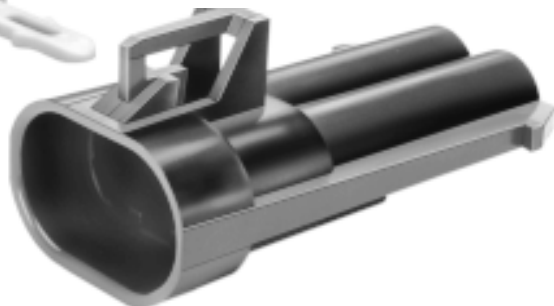
CABLE RANGE (mm²): 0.50-5.0
 CURRENT RANGE (AMPS): 0-42
 TEMP RANGE °C: -40 to 125
 RESISTANCE: <10mΩ@20mV
 VOLTAGE DROP: <3.0mV/amp
 CENTERLINE SPACING (mm): 9.5
 BLADE WIDTH (mm): 4.8

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)

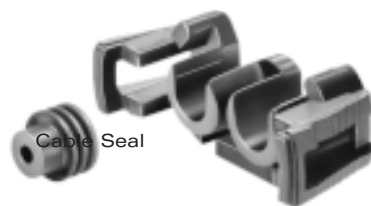


Male Connector

Male Terminal



Cable Seal



TPA
(Terminal Position Assurance)

480 MALE TERMINALS SEALED

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

480 MALE CONNECTOR SEALED

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

480 METRI-PACK CAVITY PLUG*

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

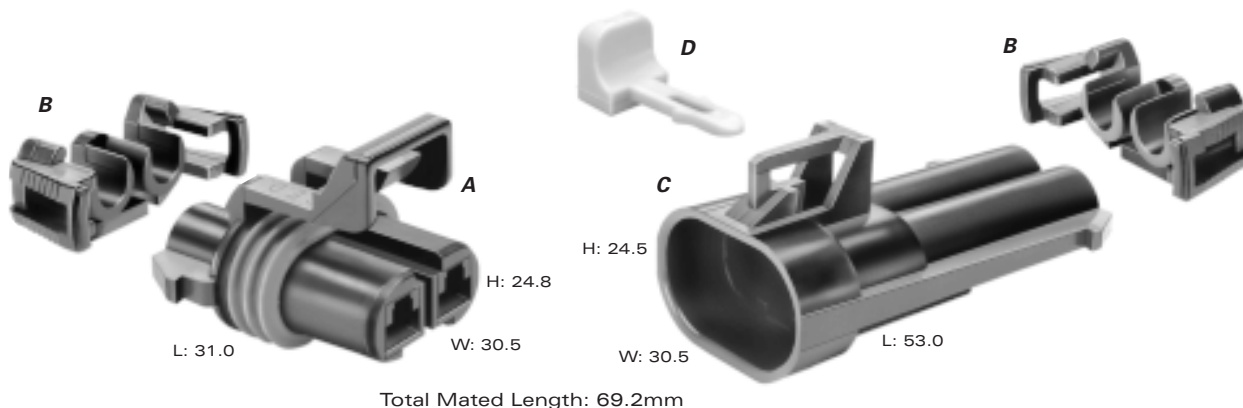
*Cavity plugs seal unused female and male cavities

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.

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

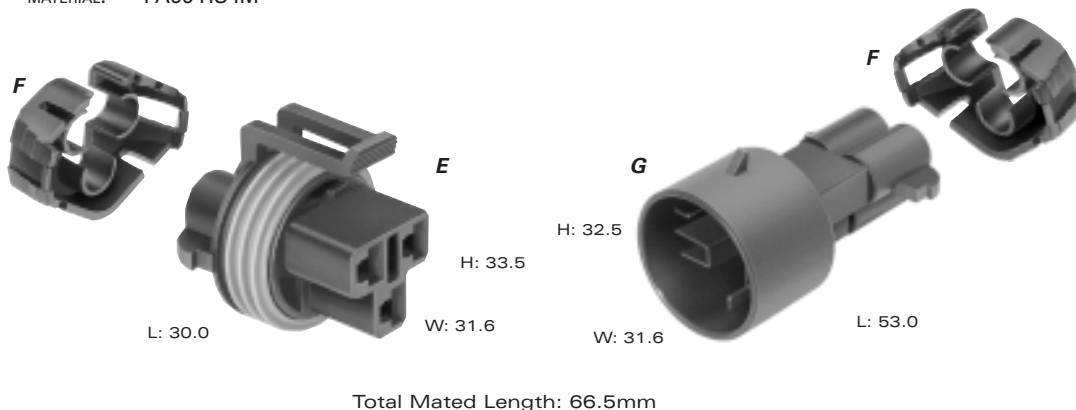


A PART NO: 12052613
 DESCRIPTION: Connector Assembly 2F
 SIZE: 31.0L x 24.8H x 30.5W
 COLOR: Black
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 100
 SEALS/PLUGS: See Page 100, 101

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

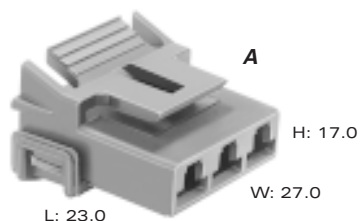
D PART NO: 12020833
 DESCRIPTION: CPA
 COLOR: Gray
 MATERIAL: PBT



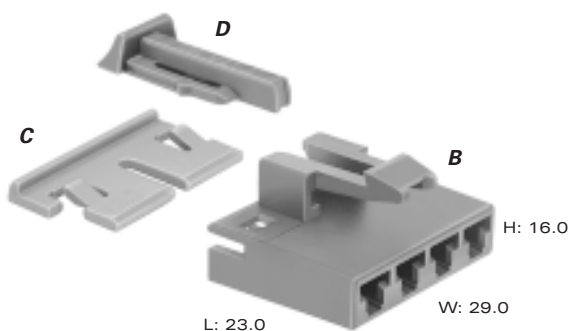
E PART NO: 12131592
 DESCRIPTION: Connector Assembly 3F
 SIZE: 30.0L x 33.5H x 31.6W
 COLOR: Black
 MATERIAL: PA66
 TERMINALS: See Page 100
 SEALS/PLUGS: See Page 100, 101

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



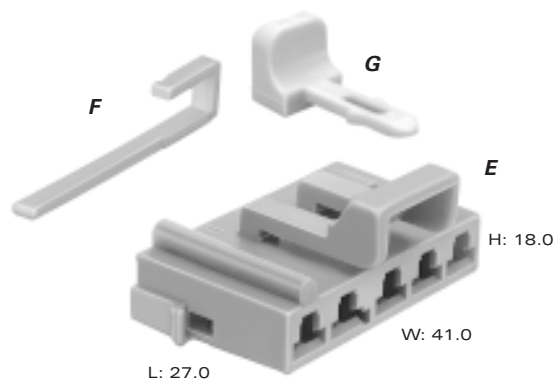
A PART NO: 12162512*
 DESCRIPTION: Connector 3F
 SIZE: 23.0L x 17.0H x 27.0W
 COLOR: Black
 MATERIAL: PA6
 TERMINALS: See Page 96
 TYPICAL APP: Switch
 *HINGED SECONDARY LOCK



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

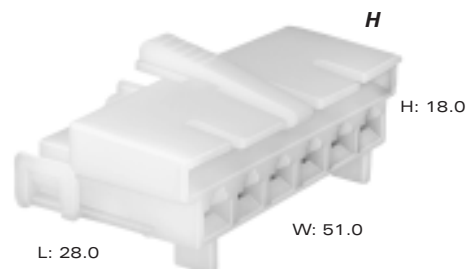
D PART NO: 12052834
 DESCRIPTION: CPA
 COLOR: Green
 MATERIAL: PP



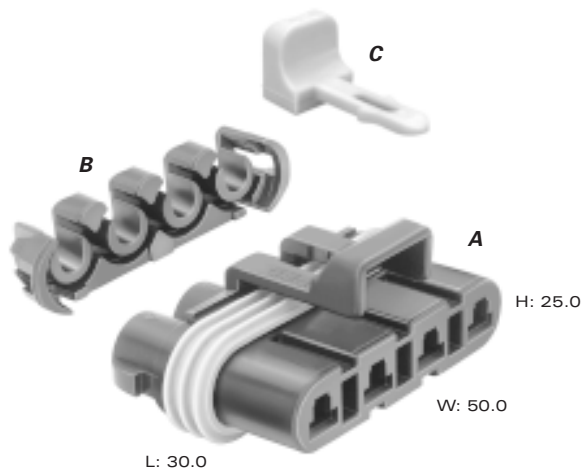
E PART NO: 12059296
 DESCRIPTION: Connector 5F
 SIZE: 27.0L x 18.0H x 41.0W
 COLOR: Red
 MATERIAL: PA6
 TERMINALS: See Page 96
 TYPICAL APP: Switch

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



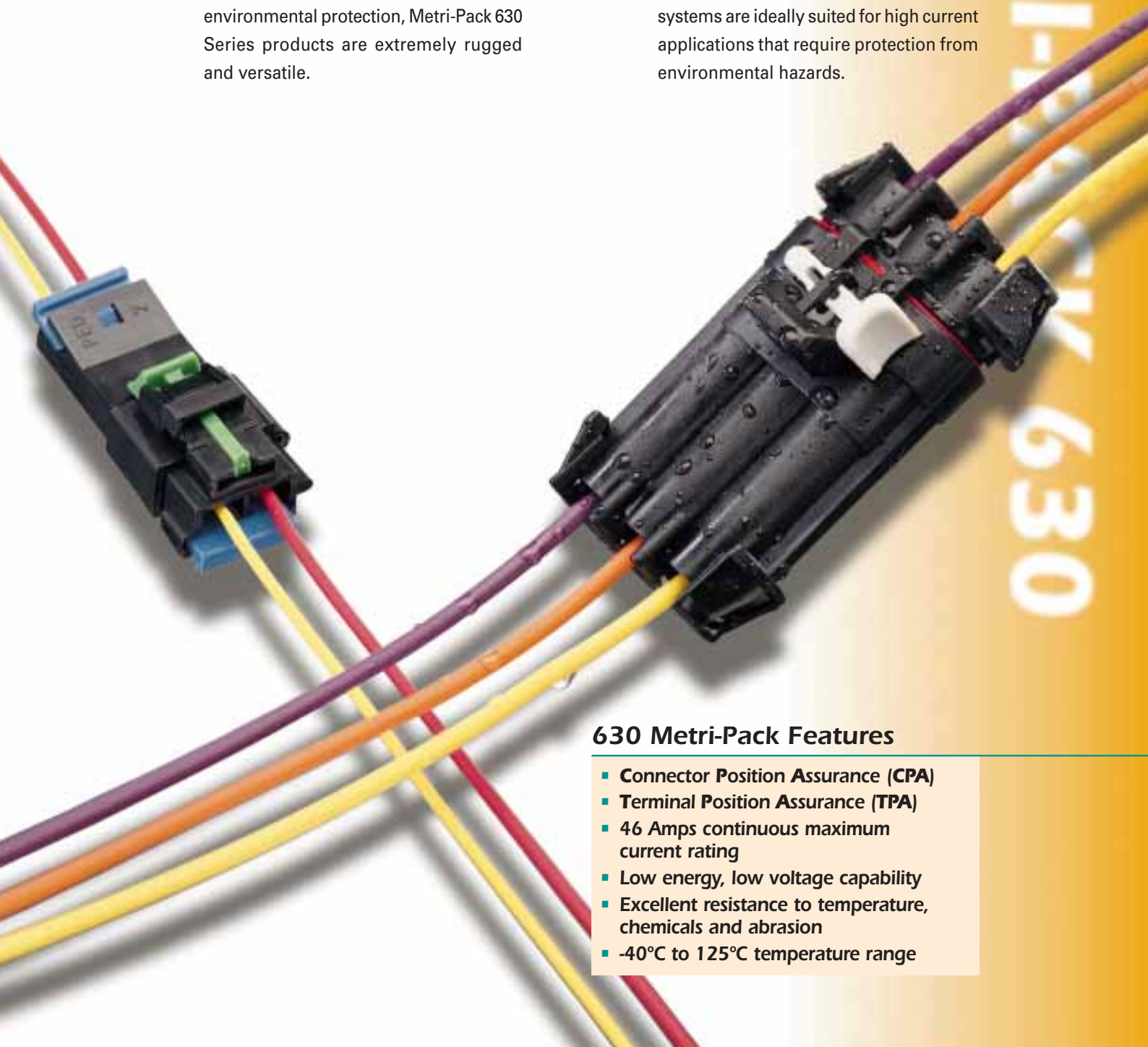
Available in device and in-line connections for vehicle applications, Metri-Pack 630 Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

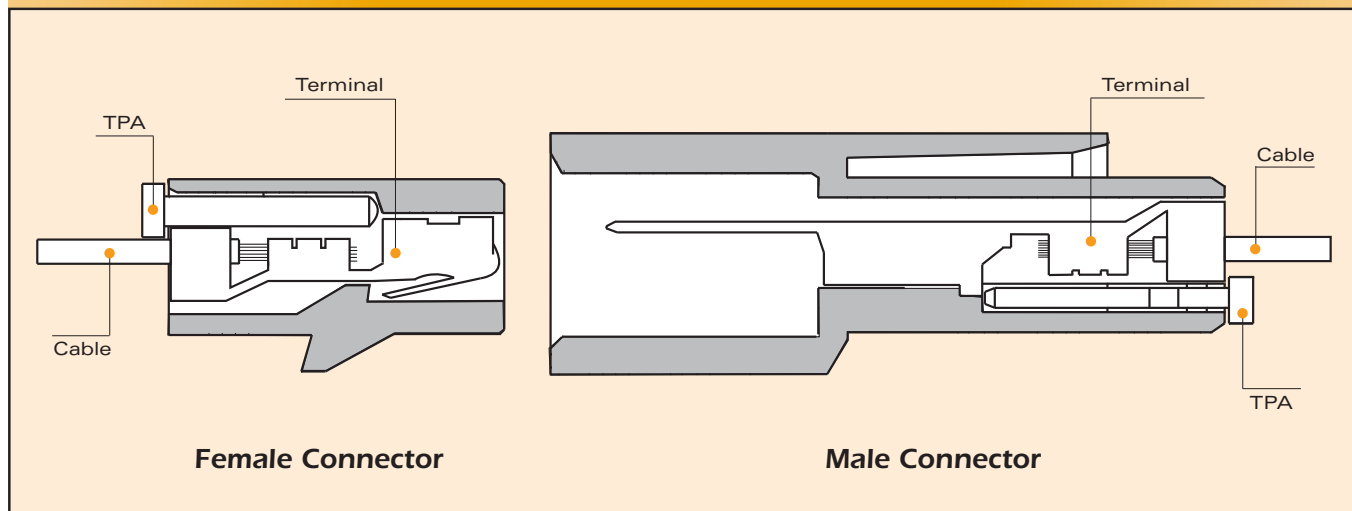


630 Metri-Pack Features

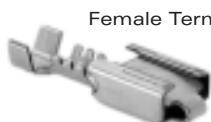
- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- 46 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range



Cross Sectional View



TPA
(Terminal Position Assurance)



Female Terminal

CPA
(Connector Position Assurance)



Female Connector



630 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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	—

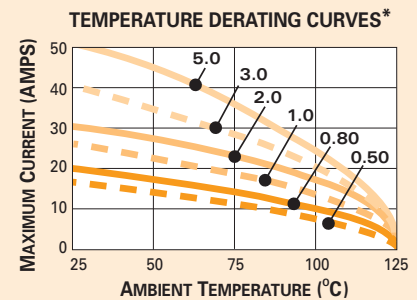
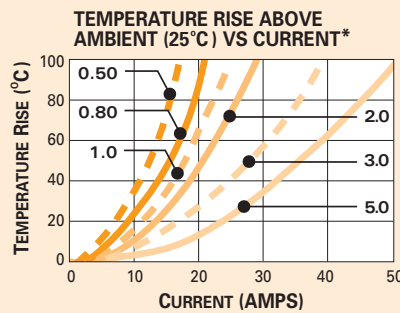
<http://delphi.com/products/connect>



Unsealed System Application Information

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

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	—

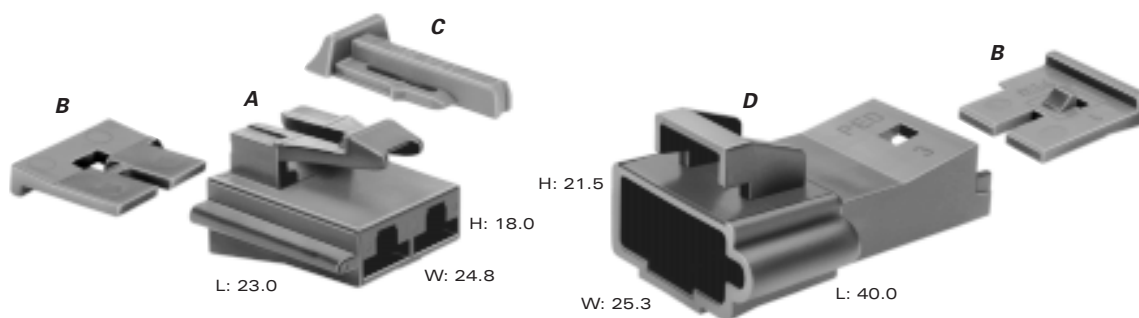
630 MALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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.

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



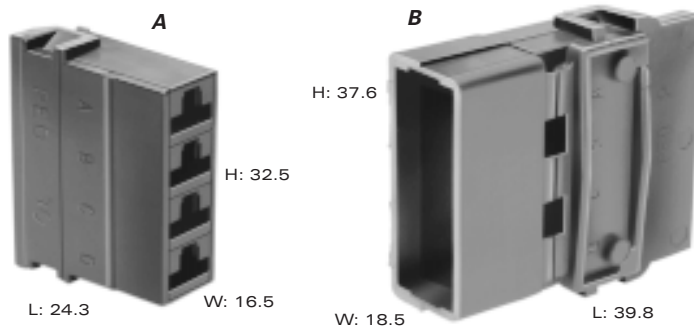
Total Mated Length: 53.0mm

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



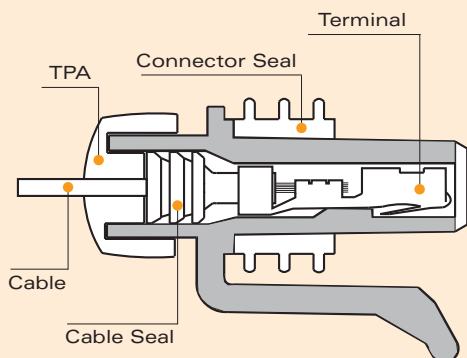
Total Mated Length: 53.1mm

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.

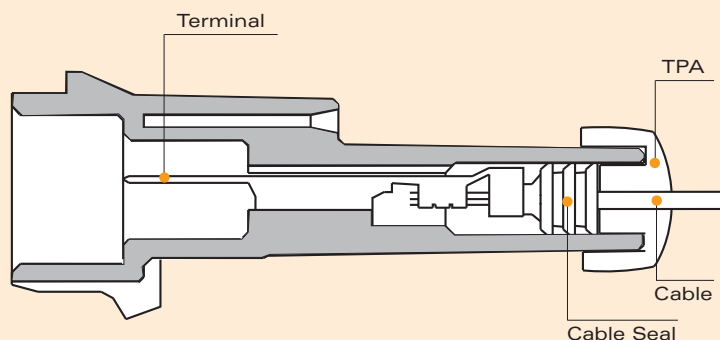
B PART NO: **12052623***
 DESCRIPTION: Connector 4M
 SIZE: 39.8L x 37.6H x 18.5W
 COLOR: Black
 MATERIAL: PA6
 TERMINALS: See Page 107
 *HINGED SECONDARY LOCK.



Cross Sectional View



Female Connector Assembly



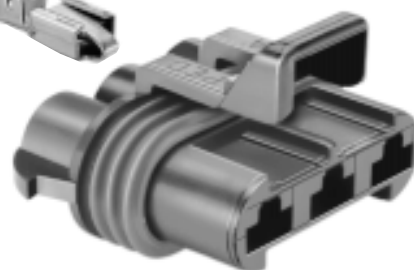
Male Connector

TPA
(Terminal Position Assurance)



Cable Seal

Female Terminal



Female Connector Assembly

630 FEMALE TERMINALS SEALED

Part #	Cable Range (mm ²)	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 ²)	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

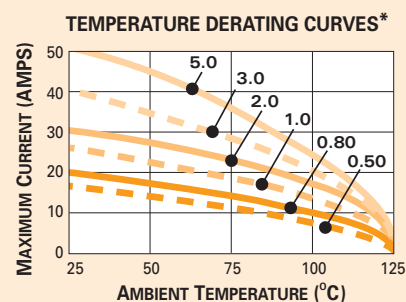
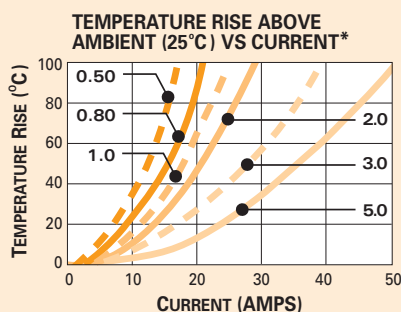
<http://delphi.com/products/connect>



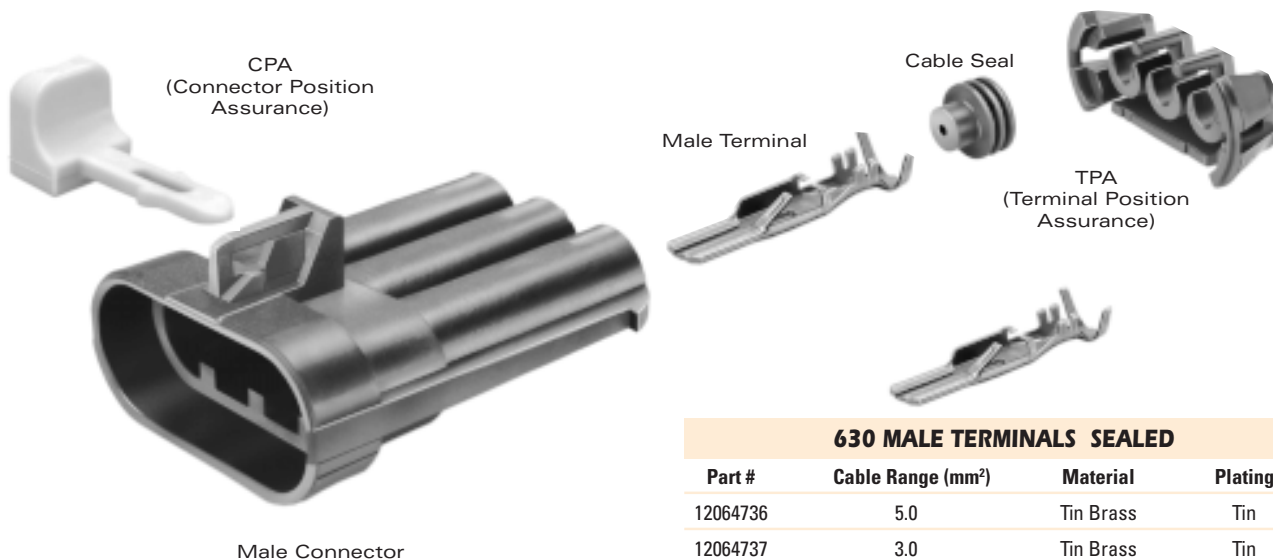
Sealed System Application Information

CABLE RANGE (mm²): 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 ²)	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.

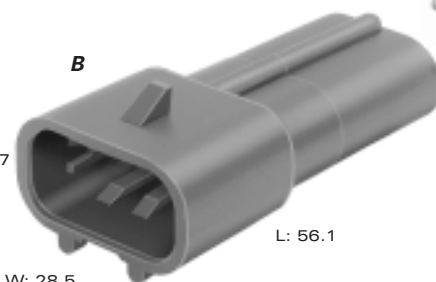
<http://delphi.com/products/connect>



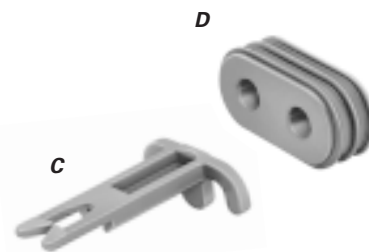
Multiple Cable Seal
(Included)



H: 21.7



Total Mated Length: 67.5mm

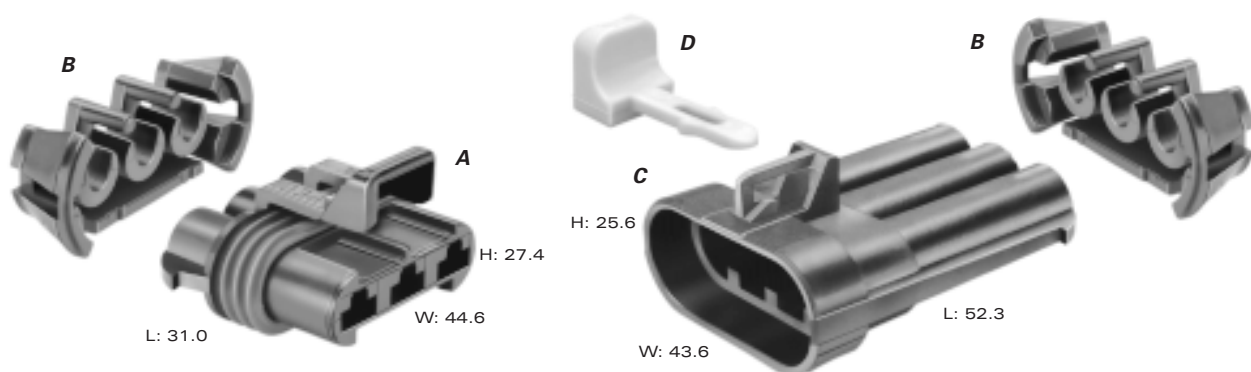


A PART NO: 12033769
DESCRIPTION: Connector Assembly 2F
SIZE: 31.5L x 20.0H x 27.3W
COLOR: Black
MATERIAL: PA66 HS IM
TERMINALS: See Page 110, Pull-To-Seat Terminals

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.

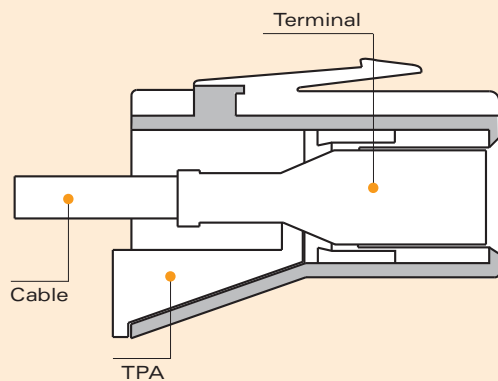
Ideally suited for high current applications that do not require environmental protection, Metri-Pack 800 Series products are extremely rugged and versatile.

800 Metri-Pack Features

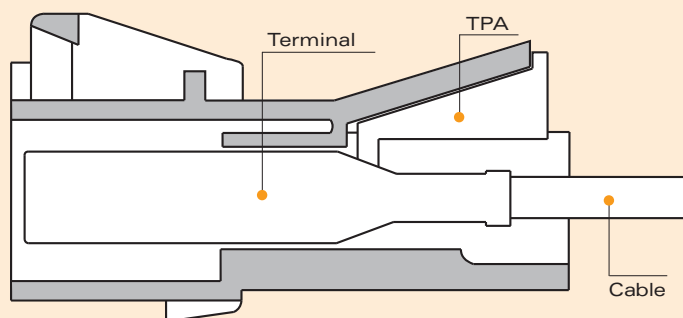
- **Connector Position Assurance (CPA)**
- **Terminal Position Assurance (TPA)**
- 60 Amps continuous maximum current rating
- Low energy, low voltage capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range



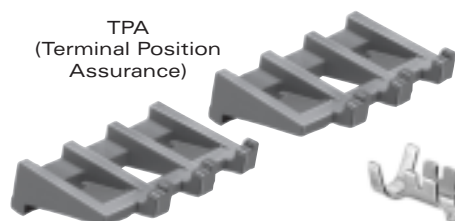
Cross Sectional View



Female Connector



Male Connector



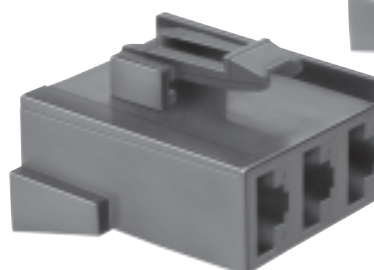
TPA
(Terminal Position
Assurance)



Female Terminal



CPA
(Connector Position
Assurance)



Female Connectors

800 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

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

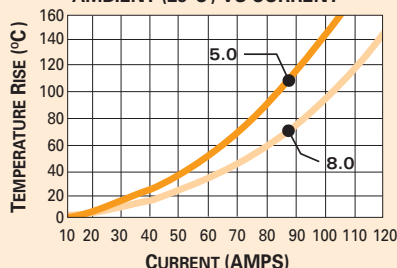


Unsealed System Application Information

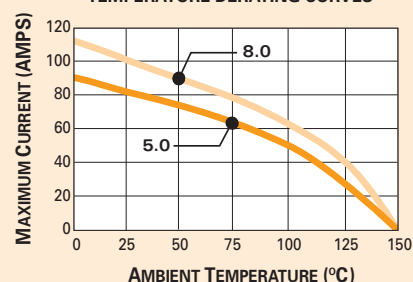
CABLE RANGE (mm²): 2.0-5.0
CURRENT RANGE (AMPS): 0-60
TEMP RANGE °C: -40 to 125
RESISTANCE: <10mΩ@20mV
VOLTAGE DROP: <3.0mV/amp
CENTERLINE SPACING (mm): 10.3
BLADE WIDTH (mm): 8.0

800 SERIES TERMINALS - Tin Plated

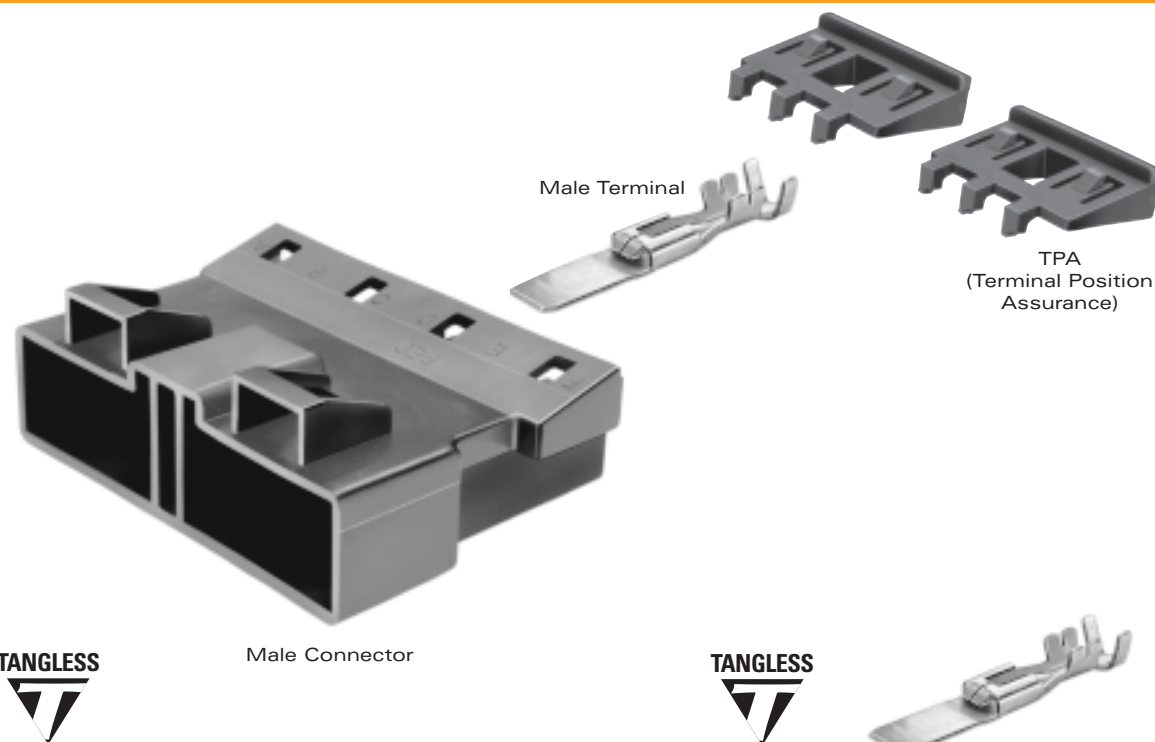
TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*



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.



Male Connector



800 MALE CONNECTORS UNSEALED

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

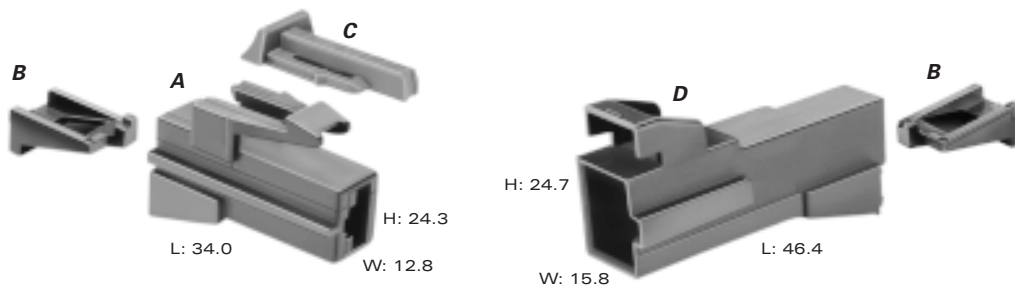
800 MALE TANGLESS TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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.

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



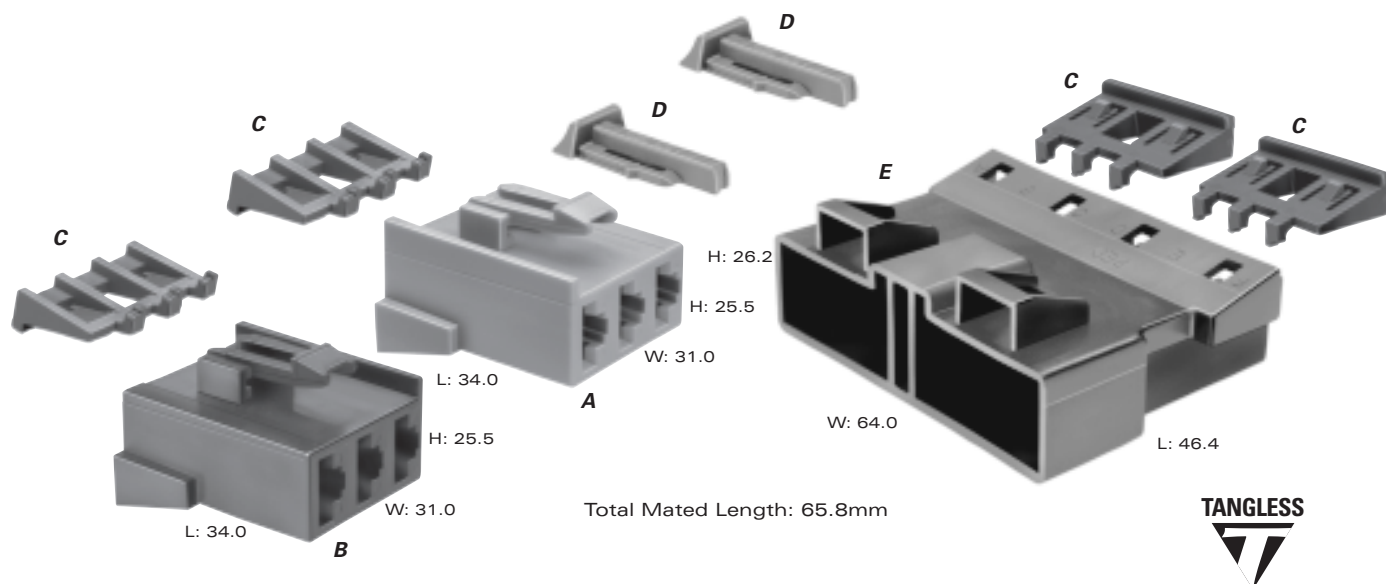
Total Mated Length: 65.7mm

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



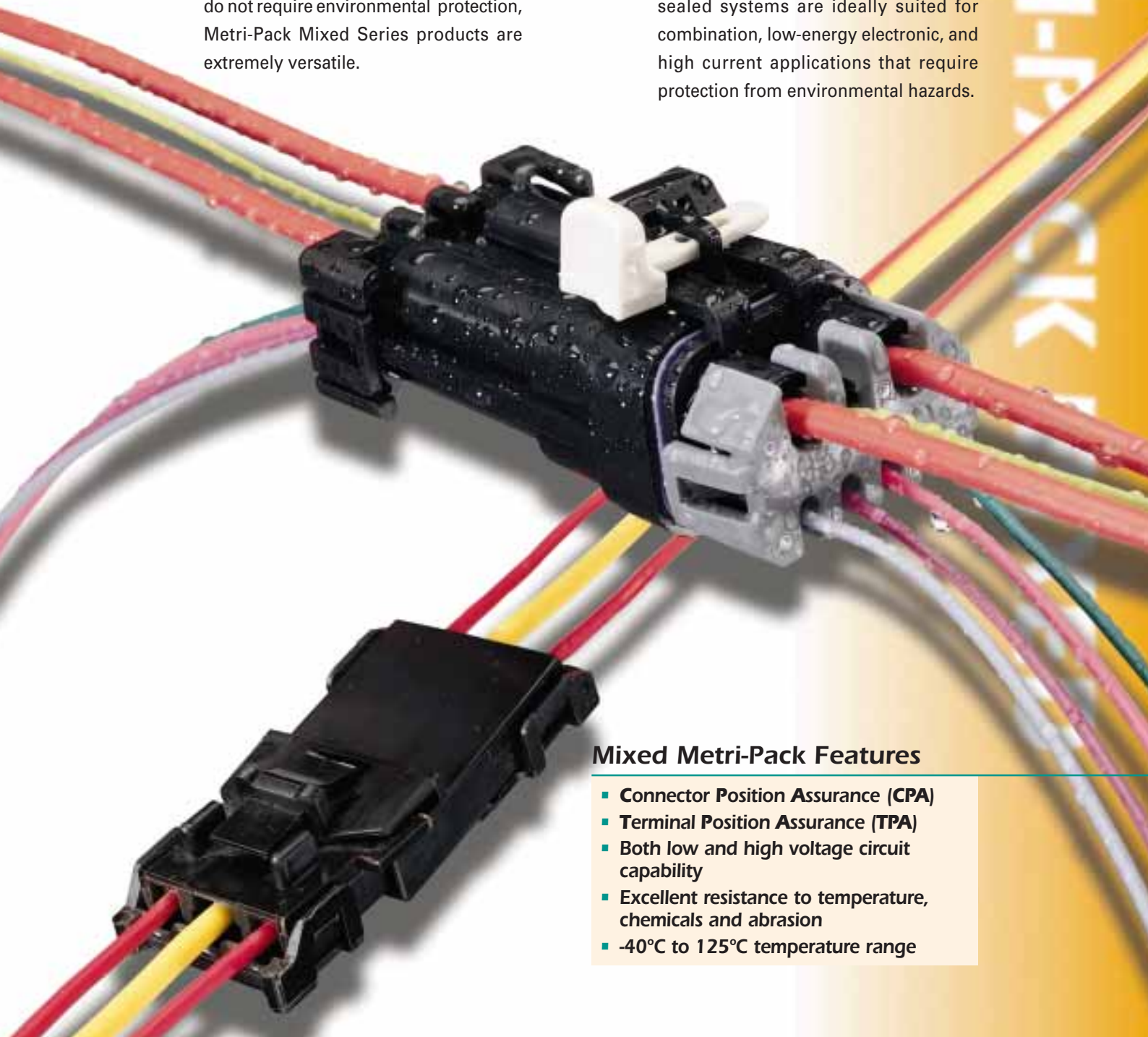
Available in device and in-line connections for vehicle applications, Metri-Pack Mixed Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

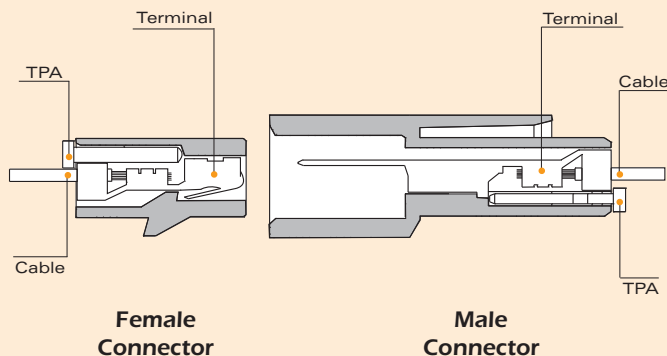


Mixed Metri-Pack Features

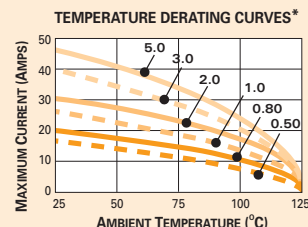
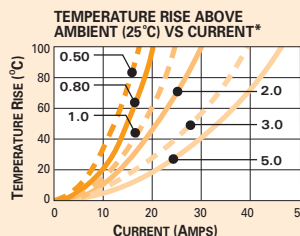
- Connector Position Assurance (CPA)
- Terminal Position Assurance (TPA)
- Both low and high voltage circuit capability
- Excellent resistance to temperature, chemicals and abrasion
- -40°C to 125°C temperature range



Unsealed System Application Information



280 SERIES TERMINALS - Tin Plated



CABLE RANGE (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.



280



480



630



Female Terminals

Female Connector

280 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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 ²)	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

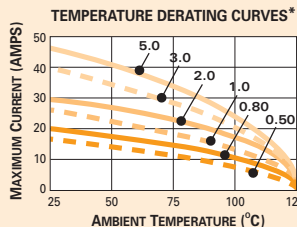
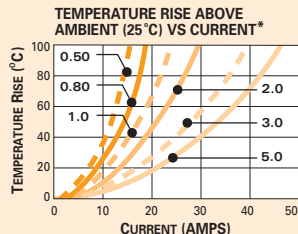
Part #	Cable Range (mm ²)	Material	Plating
12084590	5.0	Tin Brass	Tin
12052224	3.0	Tin Brass	Tin
12084596	3.0 (2 Req'd.)	Tin Brass	Tin
12015870	2.0-1.0	Tin Brass	Tin
12015869	1.0-0.80	Tin Brass	Tin
12020035	0.80-0.50 (2 Req'd.)	Tin Brass	Tin
12052222	0.50-0.35	Tin Brass	Tin

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



Unsealed System Application Information

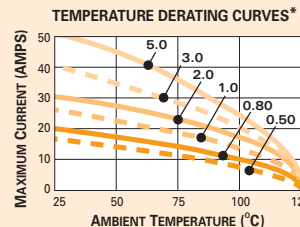
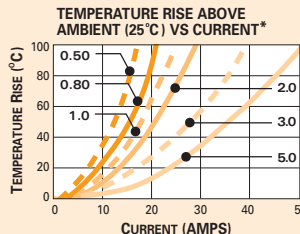
480 SERIES TERMINALS-Tin Plated



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

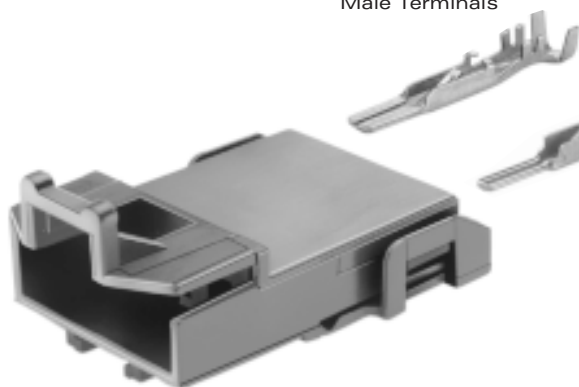


CABLE RANGE (mm²): 0.35-5.0
CURRENT RANGE (AMPS): 0-46
TEMP RANGE °C: -40 to 125
RESISTANCE: <10mΩ@20mV

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.

Male Terminals



Male Connector

280

480

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

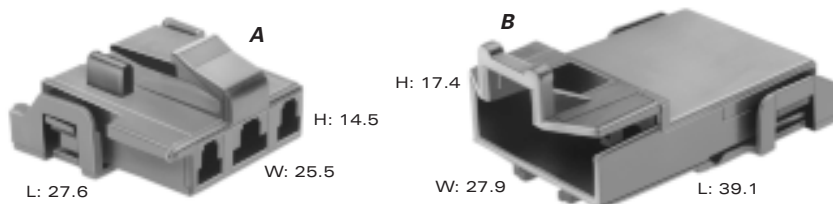
MIXED METRI-PACK MALE CONNECTOR UNSEALED

# Cavities	Connector	Color	Material
3	12045681	Black	PA6

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.

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



Total Mated Length: 55.6mm

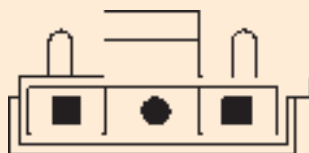
A PART NO: **12020014***
 DESCRIPTION: Connector 3F
 SIZE: 27.6L x 14.5H x 25.5W
 COLOR: Black
 MATERIAL: PA6
 TERMINALS: See Page 122
 *HINGED SECONDARY LOCK.

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

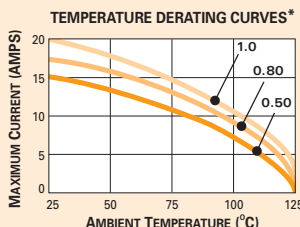
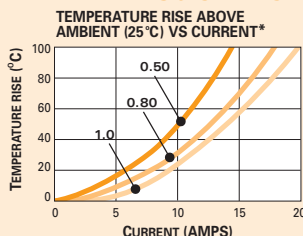
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.





Sealed System Application Information

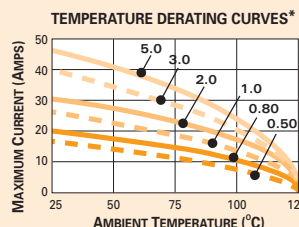
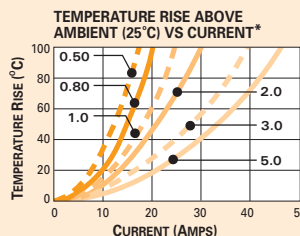
150 SERIES TERMINALS-Tin Plated



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

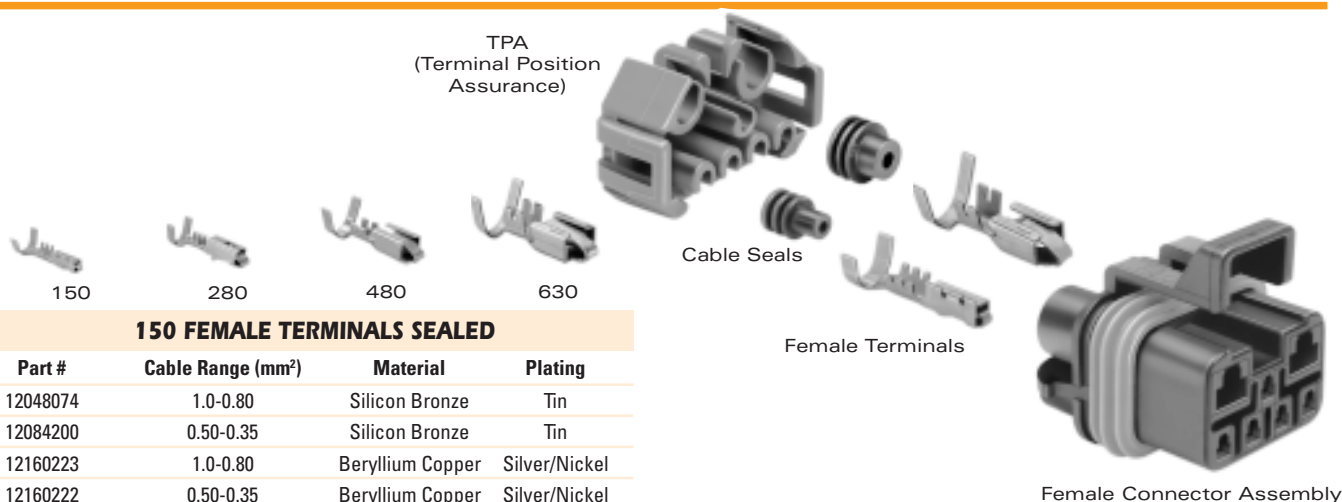
280 SERIES TERMINALS - Tin Plated



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

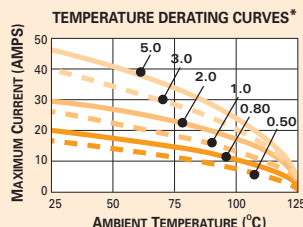
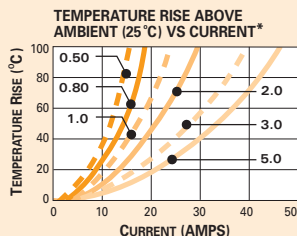
MIXED METRI-PACK FEMALE CONNECTOR ASSEMBLY SEALED

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



Sealed System Application Information

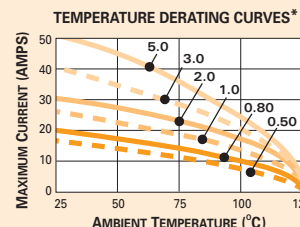
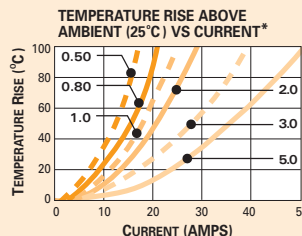
480 SERIES TERMINALS-Tin Plated



CABLE RANGE (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

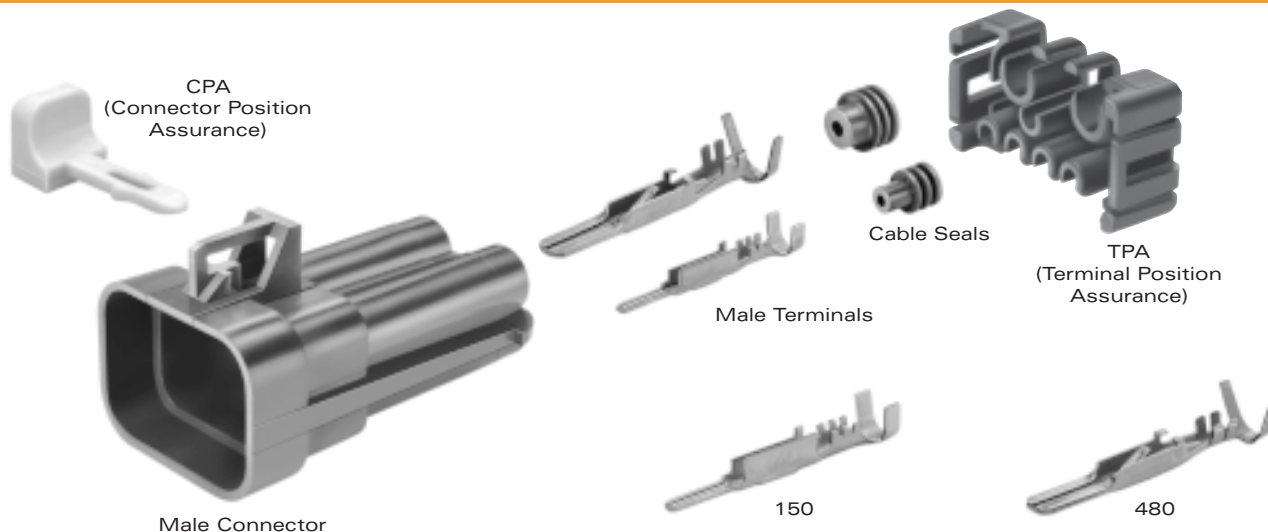
630 SERIES TERMINALS-Tin Plated



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.



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 (mm²)	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 (mm²)	Material	Plating
12052172	5.0	Tin Brass	Tin
12065197	3.0	Tin Brass	Tin
12065196	2.0-1.0	Tin Brass	Tin

SECTION NOTES:

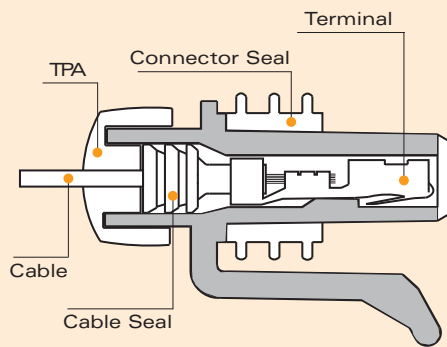
Contact your regional support representative at the number listed below.

- 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.

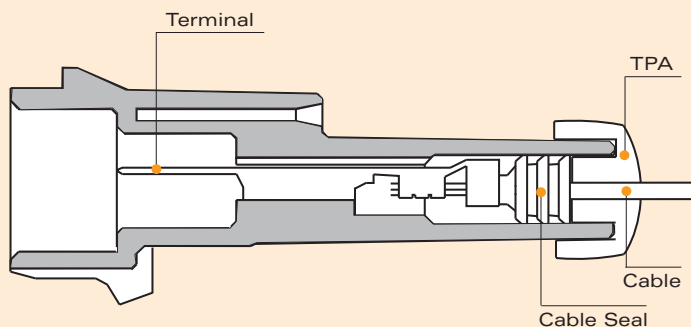
<http://delphi.com/products/connect>



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

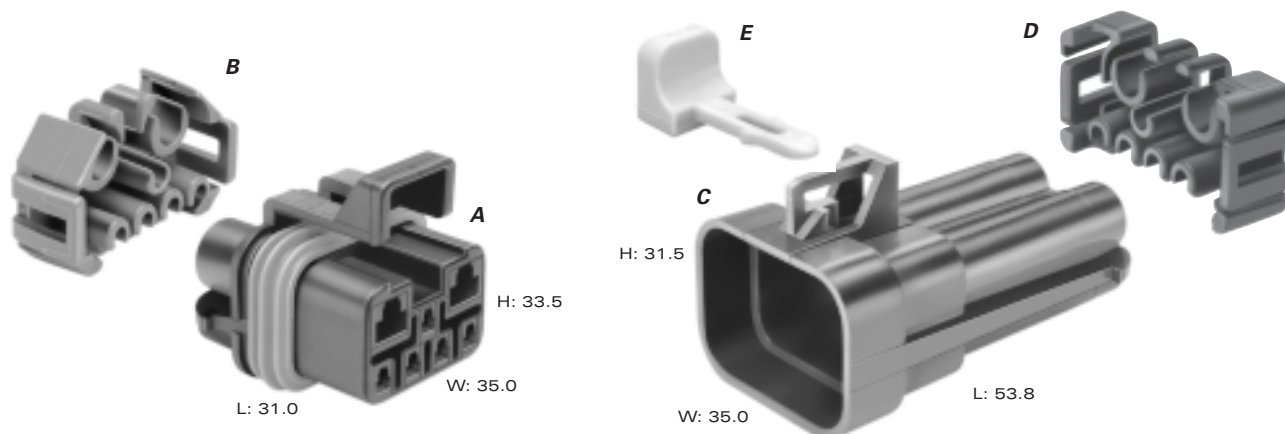
Reel Part #	Loose Part #	Cable Diameter	Material	Color
12059257	12052386	5.15-4.40	Silicone	Green
12059260	12052668	4.50-3.61	Silicone	Blue
12059258	12052387	3.75-2.81	Silicone	Lt. Gray
12059259	12052388	2.85-2.01	Silicone	Dk. Red
12077760	12077759	2.15-1.65	Silicone	Tan

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

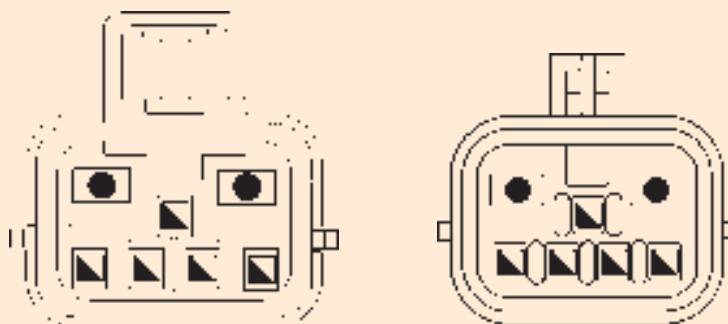
D PART NO: 12052199
 DESCRIPTION: TPA
 COLOR: Black
 MATERIAL: PA6

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

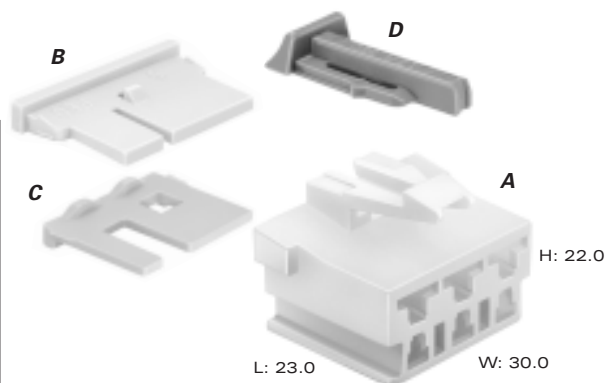
KEY:

- ▣ 150 SERIES
- 480 SERIES

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



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

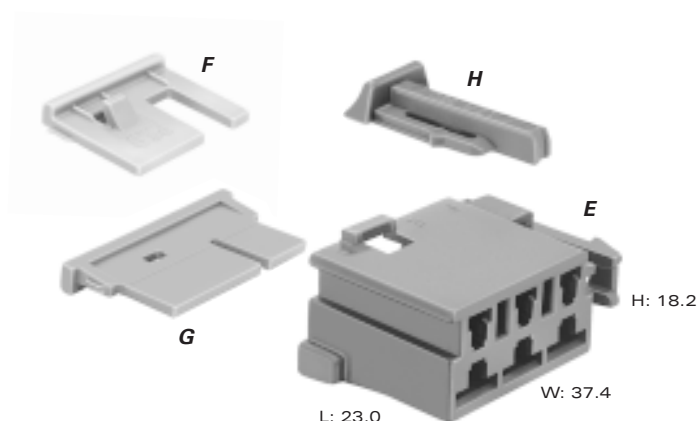


A PART NO: 12129842
 DESCRIPTION: Connector 6F
 SIZE: 23.0L x 22.0H x 30.0W
 COLOR: Natural
 MATERIAL: PA66 HS IM
 TERMINALS: See Page 122
 TYPICAL APP: Switch

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

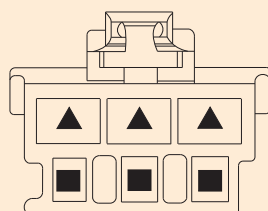
G PART NO: 12162299
 DESCRIPTION: TPA
 COLOR: Md. Gray
 MATERIAL: PA6

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

KEY:

- 280 SERIES
- ▲ 630 SERIES

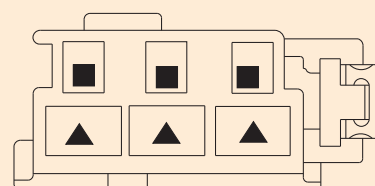
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

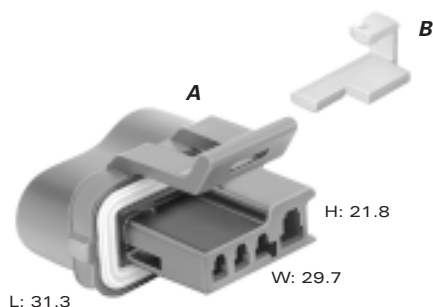


KEY:

- 280 SERIES
- ▲ 630 SERIES

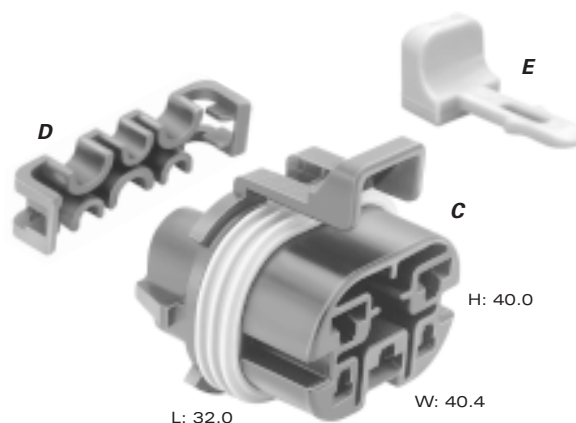
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.





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

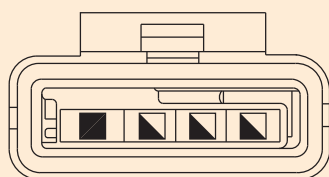
D PART NO: 12052290
 DESCRIPTION: TPA
 COLOR: Black
 MATERIAL: PA66 HS IM

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

KEY:

- 150 SERIES
- 280 SERIES

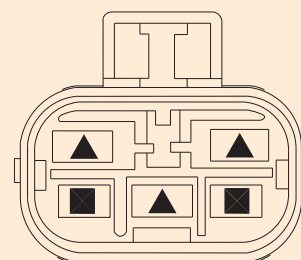
Mixed connectors feature a combination of different terminal cavities, as indicated by the key.

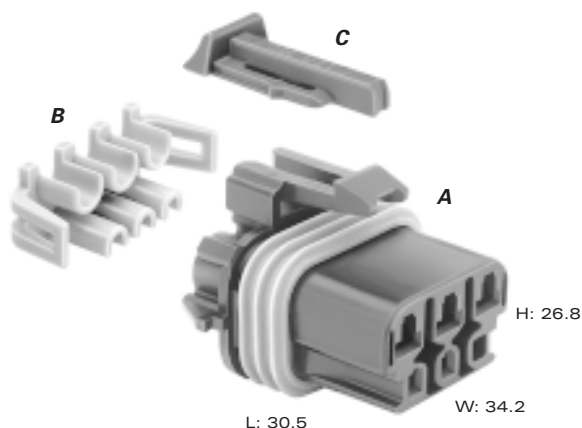


KEY:

- 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

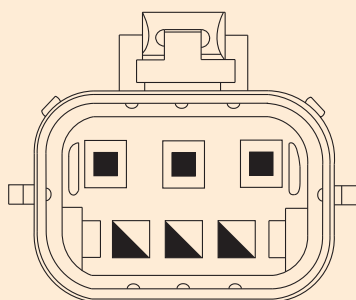
B PART NO: 12129124
 DESCRIPTION: TPA
 COLOR: Lt. Gray
 MATERIAL: PA6

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



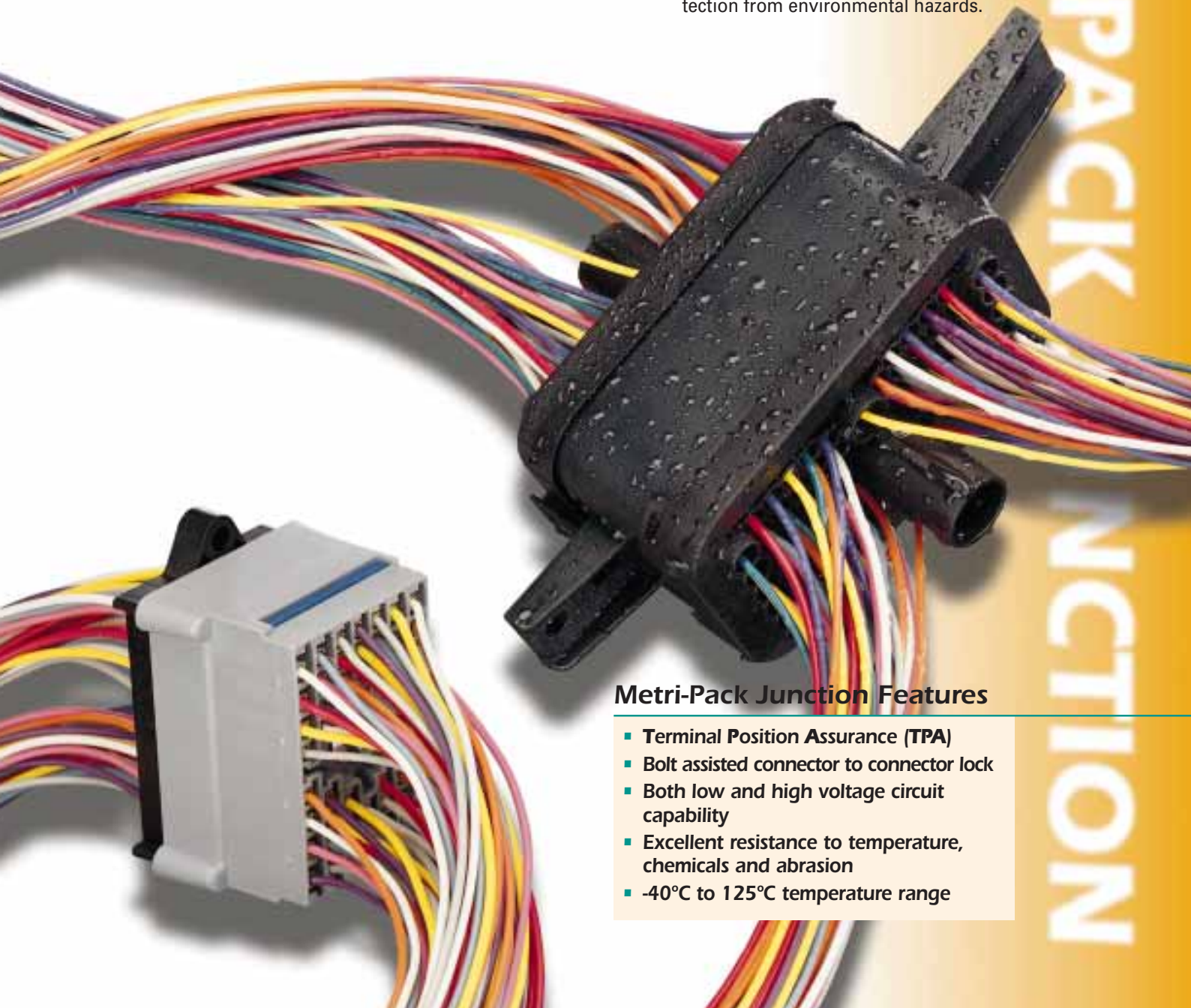
Available in pass-through and in-line connections, Metri-Pack Junction System Series connectors can meet or exceed the requirements for most marine, appliance, and industrial control applications.

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.

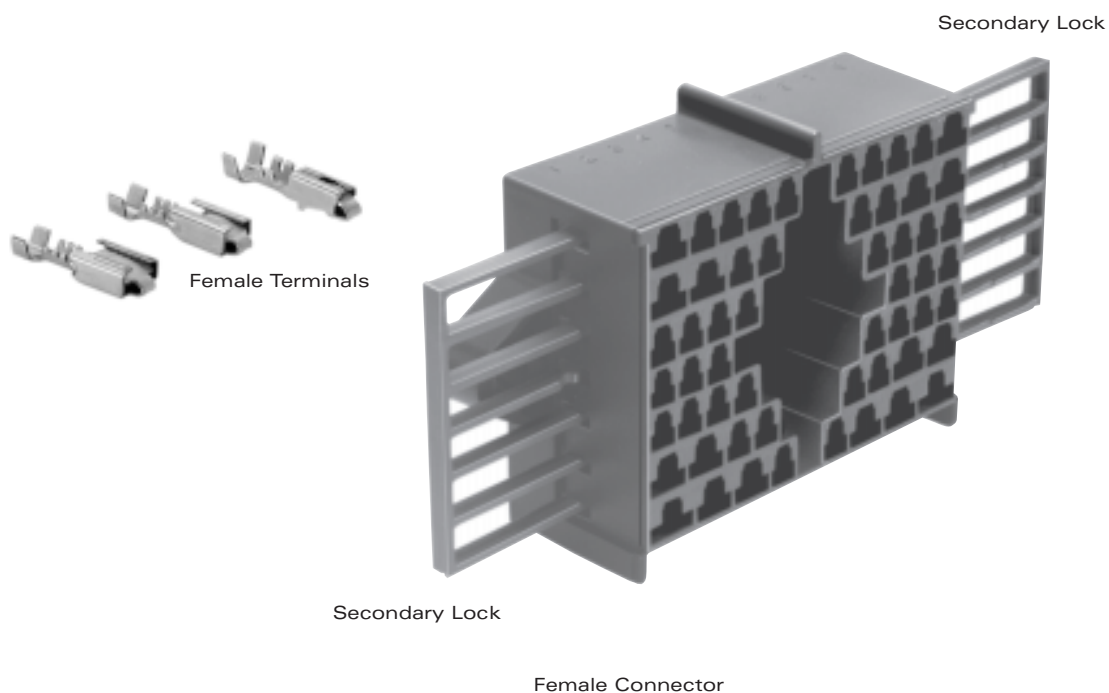


Metri-Pack Junction Features

- **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



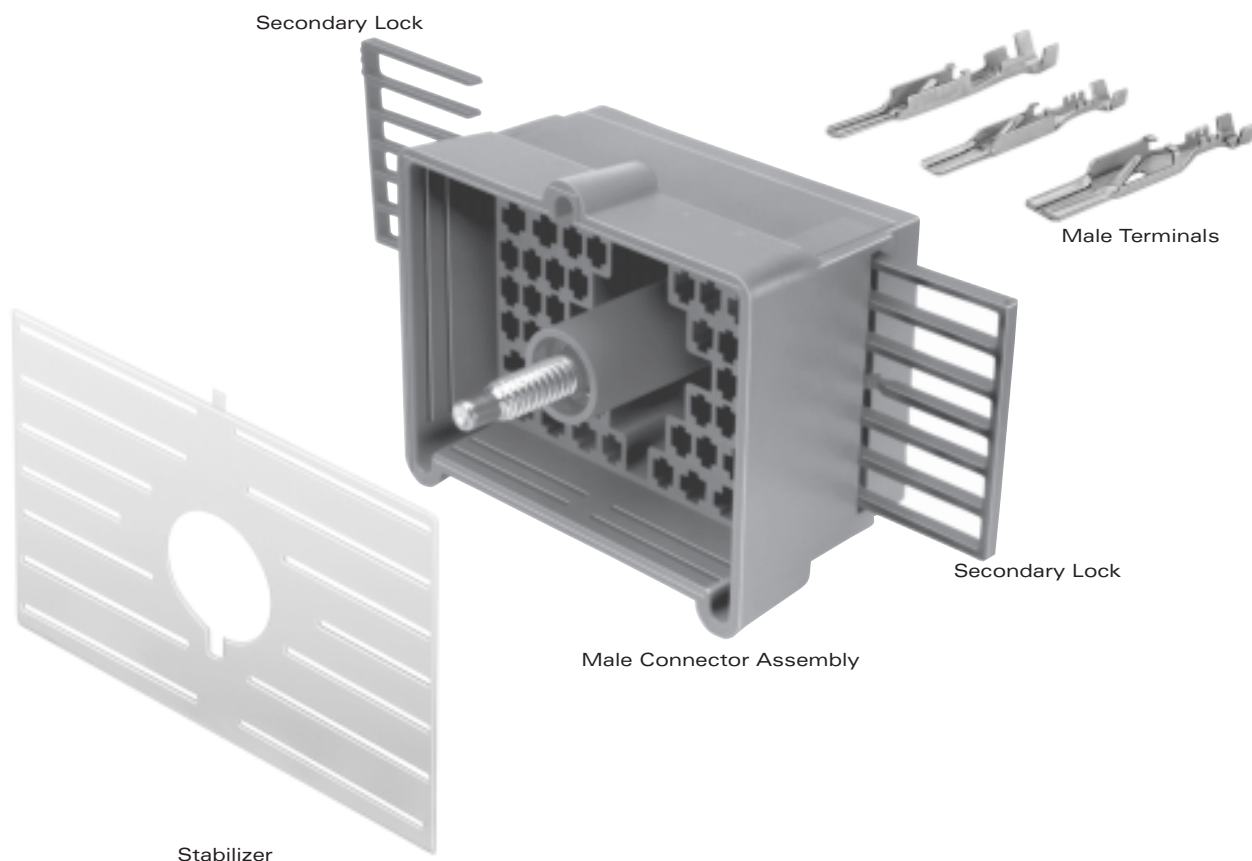
JUNCTION SYSTEMS FEMALE CONNECTORS UNSEALED

# 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

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



Male Unsealed System



JUNCTION SYSTEMS MALE CONNECTOR ASSEMBLIES UNSEALED

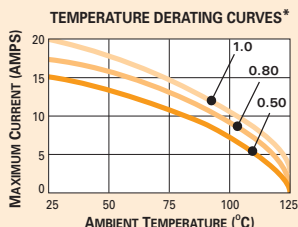
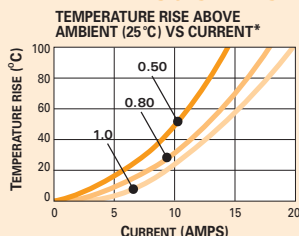
# Cavities	Conn. Asm.	Color	Material	Secondary Lock	Stabilizer
42way: 25	12015509	Black	PA66 HS IM	12015510	12162412
: 17	12020629	Black	PA6	12015511	12162413
48way: 48	12077822	Black	PA6	12047845	12186880
				12047846	
				12047838	
56way: 56	12059735	Md. Gray	PA66 HS IM	15324764	12186869
116way: 116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

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



Unsealed System Application Information

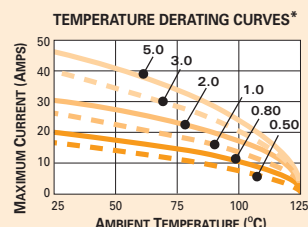
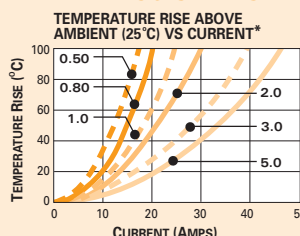
150 SERIES TERMINALS-Tin Plated



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

VOLTAGE DROP: <10.0mV/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 SERIES FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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 ²)	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.) 0.80-0.50 (1 Req'd.)	Tin Brass	Tin



280 SERIES FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

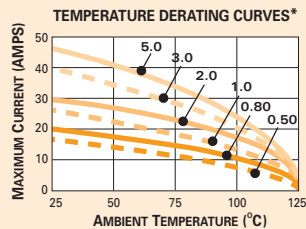
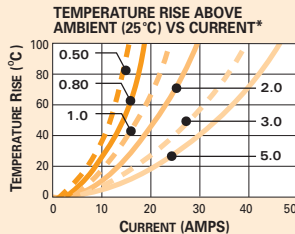
Part #	Cable Range (mm ²)	Material	Plating
12084590	5.0	Tin Brass	Tin
12084596	3.0 (2 Req'd.)	Tin Brass	Tin
12052224	3.0	Tin Brass	Tin
12015870	2.0-1.0	Tin Brass	Tin
12015869	1.0-0.80	Tin Brass	Tin
12020035	0.80-0.50 (2 Req'd.)	Tin Brass	Tin
12052222	0.50-0.35	Tin Brass	Tin

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



Unsealed System Application Information

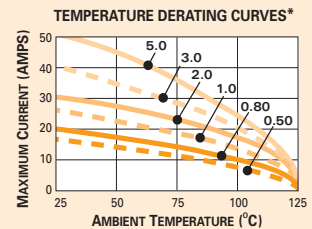
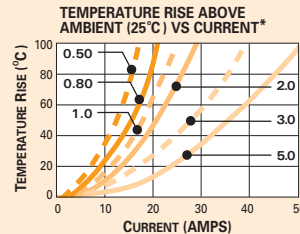
480 SERIES TERMINALS-Tin Plated



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 (mm ²)	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 (mm ²)	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

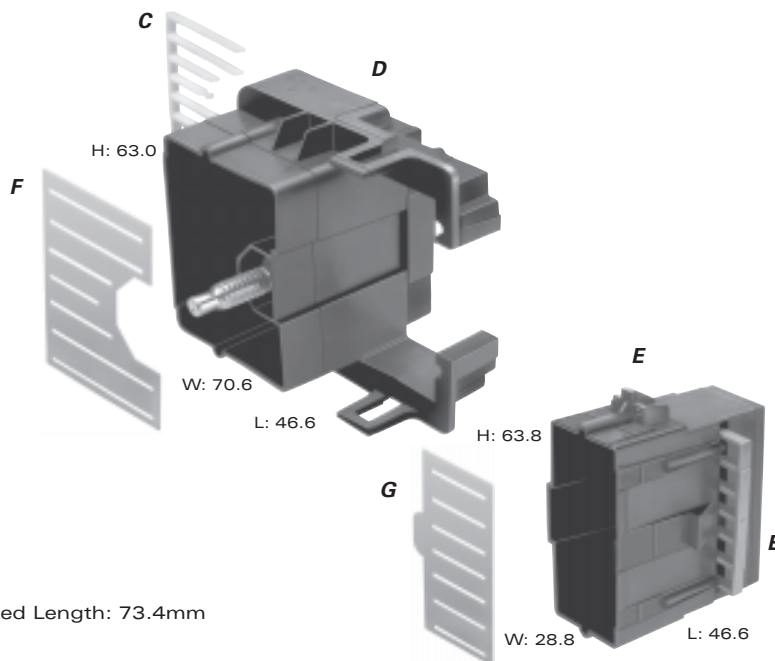
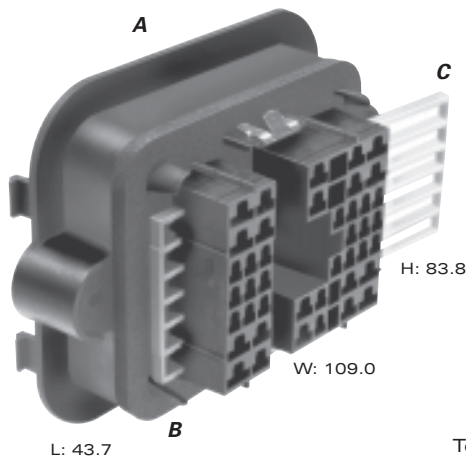
Part #	Cable Range (mm ²)	Material	Plating
12084586	5.0	Tin Brass	Tin
12129498	3.0-2.0	Tin Brass	Tin
12020116	1.0	Tin Brass	Tin
12034047	1.0-0.80	Tin Brass	Tin
12066271	0.50-0.35	Tin Brass	Tin
12020782	0.35 (2 Req'd.)	Tin Brass	Tin



630 SERIES MALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

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



Total Mated Length: 73.4mm

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

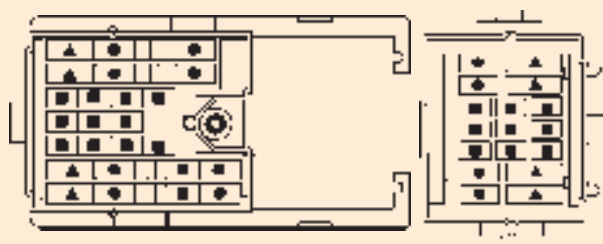
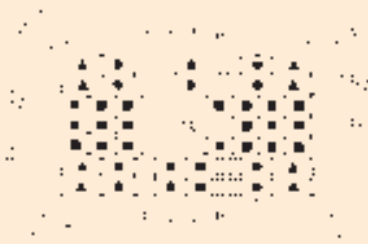
F PART NO: 12162412
 DESCRIPTION: Stabilizer
 COLOR: Natural
 MATERIAL: Mylar

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

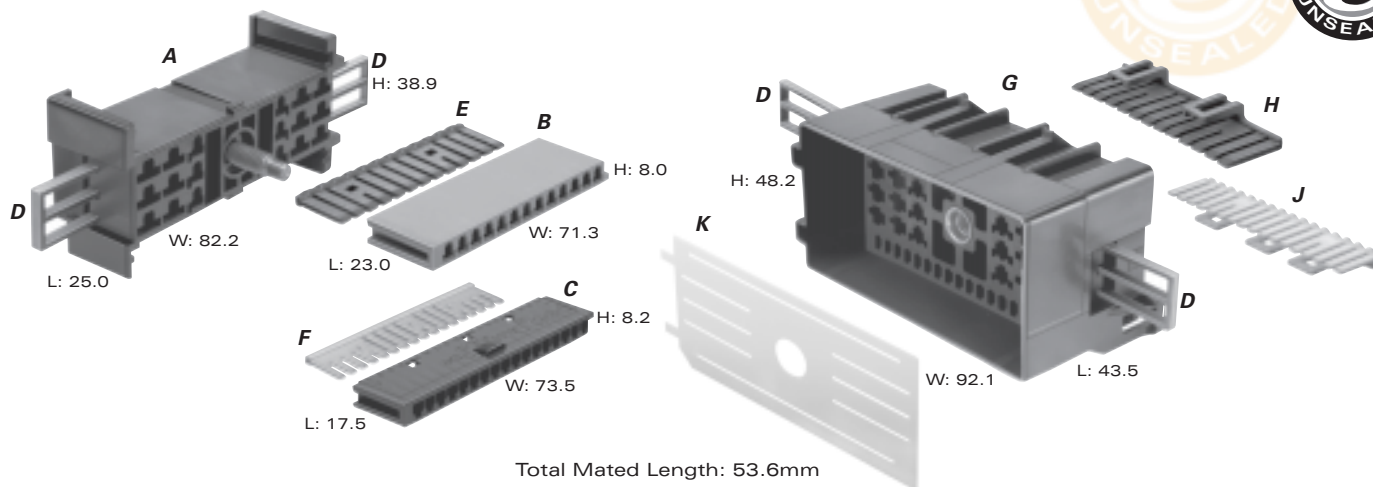
KEY:

- 280 SERIES
- 480 SERIES
- ▲ 630 SERIES

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



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



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

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

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

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

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

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

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

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

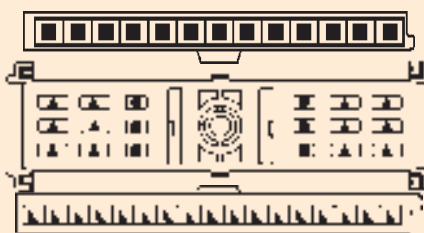
E PART NO: 12047841
 DESCRIPTION: TPA
 COLOR: Blue
 MATERIAL: PBT

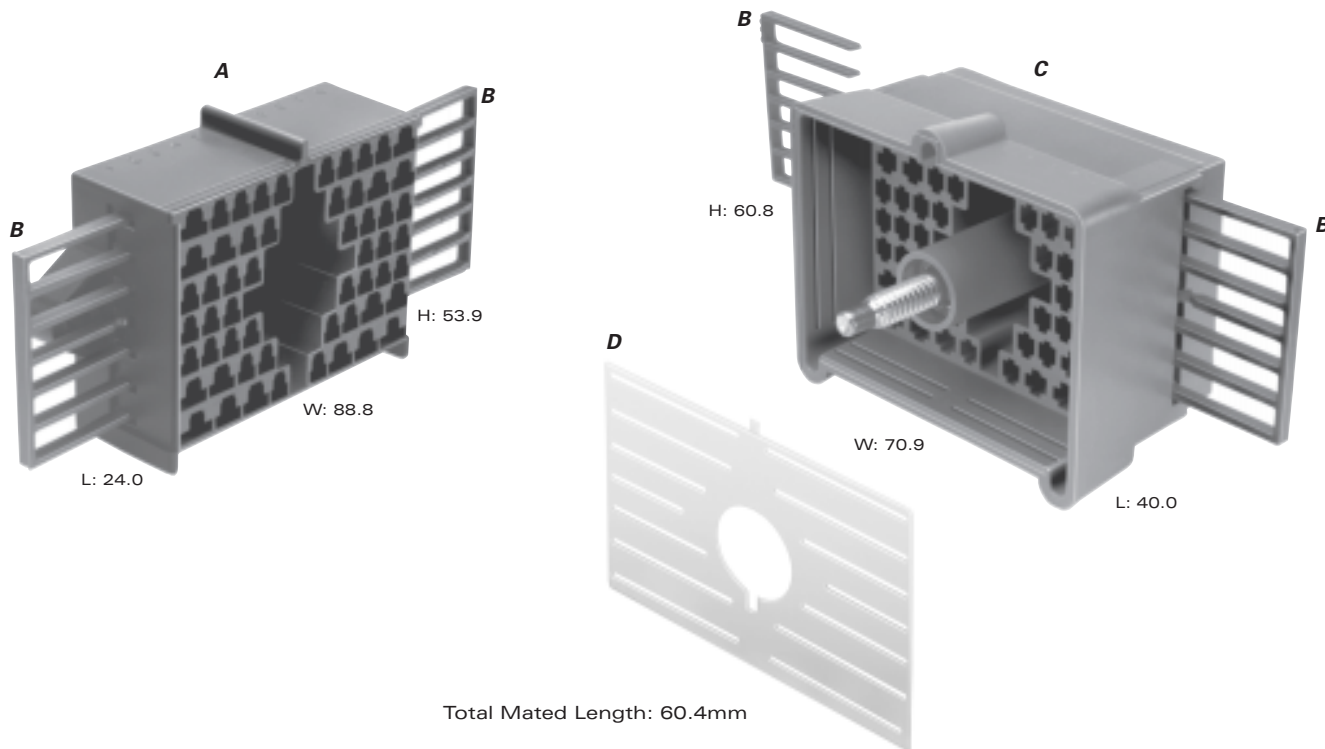
F PART NO: 12047843
 DESCRIPTION: TPA
 COLOR: Natural
 MATERIAL: PBT

KEY:

- 150 SERIES
- 280 SERIES
- ▲ 630 SERIES

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





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

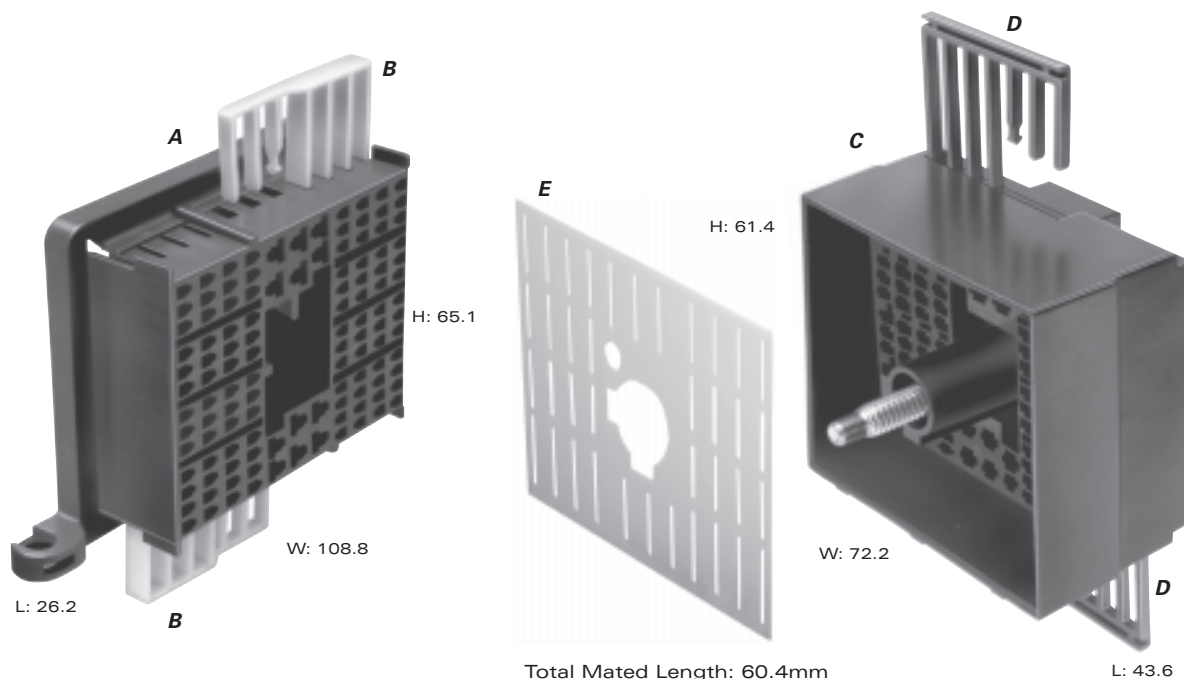
KEY:

- 280 SERIES
- 480 SERIES
- ▲ 630 SERIES

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



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



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

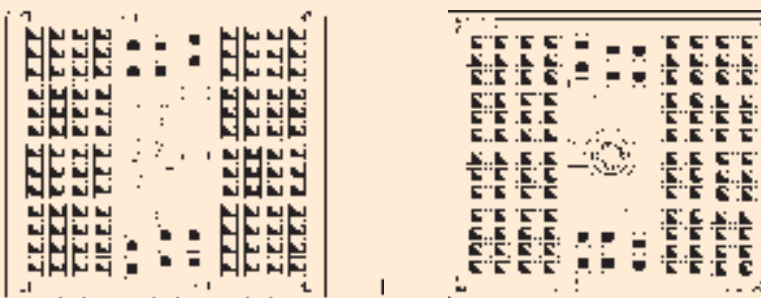
D PART NO: 12047752
 DESCRIPTION: Secondary Lock
 NUMBER REQ: 2
 COLOR: Blue
 MATERIAL: PBT

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.



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

North American Region
1-800-PACKARD

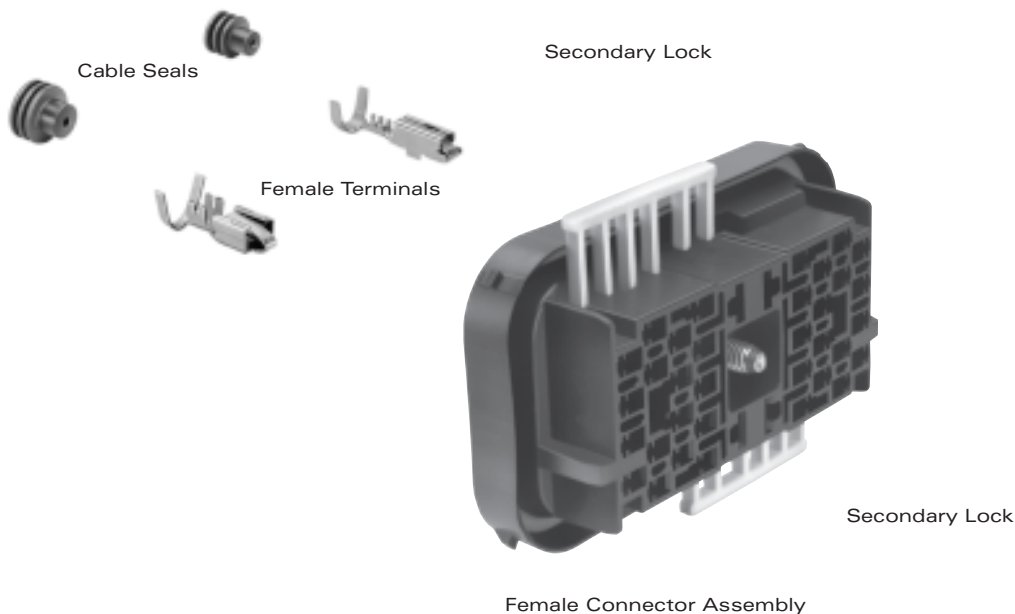
European Regions
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002



Female Sealed System



JUNCTION SYSTEMS FEMALE CONNECTOR ASSEMBLIES SEALED

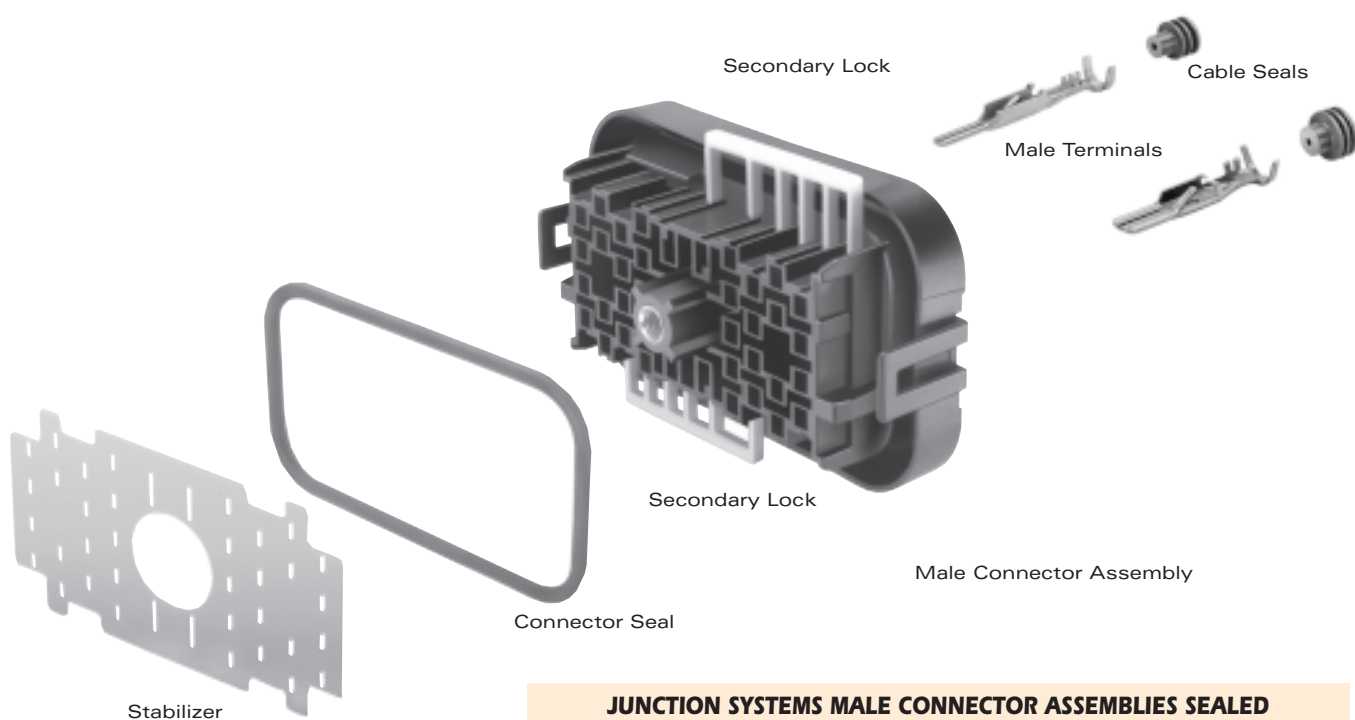
# Cavities	Conn. Asm.	Color	Material	Secondary Lock
30	12065850	Black	PBT	12066050
36	12092491*	Black	PBT	12064835
38	12191499	Black	PA66 15% GF & 25% MF	12129669
78	12129206	Black	PA66 HS 33% GF	12129214

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

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



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 HS IM 14% GF	12129670	15317352	12161191	12129672
78	12176690	Black	PA66 HS 33% GF	12129213	12162573	12162527	—



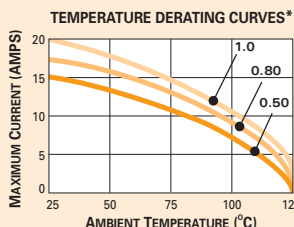
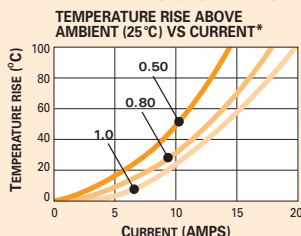
Shroud

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



Sealed System Application Information

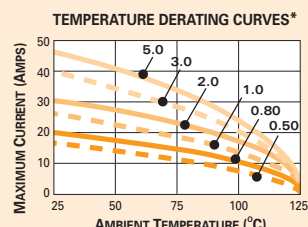
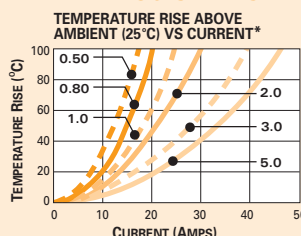
150 SERIES TERMINALS-Tin Plated



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

VOLTAGE DROP: <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 SERIES 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

480 SERIES 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

280 SERIES 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
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 (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

TANGLESS

280 TANGLESS SERIES FEMALE TERMINALS SEALED

Part #	Cable Range (mm²)	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)

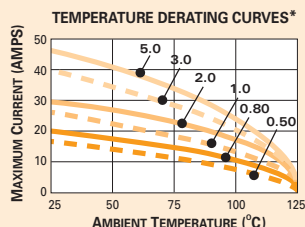
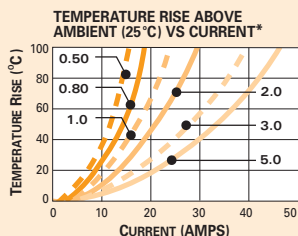
* Thin Stock—Electrical current restrictions may apply, contact your regional support representative at the number listed below.

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



Sealed System Application Information

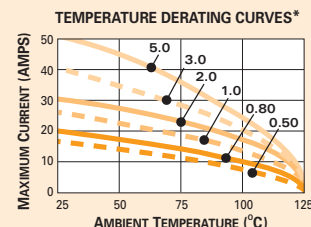
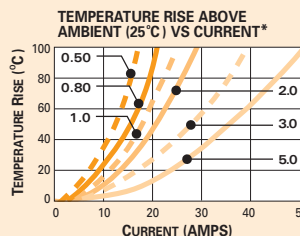
480 SERIES TERMINALS-Tin Plated



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 (mm ²)	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 (mm ²)	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 (mm ²)	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 (mm ²)	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

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



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



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



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



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



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 CAVITY PLUG*

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

*Cavity plugs seal unused female and male cavities.



480 METRI-PACK CAVITY PLUG*

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

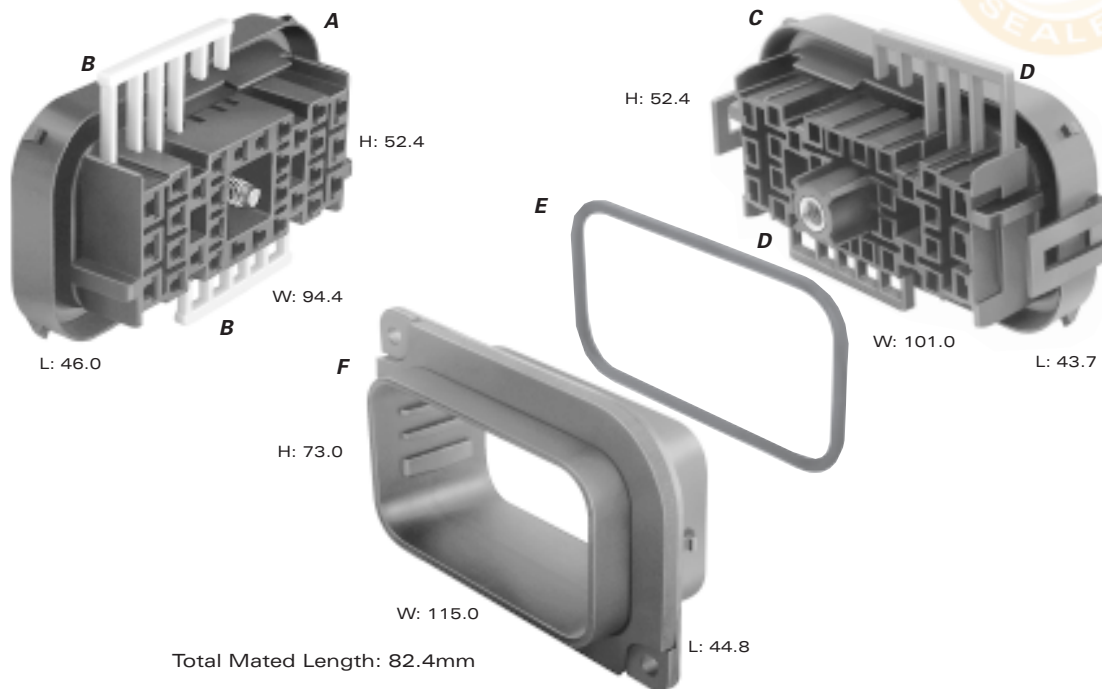
*Cavity plugs seal unused female and male cavities.



630 METRI-PACK 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

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.

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

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

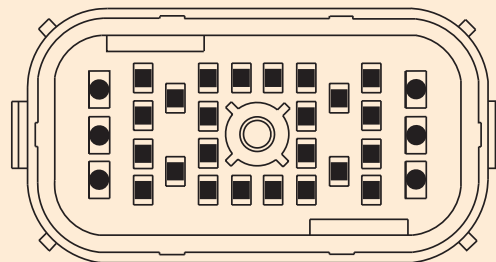
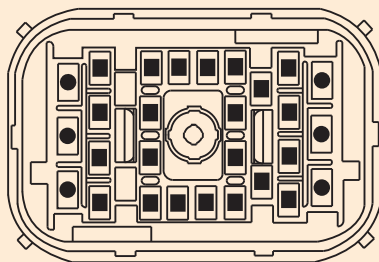
E PART NO: 12065849
 DESCRIPTION: Connector Seal
 COLOR: Green
 MATERIAL: Silicone

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.

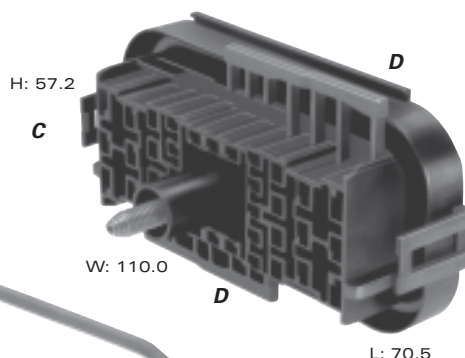
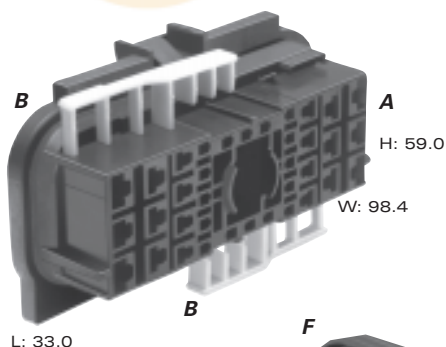
KEY:

- 280 SERIES
- 480 SERIES

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



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



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

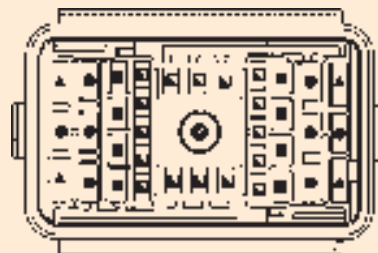
E PART NO: 12064837
 DESCRIPTION: Connector Seal
 COLOR: Green
 MATERIAL: Silicone

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

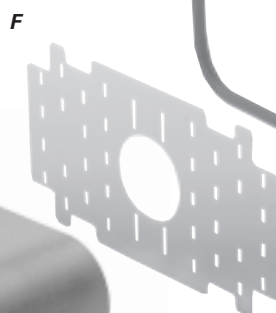
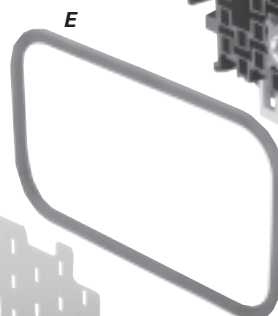
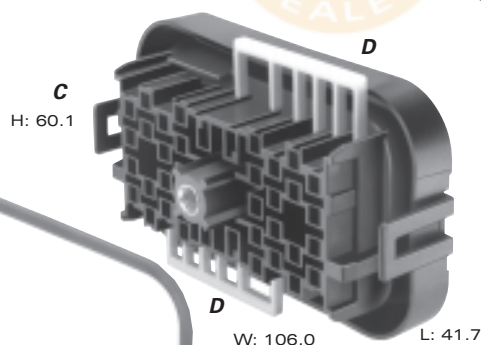
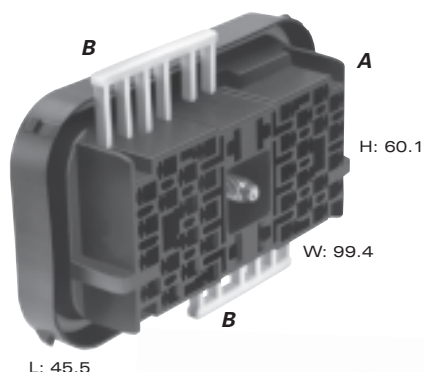
KEY:

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

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



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



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

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.

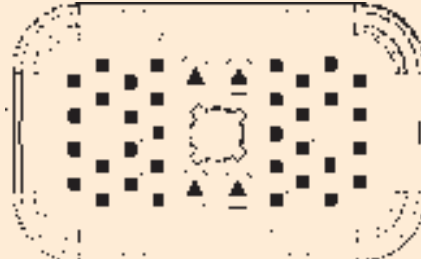
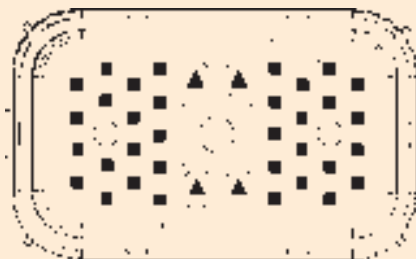
KEY:

TANGLESS

■ 280 SERIES

▲ 630 SERIES

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



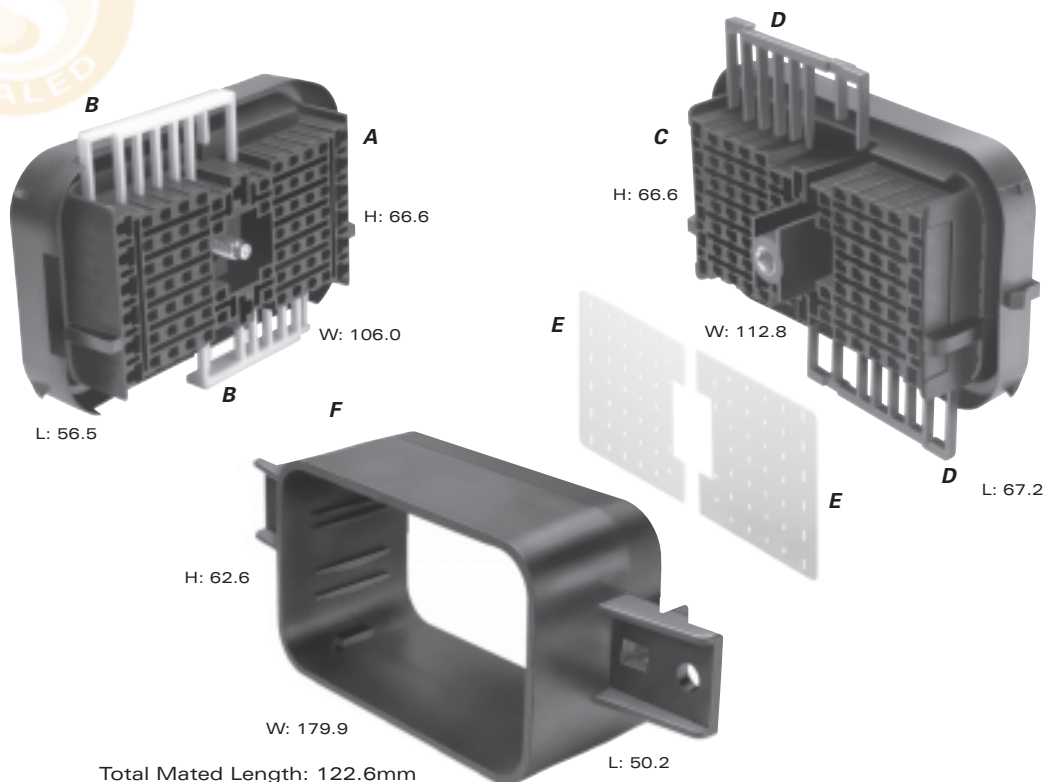
<http://delphi.com/products/connect>

North American Region
1-800-PACKARD

European Region
49-202-291-2000

Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002



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

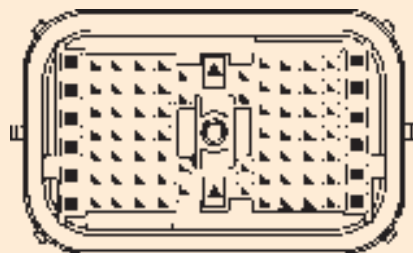
E PART NO: 12162573
 DESCRIPTION: Stabilizer
 NUMBER REQ: 2
 COLOR: Natural
 MATERIAL: Mylar

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

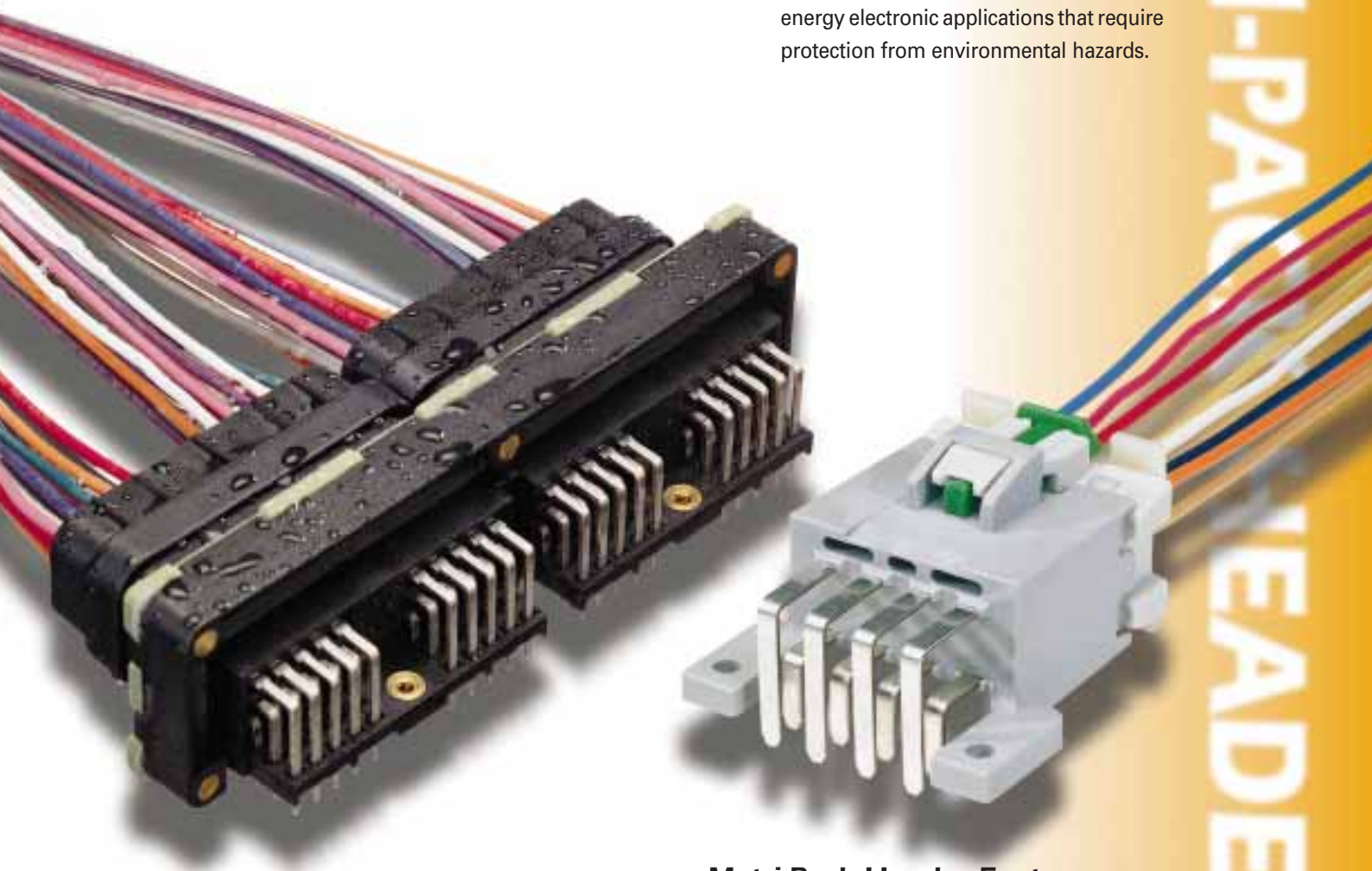


The Metri-Pack 280 Series unsealed electronic header is a versatile, and extremely rugged system designed to meet customer's power circuit needs. This system offers the combination of excellent low energy electronic circuits and power circuit capability in a single connection.



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.

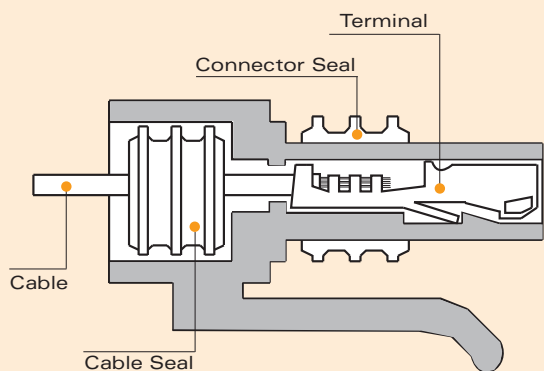


Metri-Pack Header Features

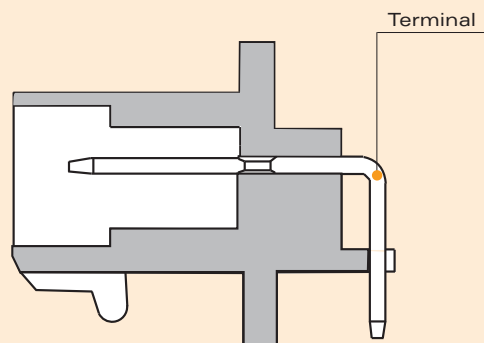
- **Terminal Position Assurance (TPA)**
- 14 Amps continuous maximum current rating for 150 Metri-Pack Series
- 30 Amps continuous maximum current rating for 280 Metri-Pack Series
- Low energy, low voltage capability
- Small overall dimensions
- Bolt assist connector to connector lock
- -40°C to 125°C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



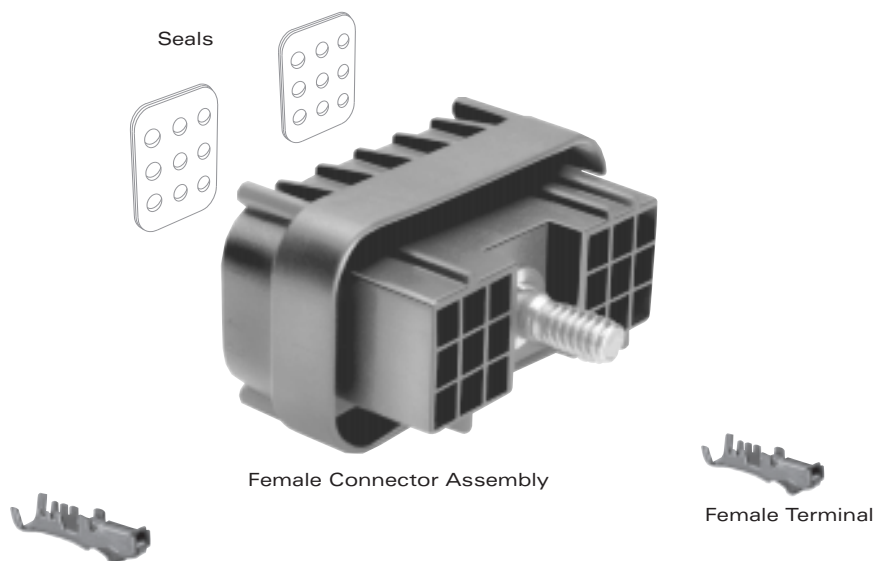
Cross Sectional View



Female Connector Assembly



Male Header Connector Assembly



Female Connector Assembly

Female Terminal

150 PULL-TO-SEAT FEMALE TERMINALS SEALED

Part #	Cable Range (mm ²)	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.

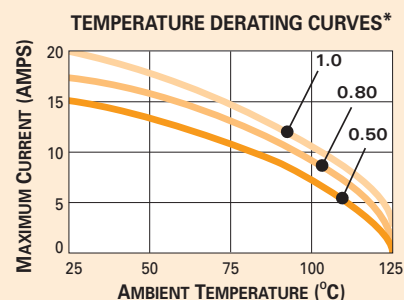
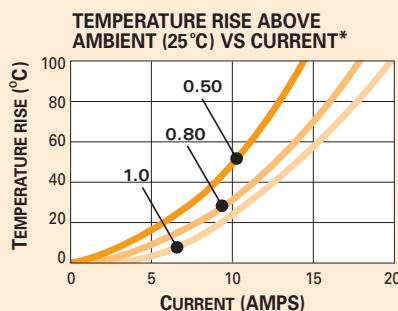
<http://delphi.com/products/connect>



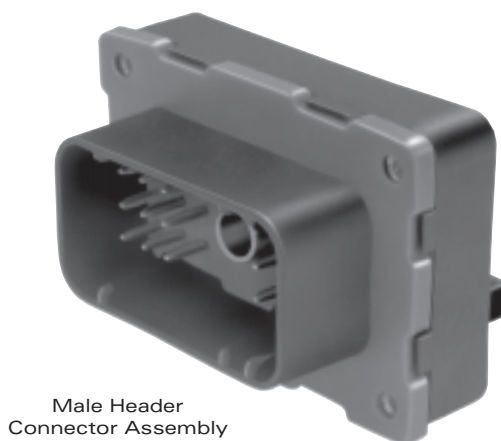
Sealed System Application Information

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

150 SERIES TERMINALS-Tin Plated



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



Male Header
Connector Assembly

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.

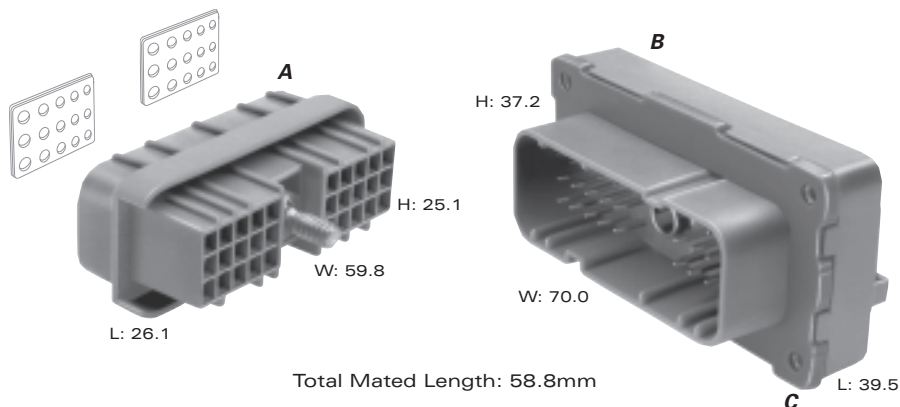
CABLE SEAL PLUGS

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.

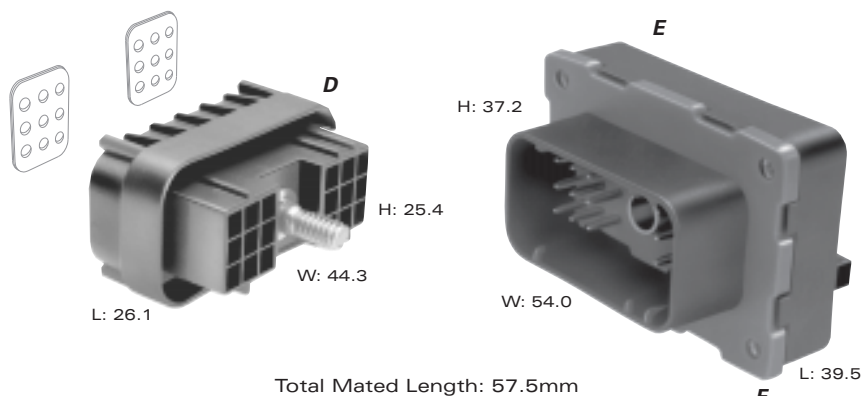
<http://delphi.com/products/connect>



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



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

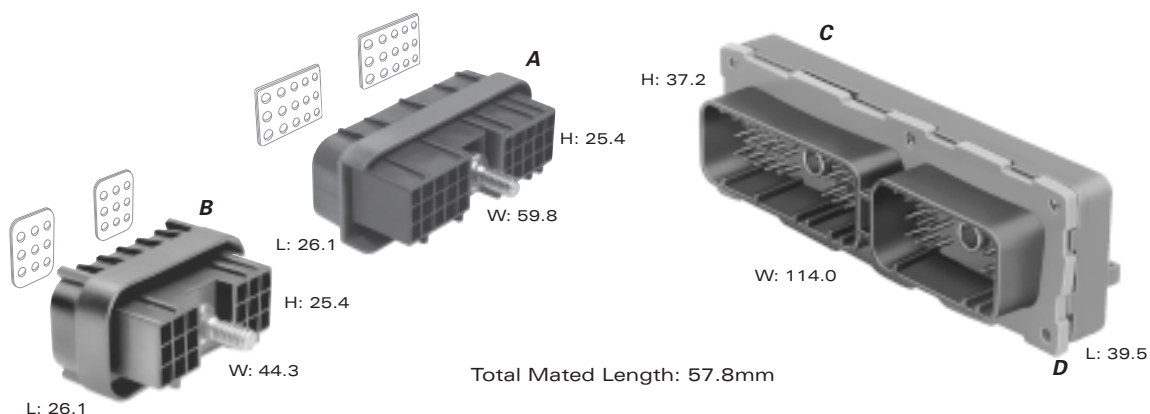
E PART NO: 12040923
 DESCRIPTION: Connector Assembly 18M
 SIZE: 39.5L x 37.2H x 54.0W
 COLOR: Black
 MATERIAL: PET 30% GF
 NOTE: Shipping cover 12040940 included.

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

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

150 HEADER

Metri-Pack Series



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

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.

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

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

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

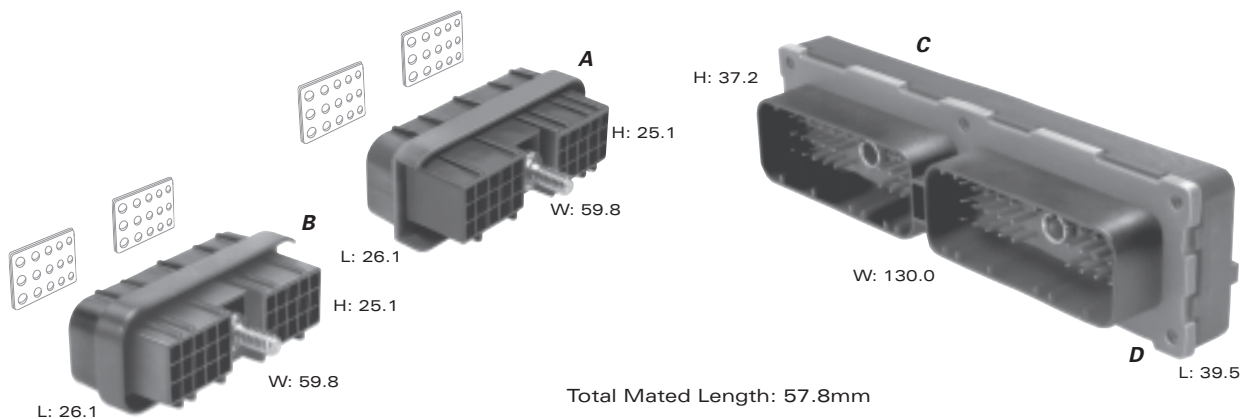
North American Region
 1-800-PACKARD

European Region
 49-202-291-2000

Asia Pacific Region
 65-730-9900

South American Region
 55-12-378-2002

157



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

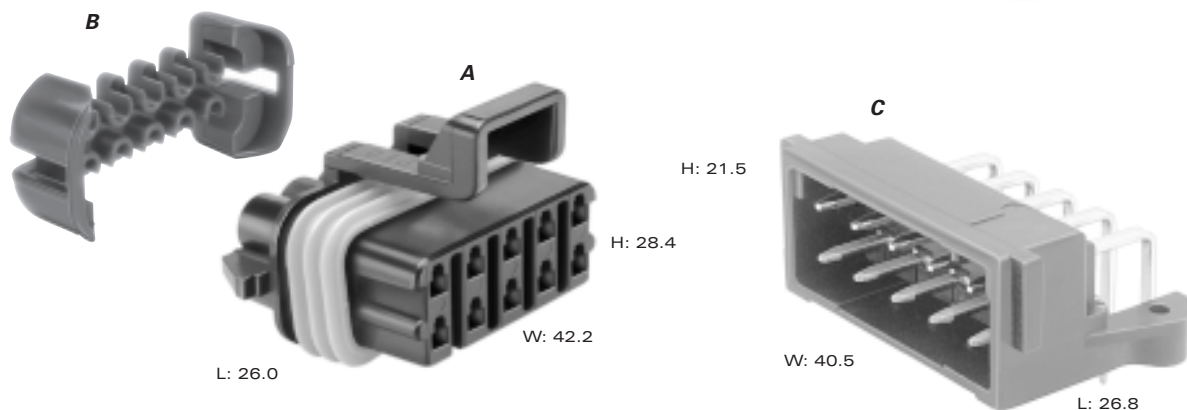
C PART NO: 12034396
 DESCRIPTION: Connector Assembly 60M
 SIZE: 39.5L x 37.2H x 130.0W
 COLOR: Black
 MATERIAL: PET 30% GF
 NOTE: Shipping cover 12040542
 (2 Req'd.) included

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

150 HEADER

Metri-Pack Series



Total Mated Length: 46.7mm

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 ²)	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

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

North American Region
1-800-PACKARD

European Region
49-202-291-2000

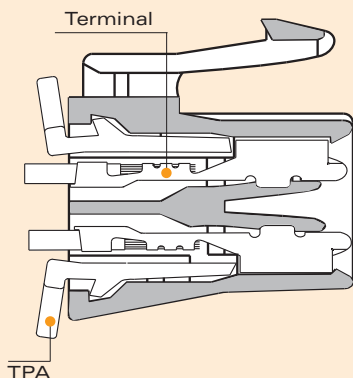
Asia Pacific Region
65-730-9900

South American Region
55-12-378-2002

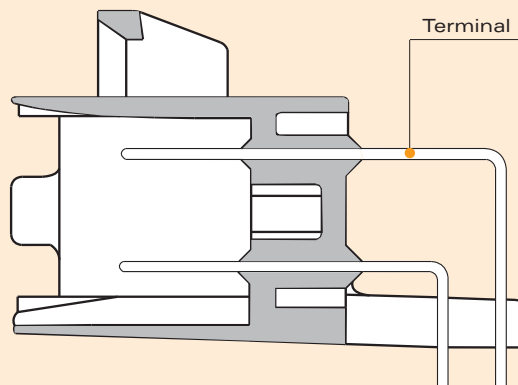
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Cross Sectional View



Female Connector



Male Header Connector Assembly

TPA
(Terminal Position
Assurance)

CPA
(Connector Position
Assurance)

TANGLESS



280 TANGLESS FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

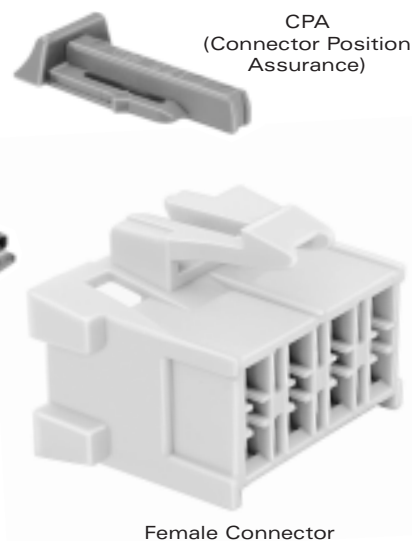
*Thin Stock—Electrical current restrictions apply, contact your regional support representative at the number listed below.

280 FEMALE TERMINALS UNSEALED

Part #	Cable Range (mm ²)	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

TANGLESS

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>

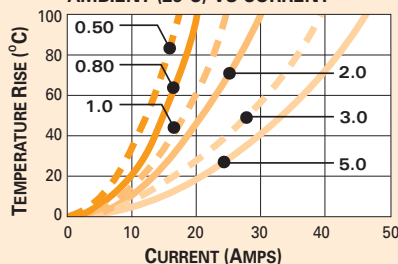


Unsealed System Application Information

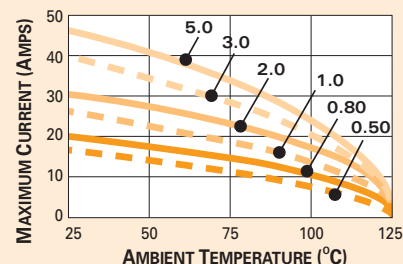
CABLE RANGE (mm²): 0.35-5.0
CURRENT RANGE (AMPS): 0-30
TEMP RANGE °C: -40 to 125
RESISTANCE: <10mΩ@20mV
VOLTAGE DROP: <3.0mV/amp
CENTERLINE SPACING (mm):..... 6.9
BLADE WIDTH (mm):..... 2.8

280 SERIES TERMINALS - Tin Plated

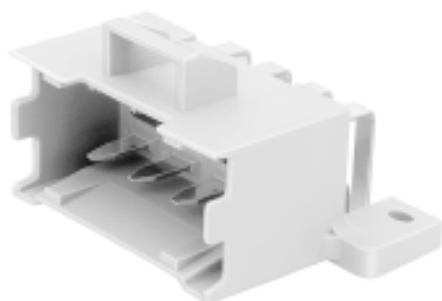
TEMPERATURE RISE ABOVE AMBIENT (25°C) VS CURRENT*



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.



Male Header Connector Assembly

280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED

Pins	Connector	Color	Material
4	12110440	Black	PA66 HS IM

TANGLESS



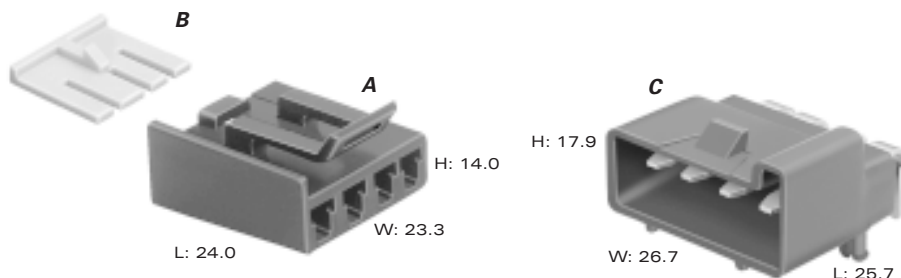
280 METRI-PACK MALE HEADER CONNECTOR ASSEMBLY UNSEALED

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>

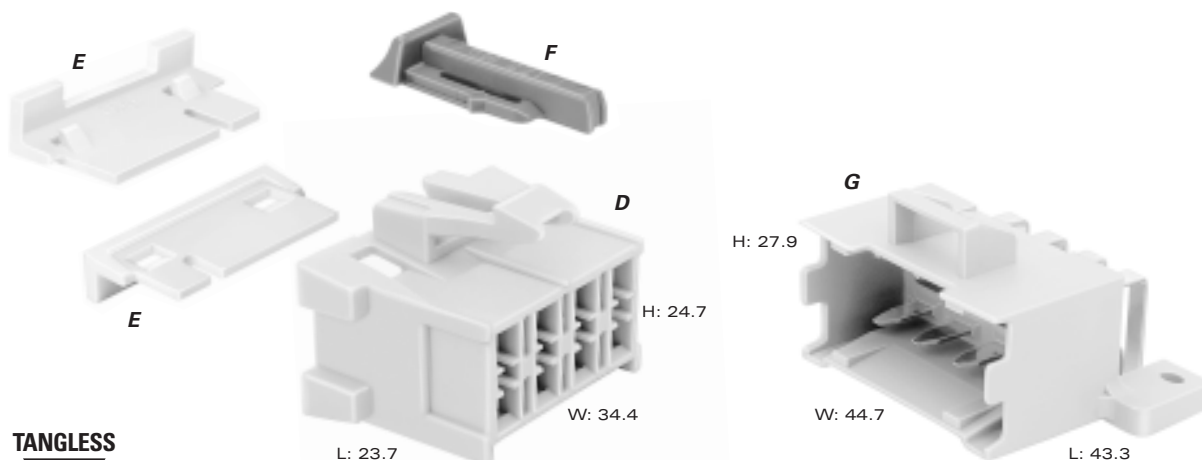


Total Mated Length: 40.4mm

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

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

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