

# AMPSEAL 16 CONNECTOR SERIES

For Industrial & Commercial Transportation

Terminals and Connectors



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## MARKETS WE SERVE



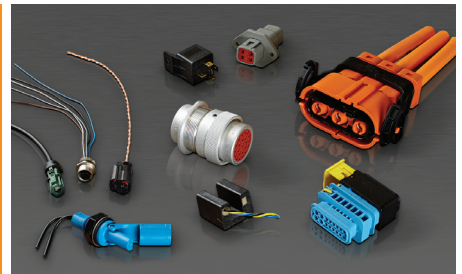
ON-HIGHWAY



OFF-HIGHWAY

RECREATIONAL  
TRANSPORTATION

TE Connectivity (TE) Industrial & Commercial Transportation is a reliable provider of solutions for even the harshest environment. With a focus on employee expertise and durable products, we deliver the solutions and support our customers can count on.

2,000+  
Employees10,000+  
Customers20,000+  
Different Parts

Years ago, tractors, construction equipment, trucks, and boats had simple electrical systems that might have included electrical starting and a basic lighting package. Today, ECUs, joysticks, fuel-efficient engines, LED lights, and CAN systems are standard equipment. The need to protect sensitive electrical systems from vibration, moisture, dust, dirt, salt, and airborne particles has never been greater. TE Industrial & Commercial Transportation is a leader in supporting today's increasingly complex and sophisticated equipment and applications.

Our comprehensive line of products includes an unparalleled portfolio of rugged sensors, terminals, connectors, relays, and hybrid electric mobility solutions. These solutions are designed to withstand the harshest environmental conditions and to help vehicles operate safer, cleaner, and smarter.

Our solutions adapt to virtually any harsh environment application, including:

Motors and  
GearboxesABS/EBS  
Brake UnitsTelematics  
Units

Sensors

Wire-To-Wire  
Coupling at  
the ChassisInfotainment  
Applications

# AMPSEAL 16 CONNECTOR SERIES

The AMPSEAL 16 connector system is targeted for off-road, heavy duty industrial, recreational and agricultural applications.

This wire-to-wire and wire-to-device connector line was designed to meet the rigorous demands of an industry that requires the highest standards in performance.

Since the launch of our latest AMPSEAL 16 high temperature connector, this series now features an option for extended on-engine, aftertreatment and powertrain applications, with an increased temperature range of up to 150°C.

AMPSEAL 16 plug and cap housings offer a one-piece design and come fully assembled - reducing installation time and enabling an efficient supply chain.



## Benefits

- Optimize applied costs with the Heavy Duty Stamped & Formed (HDSF) size 16 contacts rated up to 13 amps each
- Protect from dust, water, and overspray with IP67, IP68 & IP6K9K (with rear protection)
- Enhanced terminal to connector assembly with integrated Terminal Position Assurance (TPA) ensures contact alignment and retention
- Color and mechanical coding with integrated Connector Position Assurance (CPA) offers a reliable plug and cap housing assembly process.
- Enhance design flexibility with optional backshell and mounting clip accessory items
- Design extended to on-engine, aftertreatment and powertrain applications with new high temperature connectors

## Key Industries

AMPSEAL 16 products can be utilized in the truck, bus, construction, agriculture, and special vehicles industries



Truck



Bus



Construction



Agriculture



Special

## Applications

AMPSEAL 16 products can be utilized in the following applications



Motors and Gearboxes



ABS/ESC Brake Units



Hydraulic Pumps



Sensors



Wire-To-Wire



Actuators



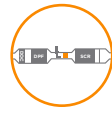
Switches

## High Temperature Applications

AMPSEAL 16 products can be utilized in the following applications



On-Engine Control



After treatment

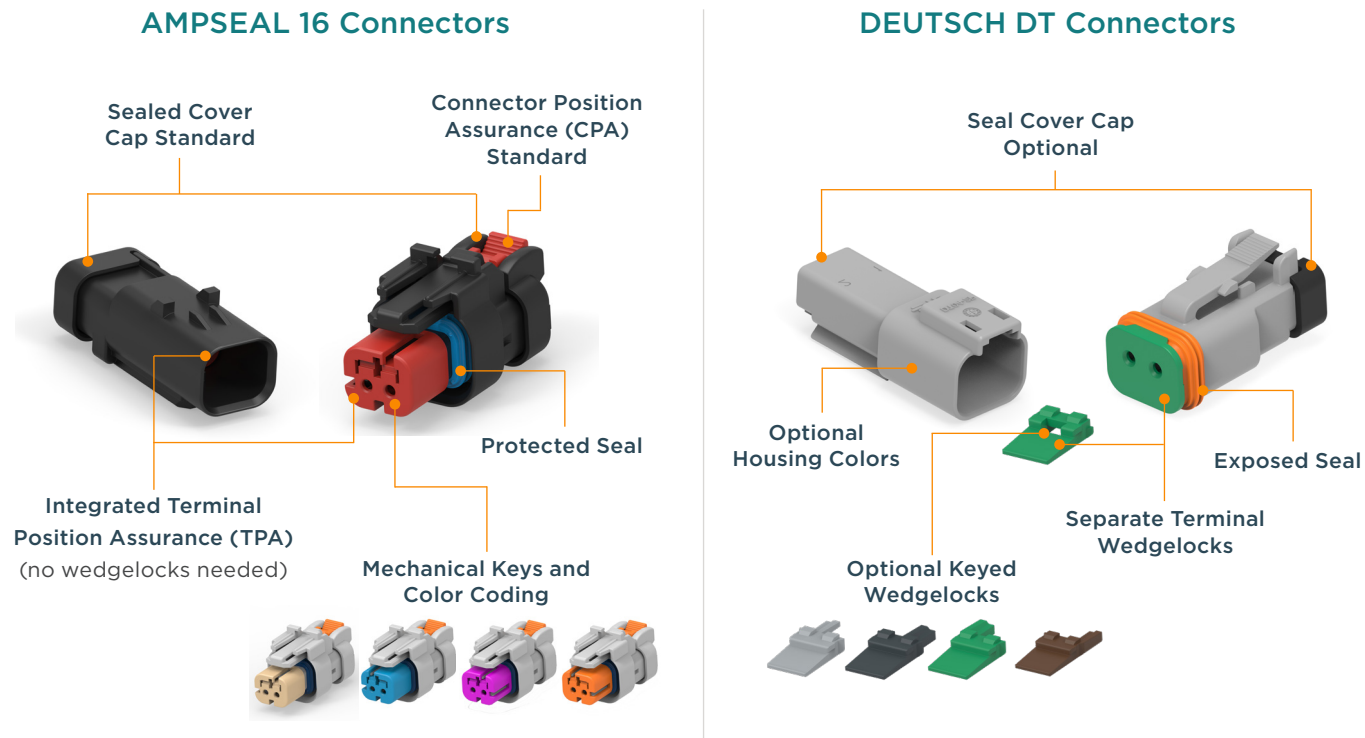


Cooling System



Engine Compartment

# COMPARISON TO DEUTSCH DT CONNECTORS



# PERFORMANCE SPECIFICATIONS

|                    | AMPSEAL 16 Connectors                                                                              |                                                                                                     | DEUTSCH DT Connectors                                                             |
|--------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                    | Standard Temperature                                                                               | High Temperature                                                                                    |                                                                                   |
| Current            | Up to 13 amps                                                                                      |                                                                                                     | Up to 13 amps                                                                     |
| Temperature        | -40°C to 125°C                                                                                     | -40°C to 150°C                                                                                      | -55°C to +125°C                                                                   |
| Flammability       | UL94 HB                                                                                            | UL94 V-0                                                                                            | UL Recognized.<br>12 mm Flame test per UL-94                                      |
| Ingress Protection | IP67, IP68 & IP6K9K (with rear protection)                                                         |                                                                                                     | IP68 & IP6K9K (with rear protection)                                              |
| Vibration          | 21G's rms up to 2000 Hz. 20 hours in each of three mutually perpendicular planes.                  |                                                                                                     | 21G's rms up to 2000 Hz. 20 hours in each of three mutually perpendicular planes. |
| Keying Coding      | -1 = A key (red TPA)<br>-2 = B key (gray TPA)<br>-3 = C Key (yellow TPA)<br>-4 = D Key (green TPA) | -1 = A key (tan TPA)<br>-2 = B key (blue TPA)<br>-3 = C Key (purple TPA)<br>-4 = D Key (orange TPA) | 4 keys available for 8 & 12 position.<br>2-6 position optional keyed wedgelock.   |

# PRODUCT DOCUMENTATION

The AMPSEAL 16 connector system is targeted for off-road, heavy duty industrial, recreational and agricultural applications. This wire-to-wire and wire-to-device connector line was designed to meet the rigorous demands of an industry that requires the highest standards in performance.

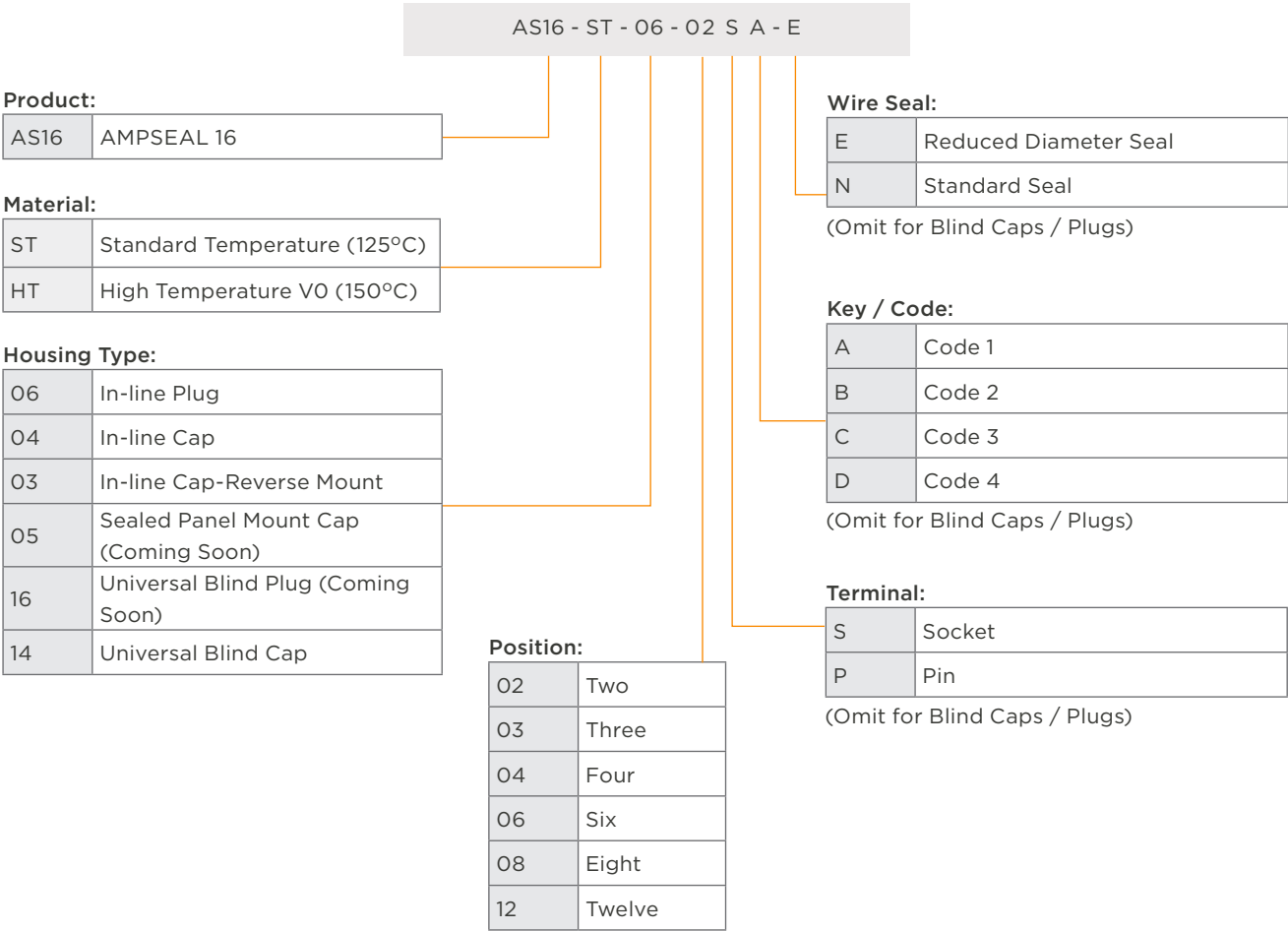
Additional documentation is available for assistance with AMPSEAL 16 products.

The following TE Connectivity document numbers may be helpful:

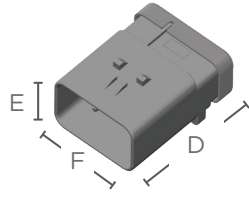
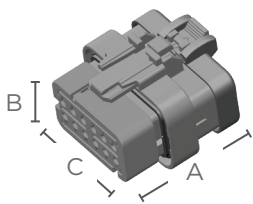
- [108-2184](#) (Product Specification)
- [114-13065](#) (Application Specification)
- [408-8623](#) (Instruction Sheet) 501-708 (Qualification Test Report)
- [114-32363](#) (Application Specifications High Temperature)
- [108-32602](#) (Product Specifications High Temperature)
- [501-32504](#) (Qualification Test Report High Temperature)

# ALIAS PART NUMBERING SYSTEM

New alias numbering supports easier product identification, findability and better understanding of the products to order by specifying the product line, the material type and the modifications such as: housing types for connectors, number of positions, keying system, wire seal, etc.. An alias part numbering system is also available for backshells, HDSF terminals and integrated components within this catalog.



# AMPSEAL 16 DIMENSIONS



| Cavity | AMPSEAL 16 Plug Housing |                     |                    | AMPSEAL 16 Cap Housing |                     |                    |
|--------|-------------------------|---------------------|--------------------|------------------------|---------------------|--------------------|
|        | Overall Length<br>A     | Overall Height<br>B | Overall Width<br>C | Overall Length<br>D    | Overall Height<br>E | Overall Width<br>F |
| 2      | 1.45 (36.75)            | .93 (23.5)          | .80 (20.33)        | 1.87 (47.55)           | .75 (18.93)         | .77 (19.60)        |
| 3      | 1.45 (36.80)            | .93 (23.5)          | .98 (24.83)        | 1.87 (47.55)           | .75 (19.15)         | .95 (24.10)        |
| 4      | 1.44 (36.70)            | 1.06 (26.8)         | 1.00 (25.33)       | 1.87 (47.55)           | .88 (22.45)         | .97 (24.60)        |
| 6      | 1.44 (36.60)            | 1.22 (31.0)         | 1.00 (25.33)       | 1.87 (47.55)           | 1.05 (26.65)        | .97 (24.60)        |
| 8      | 1.45 (36.80)            | 1.24 (31.5)         | 1.15 (29.33)       | 1.87 (47.55)           | 1.05 (26.65)        | 1.13 (28.60)       |
| 12     | 1.45 (36.80)            | 1.24 (31.5)         | 1.51 (38.33)       | 1.87 (47.55)           | 1.05 (26.65)        | 1.48 (37.60)       |

Dimensions are for reference only, see product drawings

# AMPSEAL 16 CONFIGURATIONS



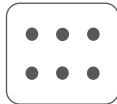
2 Positions  
2 size 16



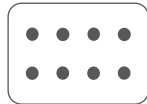
3 Positions  
3 size 16



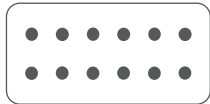
4 Positions  
4 size 16



6 Positions  
6 size 16



8 Positions  
8 size 16



12 Positions  
12 size 16

# AMPSEAL 16 WIRE SEALING RANGE

The wire sealing range is the recommended outside diameter of the wire insulation required to maintain an environmental seal in the rear connector cavities

| Contact Size                                                   | Standard seal (N-Seal)   | Reduced Seal (E-Seal)    |
|----------------------------------------------------------------|--------------------------|--------------------------|
| HDSF 16 & Solid Contact<br>14-20 AWG (2.0-0.5mm <sup>2</sup> ) | .086-.144<br>(2.18-3.67) | .051-.100<br>(1.30-2.54) |

# AMPSEAL 16 HIGH TEMPERATURE



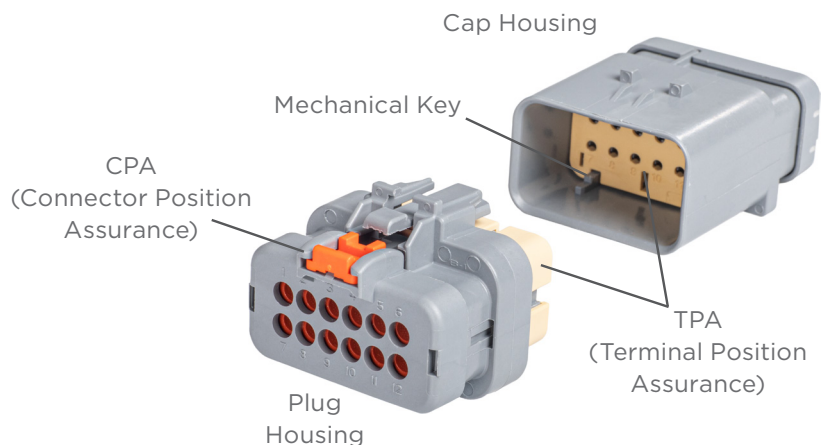
TE's AMPSEAL 16 high temperature connector is the latest addition to the well-established AMPSEAL 16 product portfolio - built to withstand extreme heat conditions in a vast selection of on-engine, aftertreatment and powertrain applications.

With a temperature range of up to 150°C (a 20% increase from the 125°C limit of the original), and a higher flammability rating of UL94 V-0, the new AMPSEAL 16 connector delivers the ideal solution for high intensity vehicles and machinery - providing two sealing options for SAE and ISO wires, to further support its extensive functionality.

Differentiated by a new gray colored housing, TE's high temperature variants can be effortlessly identified to aid ease of assembly, with the four discrete color polarization keys also helping to prevent mismatching.

In combination with the fully assembled one-piece design, the new AMPSEAL 16 high temperature connector provides a cost effective, easy-to-build extension of this all-encompassing product line - improving its adaptability for a host of applications.

Plug housing and cap housing TPA colors are mechanically keyed to mate only with identical colors.



# ORDERING INFORMATION

## AMPSEAL 16 PLUGS



| Positions | Wire Seal  | Standard Plug (06) |                   | High Temperature Plug (06) |                   |
|-----------|------------|--------------------|-------------------|----------------------------|-------------------|
|           |            | Part Number        | Alias             | Part Number                | Alias             |
| 2 Pos     | STAND DIA  | 776427-1           | AS16-ST-06-02SA-N | 2320920-1                  | AS16-HT-06-02SA-N |
|           |            | 776427-2           | AS16-ST-06-02SB-N | 2320920-2                  | AS16-HT-06-02SB-N |
|           |            | 776427-3           | AS16-ST-06-02SC-N | 2320920-3                  | AS16-HT-06-02SC-N |
|           |            | 776427-4           | AS16-ST-06-02SD-N | 2320920-4                  | AS16-HT-06-02SD-N |
|           | REDUC. DIA | 776522-1           | AS16-ST-06-02SA-E | 2320932-1                  | AS16-HT-06-02SA-E |
|           |            | 776522-2           | AS16-ST-06-02SB-E | 2320932-2                  | AS16-HT-06-02SB-E |
|           |            | 776522-3           | AS16-ST-06-02SC-E | 2320932-3                  | AS16-HT-06-02SC-E |
|           |            | 776522-4           | AS16-ST-06-02SD-E | 2320932-4                  | AS16-HT-06-02SD-E |
| 3 Pos     | STAND DIA  | 776429-1           | AS16-ST-06-03SA-N | 2320921-1                  | AS16-HT-06-03SA-N |
|           |            | 776429-2           | AS16-ST-06-03SB-N | 2320921-2                  | AS16-HT-06-03SB-N |
|           |            | 776429-3           | AS16-ST-06-03SC-N | 2320921-3                  | AS16-HT-06-03SC-N |
|           |            | 776429-4           | AS16-ST-06-03SD-N | 2320921-4                  | AS16-HT-06-03SD-N |
|           | REDUC. DIA | 776523-1           | AS16-ST-06-03SA-E | 2320933-1                  | AS16-HT-06-03SA-E |
|           |            | 776523-2           | AS16-ST-06-03SB-E | 2320933-2                  | AS16-HT-06-03SB-E |
|           |            | 776523-3           | AS16-ST-06-03SC-E | 2320933-3                  | AS16-HT-06-03SC-E |
|           |            | 776523-4           | AS16-ST-06-03SD-E | 2320933-4                  | AS16-HT-06-03SD-E |
| 4 Pos     | STAND DIA  | 776487-1           | AS16-ST-06-04SA-N | 2320922-1                  | AS16-HT-06-04SA-N |
|           |            | 776487-2           | AS16-ST-06-04SB-N | 2320922-2                  | AS16-HT-06-04SB-N |
|           |            | 776487-3           | AS16-ST-06-04SC-N | 2320922-3                  | AS16-HT-06-04SC-N |
|           |            | 776487-4           | AS16-ST-06-04SD-N | 2320922-4                  | AS16-HT-06-04SD-N |
|           | REDUC. DIA | 776524-1           | AS16-ST-06-04SA-E | 2320934-1                  | AS16-HT-06-04SA-E |
|           |            | 776524-2           | AS16-ST-06-04SB-E | 2320934-2                  | AS16-HT-06-04SB-E |
|           |            | 776524-3           | AS16-ST-06-04SC-E | 2320934-3                  | AS16-HT-06-04SC-E |
|           |            | 776524-4           | AS16-ST-06-04SD-E | 2320934-4                  | AS16-HT-06-04SD-E |
| 6 Pos     | STAND DIA  | 776433-1           | AS16-ST-06-06SA-N | 2320923-1                  | AS16-HT-06-06SA-N |
|           |            | 776433-2           | AS16-ST-06-06SB-N | 2320923-2                  | AS16-HT-06-06SB-N |
|           |            | 776433-3           | AS16-ST-06-06SC-N | 2320923-3                  | AS16-HT-06-06SC-N |
|           | REDUC. DIA | 776531-1           | AS16-ST-06-06SA-E | 2320935-1                  | AS16-HT-06-06SA-E |
|           |            | 776531-2           | AS16-ST-06-06SB-E | 2320935-2                  | AS16-HT-06-06SB-E |
|           |            | 776531-3           | AS16-ST-06-06SC-E | 2320935-3                  | AS16-HT-06-06SC-E |
| 8 Pos     | STAND DIA  | 776494-1           | AS16-ST-06-08SA-N | 2320924-1                  | AS16-HT-06-08SA-N |
|           |            | 776494-2           | AS16-ST-06-08SB-N | 2320924-2                  | AS16-HT-06-08SB-N |
|           |            | 776494-3           | AS16-ST-06-08SC-N | 2320924-3                  | AS16-HT-06-08SC-N |
|           |            | 776494-4           | AS16-ST-06-08SD-N | 2320924-4                  | AS16-HT-06-08SD-N |
|           | REDUC. DIA | 776532-1           | AS16-ST-06-08SA-E | 2320936-1                  | AS16-HT-06-08SA-E |
|           |            | 776532-2           | AS16-ST-06-08SB-E | 2320936-2                  | AS16-HT-06-08SB-E |
|           |            | 776532-3           | AS16-ST-06-08SC-E | 2320936-3                  | AS16-HT-06-08SC-E |
|           |            | 776532-4           | AS16-ST-06-08SD-E | 2320936-4                  | AS16-HT-06-08SD-E |
| 12 Pos    | STAND DIA  | 776437-1           | AS16-ST-06-12SA-N | 2320925-1                  | AS16-HT-06-12SA-N |
|           |            | 776437-2           | AS16-ST-06-12SB-N | 2320925-2                  | AS16-HT-06-12SB-N |
|           |            | 776437-3           | AS16-ST-06-12SC-N | 2320925-3                  | AS16-HT-06-12SC-N |
|           |            | 776437-4           | AS16-ST-06-12SD-N | 2320925-4                  | AS16-HT-06-12SD-N |
|           | REDUC. DIA | 776533-1           | AS16-ST-06-12SA-E | 2320937-1                  | AS16-HT-06-12SA-E |
|           |            | 776533-2           | AS16-ST-06-12SB-E | 2320937-2                  | AS16-HT-06-12SB-E |
|           |            | 776533-3           | AS16-ST-06-12SC-E | 2320937-3                  | AS16-HT-06-12SC-E |
|           |            | 776533-4           | AS16-ST-06-12SD-E | 2320937-4                  | AS16-HT-06-12SD-E |

## AMPSEAL 16 CONNECTOR SERIES

Terminals and Connectors

### IN-LINE CAPS



| Positions | Wire Seal  | Standard In-Line Cap (04) |                   | High Temperature In-Line Cap (04) |                   | Standard In-Line Cap (03)<br>(Reverse Bracket) |                   |
|-----------|------------|---------------------------|-------------------|-----------------------------------|-------------------|------------------------------------------------|-------------------|
|           |            | Part Number               | Alias             | Part Number                       | Alias             | Part Number                                    | Alias             |
| 2 Pos     | STAND DIA  | 776428-1                  | AS16-ST-04-02PA-N | 2320913-1                         | AS16-HT-04-02PA-N | 1717672-1                                      | AS16-ST-03-02PA-N |
|           |            | 776428-2                  | AS16-ST-04-02PB-N | 2320913-2                         | AS16-HT-04-02PB-N | 1717672-2                                      | AS16-ST-03-02PB-N |
|           |            | 776428-3                  | AS16-ST-04-02PC-N | 2320913-3                         | AS16-HT-04-02PC-N | 1717672-3                                      | AS16-ST-03-02PC-N |
|           |            | 776428-4                  | AS16-ST-04-02PD-N | 2320913-4                         | AS16-HT-04-02PD-N | 1717672-4                                      | AS16-ST-03-02PD-N |
|           | REDUC. DIA | 776534-1                  | AS16-ST-04-02PA-E | 2320926-1                         | AS16-HT-04-02PA-E | 1871412-1                                      | AS16-ST-03-02PA-E |
|           |            | 776534-2                  | AS16-ST-04-02PB-E | 2320926-2                         | AS16-HT-04-02PB-E | 1871412-2                                      | AS16-ST-03-02PB-E |
|           |            | 776534-3                  | AS16-ST-04-02PC-E | 2320926-3                         | AS16-HT-04-02PC-E | 1871412-3                                      | AS16-ST-03-02PC-E |
|           |            | 776534-4                  | AS16-ST-04-02PD-E | 2320926-4                         | AS16-HT-04-02PD-E | 1871412-4                                      | AS16-ST-03-02PD-E |
| 3 Pos     | STAND DIA  | 776430-1                  | AS16-ST-04-03PA-N | 2320914-1                         | AS16-HT-04-03PA-N | 1717673-1                                      | AS16-ST-03-03PA-N |
|           |            | 776430-2                  | AS16-ST-04-03PB-N | 2320914-2                         | AS16-HT-04-03PB-N | 1717673-2                                      | AS16-ST-03-03PB-N |
|           |            | 776430-3                  | AS16-ST-04-03PC-N | 2320914-3                         | AS16-HT-04-03PC-N | 1717673-3                                      | AS16-ST-03-03PC-N |
|           |            | 776430-4                  | AS16-ST-04-03PD-N | 2320914-4                         | AS16-HT-04-03PD-N | 1717673-4                                      | AS16-ST-03-03PD-N |
|           | REDUC. DIA | 776535-1                  | AS16-ST-04-03PA-E | 2320927-1                         | AS16-HT-04-03PA-E | 1871413-1                                      | AS16-ST-03-03PA-E |
|           |            | 776535-2                  | AS16-ST-04-03PB-E | 2320927-2                         | AS16-HT-04-03PB-E | 1871413-2                                      | AS16-ST-03-03PB-E |
|           |            | 776535-3                  | AS16-ST-04-03PC-E | 2320927-3                         | AS16-HT-04-03PC-E | 1871413-3                                      | AS16-ST-03-03PC-E |
|           |            | 776535-4                  | AS16-ST-04-03PD-E | 2320927-4                         | AS16-HT-04-03PD-E | 1871413-4                                      | AS16-ST-03-03PD-E |
| 4 Pos     | STAND DIA  | 776488-1                  | AS16-ST-04-04PA-N | 2320915-1                         | AS16-HT-04-04PA-N | 1717674-1                                      | AS16-ST-03-04PA-N |
|           |            | 776488-2                  | AS16-ST-04-04PB-N | 2320915-2                         | AS16-HT-04-04PB-N | 1717674-2                                      | AS16-ST-03-04PB-N |
|           |            | 776488-3                  | AS16-ST-04-04PC-N | 2320915-3                         | AS16-HT-04-04PC-N | 1717674-3                                      | AS16-ST-03-04PC-N |
|           |            | 776488-4                  | AS16-ST-04-04PD-N | 2320915-4                         | AS16-HT-04-04PD-N | 1717674-4                                      | AS16-ST-03-04PB-N |
|           | REDUC. DIA | 776536-1                  | AS16-ST-04-04PA-E | 2320928-1                         | AS16-HT-04-04PA-E | 1871414-1                                      | AS16-ST-03-04PA-E |
|           |            | 776536-2                  | AS16-ST-04-04PB-E | 2320928-2                         | AS16-HT-04-04PB-E | 1871414-2                                      | AS16-ST-03-04PB-E |
|           |            | 776536-3                  | AS16-ST-04-04PC-E | 2320928-3                         | AS16-HT-04-04PC-E | 1871414-3                                      | AS16-ST-03-04PC-E |
|           |            | 776536-4                  | AS16-ST-04-04PD-E | 2320928-4                         | AS16-HT-04-04PD-E | 1871414-4                                      | AS16-ST-03-04PD-E |
| 6 Pos     | STAND DIA  | 776434-1                  | AS16-ST-04-06PA-N | 2320916-1                         | AS16-HT-04-06PA-N | 1717675-1                                      | AS16-ST-03-06PA-N |
|           |            | 776434-2                  | AS16-ST-04-06PB-N | 2320916-2                         | AS16-HT-04-06PB-N | 1717675-2                                      | AS16-ST-03-06PB-N |
|           |            | 776434-3                  | AS16-ST-04-06PC-N | 2320916-3                         | AS16-HT-04-06PC-N | 1717675-3                                      | AS16-ST-03-06PC-N |
|           | REDUC. DIA | 776537-1                  | AS16-ST-04-06PA-E | 2320929-1                         | AS16-HT-04-06PA-E | 1717975-1                                      | AS16-ST-03-06PA-E |
|           |            | 776537-2                  | AS16-ST-04-06PB-E | 2320929-2                         | AS16-HT-04-06PB-E | 1717975-2                                      | AS16-ST-03-06PB-E |
|           |            | 776537-3                  | AS16-ST-04-06PC-E | 2320929-3                         | AS16-HT-04-06PC-E | 1717975-3                                      | AS16-ST-03-06PC-E |
| 8 Pos     | STAND DIA  | 776495-1                  | AS16-ST-04-08PA-N | 2320917-1                         | AS16-HT-04-08PA-N | 1717676-1                                      | AS16-ST-03-08PA-N |
|           |            | 776495-2                  | AS16-ST-04-08PB-N | 2320917-2                         | AS16-HT-04-08PB-N | 1717676-2                                      | AS16-ST-03-08PB-N |
|           |            | 776495-3                  | AS16-ST-04-08PC-N | 2320917-3                         | AS16-HT-04-08PC-N | 1717676-3                                      | AS16-ST-03-08PC-N |
|           |            | 776495-4                  | AS16-ST-04-08PD-N | 2320917-4                         | AS16-HT-04-08PD-N | 1717676-4                                      | AS16-ST-03-08PD-N |
|           | REDUC. DIA | 776538-1                  | AS16-ST-04-08PA-E | 2320930-1                         | AS16-HT-04-08PA-E | 1871415-1                                      | AS16-ST-03-08PA-E |
|           |            | 776538-2                  | AS16-ST-04-08PB-E | 2320930-2                         | AS16-HT-04-08PB-E | 1871415-2                                      | AS16-ST-03-08PB-E |
|           |            | 776538-3                  | AS16-ST-04-08PC-E | 2320930-3                         | AS16-HT-04-08PC-E | 1871415-3                                      | AS16-ST-03-08PC-E |
|           |            | 776538-4                  | AS16-ST-04-08PD-E | 2320930-4                         | AS16-HT-04-08PD-E | 1871415-4                                      | AS16-ST-03-08PD-E |
| 12 Pos    | STAND DIA  | 776438-1                  | AS16-ST-04-12PA-N | 2320918-1                         | AS16-HT-04-12PA-N | 1717677-1                                      | AS16-ST-03-12PA-N |
|           |            | 776438-2                  | AS16-ST-04-12PB-N | 2320918-2                         | AS16-HT-04-12PB-N | 1717677-2                                      | AS16-ST-03-12PB-N |
|           |            | 776438-3                  | AS16-ST-04-12PC-N | 2320918-3                         | AS16-HT-04-12PC-N | 1717677-3                                      | AS16-ST-03-12PC-N |
|           |            | 776438-4                  | AS16-ST-04-12PD-N | 2320918-4                         | AS16-HT-04-12PD-N | 1717677-4                                      | AS16-ST-03-12PD-N |
|           | REDUC. DIA | 776539-1                  | AS16-ST-04-12PA-E | 2320931-1                         | AS16-HT-04-12PA-E | 1717934-1                                      | AS16-ST-03-12PA-E |
|           |            | 776539-2                  | AS16-ST-04-12PB-E | 2320931-2                         | AS16-HT-04-12PB-E | 1717934-2                                      | AS16-ST-03-12PB-E |
|           |            | 776539-3                  | AS16-ST-04-12PC-E | 2320931-3                         | AS16-HT-04-12PC-E | 1717934-3                                      | AS16-ST-03-12PC-E |
|           |            | 776539-4                  | AS16-ST-04-12PD-E | 2320931-4                         | AS16-HT-04-12PD-E | 1717934-4                                      | AS16-ST-03-12PD-E |

COMING SOON



COMING SOON



| Positions | Wire Seal  | Sealed Flange Mount Cap (05) |                   | Universal Blind Cap (14) |               | Universal Blind Plug (16) |               |
|-----------|------------|------------------------------|-------------------|--------------------------|---------------|---------------------------|---------------|
|           |            | Part Number                  | Alias             | Part Number              | Alias         | Part Number               | Alias         |
| 2 Pos     | STAND DIA  | 1-2448800-1                  | AS16-ST-05-02PA-N | 2040594-1                | AS16-ST-14-02 | 2448820-1                 | AS16-ST-16-02 |
|           |            | 1-2448800-2                  | AS16-ST-05-02PB-N |                          |               |                           |               |
|           |            | 1-2448800-3                  | AS16-ST-05-02PC-N |                          |               |                           |               |
|           |            | 1-2448800-4                  | AS16-ST-05-02PD-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448800-1                  | AS16-ST-05-02PA-E |                          |               |                           |               |
|           |            | 2-2448800-2                  | AS16-ST-05-02PB-E |                          |               |                           |               |
|           |            | 2-2448800-3                  | AS16-ST-05-02PC-E |                          |               |                           |               |
|           |            | 2-2448800-4                  | AS16-ST-05-02PD-E |                          |               |                           |               |
| 3 Pos     | STAND DIA  | 1-2448801-1                  | AS16-ST-05-03PA-N | 2040594-2                | AS16-ST-14-03 | 2448820-2                 | AS16-ST-16-03 |
|           |            | 1-2448801-2                  | AS16-ST-05-03PB-N |                          |               |                           |               |
|           |            | 1-2448801-3                  | AS16-ST-05-03PC-N |                          |               |                           |               |
|           |            | 1-2448801-4                  | AS16-ST-05-03PD-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448801-1                  | AS16-ST-05-03PA-E |                          |               |                           |               |
|           |            | 2-2448801-2                  | AS16-ST-05-03PB-E |                          |               |                           |               |
|           |            | 2-2448801-3                  | AS16-ST-05-03PC-E |                          |               |                           |               |
|           |            | 2-2448801-4                  | AS16-ST-05-03PD-E |                          |               |                           |               |
| 4 Pos     | STAND DIA  | 1-2448802-1                  | AS16-ST-05-04PA-N | 2040594-3                | AS16-ST-14-04 | 2448820-3                 | AS16-ST-16-04 |
|           |            | 1-2448802-2                  | AS16-ST-05-04PB-N |                          |               |                           |               |
|           |            | 1-2448802-3                  | AS16-ST-05-04PC-N |                          |               |                           |               |
|           |            | 1-2448802-4                  | AS16-ST-05-04PD-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448802-1                  | AS16-ST-05-04PA-E |                          |               |                           |               |
|           |            | 2-2448802-2                  | AS16-ST-05-04PB-E |                          |               |                           |               |
|           |            | 2-2448802-3                  | AS16-ST-05-04PC-E |                          |               |                           |               |
|           |            | 2-2448802-4                  | AS16-ST-05-04PD-E |                          |               |                           |               |
| 6 Pos     | STAND DIA  | 1-2448803-1                  | AS16-ST-05-06PA-N | 2040594-4                | AS16-ST-14-06 | 2448820-4                 | AS16-ST-16-06 |
|           |            | 1-2448803-2                  | AS16-ST-05-06PB-N |                          |               |                           |               |
|           |            | 1-2448803-3                  | AS16-ST-05-06PC-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448803-1                  | AS16-ST-05-06PA-E |                          |               |                           |               |
|           |            | 2-2448803-2                  | AS16-ST-05-06PB-E |                          |               |                           |               |
|           |            | 2-2448803-3                  | AS16-ST-05-06PC-E |                          |               |                           |               |
| 8 Pos     | STAND DIA  | 1-2448804-1                  | AS16-ST-05-08PA-N | 2040594-5                | AS16-ST-14-08 | 2448820-5                 | AS16-ST-16-08 |
|           |            | 1-2448804-2                  | AS16-ST-05-08PB-N |                          |               |                           |               |
|           |            | 1-2448804-3                  | AS16-ST-05-08PC-N |                          |               |                           |               |
|           |            | 1-2448804-4                  | AS16-ST-05-08PD-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448804-1                  | AS16-ST-05-08PA-E |                          |               |                           |               |
|           |            | 2-2448804-2                  | AS16-ST-05-08PB-E |                          |               |                           |               |
|           |            | 2-2448804-3                  | AS16-ST-05-08PC-E |                          |               |                           |               |
|           |            | 2-2448804-4                  | AS16-ST-05-08PD-E |                          |               |                           |               |
| 12 Pos    | STAND DIA  | 1-2448805-1                  | AS16-ST-05-12PA-N | 2040594-6                | AS16-ST-14-12 | 2448820-6                 | AS16-ST-16-12 |
|           |            | 1-2448805-2                  | AS16-ST-05-12PB-N |                          |               |                           |               |
|           |            | 1-2448805-3                  | AS16-ST-05-12PC-N |                          |               |                           |               |
|           |            | 1-2448805-4                  | AS16-ST-05-12PD-N |                          |               |                           |               |
|           | REDUC. DIA | 2-2448805-1                  | AS16-ST-05-12PA-E |                          |               |                           |               |
|           |            | 2-2448805-2                  | AS16-ST-05-12PB-E |                          |               |                           |               |
|           |            | 2-2448805-3                  | AS16-ST-05-12PC-E |                          |               |                           |               |
|           |            | 2-2448805-4                  | AS16-ST-05-12PD-E |                          |               |                           |               |

# COMING SOON

## AMPSEAL 16 SEALED FLANGE MOUNT CAP

Family of sealed mounting caps for panel applications, used in harsh environments with high vibration.

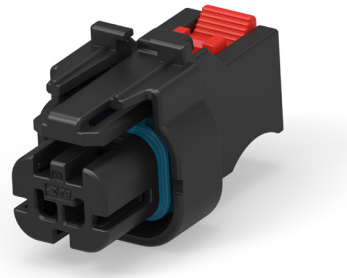
- Number of positions: 2, 3, 4, 6, 8 and 12
- A, B, C & D keys
- M5 inserts
- Standard temperature (-40°C to 125°C)
- IP67 & IP6K9K with rear protection
- Panel (connector and flange ingress protection) thickness up to 6mm



## AMPSEAL 16 UNIVERSAL BLIND PLUG

Family of universal keyed blind plugs that offers a sealed protection interface for unmated caps against harsh environments.

- Optional CPA and mounting features (lanyard) available soon
- Number of positions: 2, 3, 4, 6, 8 and 12
- Universal keyed plugs
- Standard temperature (-40°C to 125°C)
- IP67 & IP6K9K with rear protection
- M3 thread hole

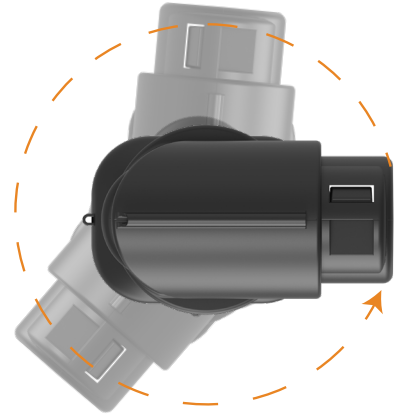


# ACCESSORIES

## AMPSEAL 16 BACKSHELLS

AMPSEAL 16 backshells provide strain relief, environmental protection and deliver enhanced aesthetics for connectors. They are constructed of robust thermoplastic and install easily by snapping onto the connectors.

- Temperature: -40°C to 125°C
- Flammability: UL94 V0
- Elbow 360° fully rotational, enables wires to be routed in various angles
- Smooth wire exit or corrugated tubing style
- Smooth wire provide strain relief
- Corrugated tubing allow a wide range of conduit sizes to nest within the rear of the backshell
- Smart Part Numbering (Alias) that easily identifies the product features (plug/cap, positions, conduit)

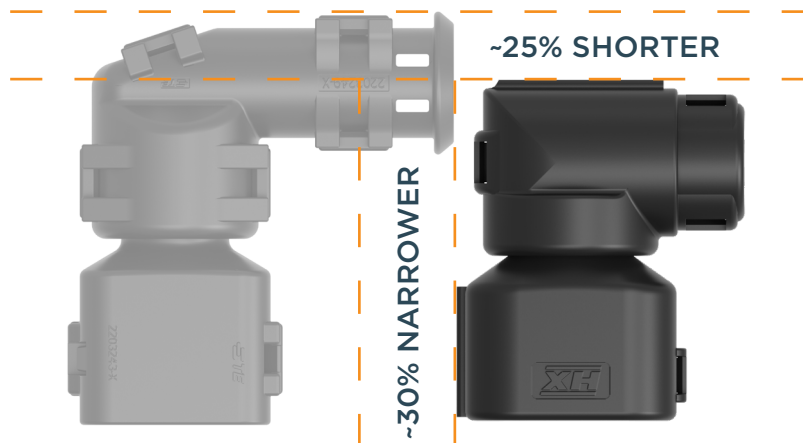


**360° FULLY ROTATIONAL ELBOW**

The following TE Connectivity document numbers may be helpful:

- [108-151043](#) (Product Specification)
- [408-151043](#) (Instruction Sheet)

Low profile backshells are ~25% shorter and ~30% narrower than the standard right angle backshell.

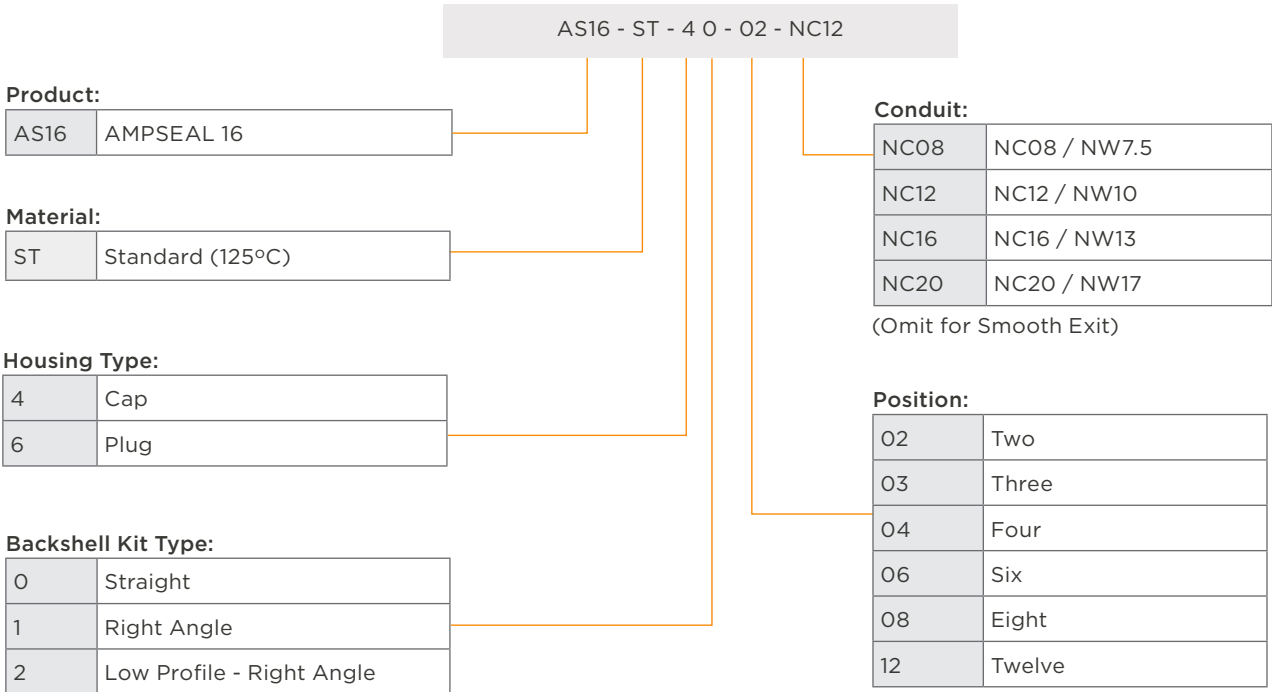


# MOUNTING CLIPS



| Part Number | Description                                   |
|-------------|-----------------------------------------------|
| 1924487-1   | Mounting clip without anti-rotational feature |
| 1924487-2   | Mounting clip with anti-rotational feature    |

# ALIAS PART NUMBERING SYSTEM



# ORDERING INFORMATION

## BACKSHELLS FOR PLUGS



|        |              | Straight Backshell Kit<br>for Plug (60) |                       | Right-Angle Backshell Kit<br>for Plug (61) |                       | Low Profile,<br>Right-Angle Backshell Kit<br>for Plug (62) |                       |
|--------|--------------|-----------------------------------------|-----------------------|--------------------------------------------|-----------------------|------------------------------------------------------------|-----------------------|
| Pos    | Exit Type    | Part<br>Number                          | Alias                 | Part<br>Number                             | Alias                 | Part<br>Number                                             | Alias                 |
| 2 Pos  | Smooth Exit  | 2292797-1                               | AS16-ST-60-02-ST      | 2302488-1                                  | AS16-ST-61-02-RA      | --                                                         | --                    |
|        | NC08 / NW7.5 | 2292797-3                               | AS16-ST-60-02-ST-NC08 | 2302488-3                                  | AS16-ST-61-02-RA-NC08 | 2035366-1                                                  | AS16-ST-62-02-90-NC08 |
|        | NC12 / NW10  | 2292797-2                               | AS16-ST-60-02-ST-NC12 | 2302488-2                                  | AS16-ST-61-02-RA-NC12 | 2035366-3                                                  | AS16-ST-62-02-90-NC12 |
|        | NC16 / NW13  | --                                      | --                    | --                                         | --                    | 2035366-5                                                  | AS16-ST-62-02-90-NC16 |
| 3 Pos  | Smooth Exit  | 2292798-1                               | AS16-ST-60-03-ST      | 2302491-1                                  | AS16-ST-61-03-RA      | --                                                         | --                    |
|        | NC08 / NW7.5 | 2292798-3                               | AS16-ST-60-03-ST-NC08 | 2302491-3                                  | AS16-ST-61-03-RA-NC08 | 2035366-2                                                  | AS16-ST-62-03-90-NC08 |
|        | NC12 / NW10  | 2292798-2                               | AS16-ST-60-03-ST-NC12 | 2302491-2                                  | AS16-ST-61-03-RA-NC12 | 2035366-4                                                  | AS16-ST-62-03-90-NC12 |
|        | NC16 / NW13  | --                                      | --                    | --                                         | --                    | 2035366-6                                                  | AS16-ST-62-03-90-NC16 |
| 4 Pos  | Smooth Exit  | 2292799-1                               | AS16-ST-60-04-ST      | 2302492-1                                  | AS16-ST-61-04-RA      | --                                                         | --                    |
|        | NC08 / NW7.5 | --                                      | --                    | --                                         | --                    | 2035366-7                                                  | AS16-ST-62-04-90-NC08 |
|        | NC12 / NW10  | 2292799-3                               | AS16-ST-60-04-ST-NC12 | 2302492-3                                  | AS16-ST-61-04-RA-NC12 | 2035366-9                                                  | AS16-ST-62-04-90-NC12 |
|        | NC16 / NW13  | 2292799-2                               | AS16-ST-60-04-ST-NC16 | 2302492-2                                  | AS16-ST-61-04-RA-NC16 | 1-2035366-1                                                | AS16-ST-62-04-90-NC16 |
| 6 Pos  | Smooth Exit  | 2292800-1                               | AS16-ST-60-06-ST      | 2302493-1                                  | AS16-ST-61-06-RA      | --                                                         | --                    |
|        | NC08 / NW7.5 | --                                      | --                    | --                                         | --                    | 1-2035366-2                                                | AS16-ST-62-06-90-NC08 |
|        | NC12 / NW10  | 2292800-3                               | AS16-ST-60-06-ST-NC12 | 2302493-3                                  | AS16-ST-61-06-RA-NC12 | 1-2035366-0                                                | AS16-ST-62-06-90-NC12 |
|        | NC16 / NW13  | 2292800-2                               | AS16-ST-60-06-ST-NC16 | 2302493-2                                  | AS16-ST-61-06-RA-NC16 | 2035366-8                                                  | AS16-ST-62-06-90-NC16 |
| 8 Pos  | Smooth Exit  | 2292801-1                               | AS16-ST-60-08-ST      | 2302494-1                                  | AS16-ST-61-08-RA      | --                                                         | --                    |
|        | NC16 / NW13  | 2292801-3                               | AS16-ST-60-08-ST-NC16 | 2302494-3                                  | AS16-ST-61-08-RA-NC16 | --                                                         | --                    |
|        | NC20 / NW17  | 2292801-2                               | AS16-ST-60-08-ST-NC20 | 2302494-2                                  | AS16-ST-61-08-RA-NC20 | --                                                         | --                    |
| 12 Pos | Smooth Exit  | 2292802-1                               | AS16-ST-60-12-ST      | 2302495-1                                  | AS16-ST-61-12-RA      | --                                                         | --                    |
|        | NC16 / NW13  | 2292802-3                               | AS16-ST-60-12-ST-NC16 | 2302495-3                                  | AS16-ST-61-12-RA-NC16 | --                                                         | --                    |
|        | NC20 / NW17  | 2292802-2                               | AS16-ST-60-12-ST-NC20 | 2302495-2                                  | AS16-ST-61-12-RA-NC20 | --                                                         | --                    |

## BACKSHELLS FOR CAPS



|        |              | Straight Backshell Kit<br>for Cap (40) |                       | Right-Angle Backshell Kit<br>for Cap (41) |                       | Low Profile,<br>Right-Angle Backshell Kit<br>for Cap (42) |                       |
|--------|--------------|----------------------------------------|-----------------------|-------------------------------------------|-----------------------|-----------------------------------------------------------|-----------------------|
| Pos    | Exit Type    | Part<br>Number                         | Alias                 | Part<br>Number                            | Alias                 | Part<br>Number                                            | Alias                 |
| 2 Pos  | Smooth Exit  | 2292860-1                              | AS16-ST-40-02-ST      | 2302481-1                                 | AS16-ST-41-02-RA      | --                                                        | --                    |
|        | NC08 / NW7.5 | 2292860-3                              | AS16-ST-40-02-ST-NC08 | 2302481-3                                 | AS16-ST-41-02-RA-NC08 | 2098436-1                                                 | AS16-ST-42-02-90-NC08 |
|        | NC12 / NW10  | 2292860-2                              | AS16-ST-40-02-ST-NC12 | 2302481-2                                 | AS16-ST-41-02-RA-NC12 | 2098436-3                                                 | AS16-ST-42-02-90-NC12 |
|        | NC16 / NW13  | --                                     | --                    | --                                        | --                    | 2098436-5                                                 | AS16-ST-42-02-90-NC16 |
| 3 Pos  | Smooth Exit  | 2292861-1                              | AS16-ST-40-03-ST      | 2302482-1                                 | AS16-ST-41-03-RA      | --                                                        | --                    |
|        | NC08 / NW7.5 | 2292861-3                              | AS16-ST-40-03-ST-NC08 | 2302482-3                                 | AS16-ST-41-03-RA-NC08 | 2098436-2                                                 | AS16-ST-42-03-90-NC08 |
|        | NC12 / NW10  | 2292861-2                              | AS16-ST-40-03-ST-NC12 | 2302482-2                                 | AS16-ST-41-03-RA-NC12 | 2098436-4                                                 | AS16-ST-42-03-90-NC12 |
|        | NC16 / NW13  | --                                     | --                    | --                                        | --                    | 2098436-6                                                 | AS16-ST-42-03-90-NC16 |
| 4 Pos  | Smooth Exit  | 2292862-1                              | AS16-ST-40-04-ST      | 2302483-1                                 | AS16-ST-41-04-RA      | --                                                        | --                    |
|        | NC08 / NW7.5 | --                                     | --                    | --                                        | --                    | 2098436-7                                                 | AS16-ST-42-04-90-NC08 |
|        | NC12 / NW10  | 2292862-3                              | AS16-ST-40-04-ST-NC12 | 2302483-3                                 | AS16-ST-41-04-RA-NC12 | 2098436-9                                                 | AS16-ST-42-04-90-NC12 |
|        | NC16 / NW13  | 2292862-2                              | AS16-ST-40-04-ST-NC16 | 2302483-2                                 | AS16-ST-41-04-RA-NC16 | 1-2098436-1                                               | AS16-ST-42-04-90-NC16 |
| 6 Pos  | Smooth Exit  | 2292863-1                              | AS16-ST-40-06-ST      | 2302484-1                                 | AS16-ST-41-06-RA      | --                                                        | --                    |
|        | NC08 / NW7.5 | --                                     | --                    | --                                        | --                    | 2098436-8                                                 | AS16-ST-42-06-90-NC08 |
|        | NC12 / NW10  | 2292863-3                              | AS16-ST-40-06-ST-NC12 | 2302484-3                                 | AS16-ST-41-06-RA-NC12 | 1-2098436-0                                               | AS16-ST-42-06-90-NC12 |
|        | NC16 / NW13  | 2292863-2                              | AS16-ST-40-06-ST-NC16 | 2302484-2                                 | AS16-ST-41-06-RA-NC16 | 1-2098436-2                                               | AS16-ST-42-06-90-NC16 |
| 8 Pos  | Smooth Exit  | 2292864-1                              | AS16-ST-40-08-ST      | 2302485-1                                 | AS16-ST-41-08-RA      | --                                                        | --                    |
|        | NC16 / NW13  | 2292864-3                              | AS16-ST-40-08-ST-NC16 | 2302485-3                                 | AS16-ST-41-08-RA-NC16 | --                                                        | --                    |
|        | NC20 / NW17  | 2292864-2                              | AS16-ST-40-08-ST-NC20 | 2302485-2                                 | AS16-ST-41-08-RA-NC20 | --                                                        | --                    |
| 12 Pos | Smooth Exit  | 2292865-1                              | AS16-ST-40-12-ST      | 2302486-1                                 | AS16-ST-41-12-RA      | --                                                        | --                    |
|        | NC16 / NW13  | 2292865-3                              | AS16-ST-40-12-ST-NC16 | 2302486-3                                 | AS16-ST-41-12-RA-NC16 | --                                                        | --                    |
|        | NC20 / NW17  | 2292865-2                              | AS16-ST-40-12-ST-NC20 | 2302486-2                                 | AS16-ST-41-12-RA-NC20 | --                                                        | --                    |

# AMPSEAL 16 INTEGRATED RESISTORS

- AMPSEAL 16 integrated resistors feature IP67 moisture resistance and 50-cycles mating durability, making them ideal for heavy-duty applications.
- Environmentally sealed for harsh conditions.
- The series eliminates issues with soldering components in the wiring harness.
- Housed in thermoplastic material.
- AMPSEAL 16 integrated resistors are factory-assembled for simple plug-and-play installation.
- Operate at a -40°C to +125°C temperature range, resistors offer from 120 to 20K Ohm resistance.



## Resistors

### Caps

| Part Number | Alias                 | Resistance |
|-------------|-----------------------|------------|
| 1939556-4   | AS16-ST-04-02PA-R0120 | 120 Ohm    |
| 1939556-5   | AS16-ST-04-02PA-R0150 | 150 Ohm    |
| 1939604-1   | AS16-ST-04-02PA-R1000 | 1k Ohm     |
| 1939556-8   | AS16-ST-04-02PA-R2200 | 2.2k Ohm   |
| 1939556-9   | AS16-ST-04-02PA-R020K | 20k Ohm    |

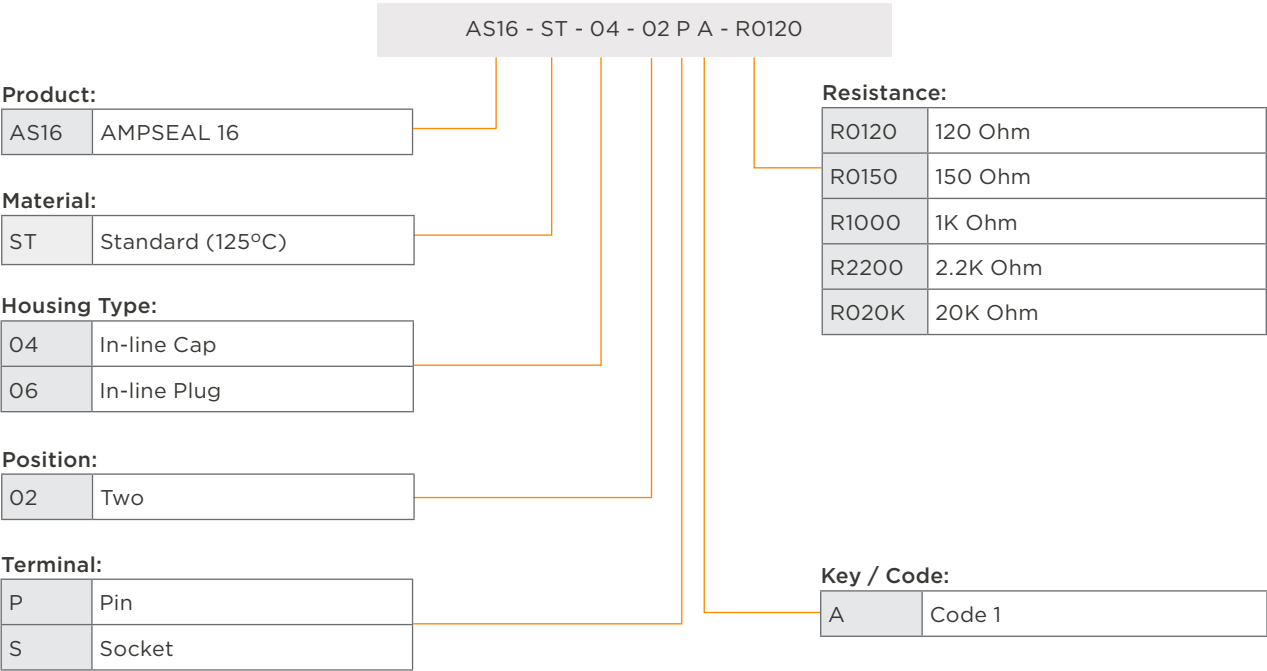


### Plug

| Part Number | Alias                 | Resistance |
|-------------|-----------------------|------------|
| 2040278-2   | AS16-ST-06-02SA-R0120 | 120 Ohm    |



# ALIAS PART NUMBERING SYSTEM



# AMPSEAL 16 CONTACTS

AMPSEAL 16 use the HDSF size 16 Contact System. The contacts are round, Stamped & Formed contacts with dual beam sockets. AMPSEAL 16 can also use Solid Contact System.

## HDSF 16 Contact Performance Specifications

### Durability

SAE J2030 6.11. 50 cycles. See note.

### Current Rating

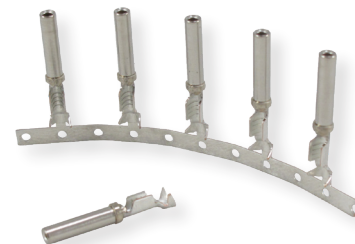
Up to 13 amps, consult TE product document 108-2184.

### Contact Retention

IEC 512-8, Test 51a. Apply axial load of 111 N to contacts at a maximum rate of 10 N per second (or 50mm per minute) and hold for 10 seconds. Contacts shall not dislodge.

The following TE Connectivity document numbers may be helpful:

- [108-2422](#) (Product Specification)
- [114-13045](#) (Application Specification)



## Crimp Tensile Strength

| USCAR 21 @ 50mm/min |                  |
|---------------------|------------------|
| Wire Gauge          | Tensile Strength |
| 18 AWG              | 90 N Min         |
| 16 AWG              | 120 N Min        |
| 14 AWG              | 180 N Min        |

## Voltage Drop

| Wire Size | Test Current Amps | Voltage Drop (millivolts max) |
|-----------|-------------------|-------------------------------|
| 18        | 8                 | 100                           |
| 16        | 10                | 100                           |
| 14        | 13                | 100                           |

Note: Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence in Figure 3 of TE product document 108-2184. USCAR is a trademark.

## Sealing Plugs

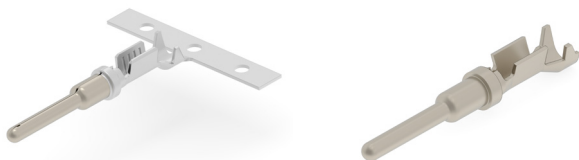
Open cavities provide pathways for contaminants to enter the connectors. To maintain seal integrity, any unused cavity must be filled with the appropriate size sealing plug.



| Color  | Part Number | Contact Size | Wire Gauge Range | Description                                                        |
|--------|-------------|--------------|------------------|--------------------------------------------------------------------|
| Yellow | 776363-1    | Size 16      | 16-20 AWG        | PBT, used with AMPSEAL 16 (standard and reduced diameter cavities) |

# ORDERING INFORMATION

## HDSF 16 STAMPED & FORMED CONTACTS FOR AMPSEAL 16 CONNECTORS



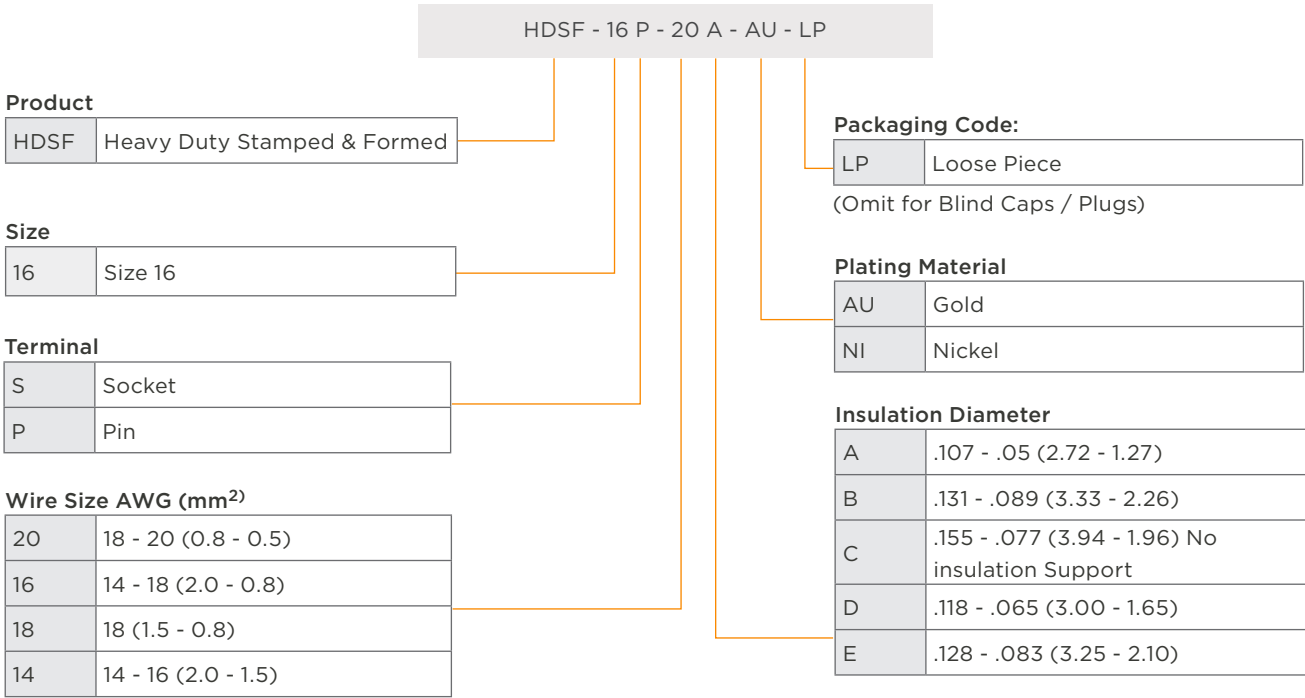
| Pin Part Numbers |                 |                |                    |                                     |                             |                               |        |
|------------------|-----------------|----------------|--------------------|-------------------------------------|-----------------------------|-------------------------------|--------|
| Strip Form       |                 | Loose Piece    |                    | Wire Size<br>AWG (mm <sup>2</sup> ) | Insulation<br>Diameter (mm) | Wire<br>Insulation<br>Support | Finish |
| Part<br>Number   | ALIAS           | Part<br>Number | ALIAS              |                                     |                             |                               |        |
| 1924463-1        | HDSF-16P-20A-AU | 1924579-1      | HDSF-16P-20A-AU-LP | 18 - 20<br>(0.8 - 0.5)              | .107-.05<br>(2.72-1.27)     | Yes                           | AU     |
| 1924463-3        | HDSF-16P-20A-NI | 1924579-3      | HDSF-16P-20A-NI-LP | 18 - 20<br>(0.8 - 0.5)              | .107-.05<br>(2.72-1.27)     | Yes                           | NI     |
| 776349-1         | HDSF-16P-20B-AU | -              | -                  | 18 - 20<br>(0.8 - 0.5)              | .131-.089<br>(3.33-2.26)    | Yes                           | AU     |
| 776349-3         | HDSF-16P-20B-NI | -              | -                  | 18 - 20<br>(0.8 - 0.5)              | .131-.089<br>(3.33-2.26)    | Yes                           | NI     |
| 638078-1         | HDSF-16P-16B-AU | 776300-1       | HDSF-16P-16B-AU-LP | 14 - 18<br>(2.0 - 0.8)              | .131-.089<br>(3.33-2.26)    | Yes                           | AU     |
| 638078-3         | HDSF-16P-16B-NI | 776300-2       | HDSF-16P-16B-NI-LP | 14 - 18<br>(2.0 - 0.8)              | .131-.089<br>(3.33-2.26)    | Yes                           | NI     |
| 638112-1         | HDSF-16P-16C-AU | 776298-1       | HDSF-16P-16C-AU-LP | 14 - 18<br>(2.0 - 0.8)              | .155-.077<br>(3.94-1.96)    | No                            | AU     |
| 638112-3         | HDSF-16P-16C-NI | 776298-2       | HDSF-16P-16C-NI-LP | 14 - 18<br>(2.0 - 0.8)              | .155-.077<br>(3.94-1.96)    | No                            | NI     |
| 2098250-1        | HDSF-16P-18D-AU | -              | -                  | 18<br>(1.5 - 0.8)                   | .118-.065<br>(3.00-1.65)    | Yes                           | AU     |
| 2098250-3        | HDSF-16P-18D-NI | -              | -                  | 18<br>(1.5 - 0.8)                   | .118-.065<br>(3.00-1.65)    | Yes                           | NI     |
| 2098252-1        | HDSF-16P-14E-AU | -              | -                  | 14 - 16<br>(2.0 - 1.5)              | .128-.083<br>(3.25-2.10)    | Yes                           | AU     |
| 2098252-3        | HDSF-16P-14E-NI | -              | -                  | 14 - 16<br>(2.0 - 1.5)              | .128-.083<br>(3.25-2.10)    | Yes                           | NI     |

## HDSF 16 STAMPED &amp; FORMED CONTACTS FOR AMPSEAL 16 CONNECTORS (CON'T)



| Socket Part Numbers |                 |                |                    |                                     |                             |                               |        |
|---------------------|-----------------|----------------|--------------------|-------------------------------------|-----------------------------|-------------------------------|--------|
| Strip Form          |                 | Loose Piece    |                    | Wire Size<br>AWG (mm <sup>2</sup> ) | Insulation<br>Diameter (mm) | Wire<br>Insulation<br>Support | Finish |
| Part<br>Number      | ALIAS           | Part<br>Number | ALIAS              |                                     |                             |                               |        |
| 1924464-1           | HDSF-16S-20A-AU | 1924580-1      | HDSF-16P-20A-AU-LP | 18 - 20<br>(0.8 - 0.5)              | .107-.05<br>(2.72-1.27)     | Yes                           | AU     |
| 1924464-2           | HDSF-16S-20A-NI | 1924580-2      | HDSF-16P-20A-NI-LP | 18 - 20<br>(0.8 - 0.5)              | .107-.05<br>(2.72-1.27)     | Yes                           | NI     |
| 776493-1            | HDSF-16S-20B-AU | -              | -                  | 18 - 20<br>(0.8 - 0.5)              | .131-.089<br>(3.33-2.26)    | Yes                           | AU     |
| 776493-2            | HDSF-16S-20B-NI | -              | -                  | 18 - 20<br>(0.8 - 0.5)              | .131-.089<br>(3.33-2.26)    | Yes                           | NI     |
| 776492-1            | HDSF-16S-16B-AU | 776299-1       | HDSF-16P-16B-AU-LP | 14 - 18<br>(2.0 - 0.8)              | .131-.089<br>(3.33-2.26)    | Yes                           | AU     |
| 776492-2            | HDSF-16S-16B-NI | 776299-2       | HDSF-16P-16B-NI-LP | 14 - 18<br>(2.0 - 0.8)              | .131-.089<br>(3.33-2.26)    | Yes                           | NI     |
| 776491-1            | HDSF-16S-16C-AU | 776297-1       | HDSF-16P-16C-AU-LP | 14 - 18<br>(2.0 - 0.8)              | .155-.077<br>(3.94-1.96)    | No                            | AU     |
| 776491-2            | HDSF-16S-16C-NI | 776297-2       | HDSF-16P-16C-NI-LP | 14 - 18<br>(2.0 - 0.8)              | .155-.077<br>(3.94-1.96)    | No                            | NI     |
| 2098251-1           | HDSF-16S-18D-AU | -              | -                  | 18<br>(1.5 - 0.8)                   | .118-.065<br>(3.00-1.65)    | Yes                           | AU     |
| 2098251-2           | HDSF-16S-18D-NI | -              | -                  | 18<br>(1.5 - 0.8)                   | .118-.065<br>(3.00-1.65)    | Yes                           | NI     |
| 2098253-1           | HDSF-16S-14E-AU | -              | -                  | 14 - 16<br>(2.0 - 1.5)              | .128-.083<br>(3.25-2.10)    | Yes                           | AU     |
| 2098253-2           | HDSF-16S-14E-NI | -              | -                  | 14 - 16<br>(2.0 - 1.5)              | .128-.083<br>(3.25-2.10)    | Yes                           | NI     |

# ALIAS PART NUMBERING SYSTEM



# AMPSEAL 16 TOOLING

## AUTOMATED TOOLING FOR HDSF 16 CONTACTS



OCEAN end  
feed applicator



OCEAN side  
feed applicator

| Pin Strip Form                               | Socket Strip Form                         | Applicator P/N | Description                                                                             |
|----------------------------------------------|-------------------------------------------|----------------|-----------------------------------------------------------------------------------------|
| 1924463-1<br>1924463-3                       | 1924464-1<br>1924464-2                    | 2151962-1      | OCEAN end feed applicator with mechanical feed                                          |
|                                              |                                           | 2151962-2      | OCEAN end feed applicator with pneumatic feed                                           |
| 638078-1<br>638078-3<br>776349-1<br>776349-3 | 776492-1<br>776492-2<br>776493-1 776493-2 | 2151731-1      | OCEAN end feed applicator with mechanical feed                                          |
|                                              |                                           | 2151731-2      | OCEAN end feed applicator with pneumatic feed                                           |
| 638112-1<br>638112-3                         | 776491-1<br>776491-2                      | 2151239-1      | OCEAN end feed applicator with mechanical feed                                          |
|                                              |                                           | 2151239-2      | OCEAN end feed applicator with pneumatic feed                                           |
| 2098250-1<br>2098250-3                       | 2098251-1<br>2098251-2                    | 2151617-1      | OCEAN end feed applicator with mechanical feed                                          |
|                                              |                                           | 2151617-2      | OCEAN end feed applicator with pneumatic feed                                           |
| 2098252-1<br>2098252-3                       | 2098253-1<br>2098253-2                    | 1530207-1      | OCEAN side feed applicator that crops the terminal strip, for use in lead-maker         |
|                                              |                                           | 1530207-2      | OCEAN side feed applicator that crops the terminal strip, for use in bench press        |
|                                              |                                           | 1530207-6      | OCEAN side feed applicator that does not crop the terminal strip, for use in lead-maker |

Note: Applicators with additional feed styles are available, contact your representative

# HAND TOOLS FOR HDSF 16 CONTACTS



| Pin Strip Form                               | Pin Loose Piece        | Socket Strip Form                         | Socket Loose Piece     | Tool P/N  | Description                                    |
|----------------------------------------------|------------------------|-------------------------------------------|------------------------|-----------|------------------------------------------------|
| 1924463-1<br>1924463-3                       | 1924579-1<br>1924579-3 | 1924464-1<br>1924464-2                    | 1924580-1<br>1924580-2 | 2119118-1 | PRO-CRIMPER III hand tool and die set assembly |
| 638078-1<br>638078-3<br>776349-1<br>776349-3 | 776300-1<br>776300-2   | 776492-1<br>776492-2<br>776493-1 776493-2 | 776299-1<br>776299-2   | 91337-1   | PRO-CRIMPER III hand tool and die set assembly |
| 638112-1<br>638112-3                         | 776298-1<br>776298-2   | 776491-1<br>776491-2                      | 776297-1<br>776297-2   | 2217753-1 | CERTI-CRIMP II straight action hand tool       |

Note: Base PRO-CRIMPER III tool part number with -2 suffix is the part number for the die set, which can be ordered separately

## Extraction Tool for HDSF 16 Contacts

| Part Number | Description                                  |
|-------------|----------------------------------------------|
| 776106-1    | Contact extraction tool for HDSF 16 contacts |



# AMPSEAL 16 SOLID CONTACTS

The solid contacts are designed for use in heavy-duty applications and are available with either a nickel or gold plating finish.

## Solid Contacts



| Pin            | Socket         | Wire Size AWG (mm <sup>2</sup> ) | Finish |
|----------------|----------------|----------------------------------|--------|
| 2300908-1      | 0462-006-1631  | 22 - 24<br>(0.35 - 0.22)         | Gold   |
| 0460-202-1631  | 0462-201-1631  | 16 - 20<br>(1.5 - 0.50)          | Gold   |
| 0460-202-16141 | 0462-201-16141 | 16 - 20<br>(1.5 - 0.50)          | Nickel |
| 0460-215-1631  | 0462-209-1631  | 14<br>(2.0)                      | Gold   |
| 0460-215-16141 | 0462-209-16141 | 14<br>(2.0)                      | Nickel |

## Solid Contacts Specifications - Product Documentation

- [114-151004](#) (Application Specification)
- [108-151004](#) (Product Specification)

# SOLID CONTACTS TOOLING

## Hand Tools for Solid Contacts



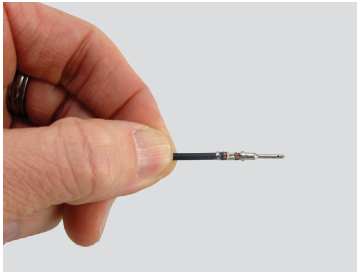
Power Crimp Press  
HDP-400



Hand Crimping Tool  
HDT-48-00

# AMPSEAL 16 HOW TO INSTRUCTIONS

## Contact Insertion

**Step 1:**

Grasp crimped contact approximately one inch behind the contact barrel.

**Step 2:**

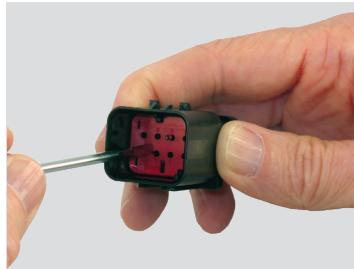
Verify the TPA is in the pre-staged position, unlocked.

**Step 3:**

Align the contact with the desired circuit cavity at the rear of the housing assembly.

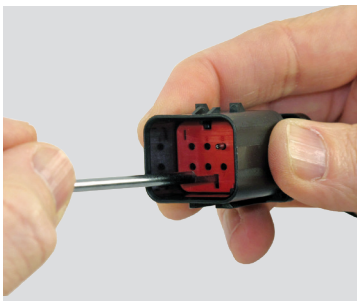
**Step 4:**

Push the contact straight into the connector cavity until the contact retention finger returns to its normal position behind the retention shoulder on the contact. A slight tug will verify the contact is locked in place.

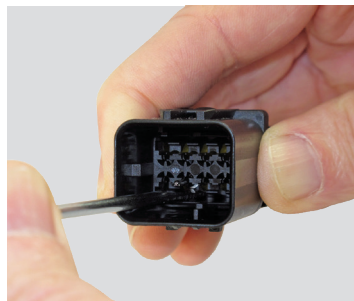
**Step 5:**

When all of the required contacts have been inserted, push the TPA into the fully locked position.

## Contact Removal

**Step 1:**

Insert the removal tool into the TPA extraction slot and pull until the TPA is completely removed from the housing.

**Step 2:**

Insert the tool into the contact cavity and deflect the contact retention finger.

**Step 3:**

Gently pull the wire until the contact is free from the housing.

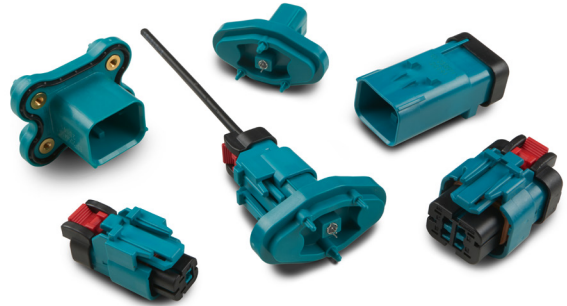
# AMPSEAL 16 CONNECTORS WITH MATE-AX COAXIAL TERMINALS

## Data Connectivity Solutions

TE Connectivity's (TE) AMPSEAL 16 connectors with MATE-AX miniaturized FAKRA coaxial system delivers analog signal up to 6 GHz and digital data transmission to reliably connect antennas, cameras, sensors, and displays within heavy-duty commercial and industrial vehicles. Their easy-to-use, flexible design utilizes widely available automotive-standard RTK031 and RG174 coaxial cable types to enable easy integration into existing coaxial architecture. They support a wide range of communication protocols, including FPD-LINK-II/III/IV, GMSL 2/3, Apix2/3, GNSS, GPS, 4G, and LTE.

AMPSEAL 16 connectors with coaxial terminals offer a higher packaging density than similar products with a robust sealed housing design. The integration of a family seal into the housing design not only eases assembly but can also reduce manufacturing and service costs by eliminating expensive heat shrink tubing and time-consuming application.

These products meet the vibration, mechanical shock and temperature requirements of rugged vehicles by utilizing the proven design of our AMPSEAL 16 housings along with the superior signal performance of our MATE-AX miniature coaxial terminals.



## Features & Benefits

### Easy, Flexible Design

- Utilizes standard 50 ohm RTK031, RG174 coaxial cable.
- Simple latch and lock design for ease of connector mating.
- 4 color-coded keying options available
- Supports a wide range of communication protocols with 15 meter link and 2 in-line connections.

### Reduce Manufacturing and Service Costs

- Integrated family seal helps eliminate the use of expensive heat shrink tubing and the associated time-consuming application.

### Rugged and Reliable

- Housing design features locking CPA latch and a terminal position assurance (TPA) to help confirm contact positioning and avoid misalignment.
- Vibration and mechanical shock resistance.
- IP67/IP69K (with backshell) dust and water protection.

## Applications



Radar/  
LiDAR



Camera Systems



Telemetry  
Units



Infotainment



Antennas



V2X



ADAS

## Key Industries



Agriculture



Construction



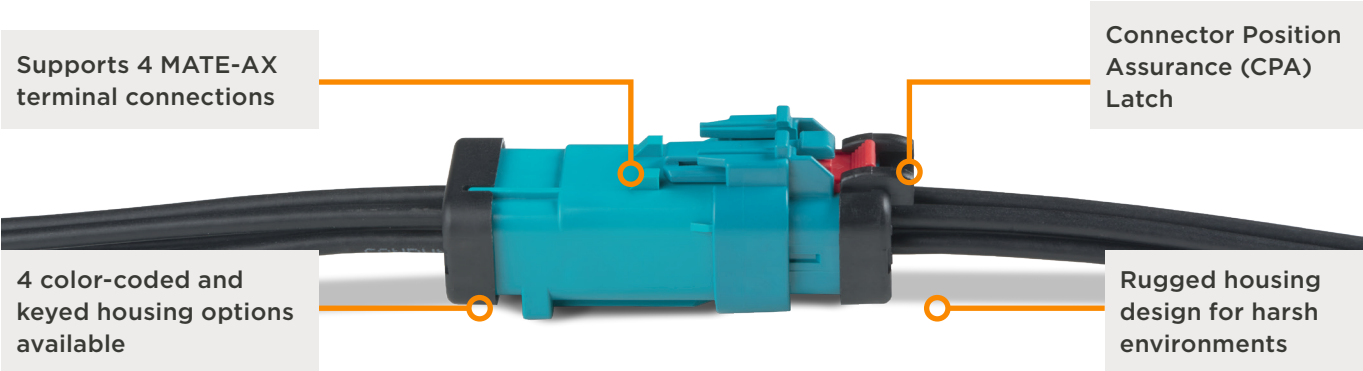
Truck



Bus

Product Features

|                            |                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Communication Protocols    | Gigabit Multimedia Serial Link (GMSL) 2/3 15 meters<br>Flat Panel Display Link (FPD-LINK) II/III/IV 15 meters                         |
| Cable Type                 | RTK031, RG174 type 50 ohm coaxial cable                                                                                               |
| Application                | 15m channel link with up to 2 in-lines                                                                                                |
| Sealing Performance        | IP67 and IP69K (with backshell)                                                                                                       |
| Operating Temperature      | -40°C to +105°C                                                                                                                       |
| Connections                | Cable-to-cable, bulkhead mount, cable-to-board/device                                                                                 |
| Terminal System            | MATE-AX coaxial terminals                                                                                                             |
| Standards & Specifications | Application Specification: 114-94667<br>Product Specification (connectors): 108-94799<br>Product Specification (terminals): 108-94515 |



## AMPSEAL 16 CONNECTOR SERIES

Terminals and Connectors

### Connectors

| Type     |        | Housings                                                                          |           |                                                                                   |           | Bulkhead (Male)                                                                    |           | 180° PCB Mount Headers                                                              |           |
|----------|--------|-----------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------|-----------|
| Position | Keying | Plug Assembly (Female)                                                            |           | In-Line Assembly (Male)                                                           |           |                                                                                    |           |                                                                                     |           |
| 1        | A      |  | 2355843-1 |  | 2374559-1 |  | 2449917-1 |  | 2355844-1 |
| 4        |        |  | 2338212-1 |  | 2338211-1 |  | 2339729-1 |  | 2356408-1 |

| Type     |        | 180° PCB Mount Headers<br>With Dispensed Seal                                     |           | 90° PCB Mount Headers<br>With Dispensed Seal                                        |           |
|----------|--------|-----------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------|-----------|
| Position | Keying |                                                                                   |           |                                                                                     |           |
| 4        | A      |  | 2439715-5 |  | 2394674-5 |
|          | B      | --                                                                                | --        |  | 2394674-6 |

### Accessories & Terminals

| Description                                                                         |                           |                             | Part Number | Use With                        |
|-------------------------------------------------------------------------------------|---------------------------|-----------------------------|-------------|---------------------------------|
| 1p PCB Terminal 180° Assembly                                                       |                           |                             | 2356413-2   | 2379753-1 (PCB/Interface Cover) |
| AMPSEAL 16 Cavity Plug (Yellow)                                                     |                           |                             | 776363-1    | 2338212-X, 2338211-X, 2339729-X |
| 1P Sealing Plug                                                                     |                           |                             | 2461552-1   | 2374559-X<br>2449917-X          |
|  | Backshells                | Smooth exit, no window      | 2452956-1   | 2355843-X                       |
|                                                                                     |                           | NW7.5 exit, no window       | 2452956-2   | 2355843-X                       |
|                                                                                     |                           | Smooth exit, window         | 2452956-3   | 2355843-X                       |
|                                                                                     |                           | NW7.5 exit, window          | 2452956-4   | 2355843-X                       |
|  | Backshell Kits            | 4p Plug (Female)            | 2292799-X   | 2338212-X                       |
|                                                                                     |                           | 4p In-line (Male)           | 2292862-X   | 2338211-X, 2339729-X            |
|  | Mounting Clips (Straight) | 20.5 mm                     | 1924487-1   | 2338211-1, 2374559-1            |
|                                                                                     |                           | 20.5 mm, anti-rotation post | 1924487-2   |                                 |
|                                                                                     |                           | 11 mm                       | 1924487-3   |                                 |

Note: There are three options for each backshell Male and Female -1,-2,-3. -1s are smooth cable exit, -2 and -3 are for corrugated tubing.

MATE-AX Cable Assemblies



| Cable Type                        | Configuration    | Cable Length (m) | Part Number |
|-----------------------------------|------------------|------------------|-------------|
| RTK031<br>(Typically DACAR 302-3) | Female-to-Female | 0.5              | 2362355-1   |
|                                   |                  | 1.0              | 2362355-2   |
|                                   |                  | 1.5              | 2362355-3   |
|                                   |                  | 3.0              | 2362355-4   |
|                                   |                  | 5.0              | 2362355-5   |
|                                   | Male-to-Female   | 0.5              | 2362356-1   |
|                                   |                  | 1.0              | 2362356-2   |
|                                   |                  | 1.5              | 2362356-3   |
|                                   |                  | 3.0              | 2362356-4   |
|                                   |                  | 5.0              | 2362356-5   |
| RG174<br>(Typically DACAR 462-2)  | Female-to-Female | 0.5              | 2362358-1   |
|                                   |                  | 1.0              | 2362358-2   |
|                                   |                  | 1.5              | 2362358-3   |
|                                   |                  | 3.0              | 2362358-4   |
|                                   |                  | 5.0              | 2362358-5   |
|                                   | Male-to-Female   | 0.5              | 2362359-1   |
|                                   |                  | 1.0              | 2362359-2   |
|                                   |                  | 1.5              | 2362359-3   |
|                                   |                  | 3.0              | 2362359-4   |
|                                   |                  | 5.0              | 2362359-5   |

Non-standard cable lengths are available upon request.

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## Online Resources

1. [te.com/ict](https://www.te.com/ict)
2. [te.com/ictliterature](https://www.te.com/ictliterature)
3. [te.com/ictvideos](https://www.te.com/ictvideos)

## About TE Connectivity

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### te.com

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