

# UNSEALED INTERCONNECTION SYSTEM

FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION

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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.



**2,000+  
Employees**



**10,000+  
Customers**



**20,000+  
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  
Gearboxes



ABS/EBS  
Brake Units



Telematics  
Units



Sensors



Wire-To-Wire  
Coupling at  
the Chassis



Infotainment  
Applications

## MARKETS WE SERVE



**ON-HIGHWAY**



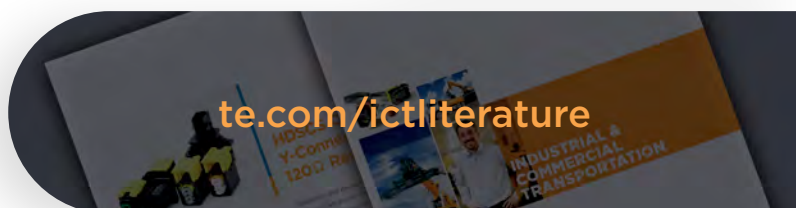
**OFF-HIGHWAY**



**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:



## SOLUTIONS CENTER

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

Connect with our PIC staff at:

**te.com/support**

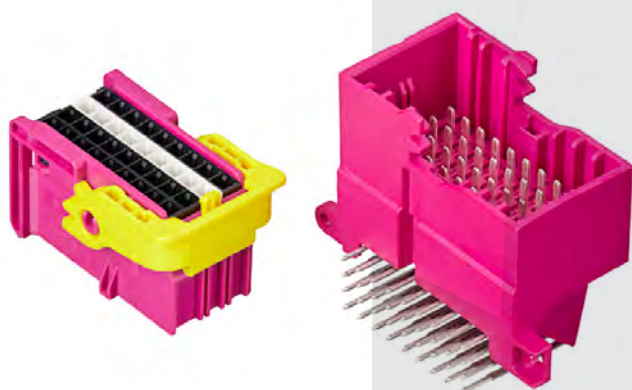




# UNSEALED INTERCONNECTION SYSTEM

## FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION

TE Connectivity's Unsealed Interconnection System for Industrial & Commercial Transportation is the ideal solution for customers in search of unsealed, rugged and flexible connectors - specifically designed for inside-cabin, bulkhead and control-unit applications of on- and off-road vehicles. Adopting TE's field proven AMP MCP 1.5K, 2.8 & 9.5 contacts and - the newest addition - the PCON 12 terminals, this series ensures complete flexibility with the option to choose between 1-36 position connectors. Featuring flame retardant UL94 V-0 material alternatives, wire sizes of up to 16mm<sup>2</sup> and a reduced mating force of the 18 position monoblock connector, these products can also be used for vibration at cabin level as well as high power applications - providing the ultimate safety and reliability, alongside overall cost-effectiveness.



|  |       |
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# UNSEALED INTERCONNECTION SYSTEM

## BENEFITS

- Enable design flexibility with a broad range of unsealed, rugged and flexible connectors and a product offering of between 1 -36 positions
- Offer additional security with flame retardant V-0 material options (18P monoblock connector and 1P 90° unsealed connector using PCON 12 terminals)
- Facilitate contact alignment with integrated and separate secondary locking features
- Help prevent mismatch with up to 6-polarization and color key mating configurations available
- Reduce mating force below 75N with new design of the 18P monoblock connector including lever
- Ensure high reliability for long term use with vibration resistance for cabin

## KEY INDUSTRIES

The Unsealed Interconnection System can be utilized in trucks and buses, as well as construction, agriculture, and two-, three- and four-wheel ATV/UTV vehicles.



Truck



Bus



Agriculture



Construction



ATV/UTV

## APPLICATIONS

The Unsealed Interconnection System operates in wire-to-wire, wire-to-board, control unit, bulkhead, in-cabin and fuse & relay box applications.



Wire-To-Wire



Wire-To-Board



Control Unit



Bulkhead



In-Cabin



Fuse and Relay Boxes

## PRODUCT DOCUMENTATION

Additional product documentation is available for assistance with the Unsealed Interconnection System. The following documentation may be helpful:

| CATEGORY                      | CUSTOMER DRAWINGS  | DOCUMENT      |
|-------------------------------|--|---------------|
| AMP MCP 2.8<br>6-21P          | Group Drawing for 6-21P Receptacle Housings  | 1355073       |
|                               | Group Drawing for 6-21P Tab Housings   | 1355072       |
|                               | Group Drawing for 6-21P Tab Headers  | 966140        |
|                               | Group Drawing for AMP MCP 2.8 Contacts Receptacle  | 1355036       |
|                               | Group Drawing for AMP MCP 2.8 Contacts Tab   | 1355052       |
|                               | Interface Drawing for 6-21P Connectors   | 114-18085-025 |
| AMP MCP<br>1.5K+2.8<br>25P    | Customer Drawing for 25P Receptacle Housings   | 1718484       |
|                               | Customer Drawing for 25P Tab Housings  | 2112890       |
|                               | Group Drawing for AMP MCP 2.8 Contacts Receptacle  | 1355036       |
|                               | Group Drawing for AMP MCP 2.8 Contacts Tab   | 1355052       |
|                               | Group Drawing for AMP MCP 1.5K Contacts Receptacle   | 1241436       |
|                               | Group Drawing for AMP MCP 1.5K Contacts Tab  | 1355055       |
| AMP MCP 1.5K<br>36P           | Interface Drawing for 25P Connector  | 114-18721     |
|                               | Customer Drawing for 36P Receptacle Housings   | 1718485       |
|                               | Customer Drawing for 36P Tab Housings  | 2112891       |
|                               | Customer Drawing for 36P Tab Headers   | 2236715       |
|                               | Customer Drawing for 9P Inserts  | 1718490       |
|                               | Customer Drawing for 18P Inserts   | 1718489       |
| AMP MCP 9.5<br>2P             | Group Drawing for AMP MCP 1.5K Contacts Receptacle   | 1241436       |
|                               | Group Drawing for AMP MCP 1.5K Contacts Tab  | 1355055       |
|                               | Interface Drawing for 36P Connectors   | 114-18664     |
|                               | Customer Drawing for 2P AMP MCP 9.5 Receptacle Housings                                    | 1355289       |
|                               | Customer Drawing for 2P AMP MCP 9.5 Tab Housings   | 1355290       |
|                               | Group Drawing for AMP MCP 9.5 Contacts Receptacle  | 1355037       |
| AMP MCP 2.8<br>18P Monoblock  | Group Drawing for AMP MCP 9.5 Contacts Tab   | 2287475       |
|                               | Interface Drawing for 2P 9.5 AMP MCP Connectors  | 114-18327-001 |
|                               | Customer Drawing for 18P Monoblock Receptacle Housings                                     | 2322190       |
|                               | Customer Drawing for 18P Monoblock Tab Housings  | 2322192       |
| 1P Using PCON<br>12 Terminals | Group Drawing for AMP MCP 2.8 Contacts Receptacle  | 1355036       |
|                               | Group Drawing for AMP MCP 2.8 Contacts Tab   | 1355052       |
|                               | Customer Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle Housings | 2308295       |
|                               | Customer Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle          | 2840573       |
|                               | Interface Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals                    | 208-18000     |

| CATEGORY                       | SPECIFICATIONS  | DOCUMENT    |
|--------------------------------|---|-------------|
| AMP MCP 2.8<br>6-21P           | Application Specification for 6-21P Receptacle/Tab Housings   | 114-94624   |
|                                | Product Specification for 6-21P Receptacle Housings   | 108-18619-3 |
|                                | Product Specification for Potential Distribution (2x9,21)   | 108-18879   |
| AMP MCP<br>1.5K+2.8<br>25P/36P | Application Specification for 25/36P  | 114-18663   |
|                                | Product Specification for 25/36P  | 108-18957   |
| AMP MCP 2.8<br>18P Monoblock   | Application Specification for 18P Monoblock   | 114-94610   |
|                                | Product Specification for 18P Monoblock   | 108-94718   |
| 1P Using PCON<br>12 Terminals  | Application Specification for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle Housings | 114-94414   |
|                                | Product Specification for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle Housings     | 108-94551   |

# UNSEALED AMP MCP 2.8 CONNECTORS



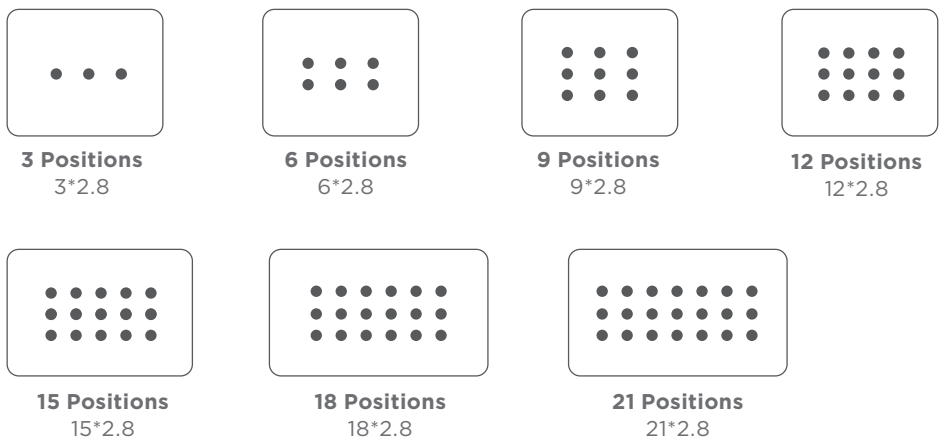
### TECHNICAL INFORMATION

|                   |  |
|-------------------|--|
| No. of Positions: | 3-21 Positions   |
| Housing Material  | PA66 (TAB) / PBT (REC)   |
| Wire Size Range   | 2.5 mm <sup>2</sup> FLR Max.<br>4.0 mm <sup>2</sup> FLR Max. (3 Pos. only) |
| Temperature       | -40°C to +120°C  |
| Protection        | IP 30  |
| Flammability      | UL 94 HB   |

### PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Integrated and separate secondary lock confirms contact alignment and retention
- Mechanical and color keyed
- Up to 6 codings available for receptacle and tab housings
- In-line, bulkhead, PCB mount options
- AMP MCP 2.8 connectors for potential distribution are available

### CONFIGURATION





## ORDERING INFORMATION

### UNSEALED AMP MCP 2.8 CONNECTORS

| No. of Positions | Keying Options | Housing Color | Part Number        |                    | Mating PCB Header Right-Angle  |
|------------------|----------------|---------------|--------------------|--------------------|--|
|                  |                |               | Receptacle Housing | Mating Tab Housing |  |
| 3                | A              | Black         | 1-968976-9         | 1-968977-9         | For detailed information please check Page 16 Unsealed AMP MCP 2.8 90° Headers |
| 6                |                | Blue**        | 8-968970-1         | 1-965641-1*        |  |
| 9                |                | Yellow**      | 8-968971-1         | 1-967626-1*        |  |
| 12               |                | Green**       | 8-968972-1         | 1-967627-1*        |  |
| 15               |                | Violet**      | 8-968973-1         | 1-967628-1*        |  |
| 18               |                | Gray          | 8-968974-1         | 1-967629-1*        |  |
| 21               |                | Brown**       | 8-968975-1         | 1-967630-1*        |  |
| 3                | B              | Gray          | 2-968976-9         | 2-968977-9         |  |
| 6                |                | Natural       | 7-968970-1         | 2-965641-1         |  |
| 9                |                | Natural       | 7-968971-1         | 2-967626-1         |  |
| 12               |                | Natural       | 7-968972-1         | 2-967627-1         |  |
| 15               |                | Natural       | 7-968973-1         | 2-967628-1         |  |
| 18               |                | Natural       | 7-968974-1         | -                  |  |
| 21               |                | Natural       | 7-968975-1         | 2-967630-1         |  |
| 3                | C              | Blue          | 3-968976-9         | 3-968977-9         |  |
| 6                |                | Blue          | 6-968970-1         | 3-965641-1         |  |
| 9                |                | Blue          | 6-968971-1         | 3-967626-1         |  |
| 12               |                | Blue          | 6-968972-1         | 3-967627-1         |  |
| 15               |                | Blue          | 6-968973-1         | 3-967628-1         |  |
| 18               |                | Blue          | 6-968974-1         | -                  |  |
| 21               |                | Blue          | 6-968975-1         | 3-967630-1         |  |
| 6                | D              | Violet        | 5-968970-1         | 4-965641-1         |  |
| 9                |                | Violet        | 5-968971-1         | 4-967626-1         |  |
| 12               |                | Violet        | 5-968972-1         | 4-967627-1         |  |
| 15               |                | Violet        | 5-968973-1         | 4-967628-1         |  |
| 18               |                | Violet        | 5-968974-1         | -                  |  |
| 6                | E              | Green         | 4-968970-1         | 5-965641-1         |  |
| 12               |                | Green         | 4-968972-1         | 5-967627-1         |  |
| 18               |                | Green         | 4-968974-1         | 5-967629-1         |  |
| 21               |                | Green         | 4-968975-1         | 5-967630-1         |  |
| 6                | F              | Orange        | 9-968970-2         | 6-965641-1         |  |
| 12               |                | Orange        | 9-968972-2         | 6-967627-1         |  |
| 18               |                | Orange        | 9-968974-2         | 6-967629-1         |  |
| 21               |                | Orange        | 9-968975-2         | 6-967630-1         |  |

\*Other colors available. See Product Group Drawing 1355072.

\*\*Other colors available. See Product Group Drawing 1355073

### UNSEALED AMP MCP 2.8 CONNECTORS FOR POTENTIAL DISTRIBUTION

| No. of Positions | Keying Options | Housing Color | Part Number |                           |
|------------------|----------------|---------------|-------------|---------------------------|
|                  |                |               | Tab Housing | Mating Receptacle Housing |
| 21               | A              | Brown         | 1-1394765-1 | 8-968975-1                |
|                  | B              | Natural       | 2-1394765-1 | 7-968975-1                |
| 2x9              | B              | Natural       | 2-1394766-1 | 7-968975-1                |
|                  | C              | Blue          | 3-1394766-1 | 6-968975-1                |
| 2x9 120Ω         | C              | Blue          | 3-1394766-2 | 6-968975-1                |
| 21               | A              | Brown         | 1534188-1   | 8-968975-1                |

# UNSEALED AMP MCP 1.5K & 2.8 CONNECTORS



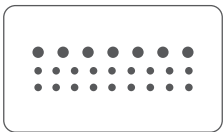
### TECHNICAL INFORMATION

|  |   |
|--|---|
| No. of Positions:                        | 25 Positions  |
| Housing Material                         | PBT/ASA-GF30  |
| Wire Size Range (with Receptacle Insert) | 1718488-1 2.5 mm2 FLR Max. (7x).<br>1718488-1 2.5 mm2 FLR Max. (7x) |
| Temperature                              | -40°C to +120°C   |
| Protection                               | IP 30   |
| Flammability                             | UL 94 HB  |

### PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- Lever mechanism for higher pin counts
- Vibration resistance at cabin level

### CONFIGURATION



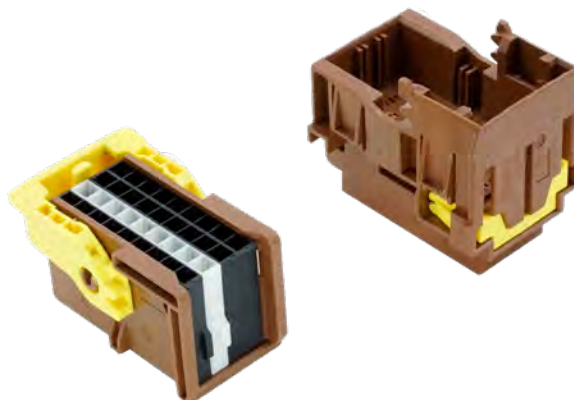
25 Positions  
18\*1.5k + 7\*2.8



### ORDERING INFORMATION

| Part Number      |                |               |                    |                   |                    |                    |
|------------------|----------------|---------------|--------------------|-------------------|--------------------|--------------------|
| No. of Positions | Keying Options | Housing Color | Carrier with Lever | 7 Position Insert | 18 Position Insert | Mating Tab Housing |
| 25               | A              | Black         | 1-1718484-1        | 1718488-1         | 1718489-1          | 1-2112890-1        |
|                  | B              | Gray          | 1-1718484-2        |                   |                    | 1-2112890-2        |
|                  | C              | Light Blue    | 1-1718484-3        |                   |                    | 1-2112890-3        |
|                  | D              | Yellow Green  | 1-1718484-4        |                   |                    | 1-2112890-4        |

# UNSEALED AMP MCP 1.5K CONNECTORS



## TECHNICAL INFORMATION

No. of Positions: 36 Positions

Housing Material: PBT/ASA-GF30

Wire Size Range: 1.5 mm<sup>2</sup> FLR Max. (With Receptacle Insert)  
Part No. 1718489 and Part No. 1718490

Temperature: -40°C to +120°C

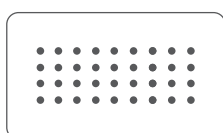
Protection: IP 30

Flammability: UL 94 HB

## PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- Lever mechanism for higher pin counts
- Vibration resistance at cabin level
- Options for in-line, bulkhead and PCB mounts

## CONFIGURATION



36 Positions  
36\*1.5K



## ORDERING INFORMATION

### Part Number

| No. of Positions | Keying Options | Housing Color | Carrier with Lever | 9 Position Insert Key A | 9 Position Insert Key B | 18 Position Insert | Mating Tab Housing | Mating Tab Header |
|------------------|----------------|---------------|--------------------|-------------------------|-------------------------|--------------------|--------------------|-------------------|
| 36               | A              | Brown         | 1-1718485-1        | 1718490-1               | 1718490-2               | 1718489-1          | 1-2112891-1        | 1-2236715-1       |
|                  | B              | Purple        | 1-1718485-2        |                         |                         |                    | 1-2112891-2        | 1-2236715-2       |
|                  | C              | Green         | 1-1718485-3        |                         |                         |                    | 1-2112891-3        | *                 |
|                  | D              | Blue          | 1-1718485-4        |                         |                         |                    | 1-2112891-4        | *                 |
|                  | E              | Gray          | 1-1718485-5        |                         |                         |                    | 1-2112891-5        | -                 |
|                  | F              | Orange        | 1-1718485-6        |                         |                         |                    | 1-2112891-6        | -                 |

\*On request.

# UNSEALED AMP MCP 9.5 2 POSITION CONNECTORS



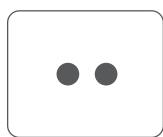
### TECHNICAL INFORMATION

|                   |                 |
|-------------------|-----------------|
| No. of Positions: | 2 Positions     |
| Housing Material  | PA66 GF13       |
| Wire Size Range   | 10mm² FLK Max   |
| Temperature       | -40°C to +120°C |
| Protection        | IP 30           |
| Flammability      | UL 94 HB        |

### PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- For power applications

### CONFIGURATION

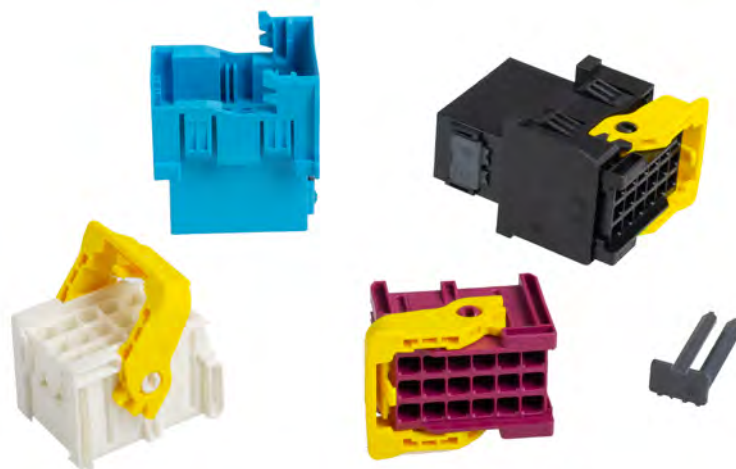


2 Positions  
2\*9.5

### ORDERING INFORMATION

| Part Number      |                |               |                    |                    |
|------------------|----------------|---------------|--------------------|--------------------|
| No. of Positions | Keying Options | Housing Color | Receptacle Housing | Mating Tab Housing |
| 2                | A              | Black         | 1355289-1          | 1355290-1          |
|                  | B              | Gray          | 1355289-2          | 1355290-5          |
|                  | C              | Blue          | 1355289-3          | 1355290-6          |

# UNSEALED AMP MCP 2.8 18P MONOBLOCK CONNECTORS



## TECHNICAL INFORMATION

No. of Positions: 18 Positions

Housing Material: PBT GF20

Wire Size Range: 0.75mm<sup>2</sup> - 2.5mm<sup>2</sup>

Temperature: -40°C to +105°C

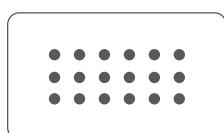
Protection: IP 30

Flammability: UL 94 V-0

## PRODUCT SPECIFICATIONS

- Requires a secondary lock to aid with contact alignment
- Reduced mating force below 75 N
- 4 color-coding options available to reduce improper mating
- Fits in existing bulkhead cut-outs and therefore no design changes are needed
- Made out of flame-retardant UL 94 V-0 material for additional safety inside the cabin

## CONFIGURATION



18 Positions  
18\*2.8

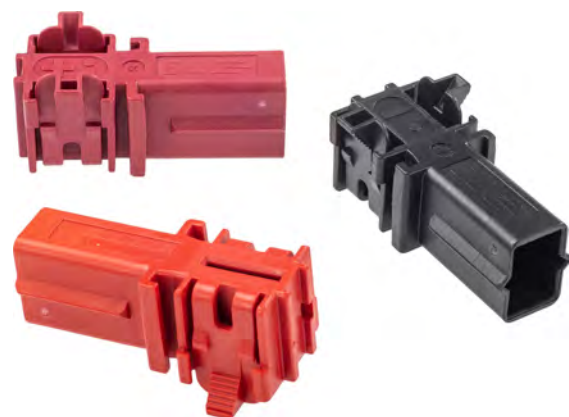
## ORDERING INFORMATION

### Part Number

| No. of Positions | Keying Options | Housing Color | Receptacle Housing | Mating Tab Housing | Secondary Locking Device |
|------------------|----------------|---------------|--------------------|--------------------|--------------------------|
| 18               | A              | Black         | 1-2322190-1        | 1-2322192-1        | 967634-1                 |
|                  | B              | White         | 2-2322190-1        | 2-2322192-1        |                          |
|                  | C              | Blue          | 3-2322190-1        | 3-2322192-1        |                          |
|                  | D              | Violet        | 4-2322190-1        | 4-2322192-1        |                          |



# ONE-POSITION 90° UNSEALED CONNECTOR USING PCON 12 TERMINALS



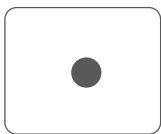
### TECHNICAL INFORMATION

|                   |                                      |
|-------------------|--------------------------------------|
| No. of Positions: | 1 Position                           |
| Housing Material  | PBT GF10                             |
| Wire Size Range   | 5mm <sup>2</sup> - 16mm <sup>2</sup> |
| Temperature       | -40°C to +105°C                      |
| Protection        | IP 20                                |
| Flammability      | UL 94 V-0                            |
| Voltage           | Up to 60 V DC                        |

### PRODUCT SPECIFICATIONS

- 90° cable exit configuration accommodates tight spaces
- Supports one-position power connections for ICT
- Perfect for in-cabin, bulkhead and control unit applications
- Positive and negative ratings on the connectors

### CONFIGURATION



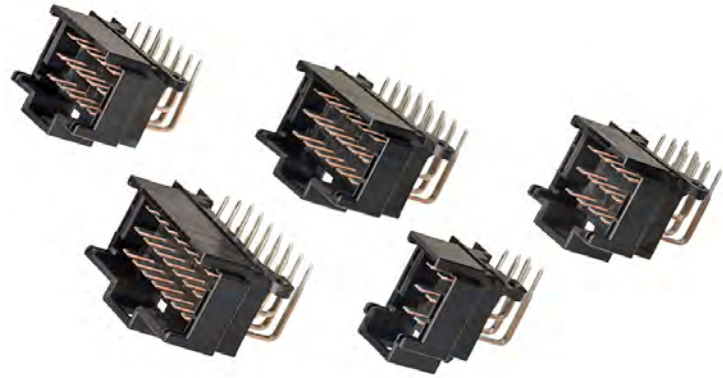
1 Positions  
1\*PCON 12

### ORDERING INFORMATION

| Part Number      |                |               |                    |                    |
|------------------|----------------|---------------|--------------------|--------------------|
| No. of Positions | Keying Options | Housing Color | Receptacle Housing | Mating Tab Housing |
| 1                | A              | Red           | 1-2308295-1        | -                  |
|                  | B              | Violet        | 2-2308295-1        | -                  |
|                  | C              | Black         | 3-2308295-1        | -                  |

\*Mating Tab Housing can be developed on request

# UNSEALED AMP MCP 2.8 90° HEADERS



## TECHNICAL INFORMATION

|                      |                       |
|----------------------|-----------------------|
| No. of Positions:    | 6-21 Positions        |
| Housing Material     | PBT GF20              |
| Mounting Orientation | Horizontal/90°        |
| Termination Method   | Through Hole - Solder |
| Tab Material         | Tin/Silver Plated     |
| Flammability         | UL 94 HB              |

## PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Mechanical keyed
- Available in different codings
- PCB mounting option with 90° Pins

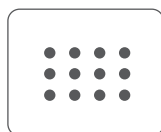
## CONFIGURATION



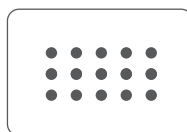
**6 Positions**  
6\*2.8



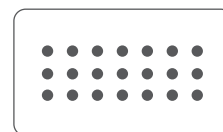
**9 Positions**  
9\*2.8



**12 Positions**  
12\*2.8



**15 Positions**  
15\*2.8



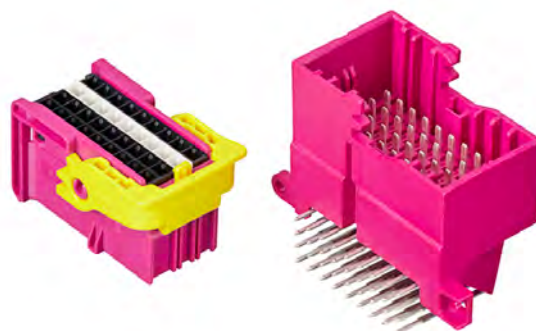
**21 Positions**  
21\*2.8

# UNSEALED AMP MCP 2.8 90° HEADERS

## ORDERING INFORMATION

|                           | Number of positions | Header PN  | Coding Header | Colour Housing | AMP MCP 2.8 Housing |                          |                       |
|---------------------------|---------------------|------------|---------------|----------------|---------------------|--------------------------|-----------------------|
|                           |                     |            |               |                | Mating PN Housing   | Coding Mating PN Housing | Colour Mating Housing |
| CuSn4<br>Tin Plated       | 6                   | 966140-5   | A             | BLACK          | 8-968970-1          | A                        | BLUE                  |
|                           |                     | 9-966140-5 |               |                | 8-968970-2          |                          | GREY                  |
|                           | 9                   | 966140-4   | A             | BLACK          | 8-968971-1          | A                        | YELLOW                |
|                           |                     | 9-966140-4 |               |                | 8-968971-2          |                          | GREY                  |
|                           | 12                  | 966140-3   | A             | BLACK          | 8-968972-1          | A                        | GREEN                 |
|                           |                     | 9-966140-3 |               |                | 8-968972-2          |                          | GREY                  |
|                           | 15                  | 966140-2   | A             | BLACK          | 8-968973-1          | A                        | PURPLE                |
|                           |                     | 9-966140-2 |               |                | 8-968973-2          |                          | GREY                  |
|                           | 18                  | 966140-1   | A             | BLACK          | 8-968974-1          | A                        | GREY                  |
|                           |                     | 9-966140-1 |               |                |                     |                          |                       |
|                           | 21                  | 966140-6   | A             | BLACK          | 8-968975-1          | A                        | BROWN                 |
|                           |                     | 9-966140-6 |               |                | 8-968975-2          |                          | GREY                  |
|                           | 12                  | 1-966140-3 | B             | NATURAL        | 7-968973-1          | B                        | NATURAL               |
|                           |                     | 8-966140-3 |               |                |                     |                          |                       |
|                           | 21                  | 1-966140-6 | B             | NATURAL        | 7-968975-1          | B                        | NATURAL               |
|                           |                     | 8-966140-6 |               |                |                     |                          |                       |
| CuSn4<br>Silver Plated    | 6                   | 3-966140-5 | A             | BLACK          | 8-968970-1          | A                        | BLUE                  |
|                           |                     | 6-966140-5 |               |                | 8-968970-2          |                          | GREY                  |
|                           | 9                   | 3-966140-4 | A             | BLACK          | 8-968971-1          | A                        | YELLOW                |
|                           |                     | 6-966140-4 |               |                | 8-968971-2          |                          | GREY                  |
|                           | 12                  | 3-966140-3 | A             | BLACK          | 8-968972-1          | A                        | GREEN                 |
|                           |                     | 6-966140-3 |               |                | 8-968972-2          |                          | GREY                  |
|                           | 15                  | 3-966140-2 | A             | BLACK          | 8-968973-1          | A                        | PURPLE                |
|                           |                     | 6-966140-2 |               |                | 8-968973-2          |                          | GREY                  |
|                           | 18                  | 3-966140-1 | A             | BLACK          | 8-968974-1          | A                        | GREY                  |
|                           |                     | 6-966140-1 |               |                |                     |                          |                       |
|                           | 21                  | 3-966140-6 | A             | BLACK          | 8-968975-1          | A                        | BROWN                 |
|                           |                     | 6-966140-6 |               |                | 8-968975-2          |                          | GREY                  |
| CuSn0,15<br>Silver Plated | 21                  | 4-966140-6 | B             | NATURAL        | 7-968975-1          | B                        | NATURAL               |
|                           |                     | 5-966140-6 |               |                |                     |                          |                       |

# UNSEALED AMP MCP 1.5K 90° HEADERS



## TECHNICAL INFORMATION

No. of Positions: 36 Positions

Housing Material PBT GF20

Mounting Orientation Horizontal/90°

Termination Method Through Hole - Solder

Tab Material Tin/Silver Plated

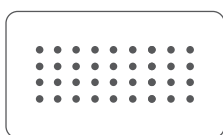
Flammability UL 94 HB

Voltage Up to 60 V DC

## PRODUCT SPECIFICATIONS

- Polarized to prevent improper mating
- Mechanical keyed
- Available in different codings
- PCB mounting option with 90° Pins

## CONFIGURATION



36 Positions  
36\*1.5K

## ORDERING INFORMATION

| No. of Positions | Housing Color | Header Right-Angle | Part Number             |                         |                    |             |
|------------------|---------------|--------------------|-------------------------|-------------------------|--------------------|-------------|
|                  |               |                    | 9 Position Insert Key A | 9 Position Insert Key B | 18 Position Insert | Carrier     |
| 36               | Brown         | 1-2236715-1        | 1718490-1               | 1718490-2               | 1718489-1          | 1-1718485-1 |
|                  | Purple        | 1-2236715-2        |                         |                         |                    | 1-1718485-2 |

# AMP MCP ACCESSORIES

Several accessory items are available to complement the Unsealed Interconnection System, including secondary locking and covers.

## SECONDARY LOCKING

### ORDERING INFORMATION

| Positions | Keying Color | Secondary Locking |
|-----------|--------------|-------------------|
| 6         | Blue         | 968271-1          |
| 9         | Yellow       | 967631-1          |
| 12        | Green        | 967632-1          |
| 15        | Purple       | 967633-1          |
| 18        | Grey         | 967634-1          |
| 21        | Brown        | 967635-1          |



## COVER

### ORDERING INFORMATION

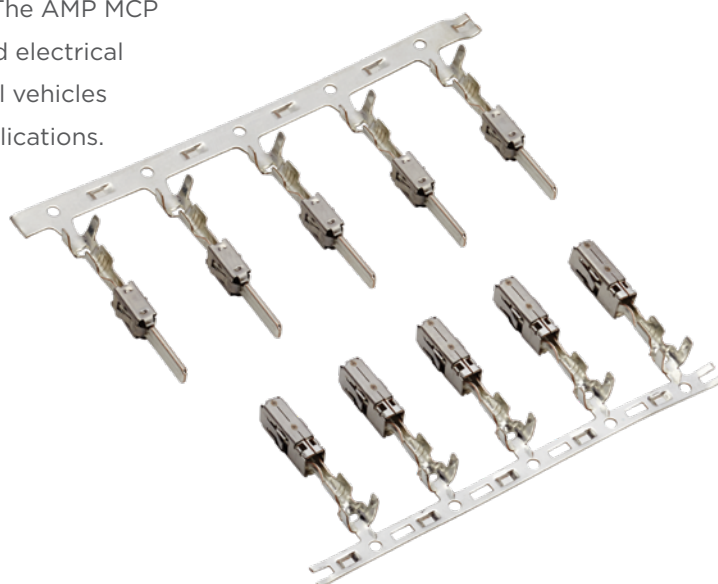
| Positions | Keying Color | Cover     |
|-----------|--------------|-----------|
| 25/36     | Black        | 2112286-1 |





# AMP MCP CONTACTS

High reliability, power connection for long term use. The AMP MCP Interconnection System is designed for electronic and electrical power applications in passenger cars and commercial vehicles as well as harsh environment off highway vehicle applications.



## AMP MCP CONTACTS PERFORMANCE SPECIFICATION

### Durability

|                    |
|--------------------|
| 10 cycles (tin)    |
| 50 cycles (silver) |
| 100 cycles (gold)  |

### Current Rating

| Contact Size | Max Current | Max. Wire Size     |
|--------------|-------------|--------------------|
| 1.5K         | Up to 20 A  | 1.5mm <sup>2</sup> |
| 2.8          | Up to 40 A  | 4.0mm <sup>2</sup> |
| 9.5          | Up to 80 A  | 10mm <sup>2</sup>  |

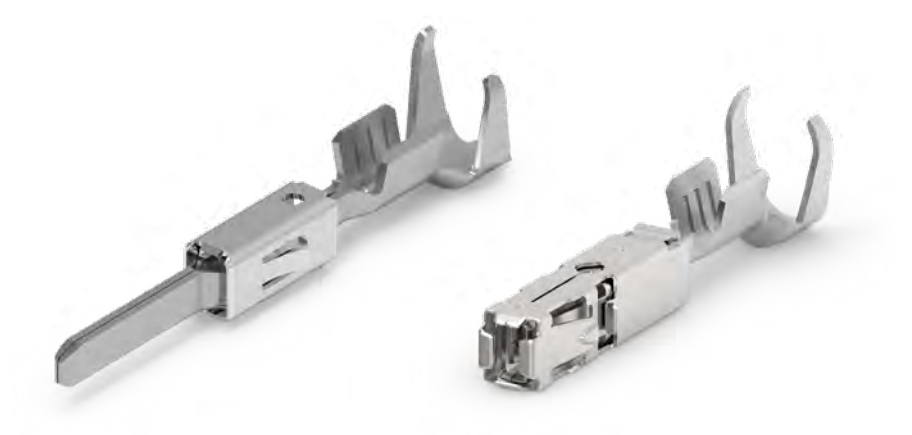
### Contact Retention

| Contact Size | Min. Load |
|--------------|-----------|
| 1.5K         | 40/60 N   |
| 2.8          | 80 N      |
| 9.5          | 150 N     |

### Crimp Tensile

| Strength Contact Size | Tensile Strength |
|-----------------------|------------------|
| <b>1.5K</b>           |                  |
| .22mm <sup>2</sup>    | ≥ 32 N           |
| .35mm <sup>2</sup>    | ≥ 50 N           |
| .50mm <sup>2</sup>    | ≥ 60 N           |
| .75mm <sup>2</sup>    | ≥ 85 N           |
| 1.0mm <sup>2</sup>    | ≥ 108 N          |
| 1.25mm <sup>2</sup>   | ≥ 135 N (16 AWG) |
| 1.5mm <sup>2</sup>    | ≥ 135 N          |
| <b>2.8</b>            |                  |
| .22mm <sup>2</sup>    | ≥ 28 N           |
| .35mm <sup>2</sup>    | ≥ 50 N           |
| .50mm <sup>2</sup>    | ≥ 60 N           |
| .75mm <sup>2</sup>    | ≥ 85 N           |
| 1.0mm <sup>2</sup>    | ≥ 108 N          |
| 1.5mm <sup>2</sup>    | ≥ 150 N          |
| 2.5mm <sup>2</sup>    | ≥ 200 N          |
| 4.0mm <sup>2</sup>    | ≥ 310 N          |
| <b>9.5</b>            |                  |
| 6.0mm <sup>2</sup>    | 350 N            |
| 10.0mm <sup>2</sup>   | 500 N            |

## AMP MCP CONTACTS



### AMP MCP 1.5K CONTACTS

Stamped & Formed Tabs and Receptacles

| 1.5K                   | Wire Size<br>(mm <sup>2</sup> ) | Insulation<br>Diameter FLR<br>(mm) | Strip Form<br>Part<br>Number | Applicator* | Finish Code                | Hand Tool Complete | Extraction Tool<br>Part Number |
|------------------------|---------------------------------|------------------------------------|------------------------------|-------------|----------------------------|--------------------|--------------------------------|
| Receptacle<br>Contacts | 0.20-0.35                       | 1.1-1.4                            | 1564980                      | x-1530216-x | 1-xxx-1/1-xxx-2/1-xxx-3    | 4-1579016-0        | 1-1579007-1                    |
|                        | 0.5-1.0                         | 1.4-2.1                            | 1241374                      | x-1528195-x | 1-xxx-1/1-xxx-2/1-xxx-3    | 539950-2           |                                |
|                        | >1.0-1.5                        | 2.2-2.4                            | 1534334                      | x-1528312-x | 1-xxx-1/1-xxx-3            | 5-1579001-3        |                                |
| Tab<br>Contacts        | 0.2-0.35                        | 1.15-1.60                          | 964265                       | x-1528091-x | xxx-2/xxx-3/xxx-5          | 169400-0, 539635-1 | 539960-1                       |
|                        | 0.22-0.35                       | 1.15-1.60                          | 2141882                      | x-1528091-x | xxx-2/xxx-3                | 169400-0, 539635-1 |                                |
|                        | 0.5-1.0                         | 1.4-2.1                            | 964267                       | x-1528092-x | xxx-1 /xxx-2 /xxx-3 /xxx-4 | 169400-0, 539635-1 |                                |
|                        | 1.5                             | 2.2-2.4                            | 1241846                      | x-1528123-x | xxx-1/xxx-2                | 169400-0, 539635-1 |                                |

\*\*Double Crimp

### AMP MCP 1.5K Terminal Material and Finish Codes

| 1.5K                   | Finish Code | 1-xxx-1        | 1-xxx-2                  | 1-xxx-3                    |                            |                            |
|------------------------|-------------|----------------|--------------------------|----------------------------|----------------------------|----------------------------|
| Receptacle<br>Contacts | Material    | CuNiSi         | CuNiSi                   | CuNiSi                     |                            |                            |
|                        | Plating     | Pre-tin Plated | Selective<br>Gold Plated | Selective<br>Silver Plated |                            |                            |
| Tab Contacts           | Finish Code | xxx-1          | xxx-2                    | xxx-3                      | xxx-4                      | xxx-5                      |
|                        | Material    | CuSn4          | CuFe2                    | CuSn4                      | CuSn4                      | CuSn4                      |
|                        | Plating     | Pre-tin Plated | Pre-tin Plated           | Gold Plated                | Selective<br>Silver Plated | Selective<br>Silver Plated |

\*Other configurations available upon request. Please contact TE for additional information.

## AMP MCP CONTACTS



### AMP MCP 2.8 CONTACTS

Stamped & Formed Tabs and Receptacles

| 2.8                 | Wire Size (mm <sup>2</sup> ) | Insulation Diameter FLR (mm) | Strip Form Part Number | Applicator  | Material/Finish Codes                     | Hand Tool Complete              | Extraction Tool Part Number |
|---------------------|------------------------------|------------------------------|------------------------|-------------|---|---------------------------------|-----------------------------|
| Receptacle Contacts | 0.2-0.5                      | 1.2-1.4                      | 2141857                | x-2836996-x | 1-xxx-1 / 1-xxx-3                         | 2363592-2                       | 1-1579007-2                 |
|                     | 0.5-1.0                      | 1.4-2.1                      | 968849                 | x-2151164-x | 1-xxx-1 / 1-xxx-2 / 1-xxx-3               | 539722-2                        |                             |
|                     | 1.0-2.5                      | 2.2-3.0                      | 968851                 | x-2151166-x | 1-xxx-1 / 1-xxx-2 / 1-xxx-3               | 539723-2                        |                             |
|                     | 2.5-4.0                      | 3.0-3.7                      | 968853                 | x-2151634-x | 1-xxx-1/ 1-xxx-3                          | 539723-2                        |                             |
| Tab Contacts        | 0.2-0.5                      | 1.15-1.60                    | 963860                 | 2-878549-2  | 1-xxx-1/1-xxx-2/1-xxx-3 / 2-xxx-1/2-xxx-2 | 734538-1                        | 1-1579007-6                 |
|                     | 0.5-1.0                      | 1.4-2.1                      | 962841                 | 2-878550-2  | 1-xxx-1/1-xxx-2/2-xxx-1                   | 734417-1                        |                             |
|                     | 1.0-2.5                      | 2.2-3.0                      | 962842                 | 2-878551-2  | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1     | 734417-2                        |                             |
|                     | 2.5-4.0                      | 3.4-3.7                      | 968946                 | 2-541534-2  | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2     | 539635-1 /<br>Matrize: 539723-2 |                             |

#### AMP MCP 2.8 Terminal Material and Finish Codes

| 2.8                 | Finish Code | 1-xxx-1        | 1-xxx-2                 | 1-xxx-3                 |                |                         |
|---------------------|-------------|----------------|-------------------------|-------------------------|----------------|-------------------------|
| Receptacle Contacts | Material    | CuNiSi         | CuNiSi                  | CuNiSi                  |                |                         |
|                     | Plating     | Pre-tin Plated | Selective Gold Plated   | Selective Silver Plated |                |                         |
| Tab Contacts        | Finish Code | 1-xxx-1        | 1-xxx-2                 | 1-xxx-3                 | 2-xxx-1        | 2-xxx-2                 |
|                     | Material    | CuSn4          | CuSn                    | CuSn                    | CuFe           | CuFe                    |
|                     | Plating     | Pre-tin Plated | Selective Silver Plated | Selective Gold Plated   | Pre-tin Plated | Selective Silver Plated |

\*Other configurations available upon request. Please contact TE for additional information.

## AMP MCP CONTACTS



### AMP MCP 9.5 CONTACTS

Stamped & Formed Tabs and Receptacles

| 9.5                 | Wire Size (mm <sup>2</sup> ) | Insulation Diameter FLR (mm) | Strip Form Part Number | Applicator | Finish Codes      | Hand Tool Complete           | Extraction Tool Part Number |
|---------------------|------------------------------|------------------------------|------------------------|------------|-------------------|------------------------------|-----------------------------|
| Receptacle Contacts | 3.0-6.0                      | 4.0-5.2                      | 1719386 **             | -          | 1-xxx-1           | -                            | 539971-1                    |
|                     | 6.0-10.0                     | 4.6-6.6                      | 967588                 | on request | 1-xxx-1 / 1-xxx-2 | on request 539783-5 for 6 mm |                             |
|                     | 6.0-10.0                     | 4.6-6.6                      | 1241930 **             | on request | 1-xxx-1           | on request 539783-5 for 6 mm |                             |
| Tab Contacts        | 2.5-4.0                      | 3.3-4.5                      | 963764                 | on request | xxx-1 /xxx -2     | 734532-1                     | 1-1579007-7                 |
|                     | 4.0-6.0                      | 4.0-5.2                      | 963766                 | on request |                   | 734533-1                     |                             |
|                     | 6.0-10.0                     | 4.6-6.6                      | 963768                 | on request |                   | 734533-1                     |                             |

\*\* FOR TAB 9.5 X 0.8 MM

### AMP MCP 9.5 Terminal Material and Finish Codes

| 9.5                 | Finish Code | 1-xxx-1        | 1-xxx-2                 |
|---------------------|-------------|----------------|-------------------------|
| Receptacle Contacts | Material    | CuNiSi         | CuNiSi                  |
|                     | Plating     | Pre-tin Plated | Selective Silver Plated |
| Tab Contacts        | Finish Code | xxx-1          | xxx-2                   |
|                     | Material    | CuSn           | CuFe                    |
|                     | Plating     | Pre-tin Plated | Pre-tin Plated          |

## PCON 12 TERMINALS

TE's PCON high-power contacts are specifically designed to support the increased connectivity requirements in high-voltage interconnection systems of hybrid and all-electric vehicles powertrain and auxiliary applications.



### PCON 12 TERMINALS PERFORMANCE SPECIFICATION

#### Durability

10 cycles

#### Current Rating

| Contact Size | Max Current | Max. Wire Size    |
|--------------|-------------|-------------------|
| 12           | 120A        | 16mm <sup>2</sup> |

#### Contact Retention

| Contact Size | Min. Load |
|--------------|-----------|
| 12           | 150N      |

#### Crimp Tensile

| Strength Contact Size                | Tensile Strength |
|--------------------------------------|------------------|
| <b>PCON 12</b>                       |                  |
| 5.0mm <sup>2</sup>                   | ≥ 290 N          |
| 6.0mm <sup>2</sup>                   | ≥ 320 N          |
| 8.0mm <sup>2</sup>                   | ≥ 350 N          |
| 10mm <sup>2</sup>                    | ≥ 450 N          |
| 12mm <sup>2</sup> -16mm <sup>2</sup> | ≥ 600 N          |

### PCON 12 TERMINALS

Stamped & Formed Tabs and Receptacles

| PCON 12             | Wire Size (mm <sup>2</sup> ) | Insulation Diameter FLR (mm) | Strip Form Part Number | Applicator | Finish Code | Insertion/Extraction Tool Part Number |
|---------------------|------------------------------|------------------------------|------------------------|------------|-------------|---------------------------------------|
| Receptacle Contacts | 5.0 - 8.0                    | N/A                          | 2840573                | 2305470-1  | xxx-1       | 8-1579028-2                           |
|                     | 10.0 - 16.0                  | N/A                          | 2840573                |            | xxx-2       |                                       |

#### PCON 12 Terminal Materials and Finish Code

| PCON 12             | Finish Code | 1-xxx-1 | 1-xxx-2 |
|---------------------|-------------|---------|---------|
| Receptacle Contacts | Material    | Cu      | Cu      |
|                     | Plating     | Ag/Ni   | Ag/Ni   |



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