

AMPSEAL 16 CONNECTOR SERIES

FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION

TERMINALS AND CONNECTORS






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.


| | | |
|------------------------------------|-------------------------------------|---|
| | | |
| <p>2,000+ Employees</p> | <p>10,000+ Customers</p> | <p>20,000+ Different Parts</p> |


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 Gearboxes
- 

ABS/EBS Brake Units
- 

Telematics Units
- 

Sensors
- 

Wire-To-Wire Coupling at the Chassis
- 

Infotainment Applications

MARKETS WE SERVE



ON-HIGHWAY



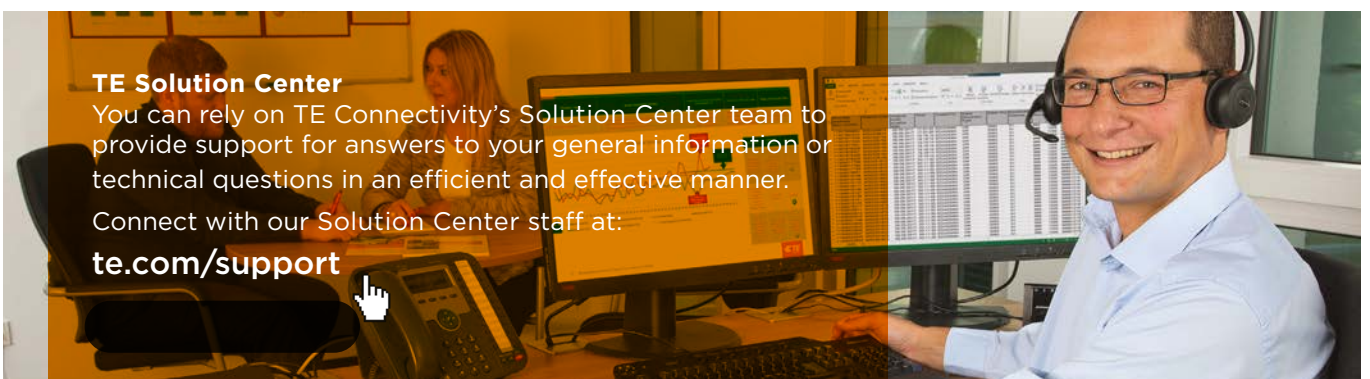
OFF-HIGHWAY



**RECREATIONAL
TRANSPORTATION**

ONLINE RESOURCES

To learn more about TE Connectivity Industrial & Commercial Transportation, its products, and their corresponding documents and videos, please check out the following pages on TE.com:



TE Solution Center

You can rely on TE Connectivity's Solution Center team to provide support for answers to your general information or technical questions in an efficient and effective manner.

Connect with our Solution Center staff at:

te.com/support



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.



| | |
|---------------------------------------|-------|
| Product Documentation | 7 |
| Specifications | 7 |
| Dimensions | 8 |
| Configurations | 8 |
| Wire Sealing Range | 8 |
| AMPSEAL 16 Ordering Information | 9 |
| AMPSEAL 16 High Temperature | 10-11 |
| Accessories | 12-13 |
| Hybrid Levers | 14-15 |
| Mini Levers | 16-17 |
| Contacts | 18-19 |
| Tooling | 20-21 |
| How To Instructions | 22-23 |

AMPSEAL 16 CONNECTOR SERIES

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 up to IP67 rugged sealing capabilities.
- Connect easily with the plug and cap housings one-piece approach that come fully assembled with Terminal Position Assurance (TPA) and Connector Position Assurance (CPA).
- Quickly verify contact alignment and retention with the Primary Latch Reinforcement (PLR), using a reliable 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

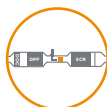


Switches

HIGH TEMPERATURE APPLICATIONS



On-Engine Control



After treatment



Cooling System



Engine Compartment

PRODUCT DOCUMENTATION

Additional documentation is available for assistance with AMPSEAL 16 products.

The following TE Connectivity document numbers may be helpful:

[108-2184 \(Product Specification\)](#) [114-13045 \(Application Specification, Contacts\)](#)
[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 \(Qualification Test Report High Temperature\)](#)



PERFORMANCE SPECIFICATIONS

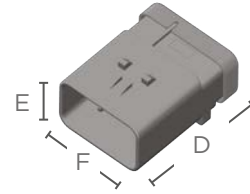
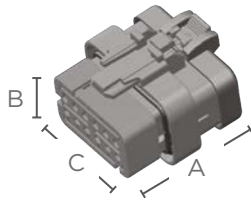
| | |
|------------------------------|---|
| Current | Up to 13 amps |
| Temperature | Operating at temperatures -40°C to +125°C (40°C to +150°C for high temperature connector) |
| Flammability | Rated UL 94 V-0 |
| Durability | See note. 50 cycles. |
| Insulation Resistance | 20 megohms minimum. SAE J2030 6.3. Insulation resistance at 1000 volts DC adjacent terminals measured after 60 seconds or until stabilization occurs. |
| Immersion | IP67 rating |
| Random Vibration | No discontinuities. See note. EIA-364-28 Subject mated specimens to 21 G's rms between 25 to 2000 Hz. Twenty hours in each of three mutually perpendicular planes. |
| Voltage | 250 volts DC |

MATERIAL SPECIFICATIONS

| | |
|-----------------------------|--------------------------------|
| Wire Seal | Silicone rubber |
| Plug Peripheral Seal | Silicone rubber |
| Housing | 15% Glass filled thermoplastic |
| CPA | 15% Glass filled thermoplastic |
| PLR | 15% Glass filled thermoplastic |

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

AMPSEAL 16 DIMENSIONS



AMPSEAL 16 Plug Housing

AMPSEAL 16 Cap Housing

| Cavity | Overall Length A | Overall Height B | Overall Width C | Overall Length D | Overall Height E | Overall Width 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.

AMPSEAL 16 CONFIGURATIONS



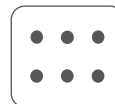
2 Positions
2 size 16



3 Positions
3 size 16



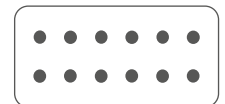
4 Positions
4 size 16



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 | Reduced Diameter Seal |
|--|--------------------------|--------------------------|
| HDSF 16 14-20 AWG (2.0-0.5mm ²) | .086-.144 (2.18-3.67) | .051-.100 (1.30-2.54) |

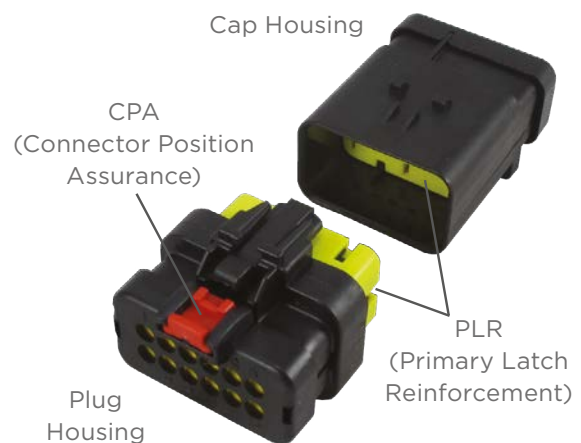
AMPSEAL 16 ORDERING INFORMATION

| Position | PLR Color | Keying | Plug Housing Standard Dia. Seal | Cap Housing Standard Dia. Seal | Plug Housing Reduced Dia. Seal | Cap Housing Reduced Dia. Seal |
|----------|-----------|--------|---------------------------------|--------------------------------|--------------------------------|-------------------------------|
| 2 | Red | Key A | 776427-1 | 776428-1 | 776522-1 | 776534-1 |
| | Gray | Key B | 776427-2 | 776428-2 | 776522-2 | 776534-2 |
| | Yellow | Key C | 776427-3 | 776428-3 | 776522-3 | 776534-3 |
| | Green | Key D | 776427-4 | 776428-4 | 776522-4 | 776534-4 |
| 3 | Red | Key A | 776429-1 | 776430-1 | 776523-1 | 776535-1 |
| | Gray | Key B | 776429-2 | 776430-2 | 776523-2 | 776535-2 |
| | Yellow | Key C | 776429-3 | 776430-3 | 776523-3 | 776535-3 |
| | Green | Key D | 776429-4 | 776430-4 | 776523-4 | 776535-4 |
| 4 | Red | Key A | 776487-1 | 776488-1 | 776524-1 | 776536-1 |
| | Gray | Key B | 776487-2 | 776488-2 | 776524-2 | 776536-2 |
| | Yellow | Key C | 776487-3 | 776488-3 | 776524-3 | 776536-3 |
| | Green | Key D | 776487-4 | 776488-4 | 776524-4 | 776536-4 |
| 6 | Red | Key A | 776433-1 | 776434-1 | 776531-1 | 776537-1 |
| | Gray | Key B | 776433-2 | 776434-2 | 776531-2 | 776537-2 |
| | Yellow | Key C | 776433-3 | 776434-3 | 776531-3 | 776537-3 |
| 8 | Red | Key A | 776494-1 | 776495-1 | 776532-1 | 776538-1 |
| | Gray | Key B | 776494-2 | 776495-2 | 776532-2 | 776538-2 |
| | Yellow | Key C | 776494-3 | 776495-3 | 776532-3 | 776538-3 |
| | Green | Key D | 776494-4 | 776495-4 | 776532-4 | 776538-4 |
| 12 | Red | Key A | 776437-1 | 776438-1 | 776533-1 | 776539-1 |
| | Gray | Key B | 776437-2 | 776438-2 | 776533-2 | 776539-2 |
| | Yellow | Key C | 776437-3 | 776438-3 | 776533-3 | 776539-3 |
| | Green | Key D | 776437-4 | 776438-4 | 776533-4 | 776539-4 |

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

Part Number Suffix:

- 1 = A key (**red PLR**)
- 2 = B key (**gray PLR**)
- 3 = C key (**yellow PLR**)
- 4 = D key (**green PLR**)



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.

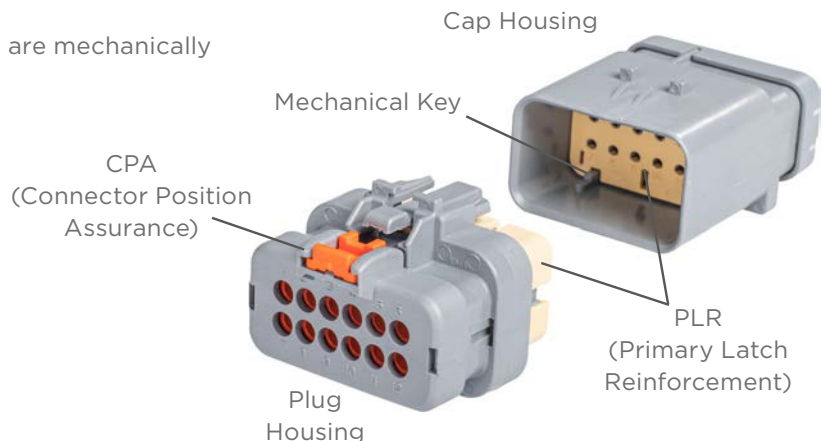
AMPSEAL 16 HIGH TEMPERATURE

| Position | PLR Color | Keying | Plug Housing Standard Dia. Seal | Cap Housing Standard Dia. Seal | Plug Housing Reduced Dia. Seal | Cap Housing Reduced Dia. Seal |
|----------|-----------|--------|---------------------------------|--------------------------------|--------------------------------|-------------------------------|
| 2 | Tan | Key A | 2320920-1 | 2320913-1 | 2320932-1 | 2320926-1 |
| | Blue | Key B | 2320920-2 | 2320913-2 | 2320932-2 | 2320926-2 |
| | Purple | Key C | 2320920-3 | 2320913-3 | 2320932-3 | 2320926-3 |
| | Orange | Key D | 2320920-4 | 2320913-4 | 2320932-4 | 2320926-4 |
| 3 | Tan | Key A | 2320921-1 | 2320914-1 | 2320933-1 | 2320927-1 |
| | Blue | Key B | 2320921-2 | 2320914-2 | 2320933-2 | 2320927-2 |
| | Purple | Key C | 2320921-3 | 2320914-3 | 2320933-3 | 2320927-3 |
| | Orange | Key D | 2320921-4 | 2320914-4 | 2320933-4 | 2320927-4 |
| 4 | Tan | Key A | 2320922-1 | 2320915-1 | 2320934-1 | 2320928-1 |
| | Blue | Key B | 2320922-2 | 2320915-2 | 2320934-2 | 2320928-2 |
| | Purple | Key C | 2320922-3 | 2320915-3 | 2320934-3 | 2320928-3 |
| | Orange | Key D | 2320922-4 | 2320915-4 | 2320934-4 | 2320928-4 |
| 6 | Tan | Key A | 2320923-1 | 2320916-1 | 2320935-1 | 2320929-1 |
| | Blue | Key B | 2320923-2 | 2320916-2 | 2320935-2 | 2320929-2 |
| | Purple | Key C | 2320923-3 | 2320916-3 | 2320935-3 | 2320929-3 |
| 8 | Tan | Key A | 2320924-1 | 2320917-1 | 2320936-1 | 2320930-1 |
| | Blue | Key B | 2320924-2 | 2320917-2 | 2320936-2 | 2320930-2 |
| | Purple | Key C | 2320924-3 | 2320917-3 | 2320936-3 | 2320930-3 |
| | Orange | Key D | 2320924-4 | 2320917-4 | 2320936-4 | 2320930-4 |
| 12 | Tan | Key A | 2320925-1 | 2320918-1 | 2320937-1 | 2320931-1 |
| | Blue | Key B | 2320925-2 | 2320918-2 | 2320937-2 | 2320931-2 |
| | Purple | Key C | 2320925-3 | 2320918-3 | 2320937-3 | 2320931-3 |
| | Orange | Key D | 2320925-4 | 2320918-4 | 2320937-4 | 2320931-4 |

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

High Temperature Part Number Suffix:

- 1 = A key (**tan PLR**)
- 2 = B key (**blue PLR**)
- 3 = C Key (**purple PLR**)
- 4 = D Key (**orange PLR**)



AMPSEAL 16 ACCESSORIES

Backshells and mounting clips are accessory items available for use with AMPSEAL 16 connectors. These accessories cover design requirements by assisting with mounting, providing additional protection, and offering increased aesthetics.

BACKSHELLS - NEXT GENERATION



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

The new backshells are available in 180° and 90° versions for all AMPSEAL 16 plug and cap arrangements (2, 3, 4, 6, 8, and 12). The two-piece 180° version channels the wires directly out of the back of the connector, offering a high level of protection and providing strain relief. The four-piece 90° version features an innovative elbow that allows for 360° rotation, enabling the wires to be routed in various angles.

The backshells are available with either a smooth wire exit or a corrugated tubing style exit. The smooth wire exit style has slots for a tie wrap, which hold the wires in place and provide strain relief. The corrugated tubing style exit backshells allow a wide range of conduit sizes to nest within the rear of the backshell.

AMPSEAL 16 ACCESSORIES

BACKSHELLS - NEXT GENERATION

| Number of Positions | Conduit Size | Plug Part Numbers | | Cap Part Numbers | |
|---------------------|--------------|--------------------------------|-------------------------|--------------------------------|-------------------------|
| | | Straight Backshell Part Number | 90° Adapter Part Number | Straight Backshell Part Number | 90° Adapter Part Number |
| 2 | Smooth | 2292797-1 | 2292849-1 | 2292860-1 | 2292849-1 |
| | NC12/NW10 | 2292797-2 | 2292849-2 | 2292860-2 | 2292849-2 |
| | NC08/NW7.5 | 2292797-3 | 2292849-3 | 2292860-3 | 2292849-3 |
| 3 | Smooth | 2292798-1 | 2292849-1 | 2292861-1 | 2292849-1 |
| | NC12/NW10 | 2292798-2 | 2292849-2 | 2292861-2 | 2292849-2 |
| | NC08/NW7.5 | 2292798-3 | 2292849-3 | 2292861-3 | 2292849-3 |
| 4 | Smooth | 2292799-1 | 2292850-1 | 2292862-1 | 2292850-1 |
| | NC16/NW13 | 2292799-2 | 2292850-2 | 2292862-2 | 2292850-2 |
| | NC12/NW10 | 2292799-3 | 2292850-3 | 2292862-3 | 2292850-3 |
| 6 | Smooth | 2292800-1 | 2292850-1 | 2292863-1 | 2292850-1 |
| | NC16/NW13 | 2292800-2 | 2292850-2 | 2292863-2 | 2292850-2 |
| | NC12/NW10 | 2292800-3 | 2292850-3 | 2292863-3 | 2292850-3 |
| 8 | Smooth | 2292801-1 | 2292851-1 | 2292864-1 | 2292851-1 |
| | NC20/NW17 | 2292801-2 | 2292851-2 | 2292864-2 | 2292851-2 |
| | NC16/NW13 | 2292801-3 | 2292851-3 | 2292864-3 | 2292851-3 |
| 12 | Smooth | 2292802-1 | 2292851-1 | 2292865-1 | 2292851-1 |
| | NC16/NW13 | 2292802-2 | 2292851-2 | 2292865-2 | 2292851-2 |
| | NC12/NW10 | 2292802-3 | 2292851-3 | 2292865-3 | 2292851-3 |

MOUNTING CLIPS



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

AMPSEAL 16 HYBRID LEVER

The AMPSEAL 16 hybrid lever is a sealed connector system that features a lever slide mechanism for mating and a slide in mounting clip. The mix of 24 size 16 and 4 size 12 terminals creates design flexibility for use in various vehicle applications.

The tool-less mounting design, environmental protection, and temporary panel retention latches (which temporarily hold the connector in place for one person mounting through the panel) all reduce application cost and assembly time.

APPLICABLE PRODUCT DOCUMENTATION

Additional documentation is available for assistance with the AMPSEAL 16 hybrid lever product. The following TE Connectivity document numbers may be helpful:

108-32036 (Product Specification)
 114-32117 (Application Specification)

501-32026 (Qualification Test Report)

DIMENSIONS



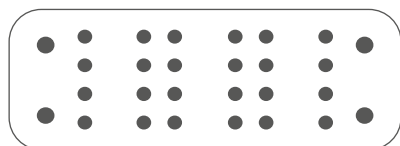
AMPSEAL 16 Hybrid Lever Receptacle Housing

AMPSEAL 16 Hybrid Lever Cap

| Cavity | Overall Length A | Overall Height B | Overall Width C | Overall Length D | Overall Height E | Overall Width F |
|--------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| 28 | 2.08 (52.95) | 1.82 (46.25) | 4.59 (116.5) | 2.86 (72.75) | 1.91 (48.45) | 4.38 (111.25) |

Dimensions are for reference only.

CONFIGURATION



28 Positions

24 size 16, 4 size 12

ORDERING INFORMATION

| Position | Keying | Plug Housing | Cap Housing |
|----------|--------|--------------|-------------|
| 28 | Key A | 2138839-1 | 2138846-1 |
| | Key B | 2138839-2 | 2138846-2 |

AMPSEAL 16 HYBRID LEVER

ACCESSORIES

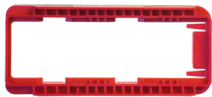
Wire covers and mounting clips are accessory items available for use with AMPSEAL 16 hybrid lever connectors. These accessories cover design requirements by assisting with mounting and providing wire strain relief.

WIRE COVER



| Part Number | Description |
|-------------|--|
| 2138853-1 | Wire cover for 28 position AMPSEAL 16 hybrid lever |

MOUNTING CLIPS



| Part Number | Description |
|-------------|---------------------------|
| 2138852-1 | Mounting clip, 5 mm panel |
| 2138852-2 | Mounting clip, 4 mm panel |
| 2138852-3 | Mounting clip, 3 mm panel |

AMPSEAL 16 MINI LEVER

TE Connectivity's new AMPSEAL 16 mini lever connectors introduce additional flexibility to power and signal bulkhead applications. The IP6K7/IP6K9K rating of this wire-to-wire option provides vital environmental protection for industries operating in harsh environments.

The ergonomic lever lock system ensures ease of assembly, while the integrated Terminal Position Assurance (TPA) and Connector Position Assurance (CPA) protect against accidental unlocking and ensure precise contact position. Essential to correct panel mating are the tool-free, "drop and slide" mounting clips - available in 3 sizes. For wire bundling and corrugated tubing, 90° and 180° wire dress covers can also be purchased alongside the AMPSEAL 16 mini lever connectors.

APPLICABLE PRODUCT DOCUMENTATION

Additional documentation is available for assistance with the AMPSEAL 16 hybrid lever product. The following TE Connectivity document numbers may be helpful:

108-151063 (Product Specification)


114-151063 (Application Specification)

DESIGN FEATURE




AMPSEAL 16 MINI LEVER

PART NUMBERS 16P

| Part Number | Description | Remark |
|-------------|------------------------------------|--|
| 2203859-1 | Plug Assembly, ML Conn, Key A, 16P | 16 Way 12-Size 16 4-Size 12  |
| 2272889-1 | CAP Assembly, ML Conn, Key A, 16P | |
| 2203859-2 | Plug Assembly, ML Conn, Key B, 16P | |
| 2272889-2 | CAP Assembly, ML Conn, Key B, 16P | |

PART NUMBERS 24P

| Part Number | Description | Remark |
|-------------|------------------------------------|--|
| 2203859-4 | Plug Assembly, ML Conn, Key D, 24P | 24 Way 20-Size 20 4-Size 12  |
| 2272889-4 | CAP Assembly, ML Conn, Key D, 24P | |

ACCESSORIES

Wire covers and mounting clips are accessory items available for use with AMPSEAL 16 mini lever connectors. These accessories cover design requirements by assisting with mounting and providing wire strain relief.

WIRE COVER

| Part Number | Description |
|--------------------|---------------------------------------|
| 2203956-1 (Smooth) | Plug/Cap Wire Dress/Cover (Backshell) |



90 DEG ELBOW

| Part Number | Description |
|--------------------|--------------|
| 2272307-1 (Smooth) | 90 Deg Elbow |



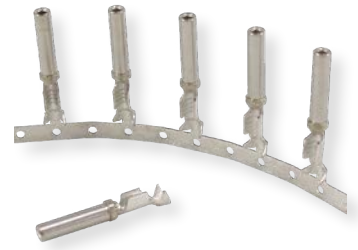
MOUNTING CLIPS

| Part Number | Description |
|-------------|-----------------------------------|
| 2203876-1 | Mounting Clip, ML Conn, 5mm Panel |
| 2203876-2 | Mounting Clip, ML Conn, 4mm Panel |
| 2203876-3 | Mounting Clip, ML Conn, 3mm Panel |



AMPSEAL 16 CONTACTS

AMPSEAL 16 and AMPSEAL 16 hybrid lever connectors commonly use the HDSF size 16 contact system. The contacts are round, stamped & formed contacts with dual beam sockets.



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.

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

| Contact 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 diameter cavities) |
| White | 776364-1 | Size 20 | 16-20 AWG | PBT, used with AMPSEAL 16 (reduced diameter cavities) |

AMPSEAL 16 CONTACTS

HDSF 16 STAMPED & FORMED CONTACTS FOR AMPSEAL 16 CONNECTORS

| Size | Pin Part Numbers | | | | Wire Size AWG (mm ²) | Insulation Diameter (mm) | Wire Insulation Support | Finish |
|---------|------------------|---------------------|----------------|---------------------|--|--------------------------------|-------------------------------|--------|
| | Strip Form | Pakcage Quantity | Loose Piece | Pakcage Quantity | | | | |
| HDSF 16 | 1924463-1 | 4000 | 1924579-1 | 1000 | 18-20 (0.8-0.5) | .107-.05 (2.72-1.27) | yes | Gold |
| | 1924463-3 | 4000 | 1924579-3 | 1000 | | | | Nickel |
| | 776349-1 | 4000 | - | - | 18-20 (0.8-0.5) | .131-.089 (3.33-2.26) | yes | Gold |
| | 776349-3 | 4000 | - | - | | | | Nickel |
| | 638078-1 | 4000 | 776300-1 | 1000 | 14-18 (2.0-0.8) | .131-.089 (3.33-2.26) | yes | Gold |
| | 638078-3 | 4000 | 776300-2 | 1000 | | | | Nickel |
| | 638112-1 | 4000 | 776298-1 | 1000 | 14-18 (2.0-0.8) | .155-.077 (3.94-1.96) | no | Gold |
| | 638112-3 | 4000 | 776298-2 | 1000 | | | | Nickel |
| | 2098250-1 | 4000 | - | - | 18 (1.5-0.8) | .118-.065 (3.00-1.65) | yes | Gold |
| | 2098250-3 | 4000 | - | - | | | | Nickel |
| | 2098252-1 | 4000 | - | - | 14 (2.0-1.5) | .128-.083 (3.25-2.10) | yes | Gold |
| | 2098252-3 | 4000 | - | - | | | | Nickel |

| Size | Receptacle Part Numbers | | | | Wire Size AWG (mm ²) | Insulation Diameter (mm) | Wire Insulation Support | Finish |
|---------|-------------------------|---------------------|----------------|---------------------|--|--------------------------------|-------------------------------|--------|
| | Strip Form | Pakcage Quantity | Loose Piece | Pakcage Quantity | | | | |
| HDSF 16 | 1924464-1 | 4000 | 1924580-1 | 1000 | 18-20 (0.8-0.5) | .107-.05 (2.72-1.27) | yes | Gold |
| | 1924464-2 | 4000 | 1924580-2 | 1000 | | | | Nickel |
| | 776493-1 | 4000 | - | - | 18-20 (0.8-0.5) | .131-.089 (3.33-2.26) | yes | Gold |
| | 776493-2 | 4000 | - | - | | | | Nickel |
| | 776492-1 | 4000 | 776299-1 | 1000 | 14-18 (2.0-0.8) | .131-.089 (3.33-2.26) | yes | Gold |
| | 776492-2 | 4000 | 776299-2 | 1000 | | | | Nickel |
| | 776491-1 | 4000 | 776297-1 | 1000 | 14-18 (2.0-0.8) | .155-.077 (3.94-1.96) | no | Gold |
| | 776491-2 | 4000 | 776297-2 | 1000 | | | | Nickel |
| | 2098251-1 | 4000 | - | - | 18 (1.5-0.8) | .118-.065 (3.00-1.65) | yes | Gold |
| | 2098251-2 | 4000 | - | - | | | | Nickel |
| | 2098253-1 | 4000 | - | - | 14 (2.0-1.5) | .128-.083 (3.25-2.10) | yes | Gold |
| | 2098253-2 | 4000 | - | - | | | | Nickel |

AMPSEAL 16 TOOLING

Tools are specific to the contact style. To create a proper crimp and achieve the highest performance specifications, contacts must be crimped with the recommended tooling.

HAND TOOLS FOR HDSF 16 CONTACTS



PRO-CRIMPER III

CERTI-CRIMP II

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

AUTOMATED TOOLING FOR HDSF 16 CONTACT



OCEAN end feed applicator



OCEAN side feed applicator

| Pin Strip Form | Socket Strip Form | Applicator P/N | Description |
|--|---|----------------|---|
| 1924463-1 1924463-3 | 1924464-1 1924464-2 | 2151962-1 | OCEAN end feed applicator with mechanical feed |
| | | 2151962-2 | OCEAN end feed applicator with pneumatic feed |
| 638078-1 638078-3 776349-1 776349-3 | 776492-1 776492-2 776493-1 776493-2 | 2151731-1 | OCEAN end feed applicator with mechanical feed |
| | | 2151731-2 | OCEAN end feed applicator with pneumatic feed |
| 638112-1 638112-3 | 776491-1 776491-2 | 2151239-1 | OCEAN end feed applicator with mechanical feed |
| | | 2151239-2 | OCEAN end feed applicator with pneumatic feed |
| 2098250-1 2098250-3 | 2098251-1 2098251-2 | 2151617-1 | OCEAN end feed applicator with mechanical feed |
| | | 2151617-2 | OCEAN end feed applicator with pneumatic feed |
| 2098252-1 2098252-3 | 2098253-1 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

AMPSEAL 16 HOW-TO INSTRUCTIONS

CONTACT INSERTION



Step 1:
Grasp crimped contact approximately one inch behind the contact barrel.



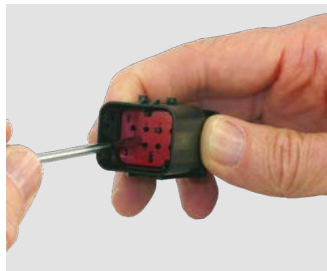
Step 2:
Verify the PLR is in the pre-staged position, unlocked.



Step 3:
Align the contact with the desired circuit cavity at the rear of the housing assembly.



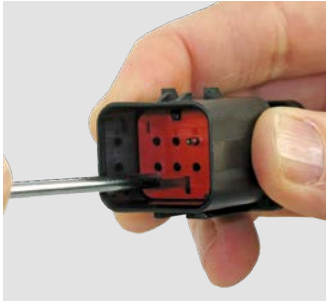
Step 4:
Push the contact straight into the connector cavity until the contact retention finger returns to its normal position behind the retention shoulder on the contact. A slight tug will verify the contact is locked in place.



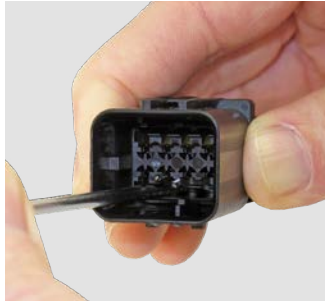
Step 5:
When all of the required contacts have been inserted, push the PLR into the fully locked position.

AMPSEAL 16 HOW-TO INSTRUCTIONS

CONTACT REMOVAL



Step 1:
Insert the removal tool into the PLR extraction slot and pull until the PLR is completely removed from the housing.



Step 2:
Insert the tool into the contact cavity and deflect the contact retention finger.



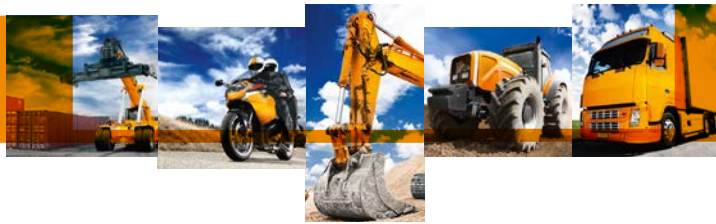
Step 3:
Gently pull the wire until the contact is free from the housing.

NOTES

NOTES

ABOUT TE CONNECTIVITY

TE Connectivity is a \$12 billion global industrial technology leader creating a safer, sustainable, productive and connected future. Our broad range of connectivity and sensor solutions, proven in the harshest environments, enable advancements in transportation, industrial applications, medical technology, energy, data communications and the home. With approximately 80,000 employees, including more than 7,500 engineers, working alongside customers in approximately 140 countries, TE ensures that EVERY CONNECTION COUNTS. Learn more at www.te.com and on LinkedIn, Facebook, WeChat and Twitter.



te.com/ict

LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. For additional information or product assistance, please contact your field representative or our customer service department. Additional information is also available on the website te.com/ict.

TECHNICAL SUPPORT

te.com/support

United States..... +1 800 522 6752 China +86 400 820 6015 Germany +49 6151 607 1999
Japan +86 044 844 8052

te.com

AMPSEAL 16, PRO-CRIMPER, CERTI-CRIMP, OCEAN, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks owned or licensed by the TE Connectivity Ltd. family of companies.

All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2021 TE Connectivity Ltd. family of companies All Rights Reserved.

7-1773982-8 01-2021

TE Connectivity

4849 Hempstead Station Drive
Kettering, OH 45429
USA

www.te.com