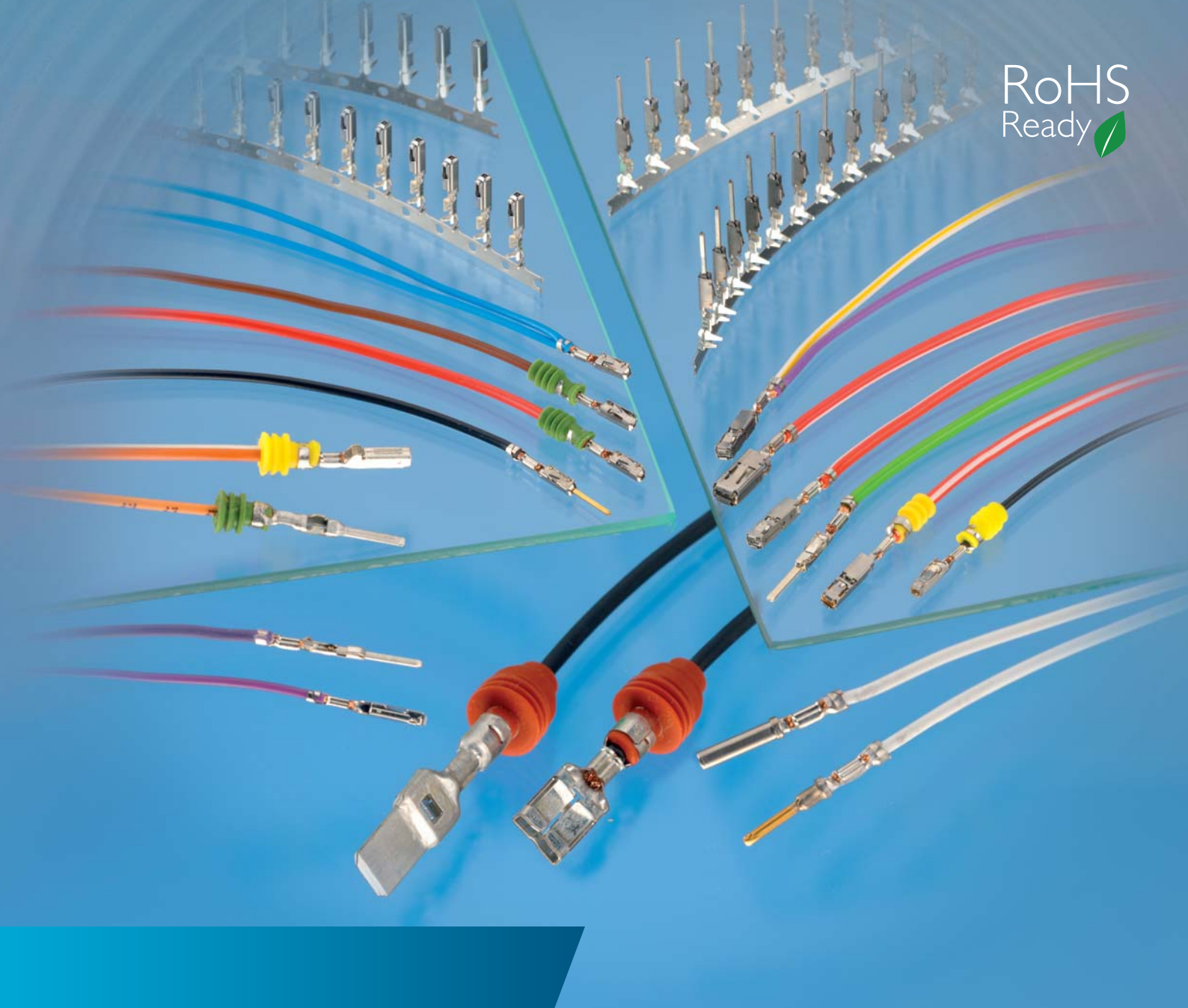
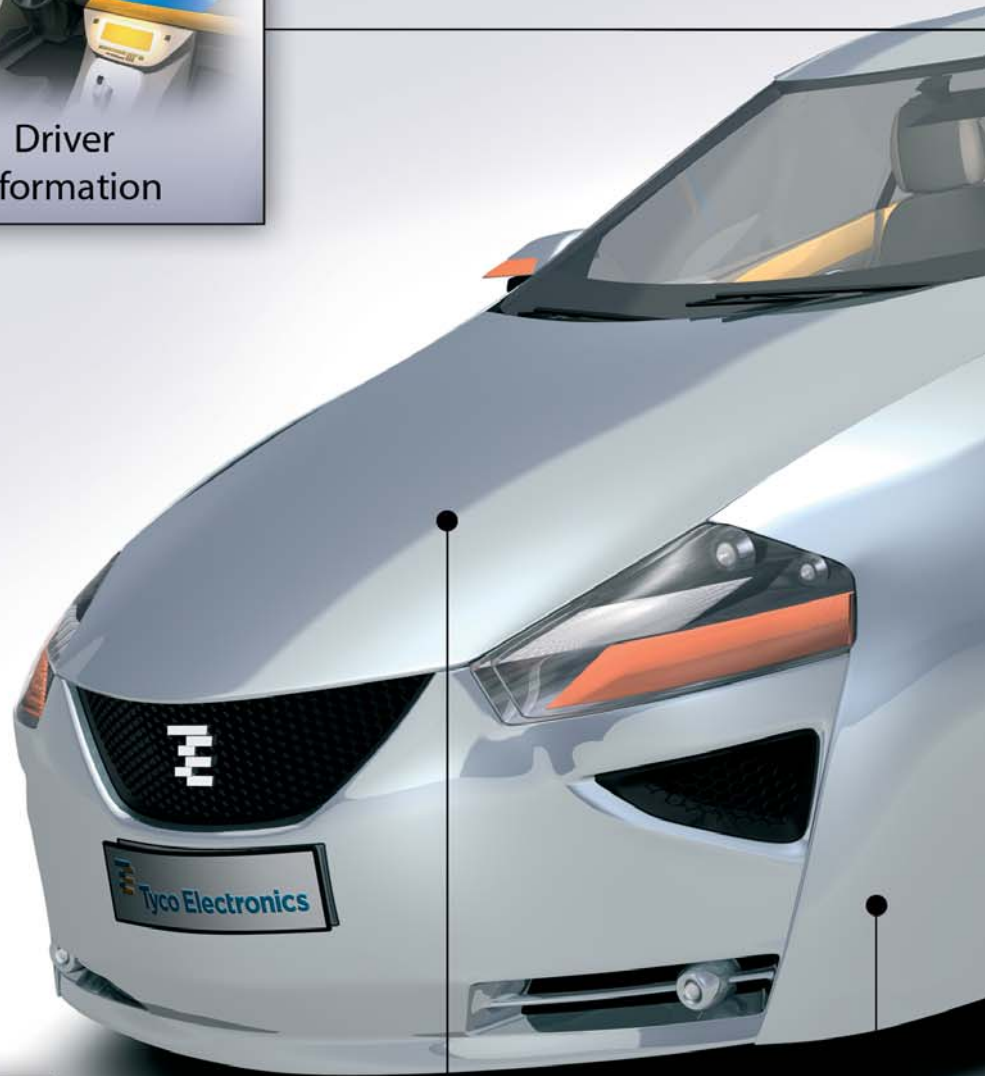


RoHS  
Ready 



# Contact Systems for the Automotive Market



# THE 5 APPLICATION AREAS



Convenience



Safety & Security Systems



Body & Chassis Systems

## INNOVATIVE TECHNOLOGIES

*Tyco Electronics Ltd. is a leading global provider of engineered electronic components, network solutions and undersea telecommunication systems. We design, manufacture and market products for customers in industries from automotive, appliance and aerospace and defense to telecommunications, computers and consumer electronics. The global automotive division follows the globalization goals of our customers, speeds up the integration of new technologies and enables our customers access to our vast product portfolio and services.*

## TERMINALS & CONNECTORS



Tyco Electronics offers a broad range of high quality terminals and connectors. Our electrical/electronic interconnection products and solutions are used to electrically and mechanically join wires and cables, printed circuit boards, integrated circuit packages and batteries. Tyco Electronics expanding capabilities include new copper and fiber-optic connectors, wires, cables/cable management systems that are designed to meet automotive industry demands. The AMP brand encompasses the broadest range of connectors in the world, including high-density, high-speed designs for leading-edge communications equipment.

LITERATURE NO. 1308092-2

## CABLE ASSEMBLY SYSTEMS



Tyco Electronics is your partner for special cable assemblies. Tyco Electronics offers research and development capabilities, prototyping, samples as well as manufacturing facilities for special cable assemblies. This includes overmold technology, semi/fully automatic manufacturing, testing equipment and appliances for handling of high volume production.

LITERATURE NO. 1654288-2



## MECHATRONICS



A variety of technical products are designed today by integrating mechanical components and electronic hardware into one packaging unit thus creating true mechatronic solutions. Mechatronic applications offer amazing and versatile potentials related to functionality, cost, space requirements and quality. Tyco Electronics contributes to those applications with its wide range of innovative and cost-effective product and process technologies.

Advanced stamping, injection molding and assembly techniques are applied along with highly selective surface plating methods.

LITERATURE NO. 1308091-2

## SENSORS



Contact-less measuring eliminates interference effects, wear and tear, and provides increased reliability. Tyco Electronics, one of the largest technology providers for the automobile industry, offers contact-less sensors for a variety of applications. As sensor manufacturer and processing partner, Tyco Electronics also provides project planning support for new sensor applications, assistance in the selection of the appropriate sensor technology for the respective application, and assistance with defining the corresponding mechanical, electrical

and magnetic interface. Tyco Electronics has a broad electromechanical portfolio that includes robust housing technologies, connector systems, and temperature stable designs based on foil and cable networks. This combination of technologies and experience ensures that reliable and cost effective sensor solutions are available for all application types.

LITERATURE NO. 1308086-2

## RELAYS AND SWITCHING MODULES



Automotive technology and integrated systems continue to develop rapidly with electric and electronic systems in today's vehicles playing an increasingly important role for traffic safety and travelling comfort. Automotive Relays and Switching Modules (AR & SM) of Tyco Electronics' Global Automotive Division offer a wide range of the most important components for such systems and is the world's number one participant in this industry sector. Tyco Electronics has competencies in development, production and related technologies

as well as application support, which ensures a competitive edge and mutual business growth on a worldwide scale.

LITERATURE NO. 1308085-2

## HIGH SPEED DATA NETWORKING



High speed data networking within the automobile is becoming more predominant. What was till now restricted to the high end of the market utilizing system such as the MOST® network, high speed data transmission based on optical fibers, now with the introduction of iPod's, display screens and cameras results in the need for high speed networking throughout all platforms.

**MOST® IS A TRADEMARK**

LITERATURE NO. 1308084-2

## POWER DISTRIBUTION SYSTEMS



In automotive environments, the extensive net of electrical/electronic loads requires complex powernet structures. The next evolution of these structures include intelligent control and distribution systems.

Tyco Electronics is working on modules with intelligent technology combinations. Our capabilities include, power distribution units that incorporate integrated switching and protection functions along with flexibility and maximizing modularity to best suit our customer needs.

LITERATURE NO. 1308087-2

## ALTERNATIVE POWER SYSTEMS COMPONENTS FOR HYBRID AND FUELCELL TECHNOLOGY



Tyco Electronics is a leader in next-generation transportation technologies and products for hybrid and electric vehicles. The Global Automotive Division is your source for high voltage power distribution, high current contacts, high voltage connectors and cables, high voltage relays, sensors and temperature protection devices for hybrid and other alternative powered vehicles.

LITERATURE NO. 1308093-2

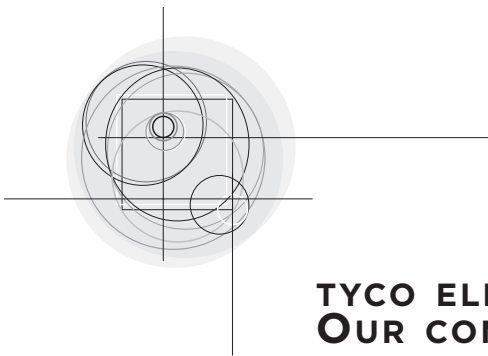
## INDUCTIVE SYSTEMS



The Global Automotive Division is your source for interconnection technologies for automotive, truck and off-highway OEMs and Tier 1 suppliers. With the design competency center in Oostkamp (Belgium), and strategic production centers in Evora (Portugal), Bangalore (India), Shenzhen (China), and Oostkamp (Belgium), Tyco Electronics Inductive Systems is ready to offer you any LF-application component required in the automotive industry.

The Inductive System group focuses on the customer requirement in order to design to the exact demand. This is achieved by highly technical, intelligent and cost-efficient engineering. In order to be a leader in design, Tyco Electronics Inductive Systems has a vast product portfolio, which consists out of antennas, actuators and integrated modules. Next to that, several specific applications are designed.

LITERATURE NO. 1308089-2



### **TYCO ELECTRONICS. OUR COMMITMENT. YOUR ADVANTAGE.**

Tyco Electronics' businesses operate in thousands of different areas of industry. The products and services we deliver all have one thing in common. They are vital to everyday living. Individuals and companies worldwide have critical needs. And every minute of every day, we satisfy them.

# TYCO ELECTRONICS “TECHNOLOGY PORTFOLIO”



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## ● Connector Systems / Electromechanical Components

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● Relays

● Sensors

● Fiber Optic Products

● Wire & Cable

● Application Tooling

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## ● Tubing & Harnessing Products

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● Circuit Protection Devices

● Touch Screen Displays

● Resistors & Inductors

● Heat Sinks & Thermal Solutions

● Switches and Knobs

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## ● Battery Connectors & Assemblies

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● Racks & Panels

● Smart Cards / Leadframes

● Identification Labeling Products

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## Tyco Electronics Online

The Tyco Electronics website is an innovative and interactive source for application information, product updates and technical solutions.

Our step-by-step software makes our website intuitive and user-friendly to better serve you!

Please contact us at:

[www.tycoelectronics.com/automotive](http://www.tycoelectronics.com/automotive)

## Internet Homepage

[www.tycoelectronics.com](http://www.tycoelectronics.com)

[www.tycoelectronics.com/automotive](http://www.tycoelectronics.com/automotive)

## Electronic Internet Catalog

[www.catalog.tycoelectronics.com](http://www.catalog.tycoelectronics.com)

## Product Information Center (PIC)

You can rely on Tyco Electronics PIC Team to provide you support for answers to your general information or technical questions in an efficient and effective manner.

To reach our PIC staff, please contact your local Tyco Electronics organization.

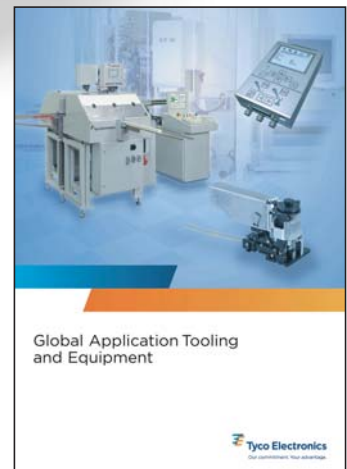


## Product and Machine Literature

Tyco Electronics offers a variety of product specific catalogs, brochures and high impact flyers to help better serve you!

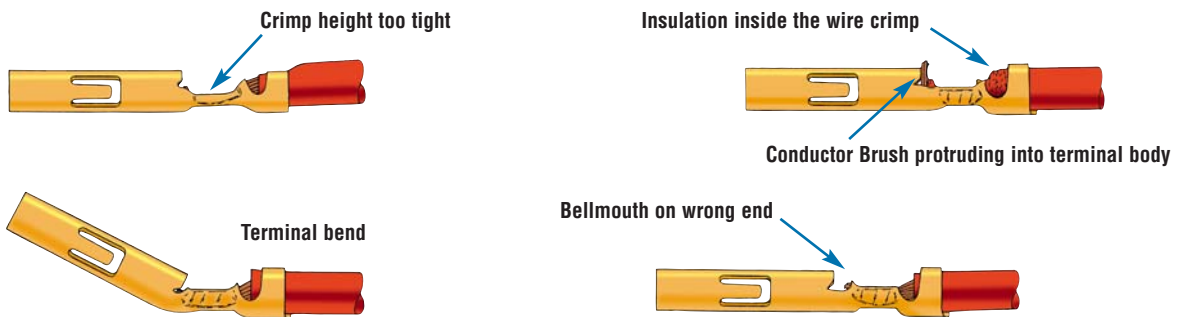
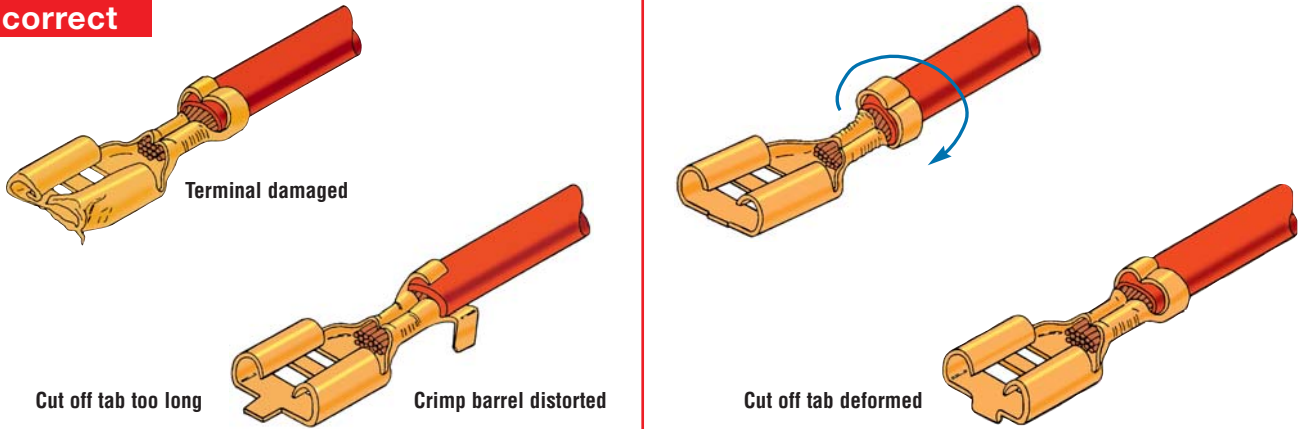
For more information on literature for Tyco Electronics'

Global Automotive Division, please contact your local Tyco Electronics Organization or go to [www.tycoelectronics.com/automotive](http://www.tycoelectronics.com/automotive)

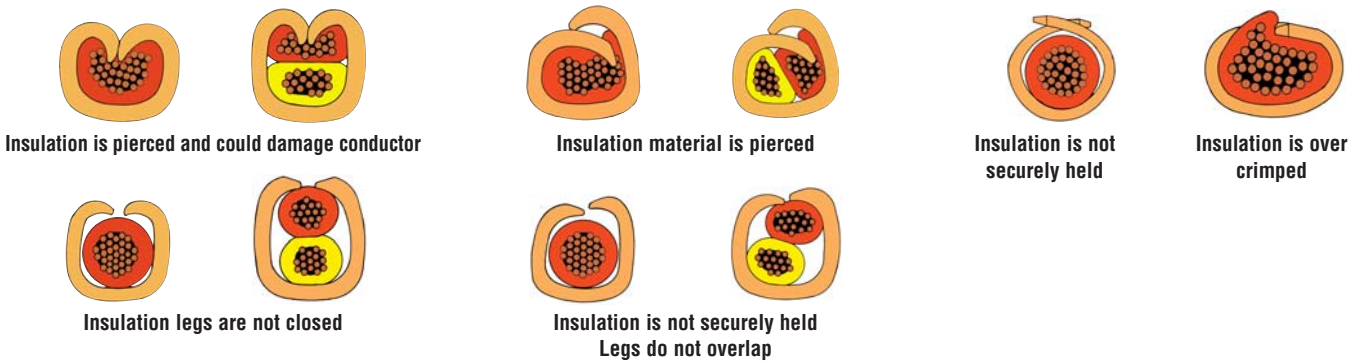


Crimp Quality Guidelines

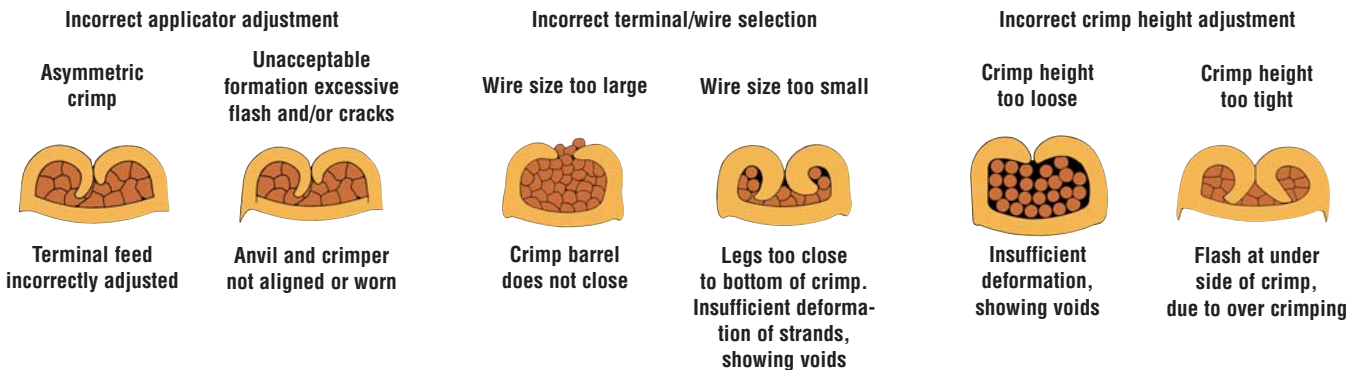
**Incorrect**



**INSULATION CRIMP**



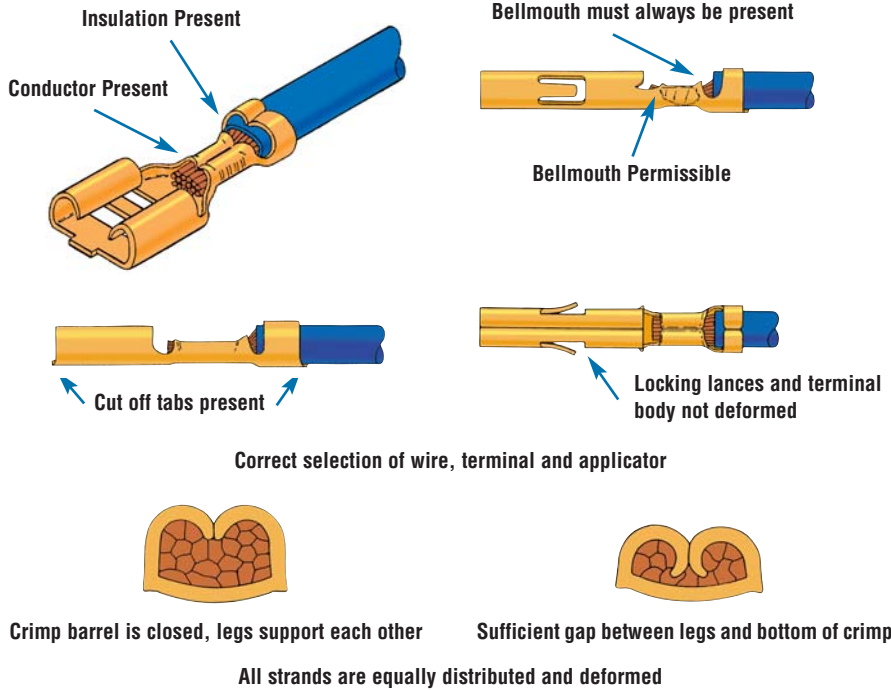
**WIRE CRIMP**



Crimp Quality Guidelines (continued)

**Correct**

**WIRE CRIMP**



Correct selection of wire, terminal and applicator

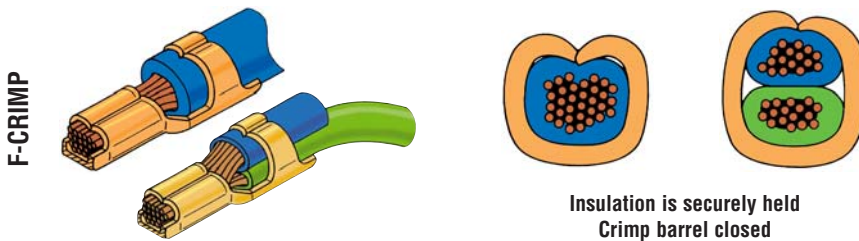
Crimp barrel is closed, legs support each other

Sufficient gap between legs and bottom of crimp

All strands are equally distributed and deformed

**INSULATION CRIMP**

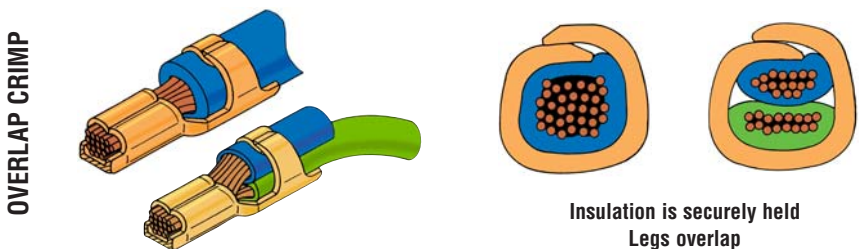
Correct Insulation Diameter, Applicator and Terminal



**F-CRIMP**

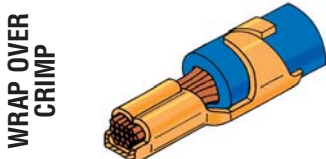
Insulation is securely held  
Crimp barrel closed

For double wire applications with different size wires always place wire with smallest outer diameter in the bottom



**OVERLAP CRIMP**

Insulation is securely held  
Legs overlap



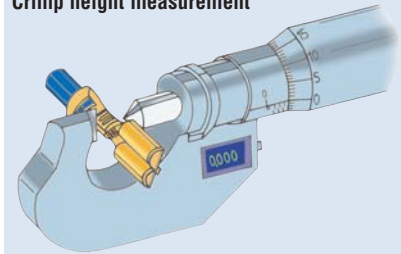
**WRAP OVER CRIMP**

Insulation securely held  
Legs must pass each other

**Test**

**WIRE CRIMP**

Crimp height measurement



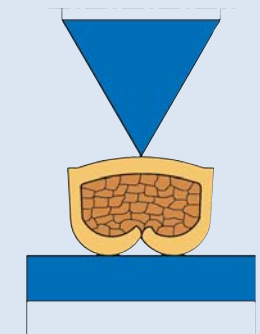
Crimp heights and tolerances

For crimp height tolerances for any given contact, please refer to the relevant application specification.

Examples:

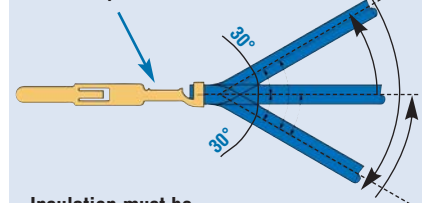
| Contact | Part No.         | Wire Range (mm <sup>2</sup> ) | Tolerance (mm) | Application Spec. |
|---------|------------------|-------------------------------|----------------|-------------------|
| MQS     | 962885<br>962886 | 0.2-0.5                       | ±0.03          | 114-18025         |
| JPT     | 927775           | 0.5-1.0                       | ±0.05          | 114-18050         |
| JPT     | 927773           | 1.5-2.5                       | ±0.05          | 114-18050         |

Digital Crimp Height Micrometer  
(0.001 mm increments) acc. to DIN ISO 9001  
Part No. 547203-1



**INSULATION CRIMP**

Wire crimp without conductor



Insulation must be securely held after bend test

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## Restriction on the Use of Hazardous Substances (RoHS)

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### Restriction on the Use of Hazardous Substances (RoHS)

At Tyco Electronics, we're ready to support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials. Part numbers in this catalog are identified as:

#### RoHS Compliant

Part numbers in this catalog are RoHS Compliant, unless marked otherwise.

These products comply with European Union Directive 2002/95/EC as amended 1 January 2006 that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.

**Note:** For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories.

#### Non-RoHS Compliant

These part numbers are identified with a "◆" symbol. These products do not comply with the material restrictions of the European Union Directive 2002/95/EC.

#### 5 of 6 Compliant

A "●" symbol identifies these part numbers. These products do not fully comply with the European Union Directive 2002/95/EC because they contain lead in solderable interfaces (they do not contain any of the other five restricted substances above allowable limits). However, these products may be suitable for use in RoHS applications where there is an application-based exception for lead in solders, such as the server, storage, or networking infrastructure exemption.

**Note:** Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced below.

#### Getting the Information You Need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog: <http://ecommas.tycoelectronics.com/commerce/alt/RohsAltHome.do>
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above

RoHS  
Customer  
Support  
Center 

So whatever your questions when it comes to RoHS, we've got the answers at [www.tycoelectronics.com/leadfree](http://www.tycoelectronics.com/leadfree)



AWG Conversion Table (Average Value)

**Conversion Tables**

Most of the wire size ranges are mentioned in mm<sup>2</sup>, as well as the insulation diameters which are in many cases only in mm's.

We therefore included the conversion tables on pages 12 and 13.

Please note that wire and insulation sizes are for guidance only.

Consult the customer drawing for precise detail.

| AWG Code | Diameter (Inch) | Diameter (mm) | F (mm <sup>2</sup> ) |
|----------|-----------------|---------------|----------------------|
| 000000   | 0.5800          | 14.733        | 170.0                |
| 00000    | 0.5165          | 13.13         | 135.0                |
| 0000     | 0.4600          | 11.684        | 103.8                |
| 000      | 0.4096          | 10.40         | 79.0                 |
| 00       | 0.3648          | 9.27          | 67.5                 |
| 0        | 0.3249          | 8.25          | 53.4                 |
| 1        | 0.2893          | 7.34          | 42.2                 |
| 2        | 0.2576          | 6.55          | 33.7                 |
| 3        | 0.2294          | 5.82          | 26.6                 |
| 4        | 0.2043          | 5.18          | 21.0                 |
| 5        | 0.1819          | 4.62          | 16.9                 |
| 6        | 0.1620          | 4.115         | 13.25                |
| 7        | 0.1443          | 3.66          | 10.25                |
| 8        | 0.1285          | 3.26          | 8.34                 |
| 9        | 0.1144          | 2.90          | 6.6                  |
| 10       | 0.1019          | 2.59          | 5.27                 |
| 11       | 0.0907          | 2.30          | 4.15                 |
| 12       | 0.0808          | 2.05          | 3.3                  |
| 13       | 0.0720          | 1.83          | 2.63                 |
| 14       | 0.0641          | 1.63          | 2.08                 |
| 15       | 0.0571          | 1.45          | 1.65                 |
| 16       | 0.0508          | 1.29          | 1.305                |
| 17       | 0.0453          | 1.14          | 1.01                 |
| 18       | 0.0403          | 1.02          | 0.79                 |
| 19       | 0.0359          | 0.91          | 0.65                 |
| 20       | 0.0320          | 0.81          | 0.51                 |
| 21       | 0.0285          | 0.72          | 0.407                |
| 22       | 0.0253          | 0.64          | 0.32                 |
| 23       | 0.0226          | 0.57          | 0.255                |
| 24       | 0.0201          | 0.51          | 0.205                |
| 25       | 0.0179          | 0.455         | 0.162                |
| 26       | 0.0159          | 0.40          | 0.125                |
| 27       | 0.0142          | 0.36          | 0.102                |
| 28       | 0.0126          | 0.320         | 0.08                 |
| 29       | 0.0113          | 0.287         | 0.0646               |
| 30       | 0.0100          | 0.254         | 0.0516               |
| 31       | 0.0089          | 0.226         | 0.04                 |
| 32       | 0.0080          | 0.203         | 0.0324               |
| 33       | 0.0071          | 0.180         | 0.0255               |
| 34       | 0.0063          | 0.160         | 0.02                 |
| 35       | 0.0056          | 0.142         | 0.0158               |
| 36       | 0.0050          | 0.127         | 0.0127               |
| 37       | 0.0045          | 0.114         | 0.01                 |
| 38       | 0.0040          | 0.101         | 0.008                |
| 39       | 0.0035          | 0.089         | 0.0062               |
| 40       | 0.0031          | 0.079         | 0.0049               |
| 41       | 0.0028          | 0.071         | 0.00395              |
| 42       | 0.0025          | 0.064         | 0.00321              |
| 43       | 0.0022          | 0.056         | 0.00246              |
| 44       | 0.00198         | 0.050         | 0.00196              |
| 45       | 0.00176         | 0.045         |                      |
| 46       | 0.00157         | 0.040         |                      |
| 47       | 0.00140         | 0.036         |                      |
| 48       | 0.00124         | 0.031         |                      |
| 49       | 0.00110         | 0.028         |                      |
| 50       | 0.00099         | 0.025         |                      |

**FLK/FLR Cable**

FLK and FLR stand for German DIN (72551) abbreviations.

**FLK means:**

- In German:  
  - Fahrzeug Leitung Kunststoff
 In English:  
  - Vehicle Cable Plastic

**FLR means:**

- In German:  
  - Fahrzeug Leitung Reduziert
 In English:  
  - Thin Walled Cable (reduced insulation thickness)

**Remark:** Starting from 0.03 mm<sup>2</sup> (AWG 32) a wire can be crimped.

Conversion Table – Inch/mm

| Inch  | 0       | 0.001   | 0.002   | 0.003   | 0.004   | 0.005   | 0.006   | 0.007   | 0.008   | 0.009   |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0     | 0       | 0.0254  | 0.0508  | 0.0762  | 0.1016  | 0.1270  | 0.1524  | 0.1778  | 0.2032  | 0.2286  |
| 0.010 | 0.2540  | 0.2794  | 0.3048  | 0.3302  | 0.3556  | 0.3810  | 0.4064  | 0.4318  | 0.4572  | 0.4826  |
| 0.020 | 0.5080  | 0.5334  | 0.5588  | 0.5842  | 0.6096  | 0.6350  | 0.6604  | 0.6858  | 0.7112  | 0.7366  |
| 0.030 | 0.7620  | 0.7874  | 0.8128  | 0.8382  | 0.8636  | 0.8890  | 0.9144  | 0.9398  | 0.9652  | 0.9906  |
| 0.040 | 1.0160  | 1.0414  | 1.0668  | 1.0922  | 1.1176  | 1.1430  | 1.1684  | 1.1938  | 1.2192  | 1.2446  |
| 0.050 | 1.2700  | 1.2954  | 1.3208  | 1.3462  | 1.3716  | 1.3970  | 1.4224  | 1.4478  | 1.4732  | 1.4986  |
| 0.060 | 1.5240  | 1.5494  | 1.5748  | 1.6002  | 1.6256  | 1.6510  | 1.6764  | 1.7018  | 1.7272  | 1.7526  |
| 0.070 | 1.7780  | 1.8034  | 1.8288  | 1.8542  | 1.8796  | 1.9050  | 1.9304  | 1.9558  | 1.9812  | 2.0066  |
| 0.080 | 2.0320  | 2.0574  | 2.0828  | 2.1082  | 2.1336  | 2.1590  | 2.1844  | 2.2098  | 2.2352  | 2.2606  |
| 0.090 | 2.2860  | 2.3114  | 2.3368  | 2.3622  | 2.3876  | 2.4130  | 2.4384  | 2.4638  | 2.4892  | 2.5146  |
| 0.100 | 2.5400  | 2.5654  | 2.5908  | 2.6162  | 2.6416  | 2.6670  | 2.6924  | 2.7178  | 2.7432  | 2.7686  |
| 0.110 | 2.7940  | 2.8194  | 2.8448  | 2.8702  | 2.8956  | 2.9210  | 2.9464  | 2.9718  | 2.9972  | 3.0226  |
| 0.120 | 3.0480  | 3.0734  | 3.0988  | 3.1242  | 3.1496  | 3.1750  | 3.2004  | 3.2258  | 3.2512  | 3.2766  |
| 0.130 | 3.3020  | 3.3274  | 3.3528  | 3.3782  | 3.4036  | 3.4290  | 3.4544  | 3.4798  | 3.5052  | 3.5306  |
| 0.140 | 3.5560  | 3.5814  | 3.6068  | 3.6322  | 3.6576  | 3.6830  | 3.7084  | 3.7338  | 3.7592  | 3.7846  |
| 0.150 | 3.8100  | 3.8354  | 3.8608  | 3.8862  | 3.9116  | 3.9370  | 3.9624  | 3.9878  | 4.0132  | 4.0386  |
| 0.160 | 4.0640  | 4.0894  | 4.1148  | 4.1402  | 4.1656  | 4.1910  | 4.2164  | 4.2418  | 4.2672  | 4.2926  |
| 0.170 | 4.3180  | 4.3434  | 4.3688  | 4.3942  | 4.4196  | 4.4450  | 4.4704  | 4.4958  | 4.5212  | 4.5466  |
| 0.180 | 4.5720  | 4.5974  | 4.6228  | 4.6482  | 4.6736  | 4.6990  | 4.7244  | 4.7498  | 4.7752  | 4.8006  |
| 0.190 | 4.8260  | 4.8514  | 4.8768  | 4.9022  | 4.9276  | 4.9530  | 4.9784  | 5.0038  | 5.0292  | 5.0546  |
| 0.200 | 5.0800  | 5.1054  | 5.1308  | 5.1562  | 5.1816  | 5.2070  | 5.2324  | 5.2578  | 5.2832  | 5.3086  |
| 0.210 | 5.3340  | 5.3594  | 5.3848  | 5.4102  | 5.4356  | 5.4610  | 5.4864  | 5.5118  | 5.5372  | 5.5626  |
| 0.220 | 5.5880  | 5.6134  | 5.6388  | 5.6642  | 5.6896  | 5.7150  | 5.7404  | 5.7658  | 5.7912  | 5.8166  |
| 0.230 | 5.8420  | 5.8674  | 5.8928  | 5.9182  | 5.9436  | 5.9690  | 5.9944  | 6.0198  | 6.0452  | 6.0706  |
| 0.240 | 6.0960  | 6.1214  | 6.1468  | 6.1722  | 6.1976  | 6.2230  | 6.2484  | 6.2738  | 6.2992  | 6.3246  |
| 0.250 | 6.3500  | 6.3754  | 6.4008  | 6.4262  | 6.4516  | 6.4770  | 6.5024  | 6.5278  | 6.5532  | 6.5786  |
| 0.260 | 6.6040  | 6.6294  | 6.6548  | 6.6802  | 6.7056  | 6.7310  | 6.7564  | 6.7818  | 6.8072  | 6.8326  |
| 0.270 | 6.8580  | 6.8834  | 6.9088  | 6.9342  | 6.9596  | 6.9850  | 7.0104  | 7.0358  | 7.0612  | 7.0866  |
| 0.280 | 7.1120  | 7.1374  | 7.1628  | 7.1882  | 7.2136  | 7.2390  | 7.2644  | 7.2898  | 7.3152  | 7.3406  |
| 0.290 | 7.3660  | 7.3914  | 7.4168  | 7.4422  | 7.4676  | 7.4930  | 7.5184  | 7.5438  | 7.5692  | 7.5946  |
| 0.300 | 7.6200  | 7.6454  | 7.6708  | 7.6962  | 7.7216  | 7.7470  | 7.7724  | 7.7978  | 7.8232  | 7.8486  |
| 0.310 | 7.8740  | 7.8994  | 7.9248  | 7.9502  | 7.9756  | 8.0010  | 8.0264  | 8.0518  | 8.0772  | 8.1026  |
| 0.320 | 8.1280  | 8.1534  | 8.1788  | 8.2042  | 8.2296  | 8.2550  | 8.2804  | 8.3058  | 8.3312  | 8.3566  |
| 0.330 | 8.3820  | 8.4074  | 8.4328  | 8.4582  | 8.4836  | 8.5090  | 8.5344  | 8.5598  | 8.5852  | 8.6106  |
| 0.340 | 8.6360  | 8.6614  | 8.6868  | 8.7122  | 8.7376  | 8.7630  | 8.7884  | 8.8138  | 8.8392  | 8.8646  |
| 0.350 | 8.8900  | 8.9154  | 8.9408  | 8.9662  | 8.9916  | 9.0170  | 9.0424  | 9.0678  | 9.0932  | 9.1186  |
| 0.360 | 9.1440  | 9.1694  | 9.1948  | 9.2202  | 9.2456  | 9.2710  | 9.2964  | 9.3218  | 9.3472  | 9.3726  |
| 0.370 | 9.3980  | 9.4234  | 9.4488  | 9.4742  | 9.4996  | 9.5250  | 9.5504  | 9.5758  | 9.6012  | 9.6266  |
| 0.380 | 9.6520  | 9.6774  | 9.7028  | 9.7282  | 9.7536  | 9.7790  | 9.8044  | 9.8298  | 9.8552  | 9.8806  |
| 0.390 | 9.9060  | 9.9314  | 9.9568  | 9.9822  | 10.0076 | 10.0330 | 10.0584 | 10.0838 | 10.1092 | 10.1346 |
| 0.400 | 10.1600 | 10.1854 | 10.2108 | 10.2362 | 10.2616 | 10.2870 | 10.3124 | 10.3378 | 10.3632 | 10.3886 |
| 0.410 | 10.4140 | 10.4394 | 10.4648 | 10.4902 | 10.5156 | 10.5410 | 10.5664 | 10.5918 | 10.6172 | 10.6426 |
| 0.420 | 10.6680 | 10.6934 | 10.7188 | 10.7442 | 10.7696 | 10.7950 | 10.8204 | 10.8458 | 10.8712 | 10.8966 |
| 0.430 | 10.9220 | 10.9474 | 10.9728 | 10.9982 | 11.0236 | 11.0490 | 11.0744 | 11.0998 | 11.1252 | 11.1506 |
| 0.440 | 11.1760 | 11.2014 | 11.2268 | 11.2522 | 11.2776 | 11.3030 | 11.3284 | 11.3538 | 11.3792 | 11.4046 |
| 0.450 | 11.4300 | 11.4554 | 11.4808 | 11.5062 | 11.5316 | 11.5510 | 11.5824 | 11.6078 | 11.6332 | 11.6586 |
| 0.460 | 11.6840 | 11.7094 | 11.7348 | 11.7602 | 11.7856 | 11.8110 | 11.8364 | 11.8618 | 11.8872 | 11.9126 |
| 0.470 | 11.9380 | 11.9634 | 11.9888 | 12.0142 | 12.0396 | 12.0650 | 12.0904 | 12.1158 | 12.1412 | 12.1666 |
| 0.480 | 12.1920 | 12.2174 | 12.2428 | 12.2682 | 12.2936 | 12.3190 | 12.3444 | 12.3698 | 12.3952 | 12.4206 |
| 0.490 | 12.4460 | 12.4714 | 12.4968 | 12.5222 | 12.5476 | 12.5730 | 12.5984 | 12.6238 | 12.6492 | 12.6746 |
| 0.500 | 12.7000 |         |         |         |         |         |         |         |         |         |
| Inch  | 0       | 0.001   | 0.002   | 0.003   | 0.004   | 0.005   | 0.006   | 0.007   | 0.008   | 0.009   |

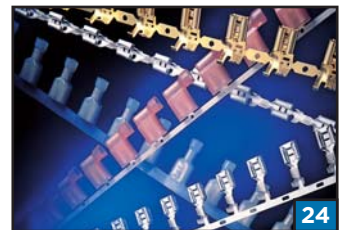
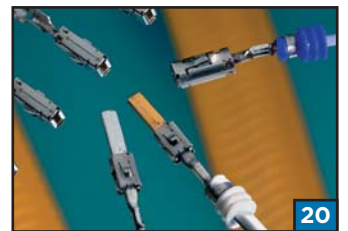
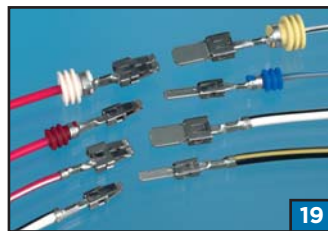
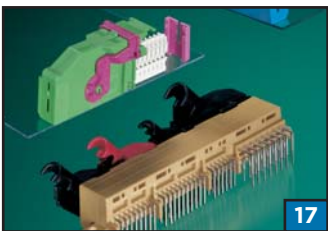
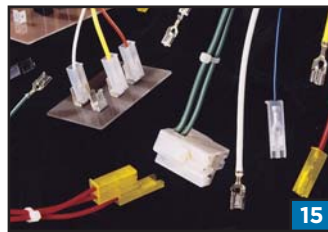
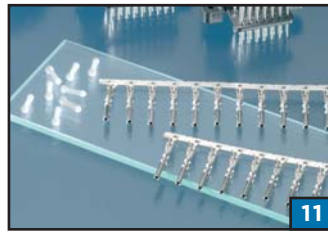
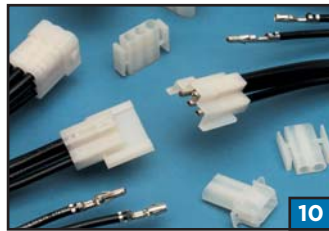
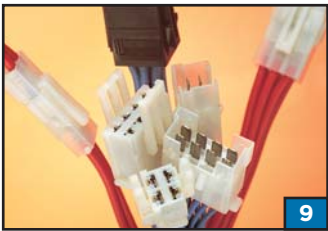
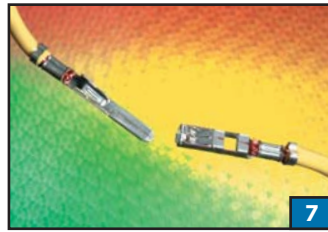
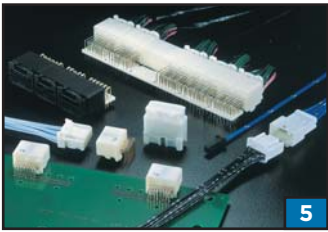
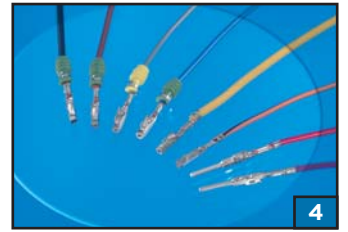
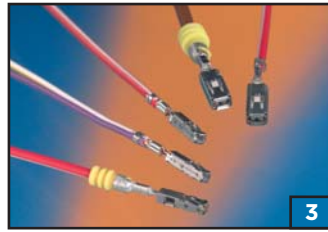
Conversion Table – Inch/mm (continued)

| Inch  | 0       | 0.001   | 0.002   | 0.003   | 0.004   | 0.005   | 0.006   | 0.007   | 0.008   | 0.009   |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.500 | 12.7000 | 12.7254 | 12.7508 | 12.7762 | 12.8016 | 12.8270 | 12.8524 | 12.8778 | 12.9032 | 12.9286 |
| 0.510 | 12.9540 | 12.9794 | 13.0048 | 13.0302 | 13.0556 | 13.0810 | 13.1064 | 13.1318 | 13.1572 | 13.1826 |
| 0.520 | 13.2080 | 13.2334 | 13.2588 | 13.2842 | 13.3096 | 13.3350 | 13.3604 | 13.3858 | 13.4112 | 13.4366 |
| 0.530 | 13.4620 | 13.4874 | 13.5128 | 15.5382 | 13.5636 | 13.5890 | 13.6144 | 13.6398 | 13.6652 | 13.6906 |
| 0.540 | 13.7160 | 13.7414 | 13.7668 | 13.7922 | 13.8176 | 13.8430 | 13.8684 | 13.8938 | 13.9192 | 13.9446 |
| 0.550 | 13.9700 | 13.9954 | 14.0208 | 14.0462 | 14.0716 | 14.0970 | 14.1224 | 14.1478 | 14.1732 | 14.1986 |
| 0.560 | 14.2240 | 14.2494 | 14.2748 | 14.3002 | 14.3256 | 14.3510 | 14.3764 | 14.4018 | 14.4272 | 14.4526 |
| 0.570 | 14.4780 | 14.5034 | 14.5288 | 14.5542 | 14.5796 | 14.6050 | 14.6304 | 14.6558 | 14.6812 | 14.7066 |
| 0.580 | 14.7320 | 14.7574 | 14.7828 | 14.8082 | 14.8336 | 14.8590 | 14.8844 | 14.9098 | 14.9352 | 14.9606 |
| 0.590 | 14.9860 | 15.0114 | 15.0368 | 15.0622 | 15.0876 | 15.1130 | 15.1384 | 15.1638 | 15.1892 | 15.2146 |
| 0.600 | 15.2400 | 15.2654 | 15.2908 | 15.3162 | 15.3416 | 15.3670 | 15.3924 | 15.4178 | 15.4432 | 15.4686 |
| 0.610 | 15.4940 | 15.5194 | 15.5448 | 15.5702 | 15.5956 | 15.6210 | 15.6464 | 15.6718 | 15.6972 | 15.7226 |
| 0.620 | 15.7480 | 15.7734 | 15.7988 | 15.8242 | 15.8496 | 15.8750 | 15.9004 | 15.9258 | 15.9512 | 15.9766 |
| 0.630 | 16.0020 | 16.0274 | 16.0528 | 16.0782 | 16.1036 | 16.1290 | 16.1544 | 16.1798 | 16.2052 | 16.2306 |
| 0.640 | 16.2560 | 16.2814 | 16.3068 | 16.3322 | 16.3576 | 16.3830 | 16.4084 | 16.4338 | 16.4592 | 16.4846 |
| 0.650 | 16.5100 | 16.5354 | 16.5608 | 16.5862 | 16.6116 | 16.6370 | 16.6624 | 16.6878 | 16.7132 | 16.7386 |
| 0.660 | 16.7640 | 16.7894 | 16.8148 | 16.8402 | 16.8656 | 16.8910 | 16.9164 | 16.9418 | 16.9672 | 16.9926 |
| 0.670 | 17.0180 | 17.0434 | 17.0688 | 17.0942 | 17.1196 | 17.1450 | 17.1704 | 17.1958 | 17.2212 | 17.2466 |
| 0.680 | 17.2720 | 17.2974 | 17.3228 | 17.3482 | 17.3736 | 17.3990 | 17.4244 | 17.4498 | 17.4752 | 17.5006 |
| 0.690 | 17.5260 | 17.5514 | 17.5768 | 17.6022 | 17.6276 | 17.6530 | 17.6784 | 17.7038 | 17.7292 | 17.7546 |
| 0.700 | 17.7800 | 17.8054 | 17.8308 | 17.8562 | 17.8816 | 17.9070 | 17.9324 | 17.9528 | 17.9832 | 18.0086 |
| 0.710 | 18.0340 | 18.0594 | 18.0848 | 18.1102 | 18.1356 | 18.1610 | 18.1864 | 18.2118 | 18.2372 | 18.2626 |
| 0.720 | 18.2880 | 18.3134 | 18.3388 | 18.3642 | 18.3896 | 18.4150 | 18.4404 | 18.4658 | 18.4912 | 19.5166 |
| 0.730 | 18.5420 | 18.5674 | 18.5928 | 18.6182 | 18.6436 | 18.6690 | 18.6944 | 18.7198 | 18.7452 | 18.7706 |
| 0.740 | 18.7960 | 18.8214 | 18.8468 | 18.8722 | 18.8976 | 18.9230 | 18.9484 | 18.9738 | 18.9992 | 19.0246 |
| 0.750 | 19.0500 | 19.0754 | 19.1008 | 19.1262 | 19.1516 | 19.1170 | 19.2024 | 19.2278 | 19.2532 | 19.2786 |
| 0.760 | 19.3040 | 19.3294 | 19.3548 | 19.3802 | 19.4056 | 19.4310 | 19.4564 | 19.4818 | 19.5072 | 19.5326 |
| 0.770 | 19.5580 | 19.5834 | 19.6088 | 19.6342 | 19.6596 | 19.6850 | 19.7104 | 19.7358 | 19.7612 | 19.7866 |
| 0.780 | 19.8120 | 19.8374 | 19.8628 | 19.8882 | 19.9136 | 19.9390 | 19.9644 | 19.9898 | 20.0152 | 20.0406 |
| 0.790 | 20.0660 | 20.0914 | 20.1168 | 20.1422 | 20.1676 | 20.1930 | 20.2184 | 20.2438 | 20.2692 | 20.2946 |
| 0.800 | 20.3200 | 20.3454 | 20.3708 | 20.3962 | 20.4216 | 20.4470 | 20.4724 | 20.4978 | 20.5232 | 20.5486 |
| 0.810 | 20.5740 | 20.5994 | 20.6248 | 20.6502 | 20.6756 | 20.7010 | 20.7264 | 20.7518 | 20.7772 | 20.8026 |
| 0.820 | 20.8280 | 20.8534 | 20.8788 | 20.9042 | 20.9296 | 20.9550 | 20.9804 | 21.0058 | 21.0312 | 21.0566 |
| 0.830 | 21.0820 | 21.1074 | 21.1328 | 21.1582 | 21.1836 | 21.2090 | 21.2344 | 21.2598 | 21.2852 | 21.3106 |
| 0.840 | 21.3360 | 21.3614 | 21.3868 | 21.4122 | 21.4376 | 21.4630 | 21.4884 | 21.5138 | 21.5392 | 21.5646 |
| 0.850 | 21.5900 | 21.6154 | 21.6408 | 21.6662 | 21.6916 | 21.7170 | 21.7424 | 21.7678 | 21.7932 | 21.8186 |
| 0.860 | 21.8440 | 21.8694 | 21.8948 | 21.9202 | 21.9456 | 21.9710 | 21.9964 | 22.0218 | 22.0472 | 22.0726 |
| 0.870 | 22.0980 | 22.1234 | 22.1488 | 22.1742 | 22.1996 | 22.2250 | 22.2504 | 22.2758 | 22.3012 | 22.3266 |
| 0.880 | 22.3520 | 22.3774 | 22.4028 | 22.4282 | 22.4536 | 22.4790 | 22.5044 | 22.5298 | 22.5552 | 22.5806 |
| 0.890 | 22.6060 | 22.6314 | 22.6568 | 22.6822 | 22.7076 | 22.7330 | 22.7584 | 22.7838 | 22.8092 | 22.8346 |
| 0.900 | 22.8600 | 22.8854 | 22.9108 | 22.9362 | 22.9616 | 22.9870 | 23.0124 | 23.0378 | 23.0632 | 23.0886 |
| 0.910 | 23.1140 | 23.1394 | 23.1648 | 23.1902 | 23.2156 | 23.2410 | 23.2664 | 23.2918 | 23.3172 | 23.3426 |
| 0.920 | 23.3680 | 23.3934 | 23.4188 | 23.4442 | 23.4696 | 23.4950 | 23.5204 | 23.5458 | 23.5712 | 23.5966 |
| 0.930 | 23.6220 | 23.6474 | 23.6728 | 23.6982 | 23.7236 | 23.7490 | 23.7744 | 23.7998 | 23.8252 | 23.8506 |
| 0.940 | 23.8760 | 23.9014 | 23.9268 | 23.9522 | 23.9776 | 24.0030 | 24.0284 | 24.0538 | 24.0792 | 24.1046 |
| 0.950 | 24.1300 | 24.1554 | 24.1808 | 24.2062 | 24.2316 | 24.2570 | 24.2824 | 24.3078 | 24.3332 | 24.3586 |
| 0.960 | 24.3840 | 24.4094 | 24.4348 | 24.4602 | 24.4856 | 24.5110 | 24.5364 | 24.5618 | 24.5812 | 24.6126 |
| 0.970 | 24.6380 | 24.6634 | 24.6888 | 24.7142 | 24.7396 | 24.7650 | 24.7904 | 24.8158 | 24.8412 | 24.8666 |
| 0.980 | 24.8920 | 24.9174 | 24.9428 | 24.9682 | 24.9936 | 25.0190 | 25.0444 | 25.0698 | 25.0952 | 25.1206 |
| 0.990 | 25.1460 | 25.1714 | 25.1968 | 25.2222 | 25.2476 | 25.2730 | 25.2984 | 25.3228 | 25.3492 | 25.3746 |
| 1.000 | 25.4000 |         |         |         |         |         |         |         |         |         |
| Inch  | 0       | 0.001   | 0.002   | 0.003   | 0.004   | 0.005   | 0.006   | 0.007   | 0.008   | 0.009   |



# Contact Systems

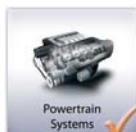
for the Automotive Market



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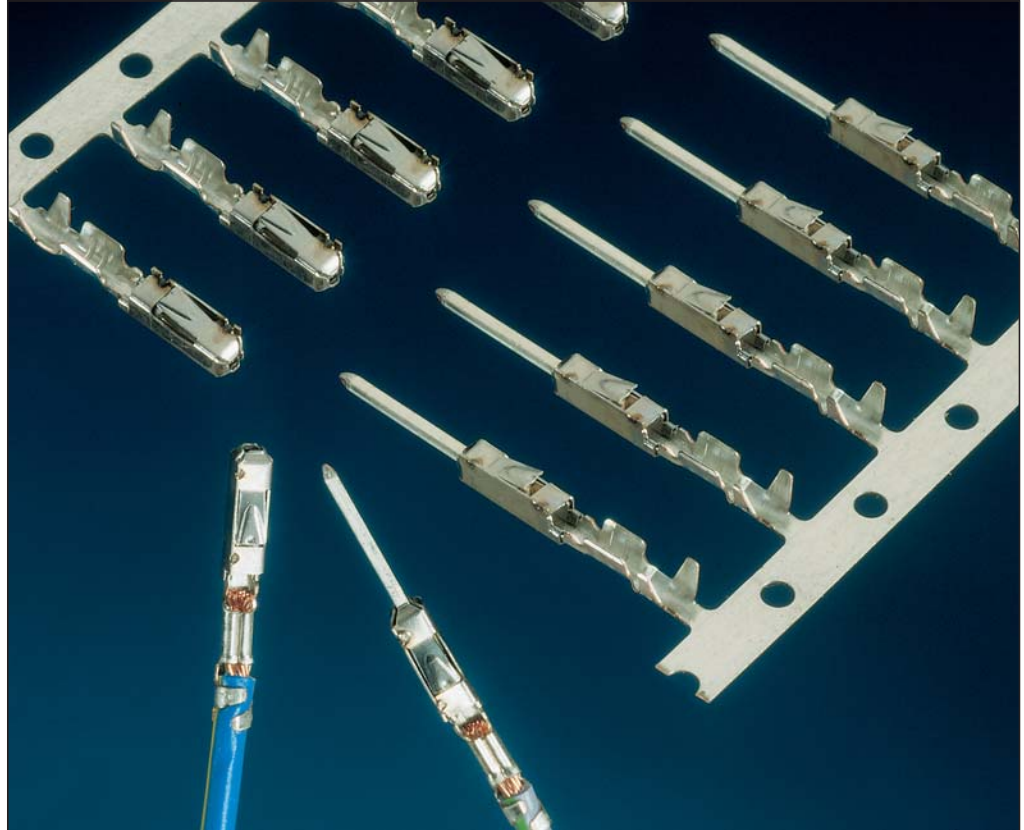
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Engineering Notes

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Introduction



With the design of the Micro Quadlok System (MQS) in the centerline 2.54 mm, we developed a new automobile suitable contact system. The positive features of existing contact systems – high packing density and at the same time high load of current carrying capacity, robust design and safe handling – were consistently implemented. Consequently, the receptacle contact and pin contact are able to be inserted safely into the contact cavity and latch in with a clear click.

The receptacle contacts with four contact points on a 0.63 x 0.63 mm pin contact and reaches at this point a max. load of current carrying capacity of up to 7.5 A at 80 °C.

Based on the plug uniform base centerline of 2.54 mm, the Quadlok system ranges from Micro Quadlok and Micro Power Quadlok to Power Quadlok which can be subjected to more stress. With the whole number multiplication of the centerline from 2.54 mm, the circuit board designer achieves a high level of freedom on designing the layout.

The contact design is based on the proven separation of the protection and stop function on one hand which is taken over by the enclosed cantilever spring. The electrical and electro-mechanical characteristics on the other hand, are secured by the inner contact body.

By this means of task sharing, the implemented contact material can be applied usage specifically and optimally.

The system as a whole is, by this means, protected for a long time against fatigue under vibration and mechanical load.

During the development of the Quadlok contact, strict attention was paid that the locking points of the second contact locking are each found at the same level.

Receptacle Contacts

**Technical Features**

**Material**

Contact: CuNiSi  
Pin Contact: Copper-Alloy  
Cantilever Spring: Stainless Steel

**Contact Finish:**

Pre-tin plated, silver plated,  
gold plated

**Conductor Binding:**

Crimp Technology/Insulation  
Displacement/FFC/Welding Area

**Wire Size Range:**

0.14–0.75 mm<sup>2</sup> Single  
Wires (FLR)/AWG 18–22

**Current Carrying Capacity:**

Up to 7.5 A at 80 °C

**Temperature Range:**

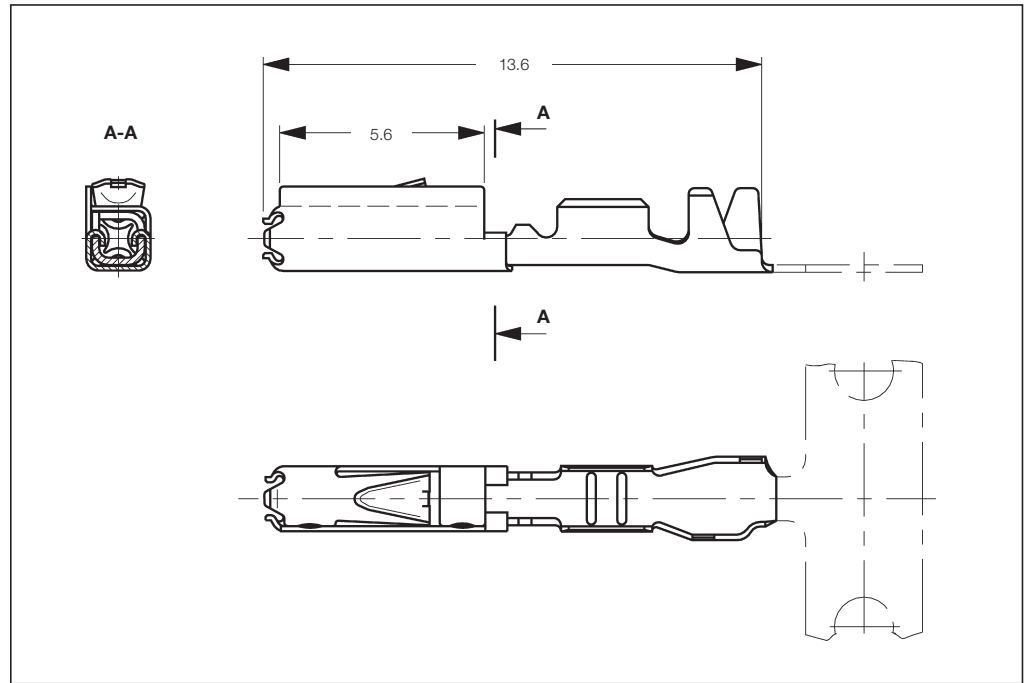
–40 °C ... +120 °C (tin plated)  
–40 °C ... +130 °C (silver plated)  
–40 °C ... +140 °C (gold plated)

**Centerline:**

2.54 x 2.54 mm Standard  
4.0 x 4.0 mm SWS Standard  
4.0 x 3.5 mm SWS Staggered

**Mating Cycles:**

20 tin plated  
20 silver plated  
100 gold plated



**Special Applications:**

Inmoldable Pin Contact,  
Insulation Displacement  
Receptacle Contact,  
Receptacle Contact with  
Short Circuit Area

**Table Drawings:**

929454 (Receptacle Contact)  
929453 (Pin Contact)

**Application Specification:**

114-18021 Standard  
114-18025 SWS System

**Product Specification:**

108-18030

**Extraction Tools:**

Part No. **6-1579007-0** Clean Body  
Part No. **6-1579007-1** Standard or  
Part No. **1355968-1**

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 539635-1 with Die Set |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
|                                    |                     |          |                     |              |                  |             |                  |            |             |                                 |
| 0.14–0.22                          | –                   | 0.9–1.2  | pre-tin plated      | 1355717-1    | 13,000           | 1355718-1   | 500              | 1426402    | 1528009     | 5-1579001-2                     |
|                                    |                     |          | gold plated         | 1355717-5    | 13,000           | 1355718-5   | 500              |            |             |                                 |
| 0.20–0.50                          | –                   | 0.9–1.6  | pre-tin plated      | 928999-1     | 13,000           | 963726-1    | 1,000            | 1238043*   | 1528035*    | 539682-2                        |
|                                    |                     |          | gold plated         | 928999-5     | 13,000           | 963726-5    | 1,000            |            |             |                                 |
|                                    |                     |          | silver plated       | 928999-6     | 13,000           | 963726-6    | 1,000            |            |             |                                 |
|                                    |                     |          | pre-tin plated      | 963715-1     | 10,000           | 963729-1    | 500              |            |             |                                 |
| 0.50–0.75                          | –                   | 1.4–1.9  | gold plated         | 963715-5     | 10,000           | 963729-5    | 500              | 1238051    | 1528037     | 3-1579001-5                     |
|                                    |                     |          | silver plated       | 963715-6     | 10,000           | 963729-6    | 500              |            |             |                                 |

\*) Applicator: Part No. **1426459** and **1528313** for use with 0.2 mm<sup>2</sup> wire

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 539635-1 with Die Set |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
|                                    |                     |          |                     |              |                  |             |                  |            |             |                                 |
| 0.20–0.50                          | –                   | 0.9–1.6  | pre-tin plated      | 962885-1     | 9,000            | 963727-1    | 500              | 1426108    | 1528022     | 539685-2                        |
|                                    |                     |          | gold plated         | 962885-5     | 9,000            | 963727-5    | 500              |            |             |                                 |
|                                    |                     |          | silver plated       | 962885-6     | 9,000            | 963727-6    | 500              |            |             |                                 |
| 0.50–0.75                          | –                   | 1.4–1.9  | pre-tin plated      | 965906-1     | 9,000            | 965907-1    | 500              | 1426123    | 1528071     | 5-1579001-1                     |
|                                    |                     |          | gold plated         | 965906-5     | 9,000            | 965907-5    | 500              |            |             |                                 |
|                                    |                     |          | silver plated       | 965906-6     | 9,000            | 965907-6    | 500              |            |             |                                 |



Receptacle Contacts (continued)

**MQS Receptacle Contacts with Short Circuit Area**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.20-0.50                          | -                   | 0.9-1.6  | gold plated         | 968893-1     | 13,000           | 1355988-1   | 500              | 1238043*   | 1528035*    | 539682-2                        |
| 0.50-0.75                          | -                   | 1.4-1.9  | gold plated         | 1452013-1    | 10,000           | 1452014-1   | 500              | 1238051    | 1528037     | 3-1579001-5                     |

\*) Applicator: Part No. **1426459** and **1528313** for use with 0.2 mm<sup>2</sup> wire

**MQS Clean Body Receptacle Contacts with Short Circuit Area**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.20-0.50                          | -                   | 0.9-1.6  | gold plated         | 1241918-1    | 13,000           | 1241919-1   | 500              | 1238043*   | 1528035*    | 3-1579001-5                     |
| 0.50-0.75                          | -                   | 1.4-1.9  | gold plated         | 1241920-1    | 10,000           | 1241921-1   | 500              | 1238051    | 1528037     | 3-1579001-5                     |

\*) Applicator: Part No. **1426459** and **1528313** for use with 0.2 mm<sup>2</sup> wire

**MQS Clean Body Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.20-0.50                          | -                   | 0.9-1.6  | pre-tin plated      | 968220-1     | 12,000           | 968220-7    | 500              | 1238043*   | 1528035*    | 539682-2                        |
|                                    |                     |          | gold plated         | 968220-5     | 12,000           | 968220-8    | 500              |            |             |                                 |
|                                    |                     |          | silver plated       | 968220-6     | 12,000           | 968220-9    | -                |            |             |                                 |
| 0.50-0.75                          | -                   | 1.4-1.9  | pre-tin plated      | 968221-1     | 10,000           | 968221-7    | 500              | 1238051    | 1528037     | 3-1579001-5                     |
|                                    |                     |          | gold plated         | 968221-5     | 10,000           | 968221-8    | 500              |            |             |                                 |
|                                    |                     |          | silver plated       | 968221-6     | 10,000           | 968221-9    | -                |            |             |                                 |

\*) Applicator: Part No. **1426459** and **1528313** for use with 0.2 mm<sup>2</sup> wire

**MQS Flexible Flat Cable (FFC) Receptacle Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish | Part Numbers |                  |             |                  |            |             |           |
|-------------------------------------|----------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|-----------|
|                                     | FLK (mm)             | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool |
|                                     |                      |          |                     |              |                  |             |                  | Standard   | Fine Adjust |           |
| -                                   | -                    | -        | pre-tin plated      | 929387-1     | 12,500           | 929388-1    | 500              | -          | -           | -         |
| -                                   | -                    | -        | pre-tin plated      | 968987-1**   | 14,000           | 968988-1    | 500              | -          | -           | -         |

\*) Depending on Foil

\*\*\*) Special Application: Short Components

Insertion and Extraction Tools are available upon request. They depends on the number of positions and the housing version.

**MQS Insulation Displacement Connection (IDC) Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |           |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|-----------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |           |
| 0.35-0.50                          | -                   | 1.2-1.6  | pre-tin plated      | 968065-1     | 10,000           | -           | -                | -          | -           | -         |

Receptacle Contacts (continued)

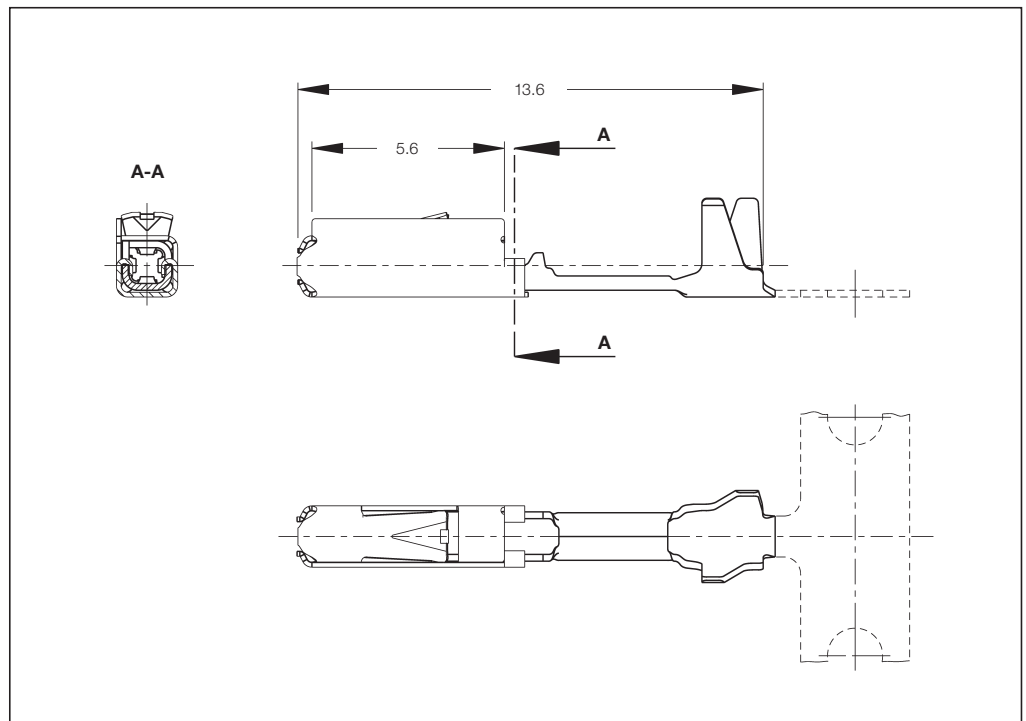
**MQS Clean Body Receptacle Contacts with Single Wire Sealing System**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|---------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.50–0.75          | –     | 1.4–2.0                  | pre-tin plated      | 1703032-1    | 8,500            | 1703033-1   | –                | –          | –         |
|                    |       |                          | gold plated         | 1703032-5    | 8,500            | 1703033-5   | –                |            |           |

**MQS Clean Body Receptacle Contacts for AWG**

| Wire Size Range    |         | Insulation Diameter (mm) | Material and Finish | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|---------|--------------------------|---------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG)   |                          |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.79–1.00          | 18      | 1.4–2.0                  | pre-tin plated      | 1719532-1    | 10,000           | 1719533-1   | –                | 1528929    | –         |
|                    |         |                          | gold plated         | 1719532-5    | 10,000           | 1719533-5   | –                |            |           |
| 0.32–0.52          | 20 + 22 | 1.50–1.85                | pre-tin plated      | 1719545-1    | 10,000           | –           | –                | –          | –         |
|                    |         |                          | gold plated         | 1719545-5    | 10,000           | –           | –                |            |           |

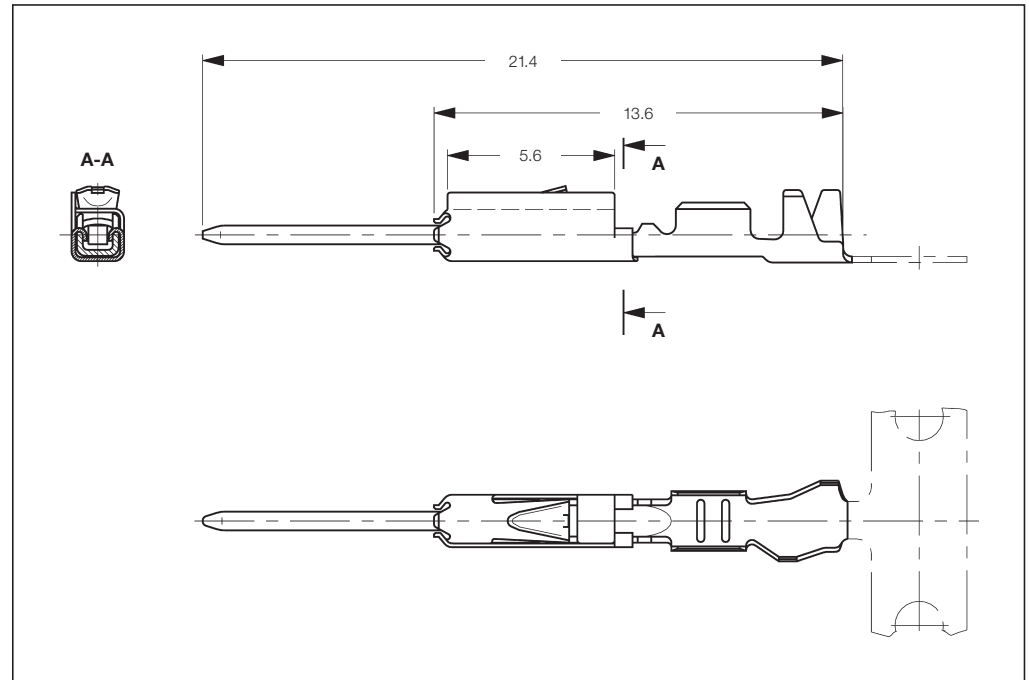
**MQS Receptacle Contacts with Welding Area**



| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|---------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.35–0.75          | –     | 1.2–1.9                  | pre-tin plated      | 1719180-1    | 10,000           | 1719181-1   | –                | –          | –         |

Pin Contacts

**Pin 0.63 x 0.63 mm,  
Mates with  
Micro Quadlok**



**Standard Pin Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 539635-1 with Die Set |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
| 0.14-0.22                          | -                   | 0.9-1.2  | pre-tin plated      | 1355719-1    | 13,000           | 1355720-1   | 500              | 1426402    | 1528009     | 5-1579001-2                     |
|                                    |                     |          | gold plated         | 1355719-2    | 13,000           | 1355720-2   | 500              |            |             |                                 |
| 0.20-0.50                          | -                   | 0.9-1.6  | pre-tin plated      | 1-928918-1   | 13,000           | 1-963725-1  | 500              | 1238043*   | 1528035*    | 539682-2                        |
|                                    |                     |          | gold plated         | 1-928918-2   | 13,000           | 2-963725-1  | 500              |            |             |                                 |
| 0.50-0.75                          | -                   | 1.6-1.9  | pre-tin plated      | 963716-1     | 10,000           | 963730-1    | 500              | 1238051    | 1528037     | 3-1579001-5                     |
|                                    |                     |          | gold plated         | 963716-2     | 10,000           | 963730-2    | 500              |            |             |                                 |

\*) **Applicator:** Part No. **1426459** and **1528313** for use with 0.2 mm<sup>2</sup> wire

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 539635-1 with Die Set |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
| 0.20-0.50                          | -                   | 0.9-1.6  | pre-tin plated      | 962886-1     | 10,000           | 963728-1    | 500              | 1426108    | 1528022     | 539685-2                        |
|                                    |                     |          | gold plated         | 962886-2     | 10,000           | 963728-2    | 500              |            |             |                                 |
| 0.50-0.75                          | -                   | 1.6-1.9  | pre-tin plated      | 965908-1     | 10,000           | 965909-1    | 500              | 1426123    | 1528071     | 5-1579001-1                     |
|                                    |                     |          | gold plated         | 965908-2     | 10,000           | 965909-2    | 500              |            |             |                                 |

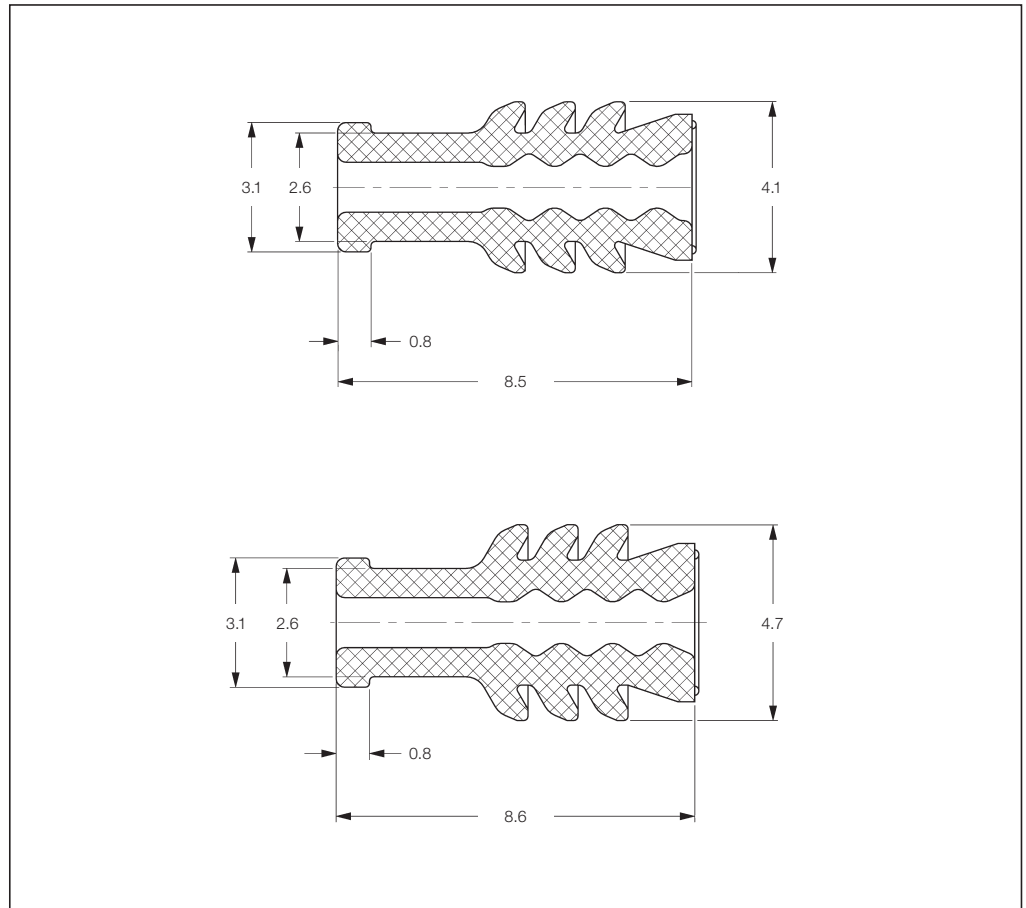
**MQS Flexible Flat Cable (FFC) Pin Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool |
|-------------------------------------|----------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|-----------|
|                                     | FLK (mm)             | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |           |
| -                                   | -                    | -        | pre-tin plated      | 1452128-1    | 13,000           | 1452129-1   | 500              | -          | -           | 90273-5   |

\*) Depending on Foil

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for Micro Quadlok**



**Cavity Diameter 3.45 mm**

| Insulation Diameter |          | Color  | Part Number | Package Quantity |
|---------------------|----------|--------|-------------|------------------|
| FLK (mm)            | FLR (mm) |        |             |                  |
| -                   | 0.9-1.3  | Yellow | 967067-2    | 20,000           |
| -                   | 1.4-1.9  | Green  | 967067-1    | 20,000           |
| Sealing Plug        |          | Blue   | 967056-1    | 5,000            |

**Cavity Diameter 4.0 mm**

| Insulation Diameter |          | Color | Part Number | Package Quantity |
|---------------------|----------|-------|-------------|------------------|
| FLK (mm)            | FLR (mm) |       |             |                  |
| -                   | 0.9-1.3  | Grey  | 963142-2    | 20,000           |
| -                   | 1.4-1.9  | Black | 963142-1    | 20,000           |
| Sealing Plug        |          | White | 963143-1    | 20,000           |



Introduction

**Technical Features**

**Material**

Contact: CuNiSi  
Pin Contact: Copper-Alloy  
Cantilever Spring: Stainless Steel

**Contact Finish:**

Tin plated

**Conductor Binding:**

Crimp Technology

**Wire Size Range:**

0.35 mm<sup>2</sup> up to 0.5 mm<sup>2</sup>  
0.75 mm<sup>2</sup> up to 1.5 mm<sup>2</sup>

**Current Carrying Capacity:**

Up to 10 A at 80 °C

**Temperature Range:**

-40 °C ... +120 °C (tin plated)

**Centerline:**

- 3.5 x 2.54 mm (unsealed)
- 4.0 x 4.0 mm (wire size equal or less than 0.75 mm<sup>2</sup>, sealed)
- 4.5 x 4.5 mm (wire size 1.0-1.5 mm<sup>2</sup>, sealed)

**Mating Cycles:**

20 tin plated

**Special Applications:**

Receptacle Contact  
Clean Body

**Extraction Tool:**

Part No. **6-1579007-2** or  
Part No. **1355968-1**

**Table Drawings:**

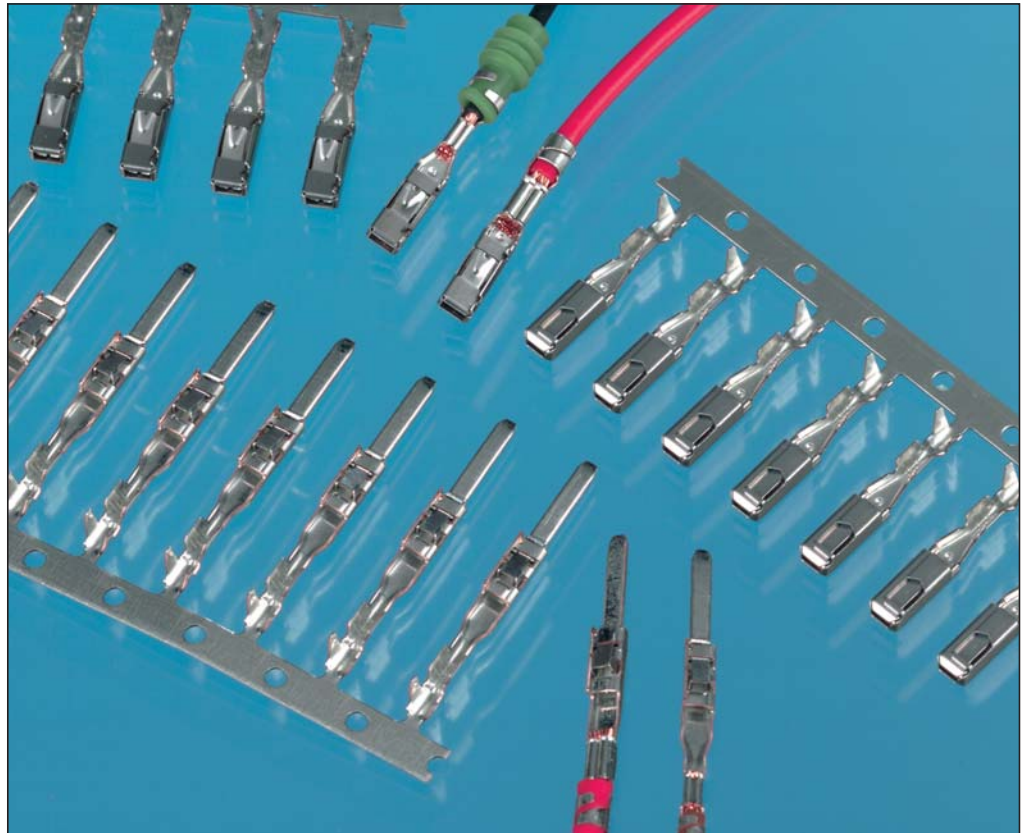
1241611  
1241612 (Clean Body)  
1452079

**Product Specification:**

108-18030

**Application Specification:**

114-18286



**Product Description**

With the well known Micro Quadlok System (MQS) we can offer you an additional contact 1.5 mm MQS.

Available as male and female receptacle. The new terminal absolutely supplements the product range. All the advantages are designed in.

It is suitable for sealed and unsealed applications. Single wire sealing or the clean body version can give you high ability on the connector design.

In combination with the MQS, MPQ and PQ you have the benefit to have the secondary locking on a common level.

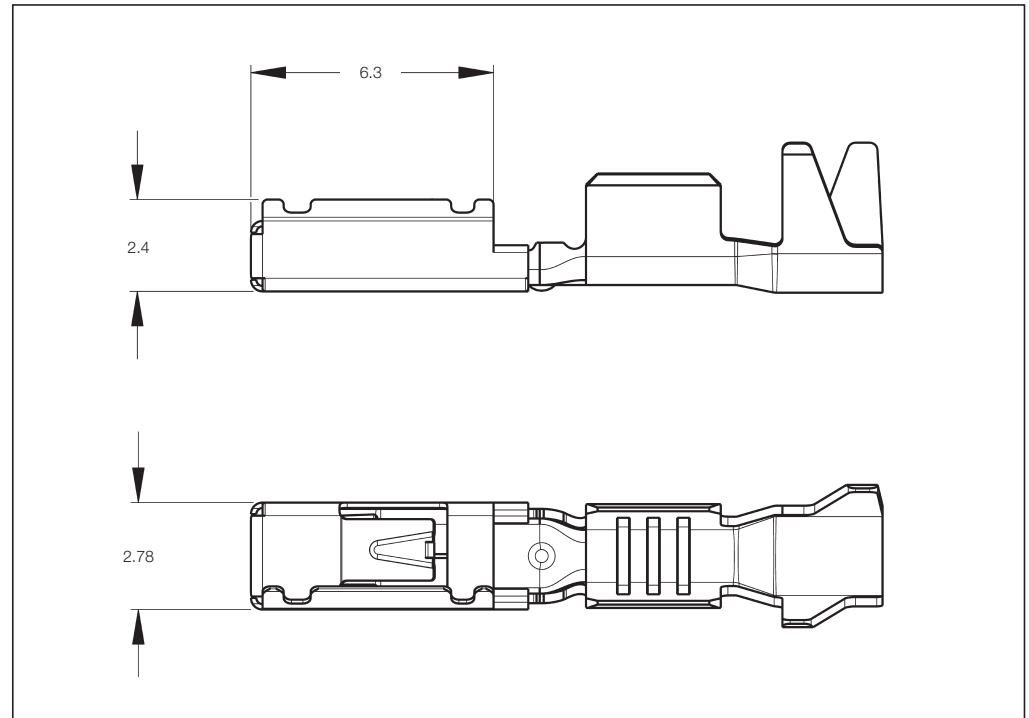
Mounting and dismounting of the terminals still guarantees the retention function. On the pin header side you can use a pin with higher rigidity.

With the two piece design electrical and mechanical functions are separated. Polarization and the two independent lockings bring together a safe and easy handling at the harness maker.

The normal contact force achieves without assisting cantilever spring. Four independent contact points assure a perfect current carry which you can use to contact stamped lead frames.

Receptacle Contacts

**Receptacle**  
**1.5 x 0.63 mm,**  
**Mates with MQS 1.5**



**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35–0.50                          | –                   | 1.1–1.6  | tin plated          | 1355556-1    | 11,000           | 1355557-1   | 500              | –          | 1528287     | 539692-2                        |
| 0.75–1.50                          | –                   | 1.7–2.4  | tin plated          | 1355553-1    | 8,500            | 1355554-1   | 500              | 1426196    | 1528207     |                                 |

**Single Wire Sealing System**

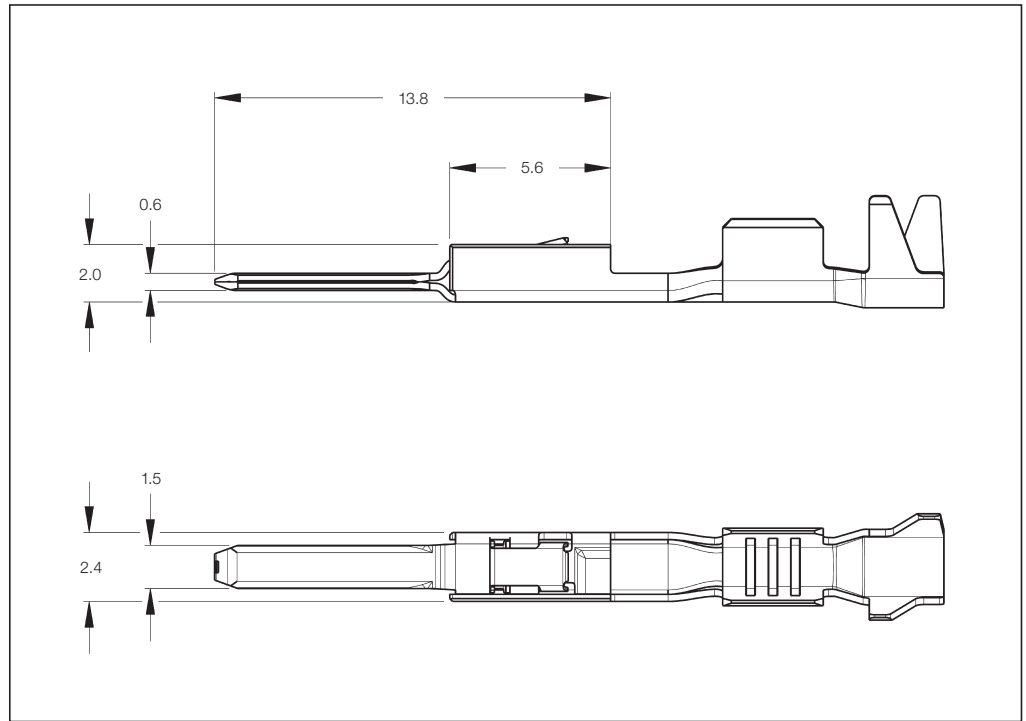
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35–0.50                          | –                   | 1.1–1.6  | tin plated          | 1241603-1    | 8,500            | 1241604-1   | 500              | –          | 1528323     | 539693-2                        |
| 0.75–1.50                          | –                   | 1.7–2.4  | tin plated          | 1241605-1    | 8,500            | 1241606-1   | 500              | 1426403    | 1528227     |                                 |

**Clean Body**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35–0.50                          | –                   | 1.1–1.6  | tin plated          | 1452158-1    | 12,000           | 1452157-1   | 500              | –          | 1528287     | 539692-2                        |
| 0.75–1.50                          | –                   | 1.7–2.4  | tin plated          | 1241608-1    | 8,500            | 1241609-1   | 500              | 1426196    | 1528207     |                                 |

Tab Contacts

**Tab 1.5 x 0.63 mm,  
Mates with MQS 1.5**

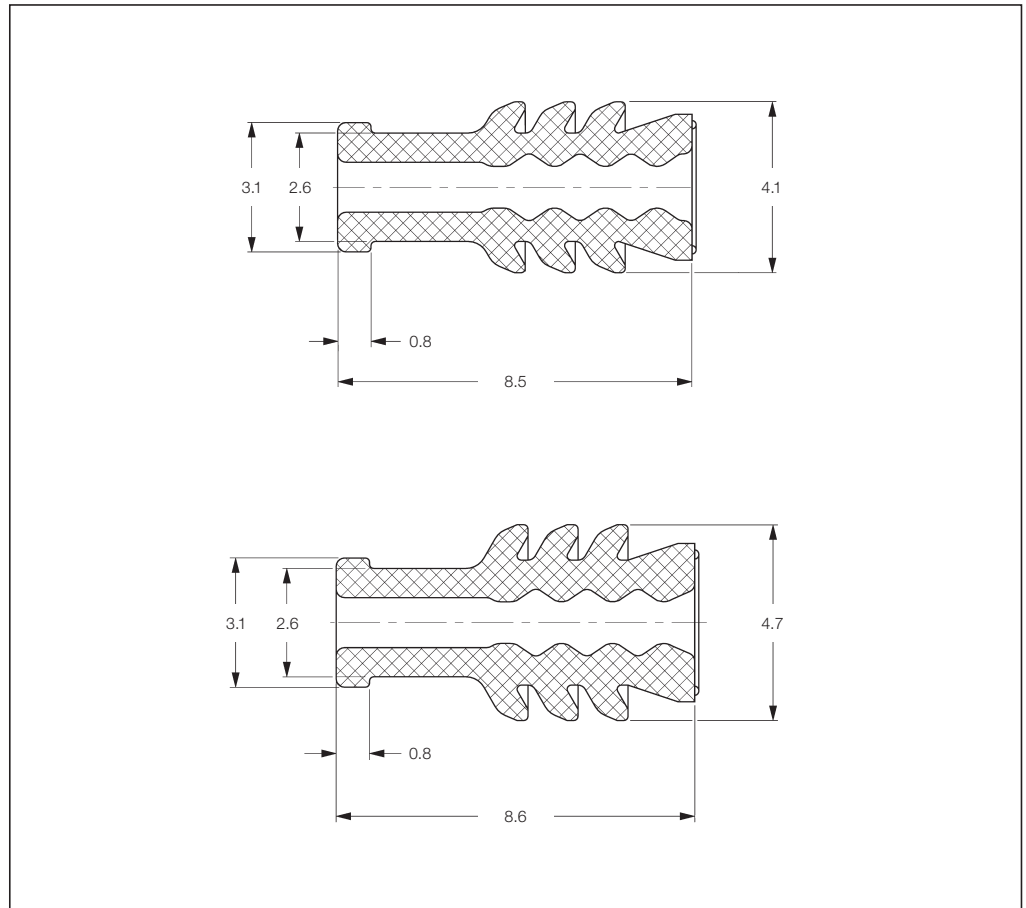


**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 539635-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35-0.50                          | -                   | 1.1-1.6  | tin plated          | 1452350-1    | 13,000           | 1452351-1   | 500              | -          | 1528287     | 539692-2                        |
| 0.75-1.50                          | -                   | 1.7-2.4  | tin plated          | 1452058-1    | 8,000            | 1452060-1   | 500              | 1426196    | 1528207     |                                 |

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for MQS 1.5**



**Cavity Diameter 3.6 mm**

| Insulation Diameter |          | Color  | Part Number | Package Quantity |
|---------------------|----------|--------|-------------|------------------|
| FLK (mm)            | FLR (mm) |        |             |                  |
| -                   | 1.1-1.3  | Yellow | 967067-2    | 20,000           |
| -                   | 1.4-1.9  | Green  | 967067-1    | 20,000           |
| Sealing Plug        |          | Blue   | 967056-1    | 5,000            |

**Cavity Diameter 4.0 mm**

| Insulation Diameter |          | Color | Part Number | Package Quantity |
|---------------------|----------|-------|-------------|------------------|
| FLK (mm)            | FLR (mm) |       |             |                  |
| -                   | 1.1-1.3  | Grey  | 963142-2    | 20,000           |
| -                   | 1.4-1.9  | Black | 963142-1    | 20,000           |
| -                   | 1.9-2.4  | Black | 963142-1    | 20,000           |
| Sealing Plug        |          | White | 963143-1    | 20,000           |



Receptacle Contacts

**Technical Features**

**Material**

Receptacle Contact: CuNiSi  
Tab Contact: CuSn  
Cantilever Spring: Stainless Steel

**Contact Finish:**

Tin plated, selective gold plated,  
Palladium Nickel plated

**Wire Size Range:**

>0.35–0.5 mm<sup>2</sup>  
>0.5–1.0 mm<sup>2</sup>  
>1.0–2.5 mm<sup>2</sup>  
stranded cable (FLR)

**Current Carrying Capacity:**

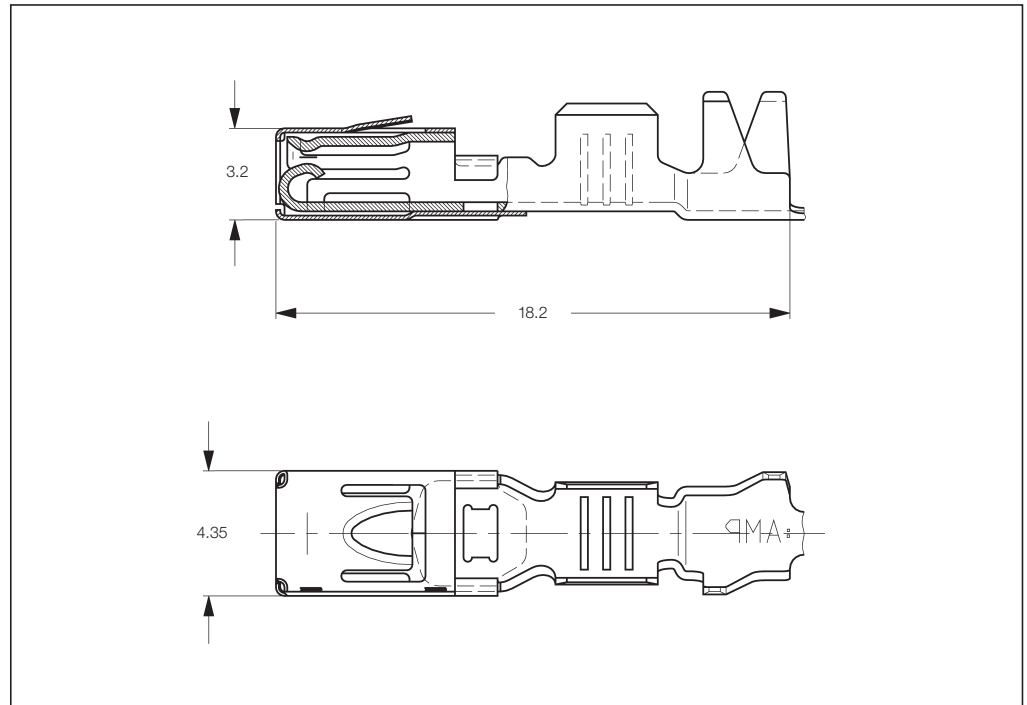
34 A (20 °C)  
25 A (80 °C)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +150 °C (gold plated)

**Centerline**

Standard: 5.08 x 5.08 mm  
Single Wire Sealing System:  
7.0 x 7.0 mm



**Extraction Tool:**

Part No. **6-1579007-3** or  
Part No. **1355968-1**

**Chart Drawings**

Receptacle Contact: 1355934  
Tab Contact: 1355933

**Product Specification:**

108-18476-1

**Application Specification:**

114-18141-1

**Standard Receptacle Contacts**

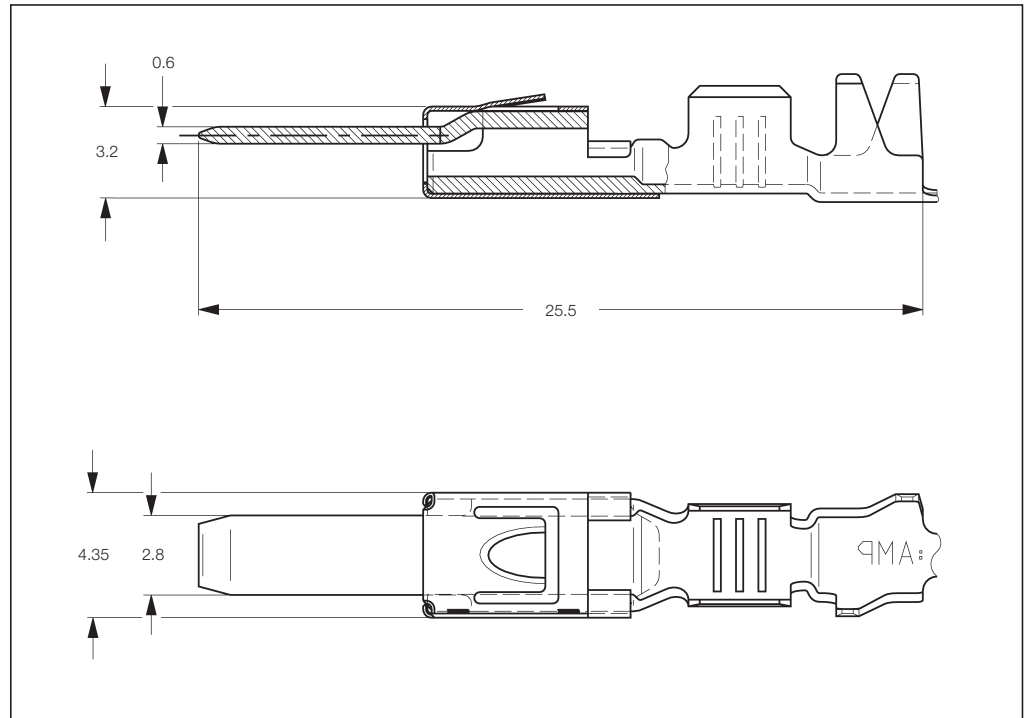
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 354940-1 with Die Set |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
| 0.35–0.5                           | –                   | 1.2–1.6  | tin plated          | 968678-2     | 5,000            | 929155-2    | 500              | –          | 1528211     | 539711-2                        |
|                                    |                     |          | gold plated         | 968678-5     | 5,000            | 929155-5    | 500              |            |             |                                 |
| >0.5–1.0                           | –                   | 1.7–2.1  | tin plated          | 968074-2     | 5,000            | 929156-2    | 500              | –          | 1528344     | 58589-2                         |
|                                    |                     |          | gold plated         | 968074-5     | 5,000            | 929156-5    | 500              |            |             |                                 |
| >1.0–2.5                           | –                   | 2.2–3.0  | tin plated          | 968075-2     | 4,000            | 929157-2    | 500              | 1426259    | 1528223     | 58590-2                         |
|                                    |                     |          | gold plated         | 968075-5     | 4,000            | 929157-5    | 500              |            |             |                                 |
| 4.0                                | –                   | 3.4–3.7  | tin plated          | 1355950-2    | 3,000            | 1355951-2   | 500              | –          | 1528358     | 58590-2                         |

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish     | Part Numbers |                  |             |                  | Applicator |             | Hand Tool 354940-1 with Die Set |
|------------------------------------|---------------------|----------|-------------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Standard   | Fine Adjust |                                 |
| 0.35–0.5                           | –                   | 1.2–1.6  | tin plated              | 968680-2     | 3,300            | 929158-2    | 500              | –          | 1528749     | 539712-2                        |
|                                    |                     |          | gold plated             | 968680-5     | 3,300            | 929158-5    | 500              |            |             |                                 |
| >0.5–1.0                           | –                   | 1.7–2.1  | tin plated              | 968119-2     | 3,000            | 929159-2    | 500              | –          | 1528175     | 58591-2                         |
|                                    |                     |          | gold plated             | 968119-5     | 3,000            | 929159-5    | 500              |            |             |                                 |
|                                    |                     |          | Palladium Nickel plated | 968115-4     | –                | 929159-4    | –                |            |             |                                 |
| >1.0–2.5                           | –                   | 2.2–3.0  | tin plated              | 968120-2     | 3,000            | 929160-2    | 500              | –          | 1528321     | 58592-2                         |
|                                    |                     |          | gold plated             | 968120-5     | 3,000            | 929160-5    | 500              |            |             |                                 |

Tab Contacts

**Tab 2.8 x 0.63 mm,  
Mates with  
Micro Power Quadlok**



**Standard Tab Contacts**

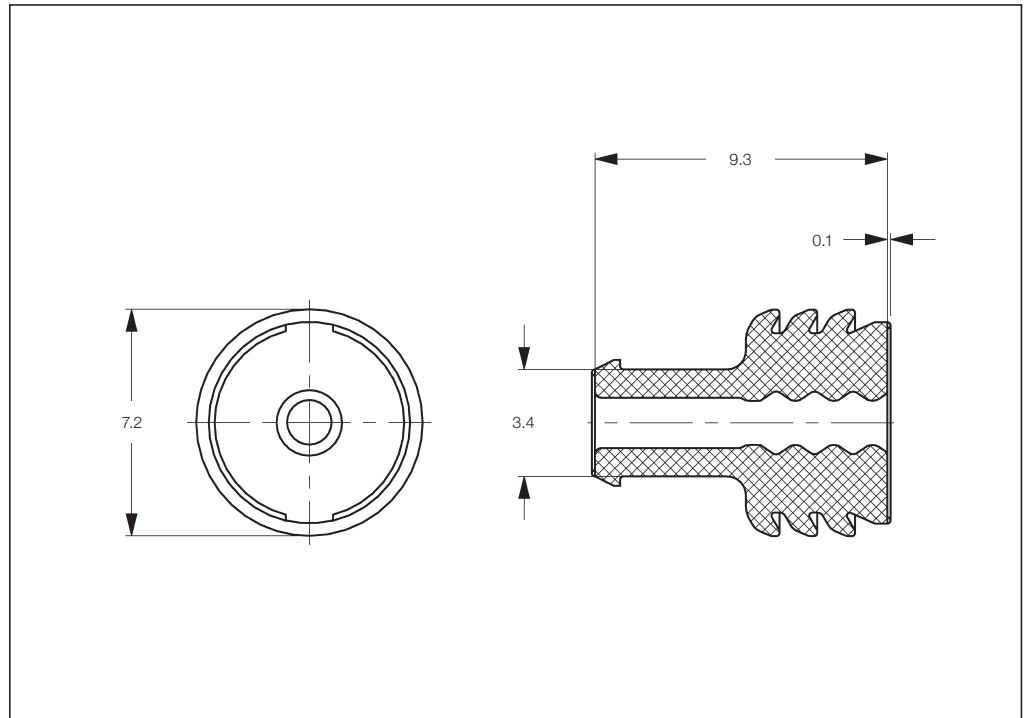
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35-0.5                           | -                   | 1.2-1.6  | tin plated          | 968679-2     | 5,000            | 929161-2    | 500              | -          | 1528211     | 539711-2                        |
|                                    |                     |          | gold plated         | 968679-5     | 5,000            | 929161-5    | 500              |            |             |                                 |
| >0.5-1.0                           | -                   | 1.7-2.1  | tin plated          | 968136-2     | 5,000            | 929162-2    | 500              | -          | 1528344     | 58589-2                         |
|                                    |                     |          | gold plated         | 968136-5     | 5,000            | 929162-5    | 500              |            |             |                                 |
| >1.0-2.5                           | -                   | 2.2-3.0  | tin plated          | 968137-2     | 4,000            | 929163-2    | 500              | 1426259    | 1528223     | 58590-2                         |
|                                    |                     |          | gold plated         | 968137-5     | 4,000            | 929163-5    | 500              |            |             |                                 |
| 4.0                                | -                   | 3.4-3.7  | tin plated          | 1355964-2    | 3,000            | 1355965-2   | 500              | -          | 1528358     | 58590-2                         |

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| 0.35-0.5                           | -                   | 1.2-1.6  | tin plated          | 968681-2     | 3,500            | 929164-2    | 500              | -          | 1528749     | 539712-2                        |
|                                    |                     |          | gold plated         | 968681-5     | 3,500            | 929164-5    | 500              |            |             |                                 |
| >0.5-1.0                           | -                   | 1.7-2.1  | tin plated          | 968138-2     | 3,000            | 929165-2    | 500              | -          | 1528175     | 58591-2                         |
|                                    |                     |          | gold plated         | 968138-5     | 3,000            | 929165-5    | 500              |            |             |                                 |
| >1.0-2.5                           | -                   | 2.2-3.0  | tin plated          | 968139-2     | 3,000            | 929166-2    | 500              | -          | 1528321     | 58592-2                         |
|                                    |                     |          | gold plated         | 968139-5     | 3,000            | 929166-5    | 500              |            |             |                                 |

Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for Micro Power Quadlok**



| Insulation Diameter |          | Color       | Part Number | Package Quantity |
|---------------------|----------|-------------|-------------|------------------|
| FLK (mm)            | FLR (mm) |             |             |                  |
| -                   | 1.2-2.1  | Grey        | 967610-1    | 5,000            |
| -                   | 2.2-3.0  | Yellow      | 967609-1    | 5,000            |
| Sealing Plug        |          | Transparent | 967653-1    | 5,000            |

Receptacle Contacts

**Technical Features**

**Material**

Receptacle Contact: CuNiSi  
Tab Contact: CuSn  
Cantilever Spring: Stainless Steel

**Contact Finish:**

Pre-tin plated,  
Paladium Nickel plated

**Wire Size Range:**

>1.0–6.0 mm<sup>2</sup> Single Wires  
(Single Wire Sealing System)

**Current Carrying Capacity:**

4.0 mm<sup>2</sup> (free in air/RT)  
45 A (20 °C)  
30 A (80 °C)

**Temperature Range:**

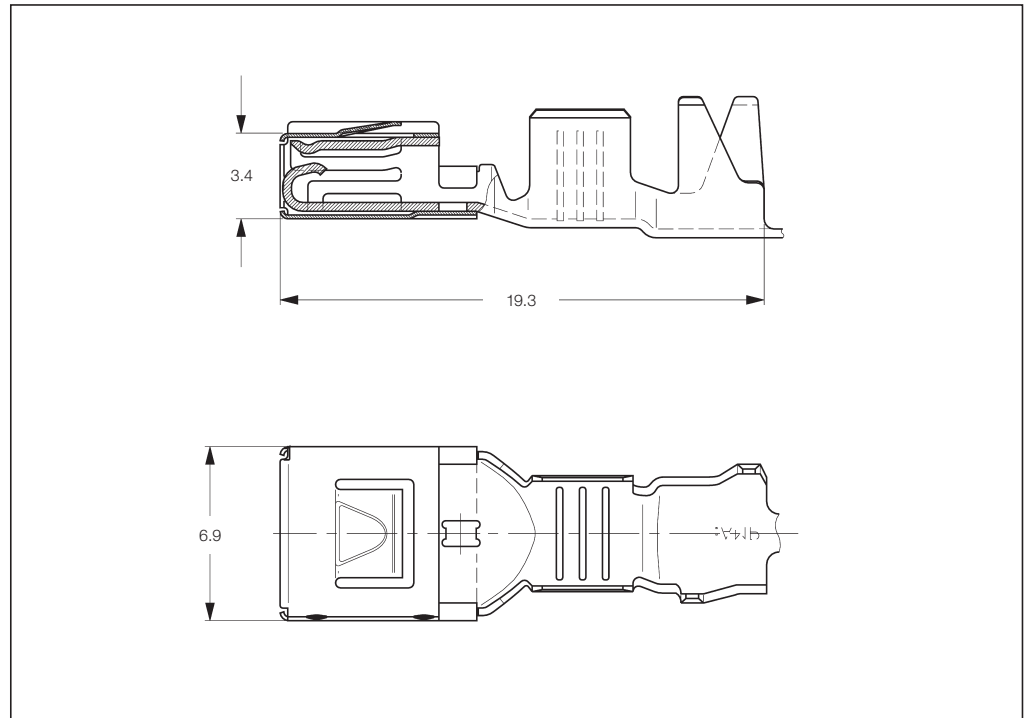
–40 °C to +130 °C (tin plated)

**Centerline:**

“Pitch 7” Version:  
7.62 x 7.0 mm (Standard)

“Pitch 6” Version:  
7.62 x 6.0 mm (Standard)

9.1 x 9.1 mm  
(Single Wire Sealing System)



**Extraction Tool:**

Part No. **6-1579007-4** or  
Part No. **1355968-1**

**Chart Drawings:**

Receptacle Contact: 1241638  
Tab Contact: 1241639

**Product Specification:**

108-18476-1

**Application Specification:**

114-18141-1

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| >1.0–2.5                           | –                   | 2.2–3.0  | pre-tin plated      | 968072-2*    | 2,800            | 929203-2    | 500              | –          | 1528215     | 58593-2                         |
|                                    |                     |          |                     | 1241601-2**  | 2,500            | 1241642-2   | 500              |            |             |                                 |
| >2.5–4.0                           | –                   | 3.4–3.7  | pre-tin plated      | 968073-2*    | 2,300            | 929204-2    | 500              | 1426313    | 1528319     | 58594-2                         |
|                                    |                     |          |                     | 1241602-2**  | 2,400            | 1241643-2   | 500              |            |             |                                 |

\* “Pitch 7” Version

\*\* “Pitch 6” Version

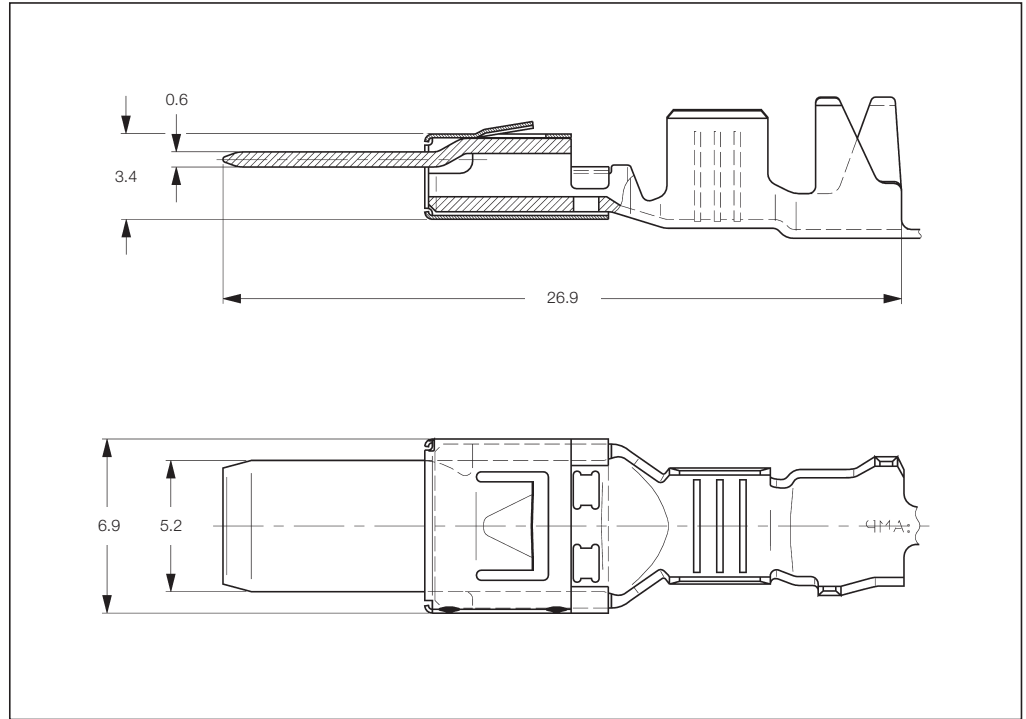
**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish    | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|------------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                        |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| >1.0–2.5                           | –                   | 2.2–3.0  | pre-tin plated         | 968121-2     | 1,800            | 929205-2    | 500              | –          | 1528356     | 58595-2                         |
|                                    |                     |          | Paladium Nickel plated | 968121-4     | –                | –           | –                |            |             |                                 |
| >2.5–4.0                           | –                   | 3.4–3.7  | pre-tin plated         | 968122-2     | 1,800            | 929206-2    | 500              | –          | 1528357     | 58596-2                         |
|                                    |                     |          | Paladium Nickel plated | 968121-4     | –                | –           | –                |            |             |                                 |



Tab Contacts

**Tab 5,2 x 0.63 mm,  
Mates with  
Power Quadlok**



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| >1.0-2.5                           | -                   | 2.2-3.0  | pre-tin plated      | 968131-2*    | 3,000            | 929207-2    | 500              | -          | 1528215     | 58593-2                         |
|                                    |                     |          |                     | 1241614-2**  | 3,000            | 1241644-2   | 500              |            |             |                                 |
| >2.5-4.0                           | -                   | 3.4-3.7  | pre-tin plated      | 968132-2*    | 2,300            | 929208-2    | 500              | 1426313    | 1528319     | 58594-2                         |
|                                    |                     |          |                     | 1241615-2**  | 2,300            | 1241645-2   | 500              |            |             |                                 |

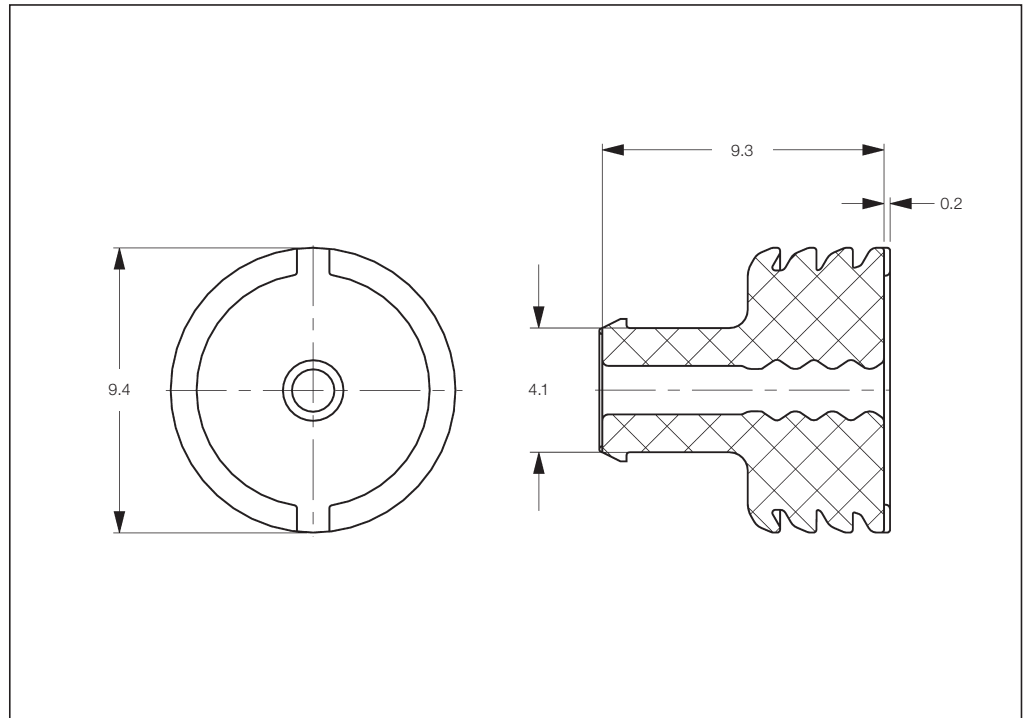
\* "Pitch 7" Version  
\*\* "Pitch 6" Version

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish | Part Numbers |                  |             |                  |            |             |                                 |
|------------------------------------|---------------------|----------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|---------------------------------|
|                                    | FLK (mm)            | FLR (mm) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator |             | Hand Tool 354940-1 with Die Set |
|                                    |                     |          |                     |              |                  |             |                  | Standard   | Fine Adjust |                                 |
| >1.0-2.5                           | -                   | 2.2-3.0  | pre-tin plated      | 968133-2     | 2,000            | 929209-2    | 500              | -          | 1528356     | 58595-2                         |
| >2.5-4.0                           | -                   | 3.4-3.7  | pre-tin plated      | 968134-2     | 2,000            | 929210-2    | 500              | -          | 1528357     | 58596-2                         |

Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for Power Quadlok**



| Insulation Diameter |          | Color       | Part Number | Package Quantity |
|---------------------|----------|-------------|-------------|------------------|
| FLK (mm)            | FLR (mm) |             |             |                  |
| -                   | 2.2-3.0  | Yellow      | 967607-1    | 3,000            |
| -                   | 3.4-3.7  | Green       | 967608-1    | 3,000            |
| Sealing Plug        |          | Transparent | 967652-1    | 20,000           |

## Introduction



The comprehensive range of AMP Timer contacts are extensively used in the automotive industry.

Each contact consists of a flat receptacle, which mates with a flat tab. The receptacle has two respective four contact springs, which are independent of each other. Two-piece contacts with a steel top spring are pre-dominantly.

This two-piece contact design means that the electrical and mechanical properties are separated. One end of the contact body is either crimped to wire, or soldered to a printed circuit board. The other end of the contact body mates with the matching tab.

The contact body is responsible for the electrical characteristics, while the top spring ensures that contact force is maintained under all circumstances. Reduction in contact force due to stress relaxation at elevated temperature is thus minimized.

In addition there are usually two lances on the steel top spring. These serve to lock the contact securely into the housing.

Secondary locking of the contact in the housing can be achieved by means of the steel top spring, which usually takes the form of a box.

All versions of Timer contacts can be combined easily in one connector without renouncing secondary locking device.

Application in connectors which contacts by means of swiveling is possible. Tabs and receptacles can be applied in both watertight and non-watertight connectors.

AMP Timer connectors are available as receptacle and tab housings (free-hanging coupling in a wiring harness) or as receptacle housings and multiple tabs (group connection). With the free-hanging coupling type the housings, with up to 100 contacts, are then secured by means of a separate locking device.

With multiway connectors the single lever method is usually employed (sequential insertion distributed along an angled path).

Using this method a single lever plug on the receptacle housing engages in one end of the multiple tab housing. The connector is then latched up to the final position. This system is relatively tolerant as regards the positioning of the contact tabs in the housing. An additional advantage is that the contact system is, to a large degree, insensitive to crooked insertion. Even when the tabs are not straight the contact geometry ensures firm contact.

In order that the flat contact system can be employed at interfaces with signal currents of medium strengths as well as with load currents more than 70 A.

Receptacle Contacts

**Technical Features**

**Contact Material:**  
CuSn, CuFe  
Cantilever Spring: Stainless Steel

**Contact Finish:**  
pre-tin plated, gold plated

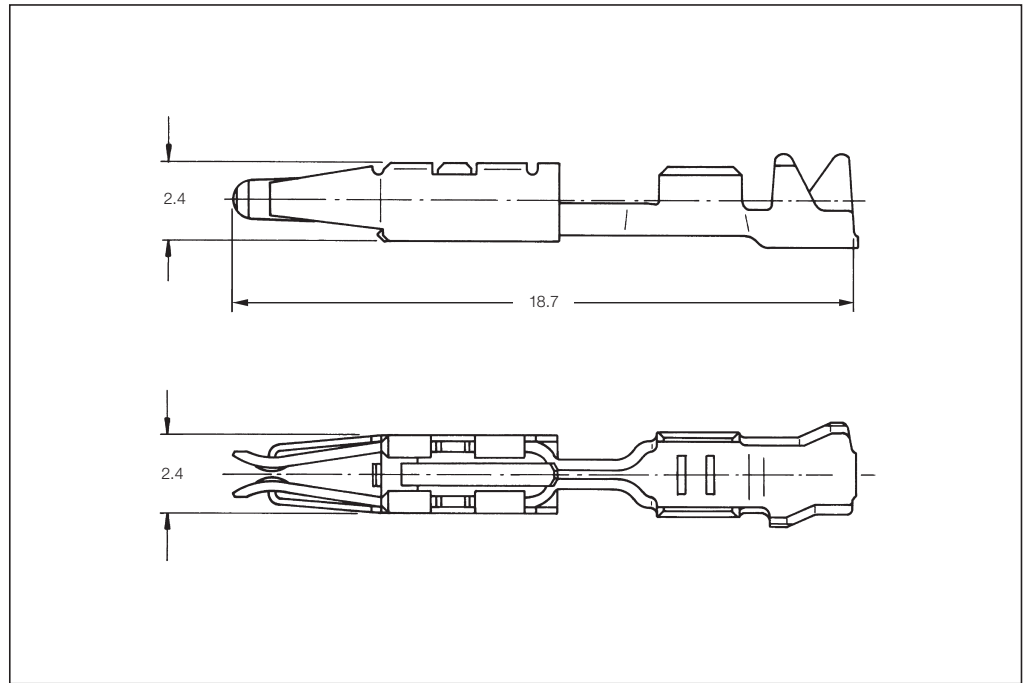
**Wire Size Range:**  
0.2–1.5 mm<sup>2</sup> FLR  
(thin walled wire)

**Contact Resistance (New State):**  
CuSn: <5 mΩ  
CuFe: <4 mΩ

**Total Temperature max.:**  
–40 °C to +120 °C (tin plated)  
–40 °C to +140 °C (gold plated)

**Mating Cycles:**  
10 (tin plated)  
100 (gold plated)

**Insertion Force\*:**  
max. 5 N (proof tab 0.8 mm thick)



**Extraction Force\*:**  
min. 2 N (proof tab 0.8 mm thick)

**Retention Force (from Housing):**  
– without second locking device  
>25 N  
– second locking device only  
>100 N  
depends on housing material

**Dimensions of Male Contacts:**  
1.6 mm x 0.8 mm

**Product Group Drawing:**  
1703333

\*) Measured with an Steel Test Tab  
(see Product Spec. 108-18279).

**Extraction Tool:**  
Part No. **726510-1**  
Part No. **5-1579007-5**

**Product Specification:**  
108-18024

**Application Specification:**  
114-18163

**Max. Current in 9 Positions Housing**

| Material | Temperature (° C) | Current Carrying Capacity (Ampere) |                      |                      |
|----------|-------------------|------------------------------------|----------------------|----------------------|
|          |                   | 0.35 mm <sup>2</sup>               | 0.50 mm <sup>2</sup> | 0.75 mm <sup>2</sup> |
| CuSn     | 20                | 3.0                                | 5.0                  | 8.0                  |
|          | 90                | 1.5                                | 2.0                  | 4.0                  |
| CuFe     | 20                | 4.0                                | 6.0                  | 10.0                 |
|          | 90                | 1.5                                | 2.5                  | 5.0                  |

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish *       | Part Numbers |                  |             |                  |              | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|-----------------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR     |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator † |                                 |
| 0.2–0.5                            | –                        | 1.2–1.6 | -1 / -2 / -3 / -4           | 929950       | 7,500            | 929951      | 500              | 1528493      |                                 |
| 0.35–0.75                          | –                        | 1.2–1.9 | -1 / -2 / -3 / -4           | 928939       | 6,000            | 929927      | 1,000            | 878376       | 539739-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3 / -4 / -7 / -8 | 929952       | 6,000            | 929953      | 500              | 1528020      |                                 |
| 1.0–1.5                            | –                        | 1.9–2.4 | -1 / -2 / -3 / -4           | 929954       | 5,000            | 929955      | 500              | 1528706      |                                 |

\*) **Material and Finish:**  
xxx-1 = CuSn, pre-tin plated  
xxx-2 = CuSn, gold plated  
xxx-3 = CuFe, pre-tin plated  
xxx-4 = CuFe, gold plated  
xxx-7 = CuSn, gold plated, short-circuit execution  
xxx-8 = CuFe, gold plated, short-circuit execution

†) The pre- and suffix for the applicators depends on the applied termination equipment.



Receptacle Contacts

**Technical Features**

**Contact Material:**  
 CuSn, CuFe, CuNiSi  
 Cantilever Spring: Stainless Steel

**Contact Finish:**  
 pre-tin plated, gold plated

**Wire Size Range:**  
 0.2–0.5 mm<sup>2</sup> (FLR)  
 0.5–1.0 mm<sup>2</sup> (FLR)  
 1.5 mm<sup>2</sup> (FLR)

**Contact Resistance (New State):**  
 CuSn: <5 mΩ  
 CuFe: <4 mΩ

**Total Temperature max.:**  
 –40 °C to +120 °C (tin plated)  
 –40 °C to +140 °C (gold plated)

**Mating Cycles:**  
 10 (tin plated)  
 100 (gold plated)

**Insertion Force\*:**  
 max. 4 N (proof tab 0.6 mm thick)

**Extraction Force\*:**  
 min. 2 N (proof tab 0.6 mm thick)

**Retention Force (from Housing):**  
 – without second locking device  
 > 25 N  
 – second locking device only  
 > 100 N  
 depends on housing material

**Dimensions of Male Contacts:**  
 1.6 x 0.6 mm = Micro Timer II  
 1.6 x 0.8 mm = Micro Timer III

**Modular Dimensions:**  
 3.25 mm x 4.0 mm (smallest)

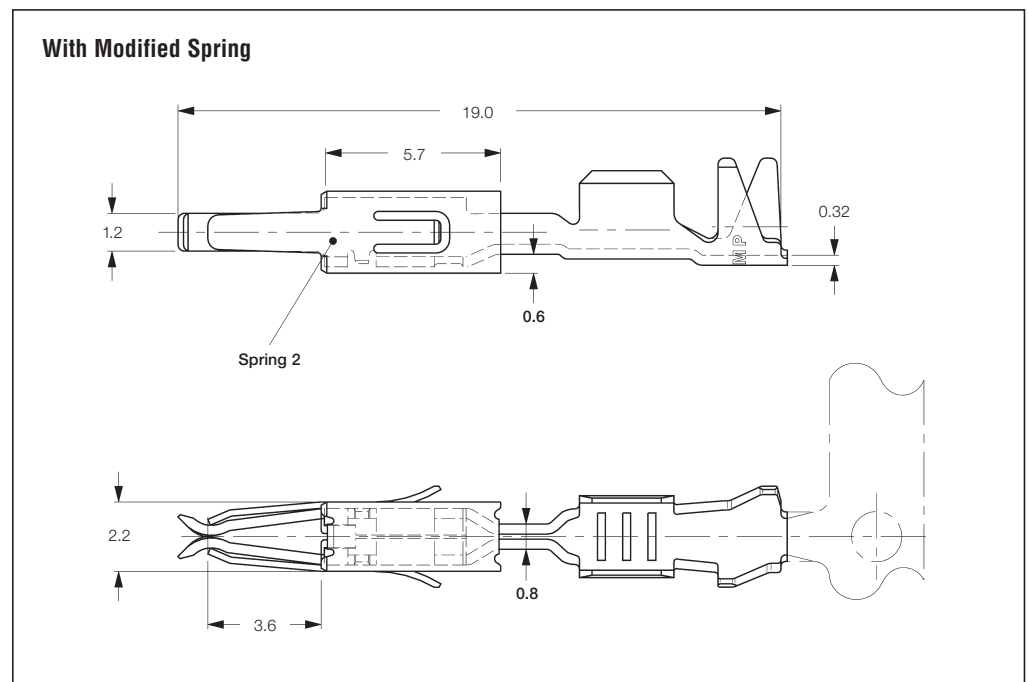
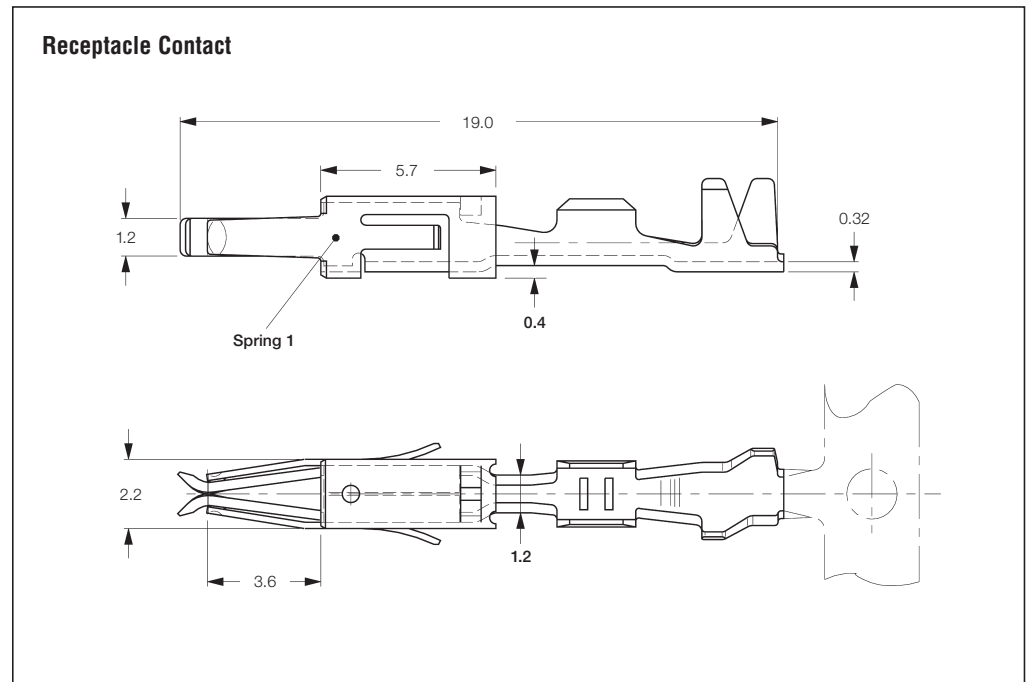
**Version in Single Seal:**  
 4.0 mm x 4.0 mm (smallest)

**Extraction Tool:**  
 Part No. **726534-1**  
 Part No. **539960-1**

**Product Group Drawings:**  
 1355045 = Micro Timer II  
 1241916 = Micro Timer III

**Product Specifications:**  
 108-18055 = Micro Timer II  
 108-18386 = Micro Timer III

**Application Specification:**  
 114-18081



**Max. Current in 68 Positions Housing**

| Material | Temperature (° C) | Current Carrying Capacity (Ampere) |                      |                      |
|----------|-------------------|------------------------------------|----------------------|----------------------|
|          |                   | 0.35 mm <sup>2</sup>               | 0.50 mm <sup>2</sup> | 0.75 mm <sup>2</sup> |
| CuSn     | 20                | 3.0                                | 5.0                  | 8.0                  |
|          | 90                | 1.5                                | 2.0                  | 4.0                  |
| CuFe     | 20                | 4.0                                | 6.0                  | 10.0                 |
|          | 90                | 1.5                                | 2.5                  | 5.0                  |

\*) Measured with an Steel Test Tab (see Product Spec. 108-18279).

\*\*) **Note:** Micro Timer III is made for diagnosis applications.

Receptacle Contacts (continued)

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*        | Part Numbers |                  |              |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|-----------------------------|--------------|------------------|--------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                             | Strip Form   | Package Quantity | Loose-Piece  | Package Quantity | Applicator <sup>‡</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -3 / -4 / -5 / -6 | 962942 1)    | 7,000            | 962944 1)    | 500              | 1528061                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3 / -4 / -5 / -6 | 962943 1)    | 6,000            | 962945 1)    | 500              | 1528256                 |                                 |
|                                    |                          |           | -1 / -2                     | 964150 1) 3) | 5,000            | 964151 1) 3) | 500              | 1528096                 | 539663-2                        |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2                     | 965914 6)    | 6,000            | 965915 6)    | 500              | 1528061                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1                          | 968052 5)    | 6,000            | 968053 5)    | 500              | 1528256                 |                                 |
|                                    |                          |           | -1                          | 969022 6)    | 6,000            | 969023 6)    | 500              | 1528304                 |                                 |

**Receptacle Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*   | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|---------|------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>‡</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.2-1.6 | -1 / -2 / -3 / -5      | 962875 1)    | 4,000            | 963710 1)   | 500              | 1528281                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1 / -2 / -3 / -5 / -6 | 962876 1)    | 4,000            | 963711 1)   | 500              | 1528054                 | 539651-2                        |
| 1.5                                | -                        | 2.2-2.4 | -1                     | 1703414      | 4,000            | 1703415     | 500              | 1528772                 | -                               |

\*\*\*) Complete Hand Tool: Part No. 734560-1

**Standard Receptacle Contacts with Modified Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |              |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|--------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece  | Package Quantity | Applicator <sup>‡</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | -2 / -3 / 4-xxx-1    | 964261 2)    | 7,500            | 964262 2)    | 500              | 1528091                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / -3 / 4-xxx-1    | 964263 2)    | 6,000            | 964264 2)    | 500              | 1528092                 | 539663-2                        |
|                                    |                          |           | -2                   | 964348 2) 3) | 5,500            | 964349 2) 3) | 500              | 1528096                 |                                 |
| 1.5                                | -                        | 2.2-2.4   | -2 / -3              | 1241844 2)   | 5,000            | 1241845 2)   | 500              | 1528123                 | -                               |
| 0.2-0.5                            | -                        | 1.15-1.60 | -2 / 4-xxx-1         | 1241858 5)   | 7,500            | 1241859 5)   | 500              | 1528091                 | 539663-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / -7 / 4-xxx-1    | 1241860 5)   | 6,000            | 1241861 5)   | 500              | 878948                  |                                 |

**Receptacle Contacts with Modified Spring and Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*   | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>‡</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -6           | 968045 1)    | 4,000            | 968046 1)   | 500              | 1528281                 |                                 |
|                                    |                          |           | -2 / -3 / -6 / 4-xxx-1 | 969005 2)    | 4,500            | 969019 2)   | 500              | 1528068                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / -3 / -6 / 4-xxx-1 | 964274 2)    | 4,000            | 964275 2)   | 500              | 1528261                 | 539663-2                        |
|                                    |                          |           | -1 / -2 / -6           | 968015 1)    | 4,000            | 968016 1)   | 500              | 1528054                 |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -2 / 4-xxx-1           | 1241730 5)   | 4,500            | 1241731 5)  | 500              | 1528068                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / 4-xxx-1           | 1241732 5)   | 4,000            | 1241733 5)  | 500              | 1528261                 |                                 |

**\*) Material and Finish:**

- xxx-1 = CuSn4, pre-tin plated
- xxx-2 = CuFe2, pre-tin plated
- xxx-3 = CuSn4, gold plated
- xxx-4 = CuSn4, gold plated, short-circuit execution
- xxx-5 = CuFe2, gold plated
- xxx-6 = CuSn4, special gold plated
- xxx-7 = CuNi12Zn24, plain
- 4-xxx-1 = CuNiSi, gold plated

**Remarks:**

- 1) = With Spring 1
- 2) = With Spring 1 or Spring 2
- 3) = For Double and Single Termination

**Micro Timer III:**

- 5) = Gap Size 0.2 mm
- 6) = Gap Size 0.35 mm

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

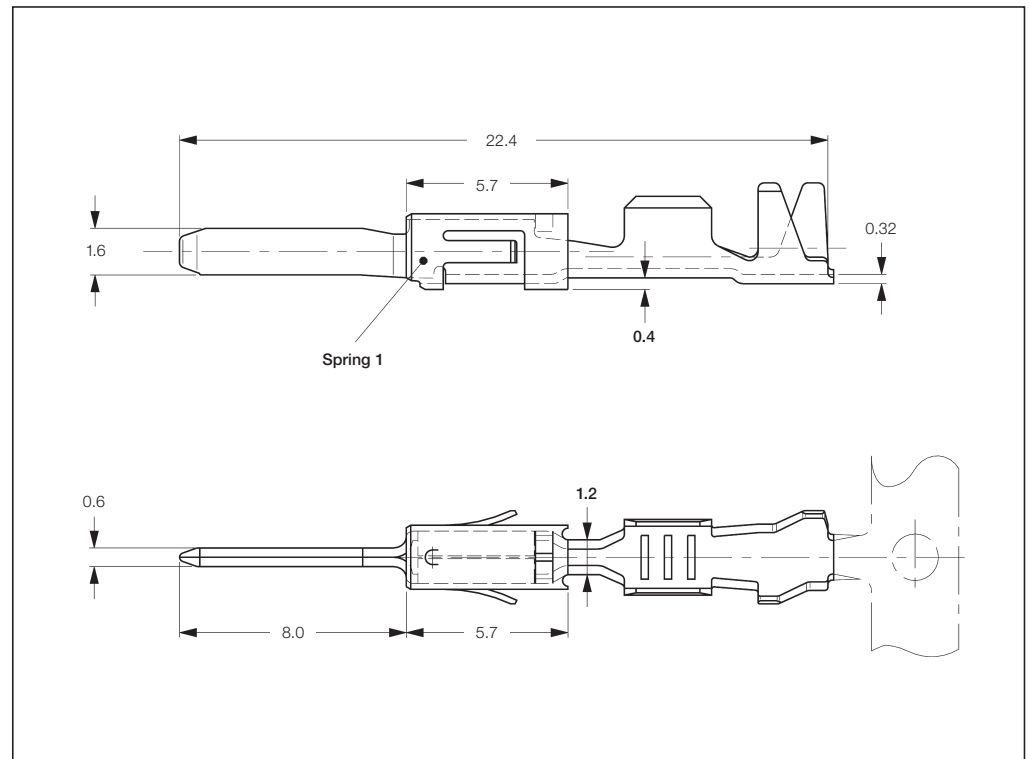
Tab Contacts

**Tabs 1.6 x 0.6 mm  
with Steel Top Spring,  
Mates with  
Micro Timer II**

**Extraction Tool:**  
Part No. **726534-1**  
Part No. **539960-1**

**Product Specification:**  
108-18331

**Application Specification:**  
114-18082



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish * | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|-----------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR       |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -3          | 963898 1)    | 7,000            | 963899 1)   | 500              | 1528061      | 539651-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3 / -4     | 963900 1)    | 6,000            | 963901 1)   | 500              | 1528256      |                                 |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish * | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|-----------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR       |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -3          | 963902 1)    | 4,000            | 963903 1)   | 500              | 1528281      | 539651-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3          | 963904 1)    | 4,000            | 963905 1)   | 500              | 1528054      |                                 |

**\*) Material and Finish:**  
xxx-1 = CuSn4, pre-tin plated  
xxx-2 = CuFe2, pre-tin plated  
xxx-3 = CuSn4, gold plated  
xxx-4 = CuSn4, gold plated

**Remarks:**  
**1)** = With Spring 1

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

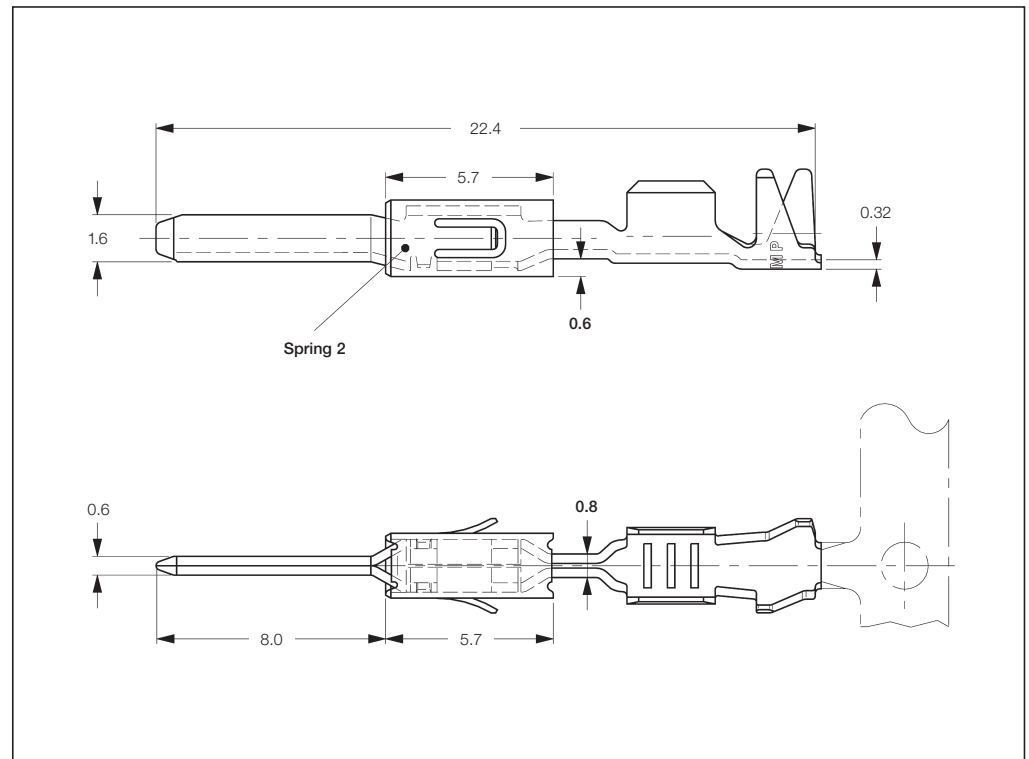
**Tabs 1.6 x 0.6 mm with Modified Steel Top Spring, Mates with Micro Timer II**

**Extraction Tool:**  
Part No. **726534-1**  
Part No. **539960-1**

**Product Group Drawing:**  
1355055

**Product Specification:**  
108-18331

**Application Specification:**  
114-18082



**Standard Tab Contacts with Modified Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish * | Part Numbers |                  |              |                  | Applicator † | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|-----------------------|--------------|------------------|--------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR       |                       | Strip Form   | Package Quantity | Loose-Piece  | Package Quantity |              |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -2 / -3               | 964265 2)    | 7,500            | 964266 2)    | 500              | 1528091      |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / -3               | 969079 2) 3) | 5,500            | 969080 2) 3) | 500              | 1528096      | 539663-2                        |
|                                    |                          |           | -1 / -2 / -3          | 964267 2)    | 6,000            | 964268 2)    | 500              | 1528092      |                                 |
| 1.5                                | -                        | 2.2-2.4   | -1 / -2 / -3          | 1241846 2)   | 4,000            | 1241847 2)   | 500              | 1528123      | -                               |

**Tab Contacts with Modified Spring and Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish * | Part Numbers |                  |             |                  | Applicator † | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|-----------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR     |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                                 |
| 0.2-0.5                            | -                        | 1.2-1.6 | -2 / -3               | 969028 2)    | 4,000            | 969029 2)   | 500              | 1528068      |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | -2 / -3               | 964269 2)    | 4,000            | 964270 2)   | 500              | 1528261      | 539663-2                        |
| 1.5                                | -                        | 2.2-2.4 | -2                    | 1703278      | 4,000            | 1703279     | 500              | 1528579      | -                               |

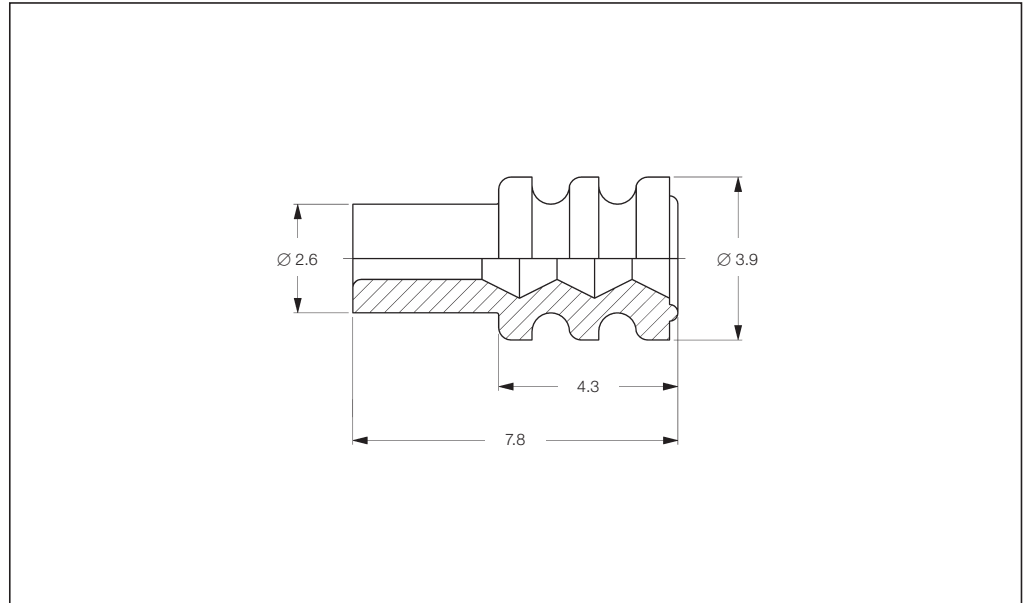
**\*) Material and Finish:**  
xxx-1 = CuSn4, pre-tin plated  
xxx-2 = CuFe2, pre-tin plated  
xxx-3 = CuSn4, gold plated

**Remarks:**  
**2)** = With Spring 1 or Spring 2  
**3)** = For Double and Single Termination

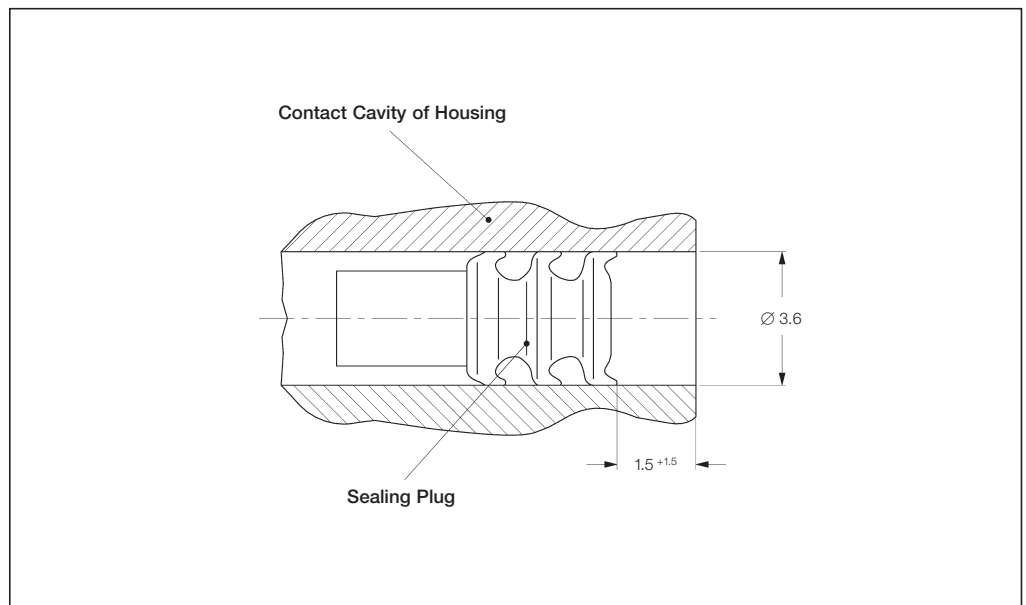
**†)** The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for Micro Timer II; Micro Timer III and 1.6 mm Tabs**



| Insulation Diameter (mm) | Color   | Part Number | Package Quantity |
|--------------------------|---------|-------------|------------------|
| 0.35-0.50                | Blue    | 1394133-1   | 10,000           |
| 0.9-1.2                  | Green   | 1718705-1   | 10,000           |
| 1.2-1.6                  | Red     | 964971-1    | 10,000           |
| 1.4-1.9                  | Grey    | 963530-1    | 10,000           |
| 1.9-2.4                  | Yellow  | 964972-1    | 10,000           |
| Sealing Plug             | White   | 963531-1    | 10,000           |
|                          | Natural | 1394132-1   | 10,000           |





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**Engineering Notes**

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Receptacle Contacts

**Technical Features**

**Wire Size Range:**

0.12–2.5 mm<sup>2</sup>  
(suitable for insulation-reduced stranded wires)

**Current Carrying Capacity:**

up to approx. 20 A

**Insertion Force\*:**

approx. 8 N

**Extraction Force\*:**

approx. 6 N

**Contact Material:**

CuZn or CuSn

**Contact Finishes:**

plain, tin plated, silver plated or gold plated.

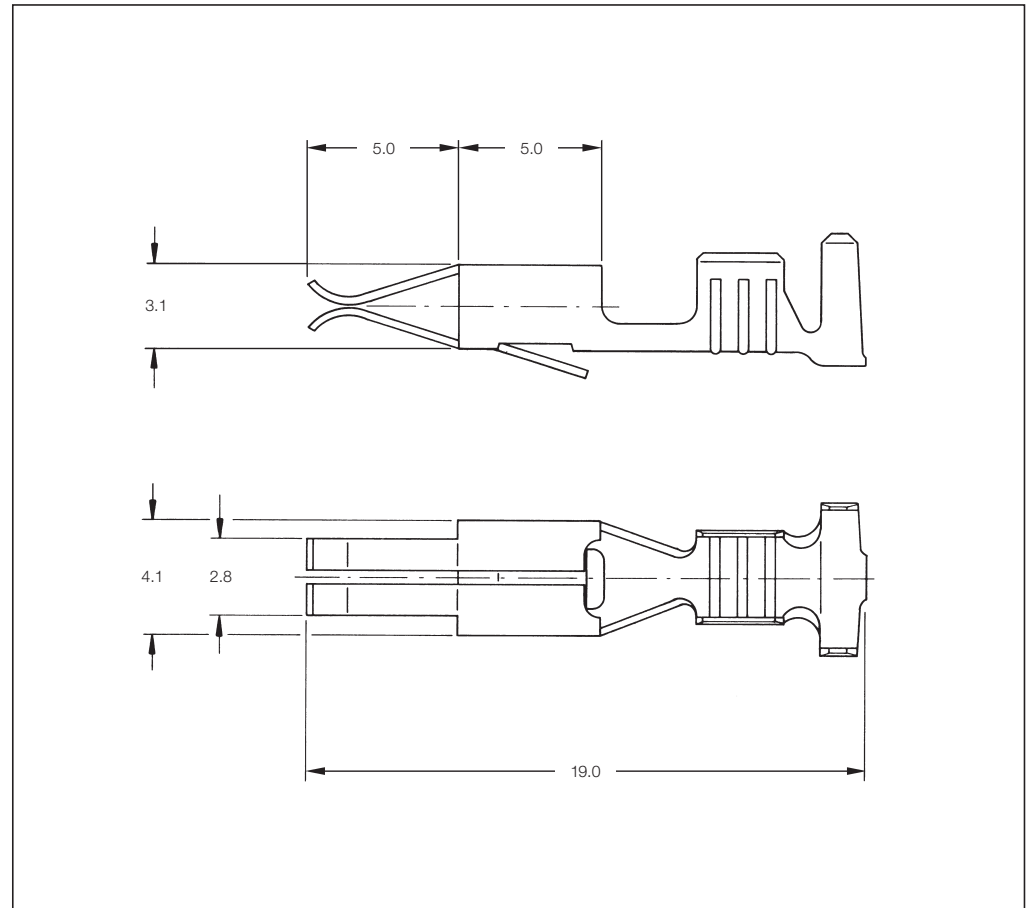
Special materials and finishes on request.

**Junior Timer Contacts Fit:**

Tabs according DIN 46244 (2.8 x 0.8 mm), DIN 46343, Part 1, as well as male connectors (3.0 x 0.8 mm).

Special applications on request.

Additional Technical Features on request.



**Extraction Tools:**

Part No. **725864-1**  
Part No. **1-1579007-4**

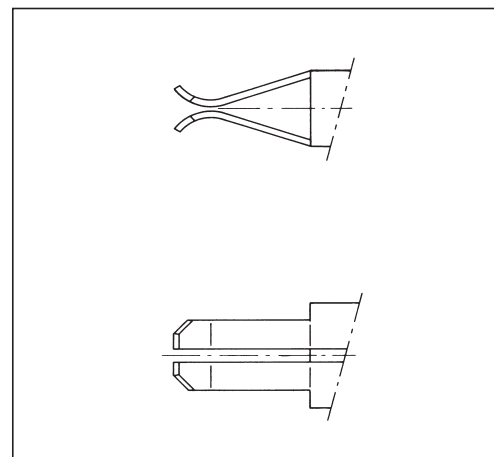
**Product Specification:**

108-18053

**Application Specification:**

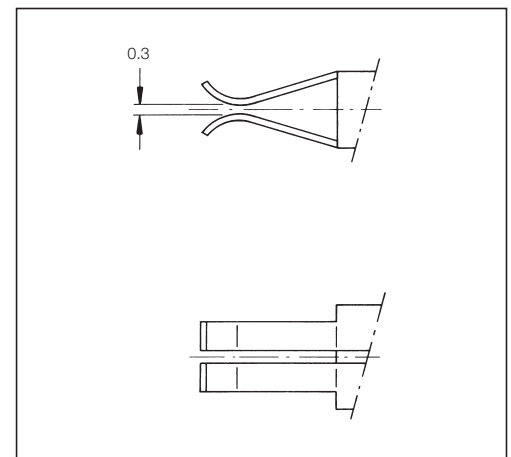
114-18079

\*) Measured with an Steel Test Tab (see Product Spec. 108-18279).



**Junior Timer Contact – Modified –**

Chamfered Springs



**Junior Timer Contact – Special Version –**

Gap Size = 0.3 mm

Receptacle Contacts (continued)

**Junior Timer Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish *        | Part Numbers      |                  |                   |                  |              |                                 |
|------------------------------------|--------------------------|---------|------------------------------|-------------------|------------------|-------------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR     |                              | Strip Form        | Package Quantity | Loose-Piece       | Package Quantity | Applicator ♦ | Hand Tool 539635-1 with Die Set |
| 0.12-0.25                          | 0.9-1.4                  | -       | -1 4) / -2 5)                | 926755            | 5,000            | 926756            | 500              | 1528556      | 90277-1                         |
| 0.5-1.0                            | 2.0-2.7                  | -       | -1 / -2 1) / -3 / -4         | 927863            | 4,000            | 927864            | 500              | 1426120      |                                 |
| 0.5-1.5                            | 2.0-3.0                  | -       | -1 / -2 / -3 / -4 / -6       | 925590            | 4,000            | 925596            | 500              | 1528548      |                                 |
| >1.0-2.5                           | 2.4-3.7                  | -       | -1 / -2 / -3 2) / -4 / -5 3) | 925595            | 3,750            | 925597            | 500              | 1528456      | 539687-2                        |
| >1.0-2.5                           | 2.7-3.7                  | -       | -1 / -2 / -4                 | 927877 ***        | 3,500            | 927878 ***        | 500              | 1426451      |                                 |
| 0.2-0.5                            | -                        | 1.2-1.6 | -1 / -2 1) / -4              | 927871            | 5,000            | 927872            | 500              | 1528274      | 539744-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1 / -2 1) / -3 / -4 / -5    | 927845            | 4,000            | 927846            | 500              | 1528583      |                                 |
| >1.0-2.5                           | -                        | 2.2-3.0 | -1 / -2 / -4 / -5            | 927856            | 3,750            | 927857            | 500              | 1426401      |                                 |
|                                    |                          |         |                              | 925871-1 1) **    | 4,000            | 925871-2 1) **    | 500              |              |                                 |
|                                    |                          |         |                              | 925871-3 3) **    | 4,000            | 925871-4 3) **    | 500              |              |                                 |
| 0.5-1.5                            | 2.3-3.3                  | -       | -                            | 925871-5 7) **    | 4,000            | -                 | 500              | 1528548      | 539687-2                        |
|                                    |                          |         |                              | 925871-6 2) **    | 4,000            | 925871-7 2) **    | 500              |              |                                 |
|                                    |                          |         |                              | 927973-1 1) **    | 4,000            | 927973-2 1) **    | 500              |              |                                 |
|                                    |                          |         |                              | 927973-3 1) 6) ** | 4,000            | 927973-4 1) 6) ** | 500              |              |                                 |

**Junior Timer Contacts with Modified Cantilever Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish * | Part Numbers |                  |             |                  |              |                                 |
|------------------------------------|--------------------------|-----|-----------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool 539635-1 with Die Set |
| 0.5-1.5                            | 2.3-3.3                  | -   | -1 / -2 / -5          | 927966       | 3,750            | 929929      | 500              | 1528548      | 539687-2                        |

**\*) Material and Finish:**

- xxx-1 = CuZn30, pre-tin plated
- xxx-2 = CuSn4, pre-tin plated
- xxx-3 = CuSn4, gold plated
- xxx-4 = CuZn30, pre-silver plated
- xxx-5 = CuSn4, pre-silver plated
- xxx-6 = CuSn4, silver plated

\*\*\*) Gap Size 0.3 mm

\*\*\*\*) For Double and Single Termination

**Remarks:**

- 1) = CuSn4, pre-tin plated
- 2) = CuSn4, silver plated
- 3) = CuSn4, gold plated
- 4) = CuSn6, pre-tin plated
- 5) = CuSn6, gold plated
- 6) = with Lubricant
- 7) = Plain

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Receptacle Contacts

**Technical Features**

**Contact Material:**

CuSn, CuFe, CuNiSi  
Cantilever Spring: Stainless Steel

**Contact Finish:**

- tin plated
- silver plated
- selective gold plated

**Wire Size Range:**

0.2–2.5 mm<sup>2</sup>  
FLK and FLR

**Contact Resistance (New State):**

CuFe: <2 mΩ  
CuSn: <3 mΩ

**Total Temperature max.:**

- 40 °C to +130 °C (tin plated)
- 40 °C to +140 °C (silver plated)
- 40 °C to +150 °C (gold plated)

**Mating Cycles:**

- 10 (tin plated)
- 50 (silver plated)
- 100 (gold plated)

**Insertion Force\*:**

max. 15 N

**Extraction Force\*:**

min. 1.5 N

**Retention Force:**

- from housings without second locking device min. 100 N
- from housings only second locking device min. 60 N

**Dimensions of Male Contacts:**

2.8 mm x 0.8 mm

**Centerlines (Standard/SWS):**

- 5.0 x 5.5 mm
- 5.0 x 5.0 mm (Staggered)

**Extraction Tool:**

Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**

1355046  
1355047 (Modified Spring)

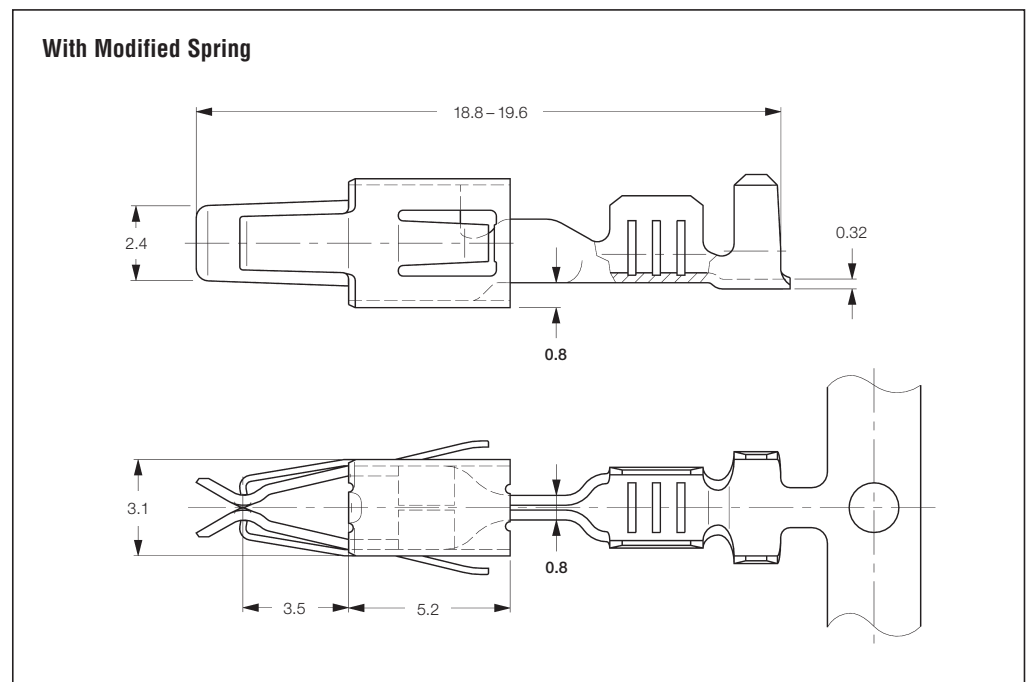
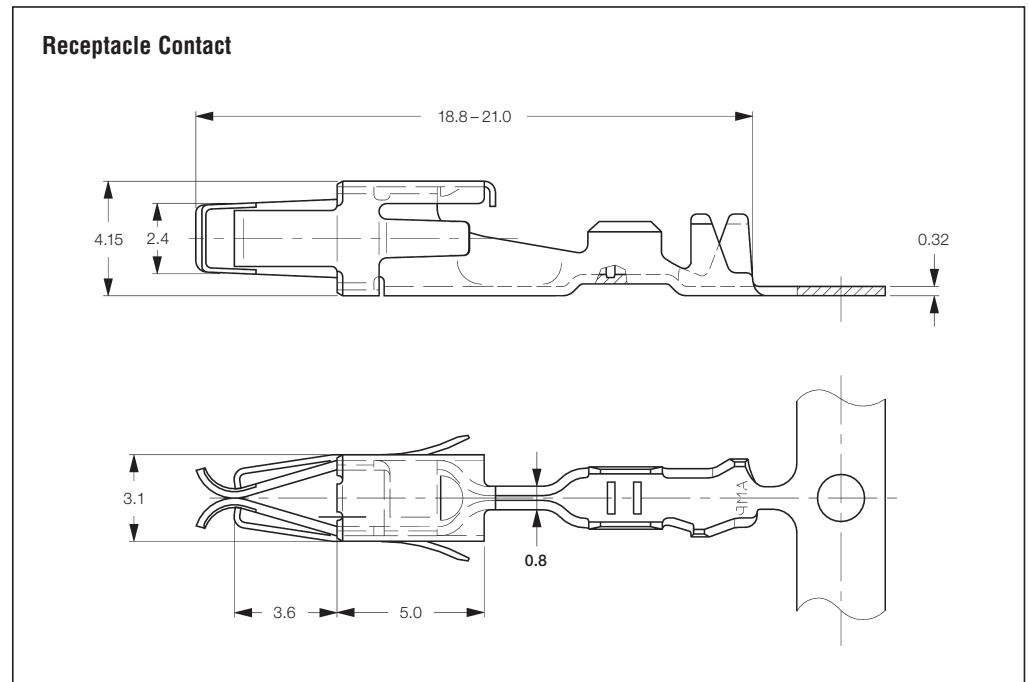
**Product Specification:**

108-18013

**Application Specification:**

114-18050

\*) Measured with an Steel Test Tab (see Product Spec. 108-18279).



**Max. Current in 7 Positions Housing**

| Material | Temperature (°C) | Current Carrying Capacity (Ampere) |                     |                     |
|----------|------------------|------------------------------------|---------------------|---------------------|
|          |                  | 1.0 mm <sup>2</sup>                | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> |
| CuSn     | 20               | 16.0                               | 20.0                | 25.0                |
|          | 90               | 7.5                                | 9.5                 | 12.0                |
| CuFe     | 20               | 15.0                               | 19.0                | 22.5                |
|          | 90               | 7.0                                | 9.0                 | 11.0                |

Receptacle Contacts (continued)

**Standard Receptacle Contacts (Length 18.8 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm)   |         | Material and Finish*                       | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|----------------------------|---------|--|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                        | FLR     |  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
| 0.22-0.50                          | 1.15-2.30                  | -       | -1 / -3 / 1-xxx-1                          | 927778       | 4,000            | 927780      | 500              | 1528407                 | 539744-2                        |
|                                    |                            |         | -1   | 967259**     | 4,500            | 967260**    | 500              |                         |                                 |
|                                    |                            |         | -1   | 969137***    | 4,000            | 969138***   | 500              |                         |                                 |
| 0.5-1.0                            | 2.0-2.7                    | -       | -1 / -3 / -6 / -7 / 1-xxx-1 / 2-xxx-1      | 927775       | 4,000            | 927783      | 500              | 1426141                 | 539674-2                        |
|                                    |                            |         | -1 / -3                                    | 928876****   | 4,000            | -           | -                | 1426141                 | 539674-2                        |
| 1.5-2.5                            | 2.7-4.1                    | -       | -1 / -3 / -6 / 1-xxx-1 / 2-xxx-1           | 927773       | 3,000            | 927781      | 500              | 1528385                 | 539674-2                        |
| 0.2-0.5                            | -                          | 1.0-1.6 | -1 / -3 / -6 / -8 / 1-xxx-1 / 2-xxx-1      | 927774       | 4,000            | 927776      | 500              | 1528032                 | 539737-2                        |
| 0.5-1.0                            | -                          | 1.4-2.3 | -1 / -3 / -6 / -8 / -9 / 1-xxx-1 / 2-xxx-1 | 927771       | 3,750            | 927779      | 500              | 1528029                 | 539674-2                        |
|                                    |                            |         | -1   | 965901***    | 4,000            | 965902***   | 500              | 1528029                 | 539674-2                        |
|                                    |                            |         | -1*  | 928810**     | 4,000            | -           | -                | 1528029                 | 539674-2                        |
| 1.5-2.5                            | -                          | 2.1-3.1 | -1 / -3 / -6 / -8 / -9 / 1-xxx-1 / 2-xxx-1 | 927768       | 3,500            | 927777      | 500              | 1528045                 | 539742-2                        |
|                                    |                            |         | -1   | 963884**     | 3,500            | 963885**    | 500              | 1528045                 | 539674-2                        |
|                                    |                            |         | -1   | 965899***    | 3,500            | 965900***   | 500              | 1528045                 | 539674-2                        |
| 0.08-0.22                          | 1.5-1.8<br>Special Version | -       | -1 / -3 / -6 / 1-xxx-1 / 2-xxx-1           | 963708       | 4,000            | 963777      | 500              | 878599                  | Complete Hand Tool 734414-1     |

**Receptacle Contacts with Single Wire Sealing System (Length 18.8 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                  | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|---------------------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
| 0.22-0.38                          | 1.15-1.60                | -         | -1 / -3 / 1-xxx-1                     | 927772       | 3,700            | 929931      | 500              | 1528027                 |                                 |
| 0.5-1.0                            | 2.0-2.7                  | -         | -1 / -3 / -6 / -8 / 1-xxx-1 / 2-xxx-1 | 927770       | 3,750            | 929930      | 500              | 1528006                 |                                 |
|                                    |                          |           | -1                                    | 929280**     | 3,750            | 929281**    | 500              | 1528006                 |                                 |
| 1.5-2.5                            | 2.7-3.0                  | -         | -1 / -3 / -8 / 1-xxx-1 / 2-xxx-1      | 927766       | 3,750            | 929929      | 500              | 1528275                 | 539737-2                        |
| 0.35-0.50                          | -                        | 1.15-1.60 | -1 / -3 / 1-xxx-1                     | 927772       | 3,700            | 929931      | 500              | 1528027                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -3 / -6 / -8 / 1-xxx-1 / 2-xxx-1 | 927770       | 3,750            | 929930      | 500              | 1528006                 |                                 |
| 1.5-2.5                            | -                        | 2.2-3.0   | -1 / -3 / -8 / 1-xxx-1 / 2-xxx-1      | 927766       | 3,750            | 929929      | 500              | 1528275                 |                                 |

**\*) Material and Finish:**

- xxx-1 = CuFe, pre-tin plated
- xxx-1\* = CuSn, pre-tin plated
- xxx-3 = CuSn, pre-tin plated
- xxx-6 = CuSn, selective pre-silver plated
- xxx-7 = CuFe, pre-tin plated, Special Test
- xxx-8 = CuSn, selective gold plated, Spring: gold plated
- xxx-9 = CuSn, selective gold and tin plated
- 1-xxx-1 = CuFe, selective gold plated
- 2-xxx-1 = CuSn, selective gold plated

**Remarks:**

- \*\*\*) Gap Size 0.30 mm
- \*\*\*\*) Gap Size 0.65 mm
- \*\*\*\*\*) Gap Size 0.15 mm

♦) The pre- and suffix for the applicators depends on the applied termination equipment.



Receptacle Contacts (continued)

**Receptacle Contacts with Single Wire Sealing System (Length 21.0 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|-------------------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
| 0.22-0.38                          | 1.15-1.60                | -         | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929941       | 3,750            | 929942      | 500              | 1528027                 |                                 |
| 0.5-1.0                            | 2.0-2.7                  | -         | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929939       | 3,750            | 929940      | 500              | 1528006                 |                                 |
| 1.5-2.5                            | 2.7-3.0                  | -         | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929937       | 3,700            | 929938      | 500              | 1528275                 |                                 |
| 0.35-0.50                          | -                        | 1.15-1.60 | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929941       | 3,750            | 929942      | 500              | 1528027                 | 539737-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929939       | 3,750            | 929940      | 500              | 1528006                 |                                 |
| 1.5-2.5                            | -                        | 2.2-3.0   | -1 / -3 / -6 /<br>1-xxx-1 / 2-xxx-1 | 929937       | 3,700            | 929938      | 500              | 1528275                 |                                 |

**\*) Material and Finish:**

xxx-1 = CuFe, pre-tin plated  
xxx-3 = CuSn, pre-tin plated  
xxx-6 = CuSn, selective pre-silver plated

1-xxx-1 = CuFe, selective gold plated  
2-xxx-1 = CuSn, selective gold plated

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

**Standard Receptacle Contacts with Modified Spring (Length 18.8 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                          | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|---|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
| 0.22-0.50                          | -                        | 1.15-1.60 | -1 / -2 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1      | 964280       | 4,500            | 964279      | 500              | 1528004                 |                                 |
|                                    |                          |           | -1 / 4-xxx-1                                  | 1241862**    | 3,500            | 1241863**   | 500              | -                       |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -6 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1 | 964284       | 4,000            | 964283      | 500              | 1528097                 | 539664-2                        |
|                                    |                          |           | -1 / 4-xxx-1                                  | 1241866**    | 3,500            | 1241867**   | 500              | -                       |                                 |
| 1.5-2.5                            | -                        | 2.2-3.0   | -1 / -2 / -6 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1 | 965999       | 3,500            | 964346      | 500              | 1528001                 |                                 |
|                                    |                          |           | -1 / 4-xxx-1                                  | 1241870**    | 3,500            | 1241871**   | 500              | 1528001                 |                                 |
| 2.5-4.0                            | -                        | 2.7-3.7   | -2  | 1241978      | 2,700            | 1241977     | 500              | 1528202                 | -                               |

**Receptacle Contacts with Modified Spring and Single Wire Sealing System (Length 19.6 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*                     | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|---------|--|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.2-2.3 | -1 / -2 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1 | 964282       | 3,500            | 964281      | 500              | 1528025                 |                                 |
|                                    |                          |         | -1 / 4-xxx-1                             | 1241864**    | 3,500            | 1241865**   | 500              | -                       |                                 |
| 0.5-1.0                            | -                        | 1.4-2.7 | -1 / -2 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1 | 964286       | 3,500            | 964285      | 500              | 1528101                 | 539650-2                        |
|                                    |                          |         | -1 / 4-xxx-1                             | 1241868**    | 3,500            | 1241869**   | 500              | -                       |                                 |
| 1.5-2.5                            | -                        | 2.2-3.0 | -1 / -2 /<br>1-xxx-1 / 2-xxx-1 / 4-xxx-1 | 964273       | 3,500            | 964287      | 500              | 1528026                 |                                 |
|                                    |                          |         | -1 / 4-xxx-1                             | 1241872**    | 3,500            | 1241873**   | 500              | 1528026                 |                                 |

**\*) Material and Finish:**

xxx-1 = CuFe, pre-tin plated  
xxx-2 = CuSn, pre-tin plated  
xxx-6 = CuSn, selective pre-silver plated

1-xxx-1 = CuFe, selective gold plated  
2-xxx-1 = CuSn, selective gold plated  
4-xxx-1 = CuNiSi, selective gold plated

**Remarks:**

\*\*\*) Gap Size 0.3 mm

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

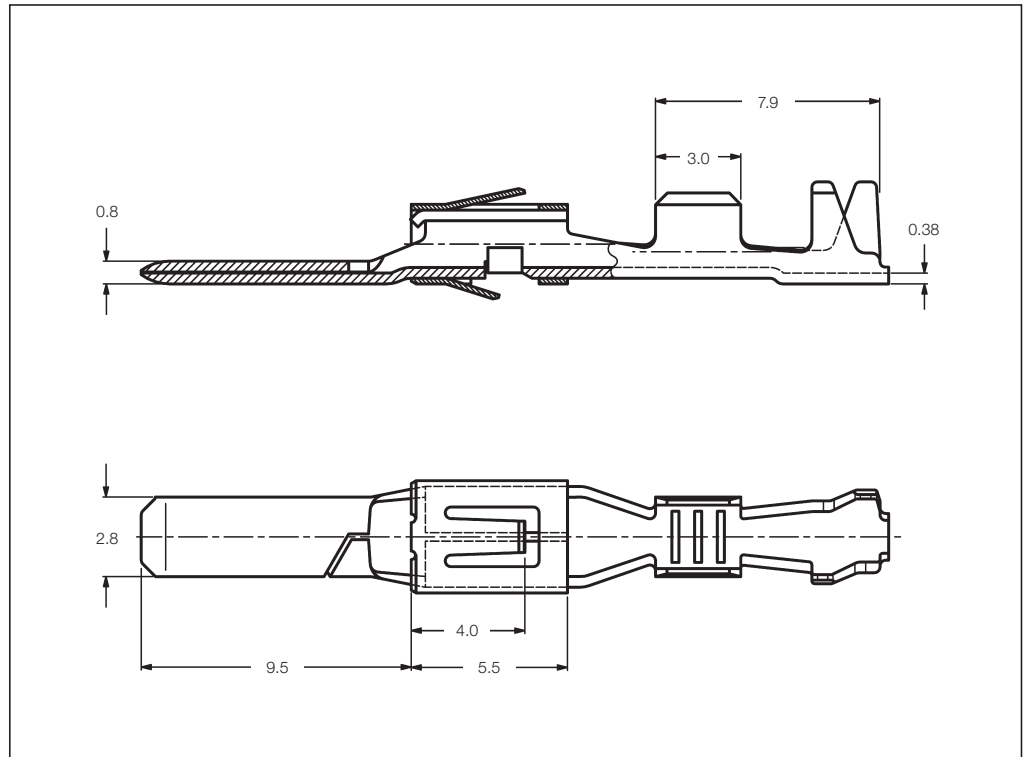
Tab Contacts Asymmetric

**Tabs 2.8 x 0.8 mm  
with Asymmetric  
Steel Top Spring,  
Mates with  
Junior Power Timer**

**Extraction Tool:**  
Part No. **726544-1**

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |                         |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> |
| 0.2-0.5                            | -                        | 1.1-1.6 | -1 / -2              | 962882       | 4,500            | 963813      | 500              | 1528753                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1 / -2              | 962883       | 4,500            | 963814      | 500              | 1528048                 |
| 1.5-2.5                            | -                        | 2.2-3.0 | -1 / -2              | 962884       | 3,500            | 963815      | 500              | 1528729                 |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |                         |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> |
| 0.2-0.5                            | -                        | 1.2-1.6 | -1 / -2              | 962879       | 4,500            | 963810      | 500              | -                       |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1 / -2 / -3         | 962880       | 2,500            | 963811      | 500              | 1426559                 |
| 1.5-2.5                            | -                        | 2.2-3.0 | -1 / -2 / -3         | 962881       | 2,500            | 963812      | 500              | 878619                  |

**\*) Material and Finish:**  
xxx-1 = CuSn, pre-tin plated  
xxx-2 = CuFe, pre-tin plated  
xxx-3 = CuSn, contact area gold plated

Additional Finishes on request.

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts Symmetric

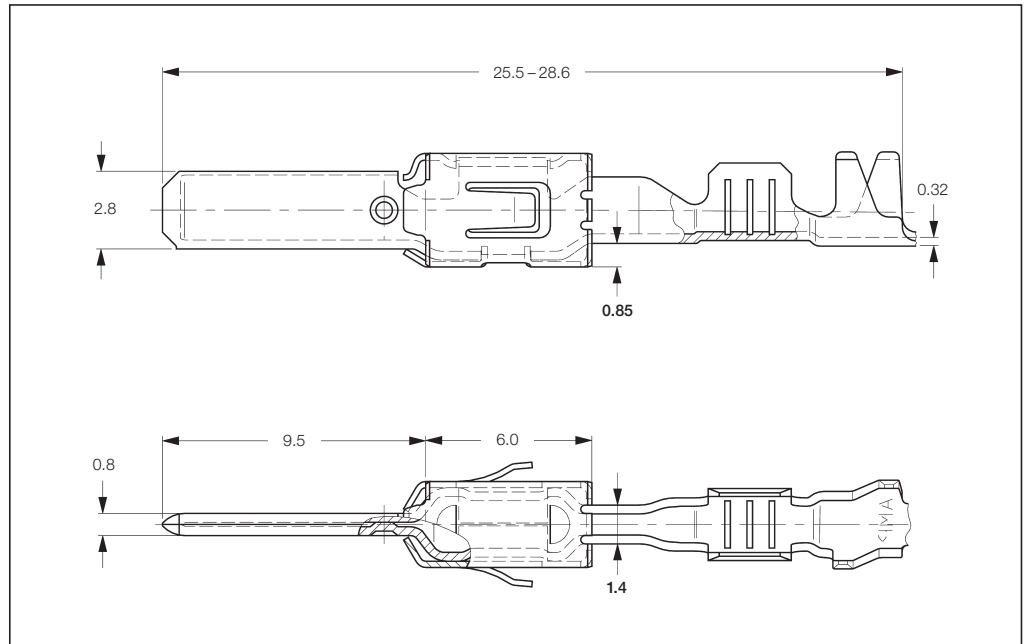
**Tabs 2.8 x 0.8 mm with Steel Top Spring, Mates with Junior Power Timer**

**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355052

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete             |
|------------------------------------|--------------------------|-----------|---|--------------|------------------|-------------|------------------|-------------|--------------------------------|
|                                    | FLK                      | FLR       |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 963860       | 4,000            | 963861      | 500              | 1528859     | 734538-1                       |
| 0.5-1.0                            | -                        | 1.4-2.0   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962841       | 4,000            | 963745      | 500              | 1528315     | 539635-1 with Die Set 539758-2 |
| 1.5-2.5                            | -                        | 2.1-2.9   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962842       | 3,500            | 963746      | 500              | 1528305     | 539635-1 with Die Set 539758-2 |
| 1.5-2.5                            | 2.4-3.7                  | -         | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962843       | 3,000            | 963747      | 500              | 878552      | 734417-3                       |
| 4.0                                | -                        | 3.4-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968946       | 2,700            | 968965      | 500              | 1528430     | -                              |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |          | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete |
|------------------------------------|--------------------------|----------|---|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK                      | FLR      |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                    |
| 0.2-0.5                            | -                        | max. 2.1 | 1-xxx-1 / 1-xxx-3   | 965982       | 3,500            | 965983      | 500              | 1528406     | -                  |
| 0.5-1.0                            | -                        | max. 2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962915       | 3,500            | 963748      | 500              | 1528452     | 734438-1           |
| 1.5-2.5                            | -                        | max. 3.0 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962916       | 3,500            | 963749      | 500              | 1528316     | 734440-1           |
| 4.0                                | -                        | max. 3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968947       | 3,500            | 968966      | 500              | 1528067     | -                  |
| AWG 12                             | GXL = max. 3.55          |          | 1-xxx-1 / 1-xxx-2   | 1719504      | 3,500            | 1719503     | 500              | 1852291     | -                  |

**\*) Material and Finish:**  
1-xxx-1 = CuSn, pre-tin plated  
1-xxx-2 = CuSn, selective silver plated  
1-xxx-3 = CuSn, selective gold plated

2-xxx-1 = CuFe, pre-tin plated  
2-xxx-2 = CuFe, selective silver plated  
2-xxx-3 = CuFe, selective gold plated  
3-xxx-1 = CuSn, pre-tin plated

**\*)** The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts Symmetric

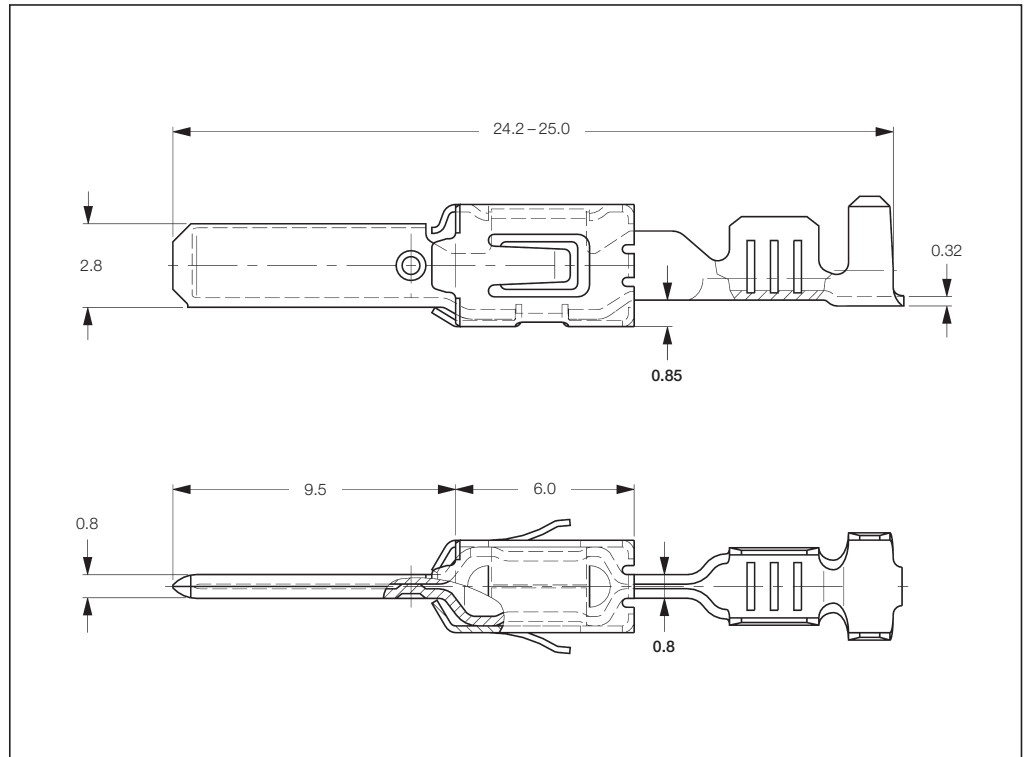
**Tabs 2.8 x 0.8 mm with Modified Steel Top Spring, Mates with Junior Power Timer**

**Extraction Tool:**  
Part No. **725864-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355364

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts with Modified Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*        | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|-----------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>†</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1           | 964292       | 4,000            | 964291      | 500              | 1528004                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 964294       | 4,000            | 964293      | 500              | 1528097                 | 539664-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 964296       | 3,300            | 964295      | 500              | 1528001                 |                                 |

**Tab Contacts with Modified Spring and Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*        | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|-----------|-----------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>†</sup> | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1           | 964298       | 3,500            | 964297      | 500              | 1528025                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1 / 4-xxx-1 | 964300       | 3,500            | 964299      | 500              | 1528101                 | 539650-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1           | 964302       | 3,500            | 964301      | 500              | 1528026                 |                                 |

\*) **Material and Finish:**  
 1-xxx-3 = CuSn, selective gold plated  
 2-xxx-1 = CuFe, pre-tin plated  
 2-xxx-2 = CuFe, selective pre-silver plated  
 4-xxx-1 = CuNi18Zn20, plain

†) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts Side Feed

**Tabs 2.8 x 0.8 mm**  
**Side Feed,**  
**Mates with**  
**Junior Power Timer**

**Contact Material:**  
CuZn, CuSn, CuNiSi

**Contact Finish:**  
plain, pre-tin plated,  
silver plated, gold plated

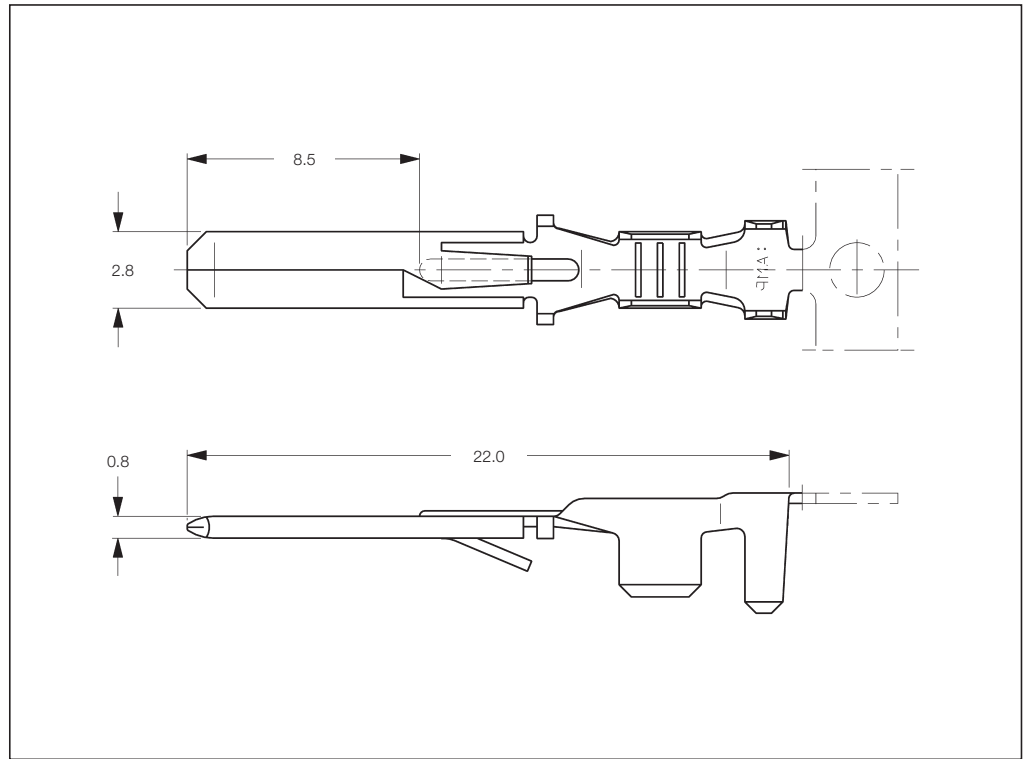
**Wire Size Range:**  
0.2–3.0 mm<sup>2</sup> (FLR)

**Extraction Tool:**  
Part No. **725864-1**  
Part No. **1-1579007-4**

**Product Group Drawing:**  
1670467

**Product Specification:**  
108-18299

**Application Specification:**  
114-18014



**Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*   | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|---------|------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|                                    |                          |         |                        |              |                  |             |                  |                         |                                 |
| 0.2–0.5                            | –                        | 1.1–1.6 | -1 / -2 / -3 / -4      | 964131       | 6,000            | 964140      | 500              | 1528053                 | 539744-2                        |
|                                    |                          |         | -1 / -2 / -3 / -4 / -5 | 963961**     | 5,000            | 963962**    | 500              | 1528530                 | 1579001-2                       |
|                                    |                          |         | -1 / -2 / -3 / -4 / -5 | 964132       | 4,000            | 964141      | 500              | 1238059                 | 539743-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3 / -4 / -5 | 927892**     | 4,000            | 928923**    | 500              | 1426070                 | –                               |
|                                    |                          |         | -1 / -2 / -3 / -4 / -5 | 928930**     | 4,000            | 928931**    | 500              | 1528384                 | –                               |
|                                    |                          |         | -1 / -2 / -3 / -4      | 964133       | 3,000            | 964142      | 500              | 878828                  | 539743-2                        |
| >1.0–2.5                           | –                        | 2.2–3.0 | -1 / -2 / -3 / -4 / -5 | 928781**     | 4,000            | 928794**    | 500              | 1528377                 | –                               |
|                                    |                          |         | -1 / -2 / -3 / -4 / -5 | 927893**     | 3,250            | 928924**    | 500              | 1426445                 | –                               |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*             | Part Numbers |                  |             |                  |                         |                                 |
|------------------------------------|--------------------------|---------|----------------------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                                  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|                                    |                          |         |                                  |              |                  |             |                  |                         |                                 |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3 / -4 / -5 / -6 / -7 | 929948**     | 3,500            | 965974**    | 500              | 878447                  | –                               |
| >1.0–2.5                           | –                        | 2.2–3.0 | -1 / -2 / -3 / -4 / -5           | 929949**     | 3,500            | 965975**    | 500              | 878478                  | –                               |

**\*) Material and Finish:**  
xxx-1 = CuSn, plain  
xxx-2 = CuSn, pre-tin plated  
xxx-3 = CuNi, pre-tin plated  
xxx-4 = CuSn, contact area gold plated  
xxx-5 = CuSn, contact area silver plated  
Additional Finishes on request.

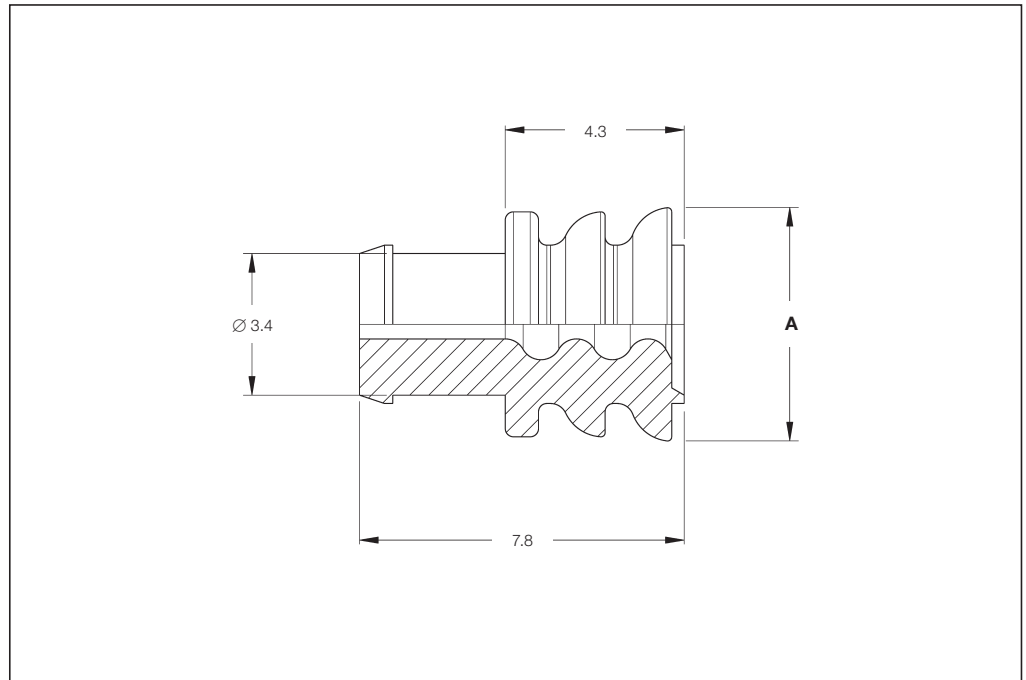
**\*\*) Material and Finish:**  
See Product Group Drawing

**♦) The pre- and suffix for the applicators depends on the applied termination equipment.**



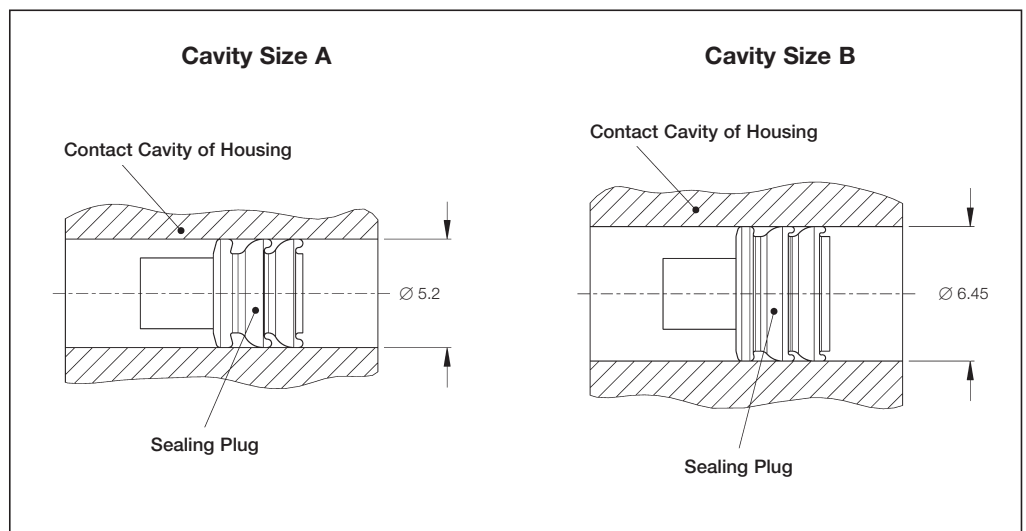
Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for Junior Power Timer and 2.8 mm Tabs (Two Cavity Diameters)**



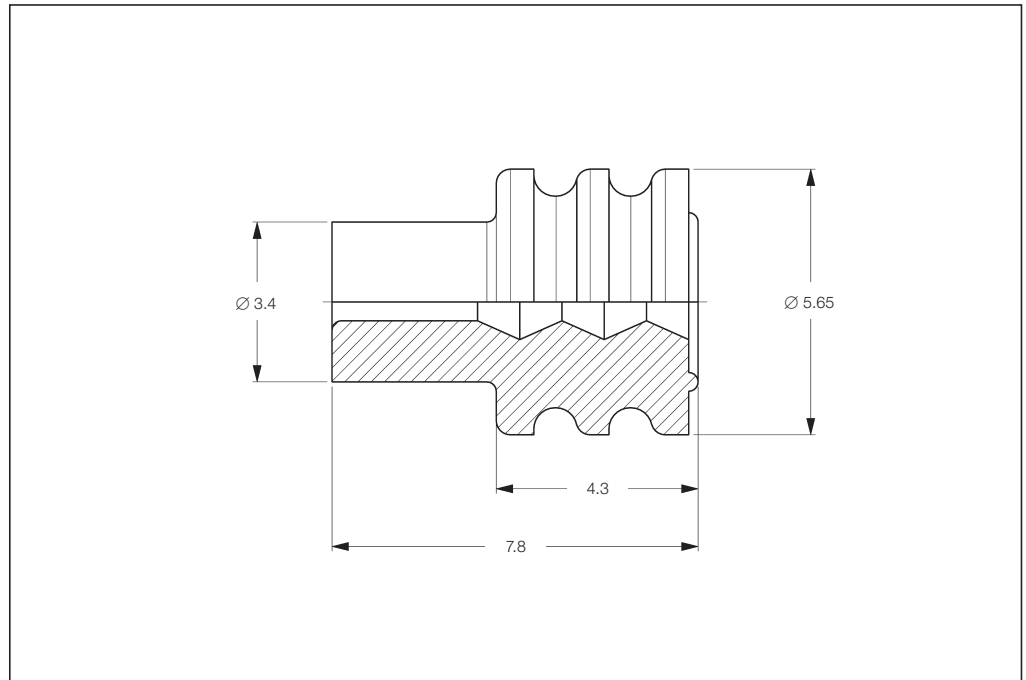
| Cavity Size | Function Relevant Insulation Diameter (mm) | (Example for Wire Size, FLR Insulation according ISO 6722 (mm <sup>2</sup> )) | Color   | Diameter A (mm) | Part Number | Package Quantity |
|-------------|--|---|---------|-----------------|-------------|------------------|
| A           | 1.2-2.1                                    | (0.35-1.00)   | Blue    | 5.6             | 828904-1    | 1,000            |
|             |  |   |         |                 | 828904-2    | 10,000           |
| A           | 2.2-3.0                                    | (1.5-2.5)   | White   | 5.6             | 828905-1    | 10,000           |
| B           | 3.0-3.7                                    | (2.5-4.0)   | Green   | 7.2             | 828985-1    | 5,000            |
| A           | Sealing Plug                               |   | Natural | 5.6             | 828922-1    | 10,000           |
| B           | Sealing Plug                               |   | Brown   | 7.2             | 828986-1    | 5,000            |

For correct use see Application Specification 114-18148.

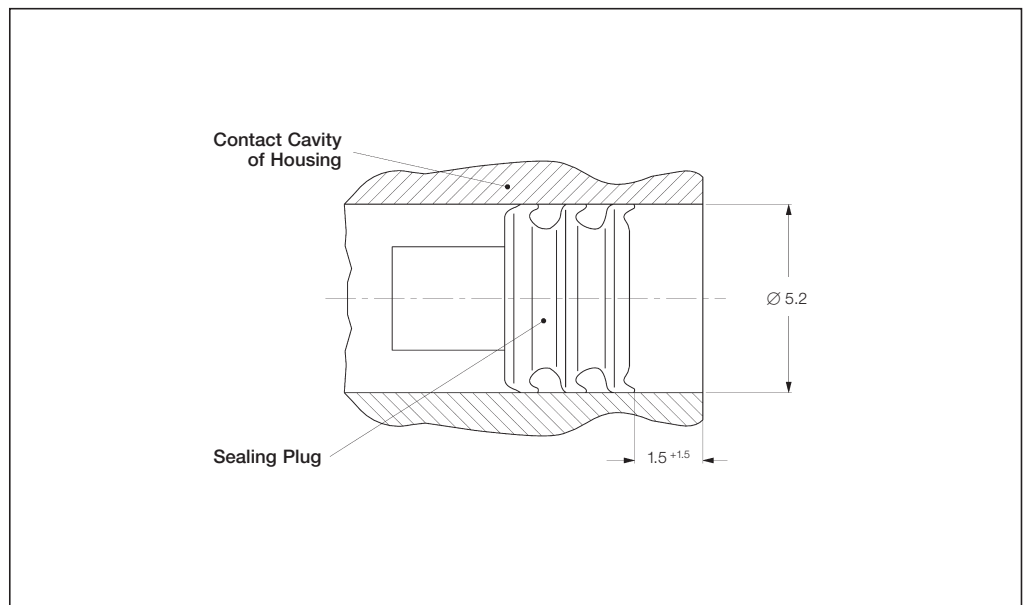


Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for Junior Power Timer and 2.8 mm Tabs (Cavity Diameter 5.2 mm)**



| Wire Size Range (mm <sup>2</sup> ) |           | Insulation Diameter (mm) | Color     | Part Number | Package Quantity |
|------------------------------------|-----------|--------------------------|-----------|-------------|------------------|
| FLK                                | FLR       |                          |           |             |                  |
| 0.35                               | 0.35-1.00 | 1.2-2.1                  | Blue      | 963294-1    | 5,000            |
| 0.5-1.0                            | 1.5       | 2.0-2.7                  | Red-Brown | 963293-1    | 5,000            |
| 1.5                                | 2.5       | 2.7-3.0                  | Yellow    | 963292-1    | 5,000            |
| -                                  | -         | Sealing Plug             | Natural   | 828922-1    | 10,000           |
| -                                  | -         |                          | Green     | 828922-2    | 10,000           |



Receptacle Contacts

**Technical Features**

**Temperature Range:**  
-40 °C to +110 °C

**Current Carrying Capacity:**  
25 A max.

**Wire Size Range:**  
0.5–2.5 mm<sup>2</sup> (suitable for insulation-reduced stranded wires)

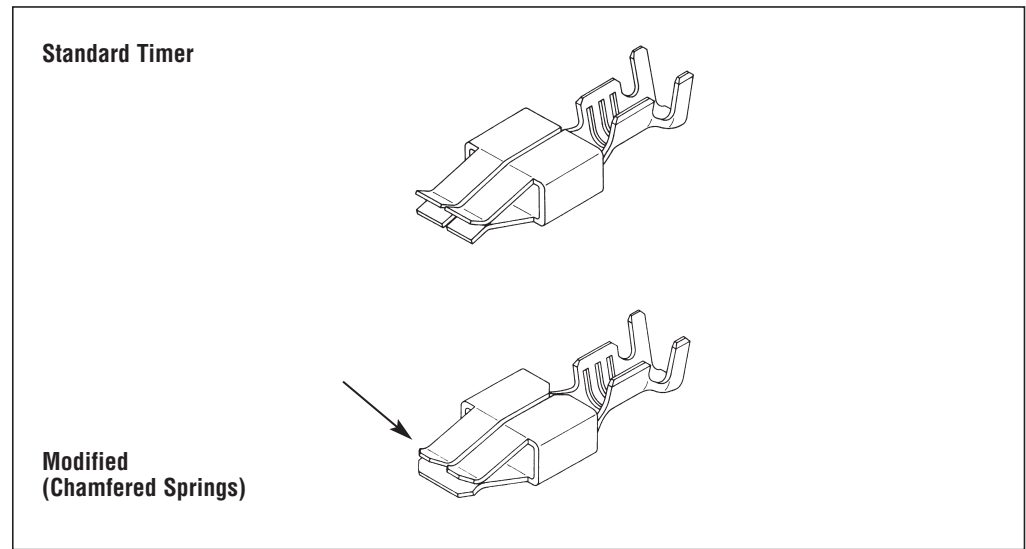
**Insulation Diameter:**  
1.0–4.3 mm

**Contact Material:**  
CuZn, CuSn and CuFe  
Additional materials and finishes on request.

**Insertion Force\*:**  
<15 N

**Extraction Force\*:**  
>8 N

\*) Measured with an Steel Test Tab (see Product Spec. 108-18279).



**Dimensions of Male Contacts:**  
6.3 x 0.8 mm,  
5.8 x 0.8 mm and  
4.8 x 0.8 mm

**Extraction Tool:**  
Part No. **725864-1**  
Part No. **1-1579007-4**

**Product Specification:**  
108-18054

**Application Specification:**  
114-18080

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*            | Part Numbers         |                  |                       |                  | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|---------------------------------|----------------------|------------------|-----------------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                                 | Strip Form           | Package Quantity | Loose-Piece           | Package Quantity |                         |                                 |
| 0.2–0.5                            | –                        | 1.0–1.6 | -1 / -2                         | 926984               | 3,000            | 926985                | 2,500            | 1528274                 | 539744-2                        |
| 0.5–1.0                            | –                        | 1.4–2.3 | -1 / -2 / -3                    | 927847               | 2,750            | 927848                | 500              | 1528583                 | 539742-2                        |
| >1.0–2.5                           | –                        | 2.1–3.1 | -1 / -2 / -3                    | 927849               | 2,500            | 927850                | 500              | 1426401                 |                                 |
|                                    |                          | 1.4–2.3 | –                               | 964201 <sup>2)</sup> | 2,750            | 1241824 <sup>2)</sup> | 500              | 1528583                 | 539742-2                        |
| 0.5–1.0                            | 2.0–3.0                  | –       | -1 / -2 / -3                    | 925575               | 2,750            | 925598                | 500              | 1528252                 |                                 |
|                                    |                          |         |                                 | 926005 <sup>1)</sup> | 2,500            | 926007 <sup>1)</sup>  | 1,000            | 1528252                 |                                 |
| >1.0–2.5                           | 2.0–3.3                  | –       | -1 / -2 / -3                    | 927865               | 2,500            | 927866                | 2,200            | 1426120                 |                                 |
|                                    | 3.0–4.3                  | –       | -1 / -2 / -3                    | 925612               | 2,500            | 925613                | 500              | 1528456                 | 539687-2                        |
| >1.0–2.5                           |                          |         |                                 | 926006 <sup>1)</sup> | 2,500            | 926008 <sup>1)</sup>  | 1,000            | 1528456                 |                                 |
|                                    | 2.4–3.7                  | –       | -1 / -2 / -3 / -4 <sup>3)</sup> | 964202               | 2,000            | –                     | –                | 1528456                 |                                 |
|                                    | 2.7–4.0                  | –       | -1 / -2 / -3                    | 927879               | 2,000            | 927880                | 500              | 1426451                 |                                 |

**Standard Receptacle Contacts with Modified Chamfered Springs**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |                          |                  | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|--------------------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece              | Package Quantity |                         |                                 |
| 0.5–1.5                            | 2.0–3.0                  | –       | -1 / -2 / -3         | 926965       | 2,500            | 927936 <sup>1) 2)</sup>  | 1,000            | 1528252                 | 539687-2                        |
| >1.0–2.5                           | 3.0–4.3                  | –       | -1 / -2 / -3         | 926973       | 2,500            | 927937 <sup>1) 2)</sup>  | 500              | 1528456                 |                                 |
| 0.5–1.0                            | –                        | 1.4–2.3 | -1 / -2 / -3         | 928820       | 3,000            | 1241823 <sup>1) 2)</sup> | 500              | 1528583                 | 539742-2                        |

\*) **Material and Finish:**  
xxx-1 = CuZn, pre-tin plated  
xxx-2 = CuSn, pre-tin plated  
xxx-3 = CuFe, pre-tin plated  
xxx-4 = CuZn, pre-tin plated, different direction off top of reel

**Remarks:**  
**1)** = Modified Locking Lance  
**2)** = Two Locking Lances  
**3)** = CuNiSi, pre-tin plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Receptacle Contacts

**Technical Features**

**Contact Material:**

CuSn, CuFe, CuNiSi,  
Cantilever Spring: Stainless Steel

**Contact Finish:**

tin plated, silver plated,  
selective gold plated

**Contact Resistance (New State):**

≤ 2 mΩ

**Total Temperature max.:**

-40 °C to +130 °C (tin plated)  
-40 °C to +140 °C (silver plated)  
-40 °C to +150 °C (gold plated)

**Mating Cycles:**

10 (tin plated)  
50 (silver plated)  
100 (gold plated)

**Insertion Force\*:**

max. 15 N (proof tab 0.8 mm thick)

**Extraction Force\*:**

min. 2 N (proof tab 0.8 mm thick)

**Retention Force:**

- from housings without second locking device min. 120 N
- from housings only second locking device min. 60 N

**Dimensions of Male Contacts:**

4.8 x 0.8 mm,  
5.8 x 0.8 mm,  
6.3 x 0.8 mm

**Modular Dimensions:**

min. 6.0 x 7.5 mm

**Extraction Tool:**

Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**

1355048  
1355049 (Modified Spring)

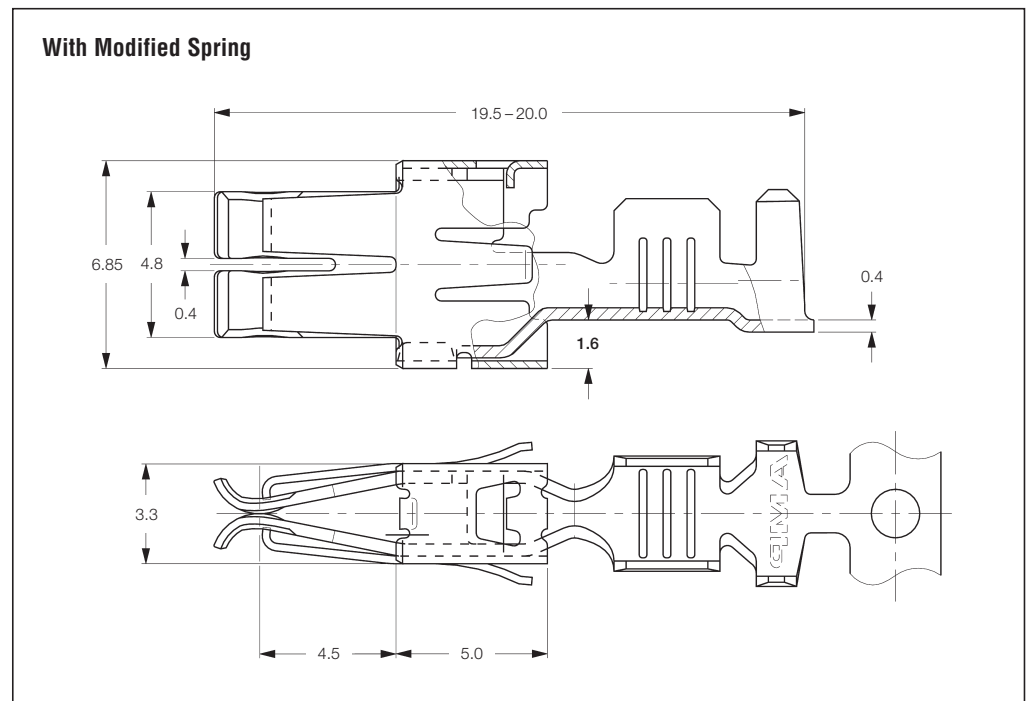
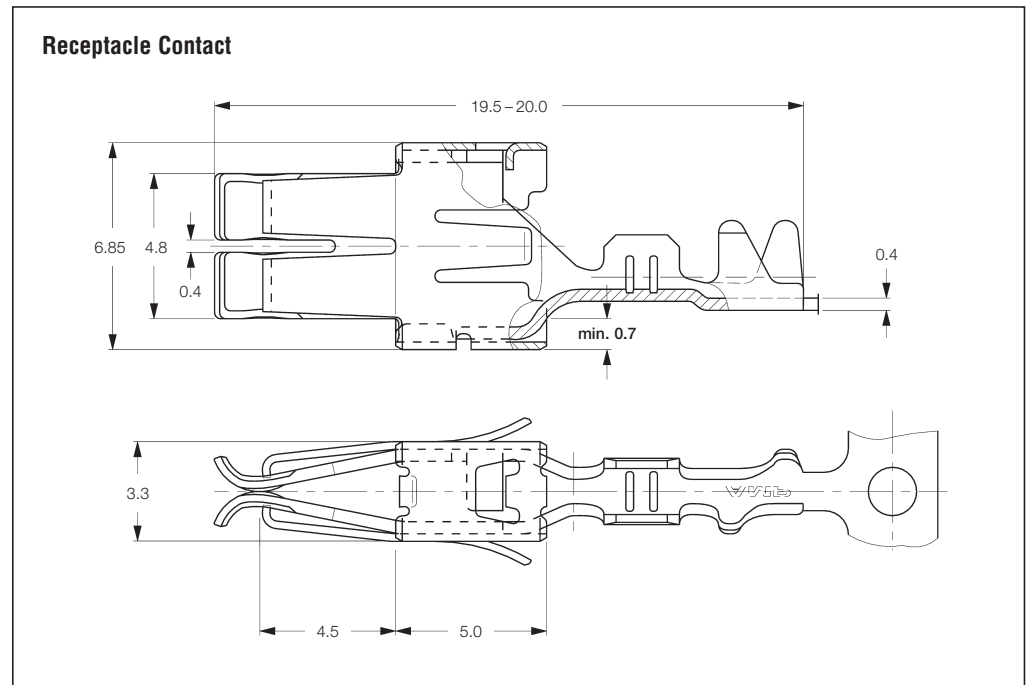
**Product Specification:**

108-18025

**Application Specification:**

114-18037

\*) Measured with an Steel Test Tab  
(see Product Spec. 108-18279).



**Max. Current in 8 Positions Housing (Fully Loaded)**

| Material | Temperature (°C) | Current Carrying Capacity (Ampere) |                     |                     |                     |
|----------|------------------|------------------------------------|---------------------|---------------------|---------------------|
|          |                  | 1.0 mm <sup>2</sup>                | 1.5 mm <sup>2</sup> | 2.5 mm <sup>2</sup> | 4.0 mm <sup>2</sup> |
| CuFe     | 20               | 17.5                               | 23.0                | 25.5                | 40.0                |
|          | 90               | 8.0                                | 10.5                | 12.0                | 17.0                |
| CuSn     | 20               | 16.5                               | 20.0                | 23.5                | 35.0                |
|          | 90               | 7.5                                | 9.0                 | 11.0                | 16.0                |

Receptacle Contacts (continued)

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm)   |          | Material and Finish *                      | Part Numbers  |                  |               |                  |              |                                 |
|------------------------------------|----------------------------|----------|--|---------------|------------------|---------------|------------------|--------------|---------------------------------|
|                                    | FLK                        | FLR      |  | Strip Form    | Package Quantity | Loose-Piece   | Package Quantity | Applicator ♦ | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | 1.15-2.3                   | -        | -1 / -2 / -3 / -4 / -5                     | 927839        | 2,300            | 928989        | 2,000            | 878426       | 539733-2                        |
| 0.5-1.0                            | 2.0-2.7                    | -        | -1 / -2                                    | 927827        | 2,300            | 927828        | 2,000            | 1528922      |                                 |
|                                    |                            |          | -2   | 1241834 1) 3) | 2,300            | 1241835 1) 3) | 2,000            | 1528922      | -                               |
| > 1.0-2.5                          | 2.7-3.7                    | -        | -1 / -2 / -5                               | 927833        | 2,000            | 927834        | 500              | 1528490      | 539733-2                        |
| > 2.5-4.0                          | 3.3-4.5                    | -        | -1 / -2                                    | 927824        | 2,000            | 927825        | 2,000            | 1530010      | 539734-2                        |
|                                    |                            |          | -1 / -2 / -3 / -4 / -5                     | 963709        | 1,500            | 963714        | 500              | 1528386      | -                               |
| > 4.0-6.0                          | 4.0-5.2                    | -        | -1 / -5                                    | 1241818       | 1,500            | 1241819       | 500              | 1528386      | 2-1579021-9                     |
| 0.2-0.5                            | -                          | 1.15-1.6 | -1 / -2 / -3 / -4 / -5 / -7                | 927840        | 2,300            | 928990        | 500              | 1426312      | -                               |
| 0.5-1.0                            | -                          | 1.4-2.1  | -1 / -2 / -3 / -4 / -5 / -7 / 1-xxx-5      | 927831        | 2,300            | 927832        | 400              | 1528295      |                                 |
| > 1.0-2.5                          | -                          | 2.2-3.0  | -1 / -2 / -3 / -4 / -5 / -6 / -7 / 1-xxx-5 | 927837        | 2,300            | 927838        | 1,500            | 1528095      | 539756-2                        |
| 1.5-2.5                            | -                          | 2.2-3.0  | -1 / -2 / -3 / -4 / -5                     | 964203 2)     | 2,300            | 1241826 2)    | -                | 1528095      |                                 |
| > 2.5-4.0                          | -                          | 2.7-3.7  | -1 / -2 / -5 / 1-xxx-5                     | 927829        | 2,300            | 927830        | 2,000            | 1528553      |                                 |
| 1.5-3.0                            | 3.0-3.4<br>Special Version |          | -5   | 1241174 1) 3) | 2,000            | 1241175 1) 3) | -                | 1528476      | -                               |
| 1.5-3.0                            | 3.0-3.4<br>Special Version |          | -1 / -2 / -5                               | 964052        | 2,000            | -             | -                | 1528476      | -                               |
| 1.5-3.0                            | 3.0-3.4<br>Special Version |          | -1 / -2 / -3 / -4 / -5                     | 964204 2)     | 2,000            | 1241827 2)    | -                | 1528476      | 539672-2                        |

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

**Receptacle Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish *                                | Part Numbers |                  |             |                  |              |                                 |
|------------------------------------|--------------------------|-----------|--|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR       |  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -7 / 1-xxx-2 / 2-xxx-2                     | 927826       | 1,600            | 929921      | 500              | 878425       |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -7 / 1-xxx-2 / 2-xxx-2                     | 927836       | 1,500            | 929922      | 500              | 1528297      | 539736-2                        |
| > 1.0-2.5                          | -                        | 2.2-3.0   | -1 / -2 / -7 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 927835       | 1,500            | 929923      | 500              | 1528102      |                                 |
| > 2.5-4.0                          | -                        | 3.4-3.7   | -1 / -2 / -7 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 928966       | 1,500            | 929924      | 500              | 1528246      |                                 |
| AWG 12-10                          | 2.05-2.59                |           | -1   | 1241962      | 1,500            | 1241963     | 500              | -            | -                               |

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

**\*) Material and Finish:**

- xxx-1 = CuFe, pre-tin plated
- xxx-2 = CuSn, pre-tin plated
- xxx-3 = CuSn, selective pre-silver plated
- xxx-4 = CuSn, pre-silver plated
- xxx-5 = CuFe, pre-silver plated
- xxx-6 = CuFe, selective nickel plated
- xxx-7 = CuFe, selective gold plated
- 1-xxx-2 = CuFe, selective gold-tin plated, Spring selective gold plated
- 1-xxx-3 = CuFe, selective gold-gold plated, Spring selective gold plated
- 1-xxx-4 = CuFe, selective gold-tin plated
- 1-xxx-5 = CuFe, pre-silver plated 3-4.5 µm
- 2-xxx-1 = CuSn, selective gold-gold plated, Spring selective gold plated
- 2-xxx-2 = CuSn, selective gold-tin plated, Spring selective gold plated
- 2-xxx-4 = CuSn, selective gold-tin plated, Spring selective gold plated

**Remarks:**

- 1) = Gap Size 0.20 mm
- 2) = Gap Size 0.15 mm
- 3) = With One Locking Lance



Receptacle Contacts (continued)

**Standard Receptacle Contacts with Modified Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* |                                 |
|                                    |                          |           |                      |              |                  |             |                  |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1                   | 964322       | 2,300            | 964321      | 500              | 1530002     |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1                   | 964324       | 2,300            | 964323      | 500              | 1528206     | 539665-2                        |
| >1.0-2.5                           | -                        | 2.2-3.0   | -1 / -5              | 964326       | 2,300            | 964325      | 500              | 1528095     |                                 |
| >2.5-4.0                           | -                        | 3.4-4.7   | -1 / -5              | 964328       | 2,100            | 964327      | 500              | 1528298     |                                 |

**Receptacle Contacts with Modified Spring and Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*             | Part Numbers |                  |             |                  |             | Hand Tool 539635-1 with Die Set |   |
|------------------------------------|--------------------------|---------|----------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|---|
|                                    | FLK                      | FLR     |                                  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* |                                 |   |
|                                    |                          |         |                                  |              |                  |             |                  |             |                                 |   |
| 0.5-1.0                            | 2.3-2.7                  | 1.4-2.1 | 1-xxx-1 / 1-xxx-2                | 964330       | 1,700            | 964329      | 500              | 1528297     | 539666-2                        |   |
|                                    |                          |         | -1                               | 969040       | 1,500            | 969041      | 500              | 1528342     |                                 |   |
| >1.0-2.5                           | 3.0-3.6                  | 2.2-3.0 | -5 / 1-xxx-1 / 1-xxx-2 / 1-xxx-5 | 964332       | 1,700            | 964331      | 500              | 1528102     |                                 |   |
|                                    |                          |         | -1                               | 969042       | 1,500            | 969043      | 500              | 1528231     |                                 |   |
| >2.5-4.0                           | 4.1-4.4                  | 3.4-3.7 | 1-xxx-1 / 1-xxx-5                | 964334       | 1,500            | 964333      | 500              | 1528246     |                                 |   |
|                                    |                          |         | -1 / -5 / 1-xxx-5                | 969044       | 1,500            | 969045      | 500              | 1530003     |                                 |   |
| >1.0-2.5                           | -                        | 2.2-3.0 | -2 / 2-xxx-4                     | 968035       | 1,500            | 968036      | 500              | 1528102     |                                 | - |
| >2.5-4.0                           | -                        | 3.4-3.7 | -2 / 1-xxx-4 / 2-xxx-4           | 968037       | 1,500            | 968038      | 500              | 1528246     |                                 | - |
| >4.0-6.0                           | -                        | 3.6-5.1 | 1-xxx-6                          | 1670426      | -                | 1670427     | -                | -           |                                 | - |

**\*) Material and Finish:**

- xxx-1 = CuFe, pre-tin plated
- xxx-2 = CuSn, pre-tin plated
- xxx-5 = CuFe, pre-silver plated
- 1-xxx-1 = CuFe, pre-tin plated
- 1-xxx-2 = CuFe, selective gold plated
- 1-xxx-4 = CuFe, selective gold plated
- 1-xxx-5 = CuFe, pre-silver plated
- 1-xxx-6 = CuNiSi, Sn28M plated
- 2-xxx-4 = CuSn, selective gold plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

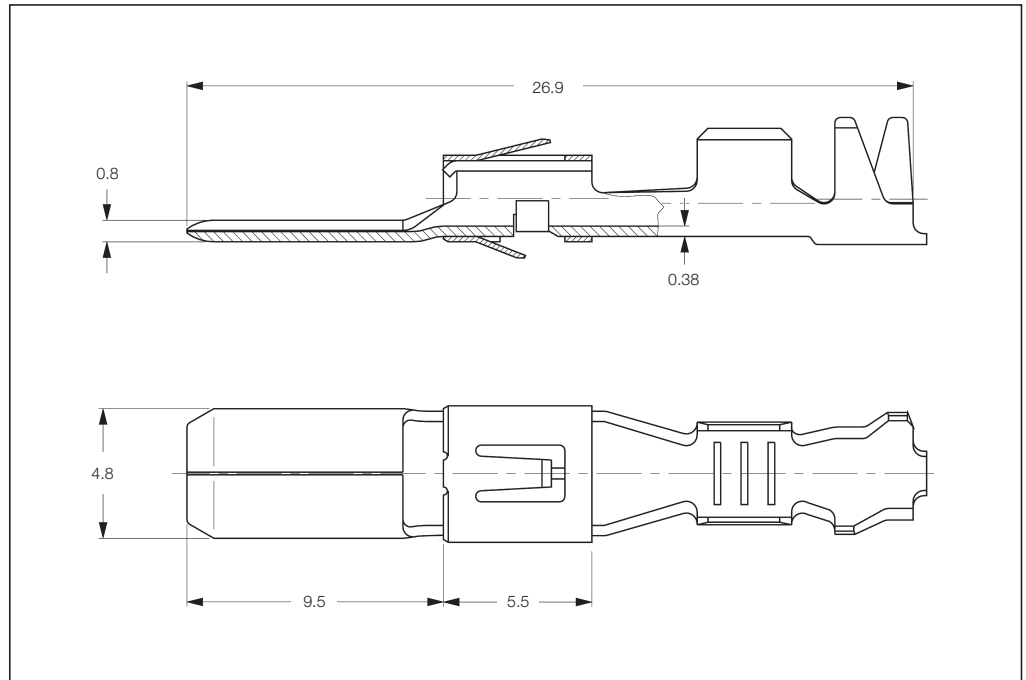
Tab Contacts Asymmetric

**Tabs 4.8 x 0.8 mm with Asymmetric Steel Top Spring, Mates with Standard Power Timer**

**Extraction Tool:**  
Part No. **726544-1**  
Part No. **2-1579007-5**

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |
| 0.2-0.5                            | -                        | 1.1-1.6 | -1 / -2              | 963824       | 3,000            | 963825      | 500              | 1528753                 |
| 0.5-1.0                            | -                        | 1.4-2.0 | -1 / -2              | 962903       | 3,000            | 963816      | 500              | 1528048                 |
|                                    | 2.0-2.7                  | -       | -1 / -2              | 962908       | 2,000            | 963821      | 500              | 878612                  |
| > 1.0-2.5                          | -                        | 2.1-2.9 | -1 / -2              | 962904       | 2,500            | 963817      | 500              | 1528729                 |
| > 2.5-4.0                          | 3.3-4.5                  | -       | -1 / -2              | 962910       | 1,700            | 963823      | 500              | 878614                  |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |
| 0.5-1.0                            | 2.0-2.7                  | 1.4-2.0 | -1 / -2              | 962905       | 1,000            | 963818      | 1,200            | 1528873                 |
| > 1.0-2.5                          | -                        | 2.1-2.9 | -1 / -2              | 962906       | 1,000            | 963819      | 500              | 878853                  |
| > 2.5-4.0                          | 3.3-4.5                  | -       | -1 / -2              | 962907       | 1,000            | 963820      | 500              | 878854                  |

**\*) Material and Finish:**  
xxx-1 = CuSn, pre-tin plated  
xxx-2 = CuFe, pre-tin plated

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts Symmetric

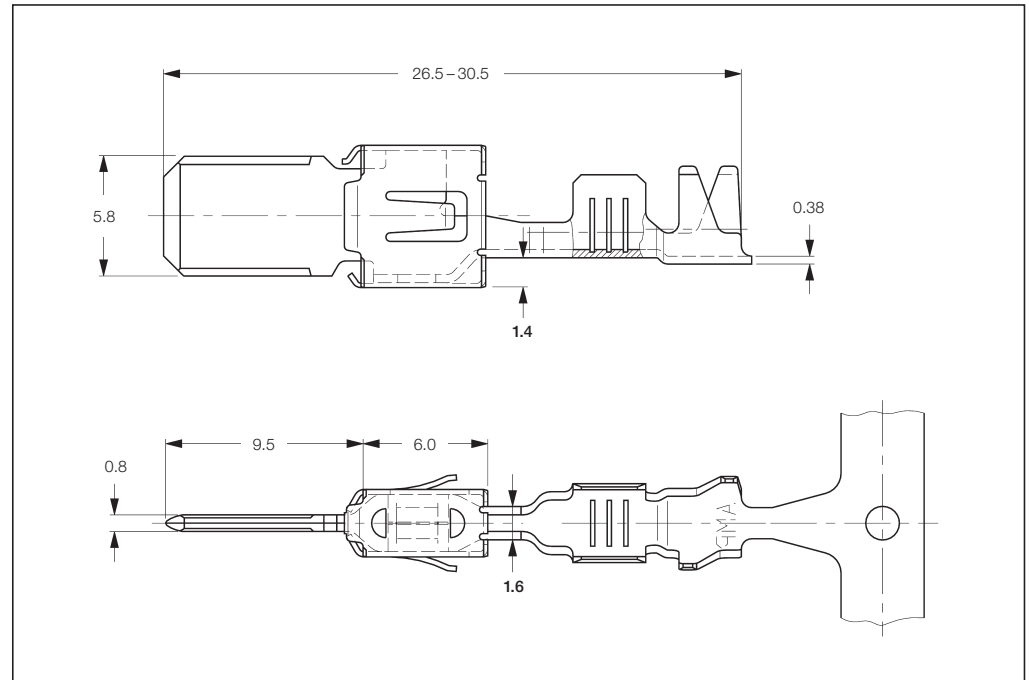
**Tabs 5.8 x 0.8 mm  
with Steel Top Spring,  
Mates with  
Standard Power Timer**

**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1241895

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                  | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|---------------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-1 / 2-xxx-1                     | 965984       | 2,000            | 965985      | 500              | -           | -                               |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963734       | 1,700            | 963737      | 500              | 878654      | 539759-2                        |
| 1.5-2.5                            | -                        | 2.2-3.0   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963735       | 1,800            | 963738      | 500              | 878561      | 734688-1**                      |
| >2.5-4.0                           | -                        | 2.7-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963736       | 1,800            | 963739      | 500              | 878562      | 539623-1**                      |
| 1.5-2.5                            | 2.4-3.7                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962845       | 1,700            | 963740      | 500              | 878563      | 539759-2                        |
| 3.0-4.0                            | 3.3-4.5                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962846       | 1,800            | 963741      | 500              | 878564      |                                 |
| 4.0-6.0                            | 4.0-5.2                  | -         | 1-xxx-1 / 2-xxx-1                     | 968050       | 1,500            | 968051      | 500              | 878968      | -                               |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*                  | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|---------------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962917       | 1,500            | 963742      | 500              | 878565      | 539757-2 / 734442-1**           |
| 1.5-2.5                            | -                        | 2.2-3.0 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962918       | 1,500            | 963743      | 500              | 878566      | 539757-2 / 734444-1**           |
| >2.5-4.0                           | -                        | 2.7-3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962919       | 1,500            | 963744      | 500              | 878567      | 539757-2 / 734446-1**           |

**\*) Material and Finish:**  
1-xxx-1 = CuSn, pre-tin plated  
1-xxx-2 = CuSn, selective silver plated  
2-xxx-1 = CuFe, pre-tin plated  
2-xxx-2 = CuFe, selective silver plated

**Remarks:**  
**\*\*) Hand Tool complete**

**\*) The pre- and suffix for the applicators depends on the applied termination equipment.**

Tab Contacts Symmetric

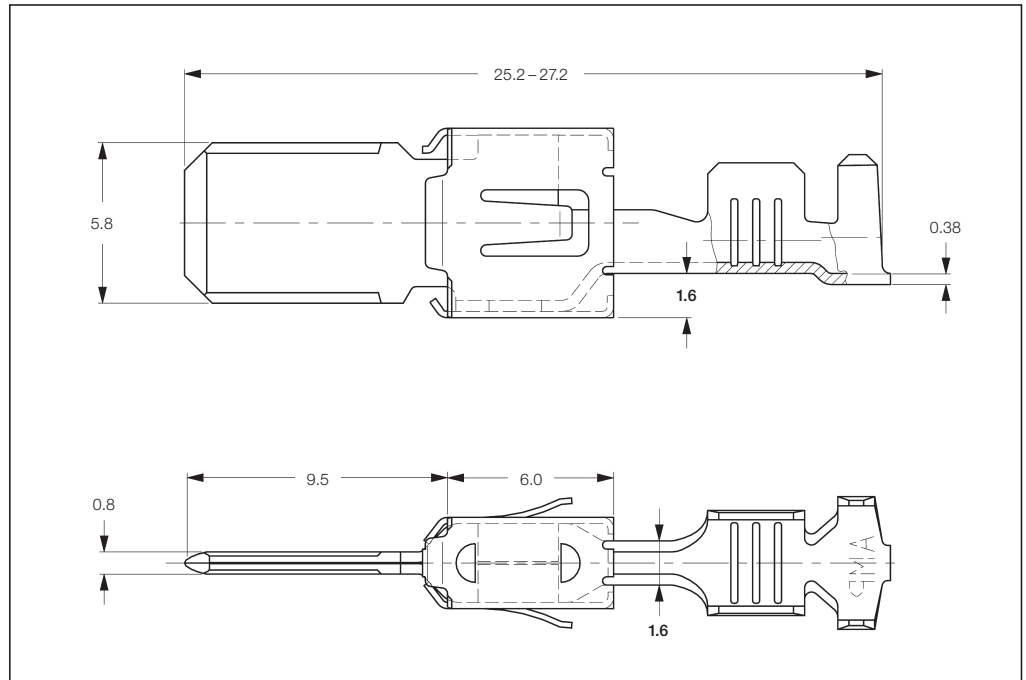
**Tabs 5.8 x 0.8 mm with Modified Steel Top Spring, Mates with Standard Power Timer**

**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1394011

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts with Modified Spring**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1                   | 969007       | 1,800            | 969008      | 500              | 1528296                 |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1                   | 964304       | 1,800            | 964303      | 2,000            | 1528093                 | 539665-2                        |
| >1.0-2.5                           | -                        | 2.2-3.0   | -1 / -3              | 964306       | 1,900            | 964305      | 500              | 1528094                 |                                 |
| >2.5-4.0                           | 3.3-4.5                  | 3.4-3.7   | -1                   | 964308       | 1,800            | 964307      | 500              | 1530004                 |                                 |

**Tab Contacts with Modified Spring and Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1                   | 964310       | 1,500            | 964309      | 500              | 1528437                 |                                 |
| >1.0-2.5                           | -                        | 2.2-3.0 | -1                   | 964312       | 1,400            | 964311      | 500              | 1528444                 | 539666-2                        |
| >2.5-4.0                           | -                        | 3.4-3.7 | -1                   | 964314       | 1,300            | 964313      | 500              | 1528439                 |                                 |

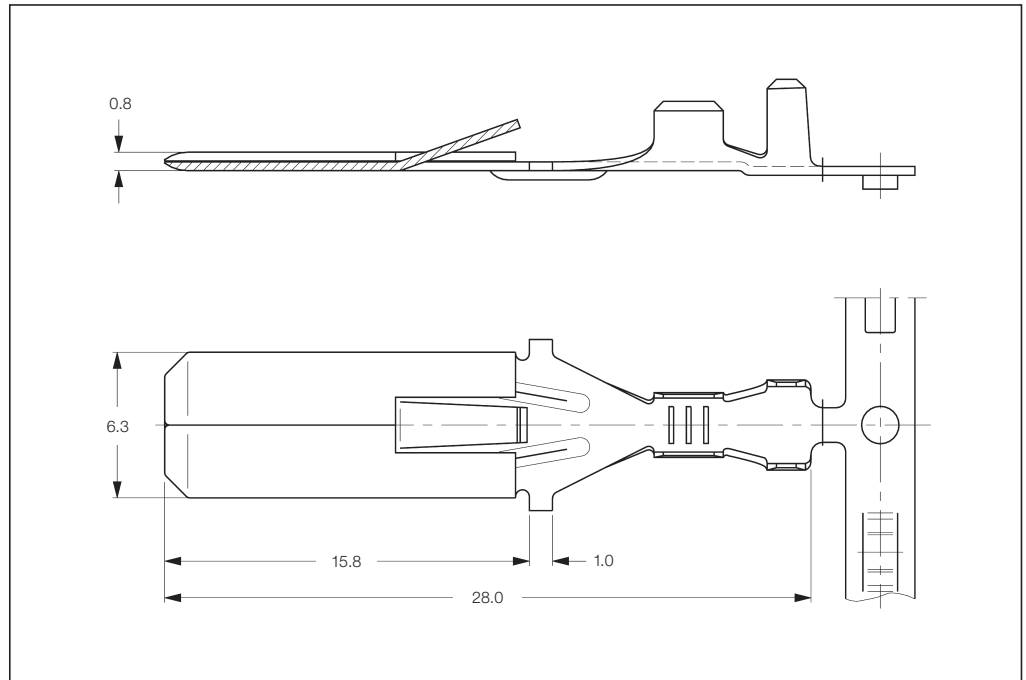
\*) **Material and Finish:**  
xxx-1 = CuFe, pre-tin plated  
xxx-3 = CuSn, selective gold plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts Side Feed

**Tabs 6.3 x 0.8 mm**  
**Side Feed,**  
**according to DIN 46343,**  
**Mates with**  
**Standard Power Timer**

**Extraction Tool:**  
Part No. **725864-1**  
Part No. **1-1579007-4**



**Tab Contacts Side Feed**

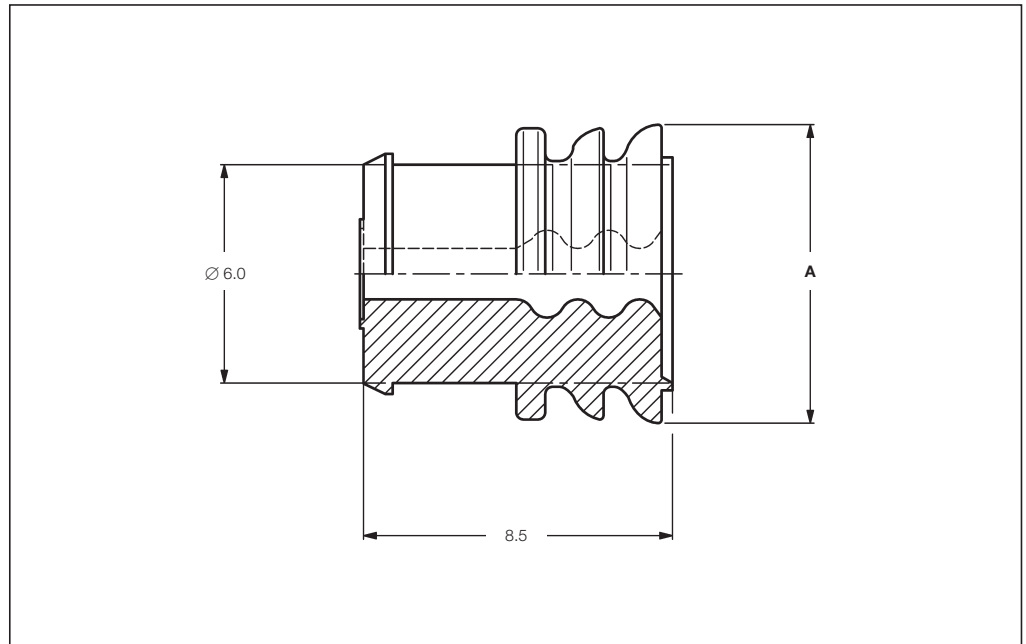
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish * | Part Numbers |                  |             |                  |              |           |
|------------------------------------|--------------------------|-----------|-----------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                                    | FLK                      | FLR       |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool |
|                                    |                          |           |                       |              |                  |             |                  |              |           |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2               | 965889       | 3,000            | 965890      | 1,500            | 878791       | -         |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2               | 963951       | 3,000            | 963952      | 1,500            | 1528051      | 734681-1  |
| > 1.0-2.5                          | -                        | 2.2-3.0   | -1 / -2               | 963953       | 2,500            | 963954      | 1,500            | 1426097      | 734682-1  |
|                                    |                          |           | -1 / -2               | 963959       | 2,500            | 963960      | 1,500            | 878775       | -         |
| > 2.5-4.0                          | -                        | 3.3-4.5   | -1 / -2               | 963955       | 2,000            | 963956      | 1,500            | 878773       | 734683-1  |

\*) **Material and Finish:**  
xxx-1 = CuSn, plain  
xxx-2 = CuSn, pre-tin plated

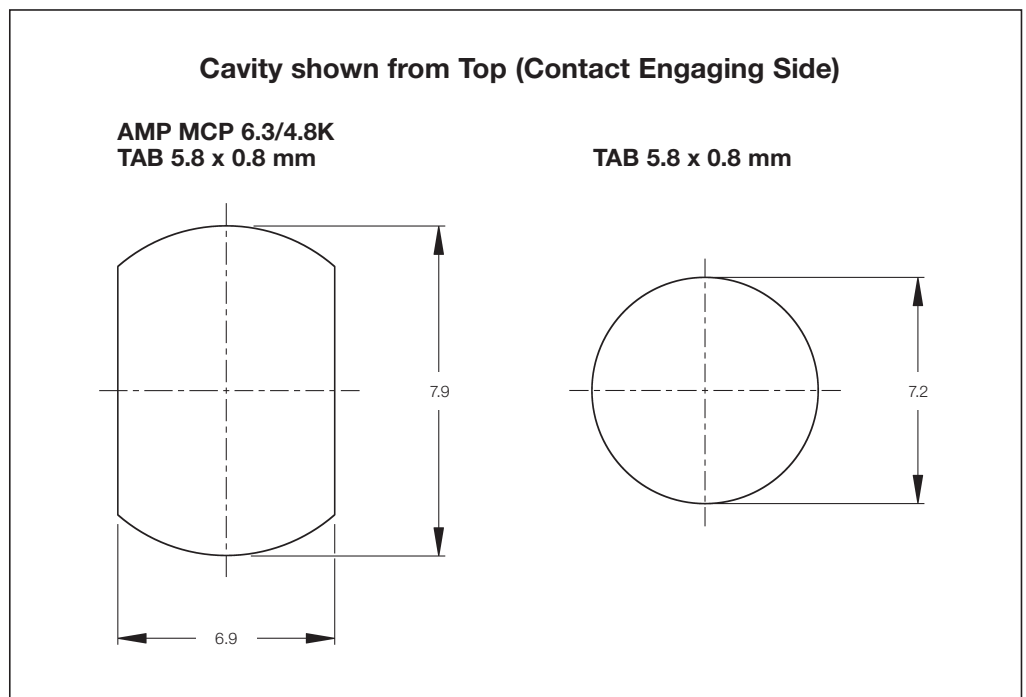
♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for Standard Power Timer and 5.8 mm (4.8 mm) Tabs**  
(Cavity Diameter see below)



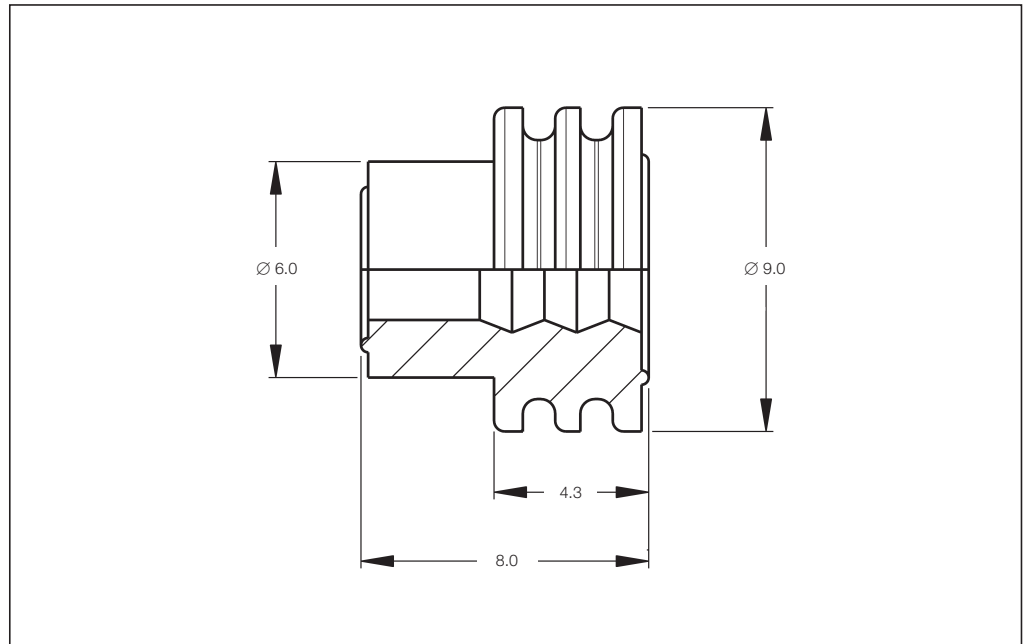
| Insulation Diameter (mm) | Color  | Diameter A (mm) | Part Number | Package Quantity |
|--------------------------|--------|-----------------|-------------|------------------|
| 1.4–2.1                  | Blue   | 8.2             | 963243-1    | 2,500            |
| 2.2–3.0                  | White  | 8.2             | 963244-1    | 2,500            |
| 3.4–3.7                  | Yellow | 8.2             | 963245-1    | 2,500            |
| Sealing Plug             | Black  | 8.1             | 100132-1    | 1,000            |



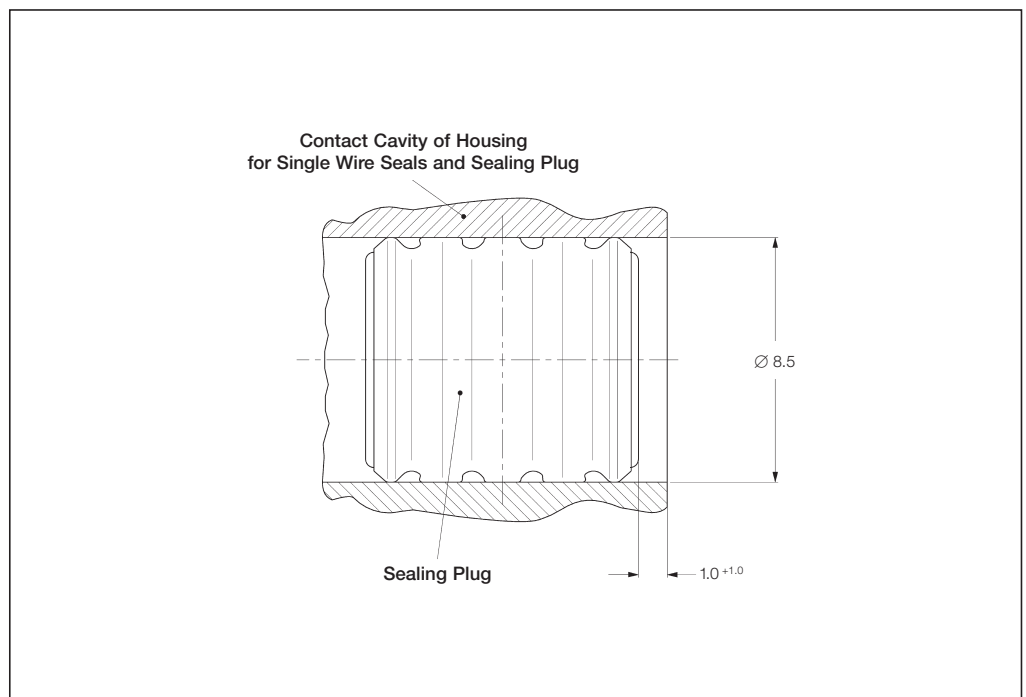


Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for Standard Power Timer  
and 5.8 mm (4.8 mm) Tabs  
(Cavity Diameter 8.5 mm)**



| Insulation Diameter (mm) | Color       | Part Number | Package Quantity |
|--------------------------|-------------|-------------|------------------|
| 2.0-2.7                  | White       | 1394511-1   | 10,000           |
| 3.4-3.7                  | Blue        | 1394512-1   | 10,000           |
| 4.0-4.5                  | Green       | 1719043-1   | 10,000           |
| Sealing Plug             | Transparent | 967652-1    | 20,000           |



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**Engineering Notes**

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Receptacle Contacts

**Technical Features**

**Contact Material:**  
CuNiSi,  
Cantilever Spring: Stainless Steel

**Contact Finish:**  
pre-tin plated

**Wire Size Range:**  
>2.5–4.0 mm<sup>2</sup>  
>4.0–6.0 mm<sup>2</sup>  
6.0–10.0 mm<sup>2</sup>

**Contact Resistance (New State):**  
<0.3 mΩ

**Total Temperature max.:**  
–40 °C to +130 °C (tin plated)

**Mating Cycles:**  
10 (tin plated)

**Retention Force:**  
– from housings without second locking device min. 150 N  
– from housings only second locking device min. 100 N

**Modular Dimensions**  
**Standard Version:**  
min. 11.0 mm x 12.5 mm

**Single Wire Seal:**  
16.0 mm x 16.0 mm

**Single Wire Seal:**  
Diameter 10.0 mm in cavity with diameter 15.0 mm

**Tab Dimensions:**  
9.5 mm x 1.2 mm and fused contacts according DIN 72581, Part 3, Form E.

**Insertion Force\*:**  
< 40 N

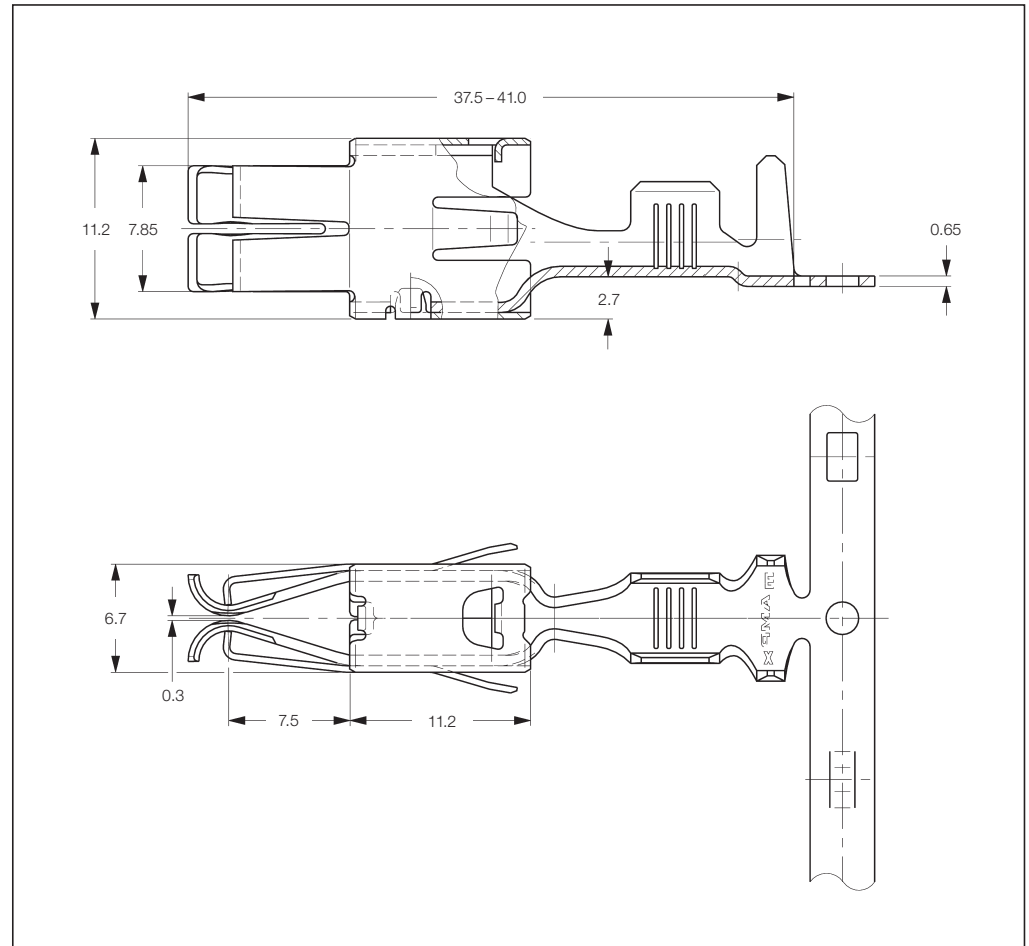
**Extraction Force\*:**  
> 6 N

**Extraction Tool:**  
Part No. **726551-1**  
Part No. **1-1579007-7**

**Product Group Drawing:**  
1355050

**Product Specification:**  
108-18047

**Application Specification:**  
114-18075



**Max. Current in 2 Positions Housing (Fully-Loaded)**

| Temperature<br>(° C) | Current Carrying Capacity<br>(Ampere) |                     |                      |                                  |                     |                      |
|----------------------|---------------------------------------|---------------------|----------------------|----------------------------------|---------------------|----------------------|
|                      | Tabs<br>9.5 x 1.2 mm                  |                     |                      | Maxi Littelfuse<br>8.0 x 0.38 mm |                     |                      |
|                      | 4.0 mm <sup>2</sup>                   | 6.0 mm <sup>2</sup> | 10.0 mm <sup>2</sup> | 4.0 mm <sup>2</sup>              | 6.0 mm <sup>2</sup> | 10.0 mm <sup>2</sup> |
| 20                   | 45.0                                  | 57.0                | 71.0                 | 40.0                             | 50.0                | 60.0                 |
| 90                   | 27.0                                  | 28.0                | 32.0                 | 27.0                             | 28.0                | 32.0                 |

| Wire Size Range<br>(mm <sup>2</sup> ) | Measured Values        |                          |
|---------------------------------------|------------------------|--------------------------|
|                                       | Crimp Extraction Force | Crimp Contact Resistance |
| 4.0                                   | > 300 N                | –                        |
| 6.0                                   | > 400 N                | –                        |
| 10.0                                  | > 500 N                | –                        |
| >2.5–4.0                              | –                      | <0.20 mΩ                 |
| 4.0–6.0                               | –                      | <0.10 mΩ                 |
| 6.0–10.0                              | –                      | <0.06 mΩ                 |

\*) Measured with an Steel Test Tab (see Product Spec. 108-18279).

Receptacle Contacts (continued)

**Standard Receptacle Contacts (Tab 9.5 x 1.2 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |                         |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |                         |           |
| >2.5-4.0                           | 4.0-4.5                  | -   | -1                   | 962928       | 750              | 962929      | 500              | 878592                  | 734531-1  |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1 / 1-xxx-6         | 962930       | 750              | 962931      | 500              | 878593                  | 734532-1  |
| 6.0-10.0                           | 4.7-6.8                  | -   | -1 / 1-xxx-6         | 962932       | 750              | 962933      | 500              | 878659                  | 734533-1  |

**Receptacle Contacts with Single Wire Sealing System (Tab 9.5 x 1.2 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |                         |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |                         |           |
| >2.5-4.0                           | 4.0-4.5                  | -   | -1                   | 962934       | 550              | 962935      | 500              | 878594                  |           |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1                   | 962936       | 550              | 962937      | 500              | 878595                  | -         |
| 6.0-10.0                           | 4.7-6.8                  | -   | -1                   | 962938       | 550              | 962939      | 500              | 878660                  |           |

**Standard Receptacle Contacts (Tab 8.0 x 2.0 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |                         |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |                         |           |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1 / 2-xxx-1         | 967228       | 750              | 967229      | 500              | 878593                  | 734532-1  |
| 6.0-10.0                           | 4.7-6.8                  | -   | -1 / 2-xxx-1         | 965918       | 750              | 965921      | 500              | 878659                  | 734533-1  |

**Standard Receptacle Contacts (Tab 8.0 x 0.8 mm and 9.5 x 0.8 mm)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |                         |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |                         |           |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1 / 1-xxx-6         | 1719952      | 750              | 1719951     | 500              | -                       | 734532-1  |
| 6.0-10.0                           | 4.7-6.8                  | -   | -1 / 1-xxx-6         | 1703008      | 750              | 1703011     | 500              | 878659                  | 734533-1  |

\*) **Material and Finish:**  
 xxx-1 = CuNiSi, pre-tin plated  
 1-xxx-6 = CuNiSi, Sn28M  
 2-xxx-1 = CuNiSi, pre-tin plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

**Tabs 9.5 x 1.2 mm with Steel Top Spring, Mates with Maxi Power Timer**

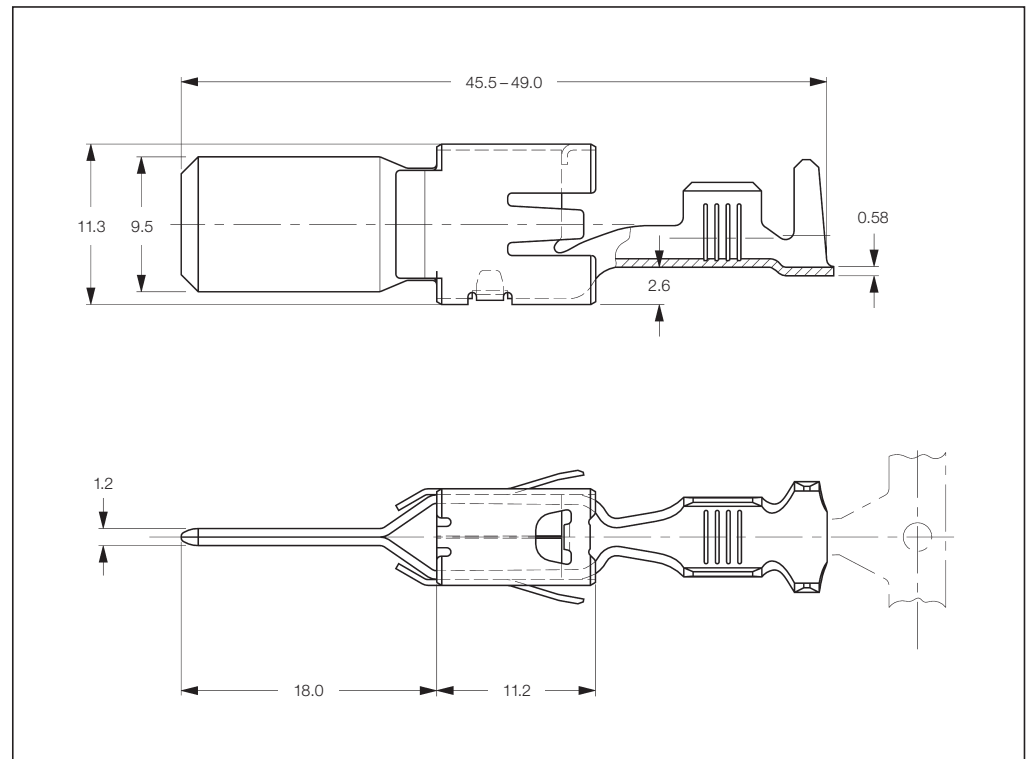
**Modular Dimensions**

**Standard Version:**  
min. 11.0 mm x 12.5 mm

**Modular Dimensions with Single Wire Sealing System:**  
18.0 mm x 18.0 mm

**Extraction Tool:**  
Part No. **726551-1**  
Part No. **1-1579007-7**

**Application Specification:**  
114-18076



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |             |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |             |           |
| >2.5-4.0                           | 3.3-4.7                  | -   | -1 / -2              | 963764       | 700              | 963765      | 500              | 878979      | 734531-1  |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1 / -2              | 963766       | 700              | 963767      | 500              | 878731      | 734532-1  |
| 6.0-10.0                           | 4.7-6.6                  | -   | -1 / -2 / -3         | 963768       | 700              | 963769      | 500              | 878732      | 734533-1  |

**Tab Contacts with Single Wire Sealing System**

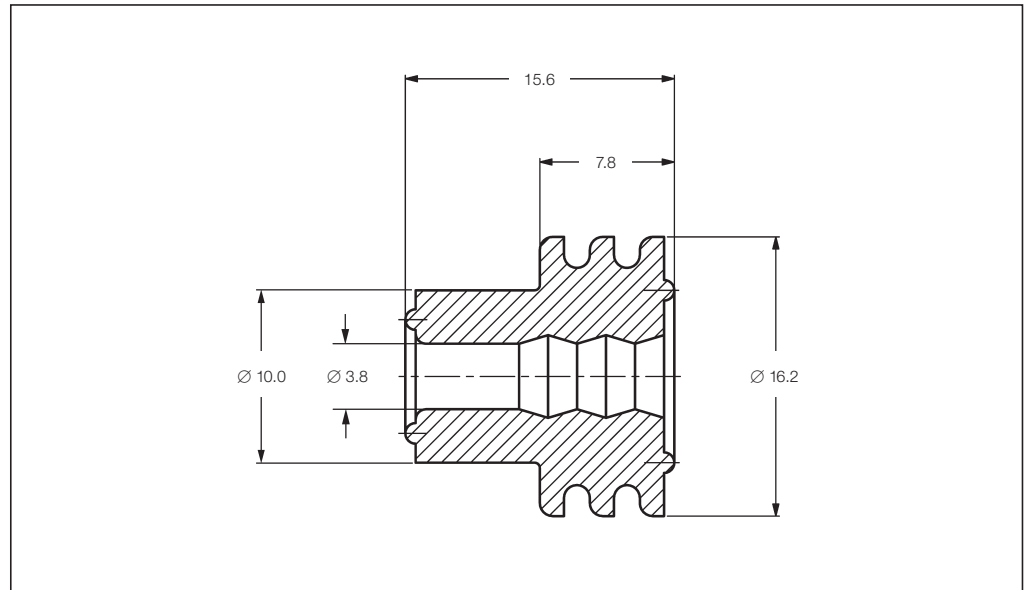
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |             |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |             |           |
| >2.5-4.0                           | 4.0-4.5                  | -   | -1 / -2              | 963770       | 550              | 963771      | 500              | 878980      | -         |
| 4.0-6.0                            | 4.7-5.3                  | -   | -1 / -2              | 963772       | 550              | 963773      | 500              | 878734      | -         |
| 6.0-10.0                           | 6.2-6.6                  | -   | -1 / -2              | 963774       | 550              | 963775      | 500              | 878735      | -         |

\*) **Material and Finish:**  
xxx-1 = CuSn, pre-tin plated  
xxx-2 = CuFe, pre-tin plated  
xxx-3 = CuSn0.15, pre-tin plated

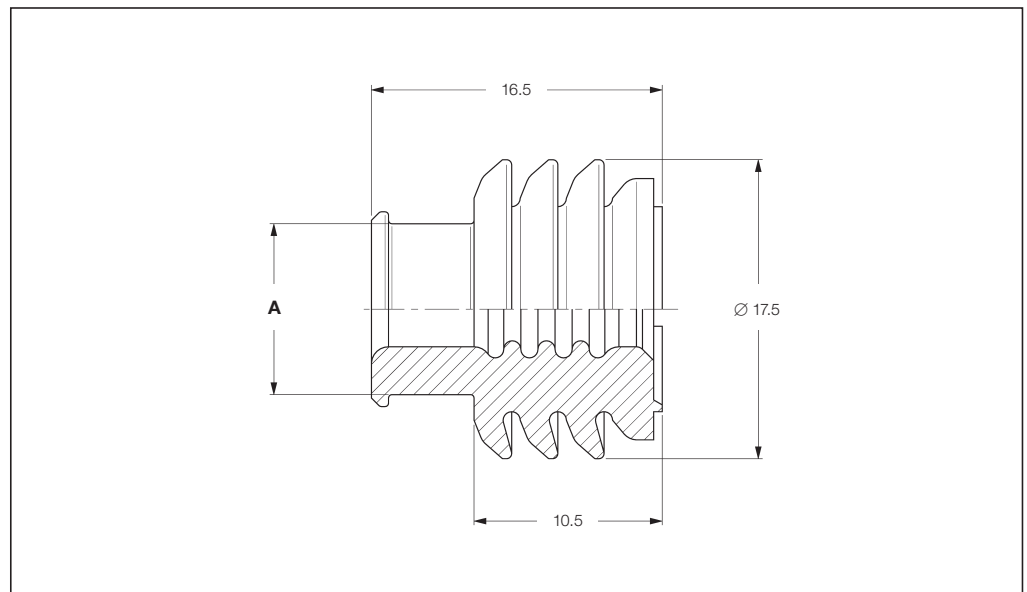
\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for Maxi Power Timer  
Contact and 9.5 mm Tab**



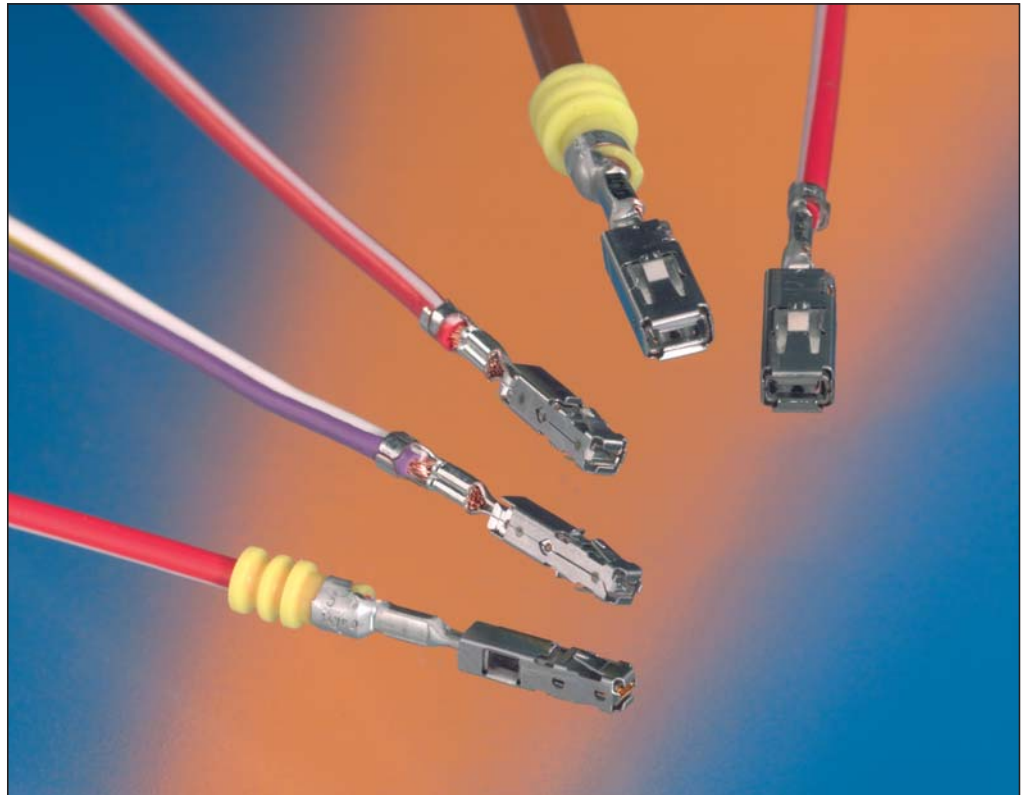
| Insulation Diameter (mm) | Color      | Part Number | Package Quantity |
|--------------------------|------------|-------------|------------------|
| 4.7-5.3                  | Light-Blue | 1355307-1   | 4,000            |



| Insulation Diameter (mm) | Color  | Part Number | Package Quantity |
|--------------------------|--------|-------------|------------------|
| 4.6-5.2                  | Violet | 1355437-1   | 4,000            |
| 5.8-6.6                  | Blue   | 1355437-2   | 4,000            |
| 7.1-8.1                  | Red    | 1355437-3   | 4,000            |
| Sealing Plug             | White  | 1355437-4   | -                |



Introduction



The AMP MCP Contact System is mainly used in the automotive industry. Each contact consists of a flat receptacle, which mates with a flat tab. Every contact has got a steel spring and a copper alloy body.

The two-piece contact design means that the electrical and mechanical properties are separated. One end of the contact body is crimped to wire and the other end mates with the matching tab. The closed spring has got several functions and also different advantages for the complete contact system.

- Protection of the contact springs
- No over elongation of the contact springs possible under normal circumstances
- No possibility to connect from the rear side
- Protection against mechanical damage
- Good guiding in the cavity
- Secondary locking possible (from 4 directions)
- Assembly into housing fully-automatically

In addition there are usually two lances on the steel to spring. These serve to lock the contact securely in the housing.

The main advantages of the body are:

- Several contact points
- Large range of wire sizes (from 0.2 mm<sup>2</sup> at AMP MCP 1.5K up to 16.0 mm<sup>2</sup> at AMP MCP 9.5)
- Base material with very high current capability
- High vibrational load

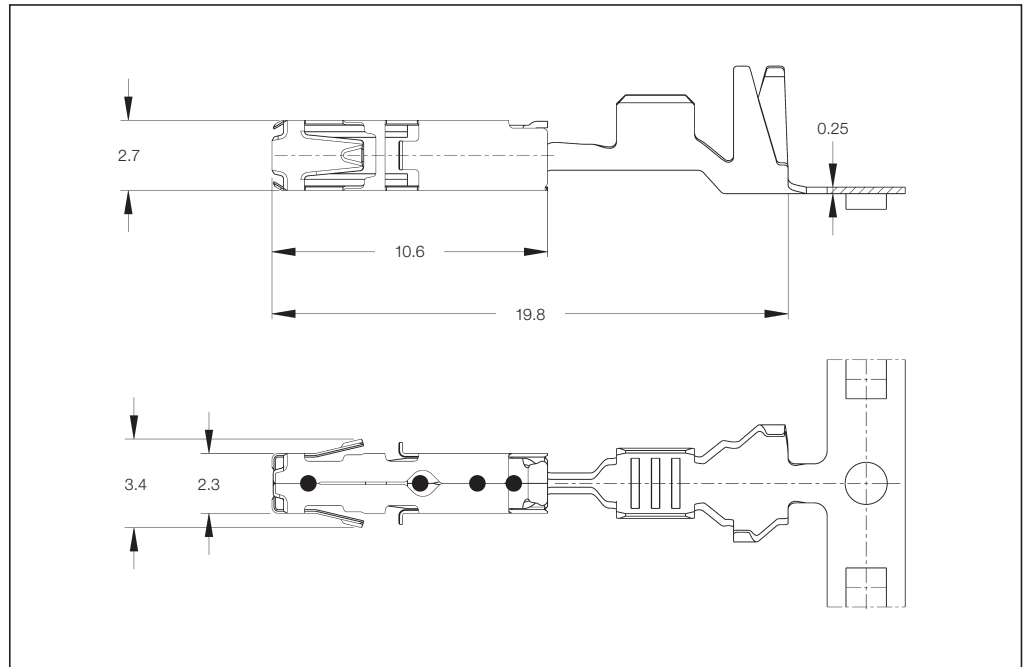
Tabs and receptacles can be applied in both sealed and unsealed connectors.

AMP MCP contacts can be fast and economically arranged to the lead using Tyco Electronics application tooling.

Receptacle Contacts (for 0.6 mm Tab Thickness)

**Technical Features**

- Contact Material:**  
CuNiSi  
Top Spring: Stainless Steel
- Contact Finish:**  
Tin plated, selective silver plated, selective gold plated
- Wire Size Range:**  
0.20–0.35 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>, >1.0–1.5 mm<sup>2</sup> (FLR Cable)
- Current Carrying Capacity:**  
up to 20 Ampere  
(at 20 °C ambient temperature)
- Temperature Range:**  
–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)
- Modular Dimensions (Centerline):**
- 0.2–1.5 mm<sup>2</sup> SRC:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- 0.2–1.5 mm<sup>2</sup> SWS:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- Mating Cycles:** ●  
up to 10 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)



**Contact Resistance:**  
New State ≤ 2 mΩ

**Mating Force:** Max. 6 N

**Unmating Force:** Max. 6 N

● Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Dimension of Male Contacts:**  
1.5<sup>+0.2</sup><sub>-0.1</sub> x 0.6<sup>+0.07</sup><sub>-0.03</sub> mm

**Extraction Tool:**  
Part No. **1-1579007-1**

**Product Group Drawing:**  
1241436

**Product Specification:**  
108-18716

**Application Specification:**  
114-18386

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |              | Material and Finish * | Part Numbers |                  |             |                  |              | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|--------------|-----------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR          |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator † |                                 |
| 0.20–0.35                          | –                        | 1.1–1.4      | -1 / -2               | 1241372      | 10,000           | 1241373     | 500              | x-1528194-x  | 539950-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1      | -1 / -2               | 1241374      | 8,000            | 1241375     | 500              | x-1528195-x  |                                 |
|                                    |                          | max. 2 x 1.6 | -1 / -2               | 1241376**    | 6,000            | 1241377**   | 500              | x-1528388-x  |                                 |
| >1.0–1.5                           | –                        | 2.2–2.4      | -1                    | 1534334      | 7,500            | 1534335     | 500              | x-1528312-x  | –                               |

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish *  | Part Numbers |                  |             |                  |              | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|------------------------|--------------|------------------|-------------|------------------|--------------|---------------------------------|
|                                    | FLK                      | FLR     |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator † |                                 |
| 0.20–0.35                          | –                        | 1.1–1.4 | -1 / -2 / -3           | 1241378      | 4,500            | 1241379     | 500              | x-1528122-x  | 539950-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3 / 1-xxx-2 | 1241380      | 4,500            | 1241381     | 500              | x-1528324-x  |                                 |
| >1.0–1.5                           | –                        | 2.2–2.4 | -1 / -3                | 1418884      | 4,500            | 1418885     | 500              | x-541793-x   | –                               |

**\*) Material and Finish:**  
xxx-1 = CuNiSi, pre-tin plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated  
1-xxx-2 = CuNiSi, min. 1.27 µm selective gold plated

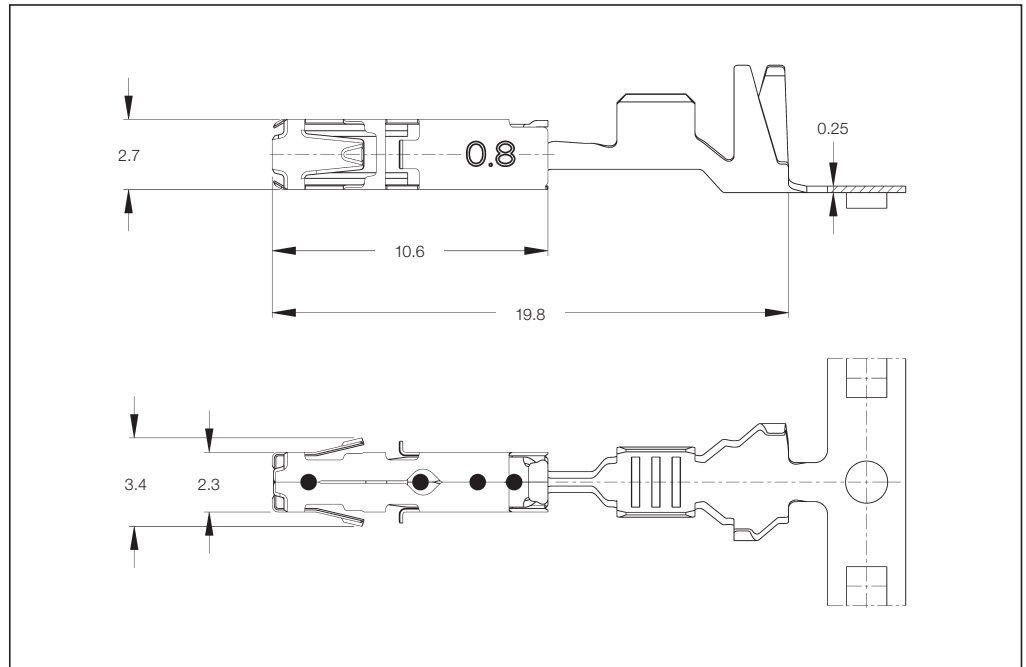
**Notes:**  
**\*\*)** Double Crimp

**†)** The pre- and suffix for the applicators depends on the applied termination equipment.

Receptacle Contacts (for 0.8 mm Tab Thickness)

**Technical Features**

- Contact Material:**  
CuNiSi  
Top Spring: Stainless Steel
- Contact Finish:**  
Tin plated, selective silver plated, selective gold plated
- Wire Size Range:**  
0.20–0.35 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>, >1.0–1.5 mm<sup>2</sup> (FLR Cable)
- Current Carrying Capacity:**  
up to 20 Ampere  
(at 20 °C ambient temperature)
- Temperature Range:**  
–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)
- Modular Dimensions (Centerline):**  
**0.2–1.5 mm<sup>2</sup> SRC:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- 0.2–1.5 mm<sup>2</sup> SWS:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- Mating Cycles:** ●  
up to 10 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)



**Contact Resistance:**  
New State ≤ 2 mΩ

**Mating Force:** Max. 6 N

**Unmating Force:** Max. 6 N

● Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Dimension of Male Contacts:**  
1.5<sup>+0.2</sup><sub>-0.1</sub> x 0.8<sup>±0.03</sup> mm

**Extraction Tool:**  
Part No. **1-1579007-1**

**Product Group Drawing:**  
1241436

**Product Specification:**  
108-18716

**Application Specification:**  
114-18386

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1                   | 1418408      | 8,000            | 1418409     | 500              | x-1528195-x | 539950-2                        |
| >1.0–1.5                           | –                        | 2.2–2.4 | -1                   | 1418410      | 7,500            | 1418411     | 500              | x-1528312-x | –                               |

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.20–0.35                          | –                        | 1.15–1.40 | -1                   | 1534160      | 4,500            | 1534161     | 500              | x-1528122-x | 539950-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1   | -1                   | 1534162      | 4,500            | 1534163     | 500              | x-1528324-x | –                               |
| >1.0–1.5                           | –                        | 2.2–2.4   | -1                   | 1718558      | 4,500            | 1718559     | 500              | x-541793-x  | –                               |

\*) **Material and Finish:**  
xxx-1 = CuNiSi, pre-tin plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated  
1-xxx-2 = CuNiSi, min. 1.27 μm selective gold plated

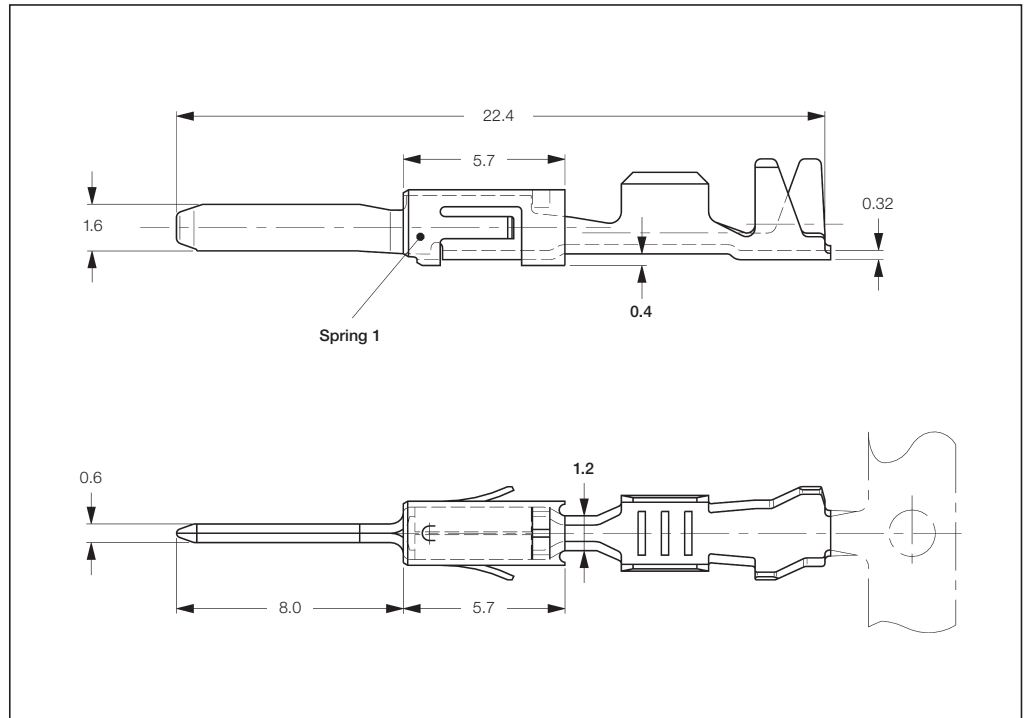
\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

**Tabs 1.6 x 0.6 mm  
with Steel Top Spring,  
Mates with  
AMP MCP 1.5K  
Contact System**

**Product Specification:**  
108-18331

**Application Specification:**  
114-18082



**Standard Tab Contacts (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -3         | 963898 1)    | 7,000            | 963899 1)   | 500              | x-878607-x  | 539651-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3         | 963900 1)    | 6,000            | 963901 1)   | 500              | x-878608-x  |                                 |

**Tab Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1 / -2 / -3         | 963902 1)    | 4,000            | 963903 1)   | 500              | x-878615-x  | 539651-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3         | 963904 1)    | 4,000            | 963905 1)   | 500              | x-878616-x  |                                 |

**\*) Material and Finish:**  
xxx-1 = CuSn4, pre-tin plated  
xxx-2 = CuFe2, pre-tin plated  
xxx-3 = CuSn4, gold plated

**Remarks:**  
1) = With Spring 1

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

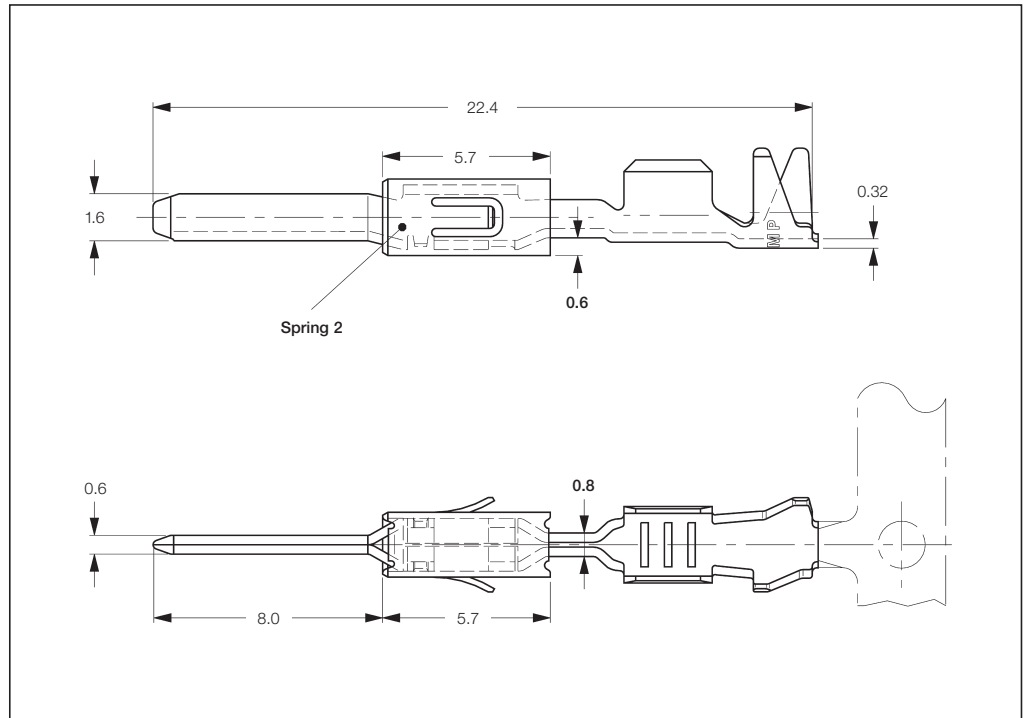
**Tabs 1.6 x 0.6 mm with Modified Steel Top Spring, Mates with AMP MCP 1.5K Contact System**

**Extraction Tool:**  
Part No. **539960-1**

**Product Group Drawing:**  
1355055

**Product Specification:**  
108-18331

**Application Specification:**  
114-18082



**Standard Tab Contacts with Modified Spring (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |              |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|--------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece  | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -2 / -3              | 964265 2)    | 7,500            | 964266 2)    | 500              | x-1528091-x |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -2 / -3              | 969079 2) 3) | 5,500            | 969080 2) 3) | 500              | x-1528096-x | 539663-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1 / -2 / -3         | 964267 2)    | 6,000            | 964268 2)    | 500              | x-1528092-x |                                 |
| 1.5                                | -                        | 2.2-2.4   | -1 / -2 / -3         | 1241846 2)   | 4,000            | 1241847 2)   | 500              | x-1528123-x |                                 |

**Tab Contacts Single Wire Sealing System with Modified Spring (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.2-1.6 | -2 / -3              | 969028 2)    | 4,000            | 969029 2)   | 500              | x-1528068-x | 539663-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1 | -2 / -3              | 964269 2)    | 4,000            | 964270 2)   | 500              | x-1528261-x |                                 |

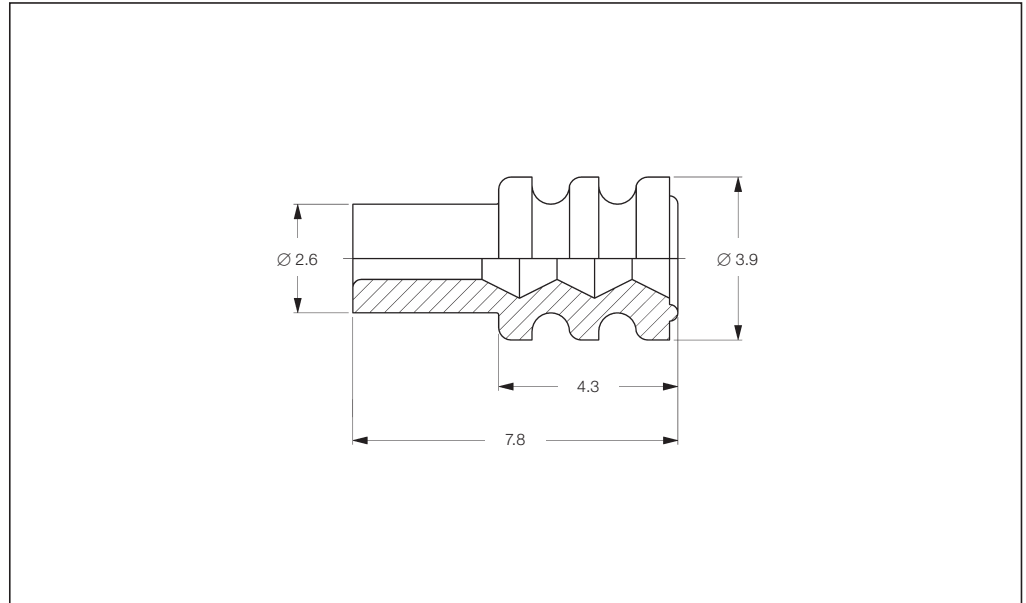
**\*) Material and Finish:**  
xxx-1 = CuSn4, pre-tin plated  
xxx-2 = CuFe2, pre-tin plated  
xxx-3 = CuSn4, gold plated

**Remarks:**  
2) = With Spring 1 (shown on Page 3-4) or Spring 2  
3) = For Double and Single Termination

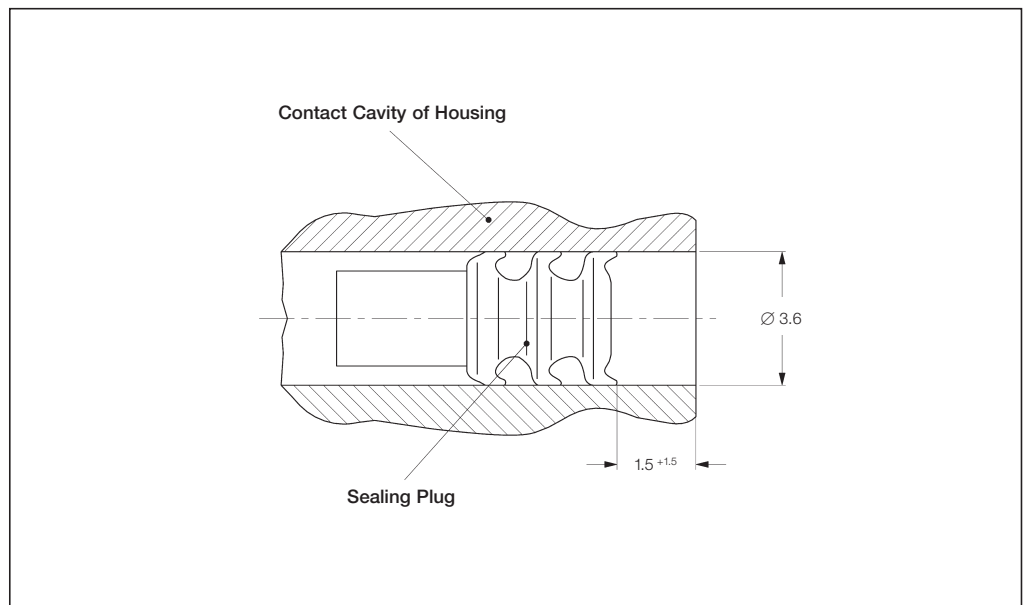
\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 1.5K Contact System (Cavity Diameter 3.6 mm)**



| Insulation Diameter (mm) | Color   | Part Number | Package Quantity |
|--------------------------|---------|-------------|------------------|
| 0.9-1.2                  | Green   | 1718705-1   | 10,000           |
| 1.2-1.6                  | Red     | 964971-1    | 10,000           |
|                          | Blue    | 1394133-1   | 10,000           |
| 1.4-1.9                  | Grey    | 963530-1    | 10,000           |
| 1.9-2.4                  | Yellow  | 964972-1    | 10,000           |
| Sealing Plug             | White   | 963531-1    | 10,000           |
|                          | Natural | 1394132-1   | 10,000           |





Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tabs: CuSn4, CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated, selective silver plated,  
selective gold plated

**Wire Size Range:**

0.2–0.5 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
1.0–2.5 mm<sup>2</sup>, 2.5–4.0 mm<sup>2</sup>  
Single Wires (FLR)

**Current Carrying Capacity:**

up to 40 Ampere  
(at 20 °C ambient temperature)

**Mating Force\*:**

Max. 6 N

**Unmating Force\*:**

Max. 5 N

**Modular Dimensions (Centerline)**

**0.35–2.5 mm<sup>2</sup> SRC:**

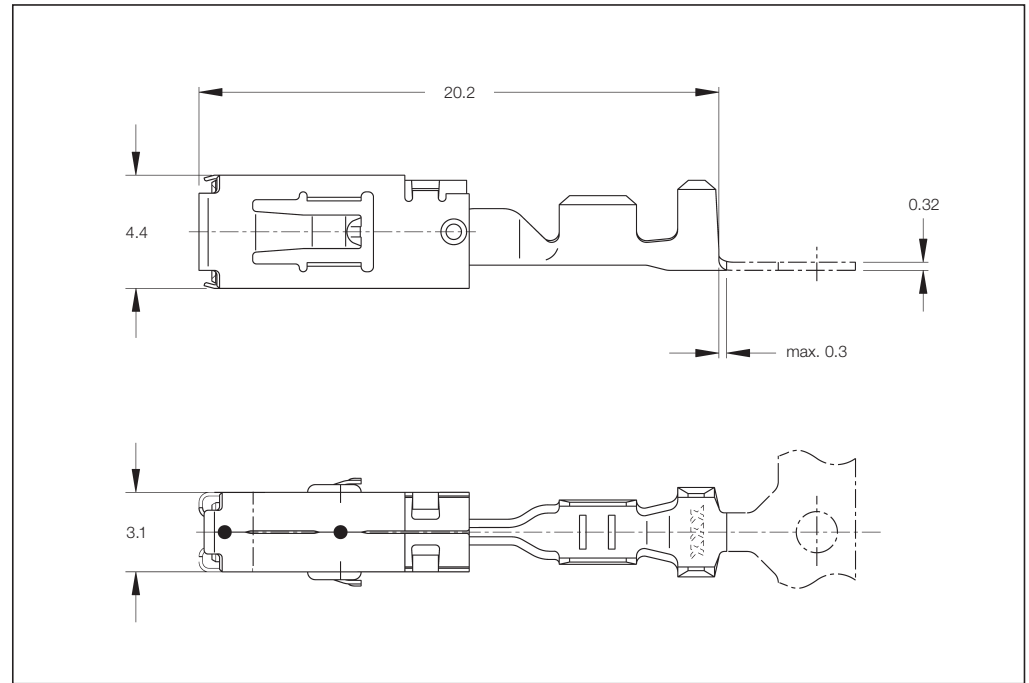
– 5.0 x 5.5 mm  
– 5.0 x 5.0 mm (Staggered)

**2.5–4.0 mm<sup>2</sup> SRC:**

– 5.5 x 5.5 mm  
– 5.0 x 5.5 mm (Staggered)

**2.5–4.0 mm<sup>2</sup> SWS:**

– 7.2 x 7.2 mm  
– 6.0 x 7.2 mm (Staggered)



**Mating Cycles:●**

up to 20 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

**Dimension of Male Contacts:**

2.8<sup>±0.1</sup> x 0.8<sup>±0.03</sup> mm  
3.0<sup>±0.1</sup> x 0.8<sup>±0.03</sup> mm

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

**Contact Resistance:**

New State ≤ 2 mΩ

**Extraction Tool:**

Part No. **1-1579007-2**

**Product Specification:**

108-18513

**Application Specification:**

114-18148

**Product Group Drawing:**

1355036

\*) Steel Tab, see Specifications

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*        | Part Numbers |                  |             |                  |                         |                    |
|------------------------------------|--------------------------|---------|-----------------------------|--------------|------------------|-------------|------------------|-------------------------|--------------------|
|                                    | FLK                      | FLR     |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool Complete |
| 0.2–0.5                            | –                        | 1.2–1.4 | 1-xxx-1 / 1-xxx-3           | 968880       | 4,500            | 968895      | 500              | x-541562-x              | 539721-2           |
| 0.5–1.0                            | –                        | 1.4–2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 | 968849       | 4,500            | 968872      | 500              | x-541535-x              | 539722-2           |
| 1.0–2.5                            | –                        | 2.2–3.0 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 | 968851       | 3,500            | 968873      | 500              | x-541536-x              | 539723-2           |
| 2.5–4.0                            | –                        | 3.0–3.7 | 1-xxx-1 / 1-xxx-3           | 968853       | 2,700            | 968874      | 500              | x-541534-x              |                    |

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*        | Part Numbers |                  |             |                  |                         |                    |
|------------------------------------|--------------------------|---------|-----------------------------|--------------|------------------|-------------|------------------|-------------------------|--------------------|
|                                    | FLK                      | FLR     |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator <sup>♦</sup> | Hand Tool Complete |
| 0.35                               | –                        | 1.2–1.4 | 1-xxx-1 / 1-xxx-3           | 968882       | 4,500            | 968896      | 500              | x-541563-x              | 539725-2           |
| 0.5–1.0                            | –                        | 1.4–2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 | 968855       | 3,500            | 968875      | 500              | x-878973-x              | 539726-2           |
| 1.0–2.5                            | –                        | 2.2–3.0 | 1-xxx-1 / 1-xxx-3           | 968857       | 4,000            | 968876      | 500              | x-878974-x              | 539727-2           |
| 2.5–4.0                            | –                        | 3.0–3.7 | 1-xxx-1 / 1-xxx-3           | 968859       | 2,500            | 968877      | 500              | x-541537-x              |                    |

\* **Material and Finish:**  
1-xxx-1 = CuNiSi, pre-tin plated  
1-xxx-2 = CuNiSi, selective gold plated  
1-xxx-3 = CuNiSi, selective silver plated

Lanceless Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tab: CuSn4, CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated

**Wire Size Range:**

0.2–0.5 mm<sup>2</sup>, >0.5–1.0 mm<sup>2</sup>,  
>1.0–2.5 mm<sup>2</sup>, >2.5–4.0 mm<sup>2</sup>  
Single Wires (FLR)

**Current Carrying Capacity:**

up to 40 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

**Modular Dimensions  
(Centerline):**

**0.35–2.5 mm<sup>2</sup> SRC:**  
– 5.0 x 5.5 mm  
– 5.0 x 5.0 mm (Staggered)  
**2.5–4.0 mm<sup>2</sup> SRC:**  
– 5.5 x 5.5 mm  
– 5.0 x 5.5 mm (Staggered)

**Mating Force\*:**

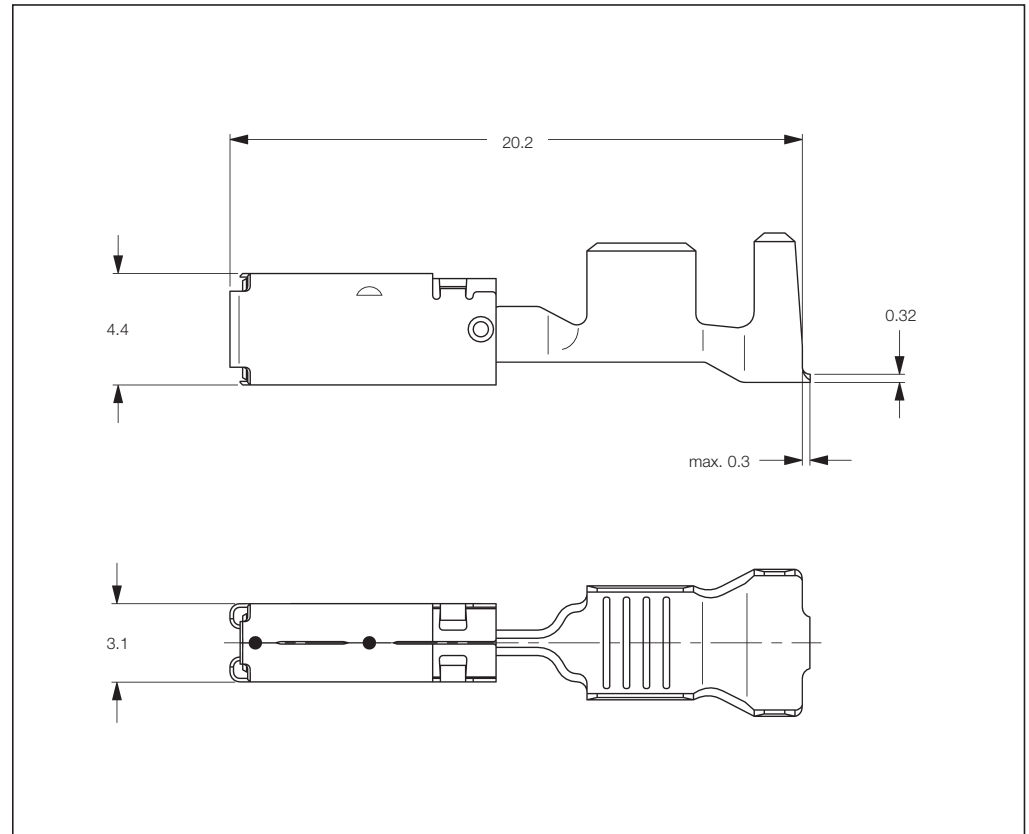
Max. 6 N

**Unmating Force\*:**

Max. 5 N

\*) Steel Tab, see Specifications

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.



**Contact Resistance:**

New State ≤ 2 mΩ

**Mating Cycles:●**

up to 20 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

**Dimension of Male Contacts:**

2.8 ±0.1 x 0.8 ±0.03 mm  
3.0 ±0.1 x 0.8 ±0.03 mm

**Extraction Tool:**

Extraction possible without tool

**Product Specification:**

108-18513

**Application Specification:**

114-18148

**Product Group Drawing:**

1719458

**Lanceless Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                    |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool Complete |
| 0.2–0.5                            | –                        | 1.2–1.4 | 1-xxx-1              | 1355876      | 4,500            | –           | –                | x-541562-x  | 539721-2           |
| >0.5–1.0                           | –                        | 1.4–2.1 | 1-xxx-1              | 1355833      | 4,500            | –           | –                | x-541535-x  | 539722-2           |
| >1.0–2.5                           | –                        | 2.2–3.0 | 1-xxx-1              | 1355877      | 3,500            | –           | –                | x-541536-x  | 539723-2           |
| >2.5–4.0                           | –                        | 3.0–3.7 | 1-xxx-1              | 1355880      | 2,700            | –           | –                | x-541534-x  |                    |

**\*) Material and Finish:**

1-xxx-1 = CuNiSi, pre-tin plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Receptacle Contacts

**Technical Features**

**Contact Material:**

CuNiSi  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated, selective silver plated,  
selective gold plated

**Wire Size Range:**

0.20–0.35 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
>1.0–2.5 mm<sup>2</sup> (FLR Cable)

**Current Carrying Capacity:**

up to 34 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

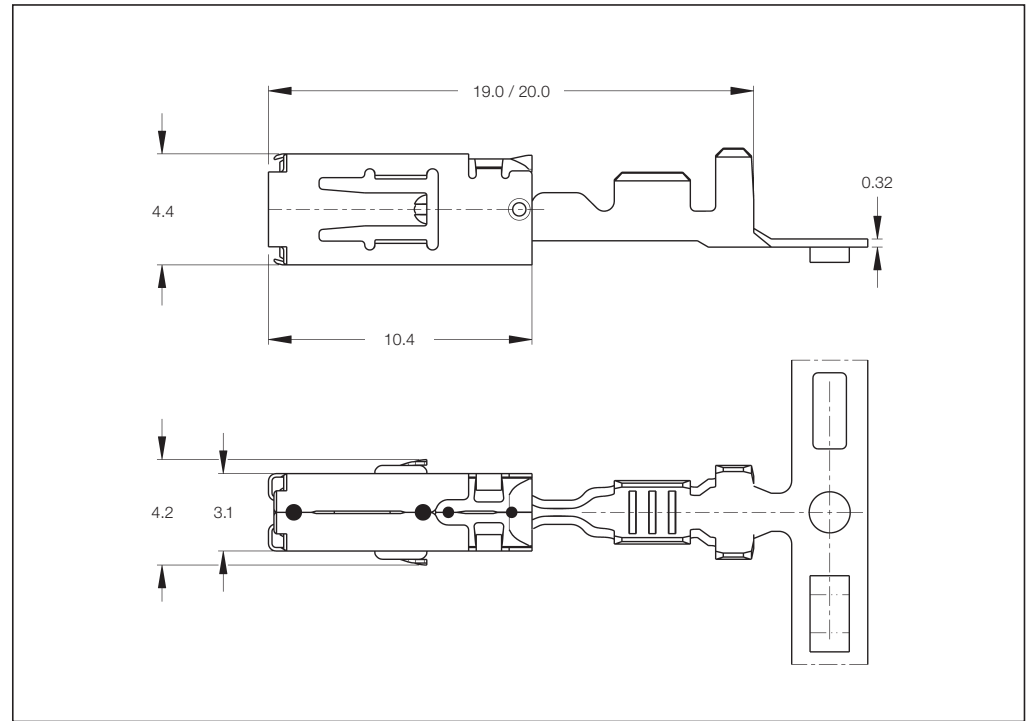
**Modular Dimensions  
(Centerline):**

**0.35–2.5 mm<sup>2</sup> SRC:**  
– 5.0 x 5.5 mm  
– 5.0 x 5.0 mm (Staggered)  
**0.35–2.5 mm<sup>2</sup> SWS:**  
– 6.0 x 6.0 mm  
– 5.0 x 5.5 mm (Staggered)

**Mating Cycles:** ●

up to 10 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

●) Mating Cycles are depending on various technical influences  
and must be clarified in each individual case.



**Contact Resistance:**

New State ≤ 2 mΩ

**Mating Force:** Max. 10 N

**Unmating Force:** Max. 7 N

**Dimension of Male Contacts:**

2.8 ±0.1 x 0.8 ±0.03 mm  
2.8 ±0.1 x 0.6 ±0.03 mm  
3.0 ±0.1 x 0.8 ±0.03 mm  
3.0 ±0.1 x 0.6 ±0.03 mm

**Extraction Tool:**

Part No. **1-1579007-2**

**Product Group Drawing:**

1241437

**Product Specification:**

108-18717

**Application Specification:**

114-18387

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |             |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|---------------------------------|-------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator* |
| 0.20–0.35                          | –                        | 1.1–1.4 | -1 / -2              | 1241386      | 4,000            | 1241387     | 500              | x-541690-x                      |             |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2              | 1241388      | 3,500            | 1241389     | 500              | x-878937-x                      | 539951-2    |
| >1.0–2.5                           | –                        | 2.2–3.0 | -1 / -2              | 1241390      | 3,500            | 1241391     | 500              | x-878704-x                      |             |

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |             |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|---------------------------------|-------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator* |
| 0.20–0.35                          | 1.3–1.5                  | 1.1–1.4 | -1 / -2 / -3         | 1241392      | 3,500            | 1241393     | 500              | x-541691-x                      |             |
| 0.5–1.0                            | 2.0–2.7                  | 1.4–2.1 | -1 / -2 / -3         | 1241394      | 3,500            | 1241395     | 500              | x-878953-x                      | 539952-2    |
| >1.0–2.5                           | 2.2–3.0                  | 2.2–3.0 | -1 / -2 / -3         | 1241396      | 3,500            | 1241397     | 500              | x-878954-x                      |             |

\*) **Material and Finish:**  
xxx-1 = CuNiSi, pre-tin plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

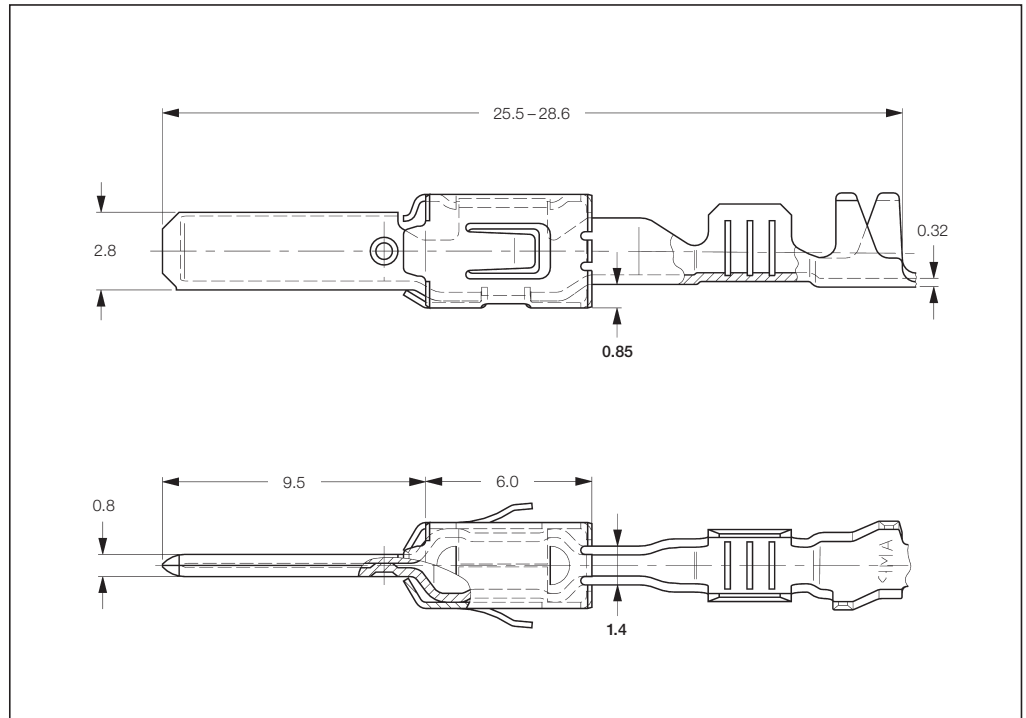
**Tabs 2.8 x 0.8 mm with Steel Top Spring, Mates with AMP MCP 2.8 Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355052

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |           | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete             |
|------------------------------------|---------------------|-----------|---|--------------|------------------|-------------|------------------|-------------|--------------------------------|
|                                    | FLK (mm)            | FLR (mm)  |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                |
| 0.2-0.5                            | -                   | 1.15-1.60 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 963860       | 4,000            | 963861      | 500              | x-878549-x  | 734538-1                       |
| 0.5-1.0                            | -                   | 1.4-2.0   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962841       | 4,000            | 963745      | 500              | x-1528315-x | 539635-1 with Die Set 539758-2 |
| 1.5-2.5                            | -                   | 2.1-2.9   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962842       | 3,500            | 963746      | 500              | x-1528305-x | 539635-1 with Die Set 539758-2 |
| 4.0                                | -                   | 3.4-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968946       | 2,700            | 968965      | 500              | x-1528430-x | -                              |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete |
|------------------------------------|---------------------|----------|---|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK (mm)            | FLR (mm) |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                    |
| 0.2-0.5                            | -                   | max. 2.1 | 1-xxx-1 / 1-xxx-3   | 965982       | 3,500            | 965983      | 500              | x-1528406-x | -                  |
| 0.5-1.0                            | -                   | max. 2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962915       | 3,500            | 963748      | 500              | x-1528452-x | 539758-1           |
| 1.5-2.5                            | -                   | max. 3.0 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962916       | 3,500            | 963749      | 500              | x-1528316-x | 539758-2           |
| 4.0                                | -                   | max. 3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968947       | 3,500            | 968966      | 500              | x-1528067-x | -                  |

**\*) Material and Finish:**

- 1-xxx-1 = CuSn, pre-tin plated
- 1-xxx-2 = CuSn, selective silver plated
- 1-xxx-3 = CuSn, selective gold plated
- 2-xxx-1 = CuFe, pre-tin plated
- 2-xxx-2 = CuFe, selective silver plated
- 2-xxx-3 = CuFe, selective gold plated
- 3-xxx-1 = CuSn, pre-tin plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

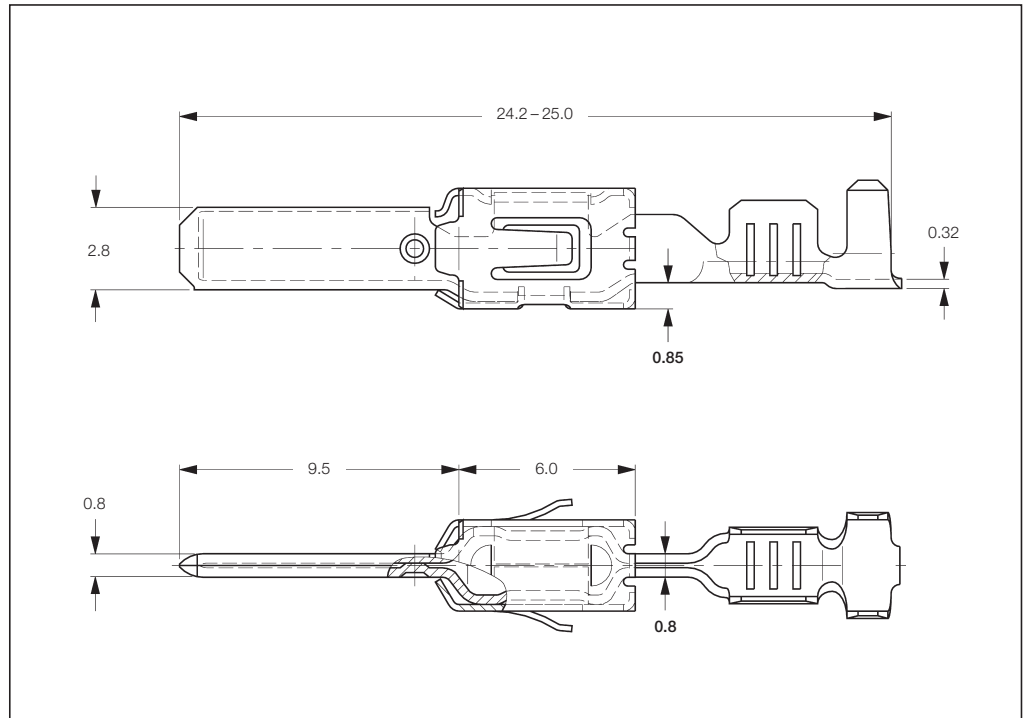
**Tabs 2.8 x 0.8 mm,  
with Modified  
Steel Top Spring,  
Mates with AMP MCP 2.8/  
2.8K Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355364

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts with Modified Spring (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*        | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|-----------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1           | 964292       | 4,000            | 964291      | 500              | x-1528004-x |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 964294       | 4,000            | 964293      | 500              | x-1528097-x | 539664-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1 / 2-xxx-2 | 964296       | 3,300            | 964295      | 500              | x-1528001-x |                                 |

**Tab Contacts Single Wire Sealing System with Modified Spring (SWS)**

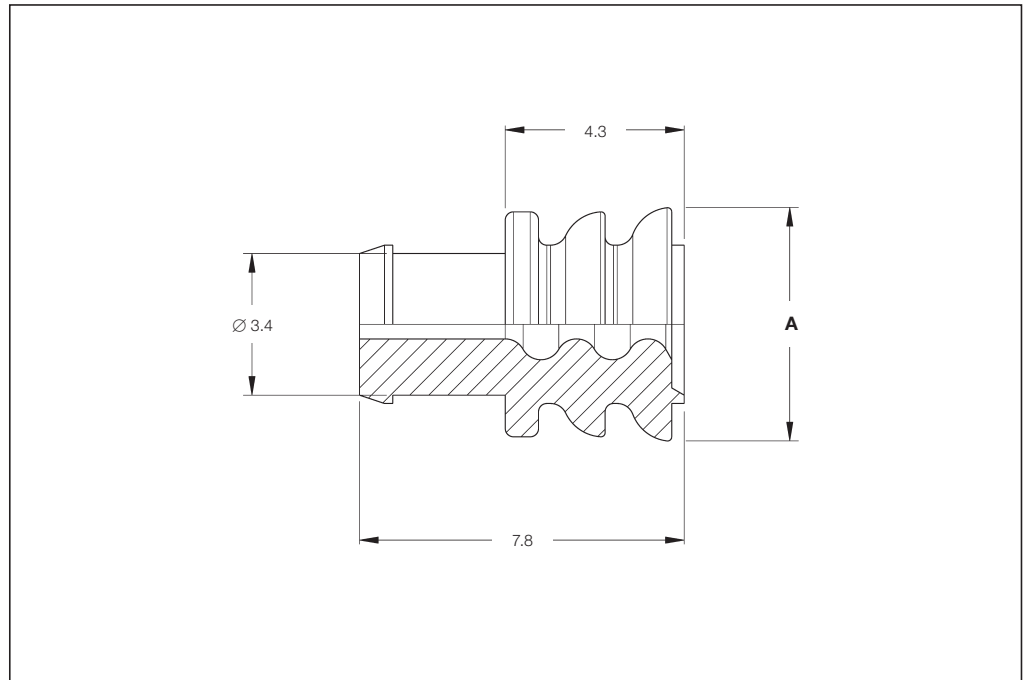
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*        | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|-----------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1           | 964298       | 3,500            | 964297      | 500              | x-1528025-x |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1 / 4-xxx-1 | 964300       | 3,500            | 964299      | 500              | x-1528101-x | 539650-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1           | 964302       | 3,500            | 964301      | 500              | x-1528026-x |                                 |

**\*) Material and Finish:**  
 1-xxx-3 = CuSn, selective gold plated  
 2-xxx-1 = CuFe, pre-tin plated  
 2-xxx-2 = CuFe, pre-silver plated  
 4-xxx-1 = CuNi, plain

**\*)** The pre- and suffix for the applicators depends on the applied termination equipment.

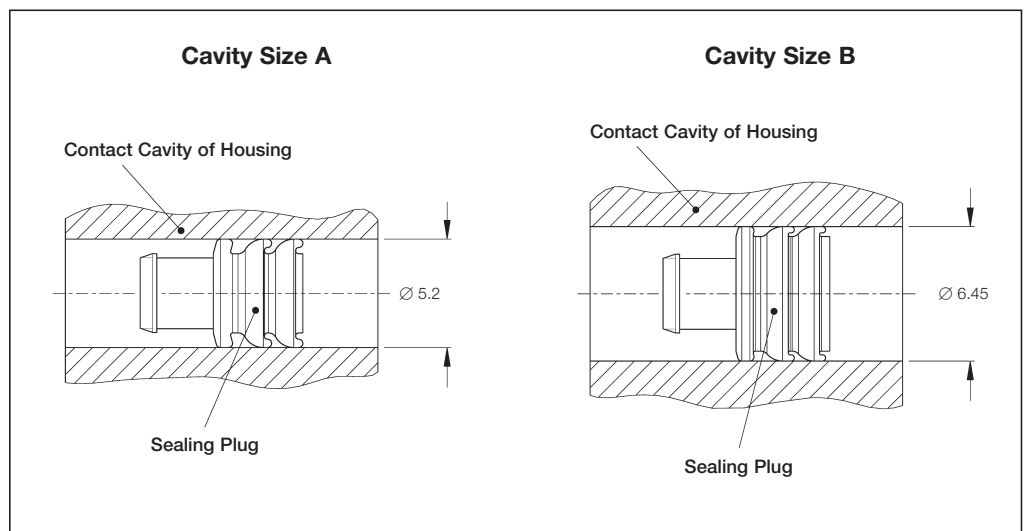
Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 2.8 Contact System (Two Cavity Diameters)**



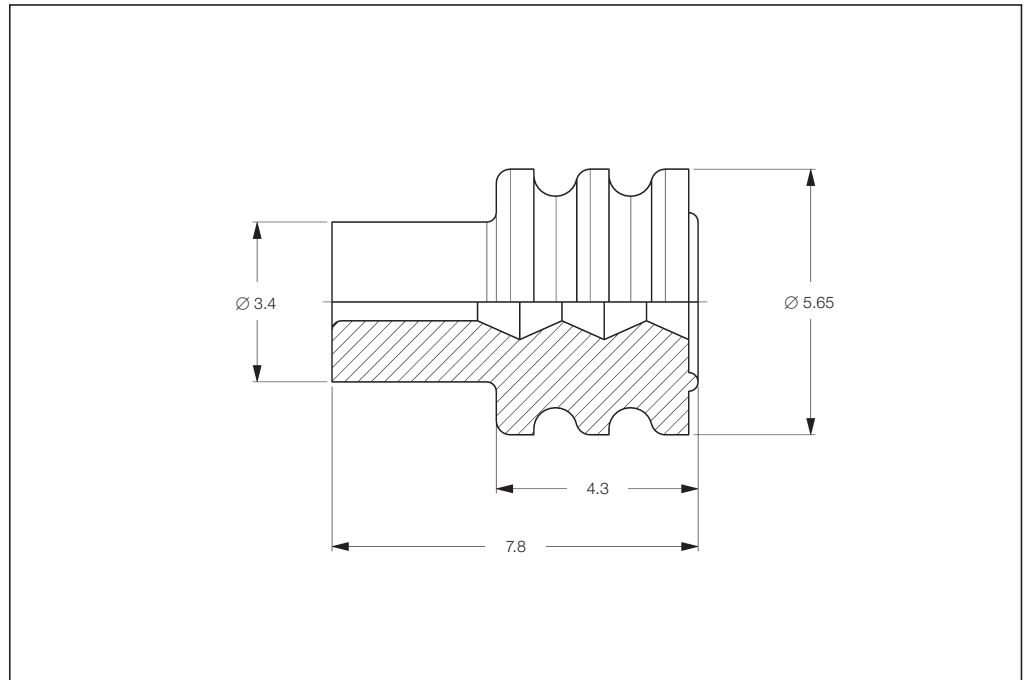
| Cavity Size | Function Relevant Insulation Diameter (mm) | (Example for Wire Size, FLR Insulation according ISO 6722 (mm <sup>2</sup> )) | Color   | Diameter A (mm) | Part Number | Package Quantity |
|-------------|--|---|---------|-----------------|-------------|------------------|
| A           | 1.2-2.1                                    | (0.35-1.00)   | Blue    | 5.6             | 828904-1    | 1,000            |
|             |  |   |         |                 | 828904-2    | 10,000           |
| A           | 2.2-3.0                                    | (1.5-2.5)   | White   | 5.6             | 828905-1    | 10,000           |
| B           | 3.0-3.7                                    | (2.5-4.0)   | Green   | 7.2             | 828985-1    | 5,000            |
| A           | Sealing Plug                               |   | Natural | 5.6             | 828922-1    | 10,000           |
| B           | Sealing Plug                               |   | Brown   | 7.2             | 828986-1    | 5,000            |

For correct use see Application Specification 114-18148.

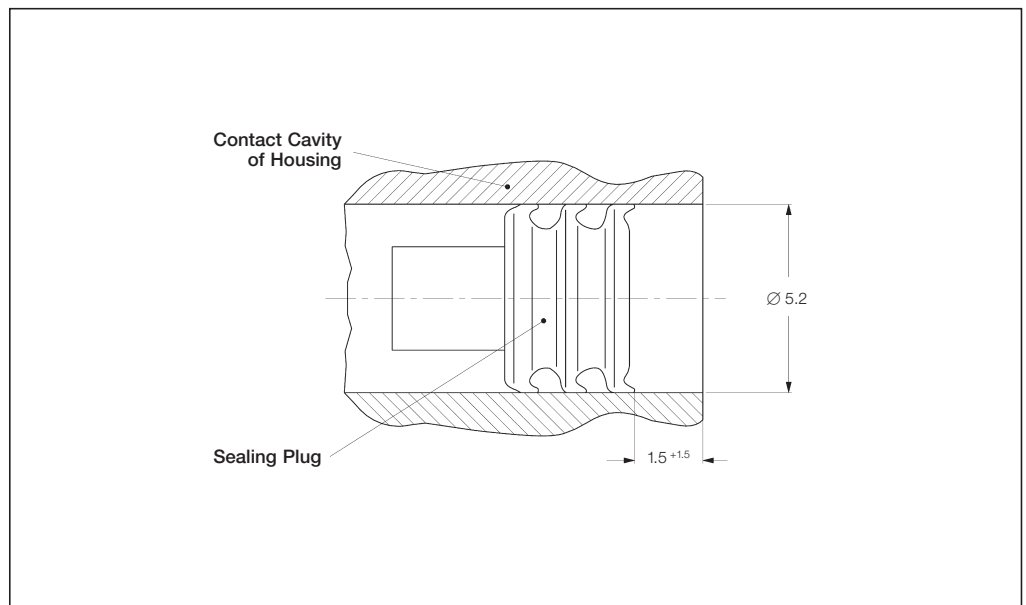


Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 2.8K Contact System (Cavity Diameter 5.2 mm)**



| Wire Size Range (mm <sup>2</sup> ) |           | Insulation Diameter (mm) | Color     | Part Number | Package Quantity |
|------------------------------------|-----------|--------------------------|-----------|-------------|------------------|
| FLK                                | FLR       |                          |           |             |                  |
| 0.35                               | 0.35-1.00 | 1.2-2.1                  | Blue      | 963294-1    | 5,000            |
| 0.5-1.0                            | 1.5       | 2.0-2.7                  | Red-Brown | 963293-1    | 5,000            |
| 1.5                                | 2.5       | 2.7-3.0                  | Yellow    | 963292-1    | 5,000            |
| -                                  | -         | Sealing Plug             | Natural   | 828922-1    | 10,000           |
| -                                  | -         |                          | Green     | 828922-2    | 10,000           |





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Engineering Notes

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Receptacle Contacts

**Technical Features**

**Contact Material:**  
CuNiSi  
Top Spring: Stainless Steel

**Contact Finish:**  
Tin plated, selective silver plated

**Wire Size Range:**  
0.2–0.5 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
>1.0–2.5 mm<sup>2</sup>, >2.5–4.0 mm<sup>2</sup>,  
>4.0–6.0 mm<sup>2</sup>

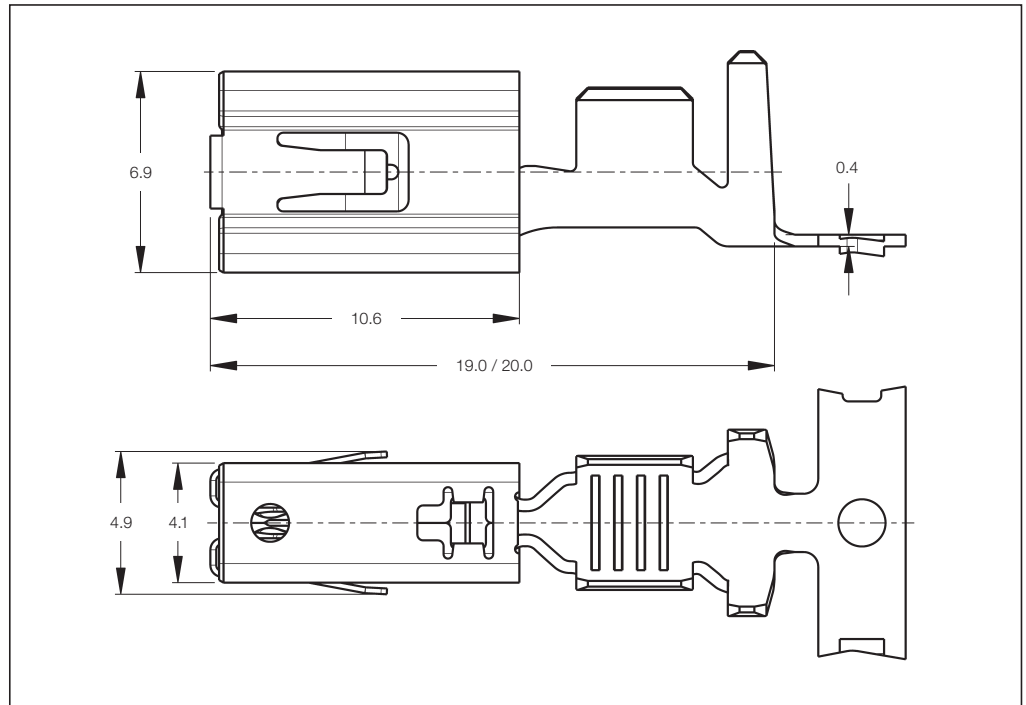
**Current Carrying Capacity:**  
up to 40 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**  
–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +140 °C (tin-silver)

**Modular Dimensions (Centerline):**  
**0.2–6.0 mm<sup>2</sup> SRC:**  
– 6.0 x 8.0 mm  
**0.2–4.0 mm<sup>2</sup> SWS:**  
– 9.0 x 9.0 mm  
– 8.0 x 9.0 mm (Staggered)

**Dimension of Male Contacts:**  
4.8 ±0.1 x 0.8 ±0.03 mm  
5.8 ±0.1 x 0.8 ±0.03 mm  
6.3 ±0.1 x 0.8 ±0.03 mm

**Contact Resistance:**  
New State ≤ 2 mΩ



**Mating Cycles:** ●  
up to 10 cycles (tin plated)  
up to 10 cycles (silver plated)

● Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Mating Force:** max. 16 N  
**Unmating Force:** max. 11 N  
**Extraction Tool:**  
Part No. **1-1579007-3**

**Product Group Drawing:**  
1241438  
**Product Specification:**  
108-18718  
**Application Specification:**  
114-18388

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.2–0.5                            | –                        | 1.1–1.6 | -1                   | 1241400      | 1,800            | 1241401     | 500              | x-1530002-x |                                 |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -3              | 1241402      | 1,800            | 1241403     | 500              | x-1528206-x | 539953-2                        |
| >1.0–2.5                           | –                        | 2.2–3.0 | -1 / -3              | 1241404      | 2,000            | 1241405     | 500              | x-1528095-x |                                 |
| >2.5–4.0                           | 3.3–4.5                  | –       | -1 / -3              | 1241406      | 2,000            | 1241407     | 500              | x-1528298-x | 539954-2                        |
| >4.0–6.0                           | –                        | 3.4–4.3 | -1                   | 1241408      | 1,800            | 1241409     | 500              | x-541735-x  |                                 |

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.2–0.5                            | 1.3–2.3                  | 1.1–1.6 | -1                   | 1241410      | 1,500            | 1241411     | 500              | x-1528513-x |                                 |
| 0.5–1.0                            | 2.0–2.7                  | 1.4–2.1 | -1 / -3              | 1241412      | 1,500            | 1241413     | 500              | x-1528342-x | 539955-2                        |
| >1.0–2.5                           | 2.7–3.7                  | 2.2–3.0 | -1 / -3              | 1241414      | 1,500            | 1241415     | 500              | x-1528231-x |                                 |
| >2.5–4.0                           | 4.1–4.5                  | 3.4–3.7 | -1 / -3              | 1241416      | 1,500            | 1241417     | 500              | x-1530003-x | 539956-2                        |
| >4.0–6.0                           | –                        | 4.0–4.5 | -4                   | 1241418      | 1,500            | 1241419     | 500              | x-1528947-x | 3-1579021-7                     |

**\*) Material and Finish:**  
xxx-1 = CuNiSi, pre-tin plated  
xxx-3 = CuNiSi, selective silver plated  
xxx-4 = CuNiSi, tin-silver pre-plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

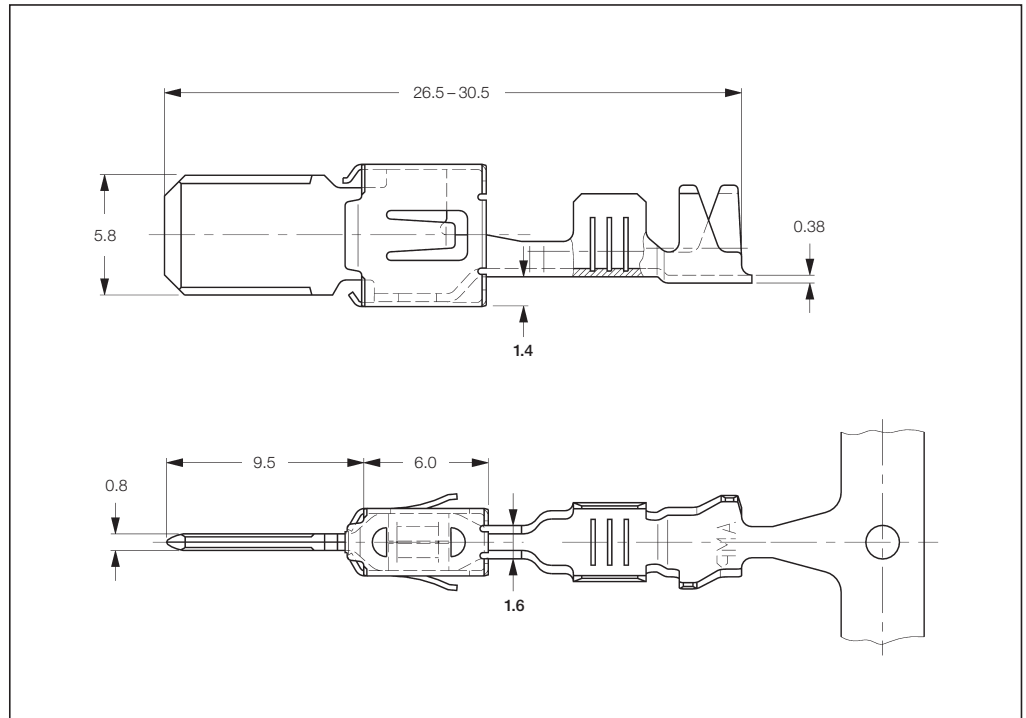
**Tabs 5.8 x 0.8 mm with Steel Top Spring, Mates with AMP MCP 6.3/4.8K Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1241895

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish *                 | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |              |
|------------------------------------|--------------------------|-----------|---------------------------------------|--------------|------------------|-------------|------------------|---------------------------------|--------------|
|                                    | FLK                      | FLR       |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator ♦ |
| 1.5-2.5                            | 2.4-3.7                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962845       | 1,700            | 963740      | 500              | x-878563-x                      |              |
| 3.0-4.0                            | 3.3-4.5                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962846       | 1,800            | 963741      | 500              | x-878564-x                      | 539759-2     |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963734       | 1,700            | 963737      | 500              | x-878654-x                      |              |
| 1.5-2.5                            | -                        | 2.2-3.0   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963735       | 1,800            | 963738      | 500              | x-878561-x                      | 734688-1**   |
| >2.5-4.0                           | -                        | 2.7-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963736       | 1,800            | 963739      | 500              | x-878562-x                      | 539623-1**   |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-1 / 2-xxx-1                     | 965984       | 2,000            | 965985      | 500              | -                               | -            |
| 4.0-6.0                            | 4.0-5.2                  | -         | 1-xxx-1 / 2-xxx-1                     | 968050       | 1,500            | 968051      | 500              | x-878968-x                      | -            |

**Tab Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish *                 | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |              |
|------------------------------------|--------------------------|---------|---------------------------------------|--------------|------------------|-------------|------------------|---------------------------------|--------------|
|                                    | FLK                      | FLR     |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator ♦ |
| 0.5-1.0                            | -                        | 1.4-2.1 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962917       | 1,500            | 963742      | 500              | x-878565-x                      |              |
| 1.5-2.5                            | -                        | 2.2-3.0 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962918       | 1,500            | 963743      | 500              | x-878566-x                      | 539757-2     |
| >2.5-4.0                           | -                        | 2.7-3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962919       | 1,500            | 963744      | 500              | x-878567-x                      |              |

**\*) Material and Finish:**  
1-xxx-1 = CuSn, pre-tin plated  
1-xxx-2 = CuSn, selective silver plated

2-xxx-1 = CuFe, pre-tin plated  
2-xxx-2 = CuFe, selective silver plated

**Remarks:**  
\*\*) Hand Tool complete

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts

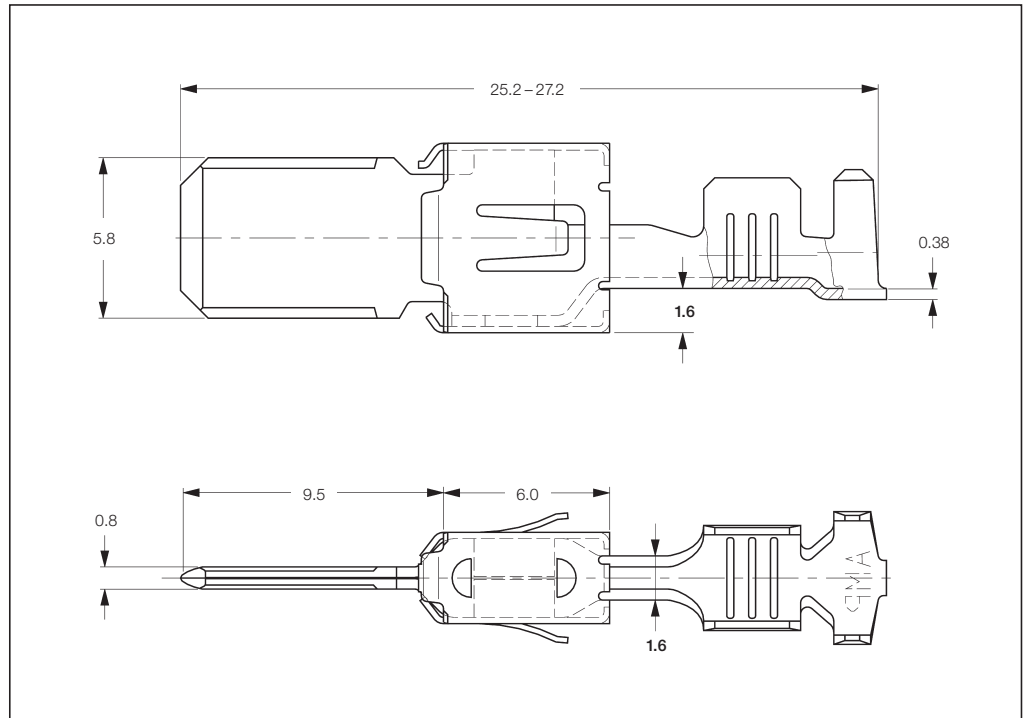
**Tabs 5.8 x 0.8 mm, with Modified Steel Top Spring, Mates with AMP MCP 6.3/4.8K Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1394011

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts with Modified Spring (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | -1                   | 969007       | 1,800            | 969008      | 500              | x-878967-x  |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | -1                   | 964304       | 1,800            | 964303      | 500              | x-878955-x  | 539665-2                        |
| >1.0-2.5                           | -                        | 2.2-3.0   | -1 / -3              | 964306       | 1,900            | 964305      | 500              | x-878956-x  |                                 |
| >2.5-4.0                           | 3.3-4.5                  | 3.3-4.5   | -1                   | 964308       | 1,800            | 964307      | 500              | x-878957-x  |                                 |

**Tab Contacts Single Wire Sealing System with Modified Spring (SWS)**

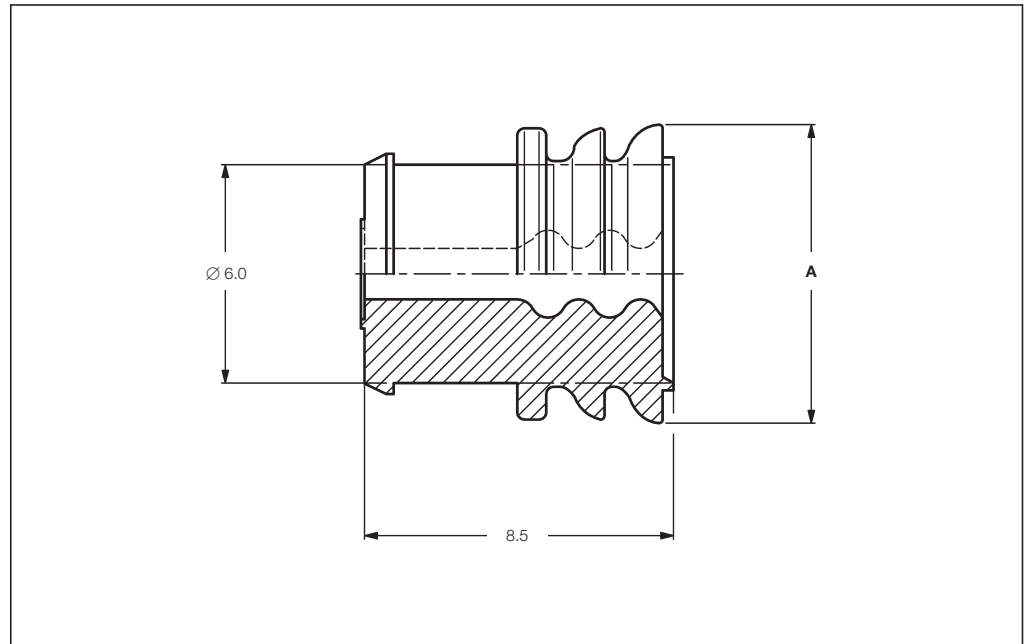
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | -1                   | 964310       | 1,500            | 964309      | 500              | x-878958-x  |                                 |
| >1.0-2.5                           | -                        | 2.2-3.0 | -1                   | 964312       | 1,400            | 964311      | 500              | x-878959-x  | 539666-2                        |
| >2.5-4.0                           | -                        | 2.7-3.7 | -1                   | 964314       | 1,300            | 964313      | 500              | x-878960-x  |                                 |

\*) **Material and Finish:**  
xxx-1 = CuFe, pre-tin plated  
xxx-3 = CuSn, selective gold plated

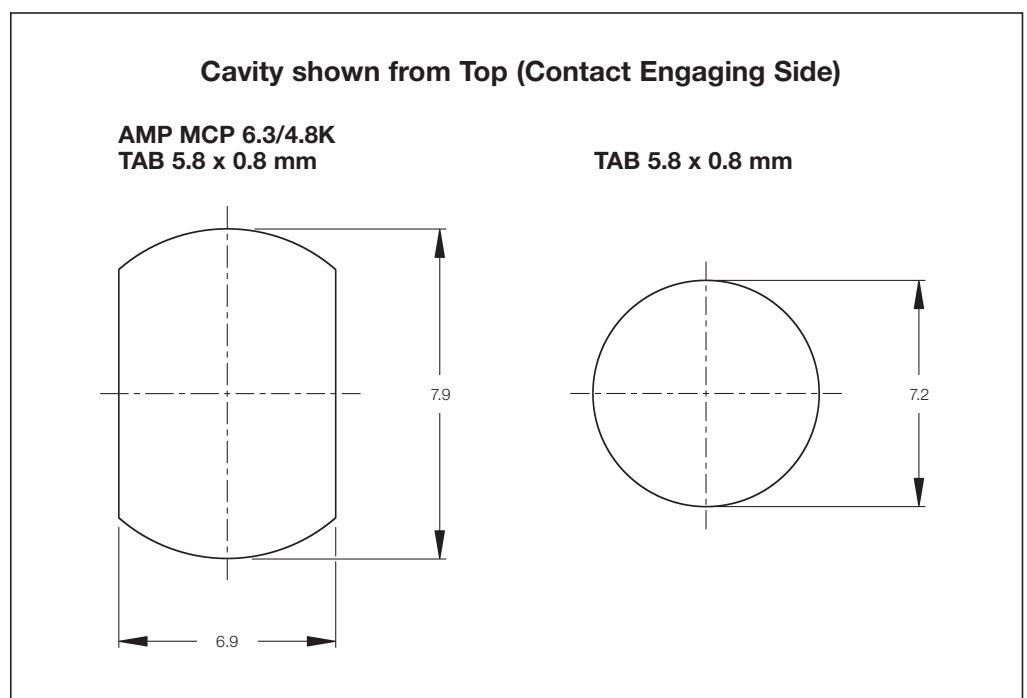
\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for AMP MCP 6.3/4.8K  
Contact System**  
(Cavity Diameter see below)

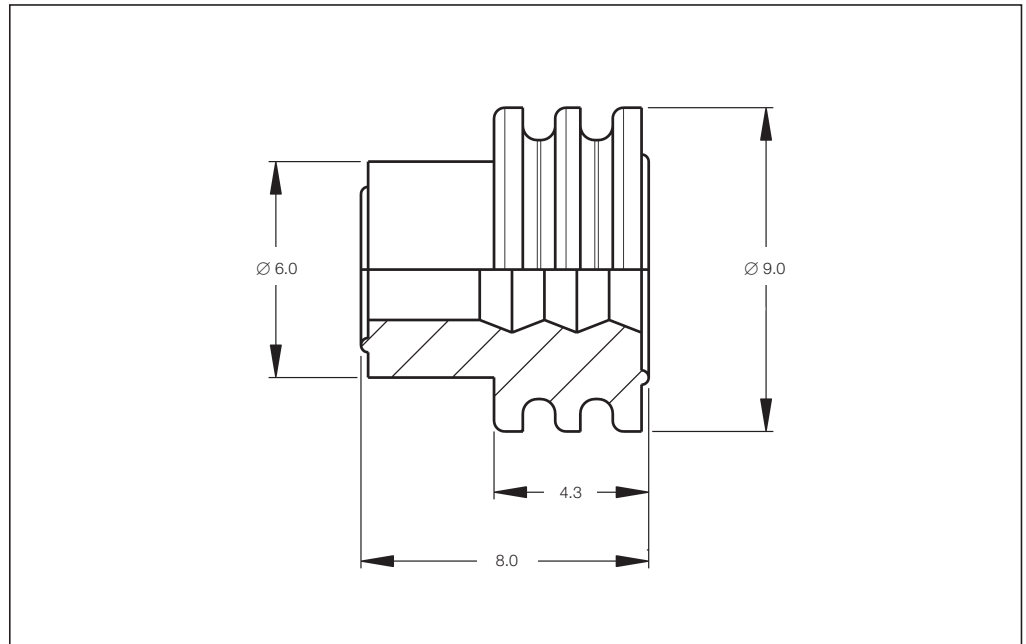


| Insulation Diameter (mm) | Color  | Diameter A (mm) | Part Number | Package Quantity |
|--------------------------|--------|-----------------|-------------|------------------|
| 1.4-2.1                  | Blue   | 8.2             | 963243-1    | 2,500            |
| 2.2-3.0                  | White  | 8.2             | 963244-1    | 2,500            |
| 3.4-3.7                  | Yellow | 8.2             | 963245-1    | 2,500            |
| Sealing Plug             | Black  | 8.1             | 100132-1    | 1,000            |

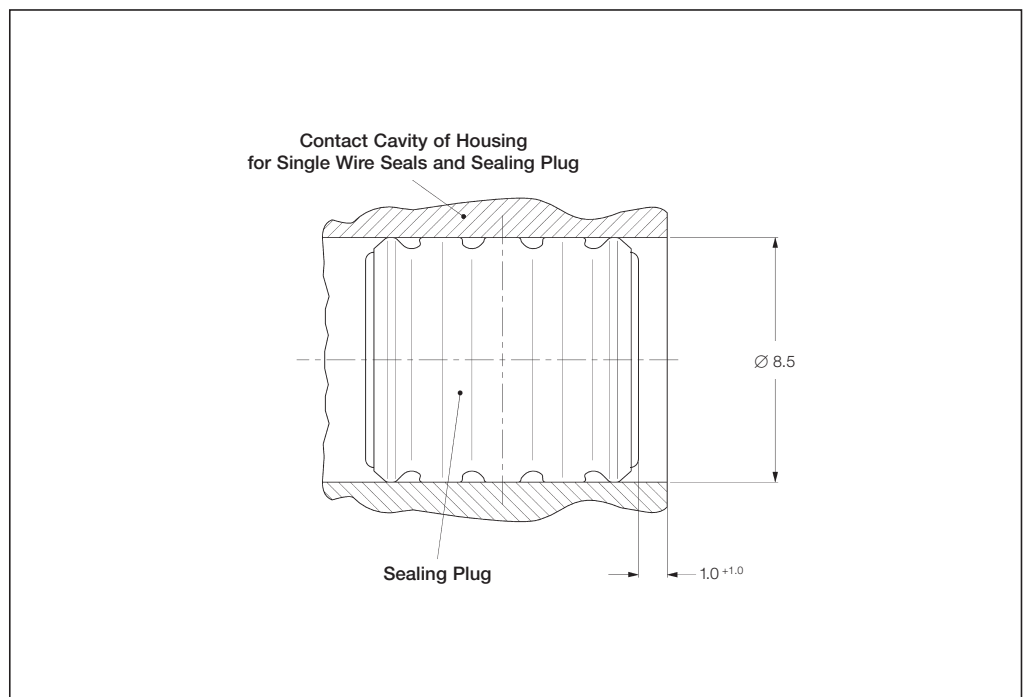


Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs  
for AMP MCP 6.3/4.8K  
Contact System  
(Cavity Diameter 8.5 mm)**



| Insulation Diameter (mm) | Color       | Part Number | Package Quantity |
|--------------------------|-------------|-------------|------------------|
| 2.0-2.7                  | White       | 1394511-1   | 10,000           |
| 3.4-3.7                  | Blue        | 1394512-1   | 10,000           |
| 4.0-4.5                  | Green       | 1719043-1   | 10,000           |
| Sealing Plug             | Transparent | 967652-1    | 20,000           |



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Engineering Notes

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Lanceless Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
 Tabs: CuSn4, CuFe2  
 Top Spring: Stainless Steel

**Contact Finish:**

Tin plated

**Wire Size Range:**

6.0–10.0 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 80 Ampere  
 (at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)

**Mating Cycles:**●

up to 10 cycles (tin plated)

**Modular Dimensions  
 (Centerline):**

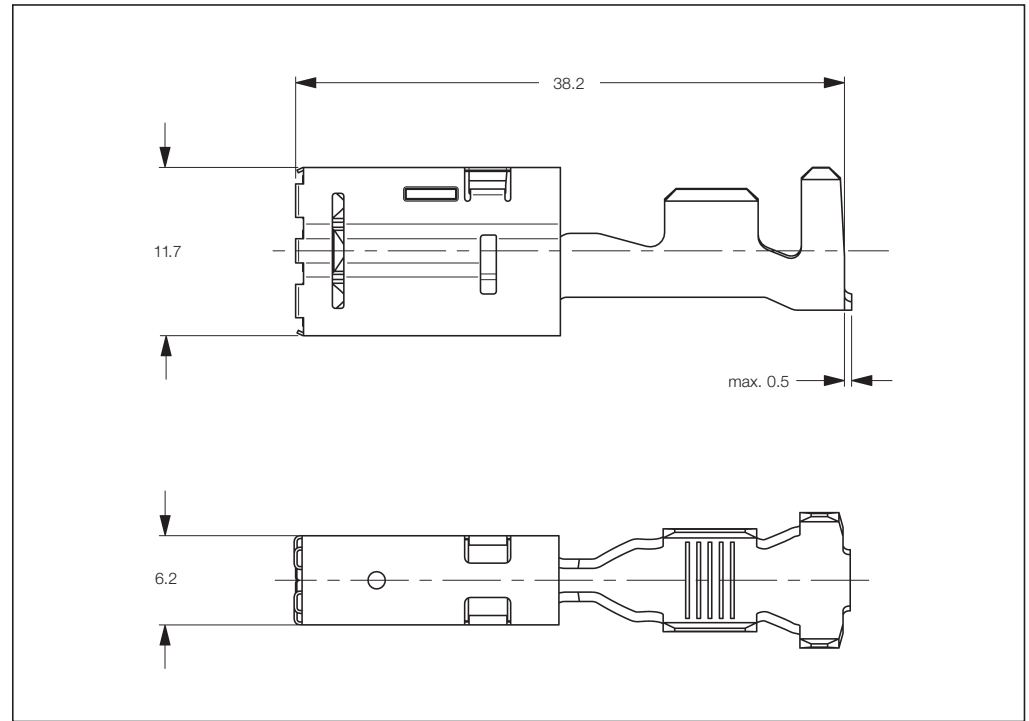
**6.0–10.0 mm<sup>2</sup> SRC:**  
 – 12.7 x 9.5 mm  
 – 12.7 x 8.5 mm (Staggered)

**Contact Resistance:**

New State ≤ 4 mΩ

**Extraction Tool:**

Extraction possible without tool



**Mating Force:**  
Max. 35 N

**Unmating Force:**  
Max. 15 N

**Product Specification:**  
108-18630

**Application Specification:**  
114-18269

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Lanceless Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish * | Part Numbers |                  |             |                  |              |   |
|------------------------------------|--------------------------|-----|-----------------------|--------------|------------------|-------------|------------------|--------------|---|
|                                    | FLK                      | FLR |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool 539783-1 with Die Set         |
| 6.0–10.0                           | 4.6–6.6                  | –   | 1-xxx-1               | 1355849      | 600              | –           | –                | 2-541664-2   | 539783-5 for 6 mm<br>539783-6 for 10 mm |

\*) **Material and Finish:**  
 1-xxx-1 = CuNiSi, pre-tin plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tabs: CuSn4, CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated,  
selective silver plated

**Wire Size Range:**

6.0–10.0 mm<sup>2</sup>, >10.0–16.0 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 100 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)

**Mating Cycles:** ●

up to 10 cycles (tin plated)  
up to 50 cycles (silver plated)

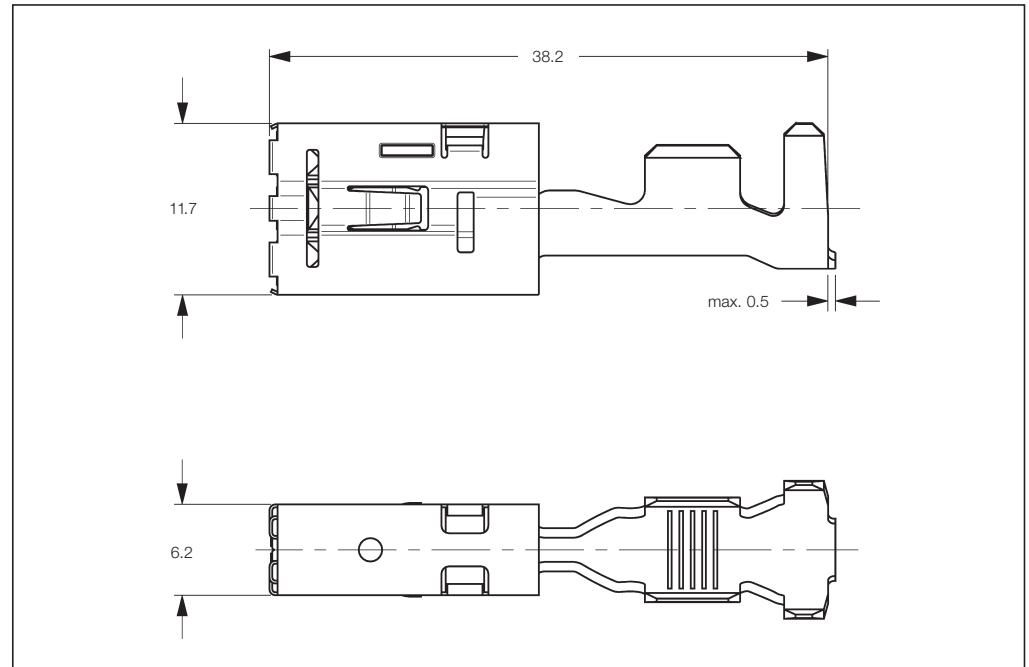
**Modular Dimensions**

**(Centerline):**

**6.0–10.0 mm<sup>2</sup> SRC:**  
– 12.7 x 9.5 mm  
– 12.7 x 8.5 mm (Staggered)

**10.0–16.0 mm<sup>2</sup> SRC:**  
– 12.7 x 10.5 mm  
– 12.7 x 9.0 mm (Staggered)

**6.0–10.0 mm<sup>2</sup> SWS:**  
– 16.0 x 16.0 mm  
– 16.0 x 14.0 mm (Staggered)



**Contact Resistance:**

New State ≤ 4 mΩ

**Mating Force:**

Max. 35 N

**Unmating Force:**

Max. 15 N

**Extraction Tool:**

Part No. **539971-1**

**Product Group Drawing:**

1355037 for tab 9.5 x 1.2  
(ISO 8092 standard)  
1241994 for tab 9.5 x 0.8

**Product Specification:**

108-18630

**Application Specification:**

114-18269

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish * | Part Numbers |                  |             |                  |              |   |
|------------------------------------|--------------------------|-----|-----------------------|--------------|------------------|-------------|------------------|--------------|---|
|                                    | FLK                      | FLR |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool 539783-1 with Die Set         |
| 3.0–6.0                            | 4.0–5.2                  | –   | 1-xxx-1               | 1718386**    | 600              | 1719385     | 500              | –            | –                                       |
| 6.0–10.0                           | 4.6–6.6                  | –   | 1-xxx-1               | 967588       | 600              | 929150      | 500              | 2-541664-2   | 539783-5 for 6 mm<br>539783-6 for 10 mm |
|                                    |                          |     | 1-xxx-1               | 1241930**    | 500              | 1241938     | 500              | 2-541664-2   | 539783-5 for 6 mm<br>539783-6 for 10 mm |
| >10.0–16.0                         | 7.1–8.1                  | –   | 1-xxx-1 / 1-xxx-2     | 967589       | 500              | 929151      | 500              | x-541471-x   | 539783-7                                |

**\*) Material and Finish:**

1-xxx-1 = CuNiSi, pre-tin plated  
1-xxx-2 = CuNiSi, selective silver plated

**\*\*) For Tab 9.5 x 0.8 mm**

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

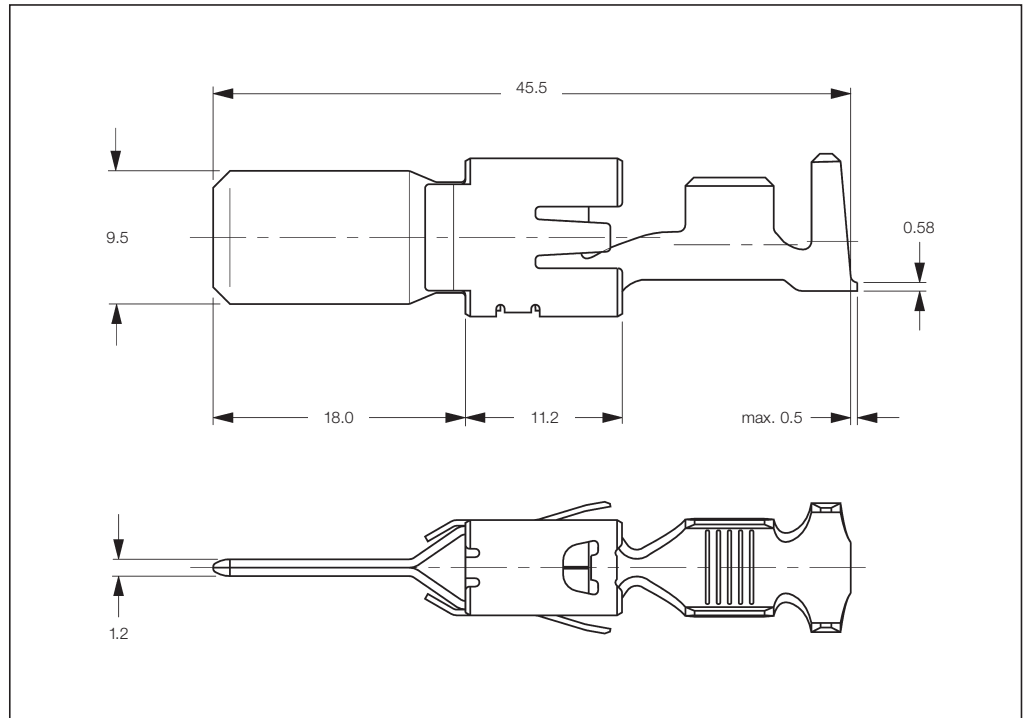
**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish    | Part Numbers |                  |             |                  |              |   |
|------------------------------------|--------------------------|-----|------------------------|--------------|------------------|-------------|------------------|--------------|---|
|                                    | FLK                      | FLR |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool 539783-1 with Die Set         |
| 6.0–10.0                           | 4.6–6.6                  | –   | CuNiSi, pre-tin plated | 1-967590-1   | 500              | 1-929152-1  | 500              | 2-541665-2   | 539783-8 for 6 mm<br>539783-9 for 10 mm |
| >10.0–16.0                         | 7.1–8.1                  | –   | CuNiSi, pre-tin plated | 1-967591-1   | 500              | 1-929153-1  | 500              | 9-541710-2   | 1-539783-0                              |

Tab Contacts

**Tabs 9.5 x 1.2 mm  
with Steel Top Spring,  
Mates with AMP MCP 9.5  
Contact System**

Extraction Tool:  
Part No. 1-1579007-7



**Standard Tab Contacts (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |            |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |            |           |
| 2.5-4.0                            | 3.3-4.7                  | -   | -1 / -2              | 963764       | 700              | 963765      | 500              | 2-878793-2 | 734532-1  |
| 4.0-6.0                            | 4.0-5.2                  | -   | -1 / -2              | 963766       | 700              | 963767      | 500              |            |           |
| 6.0-10.0                           | 4.7-6.6                  | -   | -1 / -2 / -3         | 963768       | 700              | 963769      | 500              | 2-878732-2 | 734533-1  |

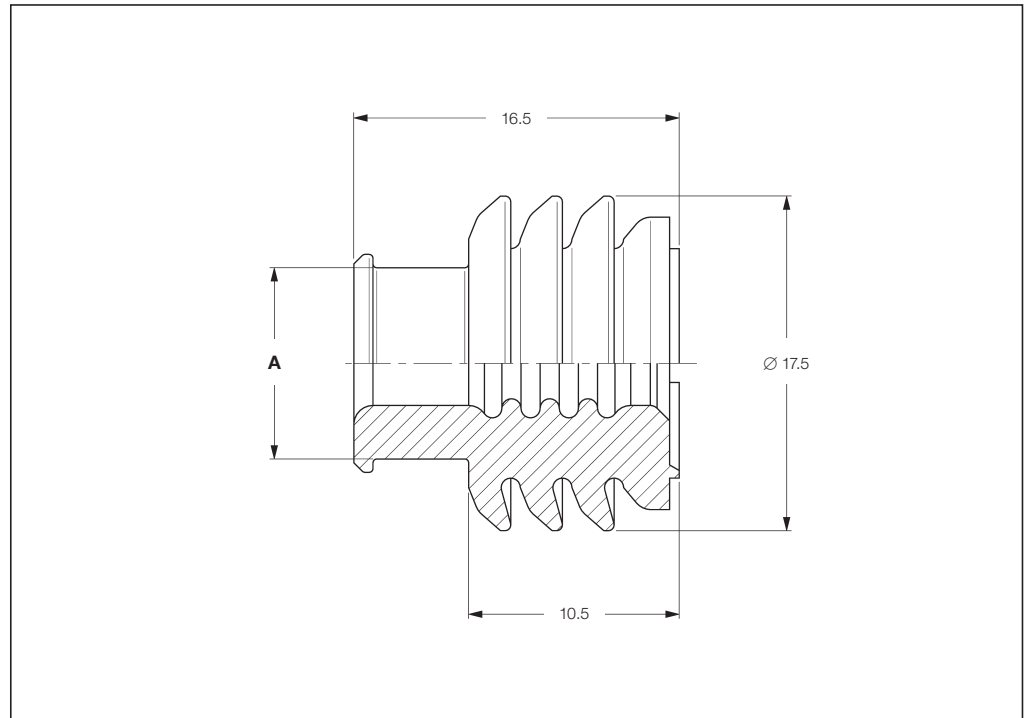
**Tab Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |     | Material and Finish* | Part Numbers |                  |             |                  |            |           |
|------------------------------------|--------------------------|-----|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                                    | FLK                      | FLR |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool |
|                                    |                          |     |                      |              |                  |             |                  |            |           |
| 2.5-4.0                            | 4.0-4.5                  | -   | -1 / -2              | 963770       | 550              | 963771      | 500              | 2-878734-2 | -         |
| 4.0-6.0                            | 4.7-5.3                  | -   | -1 / -2              | 963772       | 550              | 963773      | 500              |            |           |
| 6.0-10.0                           | 6.2-6.6                  | -   | -1 / -2              | 963774       | 550              | 963775      | 500              | 2-878735-2 | -         |

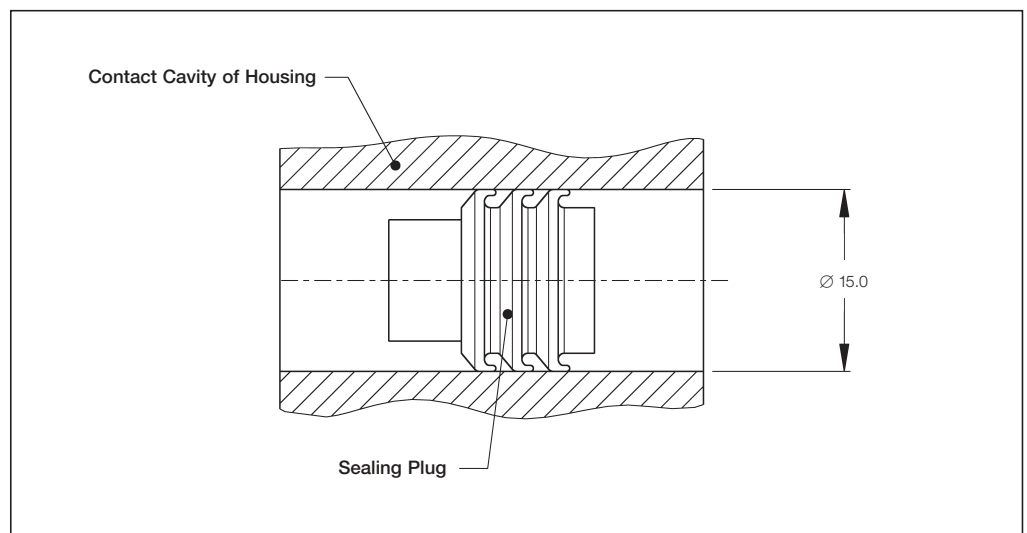
**\*) Material and Finish:**  
 -1 = CuSn, pre-tin plated  
 -2 = CuFe, pre-tin plated  
 -3 = CuSn0.15, pre-tin plated

Single Wire Seals and Sealing Plugs

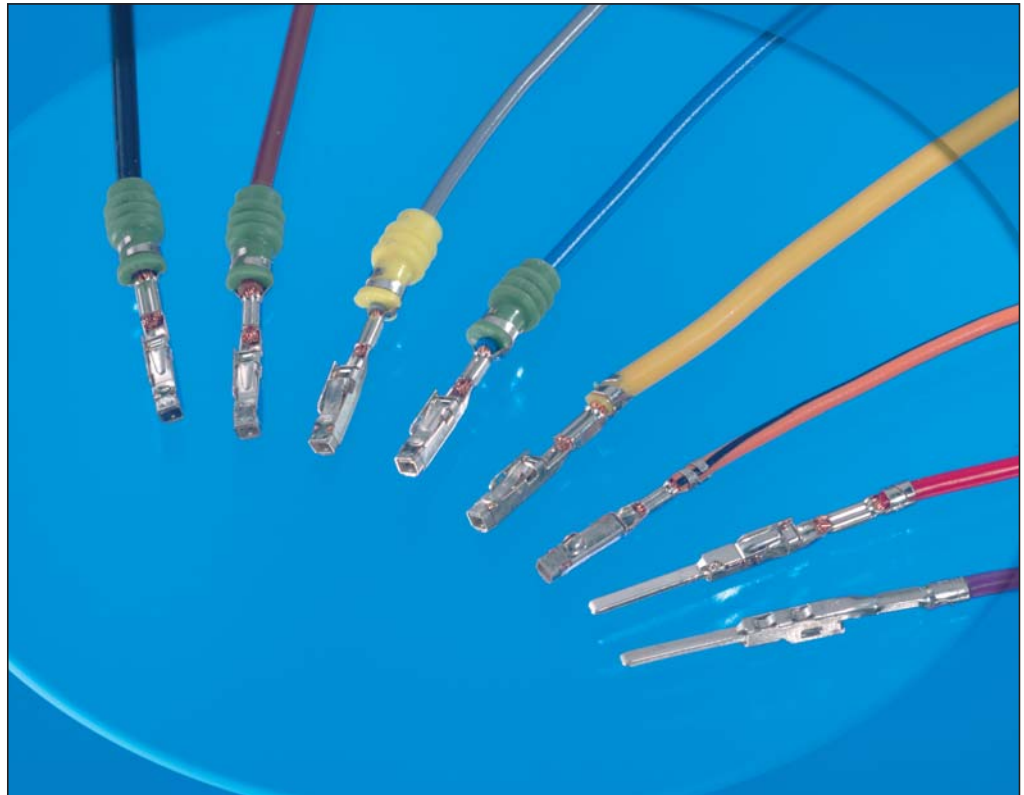
**Single Wire Seals and Sealing Plugs for AMP MCP 9.5 Contact System**



| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Color  | Part Number | Package Quantity | Dimension A (mm) |
|------------------------------------|--------------------------|--------|-------------|------------------|------------------|
| 6.0                                | 4.6-5.2                  | Violet | 1355437-1   | 4,000            | 10.0             |
| 10.0                               | 5.8-6.6                  | Blue   | 1355437-2   | 4,000            | 10.0             |
| 16.0                               | 7.1-8.1                  | Red    | 1355437-3   | 4,000            | 10.8             |
| -                                  | Sealing Plug             | -      | -           | -                | -                |



Introduction



The MCON New Generation Contact System is mainly used in the automotive industry. Each contact consists of a flat receptacle, which mates with a flat tab. Base material of contact spring and body is copper alloy.

The two-piece contact design means that the electrical and mechanical properties are separated. One end of the contact body is crimped to wire and the other end mates with the matching tab.

- Protection of the contact springs
- No over elongation of the contact springs possible under normal circumstances
- No possibility to connect from the rear side
- Protection against mechanical damage
- Good guiding in the cavity
- Secondary locking possible (from 3 directions)
- Assembly into housing fully-automatically

**The Main Advantages of the MCON System are:**

- Base material with high current capacity
- 8 or more defined contact points for increased reliability
- Improved vibration resistance
- Good guiding inside the cavity
- Protected contact spring due to the closed box
- Overstress protection of the contact springs
- Box with secondary locking feature
- Protected locking lance

Tabs and receptacles can be applied in both sealed and unsealed connectors.

MCON contacts can be fast and economically arranged to the lead using Tyco Electronics application tooling.

Receptacle Contacts – Locking Lance (LL)

**Technical Features**

**Contact Material:**

CuSn0.15/0.2;  
Insert Spring: CuNiSi

**Contact Finish:**

Tin-silver plated, selective silver plated, selective gold plated

**Wire Size Range:**

0.14–0.22 mm<sup>2</sup>,  
0.25–0.35 mm<sup>2</sup>,  
0.50–0.75 mm<sup>2</sup>,  
1.00–1.50 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 20 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +140 °C (tin-silver plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

**Contact Resistance:**

New State ≤ 2 mΩ

**Mating Cycles:**●

up to 20 cycles (tin-silver plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

**Dimension of Male Contacts:**

(1.2 ±0.1 x 0.6 ±0.03 mm)

**Extraction Tool:**

Part No. **5-1579007-3**

**Mating Force:**

Max. 5 N

**Unmating Force:**

Max. 2.5 N

**Product Group Drawing:**

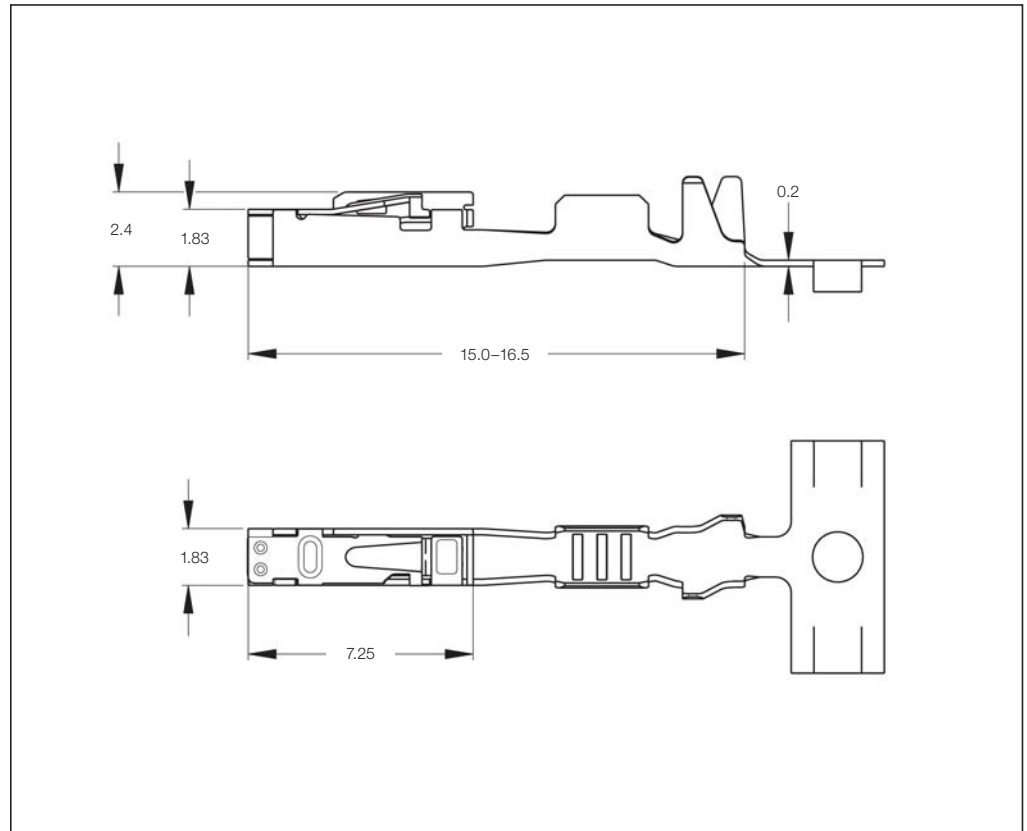
1452674

**Product Specification:**

108-18782

**Application Specification:**

114-18464



**Modular Dimensions (Centerline):**

|                           |              |   |
|---------------------------|--------------|---|
| max. 0.75 mm <sup>2</sup> | 2.5 x 2.5 mm |   |
| max. 1.0 mm <sup>2</sup>  | 2.5 x 3.0 mm | sealed 4.0 x 4.0 mm;<br>sealed staggered 3.5 x 4.0 mm,<br>cavity 3.55 mm diameter |
| max. 1.5 mm <sup>2</sup>  | 2.5 x 3.5 mm | sealed 4.5 x 4.5 mm;  |
|                           | 3.0 x 3.5 mm | sealed staggered 4.0 x 4.5 mm,<br>cavity 3.95 mm diameter                         |

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

Receptacle Contacts – Locking Lance (LL) (continued)

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
|                                    |                          |           |                      |              |                  |             |                  |             |                                 |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1452650      | 10,000           | 1452651     | 500              | x-1528155-x | 4-1579001-4                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1452653      | 10,000           | 1452654     | 500              | x-1528156-x | 4-1579001-3                     |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1452656      | 8,000            | 1452657     | 500              | x-1528157-x | 4-1579001-2                     |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1452659      | 8,000            | 1452660     | 500              | x-1528159-x | 4-1579001-1                     |

**Receptacle Contacts with Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
|                                    |                          |           |                      |              |                  |             |                  |             |                                 |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1452662      | 6,500            | 1452663     | 500              | x-1528160-x | 4-1579001-8                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1452665      | 6,500            | 1452666     | 500              | x-1528161-x | 4-1579001-7                     |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1452668      | 6,500            | 1452669     | 500              | x-1528162-x | 4-1579001-6                     |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1452671      | 6,500            | 1452672     | 500              | x-1528163-x | 4-1579001-5                     |

**\*) Material and Finish:**

xxx-1 = CuNiSi, pre-tin/silver plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated

**Note:** All part numbers are RoHS and ELV compliant.

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

**Receptacle Contacts with Short Circuit Area**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
|                                    |                          |         |                      |              |                  |             |                  |             |                                 |
| 0.5                                | –                        | 1.4–1.7 | -1                   | 1563888      | 8,000            | 1563889     | 500              | x-1528944-x | 1-1579001-0                     |

**\*) Material and Finish:**

xxx-1 = CuNiSi, selective gold plated

**Note:** All part numbers are RoHS and ELV compliant.

\*) The pre- and suffix for the applicators depends on the applied termination equipment.



Receptacle Contacts – Clean Body (CB)

**Technical Features**

**Contact Material:**  
CuSn0.15/0.2; Insert Spring: CuNiSi

**Contact Finish:**  
Tin-silver plated, selective silver plated, selective gold plated

**Wire Size Range:**  
0.14–0.22 mm<sup>2</sup>, 0.25–0.35 mm<sup>2</sup>, 0.50–0.75 mm<sup>2</sup>, 1.00–1.50 mm<sup>2</sup>

**Current Carrying Capacity:**  
up to 20 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**  
–40 °C ... +140 °C (tin-silver plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

**Contact Resistance:**  
New State ≤ 2 mΩ

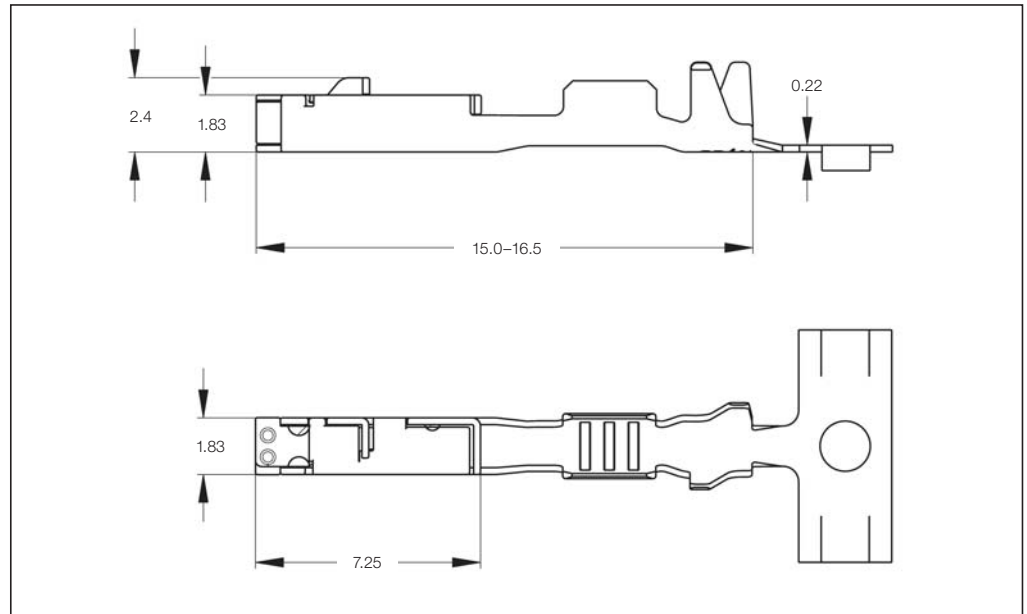
**Mating Cycles:** ●  
up to 20 cycles (tin-silver plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

**Dimension of Male Contacts:**  
(1.2 ±0.1 x 0.6 ±0.03 mm)

**Extraction Tool (For Example):**  
Part No. **1579007-8**

**Mating Force:** Max. 5 N

**Unmating Force:** Max. 2.5 N



**Modular Dimensions (Centerline):**

|                           |              |                                |
|---------------------------|--------------|--------------------------------|
| max. 0.75 mm <sup>2</sup> | 2.5 x 2.5 mm | sealed 4.0 x 4.0 mm;           |
| max. 1.0 mm <sup>2</sup>  | 2.5 x 3.0 mm | sealed staggered 3.5 x 4.0 mm, |
|                           |              | cavity 3.55 mm diameter        |
|                           |              | sealed 4.5 x 4.5 mm;           |
|                           |              | sealed staggered 4.0 x 4.5 mm, |
|                           |              | cavity 3.95 mm diameter        |

**Product Group Drawing:**  
1534326

**Product Specification:**  
108-18782

**Application Specification:**  
114-18464

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Standard Receptacle Contacts (SRC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1452500      | 10,000           | 1452501     | 500              | x-1528146-x | 3-1579001-6                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1534594      | 10,000           | 1534595     | 500              | x-1528147-x | 1579001-6                       |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1670144#     | 8,000            | 1670145#    | 500              | x-1528673-x | 2-1579016-1                     |
|                                    |                          |           |                      | 1394897      | 8,000            | 1534063     | 500              | x-1528148-x | 1579001-5                       |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1452503      | 8,000            | 1452504     | 500              | x-1528150-x | 1-1579001-3                     |

**Receptacle Contacts with Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1418841      | 6,500            | 1418842     | 500              | x-1528151-x | 4-1579001-0                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1418844      | 6,500            | 1418845     | 500              | x-1528152-x | 3-1579001-9                     |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1670146#     | 6,500            | 1670147#    | 500              | x-1528674-x | 2-1579016-2                     |
|                                    |                          |           |                      | 1418847      | 6,500            | 1418848     | 500              | x-1528153-x | 3-1579001-8                     |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1418850      | 6,500            | 1418851     | 500              | x-1528154-x | 3-1579001-7                     |

**\*) Material and Finish:**  
xxx-1 = CuNiSi, pre-tin/silver plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

**#) CAUTION: Future Strip Form Orders will be replaced.**  
Because of change of the wire crimp at the new Part No. 1670144 and Part No. 1670146 they will be processed with new crimp heights. See latest Application Specification 114-18464.

**Tab Contacts – Locking Lance (LL)**

**Technical Features**

**Contact Material:**  
CuNiSi;  
Insert Tab: CuSn0.15/0.2

**Contact Finish:**  
Tin-silver plated,  
selective silver plated,  
selective gold plated

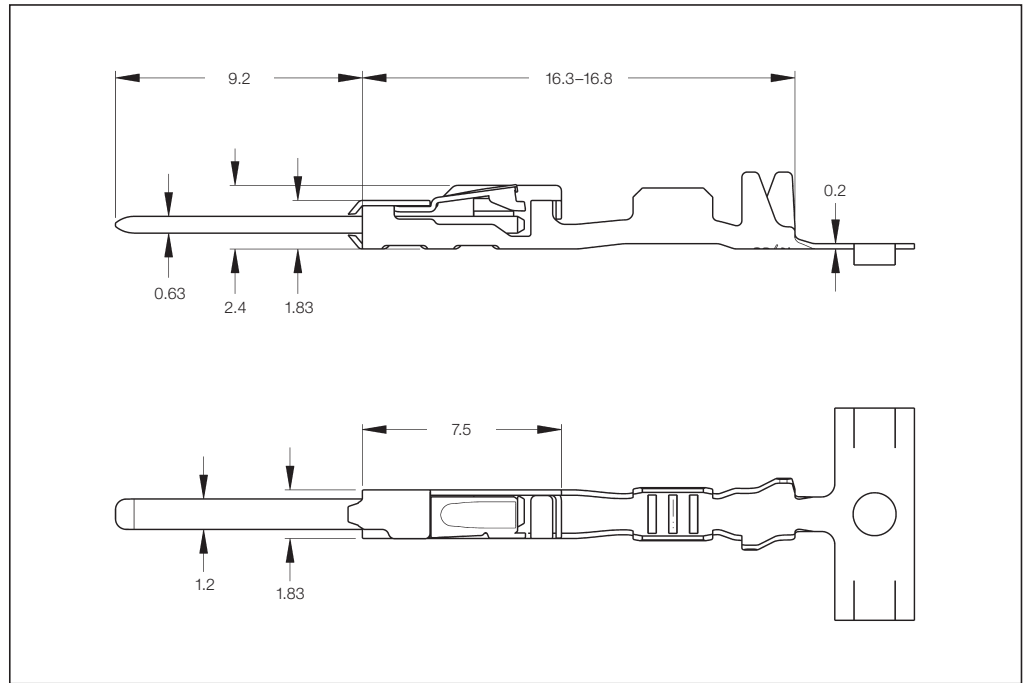
**Wire Size Range:**  
0.14–0.22 mm<sup>2</sup>,  
0.25–0.35 mm<sup>2</sup>,  
0.50–0.75 mm<sup>2</sup>,  
1.00–1.50 mm<sup>2</sup>

**Extraction Tool:**  
Part No. **5-1579007-3**

**Product Group Drawing:**  
1418754

**Product Specification:**  
108-18782

**Application Specification:**  
114-18464



**Modular Dimensions (Centerline):**

|                           |              |                                |
|---------------------------|--------------|--------------------------------|
| max. 0.75 mm <sup>2</sup> | 2.5 x 2.5 mm | sealed 4.0 x 4.0 mm;           |
| max. 1.0 mm <sup>2</sup>  | 2.5 x 3.0 mm | sealed staggered 3.5 x 4.0 mm, |
|                           |              | cavity 3.55 mm diameter        |
| max. 1.5 mm <sup>2</sup>  | 2.5 x 3.5 mm | sealed 4.5 x 4.5 mm;           |
|                           | 3.0 x 3.5 mm | sealed staggered 4.0 x 4.5 mm, |
|                           |              | cavity 3.95 mm diameter        |

**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1418756      | 9,000            | 1418757     | 500              | x-1528427-x | 4-1579001-4                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1418758      | 9,000            | 1418759     | 500              | x-1528428-x | 4-1579001-3                     |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1418760      | 8,000            | 1418761     | 500              | x-1528506-x | 4-1579001-2                     |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1418762      | 7,000            | 1418763     | 500              | x-1528507-x | 4-1579001-1                     |

**Tab Contacts with Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.14–0.22                          | –                        | 1.05–1.20 | -1 / -2 / -3         | 1718756      | 6,500            | 1718757     | 500              | x-1528508-x | 4-1579001-8                     |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1718758      | 6,500            | 1718759     | 500              | x-1528509-x | 4-1579001-7                     |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1718760      | 6,000            | 1718761     | 500              | x-1528510-x | 4-1579001-6                     |
| 1.0–1.5                            | –                        | 1.9–2.4   | -1 / -2 / -3         | 1718762      | 6,000            | 1718763     | 500              | x-1528511-x | 4-1579001-5                     |

\*) **Material and Finish:**  
xxx-1 = CuNiSi, pre-tin  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated

**Note:** All part numbers are RoHS and ELV compliant.

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Tab Contacts – Clean Body (CB)

**Technical Features**

**Contact Material:**

CuSn0.15/0.2;  
Insert Tab: CuSn0.15/0.2

**Contact Finish:**

Tin-silver plated,  
selective silver plated,  
selective gold plated

**Wire Size Range:**

0.25–0.35 mm<sup>2</sup>,  
0.50–0.75 mm<sup>2</sup>

**Modular Dimensions  
(Centerline):**

|                           |              |
|---------------------------|--------------|
| max. 0.75 mm <sup>2</sup> | 2.5 x 2.5 mm |
| max. 1.0 mm <sup>2</sup>  | 2.5 x 3.0 mm |
| max. 1.5 mm <sup>2</sup>  | 2.5 x 3.5 mm |
|                           | 3.0 x 3.5 mm |

**Product Group Drawing:**

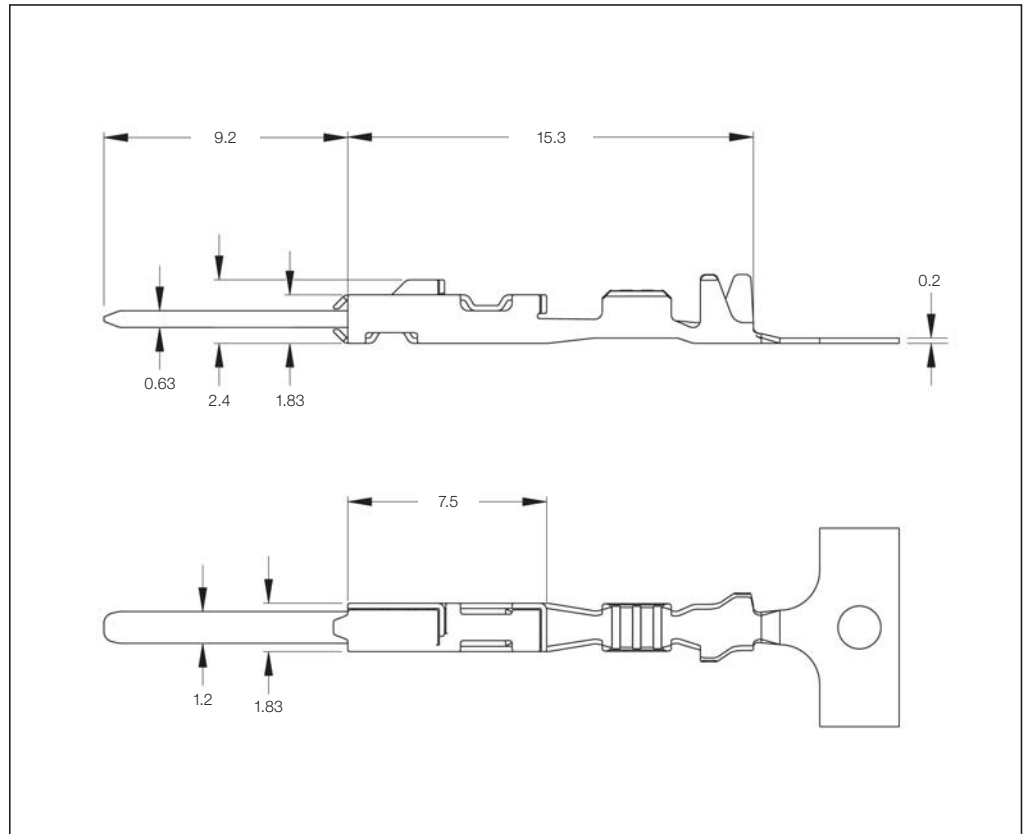
1718398

**Product Specification:**

108-18782

**Application Specification:**

114-18464



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |             |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|---------------------------------|-------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator* |
| 0.25–0.35                          | –                        | 1.10–1.75 | -1 / -2 / -3         | 1718348      | 9,000            | 1703698     | 500              | x-1528156-x                     | 4-1579001-3 |
| 0.50–0.75                          | –                        | 1.4–1.9   | -1 / -2 / -3         | 1718350      | 8,000            | 1718390     | 500              | x-1528157-x                     | 4-1579001-2 |

**\*) Material and Finish:**

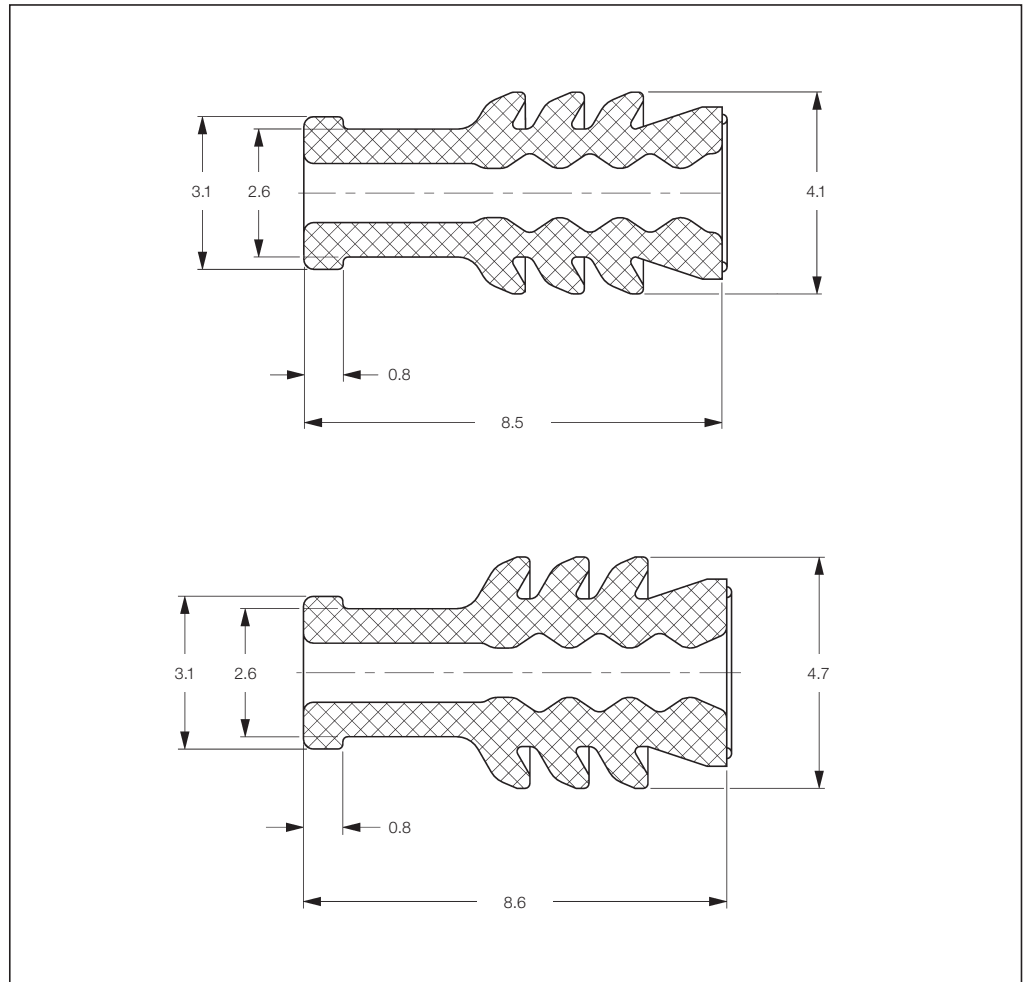
xxx-1 = CuNiSi, pre-tin  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated

**Note:** All part numbers are RoHS and ELV compliant.

**\*)** The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for MCON Contact System (Cavity Diameter 3.55 mm and 3.95 mm)**



**Cavity Diameter 3.55 mm**

| Insulation Diameter |          | Color  | Part Number | Package Quantity |
|---------------------|----------|--------|-------------|------------------|
| FLK (mm)            | FLR (mm) |        |             |                  |
| -                   | 0.9-1.4  | Yellow | 967067-2    | 20,000           |
| -                   | 1.4-2.1  | Green  | 967067-1    | 20,000           |
| Sealing Plug        |          | Blue   | 967056-1    | 5,000            |

**Cavity Diameter 3.95 mm**

| Insulation Diameter |          | Color | Part Number | Package Quantity |
|---------------------|----------|-------|-------------|------------------|
| FLK (mm)            | FLR (mm) |       |             |                  |
| -                   | 0.9-1.9  | Grey  | 963142-2    | 20,000           |
| -                   | 1.9-2.4  | Green | 967067-1    | 20,000           |
| Sealing Plug        |          | White | 963143-1    | 20,000           |

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**Engineering Notes**

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Receptacle Contacts

**Technical Features**

**Contact Material:**  
CuSn 0.15/0.2;  
Insertion Spring: CuNiSi

**Contact Finish:**  
Tin-silver plated,  
selective silver plated

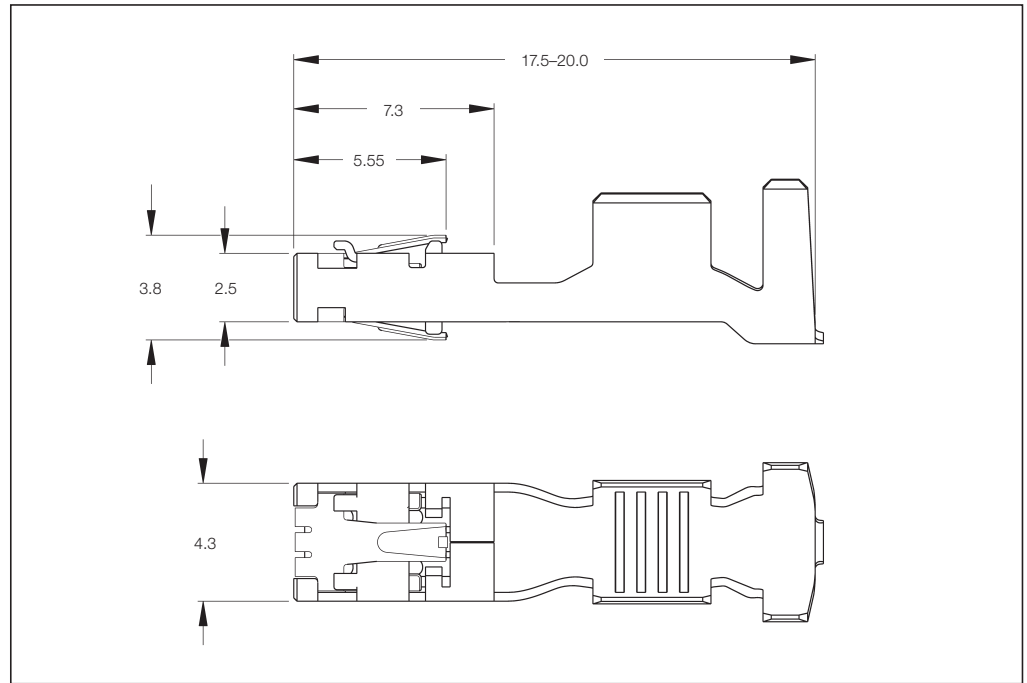
**Wire Size Range:**  
0.20–0.35 mm<sup>2</sup>,  
0.50 mm<sup>2</sup>,  
0.75–1.00 mm<sup>2</sup>,  
>1.0–2.5 mm<sup>2</sup>  
>2.5–4.0 mm<sup>2</sup>

**Extraction Tool:**  
Part No. **5-1579008-2**

**Product Group Drawing:**  
1719797

**Product Specification:**  
108-94002

**Application Specification:**  
114-18718



**Modular Dimensions (Centerline):**

|                          |                        |                               |
|--------------------------|------------------------|-------------------------------|
| max. 2.5 mm <sup>2</sup> | 5.0 x 5.5 mm           | sealed 5.5 x 5.5 mm           |
|                          | staggered 4.5 x 5.5 mm | sealed staggered 5.0 x 5.5 mm |
|                          |                        | cavity diameter 4.9 mm        |
| max. 4.0 mm <sup>2</sup> | 5.5 x 5.5 mm           | sealed 7.2 x 7.2 mm           |
|                          | staggered 5.0 x 5.5 mm | sealed staggered 6.0 x 7.2 mm |
|                          |                        | cavity diameter 6.4 mm        |

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool with Die Set |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                        |
| 0.20–0.35                          | –                        | 1.15–1.40 | -1 / -3              | 1719836      | 2,500            | 1719837     | 500              | x-1528691-x | 9-1579004-6            |
| 0.50                               | –                        | 1.4–1.6   | -1 / -3              | 1563719      | 2,500            | 1563720     | 500              | x-1528899-x | 9-1579004-7            |
| 0.75–1.00                          | –                        | 1.7–2.1   | -1 / -3              | 1719838      | 2,500            | 1719839     | 500              | x-1528632-x | 9-1579004-8            |
| >1.0–2.5                           | –                        | 2.2–3.0   | -1 / -3              | 1719840      | 2,500            | 1719841     | 500              | x-1528633-x | 9-1579004-8            |
| >2.5–4.0                           | –                        | 3.4–3.7   | -1 / -3              | 1718475      | 2,500            | 1718477     | 500              | x-1528585-x | 9-1579004-9            |

**Receptacle Contacts with Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  | Applicator* | Hand Tool with Die Set |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                        |
| 0.50                               | –                        | 1.4–1.6 | -1 / -3              | 1563935      | 2,500            | 1563936     | 500              | –           | –                      |
| 0.75–1.00                          | –                        | 1.7–2.1 | -1 / -3              | 1670802      | 2,500            | 1670803     | 500              | x-1528773-x | 6-1579014-1            |
| >1.0–2.5                           | –                        | 2.2–3.0 | -1 / -3              | 1670804      | 2,500            | 1670805     | 500              | x-1528774-x | 6-1579014-2            |
| >2.5–4.0                           | –                        | 3.4–3.7 | -1 / -3              | 1670806      | 2,500            | 1670807     | 500              | x-1528775-x | 6-1579014-3            |

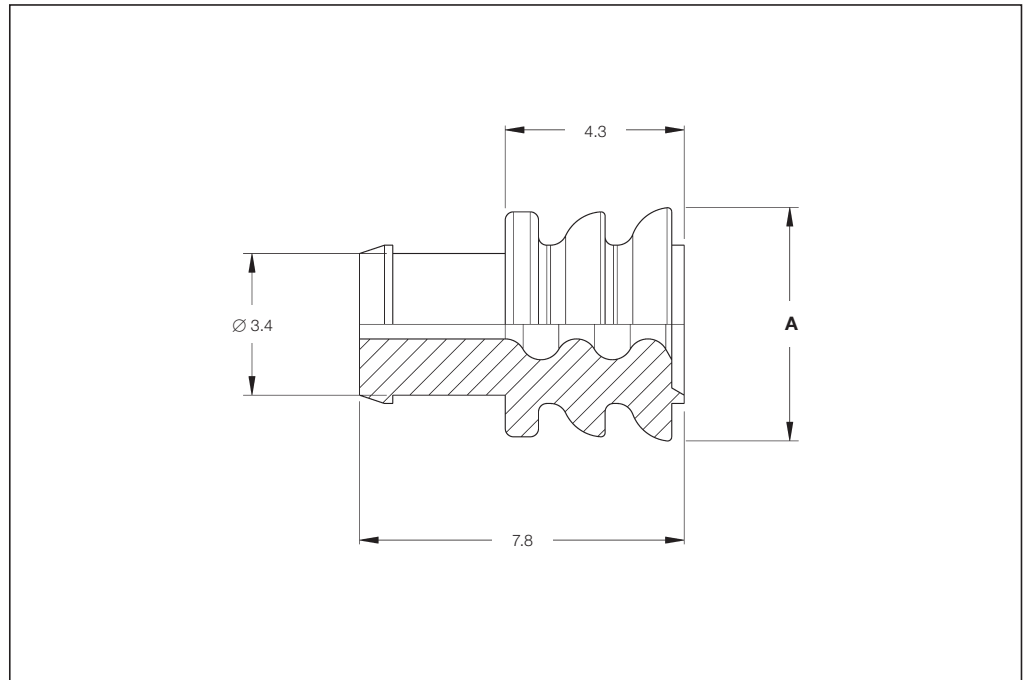
\*) **Material and Finish:**  
xxx-1 = CuNiSi, pre-tin/silver plated  
xxx-3 = CuNiSi, selective silver plated

**Note:** All part numbers are RoHS and ELV compliant.

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for MCON Contact System (Cavity Diameter 4.9 mm and 6.4 mm)**



**Cavity Diameter 4.9 mm**

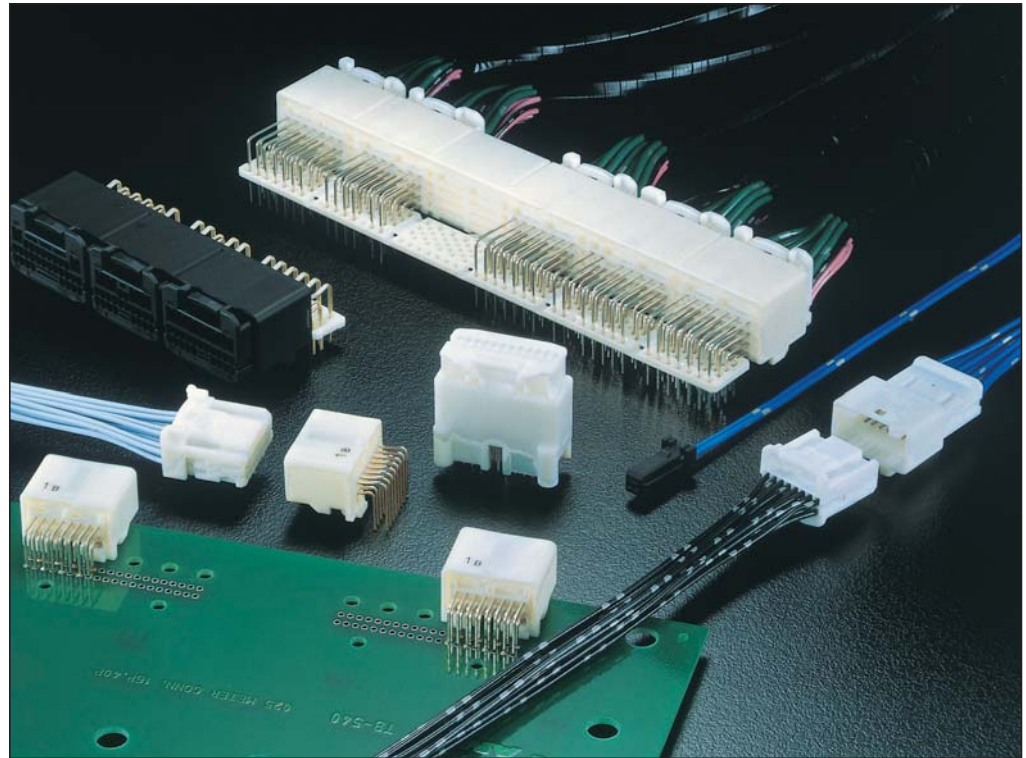
| Wire Size Range (mm) | Insulation Diameter (mm) | Color   | Diameter A (mm) | Part Number | Package Quantity |
|----------------------|--------------------------|---------|-----------------|-------------|------------------|
| 0.75-1.00            | 1.4-2.1                  | Blue    | 5.6             | 828904-1    | 1,000            |
|                      |                          |         |                 | 828904-2    | 10,000           |
| >1.5-2.5             | 2.2-3.0                  | White   | 5.6             | 828905-1    | 10,000           |
|                      | Sealing Plug             | Natural | 5.6             | 828922-1    | 10,000           |

**Cavity Diameter 6.4 mm**

| Wire Size Range (mm) | Insulation Diameter (mm) | Color | Diameter A (mm) | Part Number | Package Quantity |
|----------------------|--------------------------|-------|-----------------|-------------|------------------|
| >2.5-4.0             | 3.4-3.7                  | Green | 7.2             | 828985-1    | 5,000            |
|                      | Sealing Plug             | Brown | 7.2             | 828986-1    | 5,000            |



Introduction



Highlights

- Automotive connector series: 30% smaller size than the existing .040 III connectors and designed to resist fretting corrosion.

Product Features

- .025 Connectors with a full range of product lines.
- .025 Connectors were designed to provide better connections and performance while securing higher density in limited spaces as required in advanced electronic automotive control systems.
- .025 Connectors feature a pitch of just 2.2 mm, compared to the current standard pitch of 2.5 mm. This small pitch can help customers reduce space and weight.
- Another feature is a unique contact design to resist fretting corrosion effectively while employing a lower contact force. As a result, the low insertion force of .025 Connectors allows a lower connector mating force while offering high density for easy handling.
- .025 Connectors are available in a full range from 2 to 200 positions, assuring customers a wide choice of products.

Advantages

- Contact Pitch: 2.2 mm
- No. of Positions: 2 to 200
- Connector Mating Force: Max. 70 N
- To meet smaller space requirements
- Combination of .025/.040 and .025/.090 available

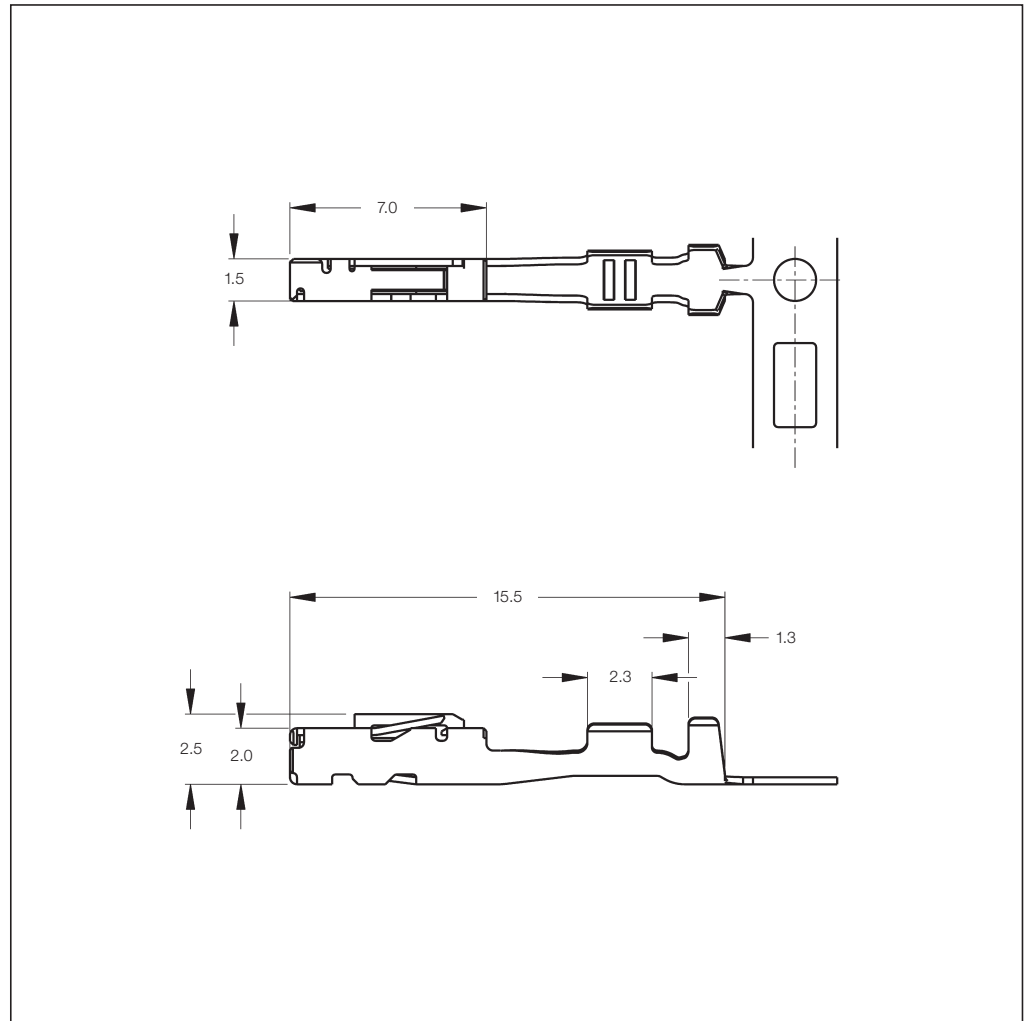
Applications

- Wire-to-Wire and Wire-to-Board/ECU Applications

Receptacle Contacts

**Technical Features**

- Temperature Range:**  
-30 °C up to +105 °C
- Dielectric Strength:**  
1000 V AC / 1 min.
- Insulation Resistance:**  
>100 MΩ
- Contact Material**
- Receptacle:**  
Copper-Alloy
- Tab:**  
Brass
- Plating:**  
Pre-tinned and selective gold
- Connector Mating Force:**  
Max. 70 N
- Contact Retention Force:**  
Min. 100 N (Secondary Lock)
- Extraction Tool:**  
Part No. **1276565-1**
- Instruction Sheet:**  
411-5966-1
- Product Specifications:**  
108-5664 (.025 Conn. 1 Row)  
108-5668 (.025 Conn. 2 Row)  
108-5674 (.025/.040 Conn.)  
108-5677 (.025/.090 Conn.)
- Application Specification:**  
114-5250 (Receptacle Contact)



**Receptacle Contacts**

| Wire Size Range      | Insulation Diameter      | Material and Finish*                | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|----------------------|--------------------------|-------------------------------------|--------------|------------------|-------------|------------------|------------|------------------------|
|                      |                          |                                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.22-0.50<br>(24-20) | 0.95-1.70<br>(.037-.067) | Copper alloy, pre-tin plated        | 1123343-1    | -                | 1318143-1   | -                | 937762     | 1463260-1              |
|                      |                          | Copper alloy, selective gold plated | 1123343-2    | -                | 1318143-2   | -                |            |                        |

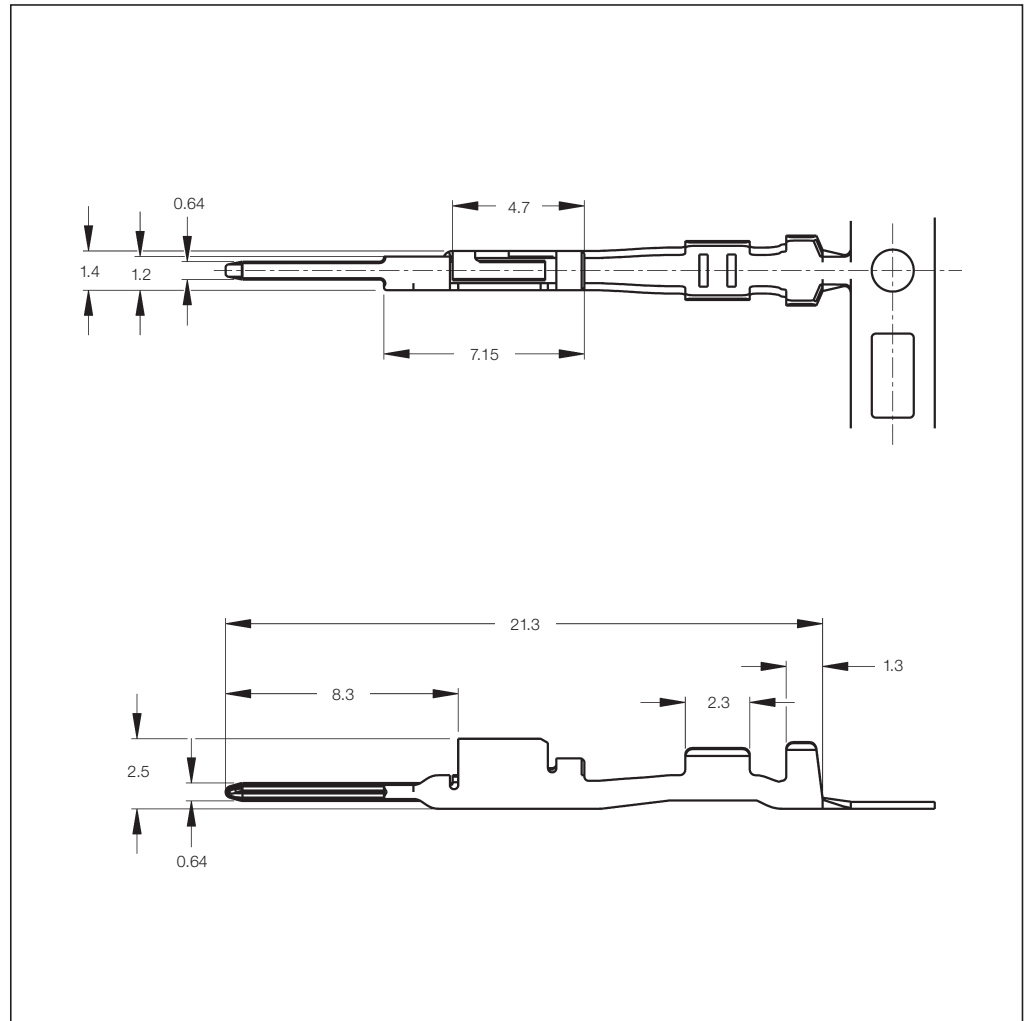
Tab Contacts

**Tab 0.64 x 0.64 mm,  
Mates with .025 (0.64 mm)  
Receptacle Contact**

**Extraction Tool:**  
Part No. **1366865-1**  
**Instruction Sheet:**  
411-5966-1

**Product Specifications:**  
108-5664 (.025 Conn. 1 Row)  
108-5668 (.025 Conn. 2 Row)  
108-5674 (.025/.040 Conn.)  
108-5677 (.025/.090 Conn.)

**Application Specification:**  
114-5291 (Tab Contact)



**Tab Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>mm<br>(Inch) | Material and Finish*                   | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|---|-------------------------------------|--|--------------|------------------|-------------|------------------|------------|------------------------|
|   |                                     |  | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.3-0.5<br>(22-20)                          | 1.1-1.7<br>(.043-.067)              | Copper alloy,<br>pre-tin plated        | 1376109-1    | -                | 1376607-1   | -                | 1366787-2  | 1463260-1              |
|   |                                     | Copper alloy,<br>selective gold plated | 1376109-2    | -                | 1376607-2   | -                |            |                        |

Engineering Notes

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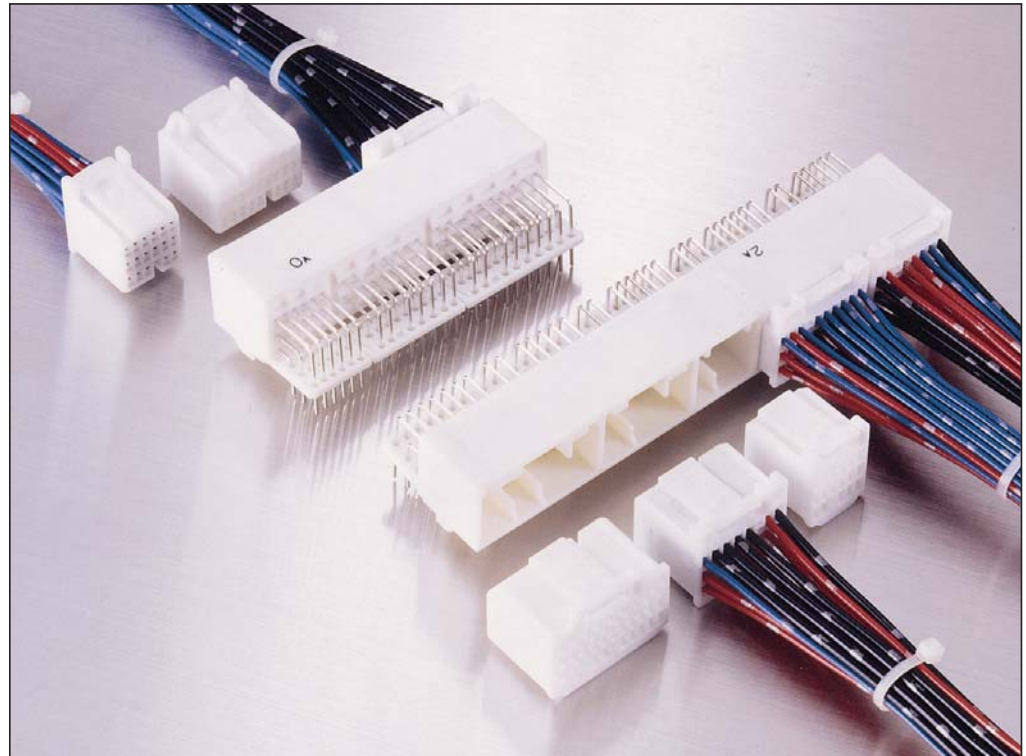


Introduction

**.040 Mark II and Mark III Receptacle Contacts**

.040 MULTILOCK Connector Series

Both .040 Mark II and Mark III receptacle contacts are designed to improve Kojiri protection and to provide better secondary locking design with side lock from hinge type (Original .040 receptacle contacts).



**Product Features**

- .040 Mark II and Mark III receptacle contacts are designed to improve the original .040 receptacle ones in along with their connector housings design improvements in MULTILOCK connectors.
- Better Kojiri Protection Design.
- Pre-tinned and selective gold plating available.
- To provide a higher contact retention force with side lock design for secondary locking.
- Base material of .040 Mark III receptacle contacts is employed with a higher heat resistance to improve anti-creep characteristics.
- .040 Mark III receptacle contacts have its unique contact design inside to avoid its contact points by stabbing of tab contacts.
- .040 Mark II and Mark III can be compatible with their connector series.

**Advantages**

- Contact Pitch: 2.5 mm
- Lower Contact Insertion Force: 4 N Max. (Gold), 6 N Max. (Tin)
- Better Kojiri Protection
- Higher Secondary Locking Force applied

**Applications**

Wire-to-Board/ECU Applications

**Application for .040 Contacts**

- .040 Mark II Connectors
- .040 Mark II/.070 Mark II Hybrid (108-5452)
- .040 Mark III I/O Connectors (108-5529)

**Remarks:**

Key design feature of contacts

**.040 Mark II:**

- Better Kojiri Protection
- Secondary Locking (side lock) is applied with a higher contact retention force

**.040 Mark III:**

- Better Kojiri Protection
- Secondary Locking (side lock) is applied with a higher contact retention force
- Base material of the contact provides higher heat resistance with anti-creep characteristics

Receptacle Contacts – Mark II

**Technical Features**

**Temperature Range:**  
-40 °C up to +120 °C

**Dielectric Strength:**  
1000 V AC / 1 min.

**Insulation Resistance:**  
>100 MΩ Min.

**Contact Material:**  
Copper-Alloy

**Contact Plating:**  
Pre-tinned and selective gold

**Lance:**  
Housing lance applied

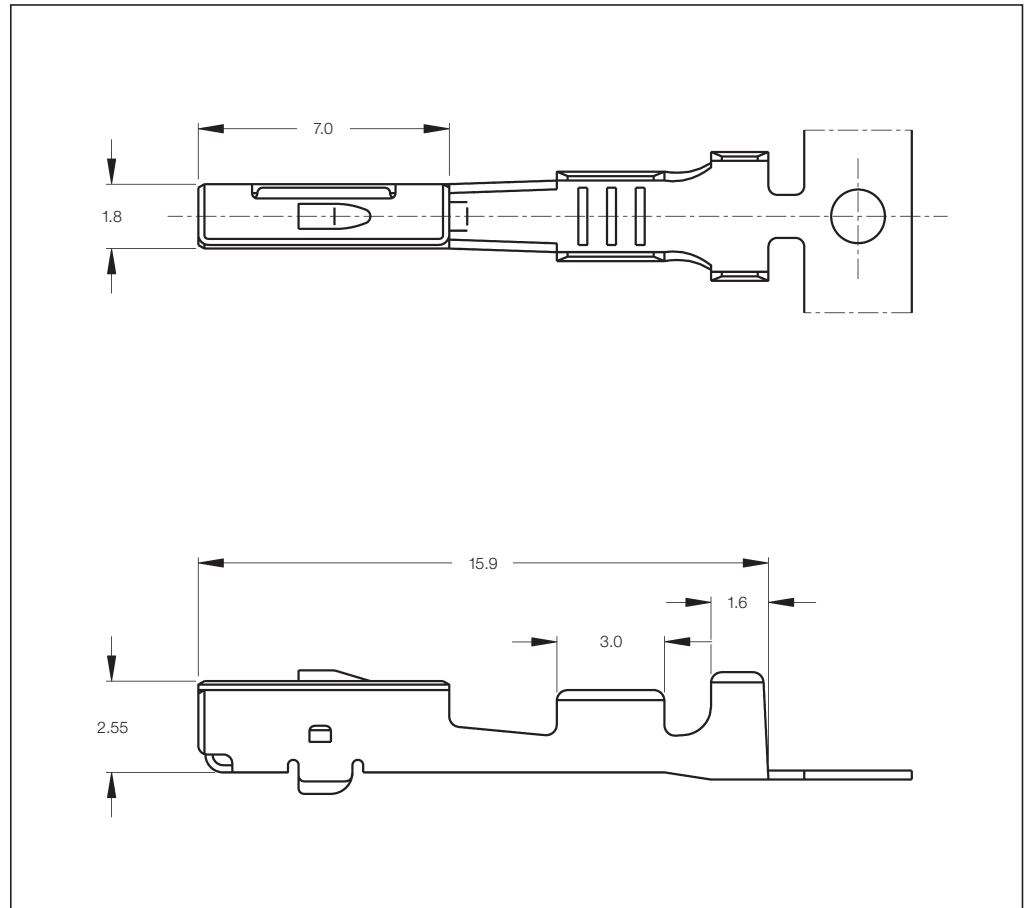
**Contact Mating Force:**  
6 N Max. (Tin)  
4 N Max. (Gold)

**Extraction Tool:**  
Part No. **715131-1**

**Instruction Sheet:**  
411-5761

**Product Specification:**  
108-5452 (Mark II)

**Application Specification:**  
114-5159 (Mark II)



**.040 Mark II Receptacle Contacts**

| Wire Size Range      | Insulation Diameter    | Material and Finish *               | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|----------------------|------------------------|-------------------------------------|--------------|------------------|-------------|------------------|------------|------------------------|
|                      |                        |                                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.30-0.85<br>(22-18) | 1.1-1.8<br>(.043-.071) | Copper alloy, pre-tin plated        | 175265-1     | -                | 179417-1    | -                | 915767-2   | 934192-1               |
|                      |                        | Copper alloy, selective gold plated | 175266-2     | -                | 179418-2    | -                |            |                        |

Receptacle Contacts – Mark III

**Technical Features**

**Temperature Range:**  
-40 °C up to +120 °C

**Dielectric Strength:**  
1000 V AC / 1 min.

**Insulation Resistance:**  
>100 MΩ Min.

**Contact Material:**  
Higher conductivity (Mark III)

**Contact Plating:**  
Pre-tinned and selective gold

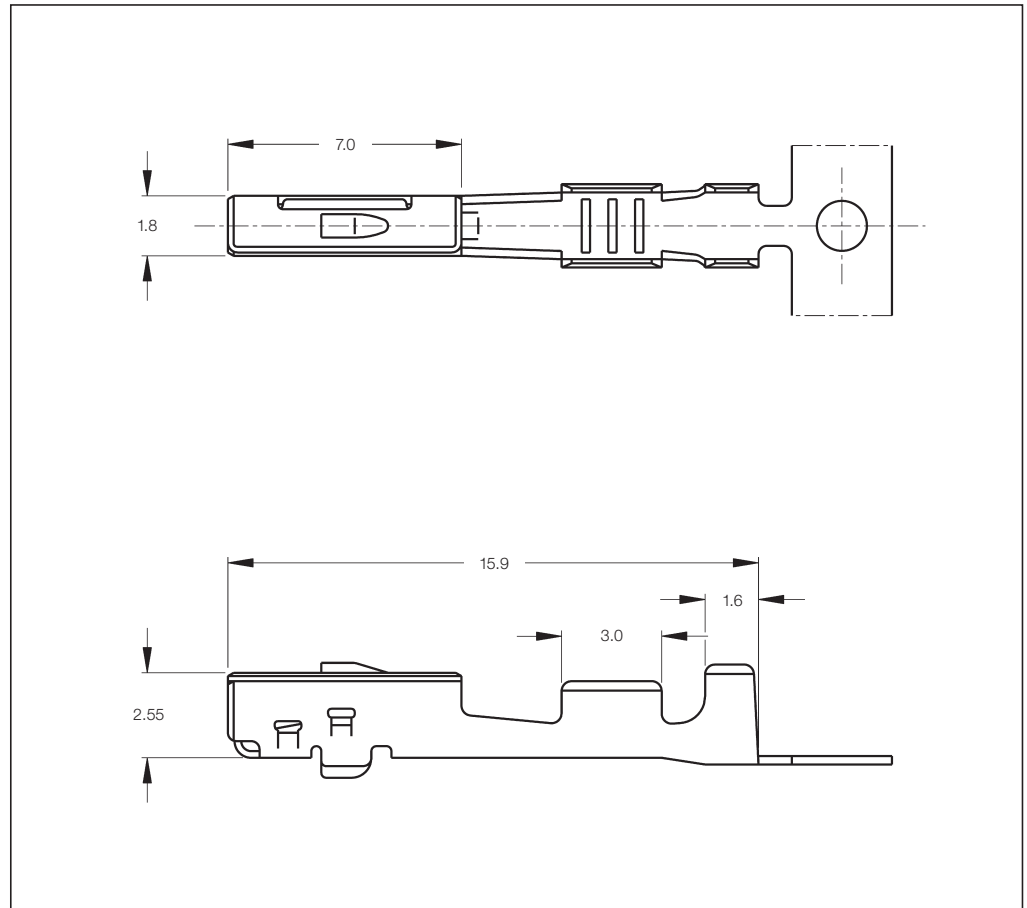
**Lance:**  
Housing lance applied

**Contact Mating Force:**  
6 N Max. (Tin)  
4 N Max. (Gold)

**Extraction Tool:**  
See Instruction Sheet: 411-5924

**Product Specification:**  
108-5529 (Mark III)

**Application Specification:**  
114-5217 (Mark III)



**.040 Mark III Receptacle Contacts**

| Wire Size Range      | Insulation Diameter    | Material and Finish *               | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|----------------------|------------------------|-------------------------------------|--------------|------------------|-------------|------------------|------------|------------------------|
|                      |                        |                                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.3–0.5<br>(22–20)   | 1.4–1.7<br>(.055–.067) | Copper alloy, pre-tin plated        | 316836-1     | –                | 1376700-1   | –                | 234588-2   | 1463383-1              |
|                      |                        | Copper alloy, selective gold plated | 316837-2     | –                | 1376701-1   | –                |            |                        |
| 0.85–1.25<br>(18–16) | 1.8–2.2<br>(.071–.087) | Copper alloy, pre-tin plated        | 316838-1     | –                | 1376704-1   | –                | 919171-2   | 934193-2               |



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Engineering Notes

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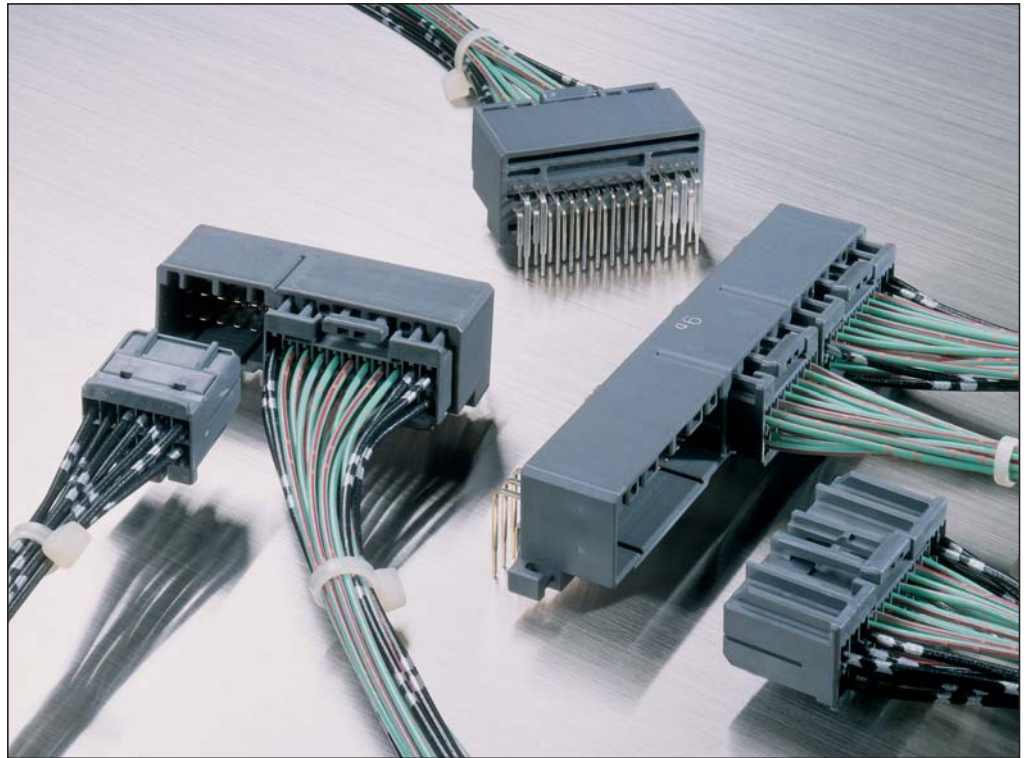


Introduction

**.070 Mark II Receptacle Contacts**

.040 Mark II/.070 Mark II Hybrid I/O Connectors (108-5342)

.070 Mark II receptacle contacts are designed to improve Kojiri protection and to provide better secondary locking design with side lock from hinge type (Original .070 receptacle contacts).



**Product Features**

- .070 Mark II receptacle contacts are designed to improve the original .070 receptacle ones in along with their connector housings design improvement in .040/.070 Hybrid Connector series.
- Better Kojiri Protection Design.
- Pre-tinned and selective gold plating available.
- To provide a higher contact retention force with side lock design for secondary locking.
- From signal to power use applications.
- Combination of .040 Mark II/.070 Mark II Hybrid Connector series.

**Advantages**

- Contact Pitch: 3.5 mm
- Lower Contact Insertion Force: 4 N Max. (Au), 6 N Max. (Sn)
- Better Kojiri Protection
- Higher Secondary Locking Force applied

**Applications**

- Wire-to-Board/ECU Applications

**Remarks:**

- Key design feature of contacts
- Better Kojiri Protection
  - Secondary Locking (side lock) is applied with a higher contact retention force

Receptacle Contacts – Mark II

**Technical Features**

**Temperature Range:**  
-40 °C up to +120 °C

**Dielectric Strength:**  
1000 V AC / 1 min.

**Insulation Resistance:**  
>100 MΩ Min.

**Contact Material:**  
Brass

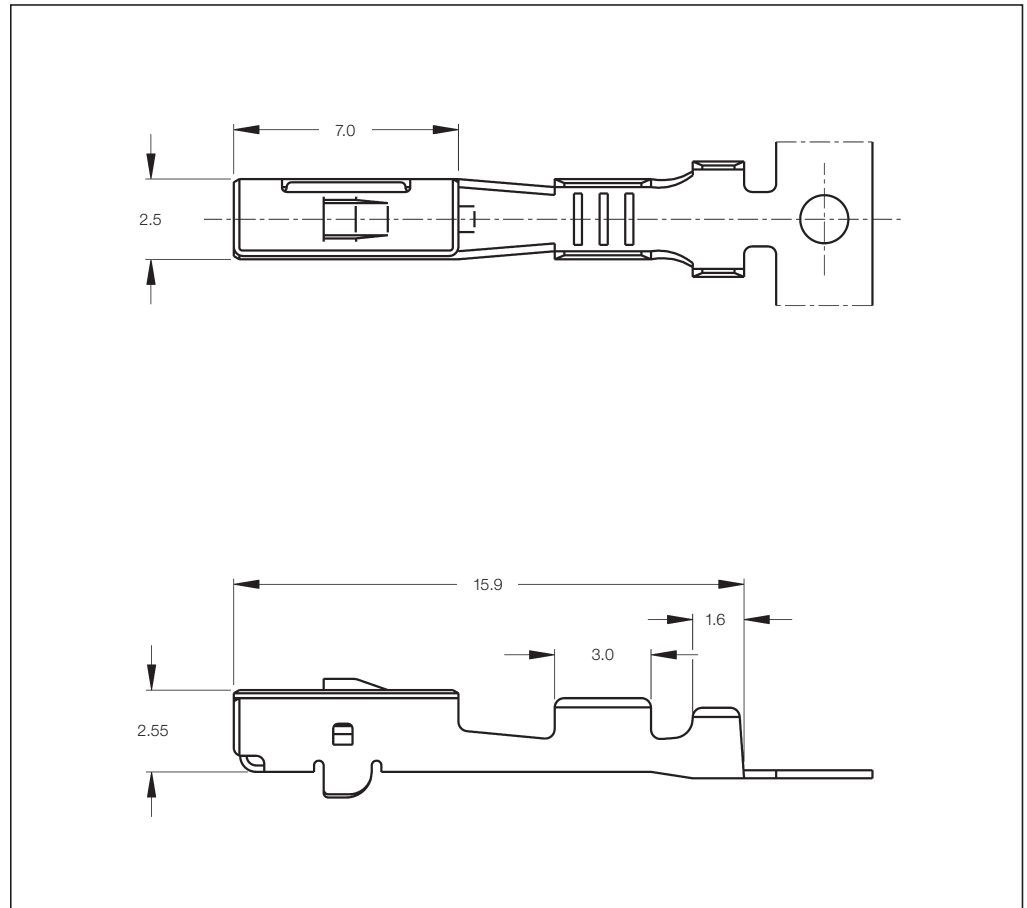
**Contact Plating:**  
Pre-tinned and selective gold

**Contact Mating Force:**  
6 N Max. (Tin)  
4 N Max. (Gold)

**Extraction Tool:**  
See Instruction Sheet: 412-5631

**Product Specification:**  
108-5452

**Application Specification:**  
114-5160



**.070 Mark II Receptacle Contacts**

| Wire Size Range     | Insulation Diameter    | Material and Finish *    | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|---------------------|------------------------|--------------------------|--------------|------------------|-------------|------------------|------------|------------------------|
|                     |                        |                          | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.3–0.85<br>(22–18) | 1.1–1.8<br>(.043–.071) | Brass,<br>pre-tin plated | 175268-1     | –                | 179423-1    | –                | 915762-2   | 934195-1               |
| 0.5–1.25<br>(20–16) | 1.3–2.5<br>(.051–.098) | Brass,<br>pre-tin plated | 175269-1     | –                | 179425-1    | –                | 915763-2   | 934196-1               |

Introduction



**Features**

- CPA capability
  - Assures connector mating
- USCAR & SDS compatibility
  - Standard interface for multiple applications
- 2.54 mm x 2.54 mm spacing
  - Typically smaller than competition
- 8 keying options
  - Maximum design flexibility
- Tang-free contact
  - Easier harness handling/production
- Good Stress Relaxation performance (70 % remaining after 3000 hr @ 150 °C)
  - Used in USCAR Class III range (-40 °C to +125 °C)

- 0.22 to 0.75 mm<sup>2</sup> wire range
  - Two terminal sizes cover 3–8 amp requirements (20 °C T-rise)
- 10 mating cycles (tin, silver or gold)
  - Robust receptacle to handle multiple mates
- Accepts up to 1.0 mm wide blade
  - Large interface flexibility and robustness
- Same shorting bar design for sealed, unsealed, gold and tin systems
  - Economical shorting bar solution

**Applications**

- Airbag Restraint Modules
- Power Control Modules
- Generic Control Modules
- Unsealed Harness Wiring
  - Inline Connections
  - Instrument Panel
  - Audio
  - Mirror
  - Switches
  - Actuators
  - Overhead Consoles
- Sealed Harness Wiring
  - Mass Air Flow
  - Passenger Sensing

**Product Offering**

- Tin, Silver and Gold Platings
- Wire-to-Wire
- Wire-to-PC Board
- Wire-to-Device
- Unsealed and Sealed
- Hand Mate and Lever Actuated

Receptacle Contacts

**Technical Features**

**Insertion Force:**

- Tin Terminals: <4.0 N
- Silver Terminals: <3.5 N
- Gold Terminals: <2.0 N

**Terminal Retention Force:**

- >40 N (Preliminary)
- >75 N (Permanent)

**Temperature Classification (according to USCAR):**

- Tin Terminals Class II:  
-40 °C to +120 °C max.  
up to +125 °C max.
- Silver and Gold Terminals Class III:  
-40 °C to +145 °C max.

**Vibration (per USCAR):**

- Unsealed Applications:  
Body and Instrument Panel Profile
- Sealed Applications:  
Engine Compartment Profile

**Dielectric Strength:**

1,000 V AC min.

**Voltage Drop (Initial Interface):**

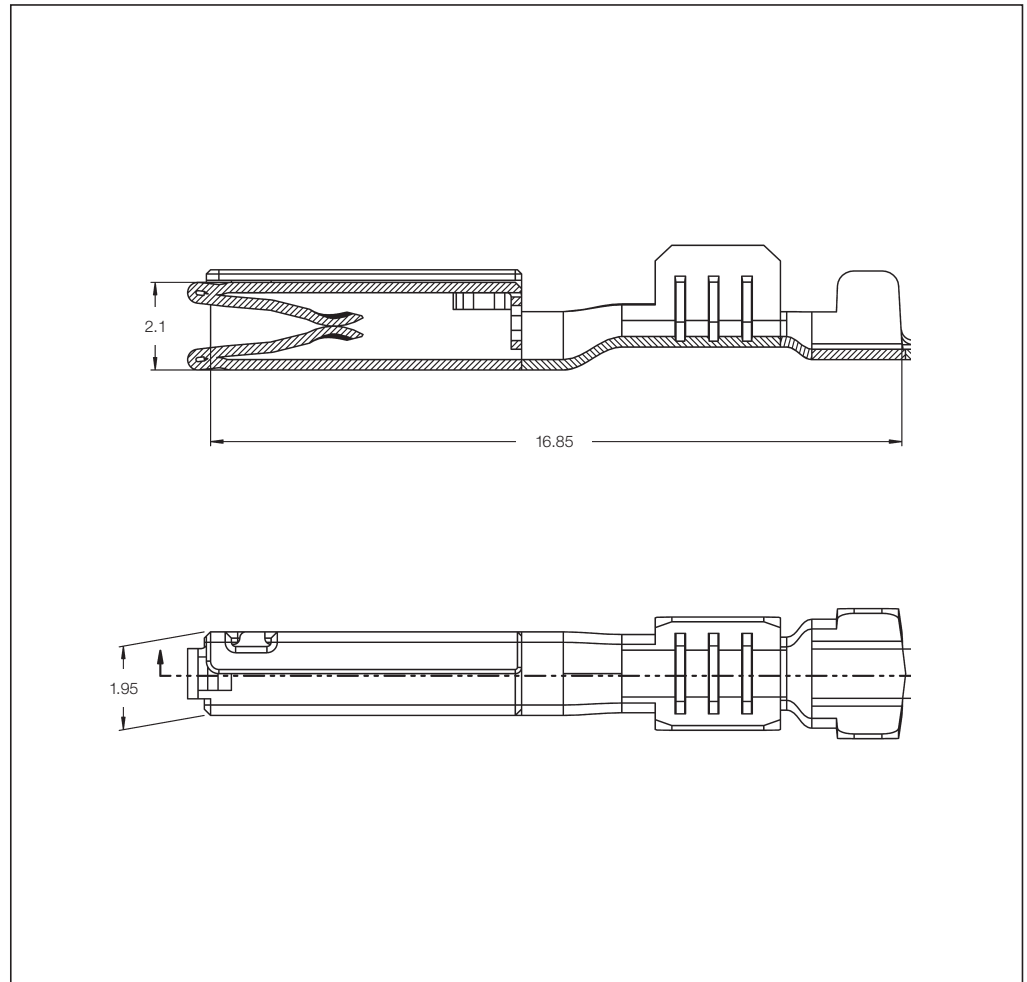
1.0 mV/A max.

**Isolation Resistance:**

20 MW @ 500 DC 500 V min.

**Extraction Tool:**

Part No. **1393477-6**



**Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Material and Finish | Part Numbers |                  |             |                  |            |             |
|------------------------------------|--------------------------|---------------------|--------------|------------------|-------------|------------------|------------|-------------|
|                                    |                          |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool   |
| 0.22-0.35                          | 1.10-1.65                | Gold plated         | 1393364-1    | 10,000           |             |                  |            |             |
|                                    |                          | Gold shunted        | 1393364-2    | 10,000           | -           | -                | 1528005    | 6-1393462-4 |
|                                    |                          | Tin plated          | 1393367-1    | 10,000           |             |                  |            |             |
|                                    |                          | Silver plated       | 1393367-2    | 10,000           |             |                  |            |             |
| 0.50-0.75                          | 1.40-2.06                | Gold plated         | 1393365-1    | 10,000           |             |                  |            |             |
|                                    |                          | Gold shunted        | 1393365-2    | 10,000           | -           | -                | 1528268    | 6-1393462-5 |
|                                    |                          | Tin plated          | 1393366-1    | 10,000           |             |                  |            |             |
|                                    |                          | Silver plated       | 1393366-2    | 10,000           |             |                  |            |             |

**Note:** All Part Numbers are RoHS and ELV compliant.

Pin Contacts

**Technical Features**

**Pin Bend Strength:**  
>6 N  
(Held at box, force applied at tip)

**Terminal Retention Force:**  
>40 N (Preliminary)  
>80 N (Permanent)

**Temperature Classification (according to USCAR)**

- Tin Terminals Class II:  
-40 °C to +120 °C max.  
up to +125 °C max.
- Gold Terminals Class III:  
-40 °C to +145 °C max.

**Vibration (per USCAR)**

Unsealed Applications:  
Body and Instrument Panel  
Profile

**Dielectric Strength:**

1,000 V AC min.

**Voltage Drop (Initial Interface):**

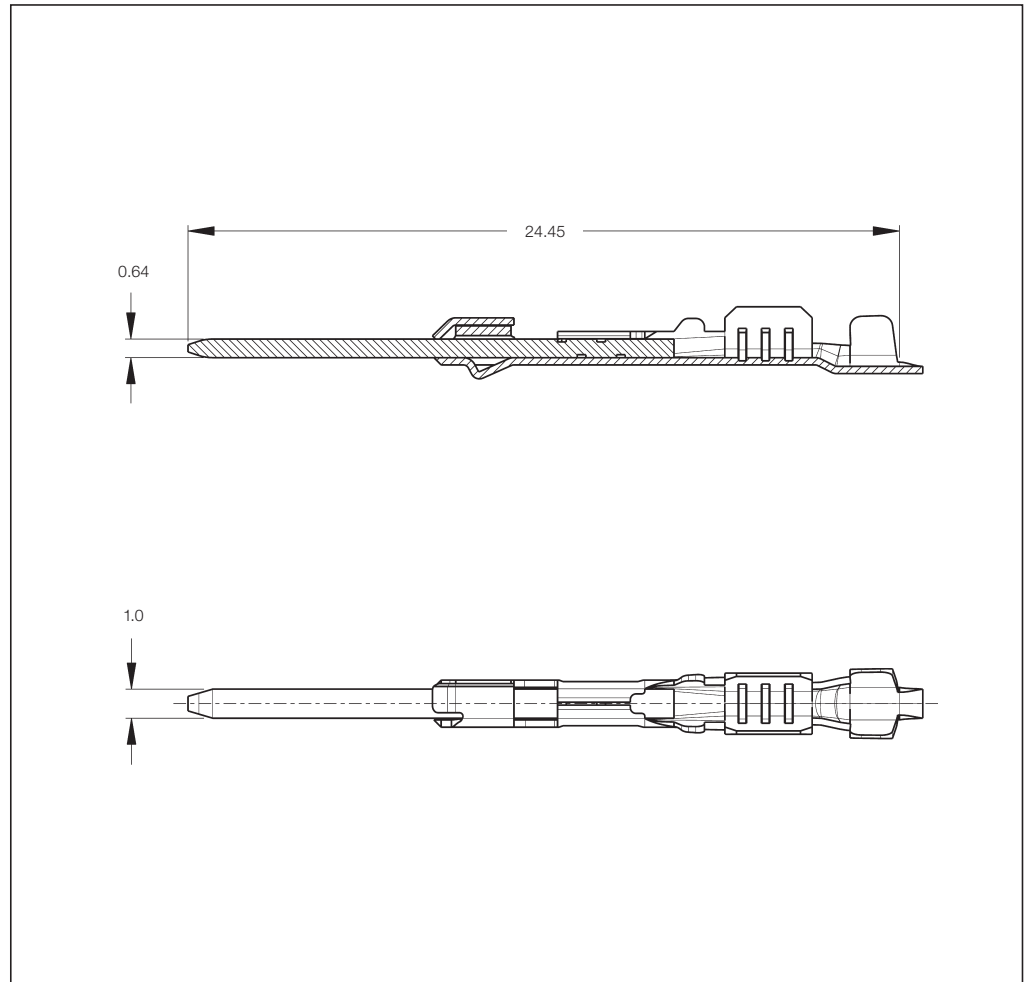
1.0 mV/A max.

**Isolation Resistance:**

20 MW @ 500 DC 500 V min.

**Extraction Tool:**

Part No. **1393477-6**



**Pin Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Material and Finish | Part Numbers             |                  |             |                  |            |             |
|------------------------------------|--------------------------|---------------------|--------------------------|------------------|-------------|------------------|------------|-------------|
|                                    |                          |                     | Strip Form               | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool   |
| 0.22-0.35                          | 1.10-1.65                | Gold plated         | 3-1419158-1 <sup>①</sup> | 10,000           |             |                  |            |             |
|                                    |                          | Tin plated          | 1-1419158-6 <sup>①</sup> | 10,000           | -           | -                | -          | 6-1393462-4 |
|                                    |                          | Gold plated         | 1438299-1 <sup>②</sup>   | 10,000           |             |                  |            |             |
|                                    |                          | Tin plated          | 1438299-2 <sup>②</sup>   | 10,000           |             |                  |            |             |
| 0.50-0.75                          | 1.40-2.06                | Gold plated         | 2-1419158-3 <sup>①</sup> | 10,000           |             |                  |            |             |
|                                    |                          | Tin plated          | 2-1419158-5 <sup>①</sup> | 10,000           | -           | -                | -          | 6-1393462-5 |
|                                    |                          | Gold plated         | 1438299-3 <sup>②</sup>   | 10,000           |             |                  |            |             |
|                                    |                          | Tin plated          | 1438299-4 <sup>②</sup>   | 10,000           |             |                  |            |             |

**Note:** All Part Numbers are RoHS and ELV compliant.

① Standard Reeling Direction (Fig. 1)

② Optional Reeling Direction for Mini Applicator (Fig. 2)

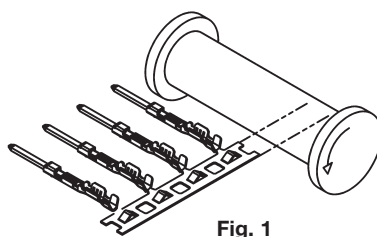


Fig. 1

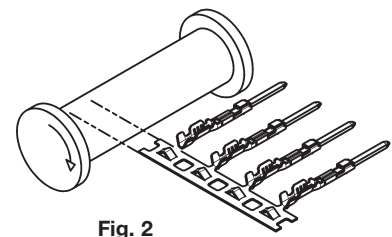


Fig. 2

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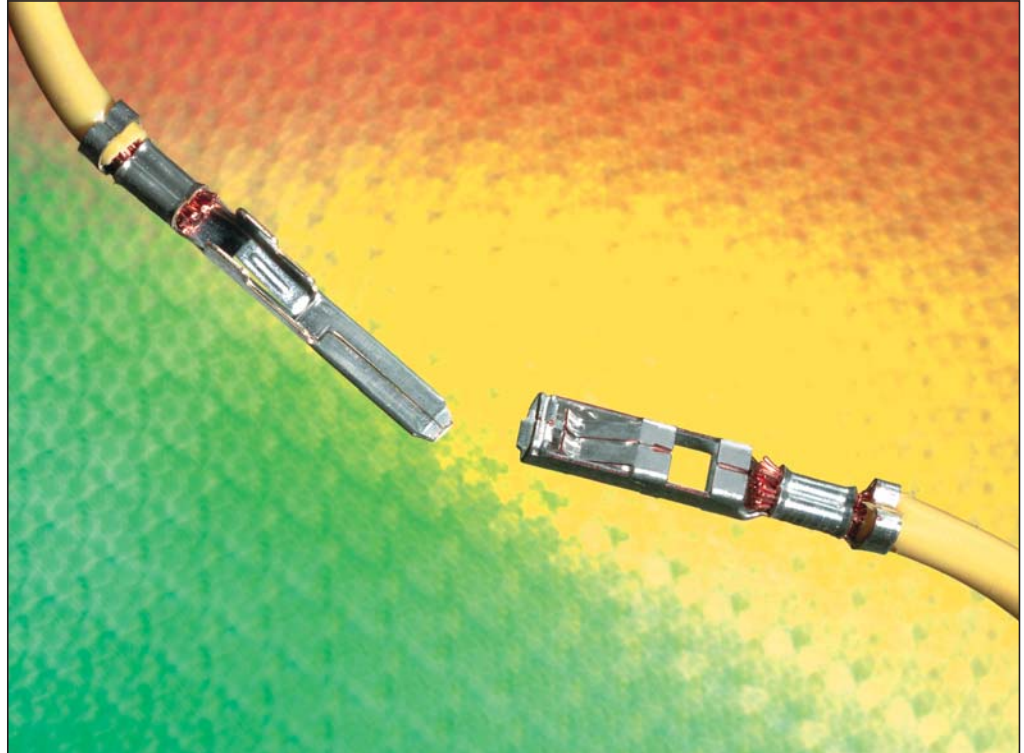
Engineering Notes

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Introduction



Tyco Electronics has developed a series of high contact density receptacle housings and connectors for wire-to-wire connections from front to rear vehicle harnesses, panel mount and wire-to-board connections on equipment.

The female box-type contact is provided with an anti-overstress device in its cavity and allows simple corrections of any tab misalignment.

The required mating force is low and it provides a very reliable electrical contact.

It is connected to 3.0 mm x 0.64 mm crimping tabs (for MIC I) or 2.8 mm x 0.8 mm tabs (for MIC IV).

The allowable wire sizes for MIC I connectors vary between 0.35 mm<sup>2</sup> up to 3.0 mm<sup>2</sup> and in two contact ranges.

The allowable wire sizes for MIC IV connectors vary between 0.35 mm<sup>2</sup> to 5.0 mm<sup>2</sup> and in three contact ranges.

Contact may be crimped manually or using a mini-applier mounted on a press.

The polarized housing includes a locking system with an audible snap-lock on mating. A color code allows identification of mechanical polarization.

**MIC I**

Housings in MIC I version are available with 2, 3 or 4 rows – with 5-, 9-, 13-, 17-, 20- or 27-positions fitted with crimped contacts.

Insertion of the contact into the housing is very precise and easy due to lead in which protect the contact lance.

**MIC IV**

The MIC IV program is special in that it can receive both crimping contacts on 0.35 mm<sup>2</sup> to 5.0 mm<sup>2</sup> wires or insulation displacement contacts for 0.35 mm<sup>2</sup> to 1.0 mm<sup>2</sup> wires in the same cavities.

The housings include 5-, 7-, 9-, 11-, 13- and 21-positions in two rows.

Male or female contacts are retained by a plastic lance provided in the housing.

By use of insulation displacement products, please consult Tyco Electronics.



Receptacle Contacts

**Technical Features**

**Current Rating:**

15 A per contact under some conditions of use for 3.0 mm<sup>2</sup> wire

**Termination Resistance:**

Initial 3 mΩ

**Temperature Range:**

-40 °C up to +100 °C

**Number of Cycles:**

20 mating cycles

**Contact Material:**

CuZn or CuSn

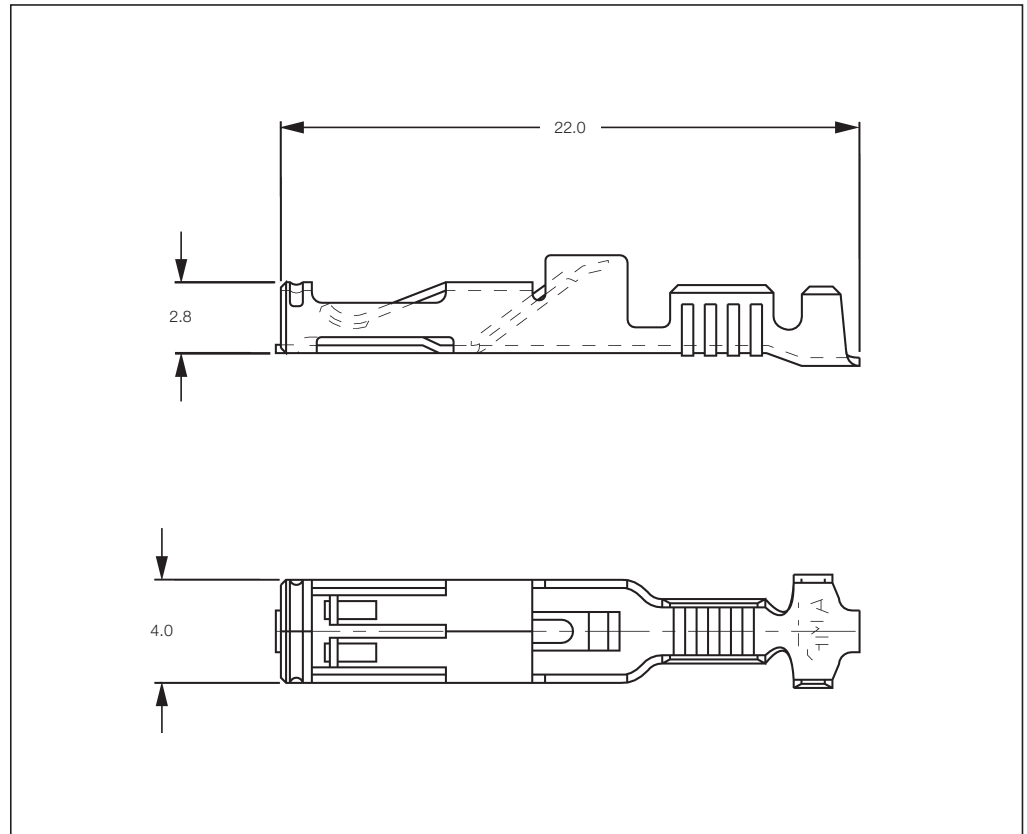
**Contact Finish:**

2.5 μm tin plated

Selective gold plating is also available.

**Extraction Tool:**

Part No. **724763-1**



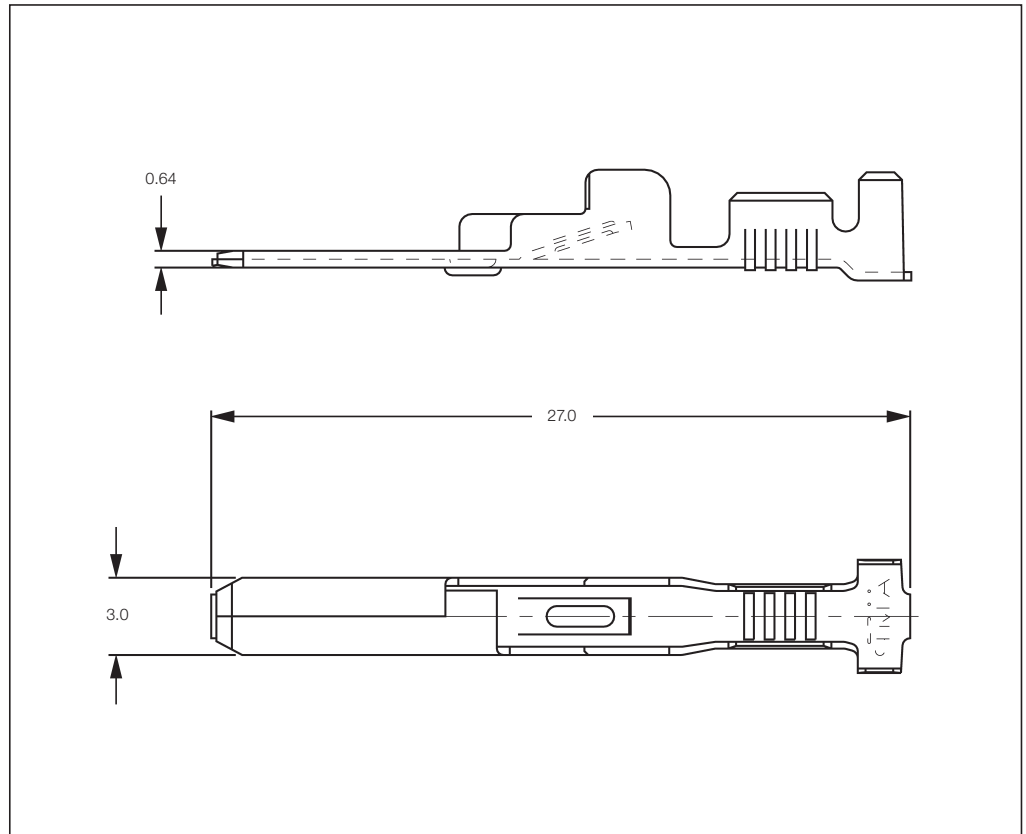
**Receptacle Contacts**

| Wire Size Range       | Insulation Diameter  |           | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|-----------------------|----------------------|-----------|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                       | FLK                  | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| mm <sup>2</sup> (AWG) | mm (Inch)            | mm (Inch) |                      |              |                  |             |                  |            |           |
| 0.35-1.0 (22-17)      | 2.1 max. (.083 max.) | -         | CuZn, pre-tin plated | 142183-1     | 4,000            | 142314-1    | 100 or 1,000     | 878300     | 944032-1  |
|                       |                      |           | CuSn, pre-tin plated | 142183-2     | 4,000            | 142314-2    | 100 or 1,000     |            |           |
|                       |                      |           | CuZn, gold plated    | 142183-5     | 4,000            | 142314-5    | 100 or 1,000     |            |           |
| 1.0-3.0 (17-12)       | 3.3 max. (.130 max.) | -         | CuZn, pre-tin plated | 142185-1     | 3,000            | 142316-1    | 100 or 500       | 878355     | 944031-1  |
|                       |                      |           | CuSn, pre-tin plated | 142185-2     | 3,000            | 142316-2    | 100 or 500       |            |           |

Additional finishes upon request.

Tab Contacts

**Tabs 3.0 x 0.64 mm,  
Mates with  
MIC I Receptacles**



**Tab Contacts**

| Wire Size Range       | Insulation Diameter     |           | Material and Finish     | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|-----------------------|-------------------------|-----------|-------------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                       | FLK                     | FLR       |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| mm <sup>2</sup> (AWG) | mm (Inch)               | mm (Inch) |                         |              |                  |             |                  |            |           |
| 0.35-1.0<br>(22-17)   | 2.1 max.<br>(.083 max.) | -         | CuZn,<br>pre-tin plated | 142184-1     | 4,000            | 142315-1    | 100 or<br>1,000  | 878324     | 944032-1  |
|                       |                         |           | CuZn,<br>gold plated    | 142184-5     | 4,000            | 142315-5    | 100 or<br>1,000  |            |           |
| 1.0-3.0<br>(17-12)    | 3.3 max.<br>(.130 max.) | -         | CuZn,<br>pre-tin plated | 142186-1     | 3,000            | 142317-1    | 100 or<br>500    | 878353     | 944031-1  |

Additional finishes upon request.

Receptacle Contacts

**Technical Features**

**Crimping Contacts**

**Current Rating:**

15 A per contact under some conditions of use for 3.0 mm<sup>2</sup> wire

**Termination Resistance:**

Initial 3 mΩ

**Temperature Range:**

-40 °C up to +100 °C

**Number of Cycles:**

20 mating cycles

**Contact Material:**

CuSn

**Contact Finish:**

2.5 μm pre-tin plated

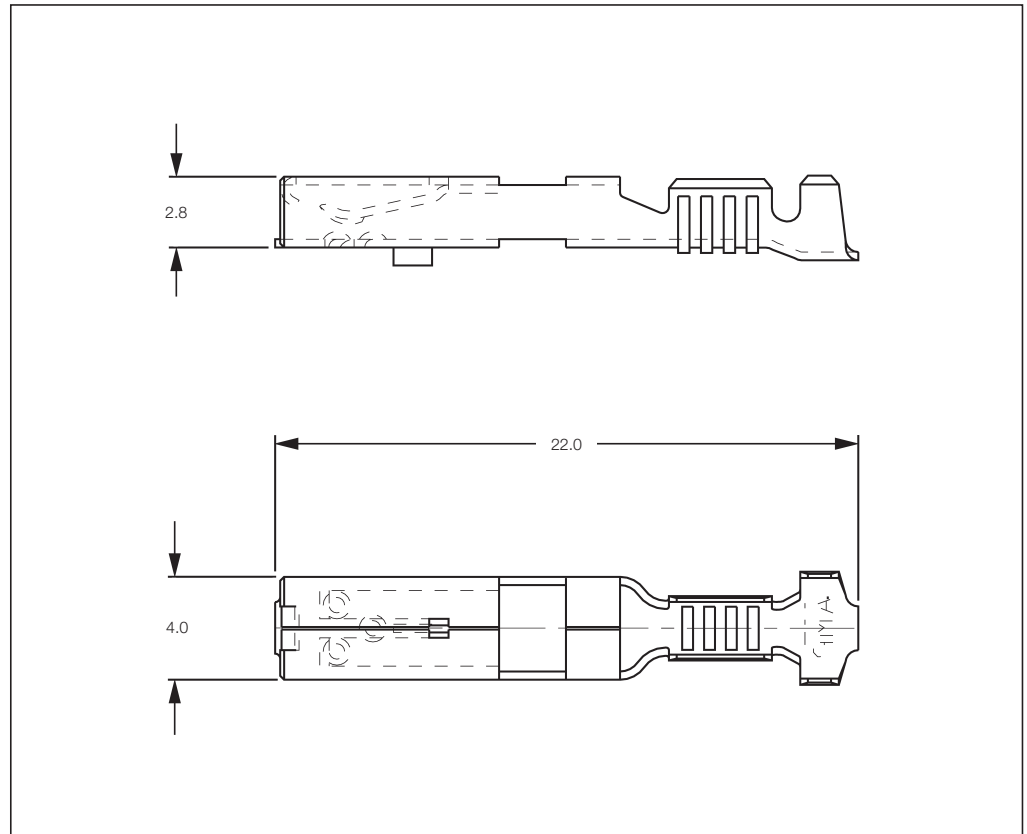
**Extraction Tool:**

Part No. **946948-1**

**Contact Description**

Receptacles mate with 3.0 x 0.64 mm and 2.8 x 0.8 mm tabs.

Receptacles are not fitted with locking lance.

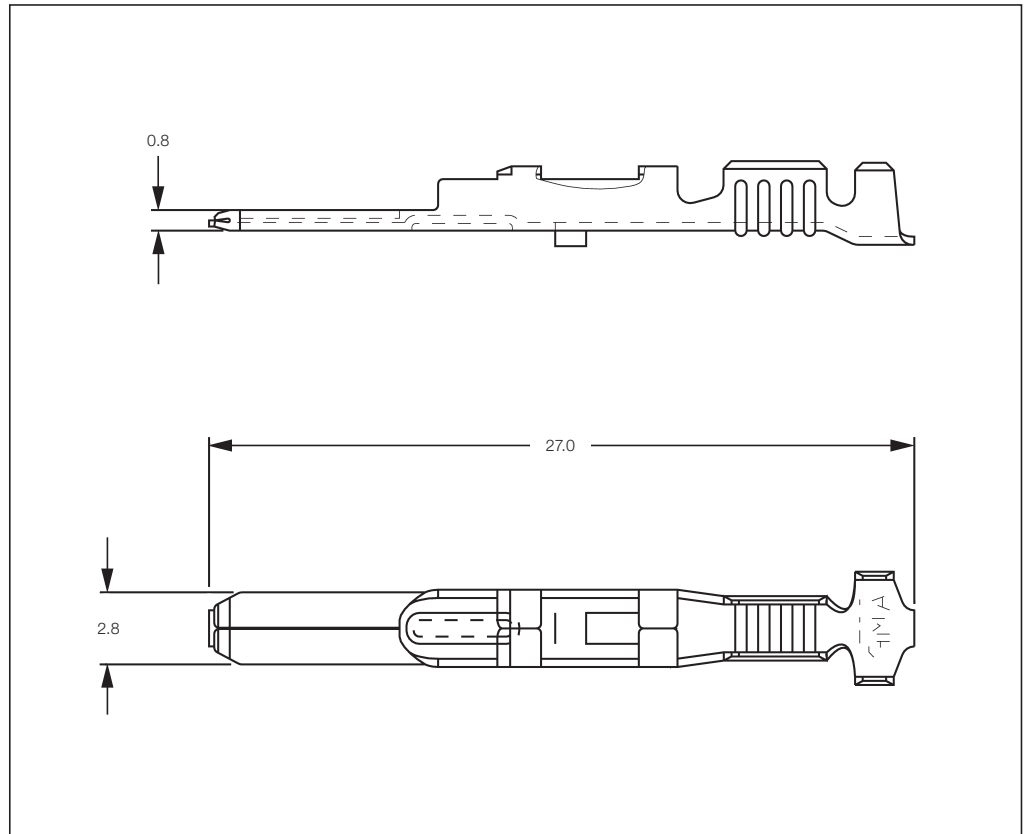


**Receptacle Contacts**

| Wire Size Range       | Insulation Diameter |           | Material and Finish      | Part Numbers |                  |             |                  | Applicator   | Hand Tool |
|-----------------------|---------------------|-----------|--------------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                       | FLK                 | FLR       |                          | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch) |                          |              |                  |             |                  |              |           |
| 0.35-1.0 (22-17)      | 2.15 (.085)         | -         | CuSn, pre-tin plated     | 144180-1     | 6,000            | 144812-1    | 100 or 1,000     | 541625       | 944032-1  |
| 1.0-3.0 (17-12)       | 3.30 (.130)         | -         | CuSn, pre-tin plated     | 144181-1     | 3,500            | 144813-1    | 100              | 878355       | 944031-1  |
| 3.0-5.0 (12-10)       | 3.50 (.138)         | -         | Copper alloy, tin plated | 142753-2     | 3,000            | -           | -                | upon request | -         |

Tab Contacts

**Tabs 2.8 x 0.8 mm,  
Mates with  
MIC IV Receptacles**



**Tab Contacts**

| Wire Size Range          | Insulation Diameter |              | Material and Finish     | Part Numbers |                  |             |                  | Applicator   | Hand Tool |
|--------------------------|---------------------|--------------|-------------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                          | FLK                 | FLR          |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| mm <sup>2</sup><br>(AWG) | mm<br>(Inch)        | mm<br>(Inch) |                         |              |                  |             |                  |              |           |
| 0.35-1.0<br>(22-17)      | 2.15<br>(.085)      | -            | CuZn,<br>pre-tin plated | 142754-1     | 6,000            | 142917-1    | 1,000            | 878324       | 944032-1  |
| 1.0-3.0<br>(17-12)       | 3.30<br>(.130)      | -            | CuZn,<br>pre-tin plated | 142755-1     | 3,000            | 142918-1    | 1,000            | upon request | 944031-1  |
| 3.0-5.0<br>(12-10)       | 3.50<br>(.138)      | -            | Cu,<br>pre-tin plated   | 142700-1     | 2,500            | -           | -                | upon request | -         |

Engineering Notes

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Introduction



Tyco Electronics' Econoseal III sealed connector range has been designed to meet the exacting requirements of the automotive industry, for a reliable sealed connector.

Three series of connectors have been developed:

- High current wire-to-wire
- Low current wire-to-wire and
- Low current wire-to-board.

Each series offers a choice of housing ways, polarized mating, discrete cable sealing and contact secondary locking, plus a choice of hand or machine tooling for simple termination.

All connectors are designed to be used with thin walled non-irradiated PVC cables. For other cable types please contact Tyco Electronics.

Though designed initially for automotive applications the Econoseal III interconnection range can be used in any industry where a reliable sealed connector is needed.

**.070 Series (1.8 mm)**

Low current wire-to-wire and wire-to-board connectors accept a cable range from 0.5 up to 2.0 mm<sup>2</sup>, current rating up to 10 A.

**.250 Series (6.3 mm)**

High current wire-to-wire connectors accept a cable range from 0.5 up to 3.0 mm<sup>2</sup>, current rating up to 20 A.

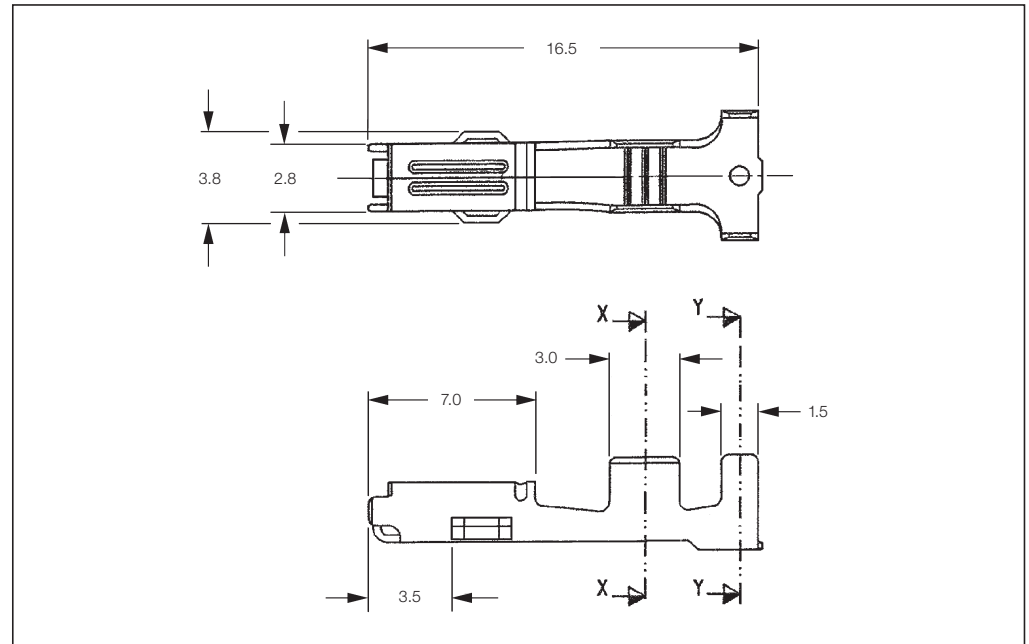
Receptacle Contacts

**Technical Features**

**Low Current Wire-to-Wire Connectors .070 Series (1.8 mm)**

- Free-hanging
- .070 Series (1.8 mm) blade and receptacle
- 2-, 3-, 4-, 6- and 13-positions
- Wire Size Range: from 0.5 up to 2.0 mm<sup>2</sup>
- Contact Rating: up to 10 A constant
- Lanceless contact system
- Inertia locking

**Application Specification:**  
114-3040



**Receptacle Contacts**

| Wire Size Range          | Insulation Diameter      |              | Material and Finish         | Part Numbers |                  |             |                  | Applicator* | Hand Tool |
|--------------------------|--------------------------|--------------|-----------------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                          | FLK                      | FLR          |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |           |
| mm <sup>2</sup><br>(AWG) | mm<br>(Inch)             | mm<br>(Inch) |                             |              |                  |             |                  |             |           |
| 0.2-0.5<br>(24-20)       | 1.6-1.8<br>(.062-.070)   | -            | Copper alloy,<br>tin plated | 345808-1     | 6,000            | 345949-1    | 1,000            | 541515      | 525317-6* |
| 0.75-1.00<br>(18-17)     | 1.85-2.10<br>(.073-.083) | -            | Copper alloy,<br>tin plated | 345806-1     | 6,000            | 345150-1    | 1,000            | 878533      | 525317-2* |
| 1.5-2.0<br>(15-14)       | 2.3-2.7<br>(.091-.106)   | -            | Copper alloy,<br>tin plated | 345806-1     | 6,000            | 345150-1    | 1,000            | 878533      | 525317-4* |
| 0.5-2.0<br>(20-14)       | 1.6-2.7<br>(.062-.106)   | -            | CuSn,<br>gold plated        | 344113-1**   | 6,000            | -           | -                | 878533      | -         |

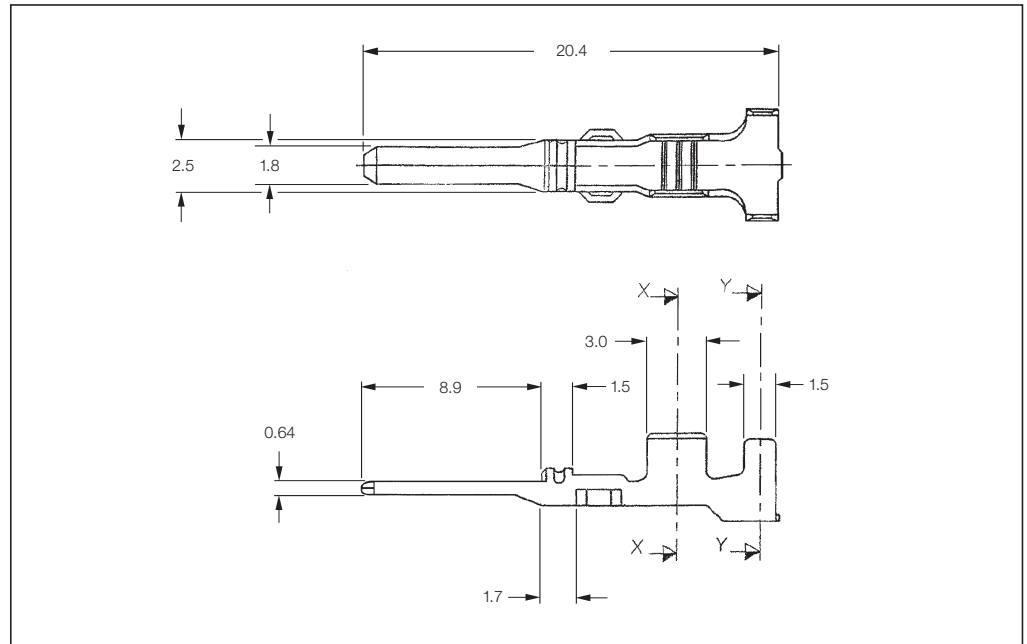
♦) Applicators are application specific, consult Tyco Electronics for details.

\*) Wire crimp form = F, Insulation crimp form = O, Other crimp forms see Product Specification

\*\*\*) For 16 and 36 positions receptacle housing

Tab Contacts / Single Wire Seals and Cavity Plugs

**Tab Contacts,  
Mates with  
Receptacle Contacts  
.070 Series**



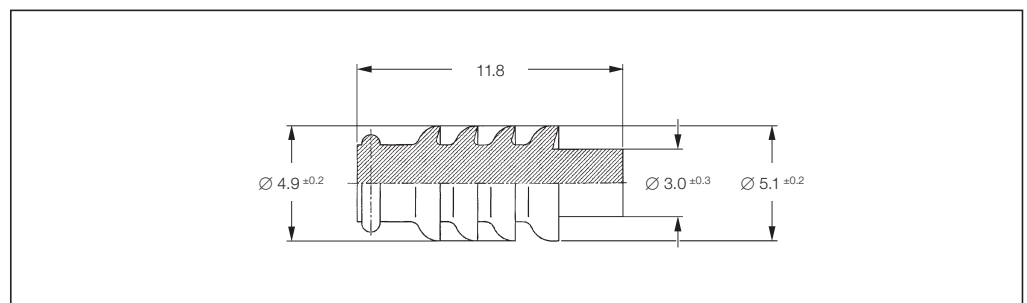
**Tab Contacts**

| Wire Size Range      | Insulation Diameter FLK  | Insulation Diameter FLR | Material and Finish      | Part Numbers |                  |             |                  | Applicator* | Hand Tool |
|----------------------|--------------------------|-------------------------|--------------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                      |                          |                         |                          | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |           |
| 0.5<br>(20)          | 1.6-1.8<br>(.062-.070)   | -                       | Copper alloy, tin plated | 345809-1     | 6,000            | 345951-1    | 2,000            | 878900      | 525317-6* |
| 0.75-1.00<br>(18-17) | 1.85-2.10<br>(.073-.083) | -                       | Copper alloy, tin plated | 345807-1     | 6,000            | 345148-1    | 2,000            | 878532      | 525317-2* |
| 1.5-2.0<br>(15-14)   | 2.3-2.7<br>(.091-.106)   | -                       | Copper alloy, tin plated | 345807-1     | 6,000            | 345148-1    | 2,000            | 878532      | 525317-4* |

- ♦) Applicators are application specific, consult Tyco Electronics for details.
- \* ) Wire crimp form = F, Insulation crimp form = O, Other crimp forms see Product Specification.

**Single Wire Seals  
and Cavity Plugs  
for Series .070 (1.8 mm)**

**Application Specification:**  
108-3069



| Insulation Diameter |             | Color | Part Number | Package Quantity |
|---------------------|-------------|-------|-------------|------------------|
| (mm)                | (Inch)      |       |             |                  |
| 1.6-2.4             | (.062-.095) | Black | 345791-1    | 5,000            |
|                     | Cavity Plug | Black | 172748-1    | 1,000            |
| 2.4 min. - 2.7 max. | (.095-.106) | Grey  | 172888-2    | 5,000            |
|                     | Cavity Plug | Grey  | 172748-2    | 1,000            |



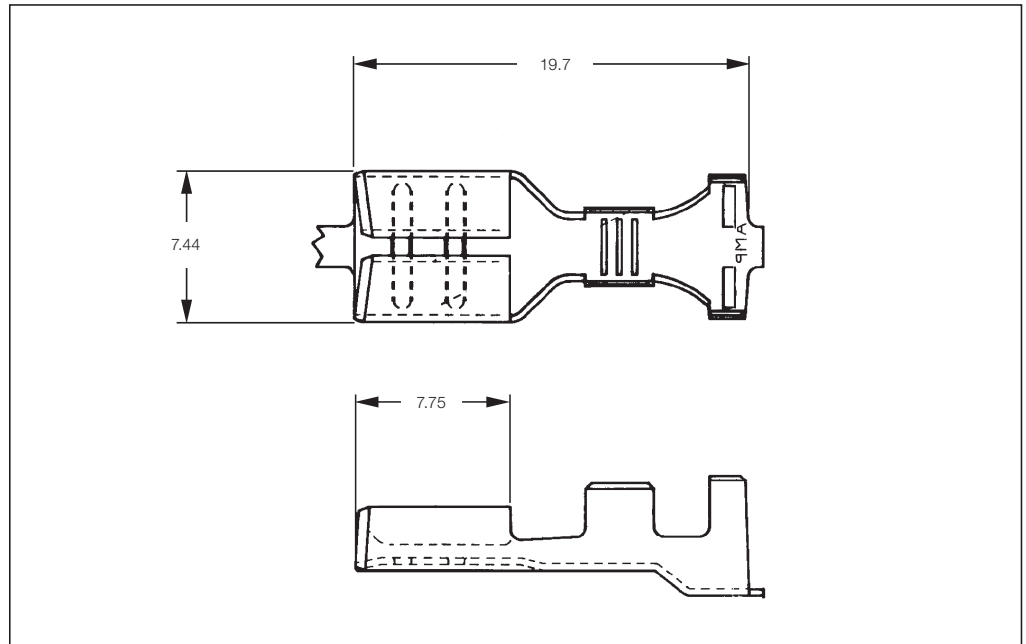
Receptacle Contacts

**Technical Features**

**High Current Wire-to-Wire Connectors .250 Series (6.3 mm)**

- Free hanging
- .250 Series (6.3 mm) FASTON blade and receptacle
- 2-, 4- and 8-positions
- Wire Size Range: from 0.5 to 3.0 mm<sup>2</sup>
- Contact Rating: up to 20 A constant
- Lanceless contact system
- Inertia Locking

**Application Specification:**  
114-3036



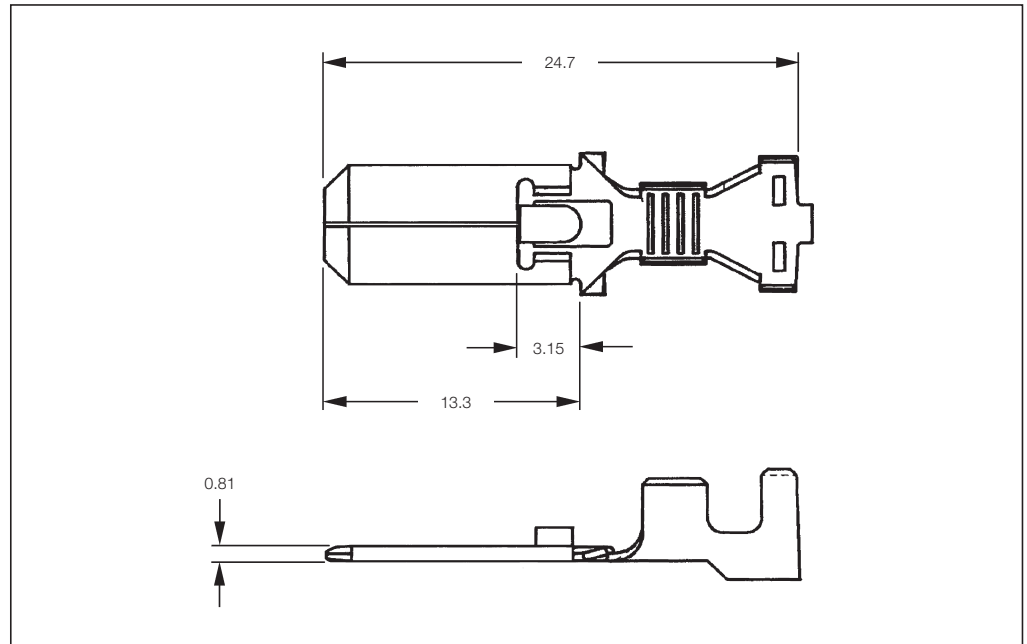
**Receptacle Contacts**

| Wire Size Range    | Insulation Diameter    | Material and Finish     | Part Numbers |                  |             |                  | Applicator* | Hand Tool |
|--------------------|------------------------|-------------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                    |                        |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |           |
| 0.5-1.5<br>(20-15) | 1.6-2.4<br>(.062-.095) | CuZn,<br>pre-tin plated | 344070-1     | 3,000            | 344995-1    | 1,000            | 541621      | 525316-4  |
| 2.0-3.0<br>(14-12) | 2.6-3.4<br>(.102-.134) | CuZn,<br>pre-tin plated | 344009-1     | 3,000            | 344993-1    | 1,000            | 541731      | 525316-2  |

\* ) Applicators are application specific, consult Tyco Electronics for details.

Tab Contacts / Single Wire Seals and Cavity Plugs

**Tab Contact,  
Mates with  
Receptacle Contacts  
.250 Series**



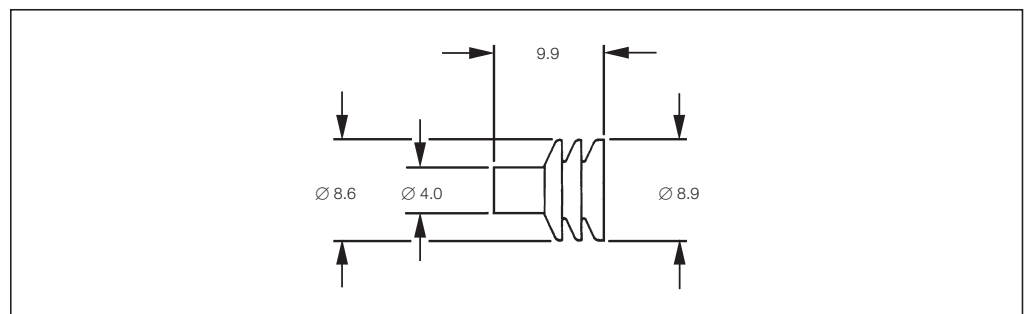
**Tab Contacts**

| Wire Size Range    | Insulation Diameter FLK | Insulation Diameter FLR | Material and Finish     | Part Numbers |                  |             |                  | Applicator* | Hand Tool |
|--------------------|-------------------------|-------------------------|-------------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                    |                         |                         |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |           |
| 0.5-1.5<br>(20-15) | 1.6-2.4<br>(.062-.095)  | -                       | CuZn,<br>pre-tin plated | 344069-1     | 3,000            | 344991-1    | 1,000            | -           | 525316-3  |
| 2.0-3.0<br>(14-12) | 2.6-3.4<br>(.102-.134)  | -                       | CuZn,<br>pre-tin plated | 344008-1     | 3,000            | 344989-1    | 1,000            | 1529135     | 525316-1  |

\* Applicators are application specific, consult Tyco Electronics for details.

**Single Wire Seals  
and Cavity Plugs  
for Series .250 (6.3 mm)**

**Application Specification:**  
108-3069



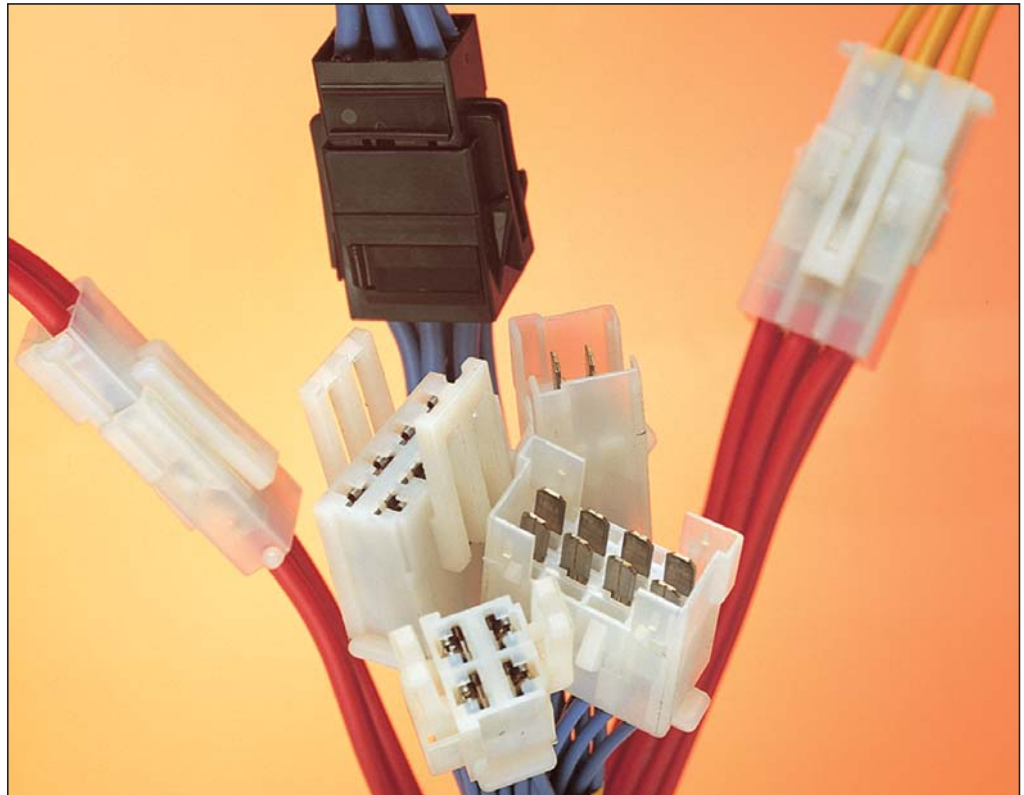
| Insulation Diameter |             | Color | Part Number | Package Quantity |
|---------------------|-------------|-------|-------------|------------------|
| (mm)                | (Inch)      |       |             |                  |
| 1.6-2.4             | (.062-.095) | Black | 344095-1    | 500              |
| Cavity Plug         |             | Black | 172749-1    | 500              |
|                     |             | Grey  | 172749-2    | 500              |
| 2.6-3.4             | (.102-.134) | Black | 172747-1    | 1,000            |
| Cavity Plug         |             | Black | 172749-1    | 500              |
|                     |             | Grey  | 172749-2    | 500              |

Engineering Notes

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Introduction



In an effort to overcome the problems arising from the careless mating of connectors during assembly, the Positive Mate connector is designed so that a condition of partial engagement is impossible.

The moulded connector housings incorporate an integral latching device, called the „Go-NoGo“ principle.

This latching device utilises the spring characteristics of the nylon material to provide a positively mated connection – or no connection at all.

If the spring latch is not locked when assembled, the two connector housings will fail to mate. Consequently, the contacts are disengaged and an open circuit exists.

Due to the insertion force required for the „Go-NoGo“ function, the maximum number of positions is limited to 10 per housing.

The box-type contact has a special construction with an internal double-spring which mates with the tab. This allows a high current flow with simultaneous low insertion force and constant closed linkage between the contacts.

**Mark IV Connectors**

Tyco Electronics developed the Positive Mate Mark IV connector range for use under the most difficult operating conditions. Its special design incorporates many unique features, such as locking latches, polarized housing and terminal secondary locking.

Male and female housings come in three shell sizes, with contact layouts in 2 to 9 position configurations.

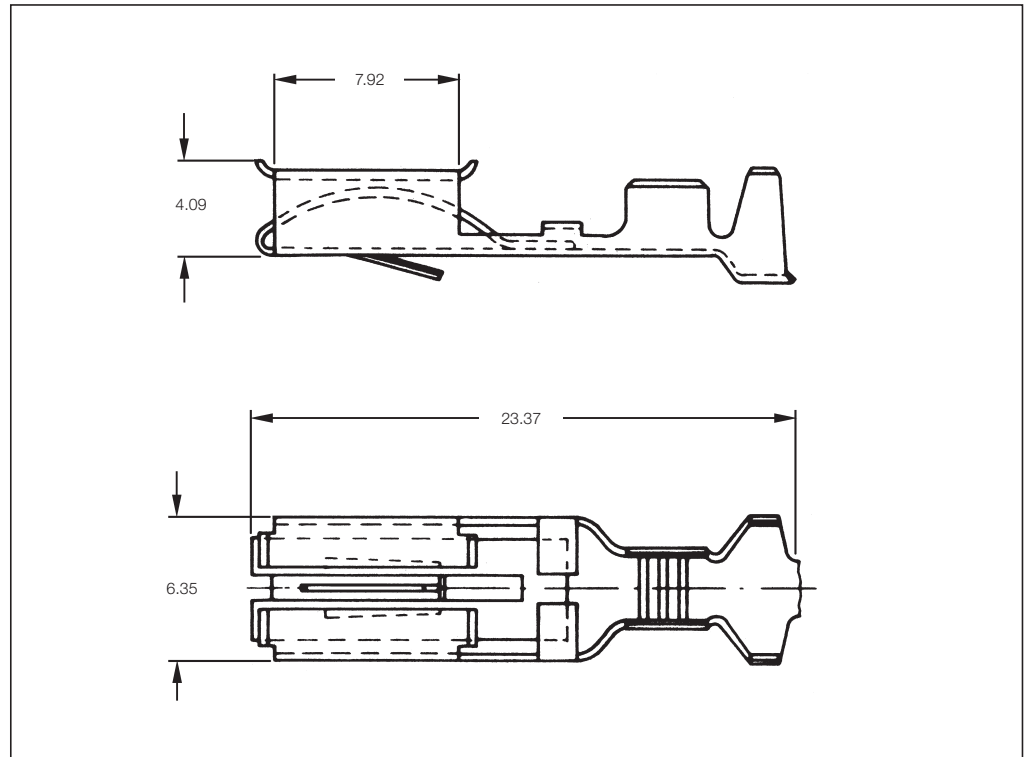
Housing accept 3.0 mm lanced contacts that require no orientation during loading. Pre-tin plated brass contacts are suitable for a wire size range of 0.5 mm<sup>2</sup> to 3.0 mm<sup>2</sup>.

They are supplied in loose-piece, for termination by hand tool, or strip form for application by automachine.

Receptacle Contacts

Technical Features

- All Positive Mate housings include a secondary contact retention feature.
- Polarization is provided.
- Rounded corners on housings to prevent injuries while connecting the housings.
- Wire size range of AWG 20 to AWG 10 allows high current capacity of up to 30 ampere per contact.
- Application tooling, ranging from hand tools to fully-automatic machines is available.



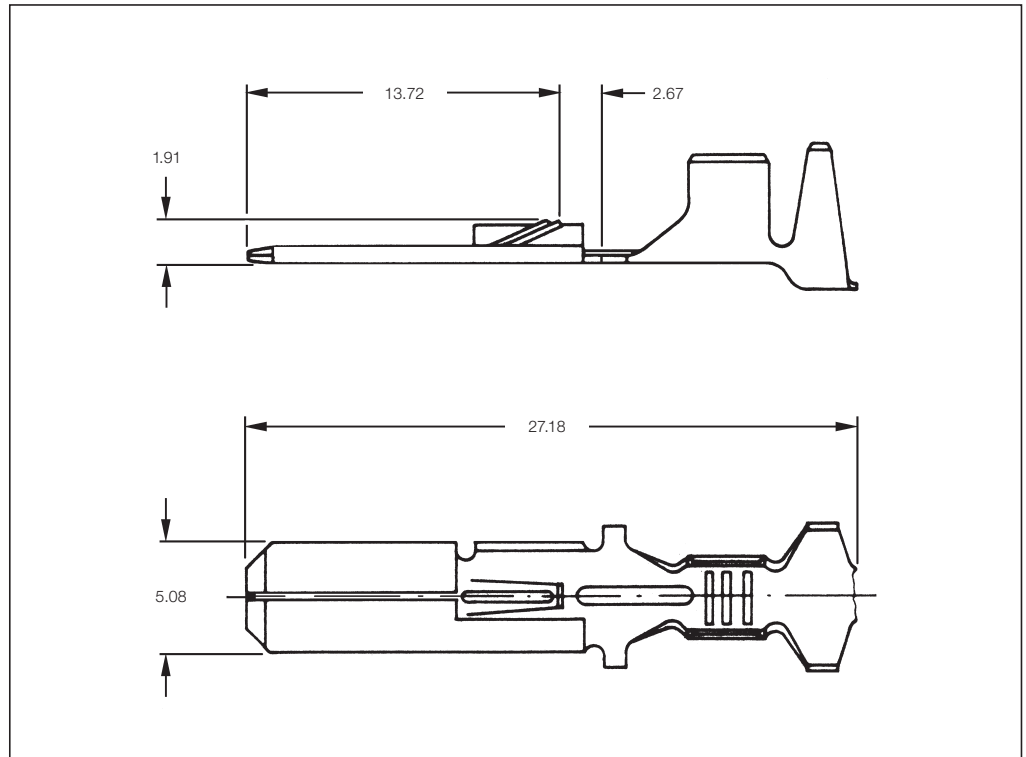
Receptacle Contacts

| Wire Size Range       | Insulation Diameter |           | Material and Finish  | Part Numbers |                  |             |                  | Applicator* | Hand Tool       |
|-----------------------|---------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|-----------------|
|                       | FLK                 | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                 |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch) |                      |              |                  |             |                  |             |                 |
| 0.5–1.5 (20–15)       | 1.5–2.5 (.059–.098) | –         | CuZn, pre-tin plated | 342642-2     | 2,500            | 342872-2    | 500              | –           | –               |
| 0.65–2.00 (20–14)     | 2.3–3.2 (.091–.126) | –         | CuZn, pre-tin plated | 342413-2     | 2,500            | 342873-2    | 500              | 878089      | 47995 or 575088 |
|                       |                     |           | CuSn, pre-tin plated | 342413-4     | 2,500            | 342873-4    | –                |             |                 |
| 3.0–5.3 (12–10)       | 3.3–4.8 (.130–.189) | –         | CuZn, pre-tin plated | 342414-2     | 2,000            | –           | –                | 878093      | 575084          |
|                       |                     |           | CuSn, pre-tin plated | 342414-4     | 2,000            | –           | –                |             |                 |

\* ) Applicators are application specific, consult Tyco Electronics for details.  
For plain contacts please contact Tyco Electronics.

Tab Contacts

Tab Contacts,  
Mates with Positive Mate  
Receptacle Contacts



Tab Contacts

| Wire Size Range       | Insulation Diameter |           | Material and Finish  | Part Numbers |                  |             |                  | Applicator* | Hand Tool |
|-----------------------|---------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                       | FLK                 | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |           |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch) |                      |              |                  |             |                  |             |           |
| 0.5–1.5 (20–15)       | 1.5–2.5 (.059–.098) | –         | CuZn, pre-tin plated | 342868-2     | 3,000            | –           | –                | 878767      | –         |
| 0.65–2.00 (20–14)     | 2.5–3.2 (.098–.126) | –         | CuZn, pre-tin plated | 153301-2     | 3,000            | 341209-2    | 500              | 878089      | 525651    |
| 1.0–2.5 (17–13)       | 2.6–3.6 (.102–.142) | –         | CuZn, pre-tin plated | 341367-2     | 2,500            | –           | –                | 878129      | –         |
| 3.0–5.3 (12–10)       | 3.3–4.8 (.130–.189) | –         | CuZn, pre-tin plated | 153303-2     | 2,000            | –           | –                | 878093      | 575084    |

\*) Applicators are application specific, consult Tyco Electronics for details.  
For plain contacts please contact Tyco Electronics.

Receptacle Contacts

**Technical Features**

- Special 3.0 mm lanced crimp contact
- Suitable for wire size ranges 0.5 mm<sup>2</sup> to 3.0 mm<sup>2</sup>
- Contacts: Brass, pre-tin plated
- Strip form or loose-piece contacts
- Hand or machine tooling available
- Simple to load
- Contact insulation support and cable antiback out

**Product Specification:**  
108-3037

**Application Specification:**  
114-3010



**Receptacle Contacts**

| Wire Size Range       | Insulation Diameter |           | Material and Finish  | Part Numbers |                  |             |                  |             |           |
|-----------------------|---------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                       | FLK                 | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch) |                      |              |                  |             |                  |             |           |
| 0.5–1.0 (20–17)       | 1.7–1.9 (.066–.075) | –         | CuZn, pre-tin plated | 342542-1     | 2,000            | 342589-1    | –                | 878382      | –         |
| 2.0–3.0 (14–12)       | 2.6–3.3 (.102–.130) | –         | CuZn, pre-tin plated | 342544-1     | 2,000            | –           | –                | 878465      | –         |

\*) Applicators are application specific, consult Tyco Electronics for details.

**Extraction Tool:**  
Part No. **342576-1**

**Insertion Aid:**  
Part No. **342577-1**

**Extraction Aid:**  
Part No. **342578-1**

Tab Contacts

**Tab Contacts,  
Mates with  
Positive Mate Mark IV  
Receptacle Contacts**

**Product Specification:**  
108-3037

**Application Specification:**  
114-3010



**Tab Contacts**

| Wire Size Range       | Insulation Diameter |           | Material and Finish  | Part Numbers |                  |             |                  |             |           |
|-----------------------|---------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|-----------|
|                       | FLK                 | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch) |                      |              |                  |             |                  |             |           |
| 0.5–1.0 (20–17)       | 1.7–1.9 (.066–.075) | –         | CuZn, pre-tin plated | 342543-1     | 2,000            | 342590-1    | 500              | 878382      | 525157-3  |
| 2.0–3.0 (14–12)       | 2.6–3.3 (.102–.130) | –         | CuZn, pre-tin plated | 342545-1     | 2,000            | 342592-1    | 500              | 878465      | 525153-3  |

\*) Applicators are application specific, consult Tyco Electronics for details.

**Extraction Tool:**  
Part No. **342576-1**

**Insertion Aid:**  
Part No. **342577-1**

**Extraction Aid:**  
Part No. **342578-1**



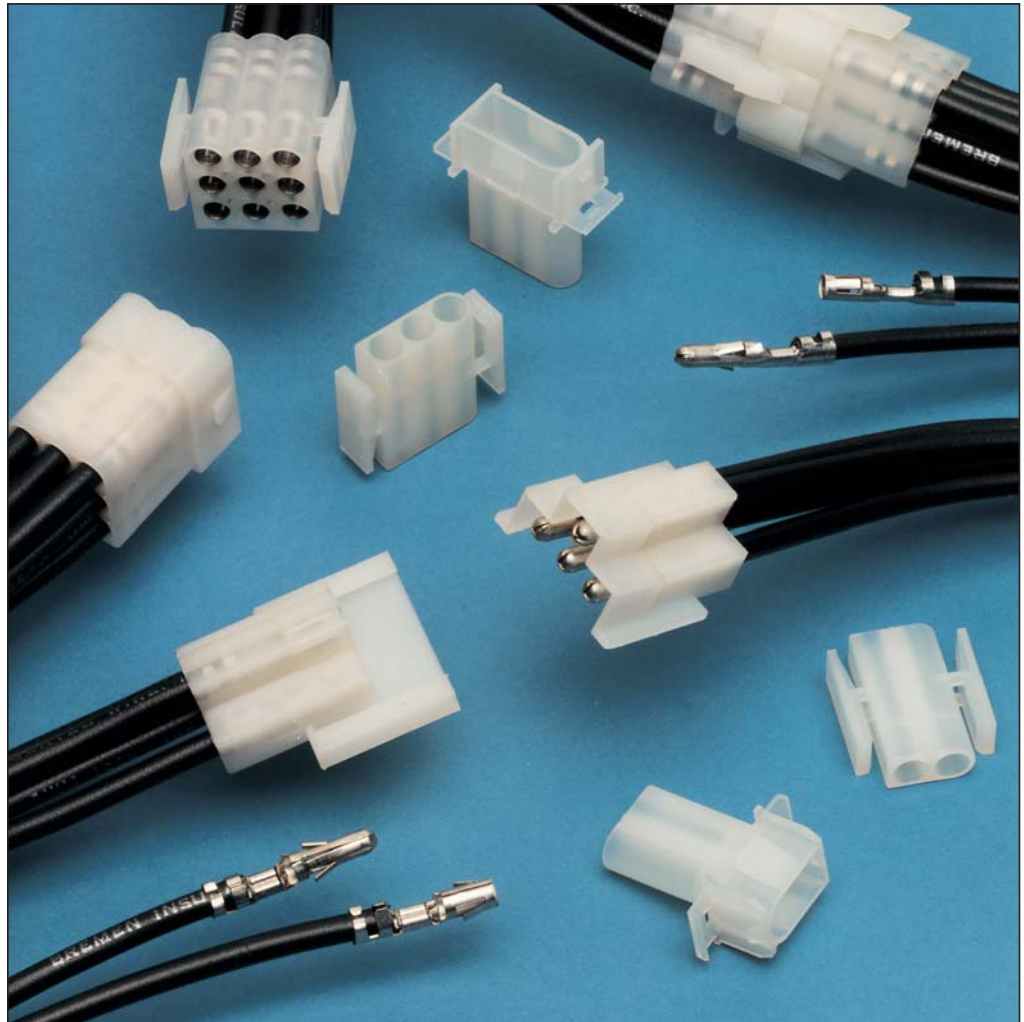
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**Engineering Notes**

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Introduction



The UL recognized .140 MATE-N-LOK connectors with 3.5 mm diameter pins and sockets, have a 25 A current carrying capacity and are capable of accepting wire with insulation diameters up to 4.5 mm. Both pins and sockets are equipped with dual locking lances, which assure positive contact retention when installed in the housings.

The seam of the socket is S-shaped, which allows an easy mating and unmating of the contacts. Special contacts of copper-laminated steel and high temperature-resistant housing (up to 105 °C) are used in applications with high temperatures and high currents for example ovens.

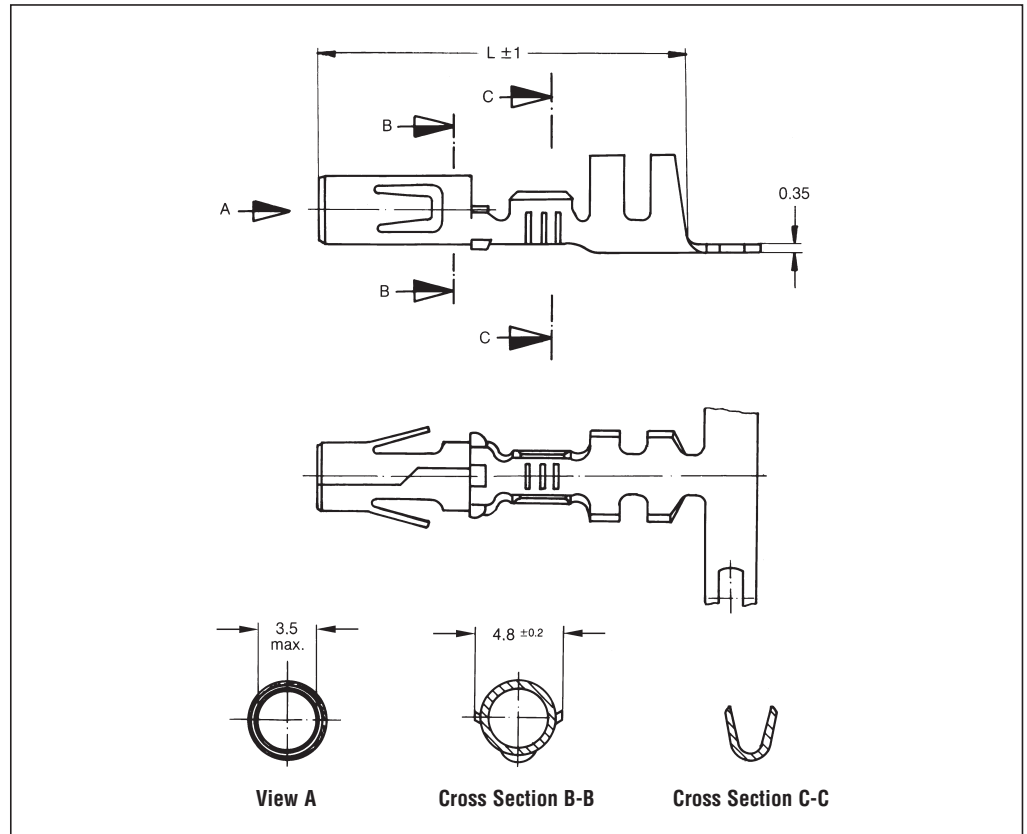
This versatile family of Tyco Electronics connectors offers a wide selection of sizes and configurations.

A few of the many available versions include connectors for free-hanging applications, special versions including those for mixed loading, which have been used in the automotive industry for years.

Socket Contacts, 3.5 mm Diameter

**Technical Features**

- Wire Size Range:**  
0.5 up to 5.3 mm<sup>2</sup>
- Insulation Diameter:**  
4.5 mm max.
- Contact Material:**  
CuZn or CuSn
- Contact Finish:**  
Pre-tin plated
- Current Carrying Capacity:**  
Up to 25 A per contact, depending on number of positions, wire size and ambient temperature
- Temperature Range:**  
-55 °C to +105 °C
- Product Specification:**  
108-1032
- Application Specification:**  
114-1007
- Extraction Tool:**  
Part No. **539764-1**



**Socket Contacts**

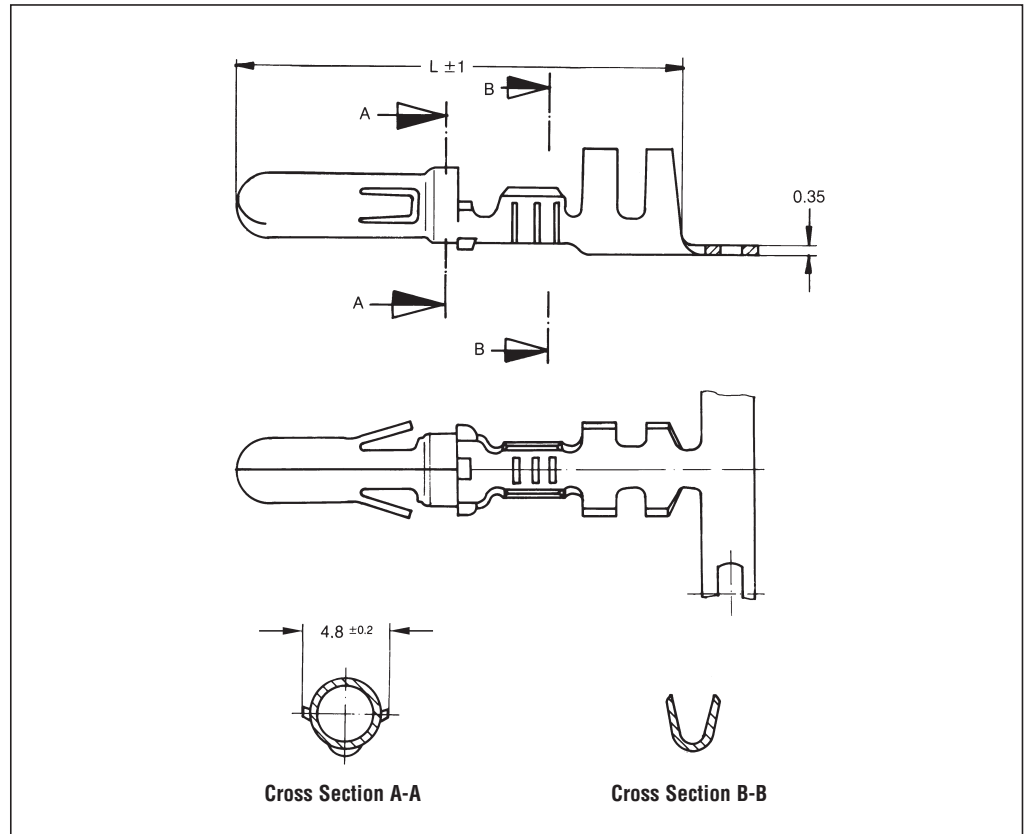
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Socket L (mm) | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------------|----------------------|--------------|------------------|-------------|------------------|------------|---------------------------------|
|                                    |                          |               |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                                 |
| 0.5-1.0                            | 1.4-2.3                  | 20.0          | CuSn, pre-tin plated | 927843-2     | 7,500            | 927844-2    | 2,500            | 872090     | 539669-2                        |
|                                    | 2.0-2.7                  | 20.0          | CuSn, pre-tin plated | 927818-2     | 7,500            | 927819-2    | 500              | 872085     | -                               |
| 0.5-1.5                            | 1.2-2.4                  | 20.0          | CuZn, pre-tin plated | 926986-1     | 7,500            | -           | -                | 871097     | 539730-2                        |
|                                    |                          |               | CuSn, pre-tin plated | 926986-2     | 7,500            | -           | -                |            |                                 |
| 0.5-2.1                            | 2.5-4.5                  | 20.0          | CuZn, pre-tin plated | 925714-1     | 7,500            | 925661-1    | 500              | 878037     | 90247 ♦                         |
|                                    |                          |               | CuSn, pre-tin plated | 925714-2     | 7,500            | 925661-2    | 900              |            |                                 |
|                                    |                          | 22.0          | St4 K 50, CuSn       | 925932-5*    | 7,500            | 925933-5*   | 500              |            |                                 |
|                                    |                          | 20.0          | CuSn, silver plated  | 925851-2**   | 7,500            | 925866-2**  | 500              |            |                                 |
| >1.0-2.5                           | 2.1-3.1                  | 20.0          | CuSn, pre-tin plated | 927860-2     | 7,500            | 927861-2    | 1,000            | 872091     | -                               |
|                                    | 2.7-4.0                  | 20.0          | CuSn, pre-tin plated | 927875-2     | 7,500            | -           | -                | 878046     | -                               |
| 2.1-5.3                            | 2.5-4.5                  | 20.0          | CuZn, pre-tin plated | 925712-1     | 7,500            | 925663-1    | 500              | 878031     | 825582 ♦                        |
|                                    |                          |               | CuSn, pre-tin plated | 925712-2     | 7,500            | 925663-2    | 500              |            |                                 |

\*) For Ambient Temperatures up to +120 °C and 17 Ampere  
\*\*) Without Locking Lance

♦) Complete Hand Tool

Pin Contacts, 3.5 mm Diameter

**Pin Contacts,  
Mates with  
3.5 mm Diameter  
Socket Contacts**



**Pin Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Socket L (mm) | Material and Finish      | Part Numbers |                  |             |                  | Applicator | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------------|--------------------------|--------------|------------------|-------------|------------------|------------|---------------------------------|
|                                    |                          |               |                          | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                                 |
| 0.5-1.0                            | 1.4-2.3                  | 25.0          | CuSn, pre-tin plated     | 927841-2     | 7,500            | 927842-2    | 2,000            | 872090     | 539669-2                        |
| 0.5-1.5                            | 1.2-2.4                  | 25.0          | CuZn, pre-tin plated     | 926988-1     | 7,500            | 926989-1    | 2,000            | 871097     | 90247 ♦                         |
|                                    |                          |               | CuSn, pre-tin plated     | 926988-2     | 7,500            | 926989-2    | 2,000            |            |                                 |
| 0.5-2.1                            | 2.5-4.5                  | 25.0          | CuZn, pre-tin plated     | 925715-1     | 7,500            | 925660-1    | 500              | 878037     | 90247 ♦                         |
|                                    |                          | 25.0          | CuSn, pre-tin plated     | 925715-2     | 7,500            | 925660-2    | 500              |            |                                 |
|                                    |                          | 26.6          | St4 K 50, pre-tin plated | 925715-5*    | 7,500            | 925660-5*   | 500              |            |                                 |
| >1.0-2.5                           | 2.1-3.1                  | 25.0          | St4 K 50, pre-tin plated | 925960-1**   | 7,500            | 925961-1**  | 500              | 872091     | -                               |
|                                    | 2.7-4.0                  | 25.0          | CuSn, pre-tin plated     | 927858-2     | 7,500            | 927859-2    | 500              |            |                                 |
| 2.1-5.3                            | 2.5-4.5                  | 25.0          | CuSn, pre-tin plated     | 927873-2     | 10,000           | 927874-2    | 500              | 878046     | -                               |
|                                    |                          |               | CuZn, pre-tin plated     | 925713-1     | 7,500            | 925662-1    | 500              |            |                                 |
|                                    |                          |               | CuSn, pre-tin plated     | 925713-2     | 7,500            | 925662-2    | 500              | 878031     | 825582 ♦                        |

\*) For Ambient Temperatures up to +120 °C and 17 Ampere  
\*\*) Without Locking Lance

♦) Complete Hand Tool

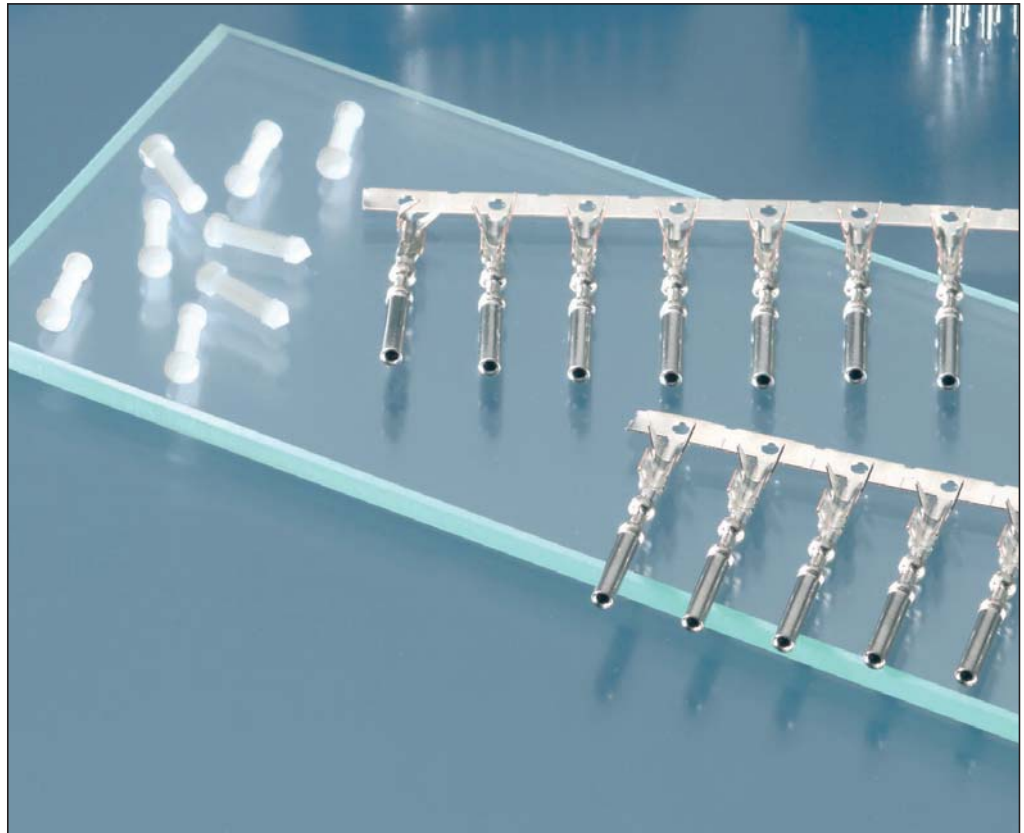
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Engineering Notes

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Introduction



Designed for the automotive industry, AMP SUPERSEAL connectors meet the sealing requirements outlined in IEC 529 and DIN 40050 I.P 6.7 specifications.

The cap and plug connector housings incorporate pre-assembled secondary locks to help insure correct and complete contact insertion into the housing and helps prevent the contacts from backing out during mating. The secondary lock cannot be closed if the contacts are not correctly inserted into the connector housing.

Cavity plugs are available for sealing unused connector cavities.

The double spring contact design (main spring and auxiliary anti-overstress spring) insure low insertion and high contact forces.

**Advantages**

- Compact system minimizes packaging requirements
- Sealing reliability proven under harsh conditions
- Designed for ease of manual harness assembly, engine mounting and under hood environments

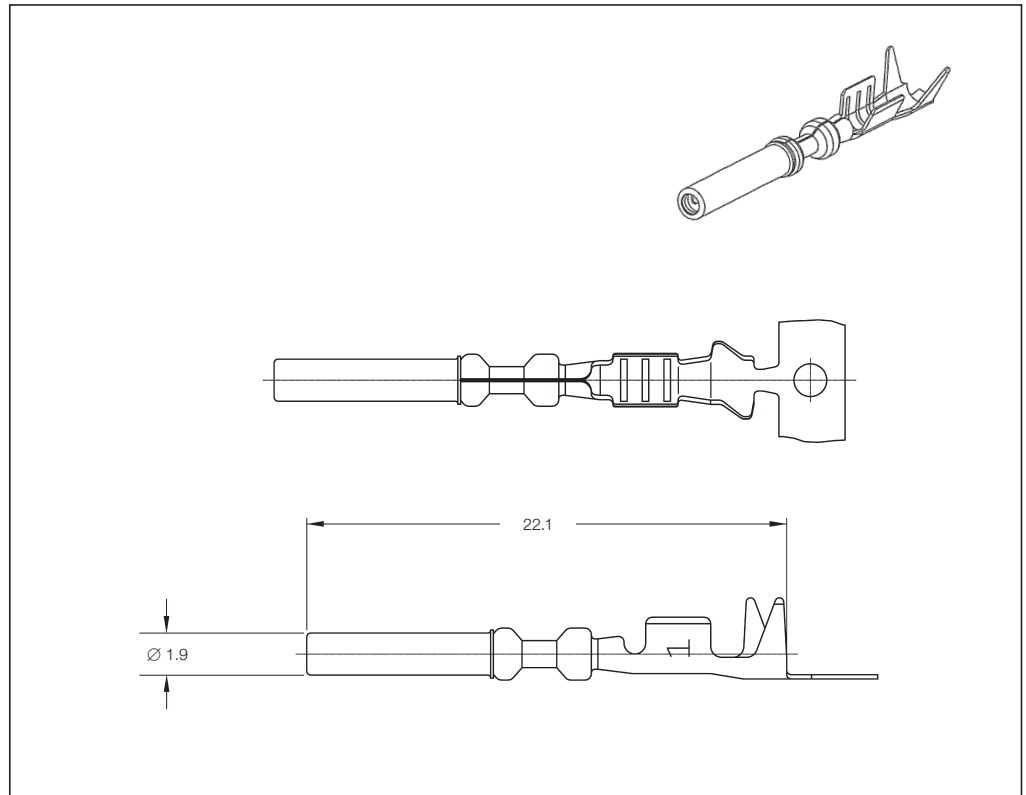
**Applications**

- Wire-to-Board (1.0 mm) and ECU applications, under hood or any location where sealing is required
- Suitable for automotive, truck, bus, or off-road vehicles

Receptacle Contacts and Cavity Plug

**Technical Features**

- Wire Size Range:**  
0.5 up to 1.25 mm<sup>2</sup>
- Insulation Diameter:**  
1.6–2.2 mm  
(Larger allowed on limited basis,  
contact Product Engineering)
- Contact Material:**  
Copper Alloy
- Contact Finish:**  
Gold over Nickel (contact part)  
Tin over Nickel (crimp area)
- Housing Material:**  
PBT/PET
- Temperature Range:**  
–40 °C up to +125 °C
- Current Carrying Capacity:**  
See Product Specification
- Product Specification:**  
108-78140
- Application Specification:**  
114-78011, 114-78013



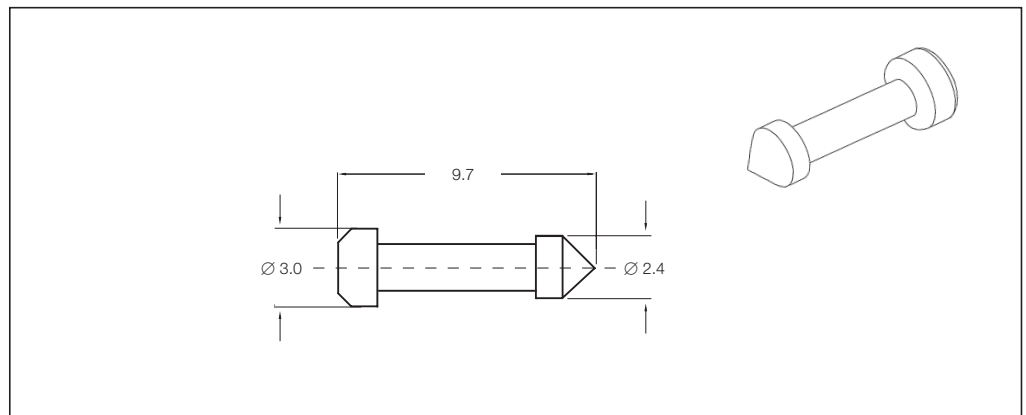
**1.0 mm Receptacle Contacts**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter<br>(mm) | Material and Finish   | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|---------------------------------------|-----------------------------|---|--------------|------------------|-------------|------------------|------------|-----------|
|                                       |                             |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.5                                   | 1.6–2.2                     | Copper Alloy<br>Gold over Nickel (Contact Part)<br>Tin over Nickel (Crimp Area) | 3-1447221-4  | –                | –           | –                | 1463174-2  | 1454509-2 |
| 0.75–0.85                             | 1.6–2.4                     | Copper Alloy<br>Gold over Nickel (Contact Part)<br>Tin over Nickel (Crimp Area) | 3-1447221-3  | –                | –           | –                | 1463173-2  | 1454509-1 |
| 1.25                                  | 1.9–2.2                     | Copper Alloy<br>Gold over Nickel (Contact Part)<br>Tin over Nickel (Crimp Area) | 3-1447221-3  | –                | –           | –                | –          | 1454509-1 |

**Note:** All part numbers are RoHS and ELV compliant.

**Cavity Plug**

Part No. **4-1437284-3**





Introduction



Tyco Electronics has developed the AMP SUPERSEAL 1.5 SERIES Connector family to meet the increasing requirements for reliability and water proofness.

AMP SUPERSEAL 1.5 SERIES Connector exceed the requirements prescribed by IP 67 according IEC 60529 and DIN 40050-9 standards and has its application in the automotive, agriculture and industrial machinery. For sensor application the AMP SUPERSEAL 1.5 SERIES Connector system is qualified as well.

**Advantages**

- Compact system minimizes packaging requirements
- Sealing reliability proven under harsh conditions
- Designed for ease of manual harness assembly, engine mounting and under hood environments

**Applications**

- Wire-to-Wire (1.5 mm) and ECU applications, under hood or any location where sealing is required
- Suitable for automotive, truck, bus, or off-road vehicles



Receptacle Contacts

**Technical Features**

**Contact Material:**

CuZn (Tab)  
CuSn (Receptacle)

**Contact Finish:**

tin plated

**Current Carrying Capacity:**

14 A max.

**Wire Size Range:**

0.35–2.5 mm<sup>2</sup>

**Insulation Diameter:**

1.2–3.3 mm FLR

**Extraction Tool:**

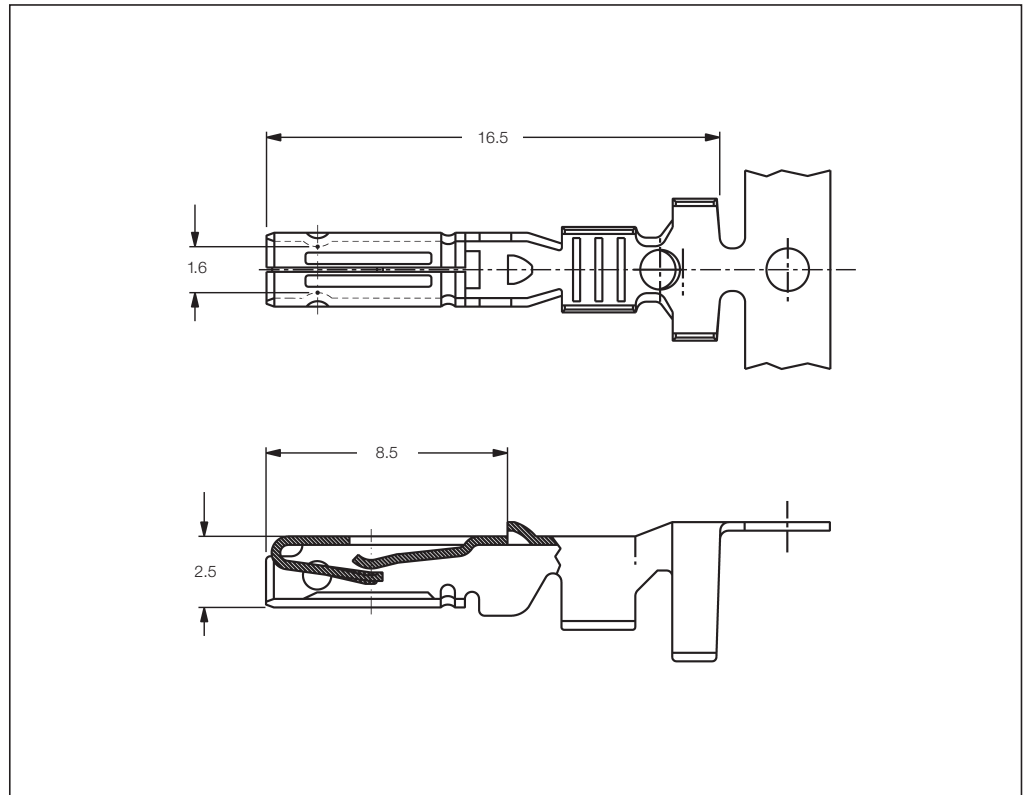
Part No. **9-1579007-1**

**Product Specification:**

108-20090

**Application Specification:**

114-20045



**1.5 mm Receptacle Contacts**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|---------------------------------------|--------------------------|---------|---------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                                       | FLK                      | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.35–0.50                             | 1.45–2.20                | 1.2–1.6 | CuSn, tin plated    | 282403-1     | 14,000           | 183035-1    | 5,000            | 1528347-1  | 58583-1   |
| 0.75–1.50                             | 2.40–3.35                | 1.7–2.4 | CuSn, tin plated    | 282110-1     | 14,000           | 183025-1    | 5,000            | 1528018-1  | 58583-1   |
| 1.5–2.5                               | 3.15–3.80                | 2.2–3.3 | CuSn, tin plated    | 282466-1     | 14,000           | –           | –                | 1426361-1  | –         |

**Note:** All part numbers are RoHS and ELV compliant.

Tab Contacts

**Technical Features**

**Contact Material:**

CuZn (Tab)  
CuSn (Receptacle)

**Contact Finish:**

tin plated, gold plated

**Current Carrying Capacity:**

14 A max.

**Wire Size Range:**

0.35–2.5 mm<sup>2</sup>

**Insulation Diameter:**

1.2–3.3 mm FLR

**Extraction Tool:**

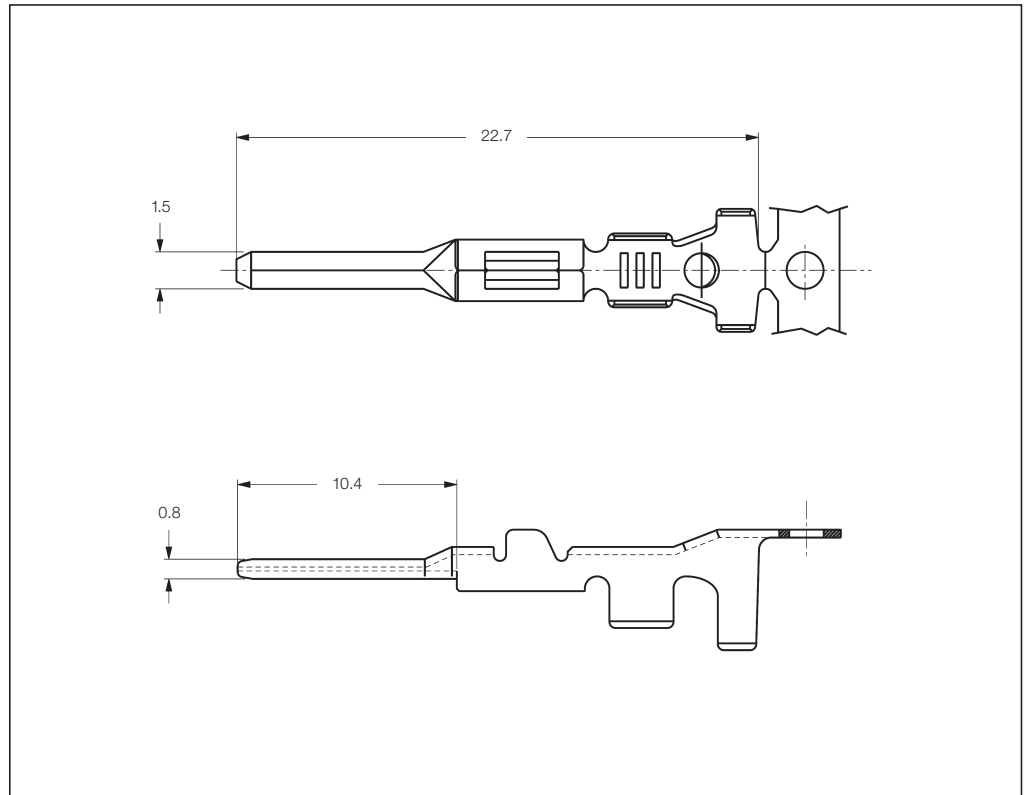
Part No. **9-1579007-1**

**Product Specification:**

108-20090

**Application Specification:**

114-20045



**1.5 mm Tab Contacts**

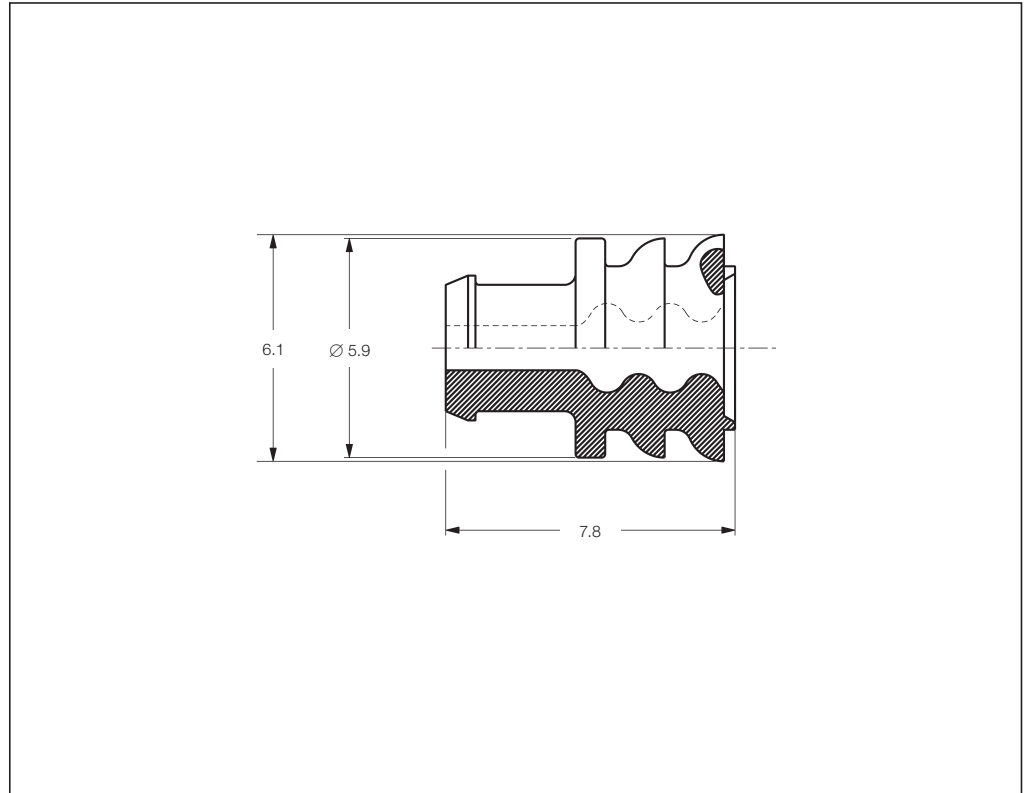
| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter<br>(mm) |         | Material and Finish | Part Numbers |                  |                                 | Applicator | Hand Tool |
|---------------------------------------|-----------------------------|---------|---------------------|--------------|------------------|---------------------------------|------------|-----------|
|                                       | FLK                         | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece<br>Package Quantity |            |           |
| 0.35–0.50                             | 1.45–2.20                   | 1.2–1.6 | CuZn, tin plated    | 282404-1     | 16,000           | 183036-1<br>5,000               | 1528199-1  | 58583-1   |
|                                       |                             |         | CuZn, gold plated   | 282404-3     | 16,000           | –                               |            |           |
| 0.75–1.50                             | 2.40–3.35                   | 1.7–2.4 | CuZn, tin plated    | 282109-1     | 16,000           | 183024-1<br>5,000               | 1528463-1  | 58583-1   |
|                                       |                             |         | CuZn, gold plated   | 282109-3     | 16,000           | –                               |            |           |
| 1.5–2.5                               | 3.15–3.80                   | 2.2–3.3 | CuZn, tin plated    | 282465-1     | 16,000           | –                               | 1528200-1  | –         |

**Note:** All part numbers are RoHS and ELV compliant.

Single Wire Seals and Cavity Plugs

**Technical Features**

- Made from silicon rubber material
- For insulation diameters of 1.2–3.3 mm
- Loose-piece wire seals are crimped simultaneously with the contacts



**Single Wire Seals and Cavity Plug**

| Insulation Diameter (mm) |         | Color  | Part Number | Package Quantity |
|--------------------------|---------|--------|-------------|------------------|
| FLK                      | FLR     |        |             |                  |
| –                        | 1.2–1.6 | Green  | 281934-4    | 50,000           |
| –                        | 1.7–2.4 | Yellow | 281934-2    | 50,000           |
| –                        | 2.5–3.3 | Red    | 281934-3    | 50,000           |
| Cavity Plug              |         | Red    | 282081-1    | 50,000           |

## Introduction



### Technical Features

- 1.3 mm Pin and Socket System (Lanceless)
- Socket terminals have 3 contact beams
- Wire Size Range 0.5–1.25 mm<sup>2</sup> (20–16 AWG)
- Wire Insulation 1.7–2.7 mm
- Terminal Plating Tin or Gold
- Current Rating up to 17 A (16 AWG with Gold)
- Temperature Range  
Gold: –40 °C to +125 °C  
Tin: –40 °C to +105 °C

Receptacle Contacts

**Technical Features**

**Contact Material:**

Cu-Alloy

**Contact Finish:**

Tin plated, gold plated

**Current Rating:**

Up to 17 amps

**Temperature Range:**

-40 °C up to +125 °C

**Wire Size Range:**

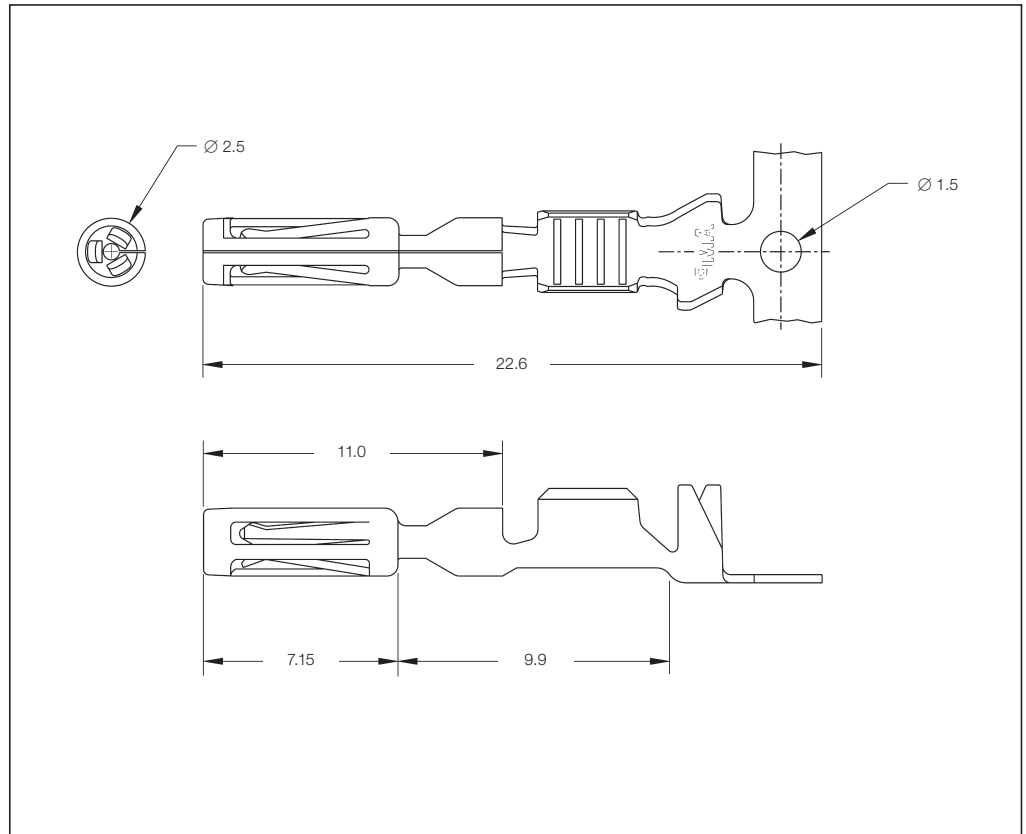
Accept 0.5–1.25 mm<sup>2</sup>  
(20–16 AWG) wire with  
insulation diameter of  
1.7–2.7 mm

**Product Specification:**

108-1329

**Application Specification:**

114-16016



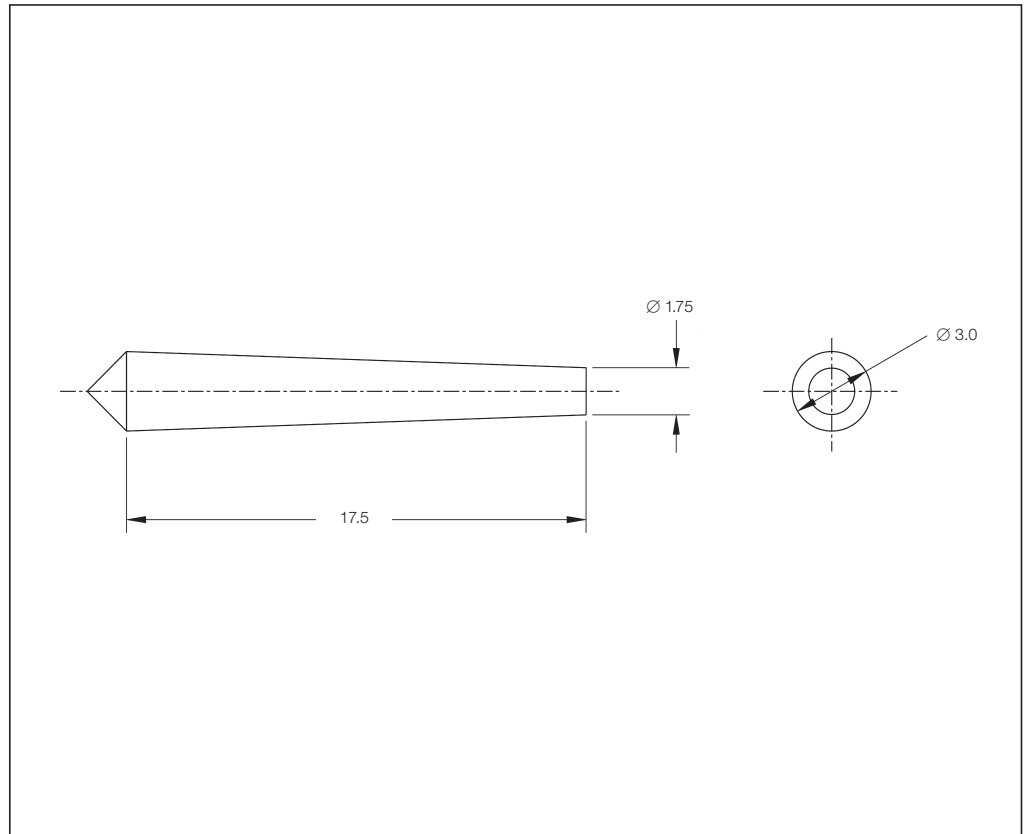
**Receptacle Contacts**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish      | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|--------------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                          | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.5–1.25           | 20–16 | 1.7–2.7                  | Cu-Alloy, pre-tin plated | 770520-1     | 5,000            | 770854-1    | 1,000            | 567333-2   | 58440-1   |
|                    |       |                          | Cu-Alloy, gold plated    | 770520-3     | 5,000            | 770854-3    | 1,000            |            |           |

**Note:** All Part Numbers are RoHS and ELV compliant.

AMPSEAL Seal Plug

All circuits are sealed by a diaphragm in the rubber wire seal. During plug connector assembly, the diaphragm is pierced as the contact passes through it. Unused circuit cavities, unless accidentally perforated will remain sealed.



**AMPSEAL Seal Plug**

| Material  | Color   | Part Number | Package Quantity |
|-----------|---------|-------------|------------------|
| Nylon 6/6 | Natural | 770678-1    | 1,000            |

**Note:** All Part Numbers are RoHS and ELV compliant.

Engineering Notes

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Introduction



The HDSF Size 16 Pin and Socket contacts system is a stamped and formed version of the screw machine MIL-C-39029 contacts.

The Tyco Electronics Size 16 contact system offers a thicker and higher performance alloy base metal, providing the following superior benefits over most of the competitive stamped and formed size 16 contact systems.

1. Increased terminal/beam strength.
2. Greater resistance to stress relaxation.
3. Increased current carrying ability due to lower T-Rise (20%).

**Technical Features**

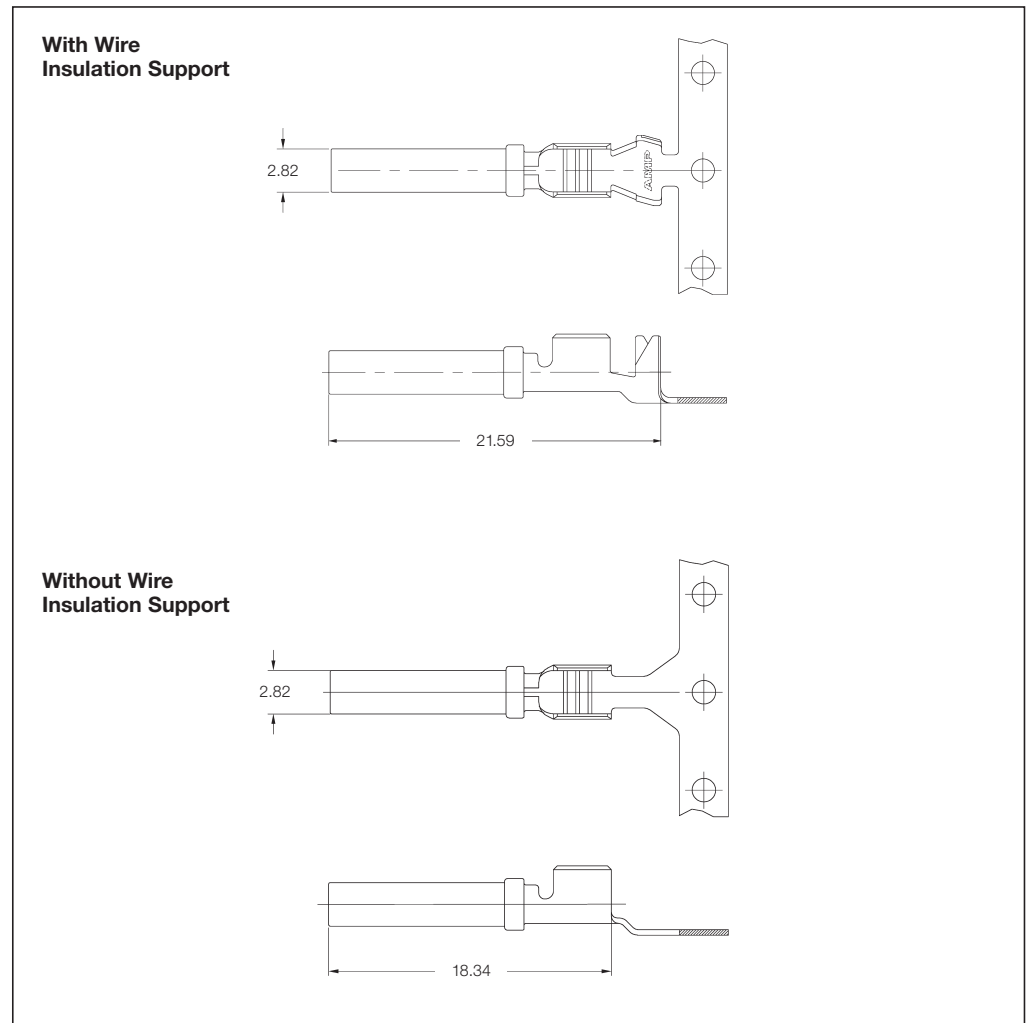
- 1.58 mm Pin and Socket System per MIL-C-39029
- Lanceless design
- Dual Beam Socket Contact
- Wire Size Range 0.5–2.0 mm<sup>2</sup> (20–14 AWG)
- Wire Insulation 1.7–2.7 mm
- Terminal Plating Gold or Nickel
- Current Rating up to 13 amps
- Vibration Performance up to 35 G's



Receptacle Contacts

**Technical Features**

- Contact Material:**  
Copper Alloy
- Contact Finish:**  
Gold or Nickel
- Wire Size Range:**  
0.5–2.0 mm<sup>2</sup> (20–14 AWG)
- Insulation Diameter:**  
1.30–3.67 mm
- Current Carrying Capacity:**  
13 amps
- Temperature Range**  
–40 °C to +120 °C
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Receptacle Contacts with Wire Insulation Support**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.5–0.8            | 20–18 | 1.30–2.54                | Copper Alloy, Gold   | 1924464-1    | 4,000            | 1924580-1   | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 1924464-2    | 4,000            | 1924580-2   | 1,000            |            |           |
| 0.8–2.0            | 18–14 | 2.18–3.67                | Copper Alloy, Gold   | 776492-1     | 4,000            | 776299-1    | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 776492-2     | 4,000            | 776299-2    | 1,000            |            |           |

**Note:** All Part Numbers are RoHS and ELV compliant.

**Receptacle Contacts without Wire Insulation Support**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.8–2.0            | 18–14 | 2.18–3.67                | Copper Alloy, Gold   | 776491-1     | 4,000            | 776297-1    | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 776491-2     | 4,000            | 776297-2    | 1,000            |            |           |

**Note:** All Part Numbers are RoHS and ELV compliant.

Pin Contacts

**Technical Features**

**Contact Material:**

Copper Alloy

**Contact Finish:**

Gold or Nickel

**Wire Size Range:**

0.5–2.0 mm<sup>2</sup> (20–14 AWG)

**Insulation Diameter:**

1.30–3.67 mm

**Current Carrying Capacity:**

13 amps

**Temperature Range**

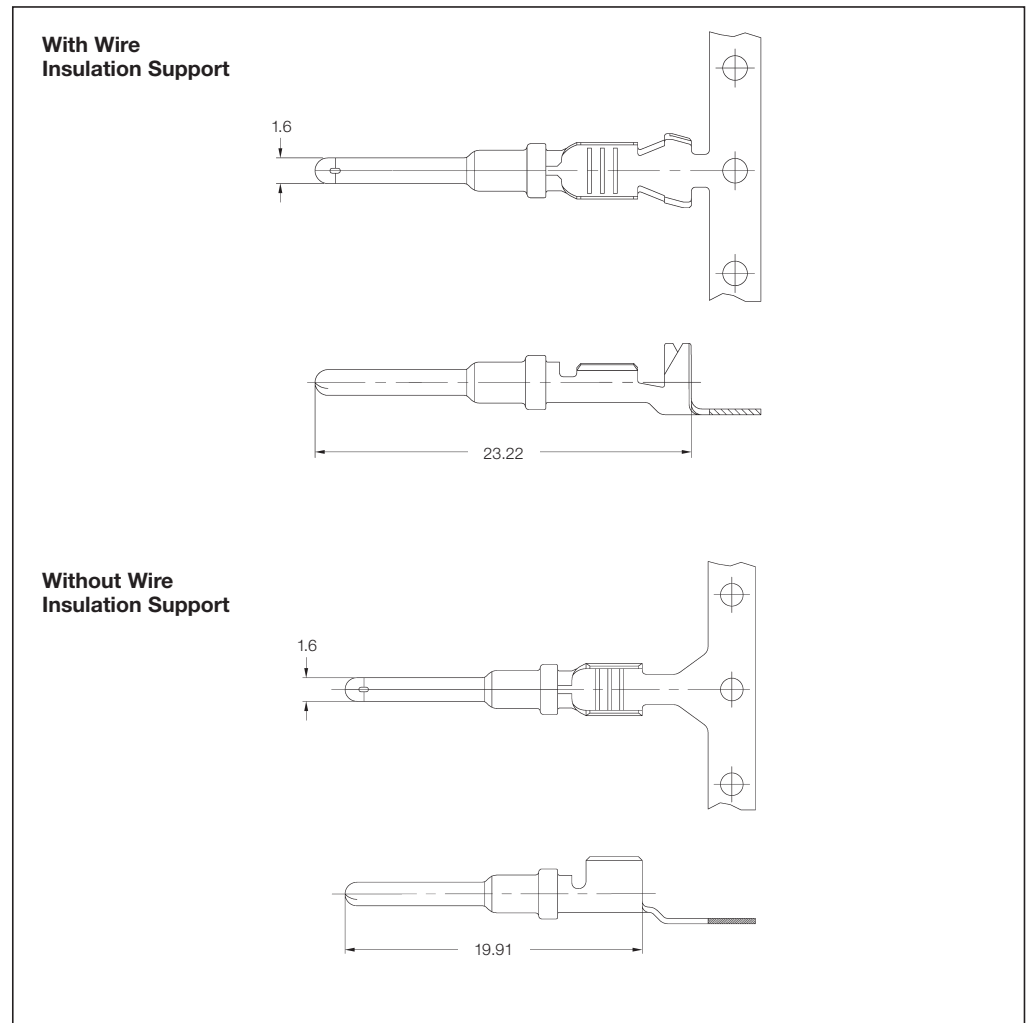
–40 °C to +120 °C

**Product Specification:**

108-2184

**Application Specification:**

114-13065



**Pin Contacts with Wire Insulation Support**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.5–0.8            | 20–18 | 1.30–2.54                | Copper Alloy, Gold   | 1924463-1    | 4,000            | 1924579-1   | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 1924463-3    | 4,000            | 1924579-3   | 1,000            |            |           |
| 0.8–2.0            | 18–14 | 2.18–3.67                | Copper Alloy, Gold   | 638078-1     | 4,000            | 776300-1    | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 638078-3     | 4,000            | 776300-2    | 1,000            |            |           |

**Note:** All Part Numbers are RoHS and ELV compliant.

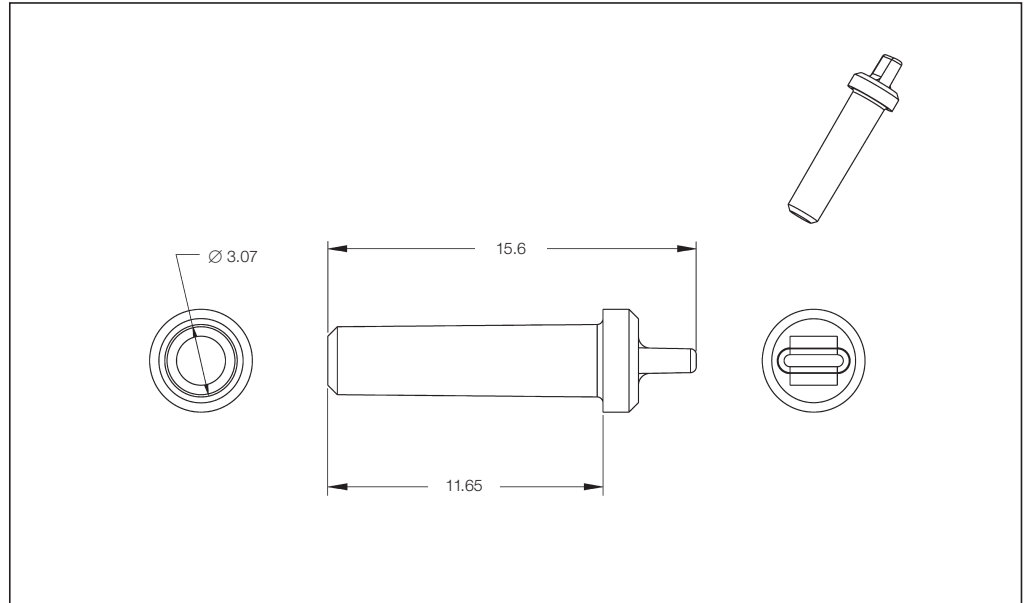
**Pin Contacts without Wire Insulation Support**

| Wire Size Range    |       | Insulation Diameter (mm) | Material and Finish  | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------|-------|--------------------------|----------------------|--------------|------------------|-------------|------------------|------------|-----------|
| (mm <sup>2</sup> ) | (AWG) |                          |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.8–2.0            | 18–14 | 2.18–3.67                | Copper Alloy, Gold   | 638112-1     | 4,000            | 776298-1    | 1,000            | -          | -         |
|                    |       |                          | Copper Alloy, Nickel | 638112-3     | 4,000            | 776298-2    | 1,000            |            |           |

**Note:** All Part Numbers are RoHS and ELV compliant.

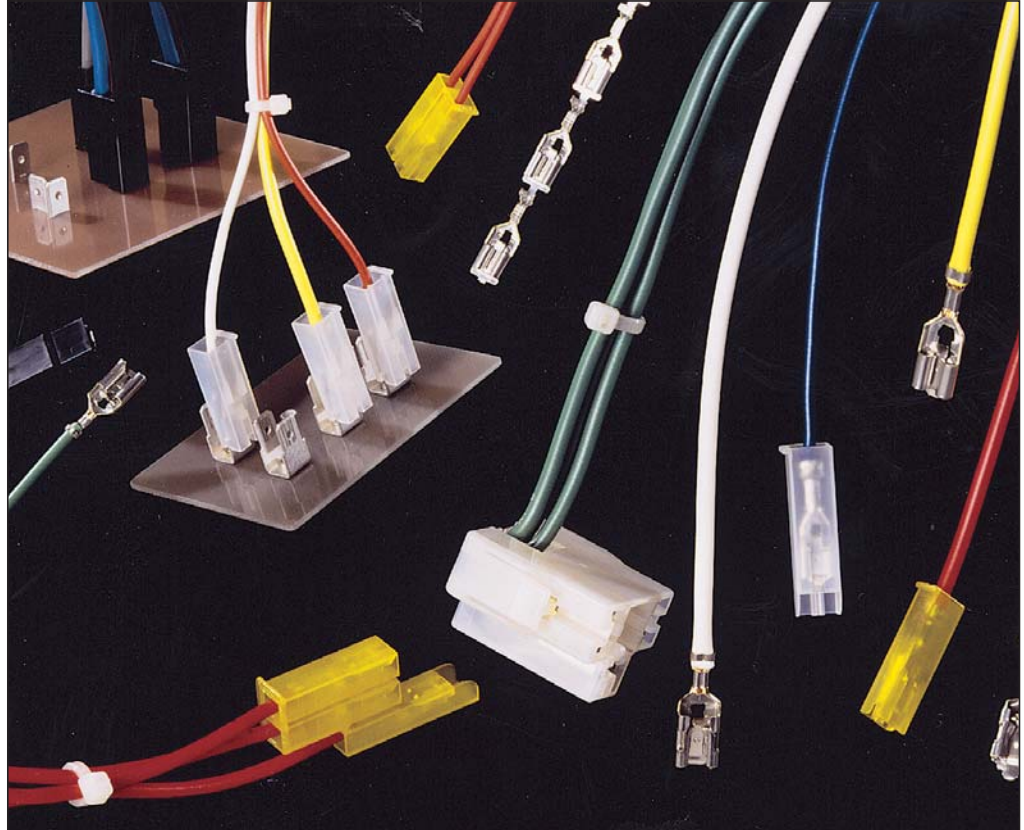
Cavity Plugs for Unsealed Cavity

**Cavity Plugs  
for Unsealed Cavity**



| Contact Cavity Size |       | Color  | Part Number | Package Quantity |
|---------------------|-------|--------|-------------|------------------|
| (mm)                | (AWG) |        |             |                  |
| 3.07                | 16    | Yellow | 776363-1    | 10,000           |
| 2.55                | 20    | White  | 776364-1    | 10,000           |

Introduction



Positive Lock receptacles are specifically designed to provide ease of assembly and secure retention to mating tabs. These unique features are attainable by the reduced insertion force of the product and the locking dimple. The receptacle locks onto mating tabs containing holes and is removable only by deflecting an integrally designed depressor prior to withdrawal.

The depressor can be deflected manually by thumb pressure, or automatically by a cam inside a specially designed nylon housing.

If the housing is employed, removal of the terminal from the tab is performed by simply applying withdrawal force to the housing. In addition to providing a means of disconnecting the terminal, the housing performs its traditional insulating function.

Aside from reduced insertion forces, Positive Lock receptacles give the assembler a definite mechanical “snap” when the terminal is correctly seated over the mating tab. This facilitates correct assembly in hard-to-reach areas such as under dashboards, recessed switch tabs, etc.

Safety is enhanced by the locking capability of the product. Unless the depressor is deliberately deflected, either manually or by withdrawal force applied directly to the optional housing, a terminal will not easily come off of the tab. Thus, the danger from exposed live parts or disruption of critical circuitry due to improperly seated or accidentally removed terminals is greatly reduced.

90° Receptacle Contacts (Flag Type)

**Technical Features**

**Wire Size Range:**

0.5 to 1.5 mm<sup>2</sup>

1.0 to 2.5 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 25 A

**Insertion Force:**

approx. 27 N

**Extraction Force,  
Latch Release Ineffective:**

approx. 7 N

**Material Thickness:**

0.4 mm

**Extraction Force,  
Latch Release Effective:**

≥100 N (without vibration)

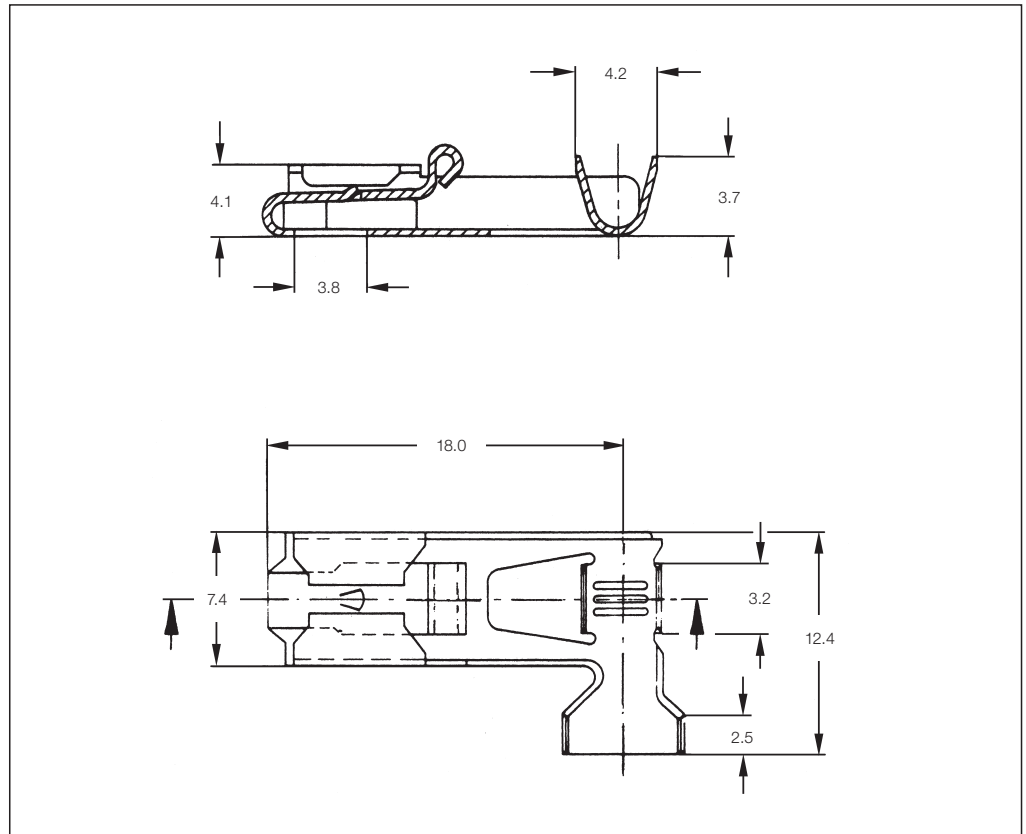
**Contact Material:**

Brass or phosphor bronze

**Contact Finish:**

plain, tin plated or silver plated

**Special Materials and Finishes  
available on request.**



**90° Receptacle Contacts (Flag Type)**

| Wire Size Range       | Insulation Diameter    |           | Material and Finish  | Part Numbers           |                  |                      |                  | Applicator <sup>♦</sup> | Hand Tool |
|-----------------------|------------------------|-----------|----------------------|------------------------|------------------|----------------------|------------------|-------------------------|-----------|
|                       | FLK                    | FLR       |                      | Strip Form             | Package Quantity | Loose-Piece          | Package Quantity |                         |           |
| mm <sup>2</sup> (AWG) | mm (Inch)              | mm (Inch) |                      |                        |                  |                      |                  |                         |           |
| 0.5-1.5<br>(20-15)    | 2.2-3.1<br>(.087-.122) | -         | CuSn, pre-tin plated | 926820-1               | 2,000            |                      |                  |                         |           |
|                       |                        |           | CuSn, plain          | 926820-2               | 2,000            |                      |                  |                         |           |
|                       |                        |           | CuSn, tin plated     | 926820-3               | 2,000            |                      |                  |                         |           |
|                       |                        |           | CuZn, pre-tin plated | 926820-4               | 2,000            | -                    | -                | 878423                  | -         |
|                       |                        |           | CuZn, plain          | 926820-5               | 2,000            |                      |                  |                         |           |
|                       |                        |           | CuZn, tin plated     | 926820-6               | 8,000            |                      |                  |                         |           |
|                       |                        |           | CuSn, silver plated  | 926820-8               | 2,000            |                      |                  |                         |           |
|                       |                        |           | 1.0-2.5<br>(17-13)   | 3.1-4.3<br>(.122-.170) | -                | CuSn, pre-tin plated | 926790-1         | 2,000                   |           |
| CuSn, plain           | 926790-2               | -         |                      |                        |                  |                      |                  |                         |           |
| CuSn, tin plated      | 926790-3               | 2,000     |                      |                        |                  |                      |                  | 878395                  | 734187-1  |
| CuZn, pre-tin plated  | 926790-4               | 2,000     |                      |                        |                  | -                    | -                |                         |           |
| CuZn, plain           | 926790-5               | 2,000     |                      |                        |                  |                      |                  |                         |           |
| CuZn, tin plated      | 926790-6               | 8,000     |                      |                        |                  |                      |                  |                         |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

180° Receptacle Contacts

**Technical Features**

**Wire Size Range:**

0.5 to 1.5 mm<sup>2</sup>  
2.5 to 4.0 mm<sup>2</sup>  
4.0 to 6.0 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 25 A

**Insertion Force:**

approx. 27 N

**Extraction Force, Latch Release Ineffective:**

approx. 7 N

**Material Thickness:**

0.4 mm

**Extraction Force, Latch Release Effective:**

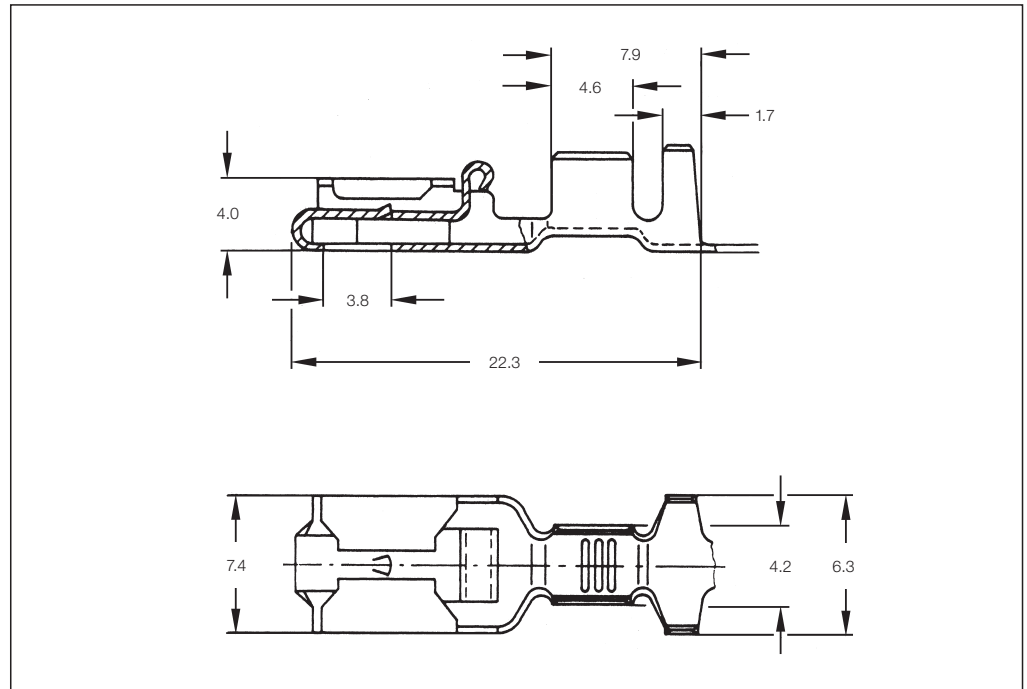
≥ 100 N (without vibration)

**Contact Material:**

Brass or phosphor bronze

**Contact Finish:**

plain, tin plated, nickel plated or silver plated



**Special Materials and Finishes available on request.**

**Pneumatic Tooling Machine:**  
Part No. **656055-1**

**Crimping Head:**  
Part No. **656080-1** (for Wire Size Range 0.5–1.5 and 2.5–4.0 mm<sup>2</sup>)

**180° Receptacle Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter    |                        | Material and Finish  | Part Numbers |                  |             |                  | Applicator* | Hand Tool                        |
|---|------------------------|------------------------|----------------------|--------------|------------------|-------------|------------------|-------------|----------------------------------|
|   | FLK<br>mm<br>(Inch)    | FLR<br>mm<br>(Inch)    |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                  |
| 0.5–1.0<br>(20–17)                          | 2.0–3.3<br>(.079–.130) | –                      | CuZn, plain          | 927867-1     | 1,500            | 927868-1    | –                | 872145      | 734372-1<br>with Die<br>734384-1 |
|   |                        |                        | CuSn, plain          | 927867-2     | 1,500            | 927868-2    | –                |             |                                  |
|   |                        |                        | CuZn, pre-tin plated | 927867-6     | 1,500            | 927868-6    | 500              |             |                                  |
|   |                        |                        | CuSn, pre-tin plated | 927867-7     | 1,500            | 927868-7    | –                |             |                                  |
|   |                        |                        | CuSn, silver plated  | 927867-8     | 1,500            | 927868-8    | –                |             |                                  |
|   |                        |                        | CuZn, silver plated  | 927867-9     | 1,500            | 927868-9    | –                |             |                                  |
| 0.5–1.0<br>(20–17)                          | –                      | 1.4–2.3<br>(.055–.091) | CuZn, plain          | 927852-1     | 1,500            | 927853-1    | 1,300            | 1528098     | 169400-0<br>with Die<br>734469-0 |
|   |                        |                        | CuSn, plain          | 927852-2     | 1,500            | 927853-2    | 1,300            |             |                                  |
|   |                        |                        | CuZn, pre-tin plated | 927852-6     | 1,500            | 927853-6    | 500              |             |                                  |
|   |                        |                        | CuSn, pre-tin plated | 927852-7     | 1,500            | 927853-7    | 1,300            |             |                                  |
|   |                        |                        | CuSn, silver plated  | 927852-8     | 1,500            | 927853-8    | 1,500            |             |                                  |
|   |                        |                        | CuZn, silver plated  | 927852-9     | 1,500            | 927853-9    | –                |             |                                  |
| 0.5–1.5<br>(20–15)                          | 2.3–3.3<br>(.091–.130) | –                      | CuZn, plain          | 160759-1     | 1,500            | 160773-1    | 500              | 1528000     | 654174-1                         |
|   |                        |                        | CuSn, plain          | 160759-2     | 1,500            | 160773-2    | 500              |             |                                  |
|   |                        |                        | CuZn, tin plated     | 160759-3     | 1,500            | 160773-3    | 500              |             |                                  |
|   |                        |                        | CuSn, tin plated     | 160759-4     | 1,500            | 160773-4    | 500              |             |                                  |
|   |                        |                        | CuZn, plain          | 281827-1     | –                | –           | –                | 1528545     |                                  |
|   |                        |                        | CuZn, tin plated     | 281827-2     | 1,500            | –           | –                | 1528000     |                                  |
|   |                        |                        | CuZn, pre-tin plated | 1-160759-1   | 1,500            | 160773-6    | 500              | 1528000     |                                  |
|   |                        |                        | CuSn, pre-tin plated | 1-160759-2   | 1,500            | 160773-7    | 500              | 1528000     |                                  |
| 0.7–2.0<br>(18–14)                          | 2.4–3.2<br>(.095–.126) | –                      | CuZn, plain          | 154718-1     | 1,500            | 341002-1    | 500              | 1528010     | 525651-0                         |
|   |                        |                        | CuSn, plain          | 154718-2     | 1,500            | 341002-2    | 500              |             |                                  |
|   |                        |                        | CuSn, tin plated     | 154718-4     | 1,500            | –           | –                |             |                                  |
|   |                        |                        | CuZn, pre-tin plated | 154718-6     | 1,500            | 341002-6    | 500              |             |                                  |
|   |                        |                        | CuSn, pre-tin plated | 154718-7     | 1,500            | 341002-7    | 500              |             |                                  |

\*) Applicators are application specific, consult Tyco Electronics for details.

**180° Receptacle Contacts (continued)**

**180° Receptacle Contacts**

| Wire Size Range       | Insulation Diameter FLK | Diameter FLR           | Material and Finish  | Part Numbers           |                  |             |                  | Applicator ♦ | Hand Tool   |
|-----------------------|-------------------------|------------------------|----------------------|------------------------|------------------|-------------|------------------|--------------|---|
|                       |                         |                        |                      | Strip Form             | Package Quantity | Loose-Piece | Package Quantity |              |   |
| mm <sup>2</sup> (AWG) | mm (Inch)               | mm (Inch)              |                      |                        |                  |             |                  |              |   |
| 1.0-2.5<br>(17-13)    | 3.0-4.3<br>(.118-.170)  | -                      | CuZn, plain          | 160831-1               | 1,500            | 928901-1    | 500              | 1528374      | 734372-1<br>with Die<br>1-734388-1                                      |
|                       |                         |                        | CuSn, plain          | 160831-2               | 1,500            | 928901-2    | 1,700            |              |   |
|                       |                         |                        | CuZn, tin plated     | 160831-3               | 1,500            | 928901-3    | 1,500            |              |   |
|                       |                         |                        | CuSn, tin plated     | 160831-4               | 1,500            | 928901-4    | 1,200            |              |   |
| 1.0-2.5<br>(17-13)    | 2.7-4.0<br>(.106-.157)  | -                      | CuZn, plain          | 927881-1               | 1,500            | 927882-1    | -                | 878045       | 734372-1<br>with Die<br>734384-1  |
|                       |                         |                        | CuSn, plain          | 927881-2               | 1,500            | 927882-2    | -                |              |   |
|                       |                         |                        | CuZn, tin plated     | 927881-3               | 1,500            | 927882-3    | -                |              |   |
|                       |                         |                        | CuSn, tin plated     | 927881-4               | 1,500            | 927882-4    | -                |              |   |
|                       |                         |                        | CuSn, silver plated  | 927881-8               | 1,500            | 927882-8    | 1,200            |              |   |
| 1.0-2.5<br>(17-13)    | -                       | 2.1-3.1<br>(.083-.122) | CuZn, plain          | 927854-1               | 1,500            | 927855-1    | 500              | 1528099      | 169400-0<br>with Die<br>734469-0  |
|                       |                         |                        | CuSn, plain          | 927854-2               | 1,500            | 927855-2    | -                |              |   |
|                       |                         |                        | CuZn, pre-tin plated | 927854-6               | 1,500            | 927855-6    | 500              |              |   |
|                       |                         |                        | CuSn, pre-tin plated | 927854-7               | 1,500            | 927855-7    | 500              |              |   |
|                       |                         |                        | CuSn, silver plated  | 927854-8               | 1,500            | 927855-8    | 500              |              |   |
|                       |                         |                        | CuZn, silver plated  | 927854-9               | 1,500            | 927855-9    | -                |              |   |
| 2.5-4.0<br>(13-11)    | 3.6-4.3<br>(.142-.170)  | -                      | CuZn, plain          | 154717-1               | 1,500            | 341001-1    | 500              | 1528233      | 654174-1<br>with Die<br>525651-x  |
|                       |                         |                        | CuSn, plain          | 154717-2               | 1,500            | 341001-2    | 500              |              |   |
|                       |                         |                        | CuZn, tin plated     | 154717-3               | 1,500            | 341001-3    | 500              |              |   |
|                       |                         |                        | CuSn, tin plated     | 154717-4               | 1,500            | -           | -                |              |   |
|                       |                         |                        | CuZn, pre-tin plated | 154717-6               | 1,500            | -           | -                |              |   |
|                       |                         |                        | CuSn, pre-tin plated | 154717-7               | 1,500            | -           | -                |              |   |
|                       |                         |                        | CuSn, silver plated  | 154717-8               | 1,500            | -           | -                |              |   |
|                       |                         |                        | CuZn, plain          | 281828-1               | -                | -           | -                |              |   |
|                       |                         |                        | CuZn, tin plated     | 281828-2               | 1,500            | -           | -                |              |   |
|                       |                         |                        | 2.5-4.0*             | 3.3-4.7<br>(.130-.185) | -                | CuZn, plain | 928958-1         |              |   |
| CuSn, plain           | 928958-2                | 1,000                  |                      |                        |                  | 928959-2    | -                |              |   |
| CuZn, pre-tin plated  | 928958-6                | 1,000                  |                      |                        |                  | 928959-6    | -                |              |   |
| CuSn, pre-tin plated  | 928958-7                | 1,300                  |                      |                        |                  | 928959-7    | -                |              |   |
| CuSn, silver plated   | 928958-8                | 1,000                  |                      |                        |                  | 928959-8    | 500              |              |   |
| 4.0-6.0*              | 4.0-5.3<br>(.157-.197)  | -                      | CuZn, plain          | 928960-1               | 1,000            | 928961-1    | -                | 1426658      | 734372-1<br>with Die<br>734384-1<br>or 169400-0<br>with Die<br>734471-0 |
|                       |                         |                        | CuSn, plain          | 928960-2               | 1,000            | 928961-2    | -                |              |   |
|                       |                         |                        | CuZn, pre-tin plated | 928960-6               | 1,000            | 928961-6    | 500              |              |   |
|                       |                         |                        | CuSn, pre-tin plated | 928960-7               | 1,000            | 928961-7    | 500              |              |   |
|                       |                         |                        | CuSn, silver plated  | 928960-8               | 1,000            | 928961-8    | 1,000            |              |   |
| 4.0-6.0<br>(11-9)     | 3.4-5.1<br>(.134-.200)  | -                      | CuZn, tin plated     | 790319-2               | 5,000            | 737015-2    | -                | 1528526      | 180250-0<br>or<br>525651-x  |
|                       |                         |                        | CuZn, pre-tin plated | 790319-3               | 1,250            | 737015-3    | 1,000            |              |   |
|                       |                         |                        | CuSn, plain          | 790319-4               | 1,250            | 737015-4    | 500              |              |   |
|                       |                         |                        | CuZn, tin plated     | 281829-2               | 5,000            | -           | -                |              |   |

\*) FLR Wire for Double Amplitude

♦) Applicators are application specific, consult Tyco Electronics for details.

180° Mating Tabs according DIN 46244, Form A

**Tab Dimensions**

① Version with Attachment

**Tabs for Crimping**

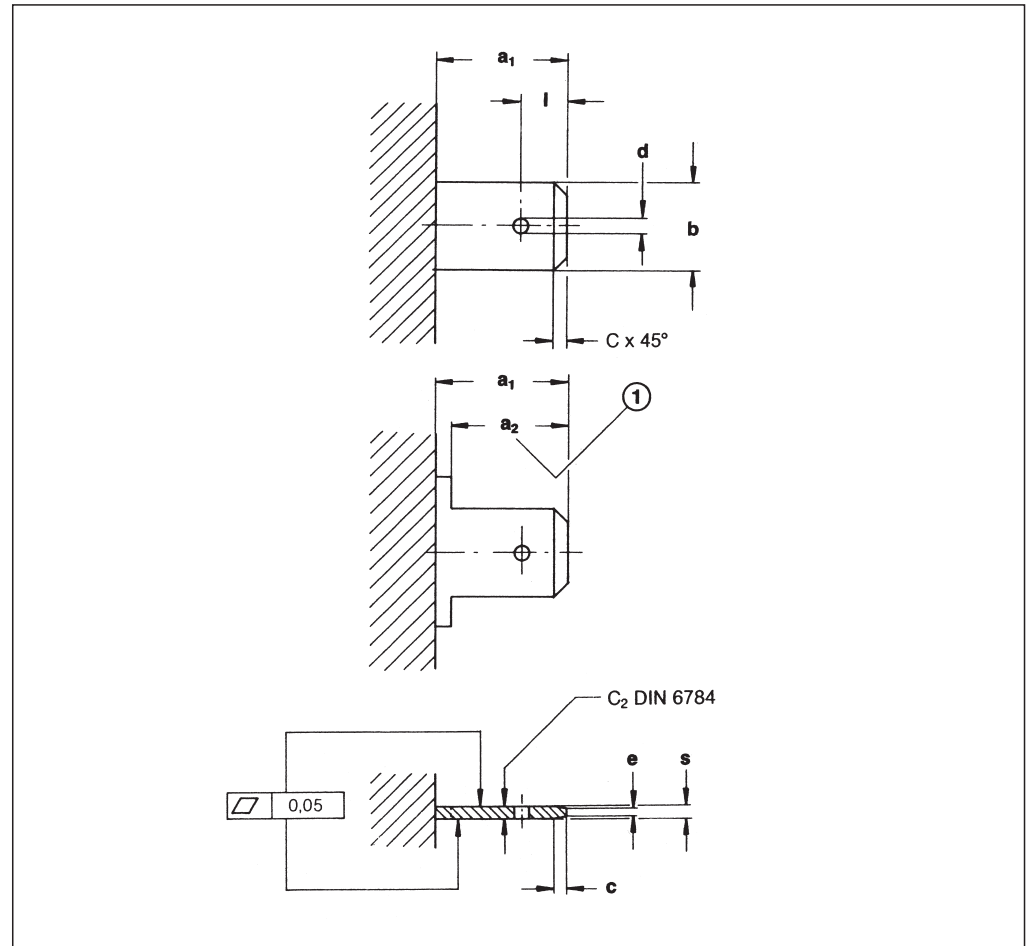
Suited for Tab Housing  
Part No. **927203**:

Part No. **160691**  
(0.3–0.8 mm<sup>2</sup>)

Part No. **280081**  
(0.8–2.1 mm<sup>2</sup>)

Part No. **160786**  
(2.0–3.3 mm<sup>2</sup>)

Part No. **280080**  
(4.0–6.0 mm<sup>2</sup>)



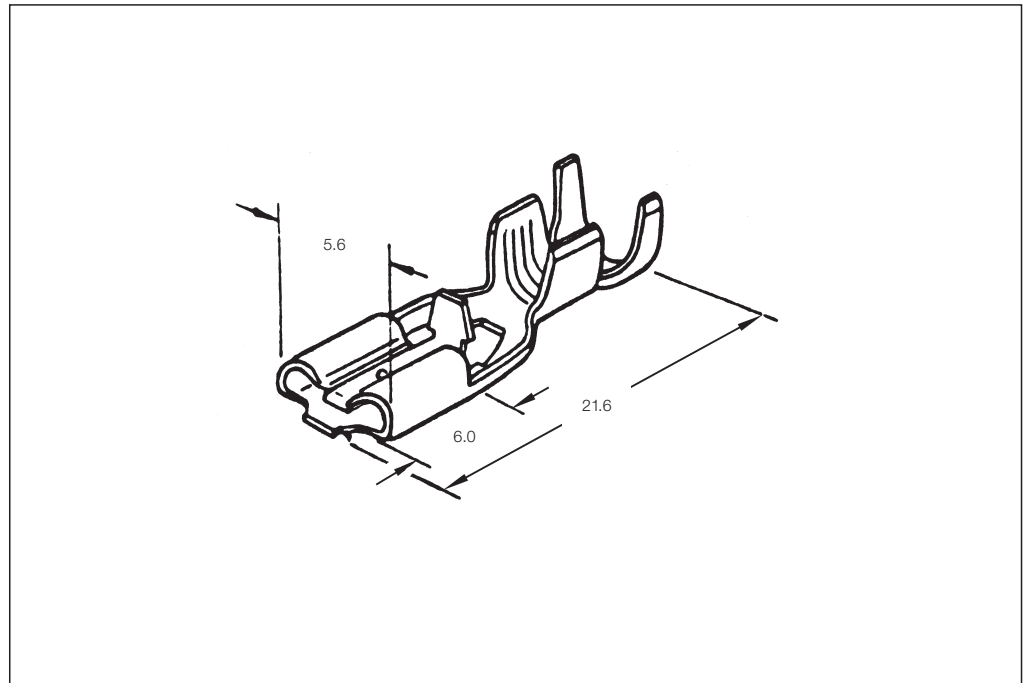
| Nominal Size | Dimensions (mm) |            |           |                |                  |                |                                    |                |
|--------------|-----------------|------------|-----------|----------------|------------------|----------------|------------------------------------|----------------|
|              | a1<br>min.      | a2<br>min. | b<br>±0,1 | c<br>Tolerance | d<br>+0,2<br>0,0 | e<br>Tolerance | l<br>Tolerance                     | s<br>Tolerance |
| 6,3–0,8      | 9,0             | 8,0        | 6,3       | 1,0 ±0,3       | 1,65             | 0,4 ±0,15      | 4,0 <sup>+0,5</sup> <sub>0,0</sub> | 0,8 ±0,03      |



Receptacle Contacts

**Technical Features**

Acceptable Tab Width:  
 4.8 x 0.5 mm



**Receptacle Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter     |                     | Material and Finish     | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|---|-------------------------|---------------------|-------------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|   | FLK<br>mm<br>(Inch)     | FLR<br>mm<br>(Inch) |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| 0.22–0.53<br>(24–20)                        | 1.5–2.7<br>(.060–.106)  | –                   | CuZn,<br>pre-tin plated | 170324-1     | 8,000            | 170330-1    | 1,000            | 1529208–     | 753898-1  |
| 0.51–1.38<br>(20–16)                        | 1.9–3.4<br>(.075–.134)  | –                   | CuZn,<br>pre-tin plated | 170325-1     | 6,000            | 170331-1    | 1,000            | 1529039      | 753899-1  |
| 0.70–2.08<br>(18–14)                        | 2.1–3.6*<br>(.083–.142) | –                   | CuZn,<br>pre-tin plated | 170326-1     | 5,000            | 170332-1    | 1,000            | 1529169      | 753786-1  |

\*) 2.1–3.6 mm (for one wire)  
 5.5 mm max. (for two wires; Outer diameter of a wire 1.6–3.1 mm).

♦) Applicators are application specific, consult Tyco Electronics for details.

90° Receptacle Contacts (Flag Type)

**Technical Features**

**Contact Material:**

Brass, pre-tin plated

**Housing Material:**

6.6 Nylon, UL 94 V-2 rated

**Product Specification:**

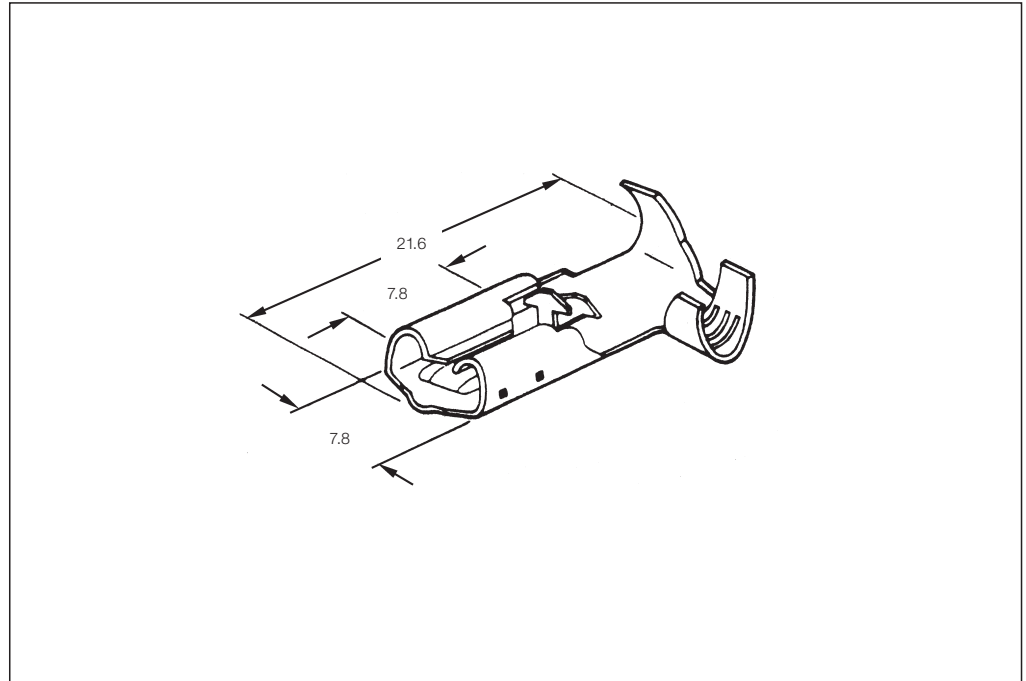
108-5162

**Application Specification:**

114-5070

**Instruction Sheet:**

IS-212 J

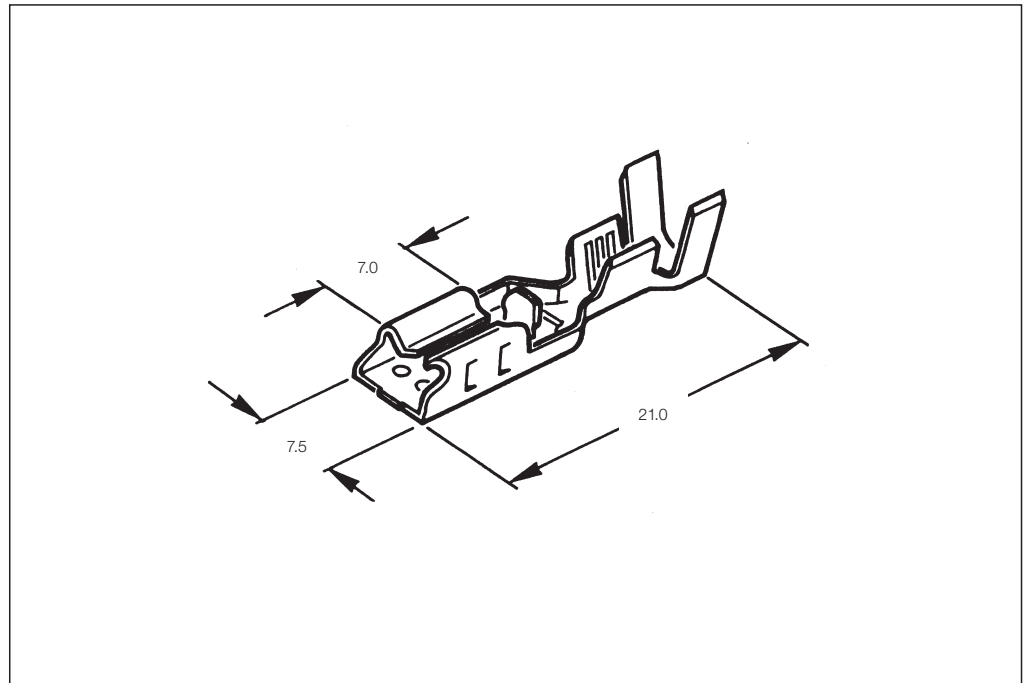


**90° Receptacle Contacts (Flag Type)**

| Wire Size Range       | Insulation Diameter     |           | Material and Finish     | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|-----------------------|-------------------------|-----------|-------------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                       | FLK                     | FLR       |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| mm <sup>2</sup> (AWG) | mm (Inch)               | mm (Inch) |                         |              |                  |             |                  |              |           |
| 0.30-0.89<br>(22-18)  | 1.5-2.8<br>(.059-.110)  | -         | CuZn,<br>pre-tin plated | 172761-1     | 2,000            | 172762-1    | 1,000            | -            | 753814-1  |
| 0.75-2.27<br>(18-13)  | 2.8-5.2<br>(.110-.204)  | -         | CuZn,<br>pre-tin plated | 172763-1     | 2,000            | 172764-1    | 1,000            | -            | 753780-1  |
| 2.00-3.37<br>(14-12)  | 2.8-3.37<br>(.110-.133) | -         | CuZn,<br>pre-tin plated | 172765-1     | 2,000            | 172766-1    | 1,000            | -            | 753815-1  |

♦) Applicators are application specific, consult Tyco Electronics for details.

180° Receptacle Contacts

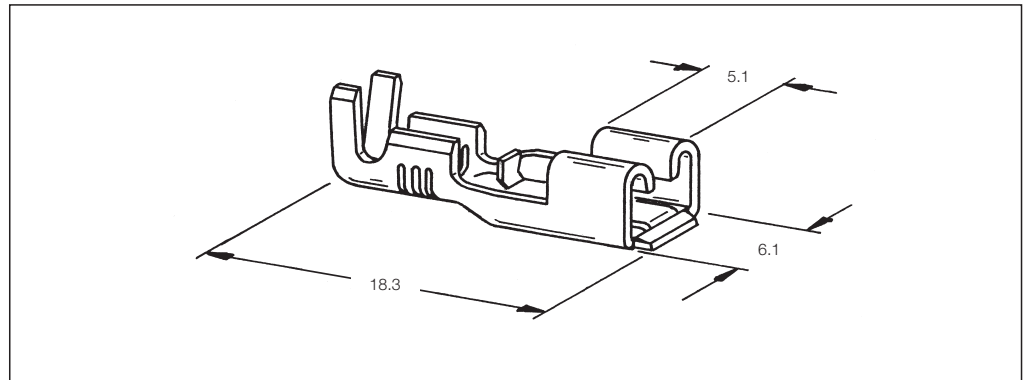


**180° Receptacle Contacts**

| Wire Size Range       | Insulation Diameter    |           | Material and Finish  | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|-----------------------|------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                       | FLK                    | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| mm <sup>2</sup> (AWG) | mm (Inch)              | mm (Inch) |                      |              |                  |             |                  |              |           |
| 0.5-1.0<br>(20-17)    | 2.1-3.4<br>(.083-.134) | -         | CuZn, plain          | 142396-1     | 12,000           |             |                  |              |           |
|                       |                        |           | CuZn, pre-tin plated | 142396-2     | 12,000           | -           | -                | 878317       | 945284-1  |
|                       |                        |           | CuSn, pre-tin plated | 142396-5     | -                |             |                  |              |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

Receptacle Contacts



Receptacle Contacts

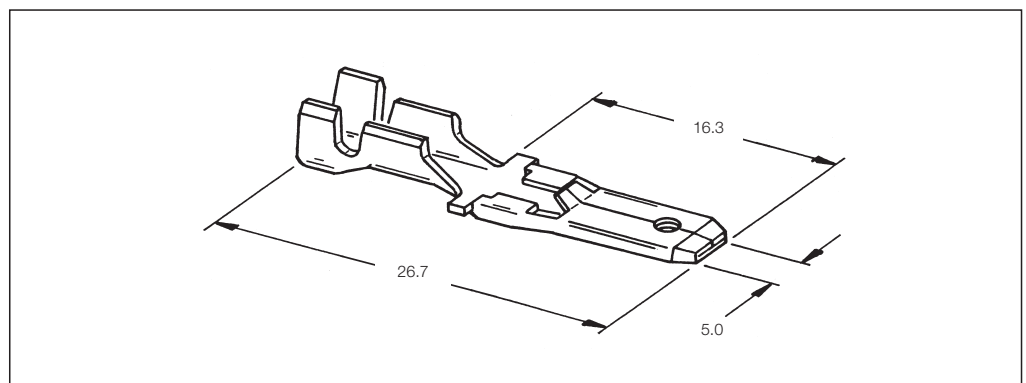
| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Insulation Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|---|--|--|---------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|   |  |  |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| 0.5–1.5<br>(20–15)                          | 2.2–3.3<br>(.087–.130)                     | –  | CuSn, plain         | 1-281405-1   | 5,000            | 182703-3    | 500              | –            | 825514-1  |
|   |  |  | CuSn, tin plated    | 1-281405-2   | –                | –           | –                |              |           |
| 1.5–2.5<br>(15–13)                          | 4.2 max.<br>(.165)                         | –  | CuZn, tin plated    | 737085-2     | –                | –           | –                | –            | 825514-1  |
|   |  |  | CuSn, plain         | 737085-3     | 2,500            | –           | –                |              |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

Tab Contacts

**Tab Contacts,  
Mates with  
Receptacle Contacts**

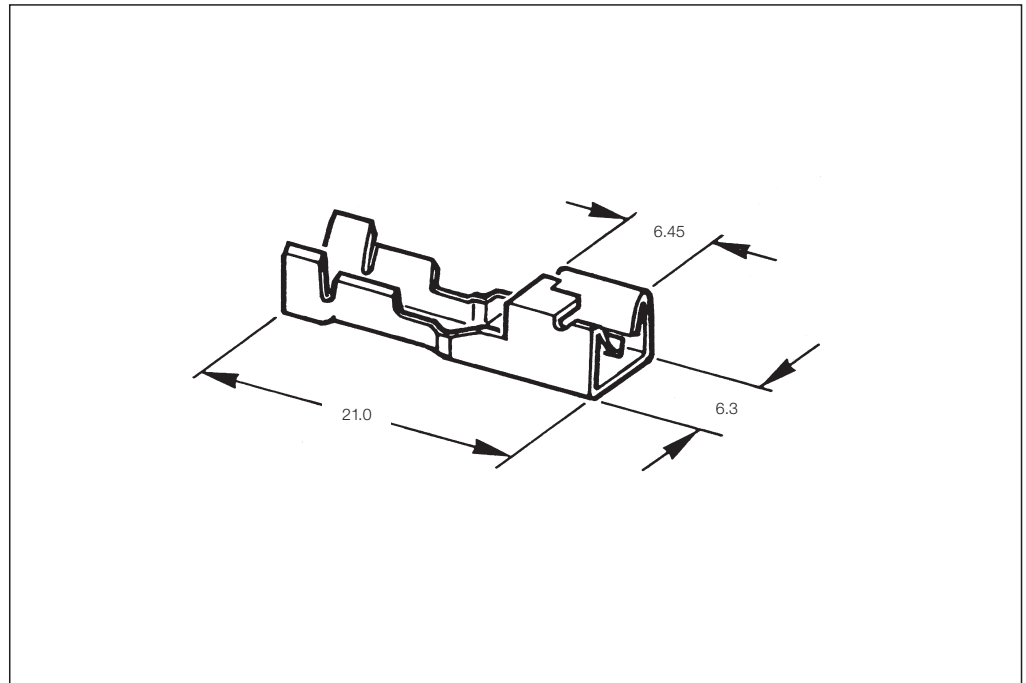
Extraction Tool:  
Part No. **484127-1**



| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Insulation Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|---|--|--|---------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|   |  |  |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| 0.3–1.0<br>(22–17)                          | 1.8–3.0<br>(.071–.118)                     | –  | CuSn, plain         | 142215-3     | 4,000            | 737068-3    | 500              | –            | 825514-1  |

♦) Applicators are application specific, consult Tyco Electronics for details.

Receptacle Contacts



Receptacle Contacts

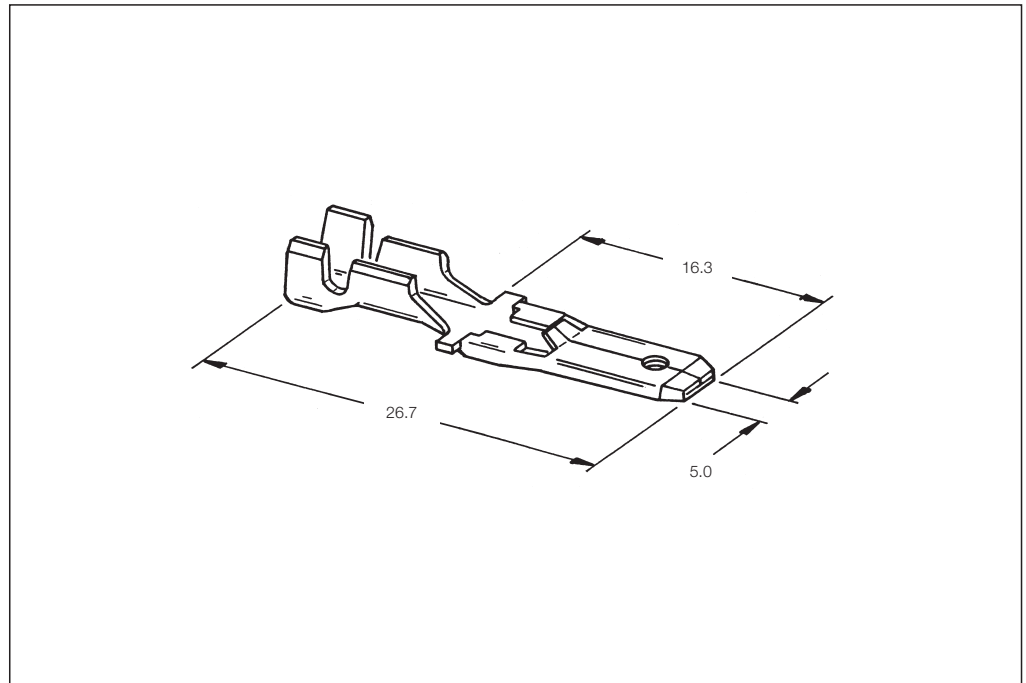
| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Insulation Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish  | Part Numbers |                  | Loose-Piece | Package Quantity | Applicator ♦ | Hand Tool |
|---|--|--|----------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|   |  |  |                      | Strip Form   | Package Quantity |             |                  |              |           |
| 0.35-1.00<br>(22-17)                        | 1.3-2.0<br>(.051-.079)                     | -  | CuZn, plain          | 141991-1     | 10,000           |             |                  |              |           |
|   |  |  | CuZn, post tinned    | 141991-2     | 5,000            | -           | -                | 1529066      | 825514-1  |
|   |  |  | CuZn, pre-tin plated | 141991-3     | 5,000            |             |                  |              |           |
| 1.0-3.0<br>(17-12)                          | 2.0-3.2<br>(.079-.126)                     | -  | CuZn, plain          | 141992-1     | 15,000           | -           | -                |              |           |
|   |  |  | CuZn, post tinned    | 141992-2     | 15,000           | -           | -                | 1529037      | 825514-1  |
|   |  |  | CuZn, pre-tin plated | 141992-3     | 4,000            | 737314-3    | -                |              |           |
| 3.0-5.0<br>(12-10)                          | 4.9 max.<br>(.193 max.)                    | -  | CuZn, post tinned    | 141993-2     | 10,500           |             |                  | 878640       | 825514-1  |
|   |  |  | CuZn, pre-tin plated | 141993-3     | 2,500            |             |                  |              |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

Tab Contacts

**Tab Contact,  
Mates with  
Receptacle Contacts**

**Extraction Tool:  
Part No. 484127-1**

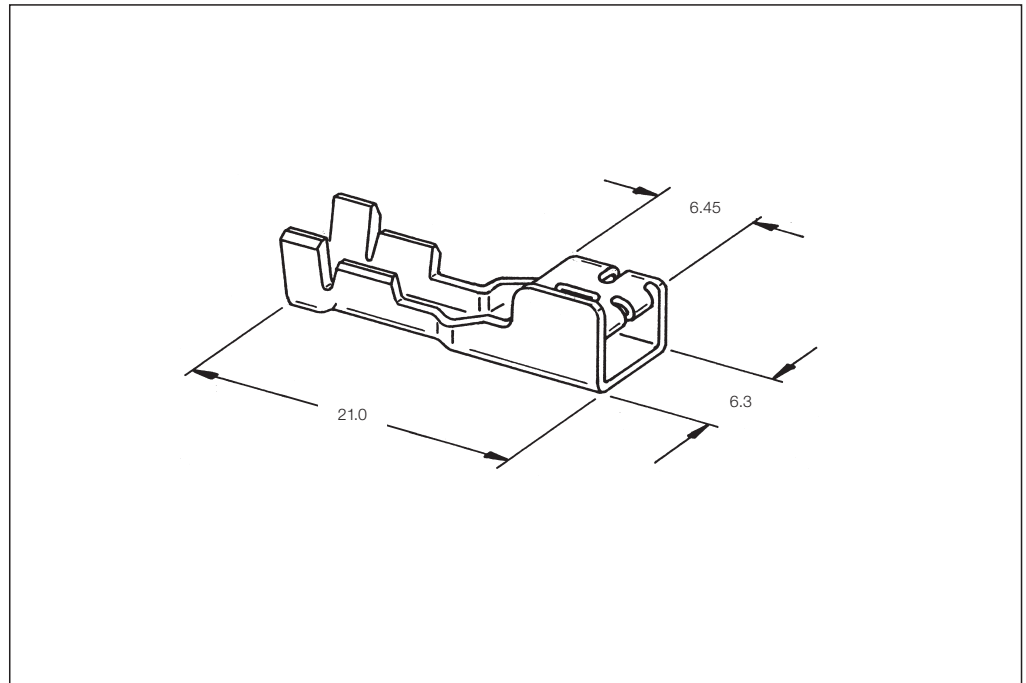


**Tab Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter     |                     | Material and Finish     | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|---|-------------------------|---------------------|-------------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|   | FLK<br>mm<br>(Inch)     | FLR<br>mm<br>(Inch) |                         | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| 0.35-1.00<br>(22-17)                        | 1.2-2.1<br>(.047-.083)  | -                   | CuZn,<br>pre-tin plated | 142087-2     | 5,500            | 142218-1    | 500              | 1339508      |           |
| 1.0-3.0<br>(17-12)                          | 2.1-3.1<br>(.083-.122)  | -                   | CuZn,<br>plain          | 142089-1     | -                | -           | -                | 1529004      | 825514-1  |
|   |                         |                     | CuZn,<br>pre-tin plated | 142089-2     | 5,000            | 142219-1    | 500              |              |           |
| 3.0-5.0<br>(12-10)                          | 4.9 max.<br>(.193 max.) | -                   | CuZn,<br>pre-tin plated | 142091-2     | 10,500           | 737316-2    | -                | 878491       |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

Receptacle Contacts

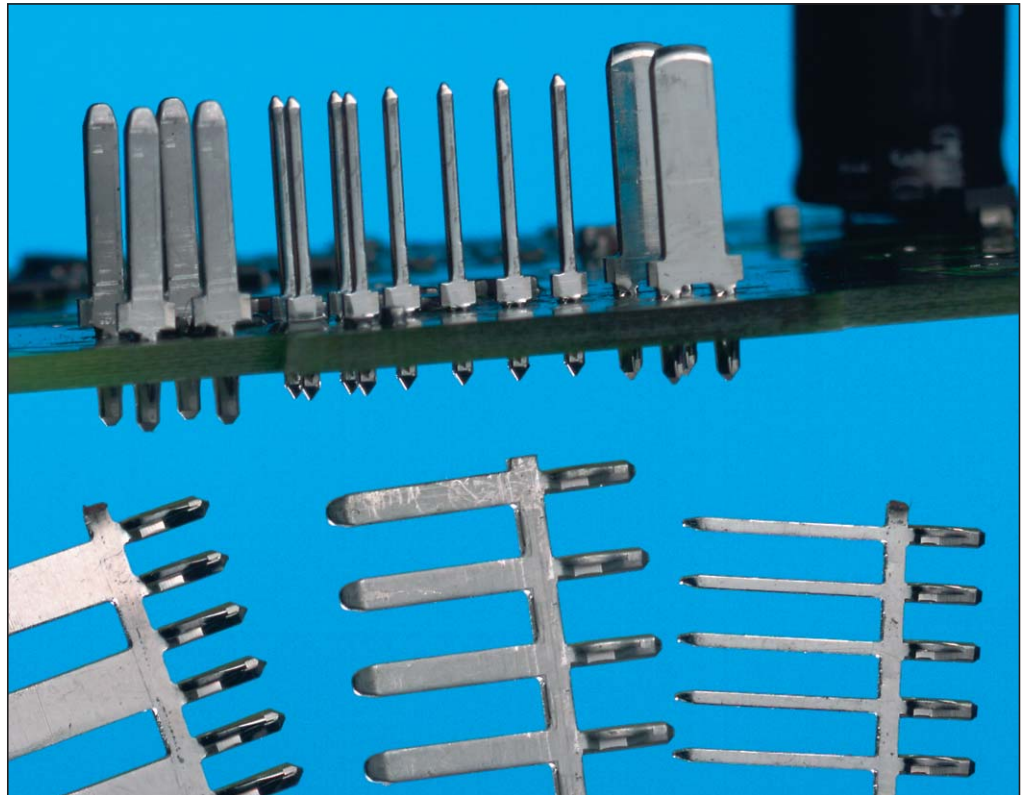


**Receptacle Contacts**

| Wire Size Range       | Insulation Diameter    |           | Material and Finish  | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool |
|-----------------------|------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|--------------|-----------|
|                       | FLK                    | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |           |
| mm <sup>2</sup> (AWG) | mm (Inch)              | mm (Inch) |                      |              |                  |             |                  |              |           |
| 0.35-1.00<br>(22-17)  | 1.0-2.0<br>(.039-.079) | -         | CuSn, plain          | 142685-1     | 12,000           | -           | -                | 1529066      | -         |
|                       |                        |           | CuSn, pre-tin plated | 142685-2     | -                |             |                  |              |           |
| 1.0-3.0<br>(17-12)    | 2.0-3.2<br>(.079-.126) | -         | CuSn, plain          | 142686-1     | 10,500           | -           | -                | 1529037      | -         |
|                       |                        |           | CuSn, pre-tin plated | 142686-2     | 10,000           |             |                  |              |           |

♦) Applicators are application specific, consult Tyco Electronics for details.

Introduction



Solderless interconnections have been popular in electrical and electronic applications with worldwide success for decades. They provide reliable electrical and mechanical stability and offer cost savings across the board.

Solderless electrical interconnections have become increasingly important for PCB applications. The Tyco Electronics compliant ACTION PIN contact provides reliable electro-mechanical connection to through-plated pc board holes.

Since Tyco Electronics compliant ACTION PIN contacts do not have to be soldered, the following problems associated with solder are eliminated:

- Faulty soldered joint
- Solder fumes (contacts become contaminated)

- Solder spots (short circuits between printed circuits)
- Flux residues
- Thermal strain on PCBs and components
- Degassing of plated-through holes.

Since its introduction in the early 1970's, the compliant ACTION PIN contact has achieved wide success. Billions of contacts have successfully proven their reliability in electronic and electrical applications.

Since many years the compliant ACTION PIN contacts are extensively used in the automotive industry.

Solderless press-in interconnections are used in racks, especially where connectors must be fixed on the solder side of the PCB and/or com-

ponent side. In those cases, the holes for the compliant ACTION PIN connectors are covered during the solder process and press-in is done after soldering.

Other applications for ACTION PIN press-in interconnections include PCBs that incorporate components using surface mounting technology (SMT). Here, too, press-in interconnections can be applied after soldering, eliminating complications caused by connectors suitable for surface mounting.

Implementing lead-free technology according environmental directives, the compliant ACTION PIN contacts offer a rich variety of interconnection solutions.

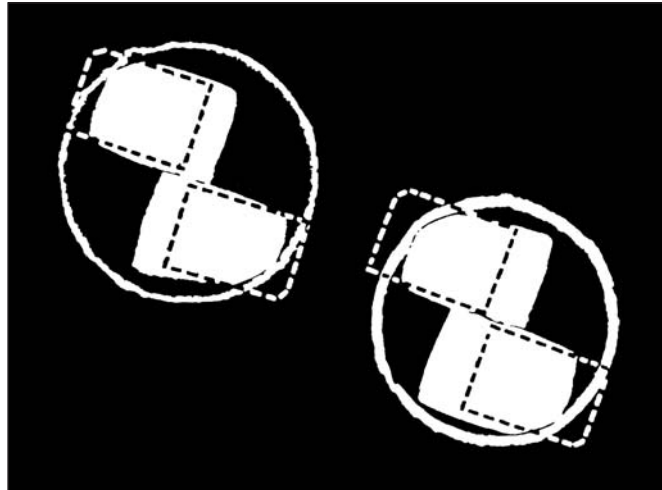
**Features of the Compliant ACTION PIN Contact**

- Large gas-tight contact zone
- High reliability due to stored energy
- No damage to plated-through holes during application
- Especially suited for multi-layer PCBs
- More economic board manufacturing due to larger hole tolerances compared to the use of a solid pin
- Application can be made by the end-user.

ACTION PIN is a trademark.



ACTION PIN Press-In Connections



**Figure 1:**  
Cross section of ACTION PIN contact press-in area in pc board holes with minimum and maximum hole diameter.

**Principle of the Compliant ACTION PIN Contact**

When a compliant ACTION PIN contact is inserted into a plated-through hole, two spring members are compressed, exerting force against the hole for a gas-tight connection. The diameter of the hole is smaller than the diagonal size of the pin (fig. 1).

The beam characteristics of the pin are designed so that a plastic as well as an elastic deformation will take place during insertion. The two spring members are compressed at different degrees to accommodate hole tolerances.

The compliant pin also reduces strain on the board. With a rigid pin, the elastic strain energy is stored entirely in the board. This will lead to damage of plated-through holes.

The compliant ACTION PIN contact produces a tight contact zone between the pin and the plated-through hole and guarantees long-term reliable electrical interconnection and mechanical reliability. The residual force of the elastic deformation maintains stored energy, insuring long-term reliability of compliant ACTION PIN contact press-in connections.

**PC Board Thickness**

Each ACTION PIN contact connector type is designed for a certain minimum pc board thickness. Generally, types suitable for pc board thickness of 1.5/1.6 mm can also be used for thicker pc boards. A tolerance of 10 % applies to the normal thickness. Special types for a pc board nominal thickness of 2.4 mm and more are required because:

- In a properly designed pc board, the mechanical reliability of such an ACTION PIN contact press-in connection is much higher than the 1.6 mm type (e.g. extraction force is over 44 N compared to 30 N).
  - This type cannot bend thicker pc boards when high density mounting occurs (e.g. wrap pins between connectors).
- However, ACTION PIN contact versions for 2.4 mm pc board should not be used with 1.6 mm pc boards because the solder point underneath could be overstrained.

**ACTION PIN Press-In Connections (continued)**

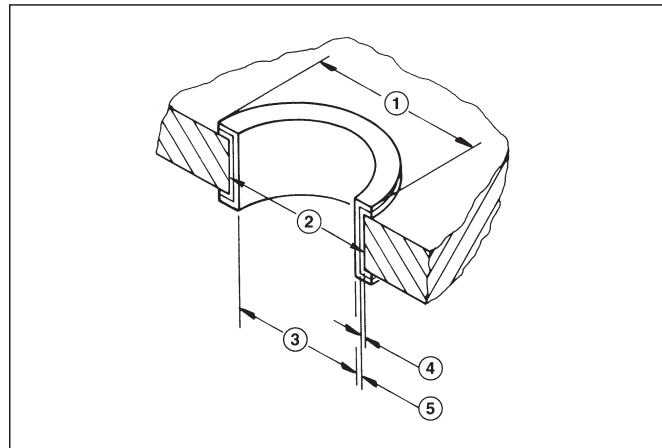
**Specifications of Plated-Through Holes**

Besides the final diameter, the entire hole design – hole diameter, copper and tin-lead thickness – is important.

**PC Board Requirements for Solderless ACTION PIN Contact Press-In Connections**

**Type:** Glass-Epoxy (NEMA grade G 10, G 11, FR 4, FR 5 corresponding to DIN 7735 Hgw-Types or DIN 40802 EP-Types).

**Hole Position Tolerance:**  
±0.05 mm not cumulative



- ① Pad
- ② Drilled Hole
- ③ Plated-Thru Hole
- ④ Copper Thickness
- ⑤ Tin-Lead Thickness

**Structure of Plated-Thru Hole**

| Nominal PCB Hole Diameter, Plated | 0.6 mm      | 0.9 mm      | 1.0 mm      | 1.35 mm    | 1.45 mm    | 1.6 mm      |
|-----------------------------------|-------------|-------------|-------------|------------|------------|-------------|
| Drilled hole diameter             | 0.7 ±0.025  | 1.0 ±0.025  | 1.15 ±0.025 | 1.5 ±0.025 | 1.6 ±0.025 | 1.75 ±0.025 |
| Copper layer*                     | 0.025–0.050 | 0.025–0.075 |             |            |            |             |
| Tin/lead layer                    | 4–10 µm     | 4–15 µm     |             |            |            |             |
| Diameter, galvanized              | 0.55–0.65   | 0.85–0.95   | 0.94–1.09   | 1.29–1.44  | 1.39–1.54  | 1.54–1.69   |
| Diameter, after reflow            | –           | –           | 0.91–1.09   | 1.27–1.44  | 1.37–1.54  | 1.54–1.69   |

\*) Maximum hardness of copper layer 150 Knoop.

Other Metallisation Structure on request.

**Gas-Tight Connection**

An electrical connection should have a long-term low electrical resistance which is not effected by environmental conditions.

This feature is described as gas-tight. Press-in methods using compliant ACTION PIN contacts with corresponding pc board holes are gas-tight.

In figure 2, the area can be seen, where the compliant ACTION PIN contact the plated-through hole, protecting against industry atmosphere.



**Figure 2:** The polished section of a plated-thru hole shows a clean contact area. The remaining plated-thru area has visibly changed due to industry atmosphere.

**Replaceable Contacts**

In general, press-in connections cannot be re-used.

Using an compliant ACTION PIN contact as a replacement, a pc board hole can be used again. Compliant ACTION PIN contacts are individually replaceable by use of a simple tool. Damaged pins can be removed and replaced several times without sacrificing mechanical or electrical performance.

**Retention Force**

Press-in pins are designed to take on additional functions besides contacting the pc board. They can also be used for wire wrapping and/or with connectors. Therefore, press-in pins must take additional stresses without damaging the press-in connection.

IEC 60352.5 requires a minimum retention force of 30 N for compliant pins. ACTION PIN contacts applications meet the minimum requirements of IEC 60352.5.

AMPMODU II Pins

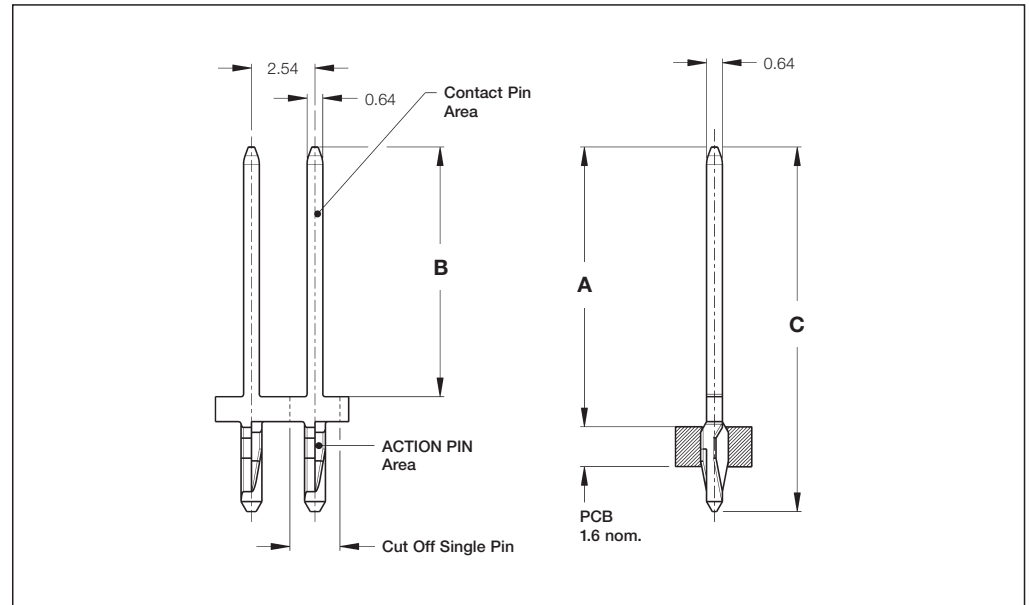
**Technical Features**

**Product Specification:**

IEC 60352-5

**Application Specification:**

114-25011



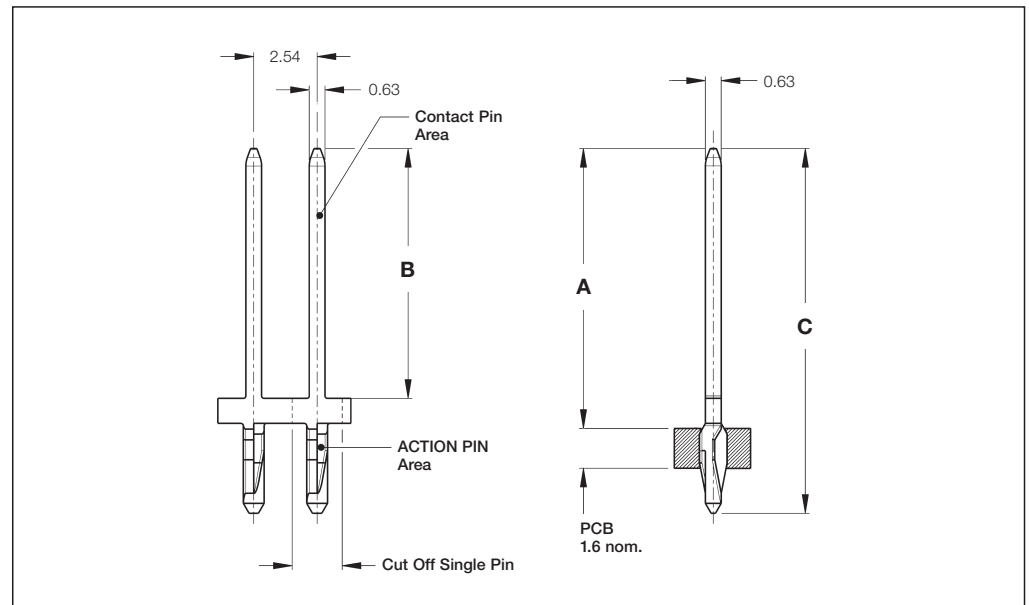
| Dimensions (mm) |       |       | Nominal PCB Hole Diameter, Plated* | Material   | Finish | Part Numbers |                  |             |                  |
|-----------------|-------|-------|------------------------------------|------------|--------|--------------|------------------|-------------|------------------|
| A               | B     | C     |                                    |            |        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |
| 5.20            | 4.00  | 8.40  | 0.9                                | CuSn 4     | 1)     | 1-928776-9   |                  | 1-928836-9  |                  |
| 6.80            | 5.60  | 10.00 |                                    |            | 1)     | 2-928776-5   |                  | 2-928836-5  |                  |
|                 |       |       |                                    |            | 3)     | 1-928776-5   |                  | 1-928836-5  |                  |
| 7.45            | 6.25  | 10.65 |                                    |            | 3)     | 2-928776-0   |                  | 2-928836-0  |                  |
| 8.25            | 7.05  | 11.45 |                                    |            | 1)     | 2-928776-2   |                  | 2-928836-2  |                  |
|                 |       |       |                                    |            | 3)     | 1-928776-2   |                  | 1-928836-2  |                  |
| 9.50            | 8.30  | 12.70 |                                    |            | 1)     | 1-928776-8   |                  | 1-928836-8  |                  |
|                 |       |       |                                    |            | 1)     | 3-928776-4   |                  | 3-928836-4  |                  |
| 10.00           | 8.80  | 13.20 |                                    |            | 3)     | 1-928776-4   | 50,000           | 1-928836-4  | 1,000            |
|                 |       |       |                                    |            | 1)     | 2-928776-3   |                  | 2-928836-3  |                  |
|                 |       |       |                                    |            | 3)     | 1-928776-3   |                  | 1-928836-3  |                  |
|                 |       |       |                                    |            | 1)     | 1-928776-6   |                  | 1-928836-6  |                  |
|                 |       |       |                                    |            | 3)     | 2-928776-6   |                  | 2-928836-6  |                  |
|                 |       |       |                                    |            | 1)     | 2-928776-7   |                  | 2-928836-7  |                  |
|                 |       |       | 3)                                 | 1-928776-7 |        | 1-928836-7   |                  |             |                  |
| 21.30           | 20.10 | 24.50 |                                    |            | 1)     | 2-928776-1   |                  | 2-928836-1  |                  |
|                 |       |       |                                    |            | 3)     | 1-928776-1   |                  | 1-928836-1  |                  |
| 3.60            | 2.40  | 6.80  | 0.9                                | CuSn 4     | 1)     | 964056-2     | 50,000           | -           |                  |
| 8.25            | 8.05  | 11.45 | 0.9                                | CuSn 4     | 2)     | 737604-2     | 50,000           | -           |                  |
|                 |       |       |                                    |            | 1)     | 1-215345-4   |                  |             |                  |
| 9.70            | 6.70  | 13.60 | 1.0                                | CuSn 4     | 3)     | 215345-2     |                  |             |                  |
|                 |       |       |                                    |            | 4)     | 215345-3     | 50,000           | -           | -                |
|                 |       |       |                                    |            | 1)     | 1-215345-3   |                  |             |                  |
| 13.10           | 10.10 | 17.00 |                                    |            | 4)     | 215345-5     |                  |             |                  |

**Finish:**

- 1) Tin over nickel plated
- 2) Contact pin area selective 0.2 µm gold over nickel plated, ACTION PIN area selective tin over nickel plated
- 3) Contact pin area selective 0.8 µm gold over nickel plated, ACTION PIN area selective tin over nickel plated
- 4) Contact pin area selective 1.3 µm gold over nickel plated, ACTION PIN area selective tin over nickel plated

\*) Structure of finished plated-through hole see table page 16-3.  
Other post lengths, materials and finishes on request.

**MQS Pins (0.63<sub>-0.03</sub> x 0.63<sub>-0.03</sub>)**



| Dimensions (mm) |       |       | Nominal PCB Hole Diameter, Plated* | Material | Finish | Part Number  |                  | Product Specification | Application Specification |
|-----------------|-------|-------|------------------------------------|----------|--------|--------------|------------------|-----------------------|---------------------------|
| A               | B     | C     |                                    |          |        | Strip Form   | Package Quantity |                       |                           |
| 8.25            | 7.05  | 11.45 | 0.9                                | CuSn 4   | 1)     | 2-929958-1   | 50,000           | -                     | -                         |
|                 |       |       |                                    |          | 2)     | 1-929958-1   |                  |                       |                           |
| 10.00           | 8.80  | 13.20 |                                    |          | 1)     | 2-929958-2   |                  |                       |                           |
|                 |       |       |                                    |          | 2)     | 1-929958-2   |                  |                       |                           |
| 8.25            | 7.05  | 11.65 | 1.0                                | CuNiSi   | 1)     | 2-963964-3   | 50,000           | 108-18643             | 114-186279                |
|                 |       |       |                                    |          | 2)     | 1-963964-3   |                  |                       |                           |
| 9.40            | 8.20  | 12.80 |                                    |          | 1)     | 2-963964-8   |                  |                       |                           |
| 10.00           | 8.80  | 13.40 |                                    |          | 1)     | 2-963964-4   |                  |                       |                           |
|                 |       |       |                                    |          | 2)     | 1-963964-4   |                  |                       |                           |
|                 |       |       |                                    |          | 1)     | 2-963964-7   |                  |                       |                           |
| 11.30           | 10.10 | 14.70 |                                    |          | 2)     | 3-963964-7   |                  |                       |                           |
| 21.50           | 20.30 | 24.90 |                                    |          | 1)     | 7-963964-9   |                  |                       |                           |
| 10.60           | 9.30  | 13.90 | 1.0                                | CuNiSi   | 1)     | 1-929278-2** | -                | 108-18643             | 114-18279                 |

**TH .025 Pins (0.64<sub>±0.05</sub> x 0.64<sub>±0.05</sub>)**

| Dimensions (mm) |     |      | Nominal PCB Hole Diameter, Plated* | Material | Finish | Part Number |                  | Product Specification | Application Specification |
|-----------------|-----|------|------------------------------------|----------|--------|-------------|------------------|-----------------------|---------------------------|
| A               | B   | C    |                                    |          |        | Strip Form  | Package Quantity |                       |                           |
| 9.4             | 8.2 | 12.8 | 1.0                                | CuNiSi   | 1)     | 1801209-1** | -                | -                     | -                         |

**Finish:**

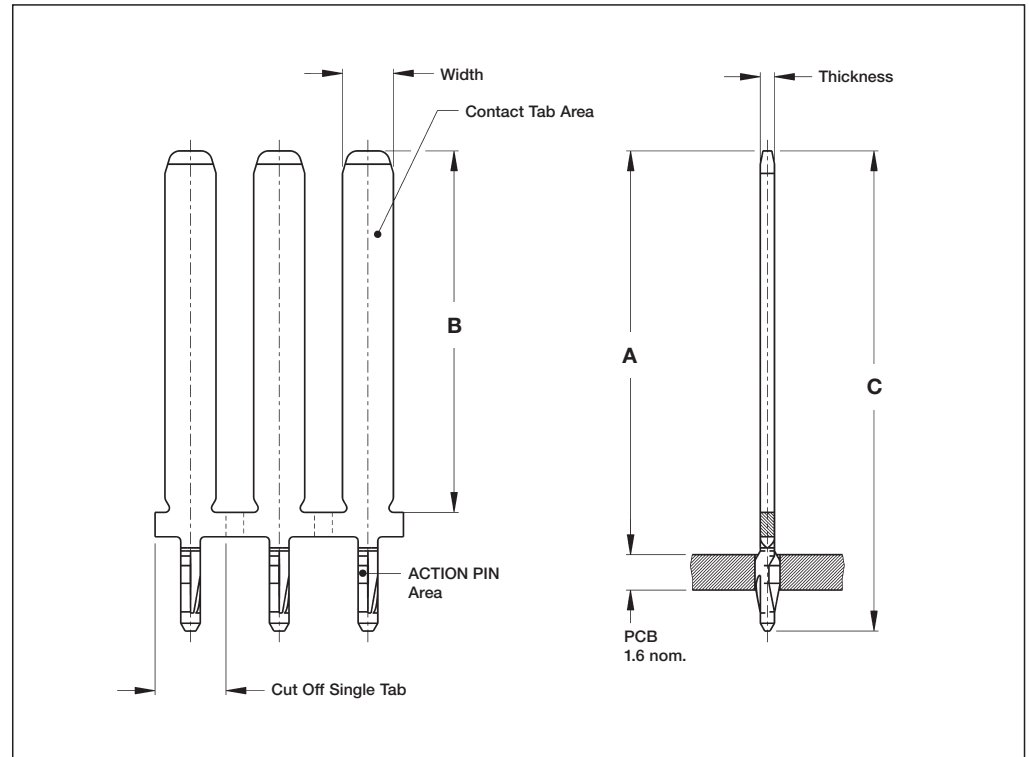
- 1) Tin over nickel plated
- 2) Contact pin area selective 0.8 µm gold over nickel plated, ACTION PIN area selective tin over nickel plated.

\*) Structure of finished plated-through hole see table page 16-3.

\*\*\*) Customer restricted

Other post lengths, materials and finishes on request.

Tab with 1 ACTION PIN Area



| Tab<br>Width x<br>Thickness | Dimensions<br>(mm) |       |       | Nominal<br>PCB Hole<br>Diameter,<br>Plated* | Material | Finish | Part Numbers  |                     | Product<br>Specification | Application<br>Specification |
|-----------------------------|--------------------|-------|-------|---|----------|--------|---------------|---------------------|--------------------------|------------------------------|
|                             | A                  | B     | C     |   |          |        | Strip<br>Form | Package<br>Quantity |                          |                              |
| 1.20 x 0.60                 | 13.60              | 12.20 | 17.00 | 1.00  | CuSn     | 1)     | 1743447-2     | -                   | 108-61069                | 114-61008                    |
| 1.50 x 0.60                 | 13.55              | 10.30 | 16.90 | 1.00  | CuNiSi   | 1)     | 1394353-2**   | 50,000              | -                        | -                            |
| 1.00 x 0.64                 | 13.80              | 12.60 | 17.20 | 1.00  | CuSn     | 1)     | 368405-2**    | -                   | 108-61087                | 114-61013                    |
| 2.30 x 0.64                 | 18.20              | 16.30 | 21.65 | 1.00  | CuSn     | 1)     | 1-1452691-2   | 20,000              | -                        | -                            |
|                             | 10.20              | 8.50  | 14.10 |   |          |        | 1-1452692-2   | 25,000              |                          |                              |
| 1.50 x 0.80                 | 11.30              | 9.60  | 15.20 | 1.35  | CuSn     | 1)     | 1-1563229-2   | 25,000              | 108-18867                | 114-18570                    |
|                             | 12.40              | 10.70 | 16.30 |   |          |        | 1-1670386-2** | 25,000              |                          |                              |
|                             |                    |       |       |   |          |        | 1-1670386-4** | 25,000              |                          |                              |
| 1.00 x 1.00                 | 22.00              | 20.00 | 29.00 | 1.60<br>pcb thickness 2.4                   | CuSn     | 1)     | 100349-2      | 50,000              | -                        | -                            |

**Finish:**

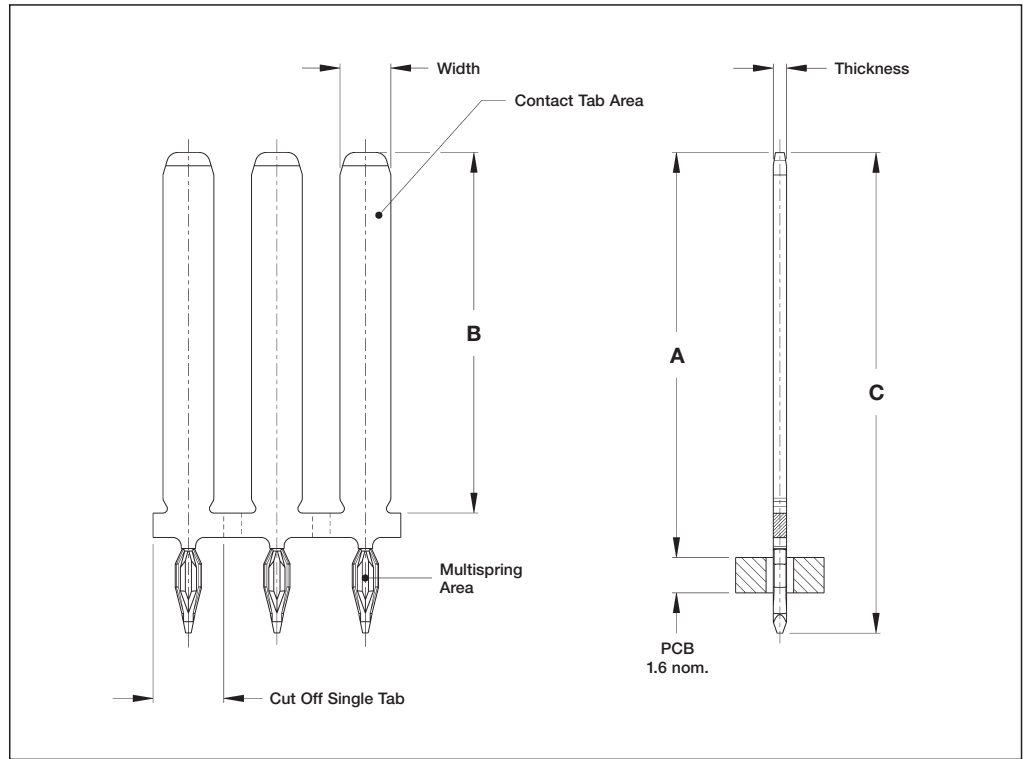
- 1) Tin over nickel plated
- 2) Contact tab area selective silver over nickel plated, ACTION PIN area selective tin over nickel plated.

\*) Structure of finished plated-through hole see table page 16-3.

\*\*\*) Customer restricted

Other post lengths, materials and finishes on request.

Tab with 1 Multispring Area



| Tab<br>Width x<br>Thickness | Dimensions<br>(mm) |       |       | Nominal<br>PCB Hole<br>Diameter,<br>Plated* | Material | Finish | Part Numbers  |                     | Product<br>Specification | Application<br>Specification |
|-----------------------------|--------------------|-------|-------|---|----------|--------|---------------|---------------------|--------------------------|------------------------------|
|                             | A                  | B     | C     |   |          |        | Strip<br>Form | Package<br>Quantity |                          |                              |
| 1.70 x 0.64                 | 12.40              | 10.80 | 16.40 | 1.00  | CuSn     | 1)     | 1801059-1**   | -                   | -                        | -                            |

**Finish:**

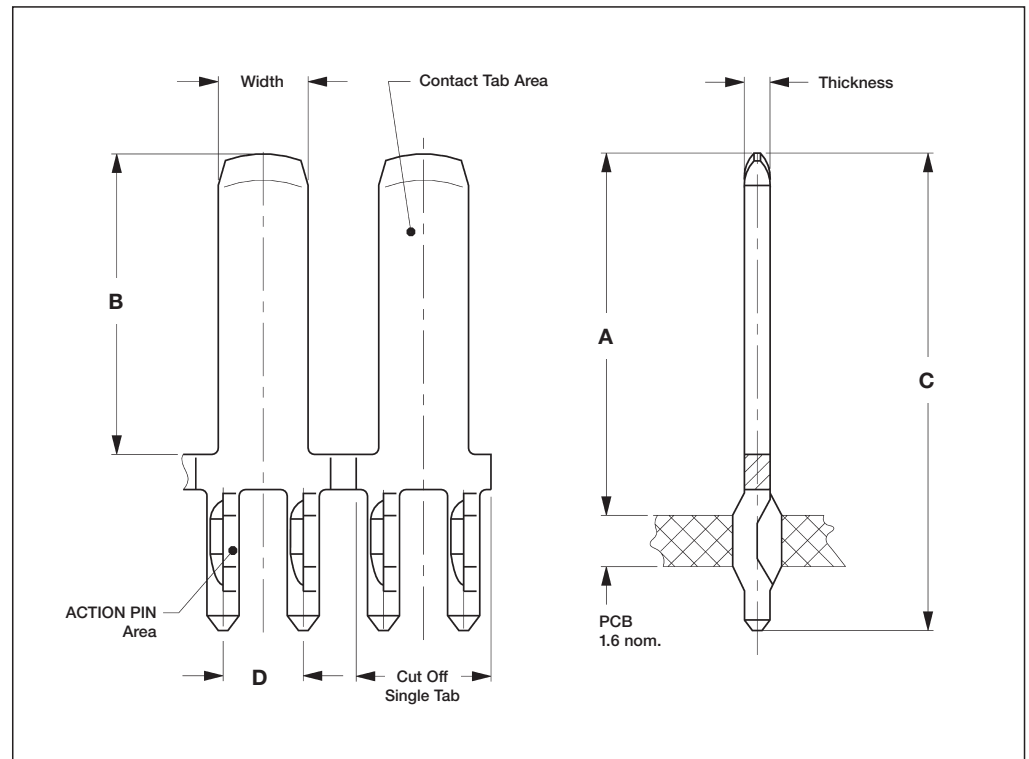
1) Tin over nickel plated

\*) Structure of finished plated-through hole see table page 16-3.

\*\*\*) Customer restricted

Other post lengths, materials and finishes on request.

Tab with 2 ACTION PIN Areas



| Tab<br>Width x<br>Thickness | Dimensions<br>(mm) |       |       |       | Nominal<br>PCB Hole<br>Diameter,<br>Plated* | Material | Finish        | Part Numbers  |                     | Product<br>Specification | Application<br>Specification |   |   |
|-----------------------------|--------------------|-------|-------|-------|---|----------|---------------|---------------|---------------------|--------------------------|------------------------------|---|---|
|                             | A                  | B     | C     | D     |   |          |               | Strip<br>Form | Package<br>Quantity |                          |                              |   |   |
| 1.5 x 0.6                   | 10.50              | 9.00  | 13.80 | 2.00  | 1.00  | CuSn     | 1)            | 1-0929450-2** | -                   | 108-18706                | 114-18379                    |   |   |
| 2.8 x 0.6                   | 10.00              | 7.90  | 13.40 | 2.54  | 1.00  | CuNiSi   | 1)            | 1-1452568-1   | -                   | -                        | -                            |   |   |
| 2.4 x 0.8                   | 12.40              | 10.40 | 15.90 | 3.10  | 1.35  | CuSn     | 1)            | 969174-2**    | 20,000              | -                        | -                            |   |   |
|                             | 8.00               | 6.00  | 11.50 | 3.10  | 1.35  |          | 1)            | 969053-2      | 20,000              | -                        | -                            |   |   |
|                             | 8.50               | 6.00  | 12.00 | 2.54  | 1.35  |          | 1)            | 352604-2      | -                   | -                        | -                            |   |   |
|                             |                    |       |       |       |   |          | 1)            | 1-1452688-2   | -                   | -                        | -                            |   |   |
|                             | 11.30              | 9.40  | 14.90 | 2.50  | 1.35  |          | 2)            | 3-1452688-1   | 20,000              | 108-18644                | 114-18280                    |   |   |
|                             |                    |       |       |       |   |          | 3)            | 2-1452688-1   | -                   | -                        | -                            |   |   |
|                             | 11.30              | 9.40  | 14.90 | 2.50  | 1.35  |          | 1)            | 1-0929277-2** | 20,000              | 108-18644                | 114-18280                    |   |   |
|                             | 2.8 x 0.8          |       |       |       |   |          |               | CuSn          | 1)                  | 338429-2                 | 12,500                       | - | - |
|                             |                    | 13.50 | 10.75 | 18.50 | 2.54  |          | 1.45          |               | 2)                  | 338429-3                 | 12,500                       | - | - |
|                             |                    |       |       |       |   |          |               |               | 1)                  | 1483313-2                | 12,500                       | - | - |
|                             |                    |       |       |       |   | 2)       | 1483313-3     |               | 12,500              | -                        | -                            |   |   |
| 13.50                       |                    | 11.60 | 17.70 | 2.54  | 1.45  | 1)       | 1-1670123-2** |               | -                   | -                        | -                            |   |   |
| 13.80                       |                    | 11.80 | 17.80 | 3.10  | 1.35  | 1)       | 969054-2      |               | 20,000              | -                        | -                            |   |   |
| 16.40                       | 13.65              | 21.40 | 2.54  | 1.45  |   |          | 1)            | 1377181-2     | -                   | -                        |                              |   |   |
| 4.8 x 0.8                   | 13.70              | 10.95 | 18.70 | 2.54  | 1.45  | CuSn     | 1)            | 1345034-2     | 11,000              | -                        | -                            |   |   |

**Finish:**

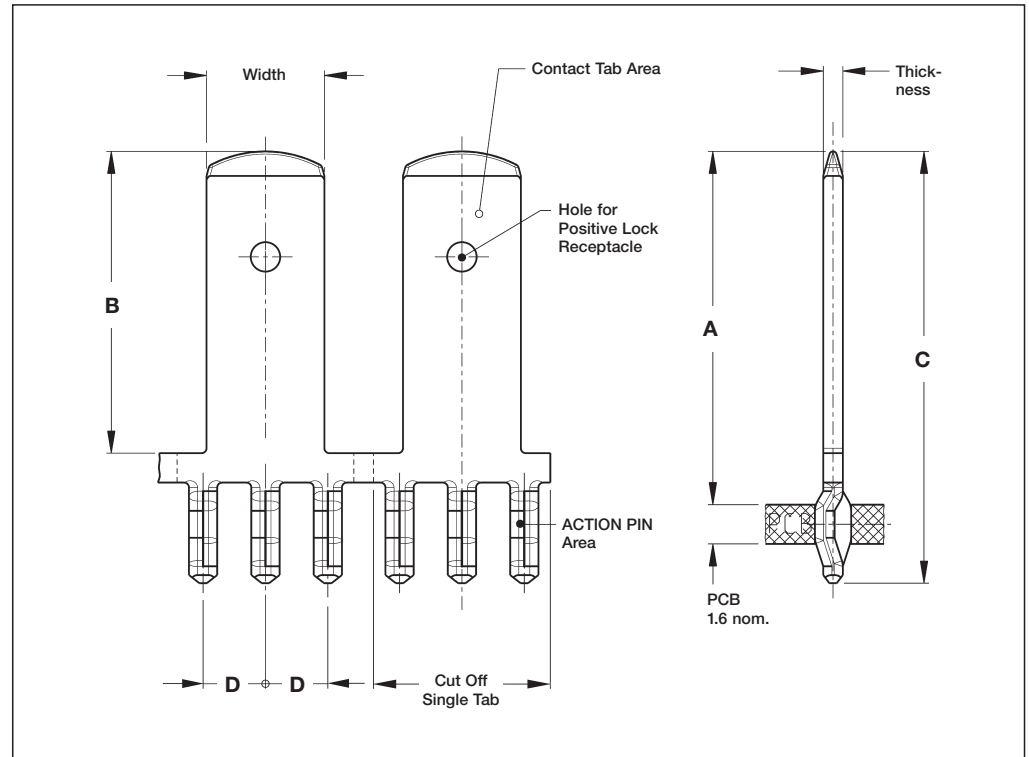
- 1) Tin over nickel plated
- 2) Contact tab area selective silver over nickel plated, ACTION PIN area selective tin over nickel plated.
- 3) Contact tab area selective 0.8 µm gold over nickel plated, ACTION PIN area selective tin over nickel plated.

\*) Structure of finished plated-through hole see table page 16-3.

\*\*\*) Customer restricted

Other post lengths, materials and finishes on request.

Tab with 3 ACTION PIN Areas



| Tab<br>Width x<br>Thickness | Dimensions<br>(mm) |       |       |      | Nominal<br>PCB Hole<br>Diameter,<br>Plated* | Hole | Material | Finish | Part Numbers  |                     |                | Product<br>Specifi-<br>cation | Application<br>Specifi-<br>cation |
|-----------------------------|--------------------|-------|-------|------|---|------|----------|--------|---------------|---------------------|----------------|-------------------------------|-----------------------------------|
|                             | A                  | B     | C     | D    |   |      |          |        | Strip<br>Form | Package<br>Quantity | Loose<br>Piece |                               |                                   |
| 4.8 x 0.8                   | 12.20              | 10.10 | 15.40 | 2.54 | 1.35  | -    | CuSn     | 1)     | 1-0929451-2** | 20,000              | 1564228-2      | 108-18707                     | 114-18380                         |
|                             | 14.40              | 12.30 | 17.60 | 2.54 | 1.35  | -    | CuSn     | 1)     | 1-1452719-2   | 20,000              | -              | 108-18707                     | 114-18380                         |
| 6.3 x 0.8                   | 13.50              | 10.75 | 18.50 | 2.54 | 1.45  | X    | CuSn     | 1)     | 216842-2      | 12,500              | -              | -                             | -                                 |
|                             | 13.50              | 10.75 | 18.50 | 2.54 | 1.45  | X    | CuSn     | 2)     | 216842-4      | 12,500              | -              | -                             | -                                 |
|                             | 19.85              | 16.05 | 23.85 | 2.54 | 1.45  | X    | CuSn     | 1)     | 1740723-2**   | 12,500              | -              | -                             | -                                 |

**Finish:**

- 1) Tin over nickel plated
- 2) Contact tab area selective silver over nickel plated,  
ACTION PIN area selective tin over nickel plated.

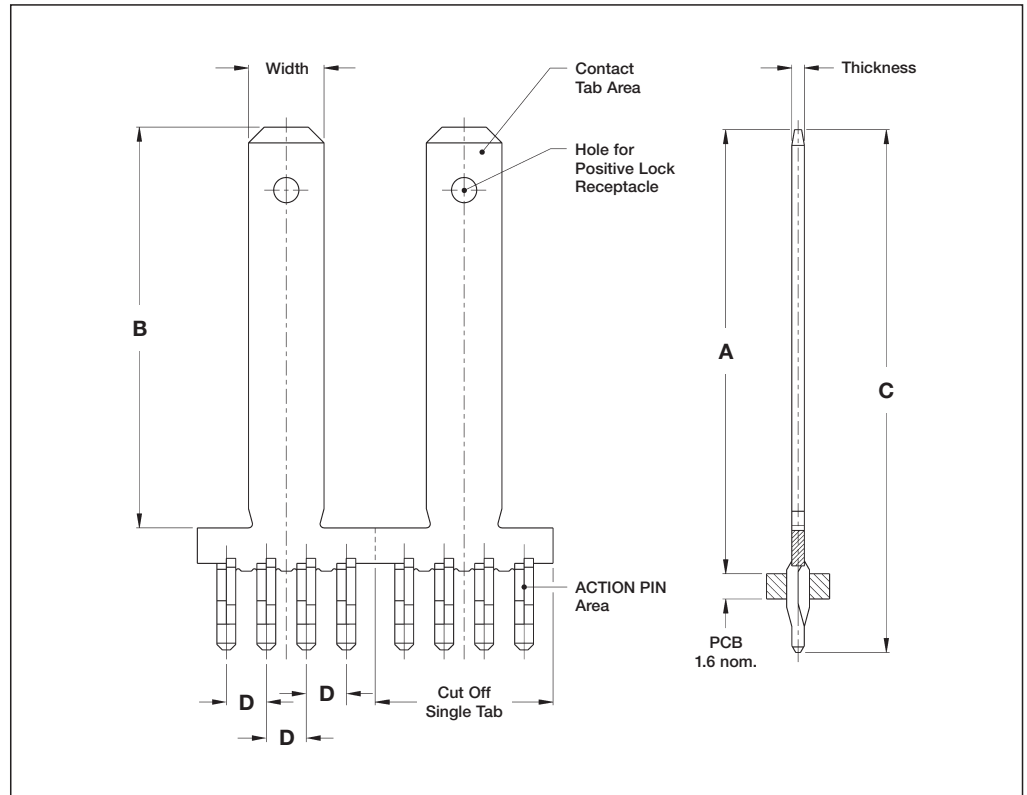
\*) Structure of finished plated-through hole see table page 16-3.

\*\*\*) Customer restricted

Other post lengths, materials and finishes on request.



Tab with 4 ACTION PIN Areas



| Tab<br>Width x<br>Thickness | Dimensions<br>(mm) |       |      |      | Nominal<br>PCB Hole<br>Diameter,<br>Plated* | Hole | Material | Finish | Part Numbers  |                     | Product<br>Specifi-<br>cation | Application<br>Specifi-<br>cation |
|-----------------------------|--------------------|-------|------|------|---|------|----------|--------|---------------|---------------------|-------------------------------|-----------------------------------|
|                             | A                  | B     | C    | D    |   |      |          |        | Strip<br>Form | Package<br>Quantity |                               |                                   |
| 4.8 x 0.8                   | 28.2               | 25.45 | 33.2 | 2.54 | 1.45  | X    | CuSn     | 1)     | 338099-2      | -                   | -                             | -                                 |

**Finish:**

1) Tin over nickel plated

\*) Structure of finished plated-through hole see table page 16-3.

Other post lengths, materials and finishes on request.

**ACTION PIN – PCB EDGE Contact**

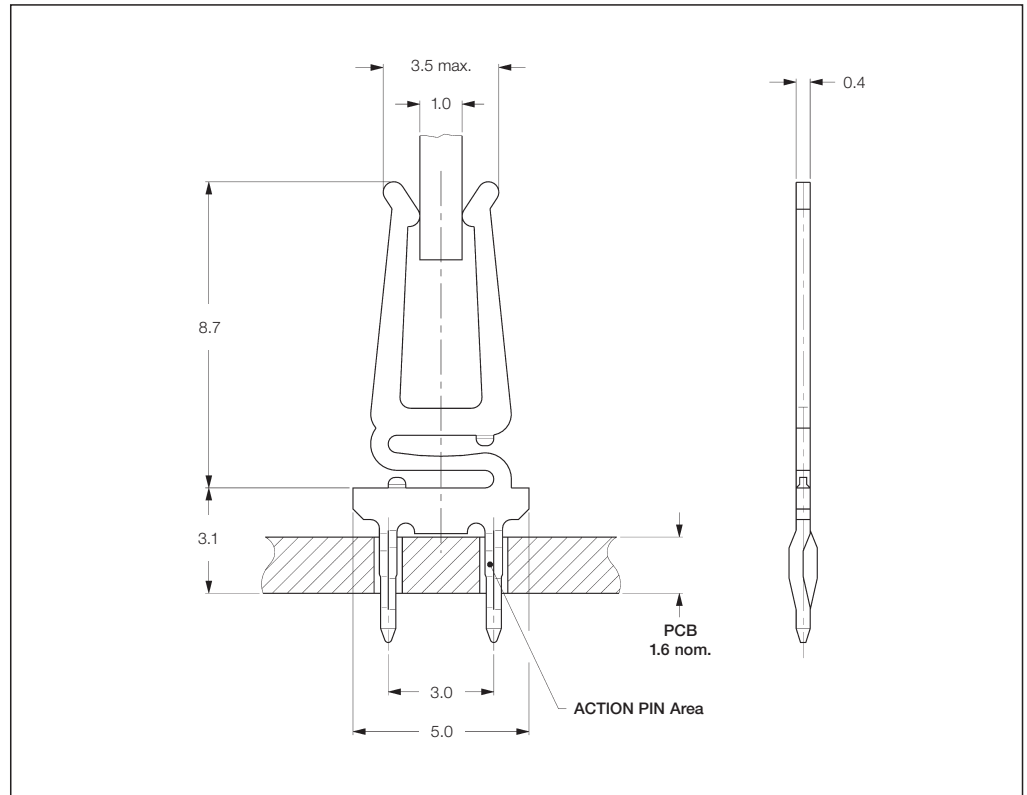
**Technical Features**

**Contact Material:**

CuSn

**Contact Finish:**

tin over nickel plated



**PCB EDGE Contact**

| Nominal PCB Hole Diameter, Plated | Part Numbers |                  |             |                  |            |           |
|-----------------------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                                   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool |
| 0.6                               | 969015-2     | 50,000           | -           | -                | -          | -         |

**ACTION PIN Contact – Wire Connection**

**Technical Features**

**Contact Material:**

CuNiSi

**Contact Finish:**

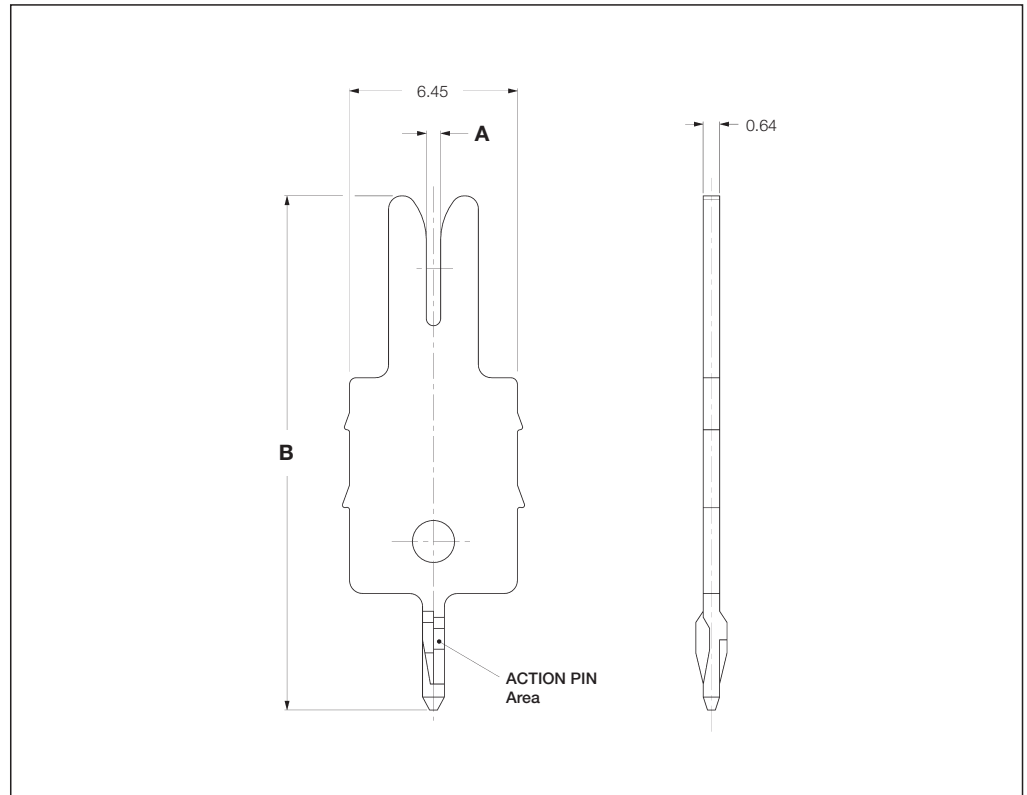
tin over nickel plated

**Product Specification:**

108-18298

**Application:**

for Capacitor



**Wire Connection**

| For Wire Diameter A (mm) | Dimension B (mm) | Nominal PCB Hole Diameter, Plated | Part Numbers |                  |             |                  | Applicator | Hand Tool |
|--------------------------|------------------|-----------------------------------|--------------|------------------|-------------|------------------|------------|-----------|
|                          |                  |                                   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |           |
| 0.8                      | 19.8             | 1.0                               | 1-968964-2   | 20,000           | -           | -                | -          | -         |
| 1.0                      |                  |                                   | 2-968964-2   | 20,000           | -           | -                | -          | -         |
| 0.8                      | 22.2             | 1.0                               | 2-1670195-2  | 20,000           | -           | -                | -          | -         |
| 1.0                      |                  |                                   | 1-1670195-2  | 20,000           | -           | -                | -          | -         |

**Finish:**

Tin over nickel plated

**ACTION PIN Contact – Foil-PC Board – Multiple Crimp**

**Technical Features**

**Contact Material:**  
CuNiSi

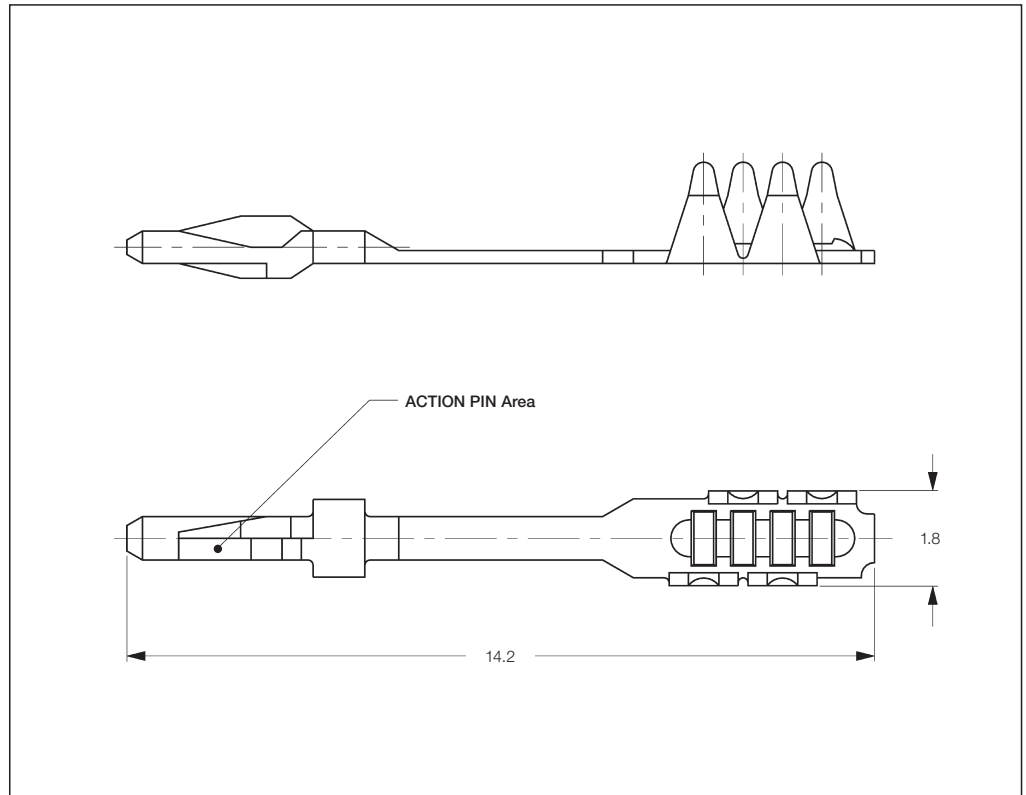
**Contact Finish:**  
tin over nickel plated

**Contact Resistance (New State):**  
CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:**  
-40 °C to +120 °C (tin plated)

**Product Specification:**  
108-18587-2

**Application Specification:**  
114-18210-2



**Multiple Crimp**

| Nominal PCB Hole Diameter, Plated | Part Numbers |                  |             |                  |                  |           |
|-----------------------------------|--------------|------------------|-------------|------------------|------------------|-----------|
|                                   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator       | Hand Tool |
| 1.0                               | 1670255-2    | -                | -           | -                | 224910<br>318619 | 90273-5   |

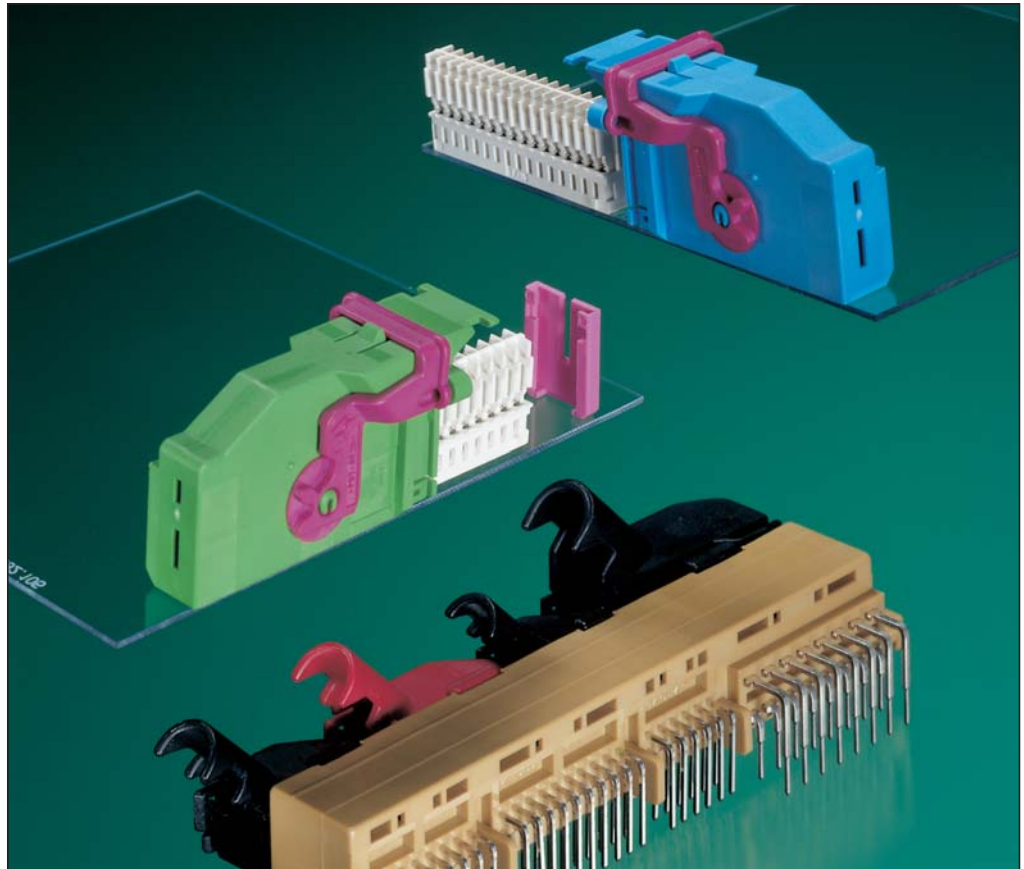
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Engineering Notes

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Introduction



**Insulation Displacement Technique in the Automotive Industry**

With the increase of electrics and electronics in automotive, the call for economic and compact component connectors was already heard in the eighties. To meet these demands, connectors in grid 2.54 mm were introduced.

Because inevitably connectors for this grid have smaller dimensions than the contacts used up to that point in time, special requirements apply to the processing, the design of the housing, the handling during production and the finishing during production as well as with the distributors.

Therefore Tyco Electronics developed connectors based on the Insulation Displacement Technique, where the contacts were already present when delivered, protected in the housing.

The essential advantages of the displacement technique are:

- Higher Quality Level.
- Mechanical protection of the contacts in the chambers.
- Economical second contact security.
- Economical processing of the contacts on various application tools, from simple hand tool to flexible fully automatic machines for production of complete cable assemblies.

- High process security during processing.
- Use of economical, one-piece contacts, since the contacts are supplied protected in the chambers.

With the Insulation Displacement Technique, the 0.35 mm<sup>2</sup> cable was introduced in vehicles, which resulted in a weight reduction.

In the beginning selected devices were connected using the Insulation Displacement Technique, but over time – obviously because of the results in the field of cost reduction and reliability – the product range has extended considerably.

Currently we offer pin and socket housings ranging from 2 to 121 positions, for watertight and non-watertight applications. These connectors are used for aggregates, free hanging couplings, in the wet area and in the interior of the vehicle to sensors, motor control units, climate control units and combined instruments.

**Applications in the Insulation Displacement area are often very customer specific.**

**Please contact your local sales representative to discuss your special requirements.**

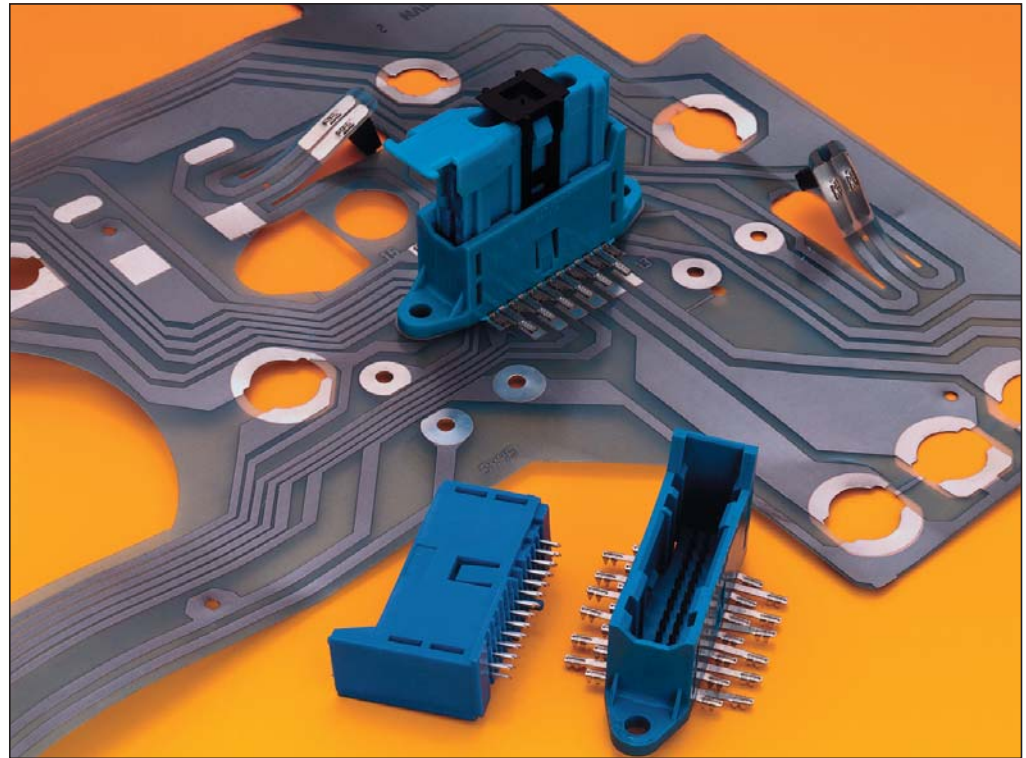
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Engineering Notes

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Introduction



For decades, the automobile industry has used flexible foil circuits, among other applications, for instrument clusters and driver-side airbags. In order to implement these internal and external electrical connections, Tyco Electronics has an extensive range of contact systems in its repertoire.

Further development of these systems, contacts, housings and processing machines, to meet current quality and technical requirements, makes it possible to use the flexible circuits in other automobile applications as well.

A clear tendency towards replacing the conventional cable harnesses with foil circuits is recognizable among the automobile manufacturers. This is driven by the ability to reduce the weight and volume of harnesses resulting in reduced fuel consumption.

The flexible foil connectors cover up to now mainly the following system applications:

- Steering wheel clock springs
- Airbags
- Seat occupation recognition
- Instrument cluster
- Dash board
- Roof harness

The connectors are very reliable, but not always robust enough for handling on the car assembly line in the main harness.

Therefore, it became Tyco Electronics' assignment to develop new solutions for these applications, i.e. solutions for contacting the foil circuits with corresponding processing machines, but also solutions for completely new contact types.

We differentiate fundamentally between "indirect connection" and "direct connection", independent of the foil type.

With the "indirect connection", contacts are connected with the foil circuit. With "direct connection", the bare copper conductor of the foil circuit is used directly as contact.



Micro Quadlok System – Foil, Multiple Crimp Socket Contact

**Technical Features**

**Contact Material:**

CuNiSi,  
Cantilever Spring: Stainless Steel

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Contact Resistance (New State):**

CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:**\*

-40 °C to +120 °C (tin plated)

**Mating Cycles:**

20 (tin plated)

**Insertion Force:**

max. 5 N

**Extraction Force:**

min. 1 N

**Retention Force (from Housing):**

- without second locking device > 60 N
  - second locking device only > 60 N
- depends on housing material

**Dimensions of Male Contacts:**

0.63 x 0.63 mm

**Conductor Thickness:**

4–200  $\mu\text{m}$

**Extraction Tools:**

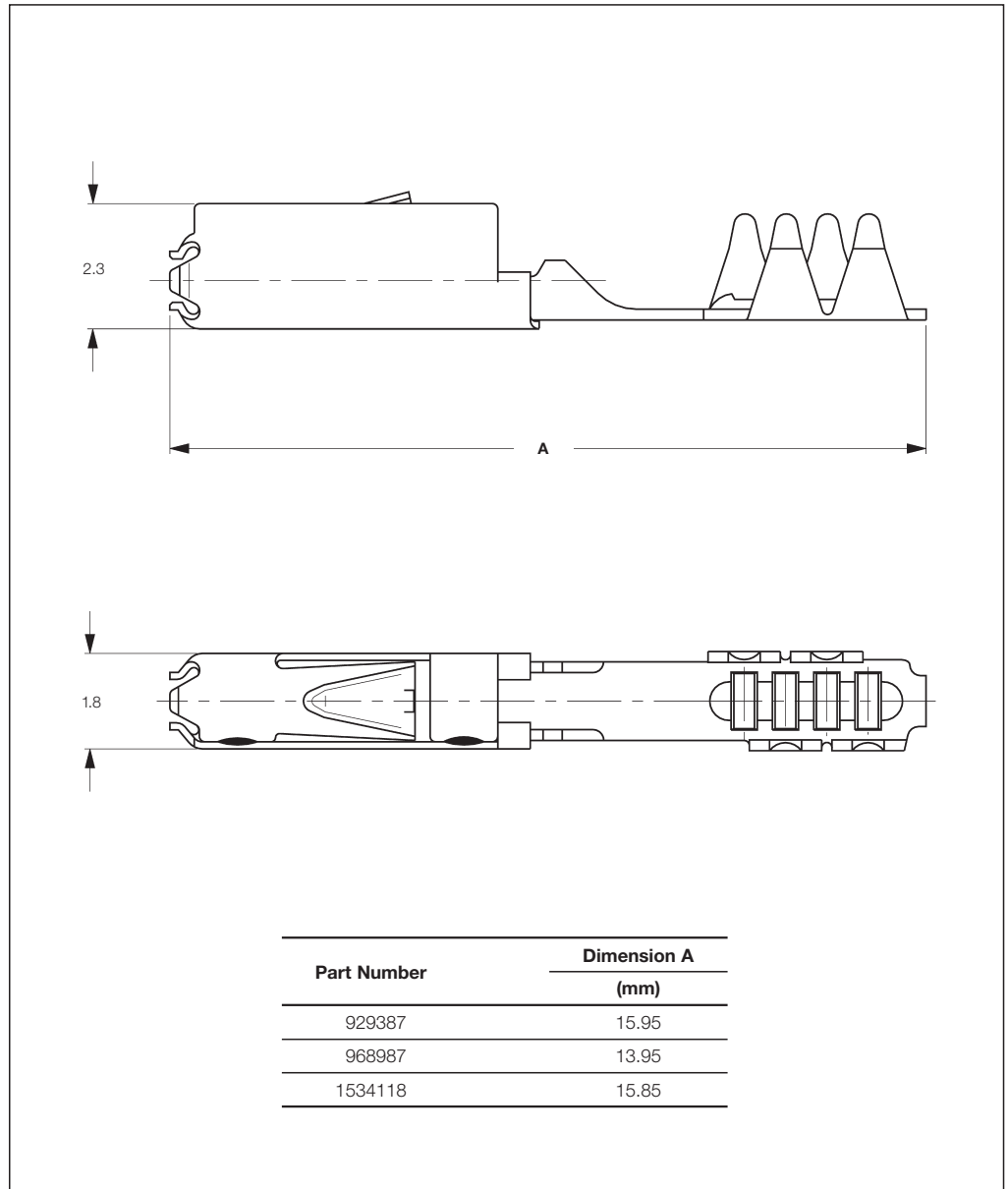
Part No. **1534197-1,**  
**91200, 91093,**  
**91092, 91047**

**Product Specification:**

108-18030

**Application Specification:**

114-18287



| Part Number | Dimension A |
|-------------|-------------|
|             | (mm)        |
| 929387      | 15.95       |
| 968987      | 13.95       |
| 1534118     | 15.85       |

**Socket Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish    | Part Numbers |                  |             |                  | Machines* and Applicators      | Hand Tool only Loose-Piece |
|-------------------------------------|----------------------|----------|------------------------|--------------|------------------|-------------|------------------|--------------------------------|----------------------------|
|                                     | FLK (mm)             | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                |                            |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 929387-1     | 12,500           | 929388-1    | 500              | 224910<br>318619               | 90273-5                    |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 968987-1     | 14,000           | 968988-1    | 500              | 528000-7<br>with<br>5-528441-3 | 2-1579004-9<br>3-1579004-0 |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 1534118-1**  | 12,500           | 1534119-1** | 500              | 1372000-1                      | 1-528013-1                 |

\*) Depending on Foil

\*\*) Two Contact Points

\*) Applicators are application specific, consult Tyco Electronics for details.

Micro Quadlok System – Foil, Multiple Crimp Pin Contact

**Technical Features**

**Contact Material:**

CuNiSi,  
Cantilever Spring: Stainless Steel

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Contact Resistance (New State):**

CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:**\*

-40 °C to +120 °C (tin plated)

**Mating Cycles:**

20 (tin plated)

**Insertion Force:**

max. 5 N

**Extraction Force:**

min. 1 N

**Retention Force (from Housing):**

- without second locking device  
> 60 N
  - second locking device only  
> 60 N
- depends on housing material

**Conductor Thickness:**

4–200  $\mu\text{m}$

**Extraction Tools:**

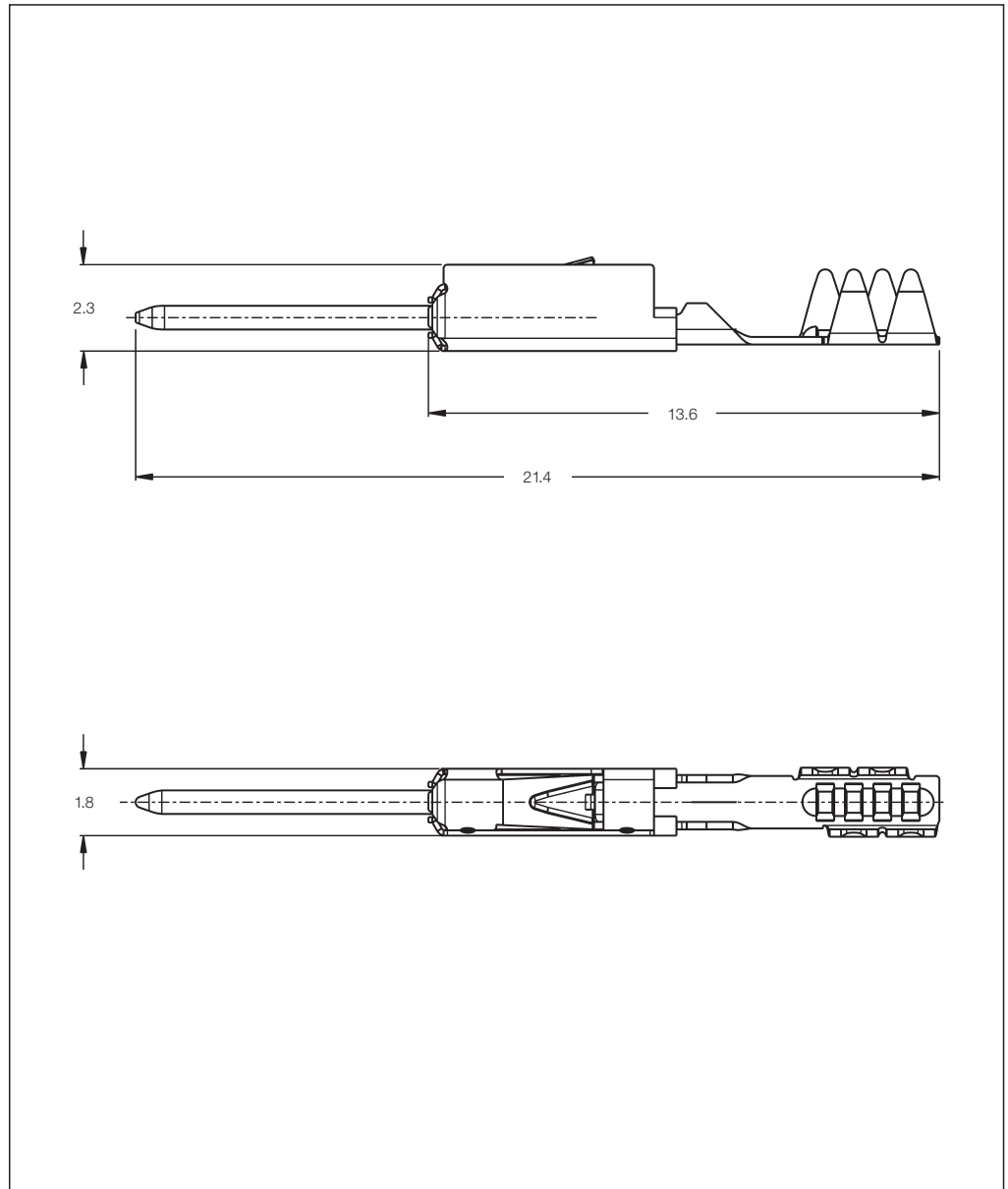
Part No. **1534197-1,**  
**91200, 91093,**  
**91092, 91047**

**Product Specification:**

108-18030

**Application Specification:**

114-18287



**Pin Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish    | Part Numbers |                  |             |                  | Machines* and Applicators                                       | Hand Tool   |
|-------------------------------------|----------------------|----------|------------------------|--------------|------------------|-------------|------------------|---|---|
|                                     | FLK (mm)             | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |   |   |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 1452128-1    | 13,000           | 1452129-1   | 500              | 224910<br>318619<br>528000-7<br>with<br>5-528441-3<br>1372000-1 | 90273-5<br>2-1579004-9<br>3-1579004-0<br>1-528013-1 |

\*) Depending on Foil

♦) Applicators are application specific, consult Tyco Electronics for details.

FFC-FFC Splice System – Foil / Multiple Crimp

**Technical Features**

**Contact Material:**

CuSn4

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Contact Resistance (New State):**

CuSn4:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:\***

-40 °C to +120 °C (tin plated)

**Conductor Thickness:**

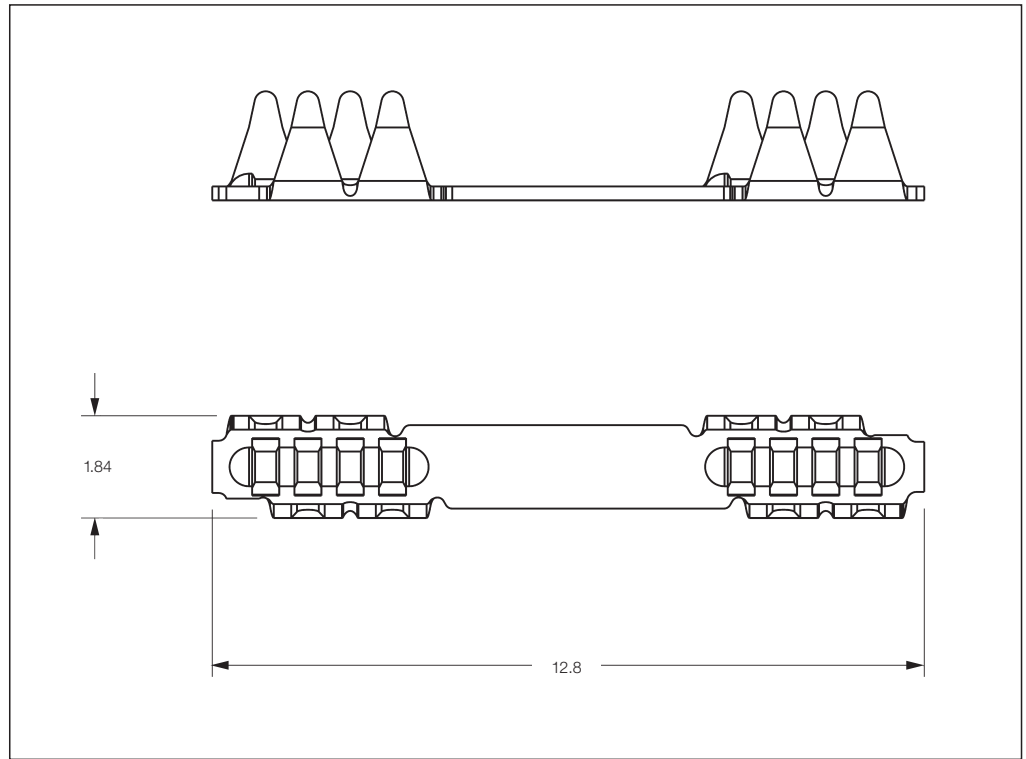
4–200  $\mu\text{m}$

**Product Specification:**

108-18030

**Application Specification:**

114-16015



**Multiple Crimp**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish   | Part Numbers |                  |             |                  |                           |           |
|-------------------------------------|----------------------|----------|-----------------------|--------------|------------------|-------------|------------------|---------------------------|-----------|
|                                     | FLK (mm)             | FLR (mm) |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Machines* and Applicators | Hand Tool |
| –                                   | –                    | –        | CuSn4, pre-tin plated | 1452078-1    | 28,000           | 1452479-1   | 500              | 1372000-4                 | 90273-5   |

\*) Depending on Foil

♦) Applicators are application specific, consult Tyco Electronics for details.

**FFC-Wire 0.2–0.5 mm<sup>2</sup> Splice System – Foil / Multiple Crimp**

**Technical Features**

**Contact Material:**

CuSn4

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Contact Resistance (New State):**

CuSn4: ≤ 3 mΩ

**Total Temperature max.:\***

–40 °C to +120 °C (tin plated)

**Conductor Thickness:**

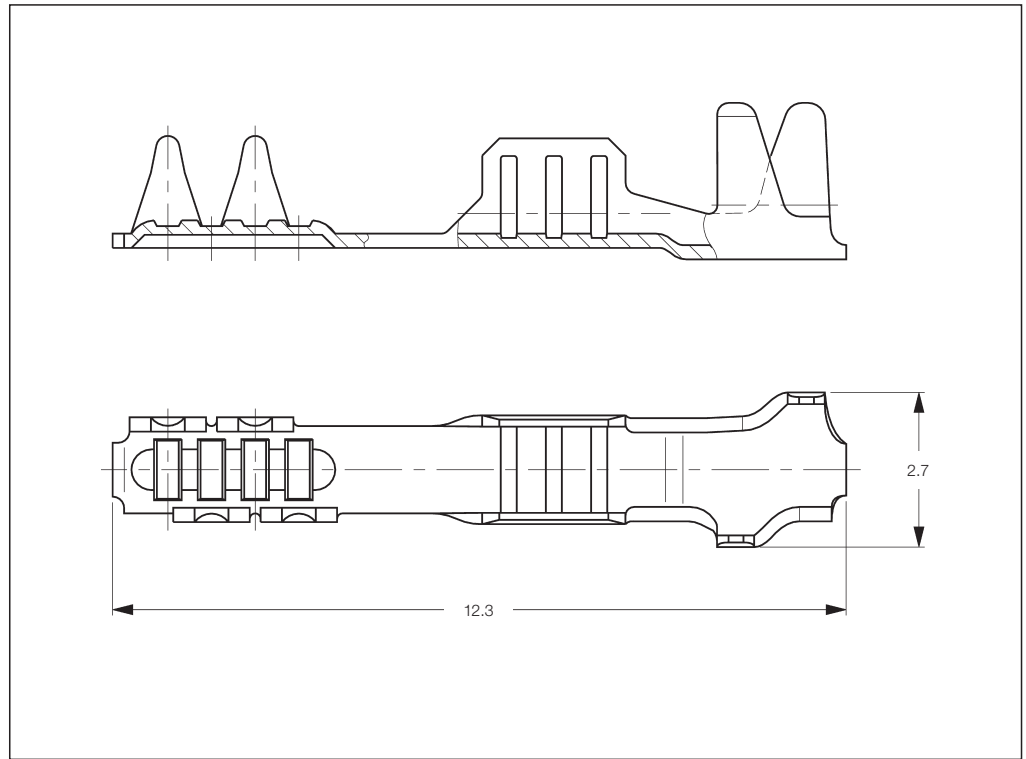
4–200 μm

**Product Specification:**

108-18030

**Application Specification:**

114-16015



| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |           | Material and Finish   | Part Numbers |                  |             |                  | Machines* and Applicators | Hand Tool             |
|-------------------------------------|----------------------|-----------|-----------------------|--------------|------------------|-------------|------------------|---------------------------|-----------------------|
|                                     | FLK (mm)             | FLR (mm)  |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                           |                       |
| 0.2–0.5                             | –                    | 1.15–1.60 | CuSn4, pre-tin plated | 965927-1     | 14,000           | 1452575-1   | 500              | upon request              | 90273-5<br>1-528013-1 |

\*) Depending on Foil

♦) Applicators are application specific, consult Tyco Electronics for details.

**ACTION-PIN System – Foil-PC Board – Multiple Crimp**

**Technical Features**

**Contact Material:**

CuNiSi

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Contact Resistance (New State):**

CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:\***

-40 °C to +120 °C (tin plated)

**Conductor Thickness:**

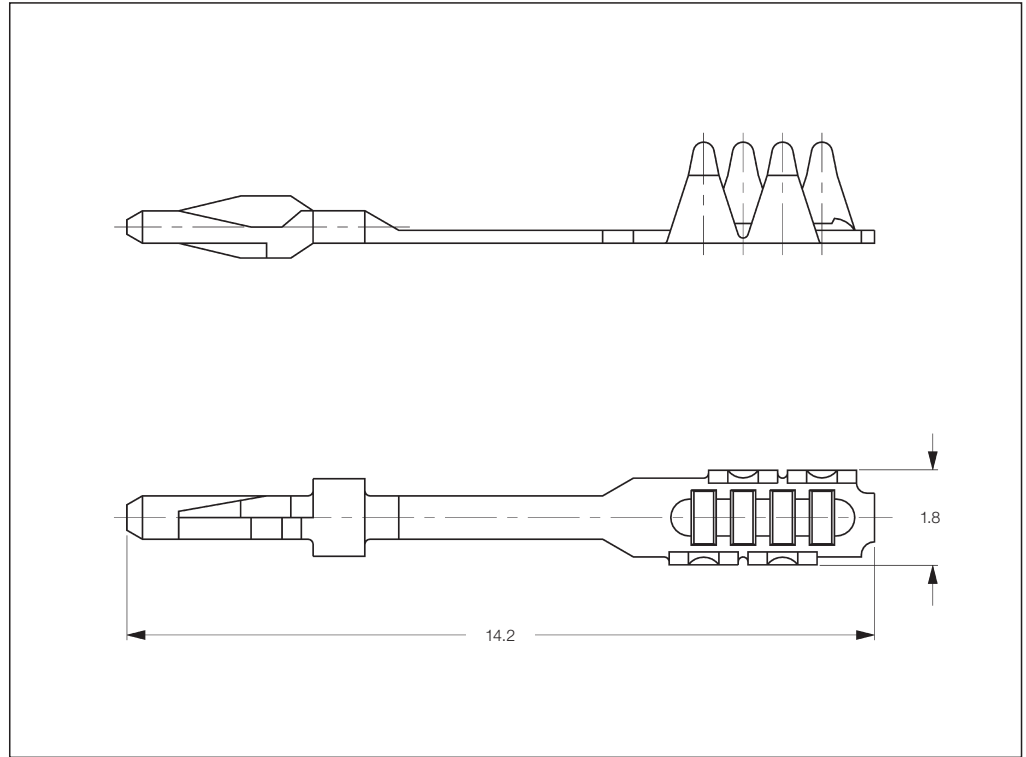
4–200  $\mu\text{m}$

**Product Specification:**

108-18587-1

**Application Specification:**

114-18210



**Multiple Crimp**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish    | Part Numbers |                  |             |                  |   | Hand Tool             |
|-------------------------------------|----------------------|----------|------------------------|--------------|------------------|-------------|------------------|---|-----------------------|
|                                     | FLK (mm)             | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Machines* and Applicators                                 |                       |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 968429-2     | 18,000           | -           | -                | 224910<br>318619<br>528000-7 with<br>5-528441-6<br>539570 | 90273-5<br>1-528013-1 |

\*) Depending on Foil

♦) Applicators are application specific, consult Tyco Electronics for details.

AMPMODU System – Foil, Multiple Crimp Socket Contact

**Technical Features**

**Contact Material:**  
Phosphor Bronze

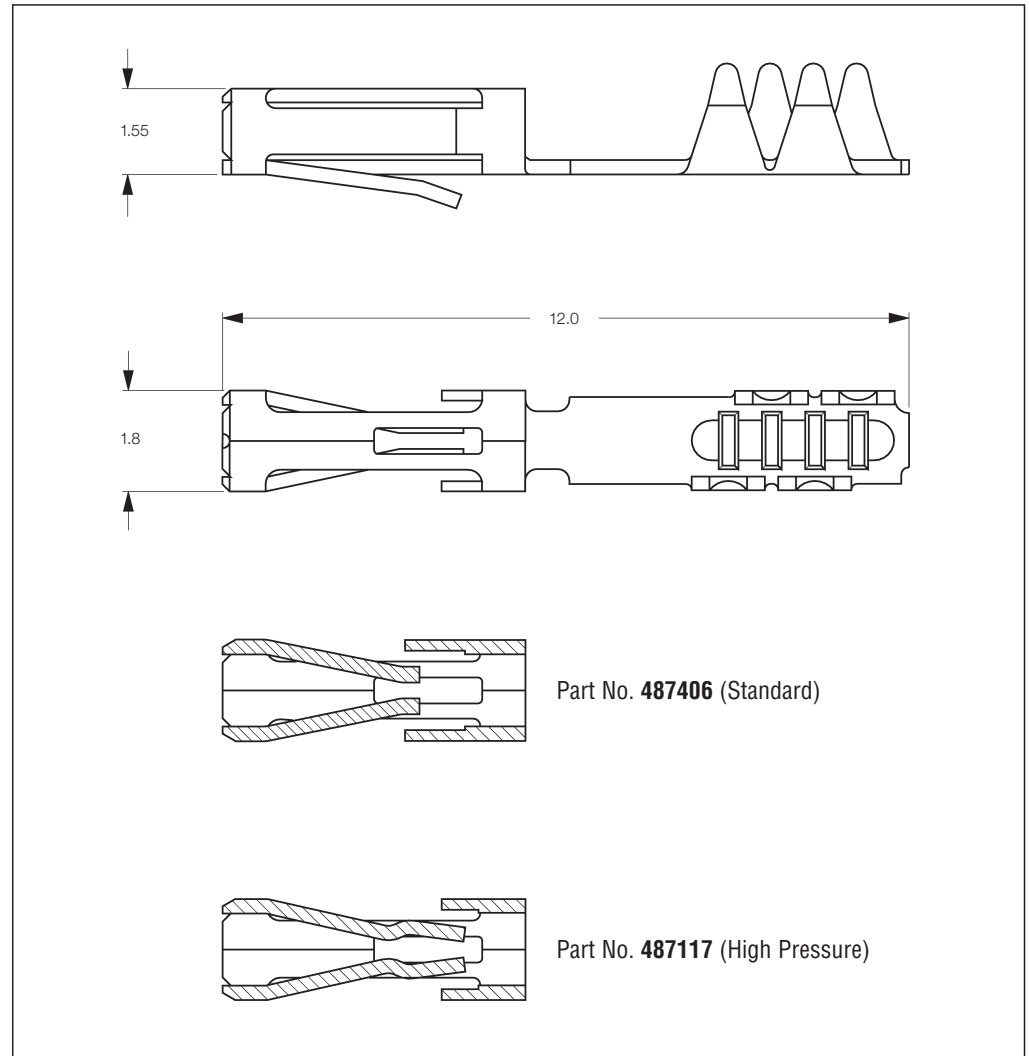
**Contact Finish:**  
pre-tin plated,  
selective gold plated on request

**Total Temperature max.:**\*  
-65 °C to +105 °C

**Mating Cycles:**  
dependant of plating thicknesses,  
see product specification

**Product Specification:**  
108-9024

**Application Specification:**  
114-16015



**Socket Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish** | Part Numbers |                  |             |                  | Machines* and Applicators | Hand Tool  |
|-------------------------------------|----------------------|----------|-----------------------|--------------|------------------|-------------|------------------|---------------------------|------------|
|                                     | FLK (mm)             | FLR (mm) |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                           |            |
| -                                   | -                    | -        | 2                     | 2-487406-2   | 14,000           |             |                  |                           |            |
|                                     |                      |          | 3                     | 2-487406-3   | 14,000           |             |                  | 224910                    |            |
|                                     |                      |          | 5                     | 2-487406-6   | 14,000           | -           | -                |                           |            |
|                                     |                      |          | 1                     | 2-487406-4   | 14,000           |             |                  | 318619                    | 1-528013-1 |
|                                     |                      |          | 6                     | 487406-9     | 14,000           |             |                  |                           |            |
| -                                   | -                    | -        | 2                     | 1-487117-0   | 10,000           |             |                  | 528000-7 with 5-528441-5  | 90273-5    |
|                                     |                      |          | 3                     | 1-487117-1   | 10,000           | -           | -                |                           |            |
|                                     |                      |          | 1                     | 487117-9     | 10,000           |             |                  |                           |            |

\*) Depending on Foil

\*\*) **Material and Finish:**

- 1 = Tin on mating area, crimp area tin plated
- 2 = 0.38 µm gold on mating area, crimp area tin plated
- 3 = 0.76 µm gold on mating area, crimp area tin plated
- 5 = 1.27 µm gold on mating area, crimp area tin plated
- 6 = 1.27 µm gold on mating area, crimp area gold plated

♦) Applicators are application specific, consult Tyco Electronics for details.

AMPMODU System – Foil, Multiple Crimp Pin Contact

**Technical Features**

**Contact Material:**

Phosphor Bronze

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Total Temperature max.:\***

-65 °C to +105 °C

**Mating Cycles:**

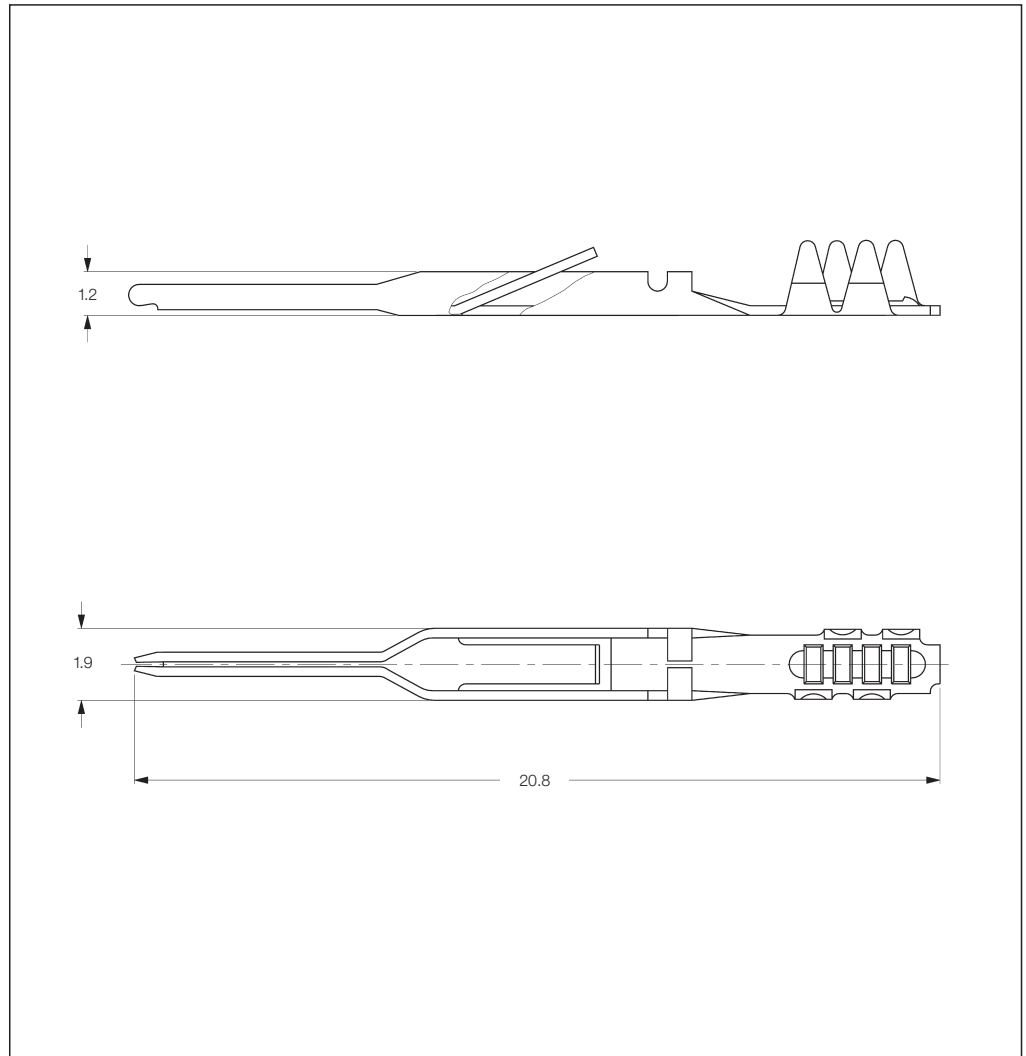
dependant of plating thicknesses,  
see product specification

**Product Specification:**

108-9024

**Application Specification:**

114-16015



**Pin Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish** | Part Numbers |                  |             |                  | Machines <sup>†</sup> and Applicators | Hand Tool  |
|-------------------------------------|----------------------|----------|-----------------------|--------------|------------------|-------------|------------------|---------------------------------------|------------|
|                                     | FLK (mm)             | FLR (mm) |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                       |            |
| -                                   | -                    | -        | 5                     | 88117-8      | 15,000           | -           | -                | 224910                                | -          |
| -                                   | -                    | -        | 2                     | 88117-9      | 15,000           | -           | -                | 318619                                | 1-528013-1 |
| -                                   | -                    | -        | 3                     | 1-88117-0    | 15,000           | -           | -                | 528000-7<br>with                      | 90273-5    |
| -                                   | -                    | -        | 1                     | 88117-7      | 15,000           | -           | -                | 5-528441-5                            | -          |

\*) Depending on Foil

**\*\*)** Material and Finish:

- 1 = Tin on mating area, crimp area tin plated
- 2 = 0.38 µm gold on mating area, crimp area tin plated
- 3 = 0.76 µm gold on mating area, crimp area tin plated
- 5 = 1.27 µm gold on mating area, crimp area tin plated

†) Applicators are application specific, consult Tyco Electronics for details.

Junior Timer System – Foil Multiple Crimp – Receptacle Contact

**Technical Features**

**Contact Material:**

CuNiSi

**Contact Finish:**

pre-tin plated

**Contact Resistance (New State):**

CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:\***

-40 °C to +120 °C (tin plated)

-40 °C to +140 °C (gold plated)

**Mating Cycles:**

10 (tin plated)

**Insertion Force:**

14 N max.

**Extraction Force:**

5 N min.

**Retention Force (from Housing):**

– without second locking device

>90 N

– second locking device only

>60 N

depends on housing material

**Fit to Tabs:**

2.8 x 0.8 mm, 3.0 x 0.8 mm

**Conductor Thickness:**

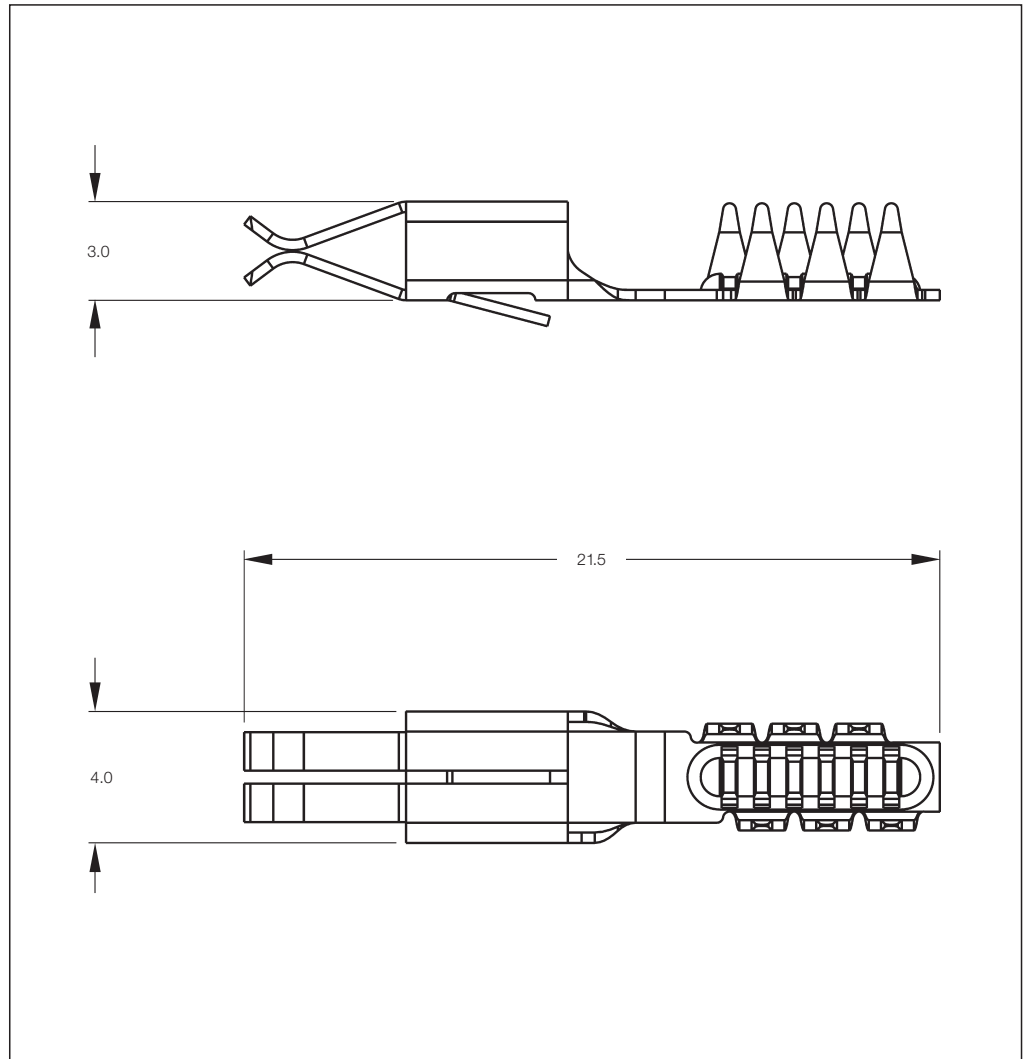
4–200  $\mu\text{m}$

**Product Specification:**

108-18053

**Application Specification:**

114-18409



**Receptacle Contacts**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish    | Part Numbers |                  |             |                  | Machines <sup>♦</sup> and Applicators                            | Hand Tool |
|-------------------------------------|----------------------|----------|------------------------|--------------|------------------|-------------|------------------|--|-----------|
|                                     | FLK (mm)             | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |  |           |
| –                                   | –                    | –        | CuNiSi, pre-tin plated | 1241783-1    | 4,000            | –           | –                | 528000-7 with 3-528441-7<br>1372000-1 with Conv. Kit<br>539984-2 | –         |

\*) Depending on Foil

♦) Applicators are application specific, consult Tyco Electronics for details.



Solder Pin – Foil – Multiple Crimp

**Technical Features**

**Contact Material:**

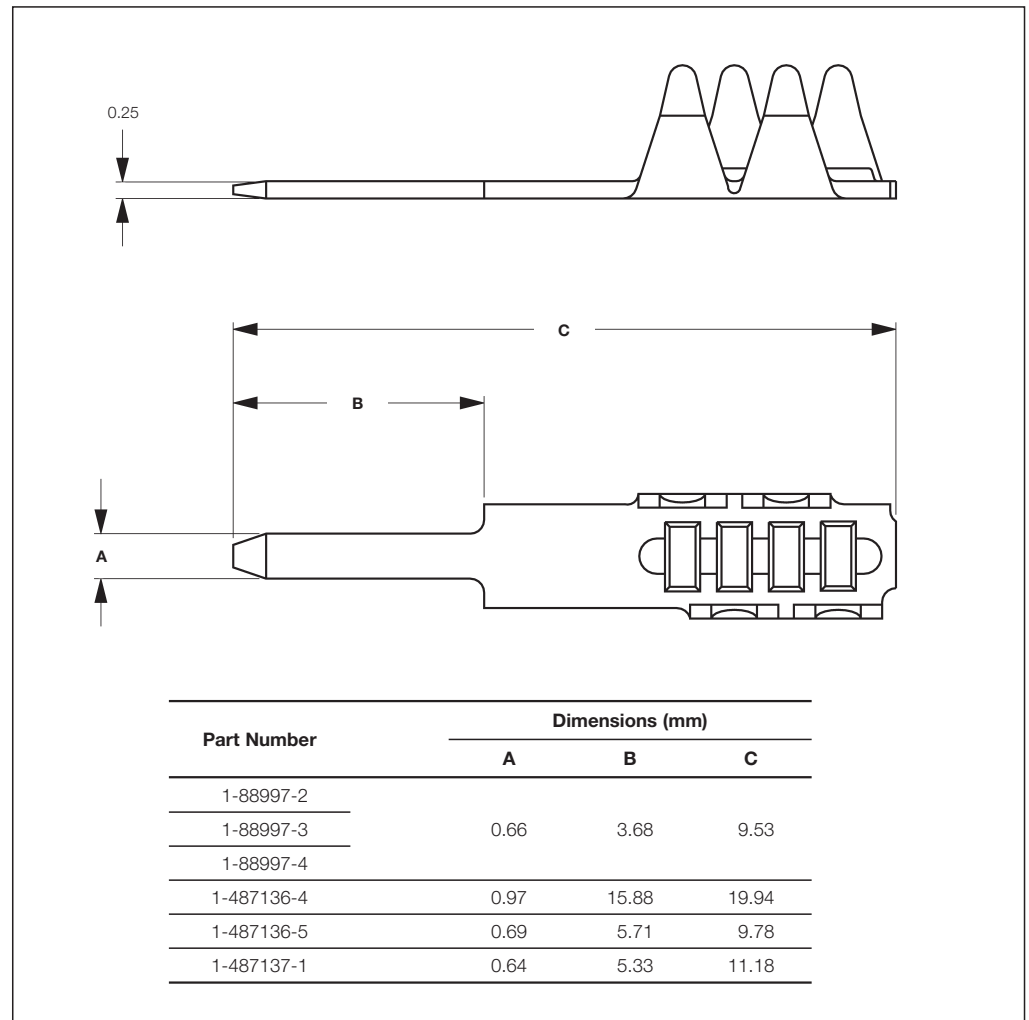
Phosphor Bronze

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Application Specification:**

114-16015



**Multiple Crimp**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish** | Part Numbers |                  |             |                  | Machines* and Applicators | Hand Tool  |
|-------------------------------------|----------------------|----------|-----------------------|--------------|------------------|-------------|------------------|---------------------------|------------|
|                                     | FLK (mm)             | FLR (mm) |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                           |            |
| -                                   | -                    | -        | 1                     | 1-88997-2    | 15,000           | -           | -                | 224910                    | 90273-5    |
|                                     |                      |          | 2                     | 1-88997-3    | 15,000           |             |                  |                           |            |
|                                     |                      |          | 3                     | 1-88997-4    | 15,000           |             |                  | 318619                    |            |
| -                                   | -                    | -        | 1                     | 1-487136-4   | 15,000           | -           | -                | 528000-7 with             | 1-528013-1 |
|                                     |                      |          | 1                     | 1-487136-5   | 15,000           |             |                  | 5-528441-7                |            |
| -                                   | -                    | -        | 1                     | 1-487137-1   | 15,000           | -           | -                |                           |            |

\*\*) Depending on Foil

**\*\*) Material and Finish:**

- 1 = Tin on solder area, crimp area tin plated
- 2 = 0.38 µm gold on solder area, crimp area tin plated
- 3 = 0.76 µm gold on solder area, crimp area tin plated
- 4 = Unplated on solder area, crimp area tin plated

♦) Applicators are application specific, consult Tyco Electronics for details.

Splice System – Foil – Multiple Crimp

**Technical Features**

**Contact Material:**

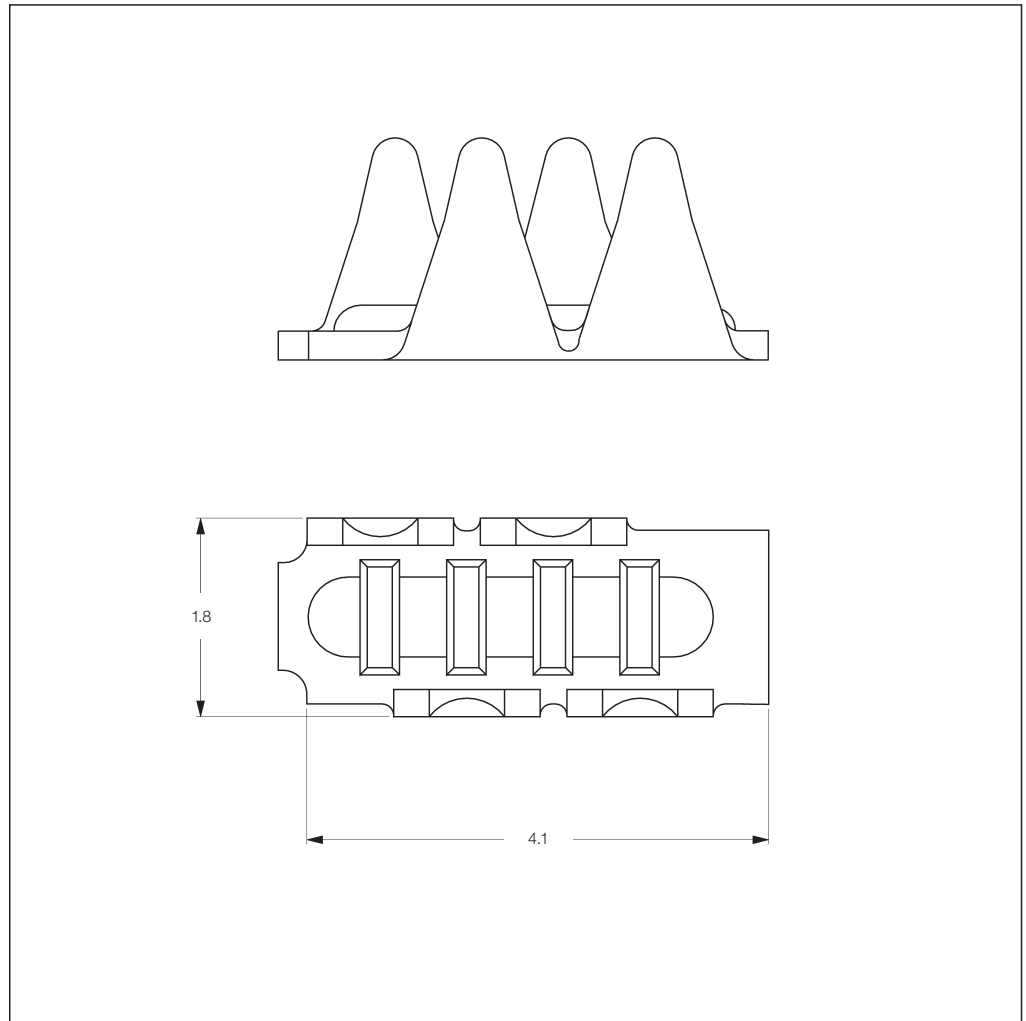
Phosphor Bronze

**Contact Finish:**

pre-tin plated,  
selective gold plated on request

**Application Specification:**

114-16015



**Multiple Crimp**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish   | Part Numbers |                  |             |                  | Applicator       | Hand Tool |
|-------------------------------------|----------------------|----------|-----------------------|--------------|------------------|-------------|------------------|------------------|-----------|
|                                     | FLK (mm)             | FLR (mm) |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                  |           |
| -                                   | -                    | -        | CuSn4, pre-tin plated | 494060-3     | 16,000           | -           | -                | 224910<br>318619 | 90273-5   |

\*) Depending on Foil

Micro Quadlok System – Foil – **Extruded**

**Technical Features**

**Contact Material:**

CuNiSi,  
Cantilever Spring: Stainless Steel

**Contact Finish:**

pre-tin plated

**Contact Resistance (New State):**

CuNiSi:  $\leq 3 \text{ m}\Omega$

**Total Temperature max.:\***

-40 °C to +150 °C (tin plated)

**Mating Cycles:**

20 (tin plated)

**Insertion Force:**

5 N max.

**Extraction Force:**

1 N min.

**Retention Force (from Housing):**

- without second locking device >60 N
  - second locking device only >60 N
- depends on housing material

**Dimensions of Male Contacts:**

0.63 x 0.63 mm

**Conductor Thickness:**

100–200  $\mu\text{m}$

**Extruded Foil Thickness:**

>600  $\mu\text{m}$

**Extraction Tools:**

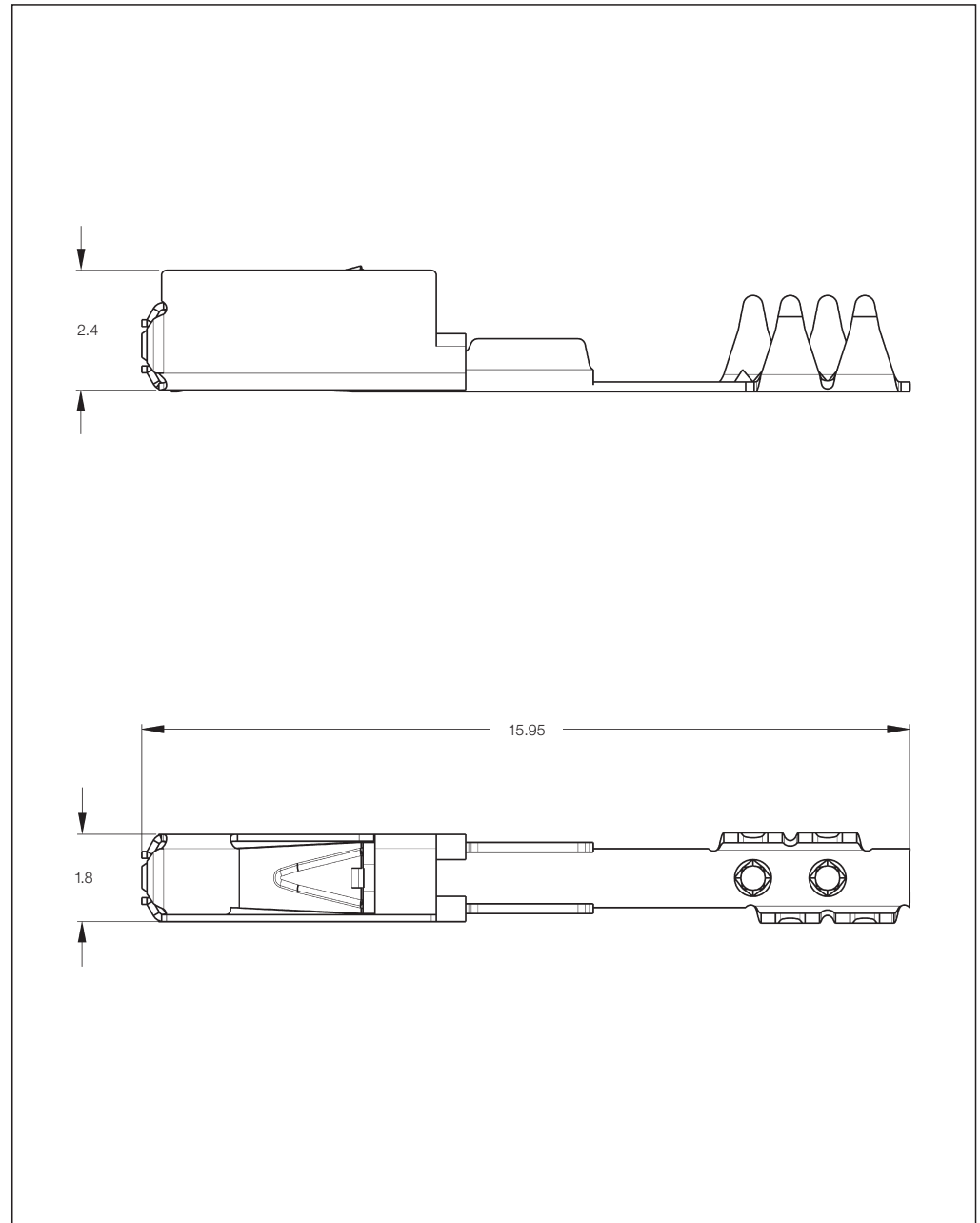
Part No. **1534197-1,**  
**91200, 91093,**  
**91092, 91047**

**Product Specification:**

108-18030

**Application Specification:**

114-18287



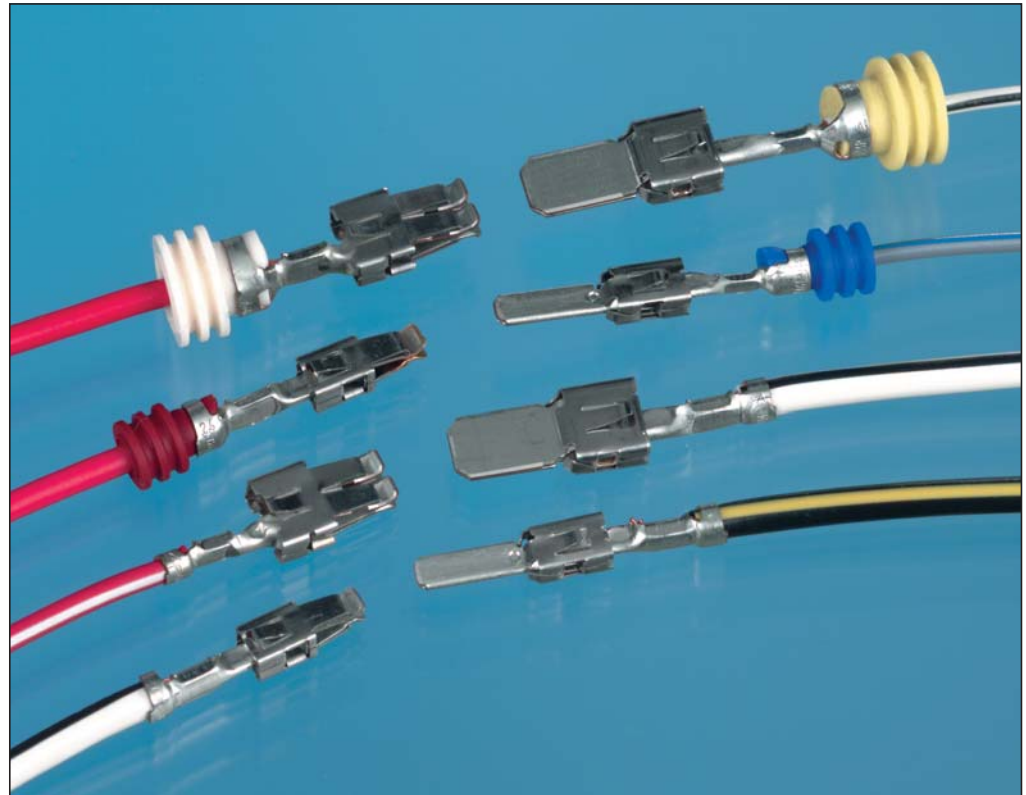
**Extruded Foil**

| Wire Size Range* (mm <sup>2</sup> ) | Insulation Diameter* |          | Material and Finish    | Part Numbers |                  |             |                  | Machines* and Applicators | Hand Tool          |
|-------------------------------------|----------------------|----------|------------------------|--------------|------------------|-------------|------------------|---------------------------|--------------------|
|                                     | FLK (mm)             | FLR (mm) |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                           |                    |
| -                                   | -                    | -        | CuNiSi, pre-tin plated | 1418887-1    | 12,500           | 1418930-1   | 500              | 528000-7 with 5-528441-3  | 1-528013-1 90273-5 |

\*) Depending on Foil

\*) Applicators are application specific, consult Tyco Electronics for details.

Introduction



The comprehensive range of Tyco Electronics Flat Contact Systems is extensively used in the automotive industries.

The tabs mate with a rich variety of receptacle contacts e.g. Timer. Tabs can be applied in both watertight and non-watertight connectors.

They can be rapidly and economically attached to the lead using Tyco Electronics hand, semi-automatic or fully-automatic tooling.

If required they can be inserted into the housig in a fully-automatic operation.

Tab Contacts Symmetric

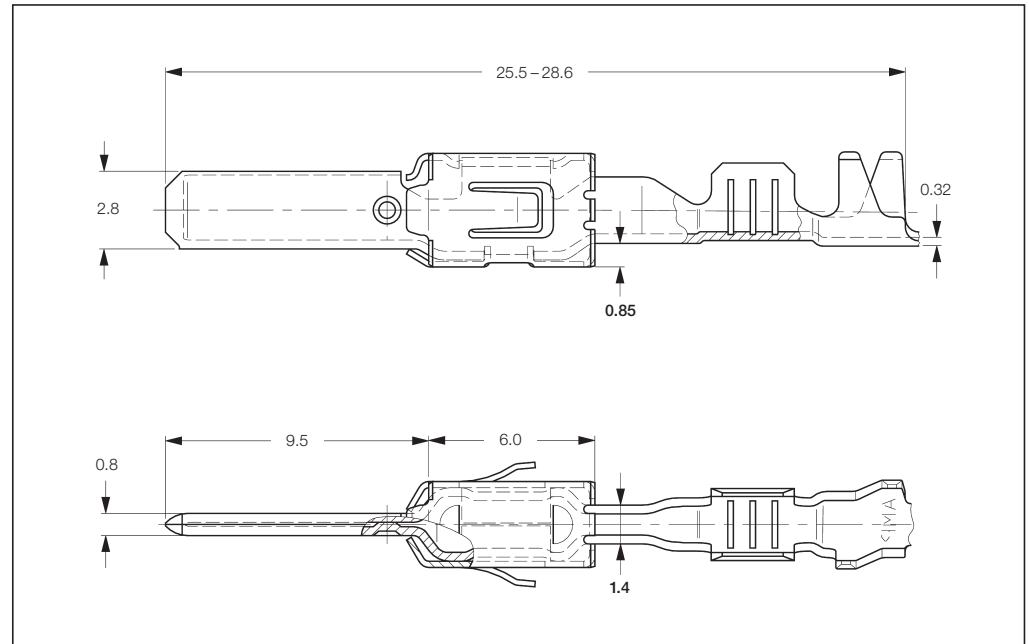
**Tabs 2.8 x 0.8 mm with Steel Top Spring**

**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355052

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete             |
|------------------------------------|--------------------------|-----------|---|--------------|------------------|-------------|------------------|-------------|--------------------------------|
|                                    | FLK                      | FLR       |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 963860       | 4,000            | 963861      | 500              | x-878549-x  | 734538-1                       |
| 0.5-1.0                            | -                        | 1.4-2.0   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962841       | 4,000            | 963745      | 500              | x-878550-x  | 539635-1 with Die Set 539758-2 |
| 1.5-2.5                            | -                        | 2.1-2.9   | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962842       | 3,500            | 963746      | 500              | x-878551-x  | 539635-1 with Die Set 539758-2 |
| 1.5-2.5                            | 2.4-3.7                  | -         | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962843       | 3,000            | 963747      | 500              | x-878552-x  | 734417-3                       |
| 4.0                                | -                        | 3.4-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968946       | 2,700            | 968965      | 500              | x-541534-x  | -                              |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |          | Material and Finish*                                      | Part Numbers |                  |             |                  | Applicator* | Hand Tool Complete |
|------------------------------------|--------------------------|----------|---|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK                      | FLR      |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                    |
| 0.2-0.5                            | -                        | max. 2.1 | 1-xxx-1 / 1-xxx-3   | 965982       | 3,500            | 965983      | 500              | x-878558-x  | -                  |
| 0.5-1.0                            | -                        | max. 2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962915       | 3,500            | 963748      | 500              | x-878559-x  | 734438-1           |
| 1.5-2.5                            | -                        | max. 3.0 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962916       | 3,500            | 963749      | 500              | x-878560-x  | 734440-1           |
| 4.0                                | -                        | max. 3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968947       | 3,500            | 968966      | 500              | x-541537-x  | -                  |
| AWG 12                             | GXL = max. 3.55          |          | 1-xxx-1 / 1-xxx-2   | 1719504      | 3,500            | 1719503     | 500              | x-1852291-x | -                  |

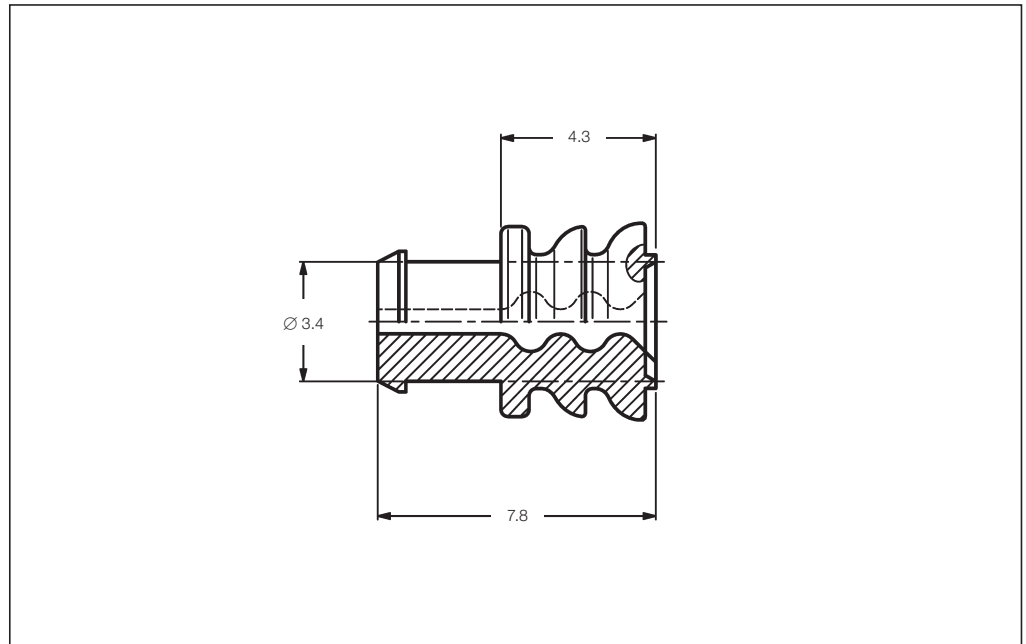
**\*) Material and Finish:**  
1-xxx-1 = CuSn, pre-tin plated  
1-xxx-2 = CuSn, selective silver plated  
1-xxx-3 = CuSn, selective gold plated

2-xxx-1 = CuFe, pre-tin plated  
2-xxx-2 = CuFe, selective silver plated  
2-xxx-3 = CuFe, selective gold plated  
3-xxx-1 = CuSn, pre-tin plated

**\*)** The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals  
and Sealing Plugs**



| Insulation Diameter (mm) | Color   | Part Number | Package Quantity |
|--------------------------|---------|-------------|------------------|
| 1.2-2.1                  | Blue    | 828904-1    | 1,000            |
|                          |         | 828904-2    | 10,000           |
| 2.2-3.0                  | White   | 828905-1    | 10,000           |
|                          |         | 828922-1    | 10,000           |
| Sealing Plug             | Natural | 828922-1    | 10,000           |
|                          | Green   | 828922-2    | 10,000           |

Tab Contacts Symmetric

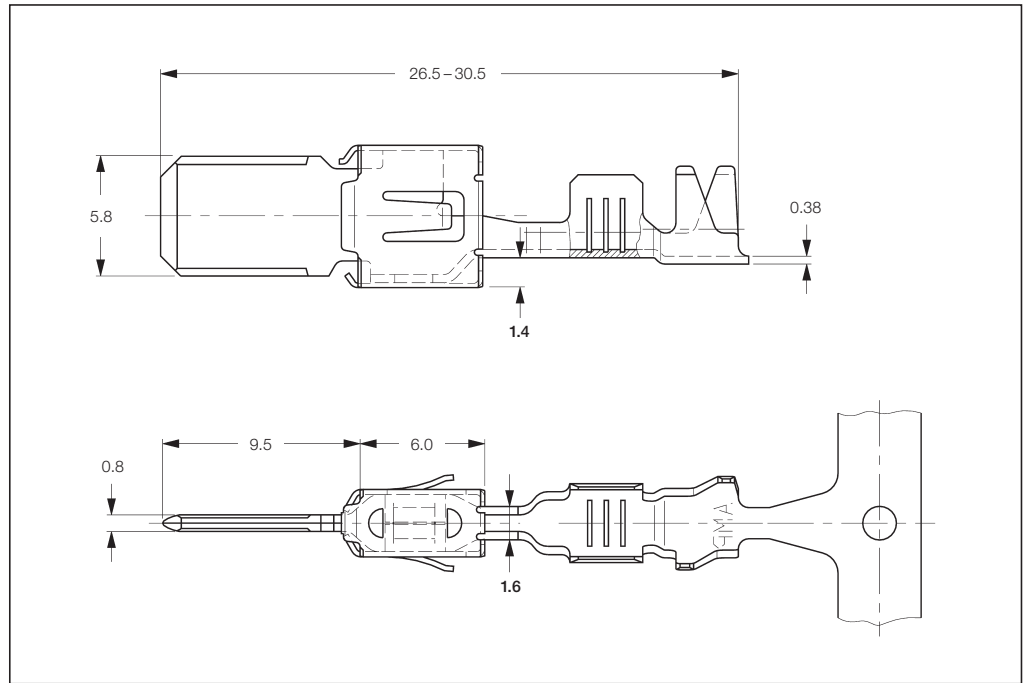
**Tabs 5.8 x 0.8 mm  
with Steel Top Spring**

**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1241895

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Standard Tab Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish*                  | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|-----------|---------------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-1 / 2-xxx-1                     | 965984       | 2,000            | 965985      | 500              | -           | -                               |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963734       | 1,700            | 963737      | 500              | x-878654-x  | 539759-2                        |
| 1.5-2.5                            | -                        | 2.2-3.0   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963735       | 1,800            | 963738      | 500              | x-878561-x  | 734688-1**                      |
| >2.5-4.0                           | -                        | 2.7-3.7   | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 963736       | 1,800            | 963739      | 500              | x-878562-x  | 539623-1**                      |
| 1.5-2.5                            | 2.4-3.7                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962845       | 1,700            | 963740      | 500              | x-878563-x  | 539759-2                        |
| 3.0-4.0                            | 3.3-4.5                  | -         | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962846       | 1,800            | 963741      | 500              | x-878564-x  |                                 |
| 4.0-6.0                            | 4.0-5.2                  | -         | 1-xxx-1 / 2-xxx-1                     | 968050       | 1,500            | 968051      | 500              | x-878968-x  | -                               |

**Tab Contacts with Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*                  | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|---------------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962917       | 1,500            | 963742      | 500              | x-878565-x  | 539757-2<br>734442-1**          |
| 1.5-2.5                            | -                        | 2.2-3.0 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962918       | 1,500            | 963743      | 500              | x-878566-x  | 539757-2<br>734444-1**          |
| >2.5-4.0                           | -                        | 2.7-3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962919       | 1,500            | 963744      | 500              | x-878567-x  | 539757-2<br>734446-1**          |

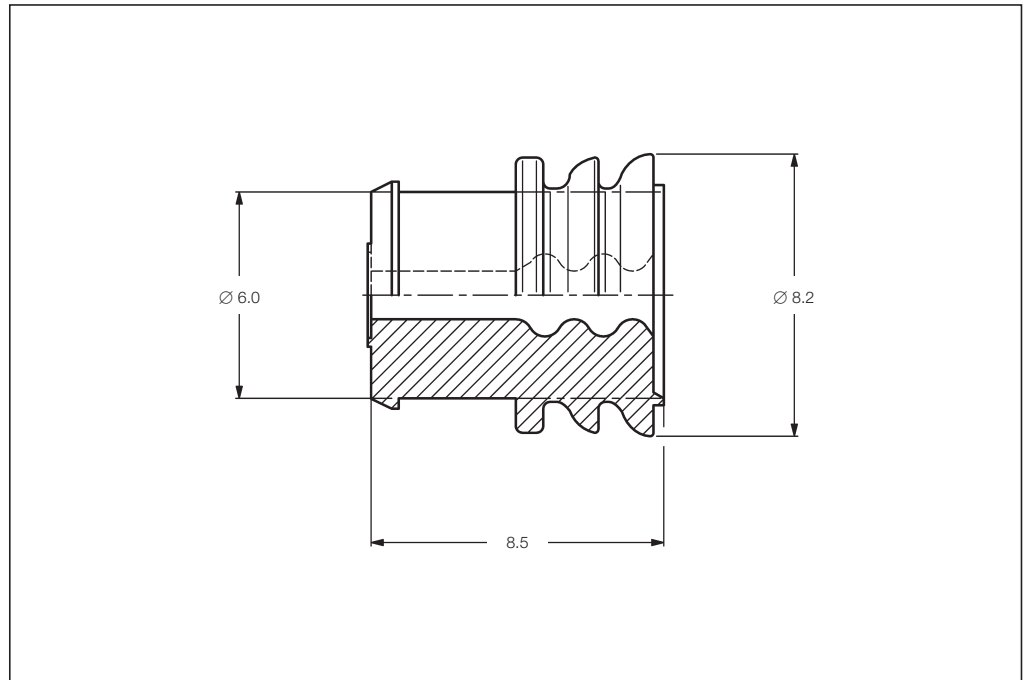
**\*) Material and Finish:**  
1-xxx-1 = CuSn, pre-tin plated  
1-xxx-2 = CuSn, selective silver plated  
2-xxx-1 = CuFe, pre-tin plated  
2-xxx-2 = CuFe, selective silver plated

**Remarks:**  
\*\*) Hand Tool complete

**\*)** The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs**



| Insulation Diameter (mm) | Color  | Part Number | Package Quantity |
|--------------------------|--------|-------------|------------------|
| 1.4-2.1                  | Blue   | 963243-1    | 2,500            |
| 2.2-3.0                  | White  | 963244-1    | 2,500            |
| 3.4-3.7                  | Yellow | 963245-1    | 2,500            |
| Sealing Plug             | Black  | 100132-1    | 1,000            |

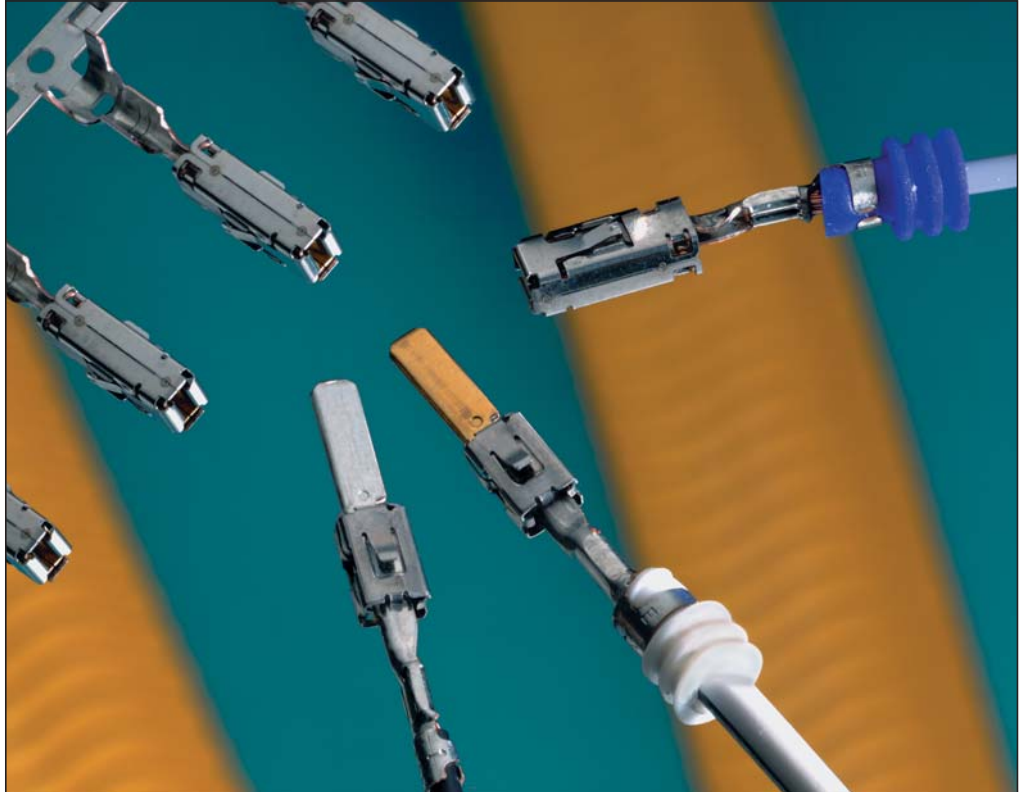


Engineering Notes

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Introduction



Micro motions due to vibrations or changes in temperature can cause fretting corrosions in the contact area of receptacle and tab. This leads to surface oxidation so that mainly at a low current it will possibly come to a complete interruption of the electric circuit.

To prevent fretting corrosion we have developed a sensor receptacle contact. Integrated into the body is a spring, which is able to compensate the micro motions in all three space axis. Thanks to this spring, the resulting friction force depending on spring normal force and friction parameter is higher than the unmating force in axial direction, so that micro motions and fretting corrosion is hereby prevented.

The two-piece contact exists of a body which is responsible for the electrical function and a steel spring. The two locking lances of the steel spring lock the contact securely in the housing, achieving high contact extraction forces. Furthermore this steel spring also serves to secure the secondary contact locking in the housing.

The sensor receptacle contact is available in a tin plated and (only in the contact area) gold plated or silver plated version. It can be applied in a single wired sealed and a non-water-proof design.

By altering the mold cavity the sensor receptacle contact becomes compatible to the Junior Power Timer receptacle. That means, that the sensor receptacle contact then can also be used in existing housing designs thereby stopping immediately appearing corrosion problems.

Our customers can accomplish this conversion of the cavity by using a mold conversion kit. Regarding a standardization of terminals with existing Junior Power Timer contacts, this possibility has to be regarded as extremely valuable.

The sensor receptacle contact can be rapidly and economically crimped to wire by using hand tools resp. semi-automatic or fully-automatic tooling.

Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tabs: CuSn4/CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

tin plated,  
selective gold plated

**Wire Size Range:**

0.5–1.0 mm<sup>2</sup>/1.4–2.0 mm<sup>2</sup>  
Single Wires (FLR)

**Current Carrying Capacity:**

up to 4 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

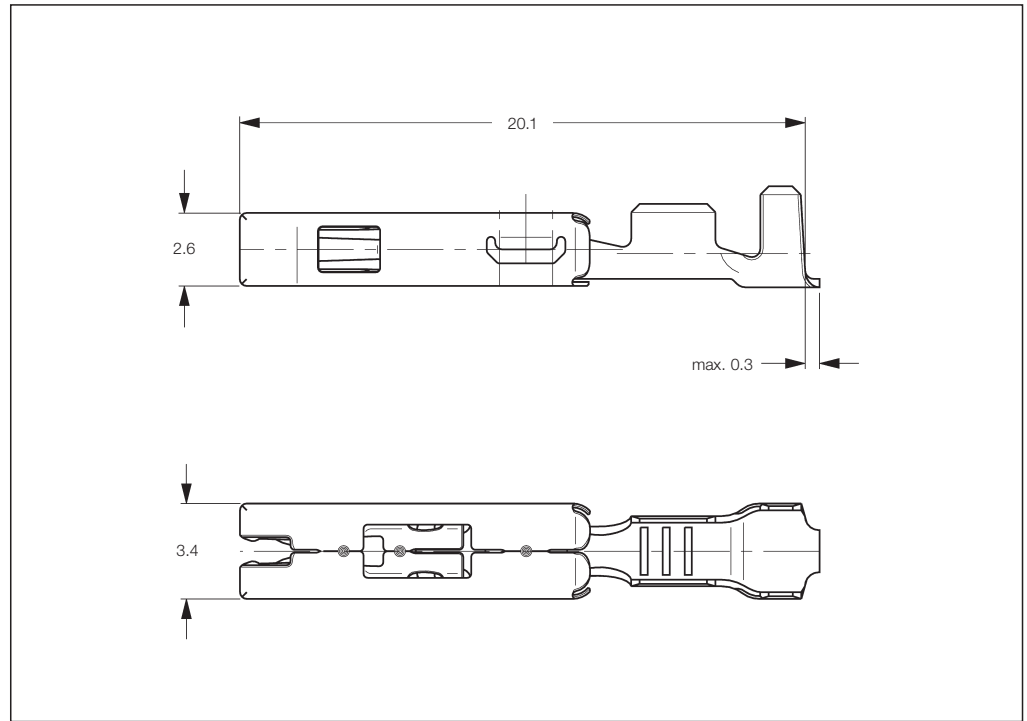
–40 °C to +130 °C (tin plated)  
–40 °C to +150 °C (gold plated)

**Mating Frequency:**

up to 10 cycles (tin plated)  
up to 100 cycles (gold plated)

**Centerline:**

3.33 x 5.0 mm



**Contact Resistance:**

New State ≤ 4 mΩ

**Mating Force:**

Max. 10 N

**Unmating Force:**

1.5–7 N

**Extraction Tool:**

Part No. **929136-1**

**Product Specification:**

108-18617

**Application Specification:**

114-18254

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish * | Part Numbers |                  |             |                  |            |                                 |
|------------------------------------|--------------------------|---------|-----------------------|--------------|------------------|-------------|------------------|------------|---------------------------------|
|                                    | FLK                      | FLR     |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool 539635-1 with Die Set |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3          | 929027       | 5,500            | 929028      | 500              | 2-541555-2 | 539724-2                        |
| 1.4–2.0                            | –                        | 2.2–2.8 | -1 / -2 / -3          | 929025       | 4,500            | 929026      | 500              | 2-541554-2 | 539724-2                        |

**\*) Material and Finish:**

- xxx-1 = selective gold plated
- xxx-2 = pre-tin plated
- xxx-3 = silver plated

Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tabs: CuSn4/CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

tin plated,  
selective gold plated

**Wire Size Range:**

0.35 mm<sup>2</sup>/0.5–1.0 mm<sup>2</sup>/  
1.5–2.5 mm<sup>2</sup>  
Single Wires (FLR)

**Current Carrying Capacity:**

up to 25 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

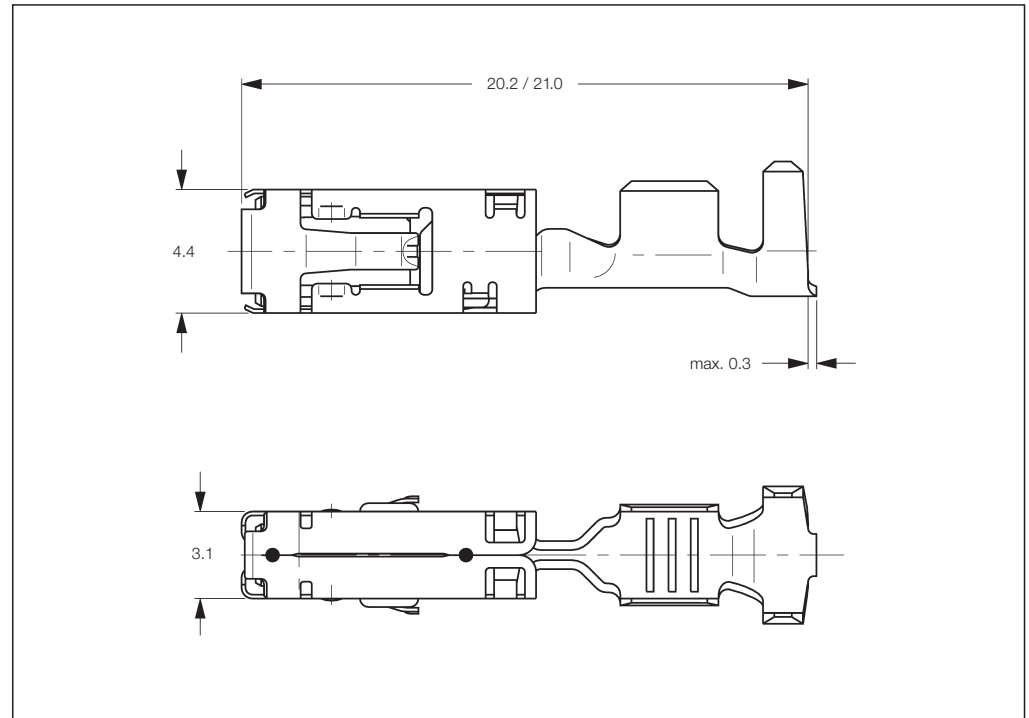
–40 °C to +130 °C (tin plated)  
–40 °C to +150 °C (gold plated)

**Mating Frequency:**

up to 20 cycles (tin plated)  
up to 100 cycles (gold plated)

**Centerline:**

5.0 x 5.5 mm Standard  
5.0 x 5.0 mm Staggered



**Contact Resistance:**  
New State ≤ 2 mΩ

**Mating Force:**  
3 to 10 N

**Unmating Force:**  
2 to 10 N

**Extraction Tool:**  
Part No. **929037-1**

**Product Specification:**  
108-18509

**Application Specification:**  
114-18144

**Standard Receptacle Contacts**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish * | Part Numbers |                  |             |                  |            |                                 |
|------------------------------------|--------------------------|---------|-----------------------|--------------|------------------|-------------|------------------|------------|---------------------------------|
|                                    | FLK                      | FLR     |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool 539635-1 with Die Set |
| 0.35                               | –                        | 1.2–1.4 | -1 / -2               | 967701       | 3,500            | 967712      | 500              | 2-541562-2 | 539721-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1                    | 967702       | 4,000            | 967713      | 500              | 2-541535-2 | 539722-2                        |
| 1.5–2.5                            | –                        | 2.2–3.0 | -1 / -2               | 967703       | 4,000            | 967714      | 500              | 2-541536-2 | 539723-2                        |

**Single Wire Sealing System**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish * | Part Numbers |                  |             |                  |            |                                 |
|------------------------------------|--------------------------|---------|-----------------------|--------------|------------------|-------------|------------------|------------|---------------------------------|
|                                    | FLK                      | FLR     |                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool 539635-1 with Die Set |
| 0.35                               | –                        | 1.2–1.4 | -1                    | 967541       | 3,500            | 967715      | 500              | 2-541563-2 | 539725-2                        |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2               | 967542       | 4,000            | 967716      | 500              | 878973-2   | 539726-2                        |
| 1.5–2.5                            | –                        | 2.2–3.0 | -1 / -2 / -3          | 967543       | 4,000            | 967717      | 500              | 878974-2   | 539727-2                        |

**\*) Material and Finish:**

xxx-1 = pre-tin plated  
xxx-2 = selective gold plated  
xxx-3 = silver plated

Tab Contacts

**Tabs 2.8 x 0.8 mm with Modified Steel Top Spring, Mates with 2.8 mm Sensor Receptacle Contact**

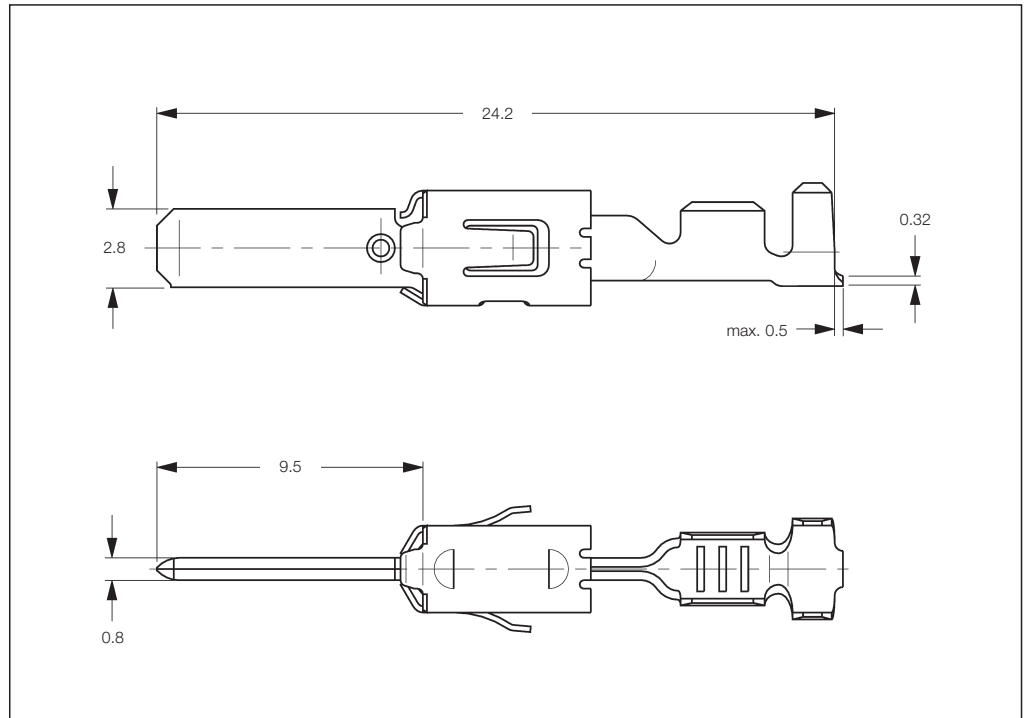
**Extraction Tool:**  
Part No. **968107-1**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355364

**Chart Drawing:**  
1355052

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Standard Tab Contacts with Modified Spring (STC)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator  | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1    | 964292       | 4,000            | 964291      | 500              | x-1528004-x |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1    | 964294       | 4,000            | 964293      | 500              | x-1528097-x | 539664-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1    | 964296       | 3,300            | 964295      | 500              | x-1528001-x |                                 |

**Tab Contacts Single Wire Sealing System with Modified Spring (SWS)**

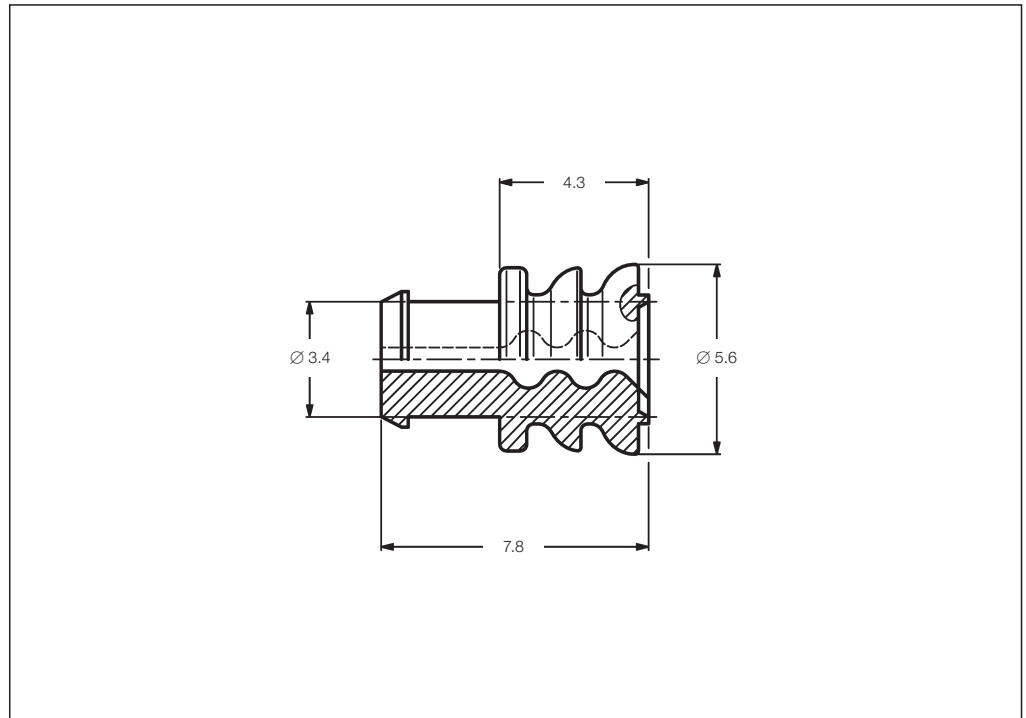
| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |           | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|-----------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR       |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator  | Hand Tool 539635-1 with Die Set |
| 0.2-0.5                            | -                        | 1.15-1.60 | 1-xxx-3 / 2-xxx-1    | 964298       | 3,500            | 964297      | 500              | x-1528025-x |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1   | 1-xxx-3 / 2-xxx-1    | 964300       | 3,500            | 964299      | 500              | x-1528101-x | 539650-2                        |
| 1.25-2.50                          | -                        | 2.2-3.0   | 1-xxx-3 / 2-xxx-1    | 964302       | 3,500            | 964301      | 500              | x-1528026-x |                                 |

\*) **Material and Finish:**  
1-xxx-3 = CuSn, selective gold plated  
2-xxx-1 = CuFe, pre-tin plated  
Additional Materials and Finishes on request.

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for 2.8 mm Sensor Flat Contact System**



| Insulation Diameter (mm) | (Wire Size Range (mm <sup>2</sup> )) | Color   | Part Number | Package Quantity |
|--------------------------|--------------------------------------|---------|-------------|------------------|
| 1.2-2.1                  | (0.35-1.00)                          | Blue    | 828904-1    | 1,000            |
|                          |                                      |         | 828904-2    | 10,000           |
| 2.2-3.0                  | (1.50-2.50)                          | White   | 828905-1    | 10,000           |
| Sealing Plug             | (0.35-2.5)                           | Natural | 828922-1    | 10,000           |

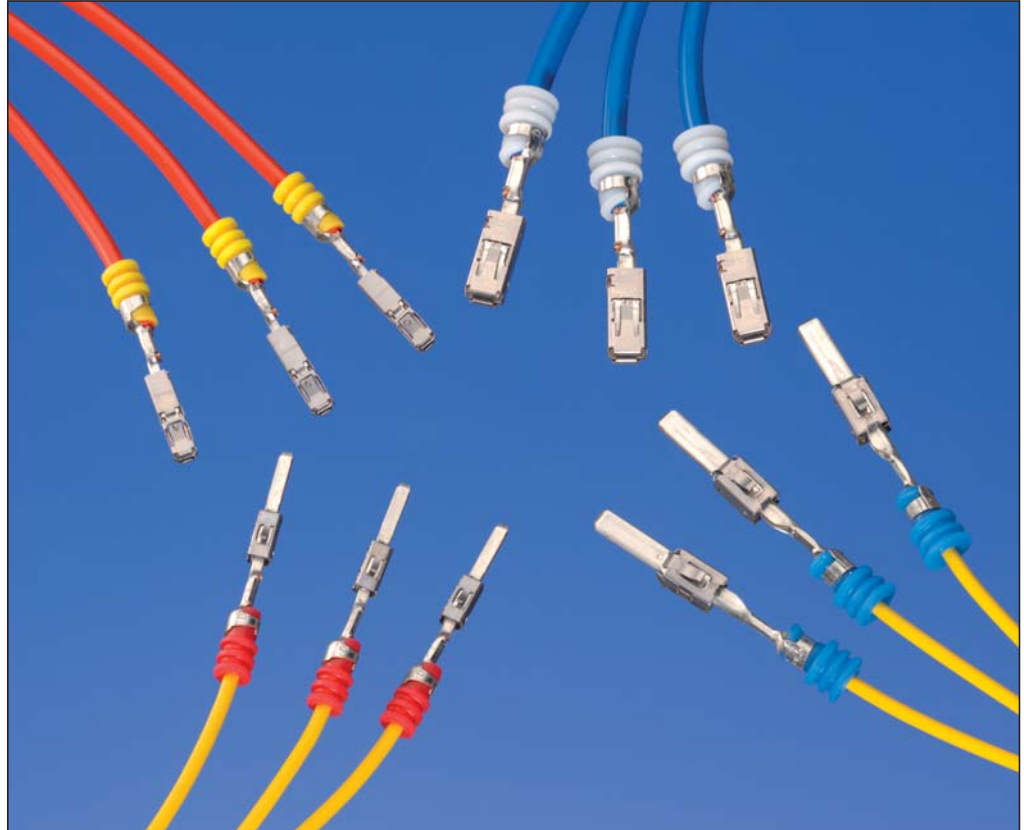
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Engineering Notes

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### Introduction



The AMP MCP Contact System is mainly used in the automotive industry. Each contact consists of a flat receptacle, which mates with a flat tab. Every contact has got a steel spring and a copper alloy body.

The two-piece contact design means that the electrical and mechanical properties are separated. One end of the contact body is crimped to wire and the other end mates with the matching tab. The closed spring has got several functions and also different advantages for the complete contact system.

- Protection of the contact springs
- No over elongation of the contact springs possible under normal circumstances
- No possibility to connect from the rear side
- Protection against mechanical damage
- Good guiding in the cavity
- Secondary locking possible (from 4 directions)
- Assembly into housing fully-automatically

In addition there are usually two lances on the steel to spring. These serve to lock the contact securely in the housing.

The main advantages of the body are:

- Several contact points
- Large range of wire sizes (from 0.2 mm<sup>2</sup> at AMP MCP 1.5K up to 6.0 mm<sup>2</sup> at AMP MCP 6.3/4.8K)
- Base material with very high current capability
- High vibrational load

Tabs and receptacles can be applied in both sealed and unsealed connectors.

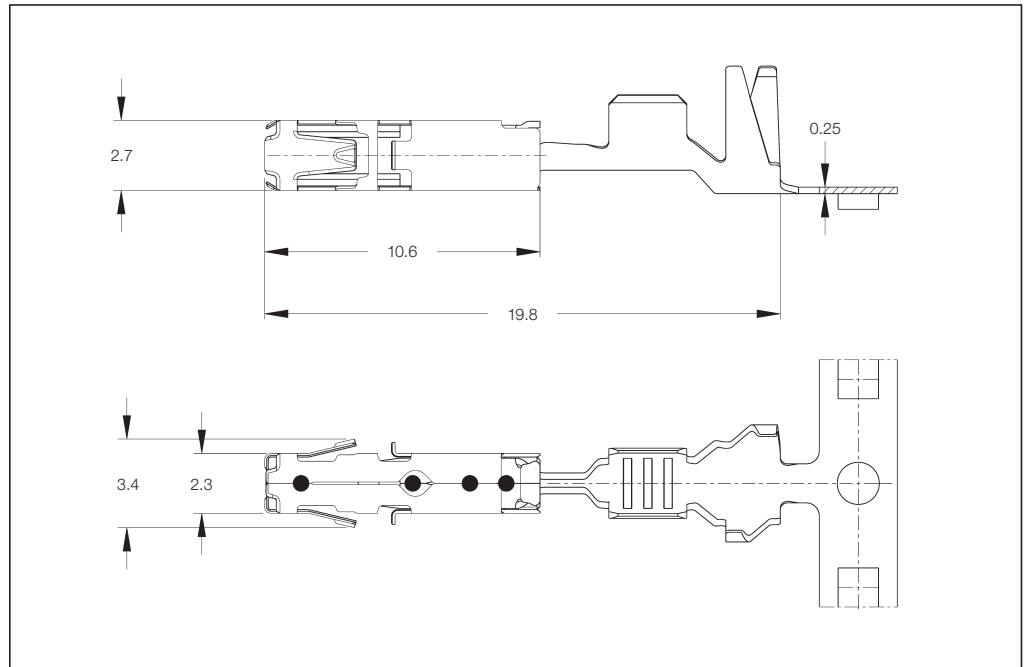
AMP MCP contacts can be fast and economically arranged to the lead using Tyco Electronics application tooling.



Sealed Receptacle Contacts

**Technical Features**

- Contact Material:**  
CuNiSi  
Top Spring: Stainless Steel
- Contact Finish:**  
Tin plated, selective silver plated,  
selective gold plated
- Wire Size Range:**  
0.20–0.35 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
>1.0–1.5 mm<sup>2</sup> (FLR Cable)
- Current Carrying Capacity:**  
up to 20 Ampere  
(at 20 °C ambient temperature)
- Temperature Range:**  
–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)
- Modular Dimensions  
(Centerline):**
- 0.2–1.5 mm<sup>2</sup> SRC:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- 0.2–1.5 mm<sup>2</sup> SWS:**  
– 4.0 x 4.0 mm  
– 4.0 x 3.5 mm (Staggered)
- Mating Cycles: ●**  
up to 10 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)



- Contact Resistance:**  
New State ≤ 2 mΩ
- Mating Force:**  
Max. 6 N
- Unmating Force:**  
Max. 6 N

- Dimension of Male Contacts:**  
1.5<sup>+0.2</sup><sub>-0.1</sub> x 0.6<sup>+0.07</sup><sub>-0.03</sub> mm
- Extraction Tool:**  
Part No. 1-1579007-1

- Product Group Drawing:**  
1241436
- Product Specification:**  
108-18716
- Application Specification:**  
114-18386

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish *  | Part Numbers |                  |             |                  | Hand Tool 539635-1 with Die Set |              |
|------------------------------------|--------------------------|---------|------------------------|--------------|------------------|-------------|------------------|---------------------------------|--------------|
|                                    | FLK                      | FLR     |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                                 | Applicator ♦ |
| 0.20–0.35                          | –                        | 1.1–1.4 | -1 / -2 / -3           | 1241378      | 4,500            | 1241379     | 500              | x-1528122-x                     | 539950-2     |
| 0.5–1.0                            | –                        | 1.4–2.1 | -1 / -2 / -3 / 1-xxx-2 | 1241380      | 4,500            | 1241381     | 500              | x-1528324-x                     |              |
| >1.0–1.5                           | –                        | 2.2–2.4 | -1 / -3                | 1418884      | 4,500            | 1418885     | 500              | x-541793-x                      |              |

- \*) Material and Finish:**  
xxx-1 = CuNiSi, pre-tin plated  
xxx-2 = CuNiSi, selective gold plated  
xxx-3 = CuNiSi, selective silver plated  
1-xxx-2 = CuNiSi, min. 1.27 µm selective gold plated

♦) The pre- and suffix for the applicators depends on the applied termination equipment.

**Note:** All Part Numbers are RoHS and ELV compliant.

Sealed Tab Contacts

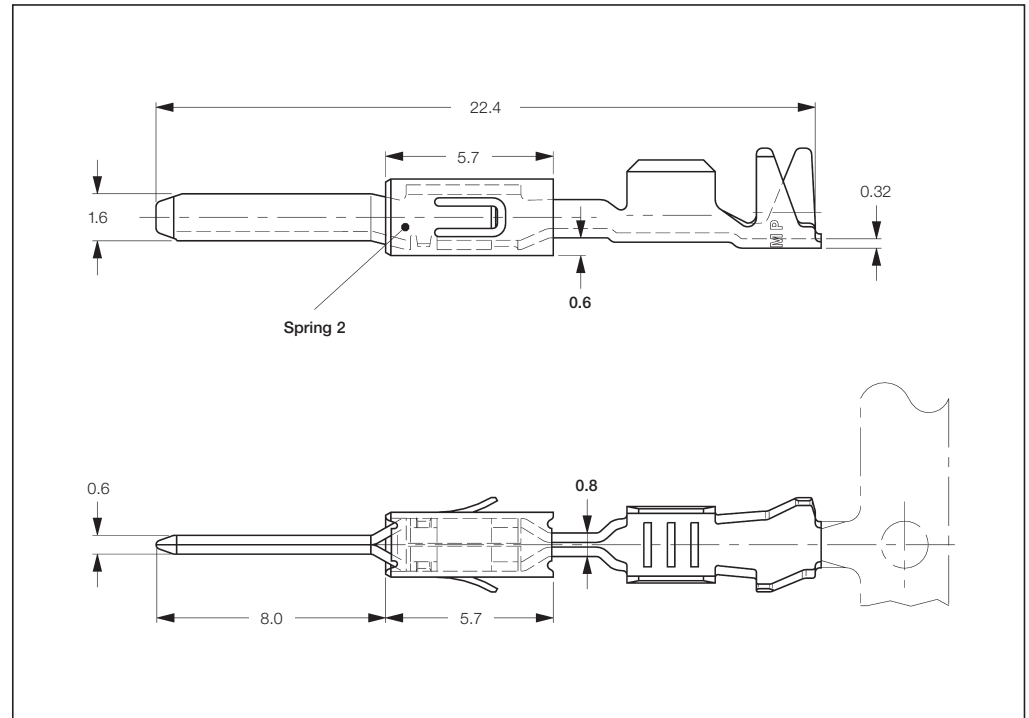
**Tabs 1.6 x 0.6 mm with Modified Steel Top Spring, Mates with AMP MCP 1.5K Contact System**

**Extraction Tool:**  
Part No. **539960-1**

**Product Group Drawing:**  
1355055

**Product Specification:**  
108-18331

**Application Specification:**  
114-18082



**Tab Contacts Single Wire Sealing System with Modified Spring (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers         |                  |                      |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|----------------------|----------------------|------------------|----------------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form           | Package Quantity | Loose-Piece          | Package Quantity |             |                                 |
| 0.2-0.5                            | -                        | 1.2-1.6 | -2 / -3              | 969028 <sup>2)</sup> | 4,000            | 969029 <sup>2)</sup> | 500              | x-1528068-x | 539663-2                        |
| 0.5-1.0                            | -                        | 1.4-2.1 | -2 / -3 / -5         | 964269 <sup>2)</sup> | 4,000            | 964270 <sup>2)</sup> | 500              | x-1528261-x |                                 |

**\*) Material and Finish:**  
xxx-2 = CuFe2, pre-tin plated  
xxx-3 = CuSn4, gold plated  
xxx-5 = CuSn4, selective silver plated

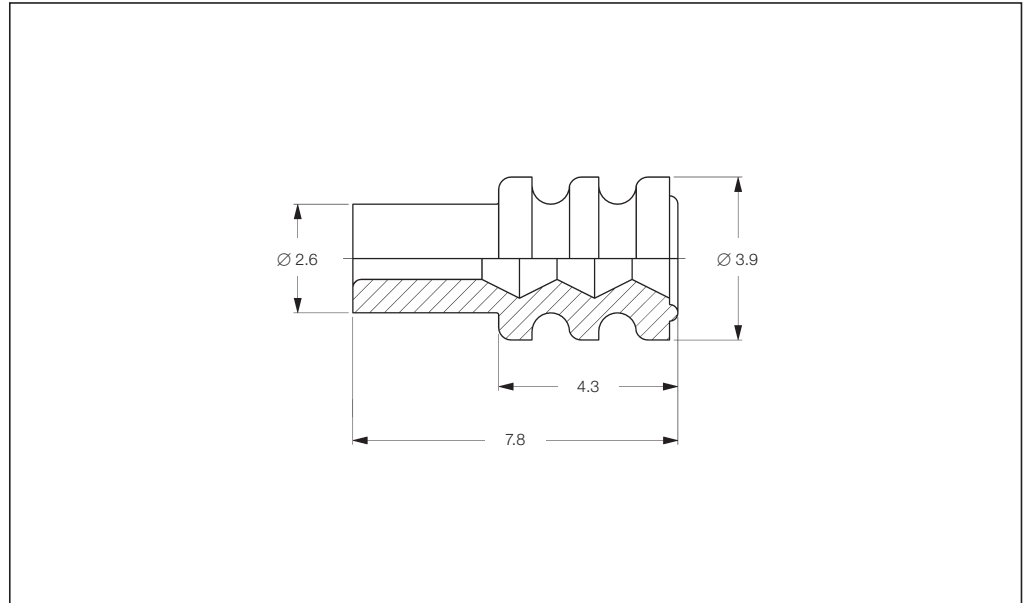
**Remark:**  
**2)** = With Spring 1 (shown in Section 3, AMP MCP Contact System, Page 4) or Spring 2

**♦)** The pre- and suffix for the applicators depends on the applied termination equipment.

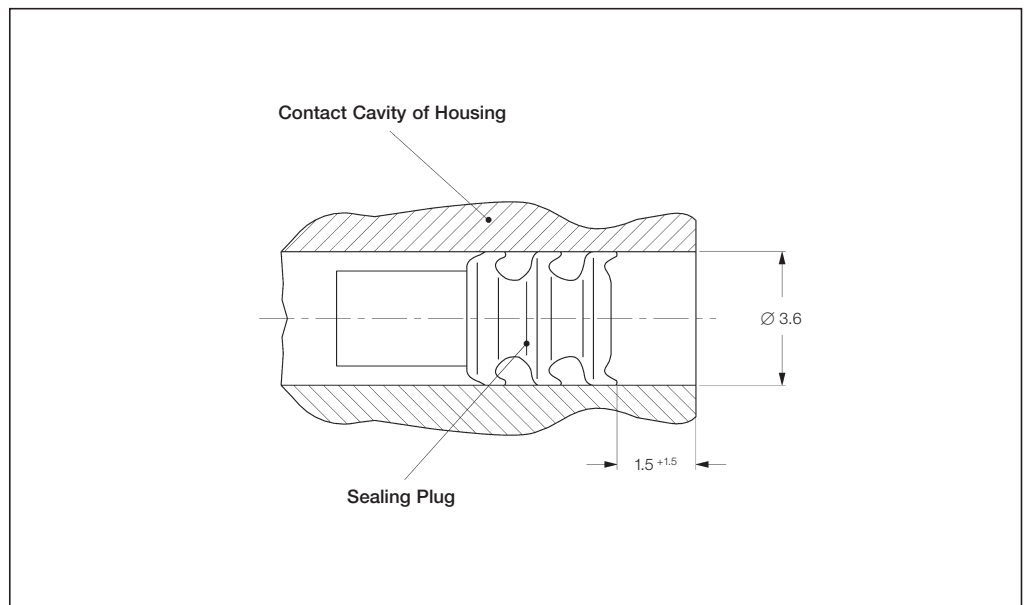
**Note:** All Part Numbers are RoHS and ELV compliant.

Single Wire Seals and Sealing Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 1.5K Contact System (Cavity Diameter 3.6 mm)**



| Insulation Diameter (mm) | Color   | Part Number | Package Quantity |
|--------------------------|---------|-------------|------------------|
| 0.9-1.2                  | Green   | 1718705-1   | 10,000           |
| 1.2-1.6                  | Red     | 964971-1    | 10,000           |
|                          | Blue    | 1394133-1   | 10,000           |
| 1.4-1.9                  | Grey    | 963530-1    | 10,000           |
| 1.9-2.4                  | Yellow  | 964972-1    | 10,000           |
| Sealing Plug             | White   | 963531-1    | 10,000           |
|                          | Natural | 1394132-1   | 10,000           |



Sealed Receptacle Contacts

**Technical Features**

**Material:**

Contact: CuNiSi  
Tabs: CuSn4, CuFe2  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated, selective silver plated,  
selective gold plated

**Wire Size Range:**

0.2–0.5 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
1.0–2.5 mm<sup>2</sup>, 2.5–4.0 mm<sup>2</sup>  
Single Wires (FLR)

**Current Carrying Capacity:**

up to 40 Ampere  
(at 20 °C ambient temperature)

**Mating Force\*:**

Max. 6 N

**Unmating Force\*:**

Max. 5 N

**Modular Dimensions (Centerline)**

**0.35–2.5 mm<sup>2</sup> SRC:**

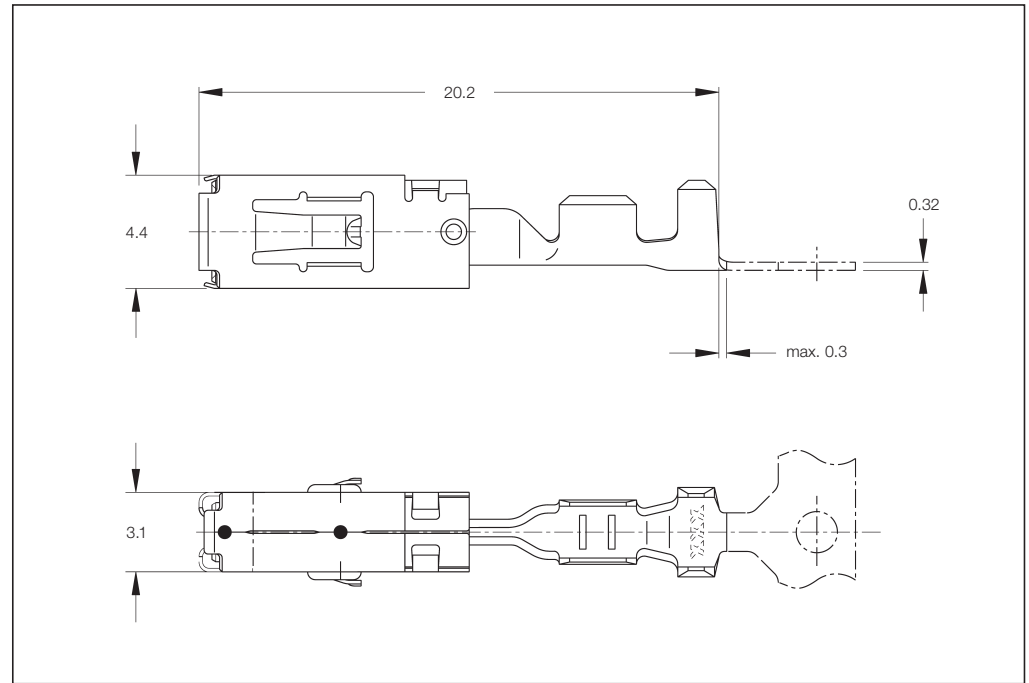
– 5.0 x 5.5 mm  
– 5.0 x 5.0 mm (Staggered)

**2.5–4.0 mm<sup>2</sup> SRC:**

– 5.5 x 5.5 mm  
– 5.0 x 5.5 mm (Staggered)

**2.5–4.0 mm<sup>2</sup> SWS:**

– 7.2 x 7.2 mm  
– 6.0 x 7.2 mm (Staggered)



**Mating Cycles:●**

up to 20 cycles (tin plated)  
up to 50 cycles (silver plated)  
up to 100 cycles (gold plated)

**Dimension of Male Contacts:**

2.8<sup>±0.1</sup> x 0.8<sup>±0.03</sup> mm  
3.0<sup>±0.1</sup> x 0.8<sup>±0.03</sup> mm

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +150 °C (gold plated)

**Contact Resistance:**

New State ≤ 2 mΩ

**Extraction Tool:**

Part No. 1-1579007-2

**Product Specification:**

108-18513

**Application Specification:**

114-18148

**Product Group Drawing:**

1355036

\*) Steel Tab, see Specifications

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*        | Part Numbers |                  |             |                  |             |                    |
|------------------------------------|--------------------------|---------|-----------------------------|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK                      | FLR     |                             | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator♦ | Hand Tool Complete |
| 0.35                               | –                        | 1.2–1.4 | 1-xxx-1 / 1-xxx-3           | 968882       | 4,500            | 968896      | 500              | x-541563-x  | 539725-2           |
| 0.5–1.0                            | –                        | 1.4–2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 | 968855       | 3,500            | 968875      | 500              | x-878973-x  | 539726-2           |
| 1.0–2.5                            | –                        | 2.2–3.0 | 1-xxx-1 / 1-xxx-3           | 968857       | 4,000            | 968876      | 500              | x-878974-x  | 539727-2           |
| 2.5–4.0                            | –                        | 3.0–3.7 | 1-xxx-1 / 1-xxx-3           | 968859       | 2,500            | 968877      | 500              | x-541537-x  |                    |

**\* Material and Finish:**

1-xxx-1 = CuNiSi, pre-tin plated  
1-xxx-2 = CuNiSi, selective gold plated  
1-xxx-3 = CuNiSi, selective silver plated

**Note:** All Part Numbers are RoHS and ELV compliant.

Sealed Tab Contacts

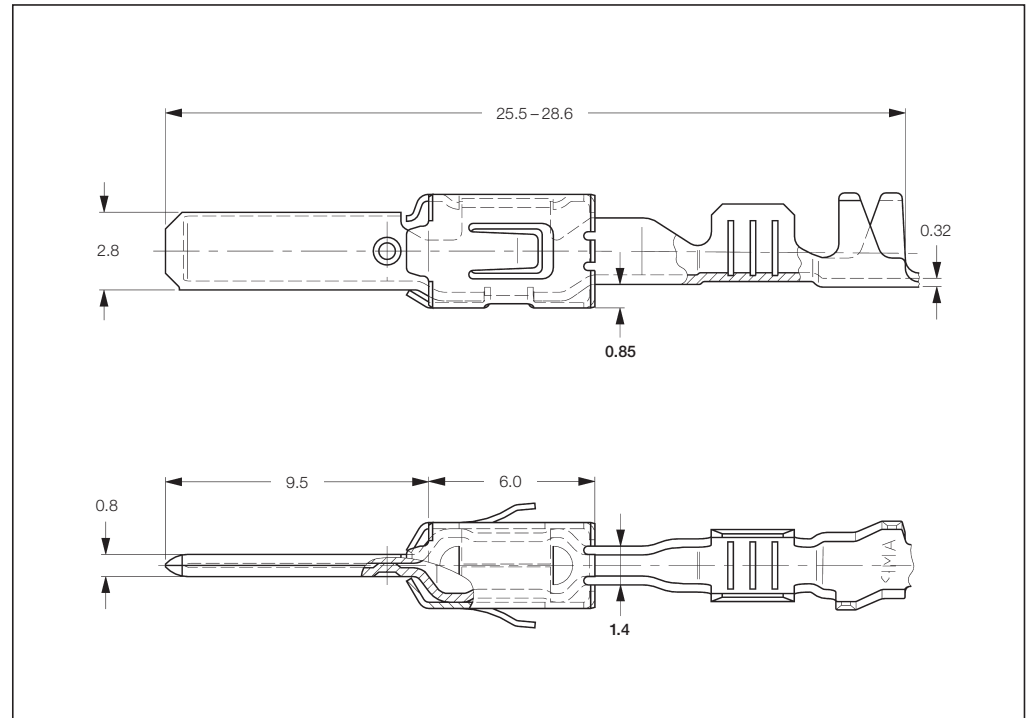
**Tabs 2.8 x 0.8 mm with Steel Top Spring, Mates with AMP MCP 2.8 Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1355052

**Product Specification:**  
108-18063

**Application Specification:**  
114-18051



**Tab Contacts with Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter |          | Material and Finish*                                      | Part Numbers |                  |             |                  |             |                    |
|------------------------------------|---------------------|----------|---|--------------|------------------|-------------|------------------|-------------|--------------------|
|                                    | FLK (mm)            | FLR (mm) |   | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool Complete |
| 0.2-0.5                            | -                   | max. 2.1 | 1-xxx-1 / 1-xxx-3   | 965982       | 3,500            | 965983      | 500              | x-1528406-x | -                  |
| 0.5-1.0                            | -                   | max. 2.1 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962915       | 3,500            | 963748      | 500              | x-1528452-x | 539758-2           |
| 1.5-2.5                            | -                   | max. 3.0 | 1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1 / 2-xxx-2 / 2-xxx-3 | 962916       | 3,300            | 963749      | 500              | x-1528316-x | 539758-2           |
| 4.0                                | -                   | max. 3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 / 3-xxx-1           | 968947       | 2,700            | 968966      | 500              | x-1528067-x | -                  |
| AWG 12                             | -                   | max. 3.2 | 1-xxx-1 / 1-xxx-2   | 1719504      | 3,200            | 1719503     | 500              | x-1852291-x | -                  |

**\*) Material and Finish:**

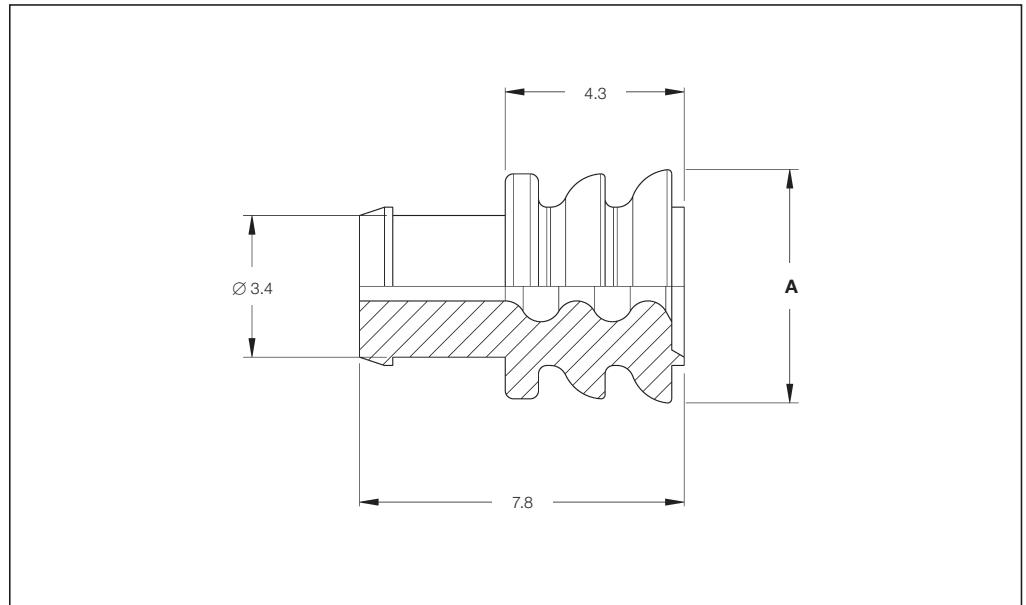
- 1-xxx-1 = CuSn, pre-tin plated
- 1-xxx-2 = CuSn, selective silver plated
- 1-xxx-3 = CuSn, selective gold plated
- 2-xxx-1 = CuFe, pre-tin plated
- 2-xxx-2 = CuFe, selective silver plated
- 2-xxx-3 = CuFe, selective gold plated
- 3-xxx-1 = CuSn, pre-tin plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

**Note:** All Part Numbers are RoHS and ELV compliant.

Single Wire Seals and Cavity Plugs

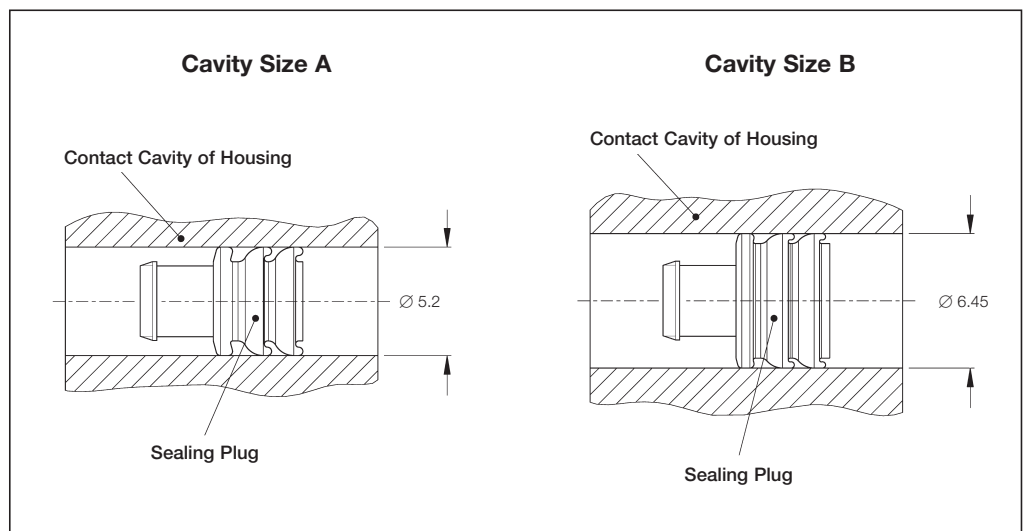
**Single Wire Seals and Sealing Plugs for AMP MCP 2.8 Contact System (Two Cavity Diameters)**



| Cavity Size | Function Relevant Insulation Diameter (mm) | (Example for Wire Size, FLR Insulation according ISO 6722 (mm <sup>2</sup> )) | Color   | Diameter A (mm) | Part Number | Package Quantity |
|-------------|--|---|---------|-----------------|-------------|------------------|
| A           | 1.2-2.1                                    | (0.35-1.00)   | Blue    | 5.6             | 828904-1    | 1,000            |
|             |  |   |         |                 | 828904-2    | 10,000           |
| A           | 2.2-3.0                                    | (1.5-2.5)   | White   | 5.6             | 828905-1    | 10,000           |
| A           | 2.89-3.20                                  | AWG12 TXL   | Brown   | 5.1             | 638865-1*   | 50,000           |
| B           | 3.0-3.7                                    | (2.5-4.0)   | Green   | 7.2             | 828985-1    | 5,000            |
| A           | Sealing Plug                               |   | Natural | 5.6             | 828922-1    | 10,000           |
| B           | Sealing Plug                               |   | Brown   | 7.2             | 828986-1    | 5,000            |

\*) Form and dimensions do not correspond to the view.

**For correct use see Application Specification 114-18148.**



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**Engineering Notes**

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Sealed Receptacle Contacts

**Technical Features**

**Contact Material:**

CuNiSi  
Top Spring: Stainless Steel

**Contact Finish:**

Tin plated, selective silver plated

**Wire Size Range:**

0.2–0.5 mm<sup>2</sup>, 0.5–1.0 mm<sup>2</sup>,  
>1.0–2.5 mm<sup>2</sup>, >2.5–4.0 mm<sup>2</sup>,  
>4.0–6.0 mm<sup>2</sup>

**Current Carrying Capacity:**

up to 40 Ampere  
(at 20 °C ambient temperature)

**Temperature Range:**

–40 °C ... +130 °C (tin plated)  
–40 °C ... +140 °C (silver plated)  
–40 °C ... +140 °C (tin-silver)

**Modular Dimensions  
(Centerline):**

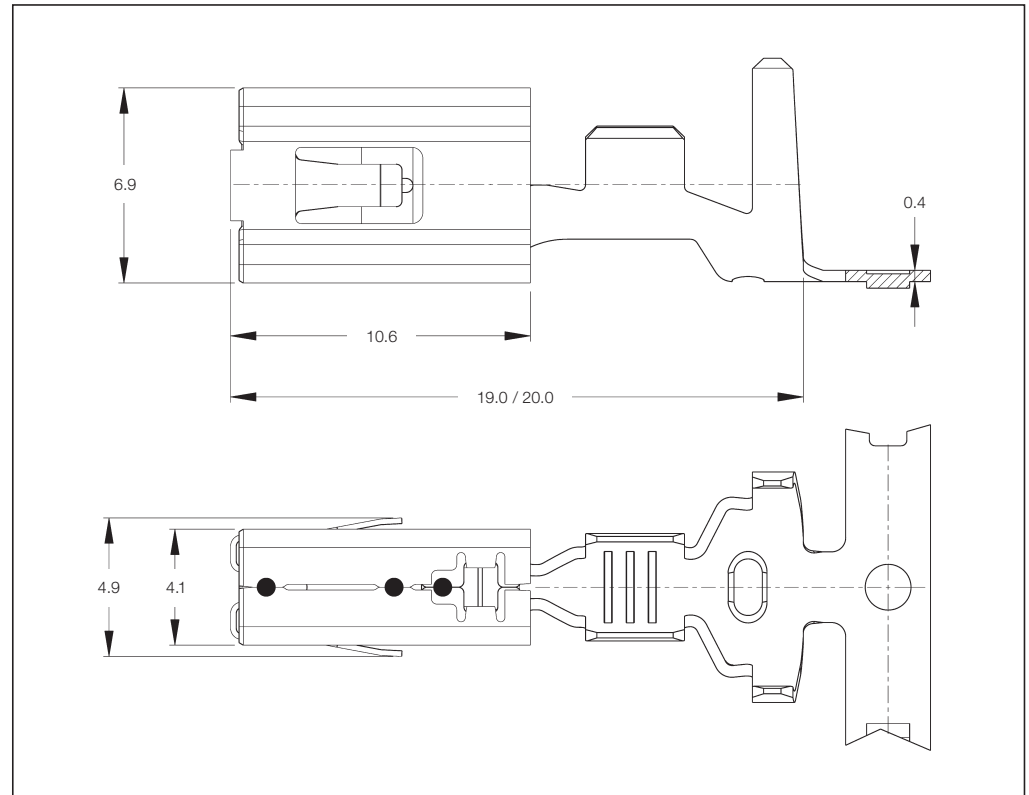
**0.2–6.0 mm<sup>2</sup> SRC:**  
– 6.0 x 8.0 mm  
**0.2–4.0 mm<sup>2</sup> SWS:**  
– 9.0 x 9.0 mm  
– 8.0 x 9.0 mm (Staggered)

**Dimension of Male Contacts:**

4.8 ±0.1 x 0.8 ±0.03 mm  
5.8 ±0.1 x 0.8 ±0.03 mm  
6.3 ±0.1 x 0.8 ±0.03 mm

**Contact Resistance:**

New State ≤2 mΩ



**Mating Cycles:**●

up to 10 cycles (tin plated)  
up to 10 cycles (silver plated)

**Mating Force:**

max. 16 N

**Unmating Force:**

max. 11 N

**Extraction Tool:**

Part No. **1-1579007-3**

**Product Group Drawing:**

1241438

**Product Specification:**

108-18718

**Application Specification:**

114-18388

●) Mating Cycles are depending on various technical influences and must be clarified in each individual case.

**Receptacle Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish* | Part Numbers |                  |             |                  |             |                                 |
|------------------------------------|--------------------------|---------|----------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                      | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator* | Hand Tool 539635-1 with Die Set |
| 0.2–0.5                            | 1.3–2.3                  | 1.1–1.6 | -1                   | 1241410      | 1,500            | 1241411     | 500              | x-1528513-x | 539955-2                        |
| 0.5–1.0                            | 2.0–2.7                  | 1.4–2.1 | -1 / -3              | 1241412      | 1,500            | 1241413     | 500              | x-1528342-x | 539956-2                        |
| >1.0–2.5                           | 2.7–3.7                  | 2.2–3.0 | -1 / -3              | 1241414      | 1,500            | 1241415     | 500              | x-1528231-x | 539956-2                        |
| >2.5–4.0                           | 4.1–4.5                  | 3.4–3.7 | -1 / -3              | 1241416      | 1,500            | 1241417     | 500              | x-1530003-x |                                 |
| >4.0–6.0                           | –                        | 4.0–4.5 | -4                   | 1241418      | 1,500            | 1241419     | 500              | x-1528947-x | 3-1579021-7                     |

**\*) Material and Finish:**

xxx-1 = CuNiSi, pre-tin plated  
xxx-3 = CuNiSi, selective silver plated  
xxx-4 = CuNiSi, tin-silver pre-plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

**Note:** All Part Numbers are RoHS and ELV compliant.



Sealed Tab Contacts

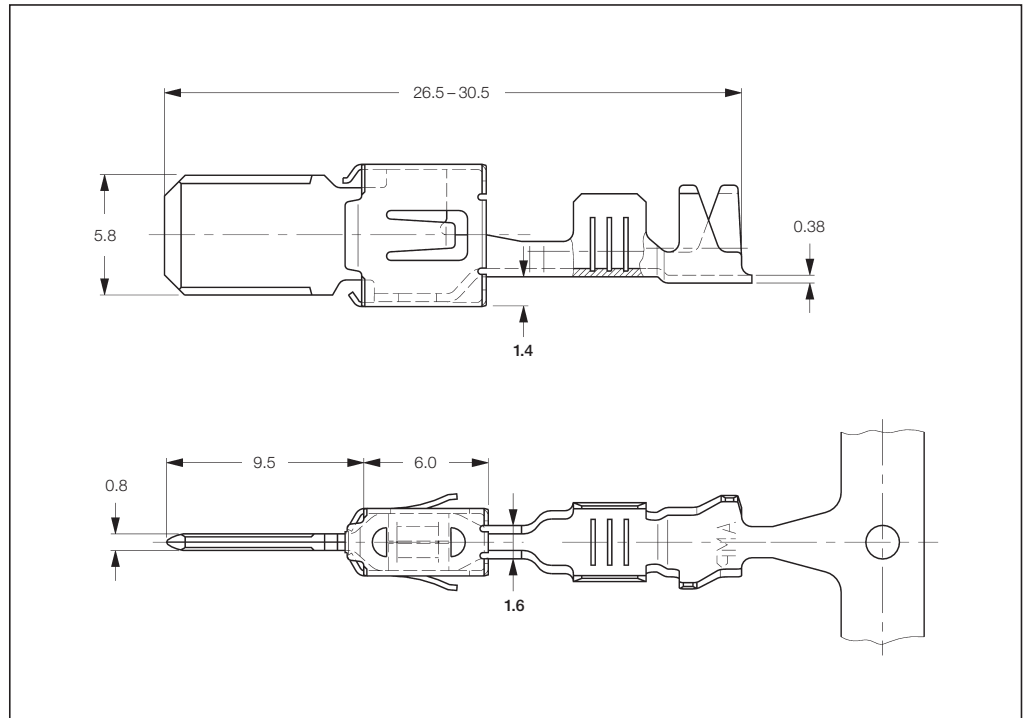
**Tabs 5.8 x 0.8 mm with Steel Top Spring, Mates with AMP MCP 6.3/4.8K Contact System**

**Extraction Tool:**  
Part No. **1-1579007-6**

**Product Group Drawing:**  
1241895

**Product Specification:**  
108-18064

**Application Specification:**  
114-18052



**Tab Contacts Single Wire Sealing System (SWS)**

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish*                  | Part Numbers |                  |             |                  | Applicator* | Hand Tool 539635-1 with Die Set |
|------------------------------------|--------------------------|---------|---------------------------------------|--------------|------------------|-------------|------------------|-------------|---------------------------------|
|                                    | FLK                      | FLR     |                                       | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |             |                                 |
| 0.5-1.0                            | -                        | 1.4-2.1 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962917       | 1,500            | 963742      | 500              | x-878565-x  |                                 |
| 1.5-2.5                            | -                        | 2.2-3.0 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962918       | 1,500            | 963743      | 500              | x-878566-x  | 539757-2                        |
| >2.5-4.0                           | -                        | 2.7-3.7 | 1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2 | 962919       | 1,500            | 963744      | 500              | x-878567-x  |                                 |

**\*) Material and Finish:**

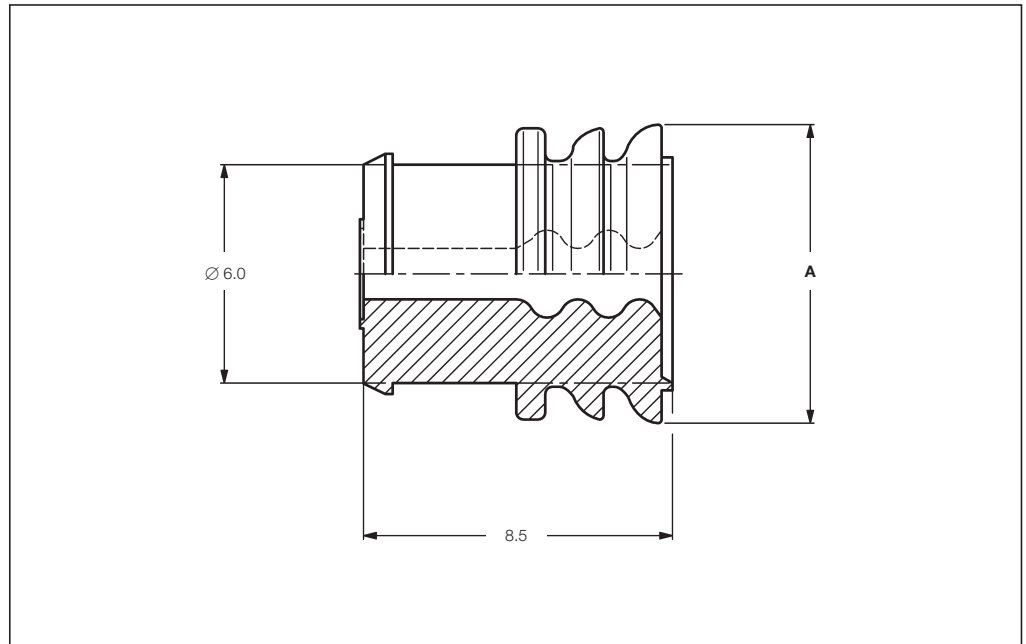
- 1-xxx-1 = CuSn, pre-tin plated
- 1-xxx-2 = CuSn, selective silver plated
- 2-xxx-1 = CuFe, pre-tin plated
- 2-xxx-2 = CuFe, selective silver plated

\*) The pre- and suffix for the applicators depends on the applied termination equipment.

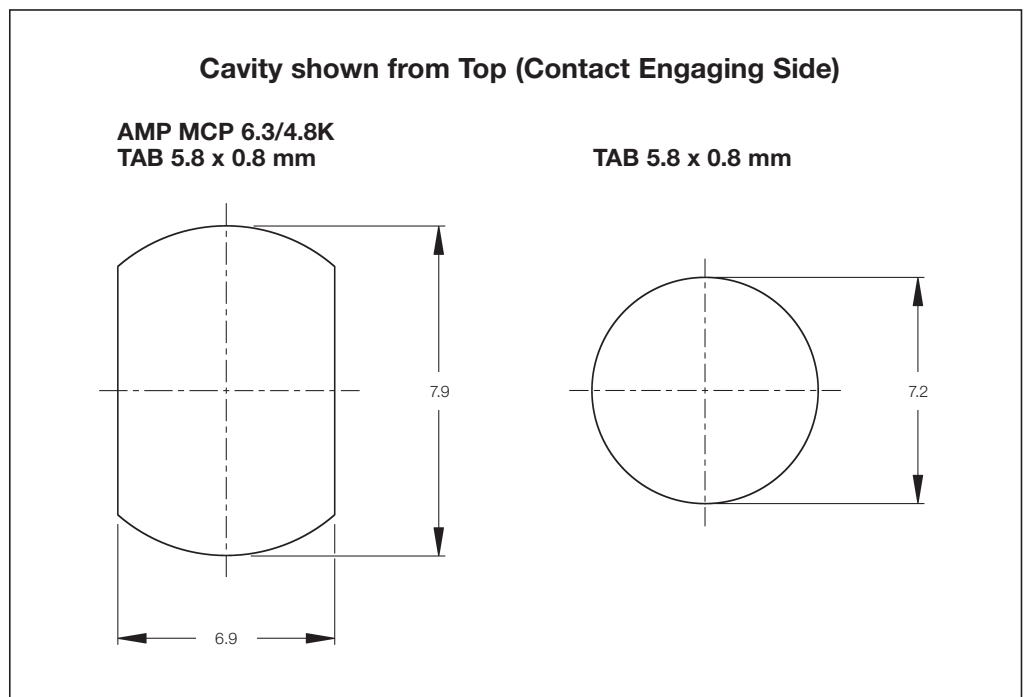
**Note:** All Part Numbers are RoHS and ELV compliant.

Single Wire Seals and Cavity Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 6.3/4.8K Contact System**  
(Cavity Diameter see below)

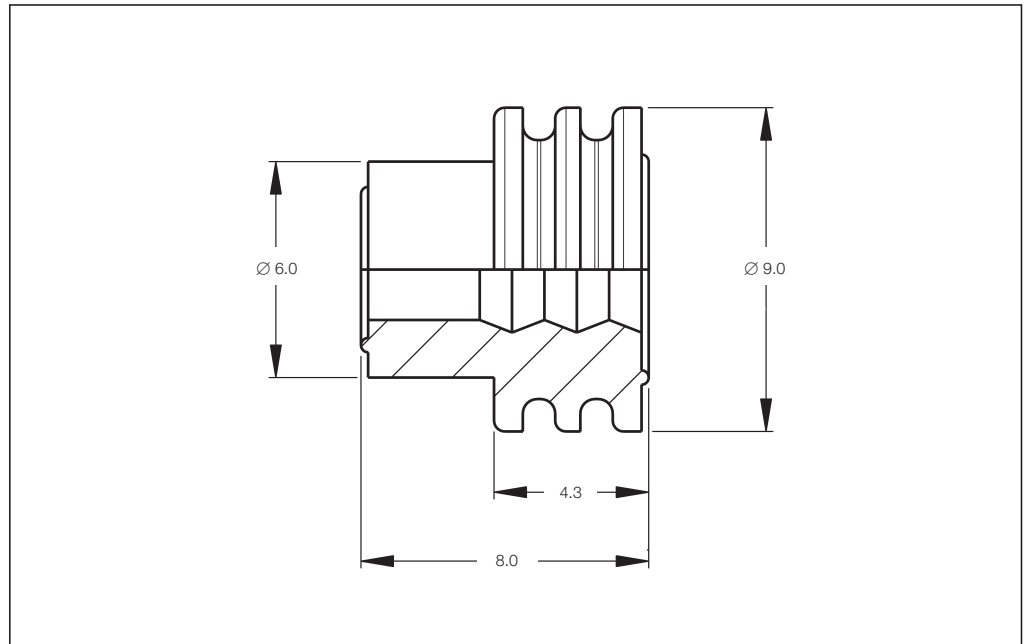


| Insulation Diameter (mm) | Color  | Diameter A (mm) | Part Number | Package Quantity |
|--------------------------|--------|-----------------|-------------|------------------|
| 1.4-2.1                  | Blue   | 8.2             | 963243-1    | 2,500            |
| 2.2-3.0                  | White  | 8.2             | 963244-1    | 2,500            |
| 3.4-3.7                  | Yellow | 8.2             | 963245-1    | 2,500            |
| Sealing Plug             | Black  | 8.1             | 100132-1    | 1,000            |

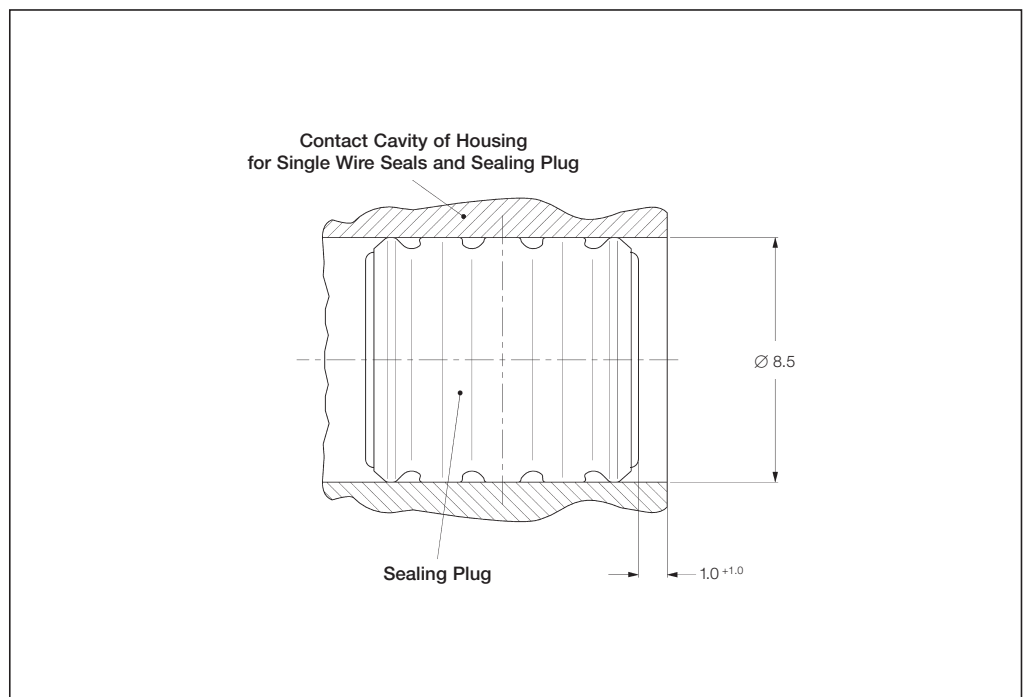


## Single Wire Seals and Cavity Plugs

**Single Wire Seals and Sealing Plugs for AMP MCP 6.3/4.8K Contact System (Cavity Diameter 8.5 mm)**



| Insulation Diameter (mm) | Color       | Part Number | Package Quantity |
|--------------------------|-------------|-------------|------------------|
| 2.0-2.7                  | White       | 1394511-1   | 10,000           |
| 3.4-3.7                  | Blue        | 1394512-1   | 10,000           |
| 4.0-4.5                  | Green       | 1719043-1   | 10,000           |
| Sealing Plug             | Transparent | 967652-1    | 20,000           |



Introduction



The diameter 1.5 mm and diameter 2.5 mm round contact systems developed by Tyco Electronics is mainly used in the automotive industry. Due to its wide range of performance possibilities, this contact system is in use in the engine compartment for aggregate or sensor connections.

Every contact has got a steel cantilever spring and a copper alloy body.

The two-piece contact design means that the electrical and mechanical properties are separated. One end of the contact body is crimped to wire and the other end mates with the matching pin.

The closed cantilever spring has got several functions and also different advantages for the complete contact system.

In addition there are several lances on the steel to spring. These serve to lock the contact securely in the housing.

Sockets and pins can be applied on both sealed and unsealed connectors.

The diameter 1.5 mm and diameter 2.5 mm contact system can be fast and economically arranged to the lead using Tyco Electronics application tooling.

**Technical Features**

- 100 % quality assurance for the contact socket
- Resistant against fretting corrosion
- Vibration resistant
- Excellent longevity
- Low contact resistance
- High position configurations
- Contact design accepts secondary locking device
- Several contact points
- Sturdy contact design
- Guarantees constant insertion and extraction forces

Socket and Pin Contacts

**Technical Features**

**Wire Size Range:**  
0.2–2.5 mm<sup>2</sup>

**Insulation Diameter:**  
1.2–3.0 mm

**Contact Material:**  
CuNiSi,  
CuNi18Zn20,  
CuFe2

**Contact Finish:**  
Tin plated, silver plated,  
gold plated, plain

**Temperature Range**  
–40 °C to +130 °C (tin plated)  
–40 °C to +140 °C (silver plated)  
–40 °C to +150 °C (gold plated)  
–40 °C to +150 °C (plain)

**Current Carrying Capacity:**  
Up to 30 A max.

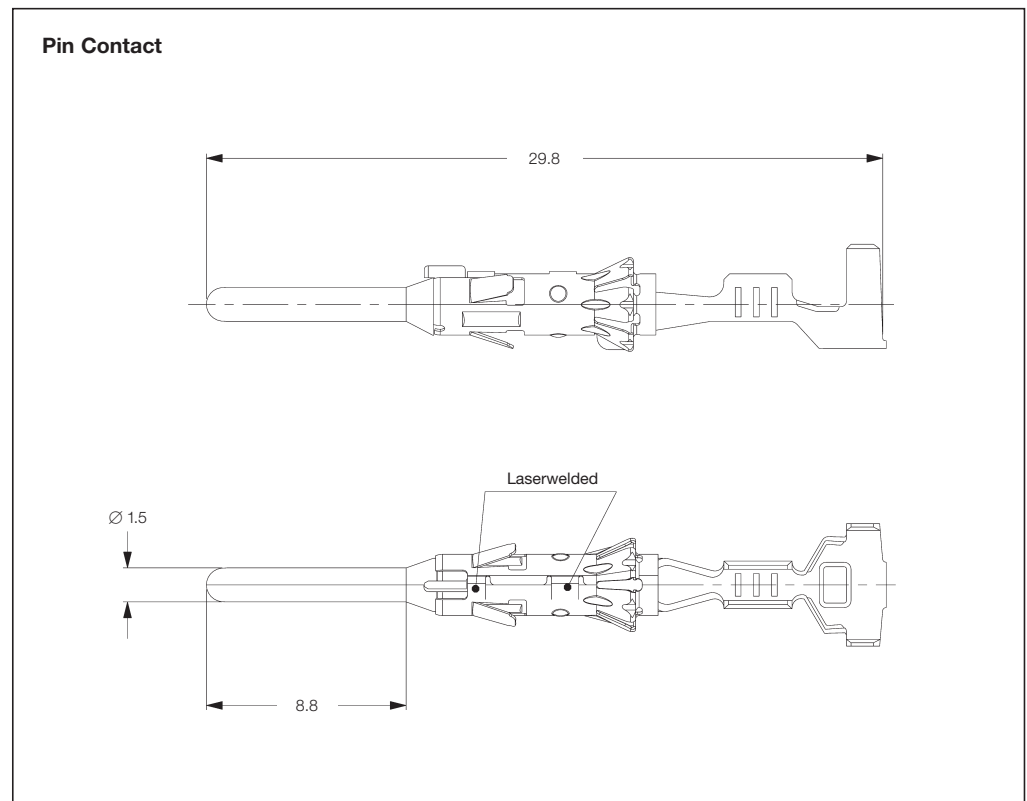
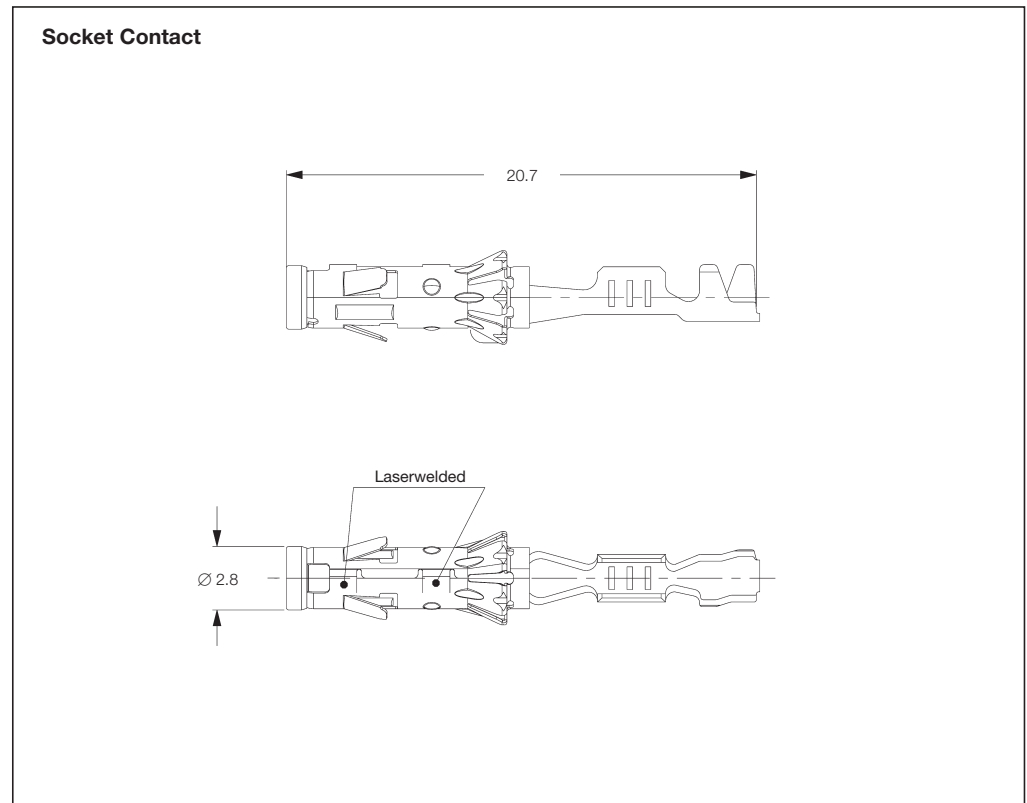
**Product Specification:**  
108-18028

**Application Specification:**  
114-18040

**Extraction Tool:**  
Part No. **539972-1**  
(Socket Contact)  
Part No. **3-1579007-7**  
(Pin Contact)

**Spare Tube:**  
Part No. **5-1579007-0**  
(Socket Contact)  
Part No. **3-1579007-8**  
(Pin Contact)

**Terminal Mounting Tool:**  
(for 0.2–1.0 mm<sup>2</sup>)  
Part No. **965702-1**



Socket Contacts

**Diameter 1.5 mm Socket Contacts**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |          | Material and Finish | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool <sup>♦</sup> |
|---------------------------------------|--------------------------|----------|---------------------|--------------|------------------|-------------|------------------|-------------------------|------------------------|
|                                       | FLK                      | FLR      |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                        |
| 0.2–0.4                               | –                        | 1.15–1.6 | tin plated          | 929985-1     | 5,000            | 962994-1    | 500              | 878480                  | 734285-1               |
| 0.5–1.0                               | –                        | 1.4–2.1  | tin plated          | 929986-1     | 4,500            | 962995-1    | 500              | 878481                  | 734285-1               |
|                                       |                          |          | tin plated          | 929986-4     | 5,000            | 962995-4    | 500              |                         |                        |
| ≥1.0–2.5                              | –                        | 1.9–3.0  | tin plated          | 929987-1     | 3,800            | 962996-1    | 500              | 878482                  | 734285-2               |

**\*) Contact Material:**

xxx-1 = CuNiSi  
xxx-4 = CuFe2

♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.

**Note:** All Part Numbers are RoHS and ELV compliant.

**Diameter 1.5 mm Socket Contacts with Single Wire Sealing System**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool <sup>♦</sup> |
|---------------------------------------|--------------------------|---------|---------------------|--------------|------------------|-------------|------------------|-------------------------|------------------------|
|                                       | FLK                      | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                        |
| 0.2–0.4                               | –                        | 1.2–2.1 | tin plated          | 929988-1     | 4,000            | 962997-1    | 500              | 878484                  | 734289-1               |
|                                       |                          |         | silver plated       | 929988-2     | 4,000            | 962997-2    | 500              |                         |                        |
| 0.5–1.0                               | –                        | 1.2–2.1 | tin plated          | 929989-1     | 4,000            | 962998-1    | 500              | 878485                  | 734289-1               |
|                                       |                          |         | silver plated       | 929989-7     | 4,000            | 962998-7    | 500              |                         |                        |
|                                       |                          |         | gold plated         | 929989-8     | 4,000            | –           | –                |                         |                        |
|                                       |                          |         | plain               | 1-929989-0   | 4,000            | 1-962998-0  | 500              |                         |                        |
|                                       |                          |         | tin plated          | 929989-4     | 4,000            | 962998-4    | 500              |                         |                        |
| ≥1.0–2.5                              | –                        | 2.2–3.0 | tin plated          | 929990-1     | 3,800            | 962999-1    | 500              | 878486                  | 734289-2               |
|                                       |                          |         | tin plated          | 929990-4     | 3,800            | 962999-4    | 500              |                         |                        |
|                                       |                          |         | silver plated       | 929990-7     | 3,800            | 962999-7    | 500              |                         |                        |
|                                       |                          |         | plain               | 1-929990-0   | 3,800            | 1-962999-0  | 500              |                         |                        |

**\*) Contact Material:**

xxx-1 = CuNiSi  
xxx-2 = CuNiSi  
xxx-4 = CuFe2  
xxx-7 = CuNiSi  
xxx-8 = CuNiSi  
1-xxx-0 = CuNi18Zn20

♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.

**Note:** All Part Numbers are RoHS and ELV compliant.

Pin Contacts

**Diameter 1.5 mm Pin Contacts with Single Wire Sealing System**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool ♦ |
|---------------------------------------|--------------------------|---------|---------------------|--------------|------------------|-------------|------------------|--------------|-------------|
|                                       | FLK                      | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |             |
| 0.2-0.4                               | -                        | 1.2-2.1 | tin plated          | 1703012-1    | 4,000            | 1703016-1   | 500              | 878484       | 734289-1    |
|                                       |                          |         | tin plated          | 1703012-4    | 4,000            | 1703016-4   | 500              |              |             |
| 0.5-1.0                               | -                        | 1.2-2.1 | tin plated          | 1703013-1    | 3,500            | 1703017-1   | 500              | 878485       | 734289-1    |
|                                       |                          |         | silver plated       | 1703013-2    | 3,500            | 1703017-2   | 500              |              |             |
|                                       |                          |         | gold plated         | 1703013-8    | 3,500            | -           | -                |              |             |
|                                       |                          |         | tin plated          | 1703013-4    | 3,500            | 1703017-4   | 500              |              |             |
| ≥1.0-2.5                              | -                        | 2.2-3.0 | tin plated          | 1703014-1    | 3,500            | 1703018-1   | 500              | 878486       | 734289-2    |
|                                       |                          |         | tin plated          | 1703014-4    | 3,500            | 1703018-4   | 500              |              |             |

**\*) Contact Material:**

- xxx-1 = CuNiSi
- xxx-2 = CuNiSi
- xxx-4 = CuFe2
- xxx-8 = CuNiSi

- ♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.

**Note:** All Part Numbers are RoHS and ELV compliant.

Socket and Pin Contacts

**Technical Features**

**Wire Size Range:**  
 0.2–4.0 mm<sup>2</sup>

**Insulation Diameter:**  
 1.15–3.6 mm

**Contact Material:**  
 CuNiSi,  
 CuFe2

**Contact Finish:**  
 Tin plated,  
 silver plated,  
 gold plated

**Temperature Range**  
 –40 °C to +130 °C (tin plated)  
 –40 °C to +140 °C (silver plated)  
 –40 °C to +150 °C (gold plated)

**Current Carrying Capacity:**  
 Up to 40 A max.

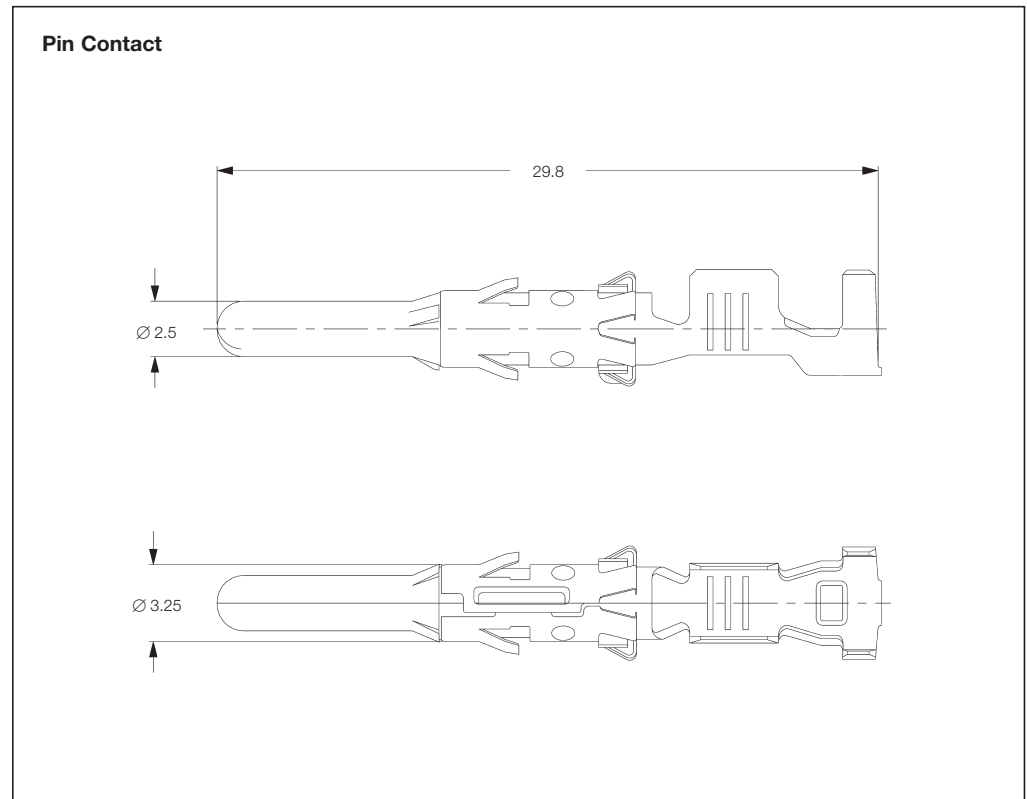
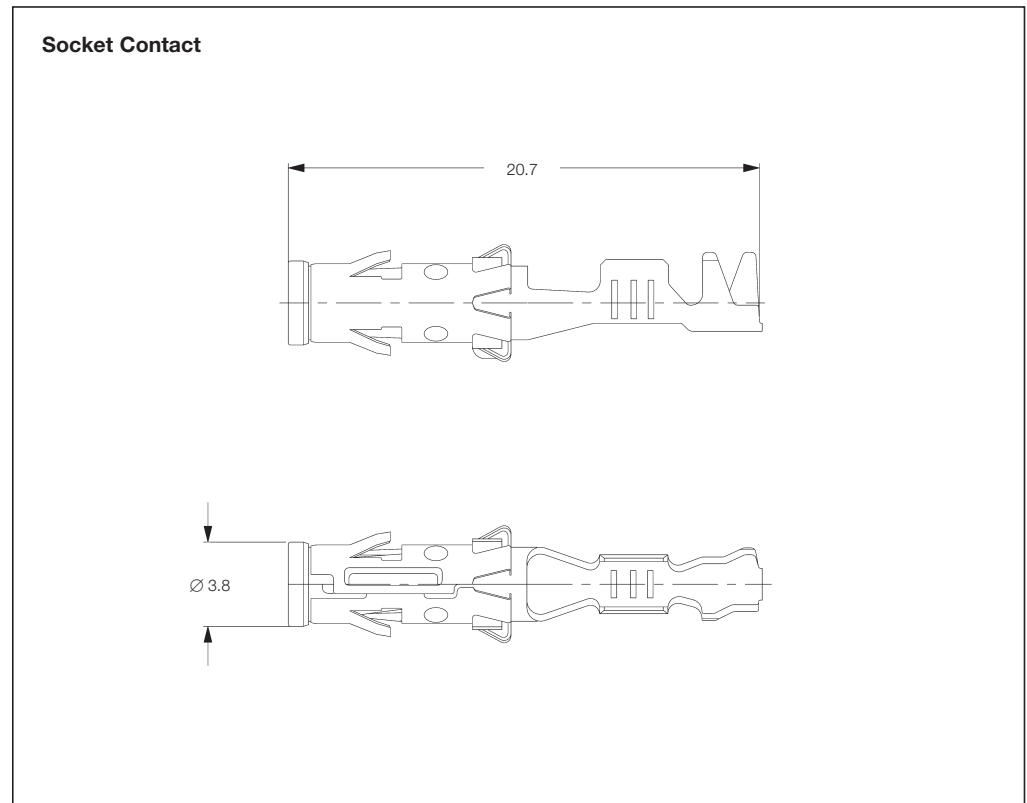
**Product Specification:**  
 108-18027

**Application Specification:**  
 114-18020

**Extraction Tool:**  
 Part No. **1-1579007-8**

**Spare Tube:**  
 Part No. **4-1579007-7**

**Terminal Mounting Tool:**  
 (for 0.2–1.0 mm<sup>2</sup>)  
 Part No. **3-1579007-2**





### Socket Contacts

#### Diameter 2.5 mm Socket Contacts

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |          | Material and Finish | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool <sup>♦</sup> |
|---------------------------------------|--------------------------|----------|---------------------|--------------|------------------|-------------|------------------|-------------------------|------------------------|
|                                       | FLK                      | FLR      |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                        |
| 0.2–0.4                               | –                        | 1.15–1.6 | tin plated          | 929969-1     | 3,000            | 962976-1    | 500              | 878480                  | 734285-1               |
|                                       |                          |          | tin plated          | 929970-1     | 3,000            | 962977-1    | 500              |                         |                        |
| 0.5–1.0                               | –                        | 1.4–2.1  | silver plated       | 929970-7     | 3,000            | 962977-7    | 500              | 878481                  | 734285-1               |
|                                       |                          |          | gold plated         | 929970-8     | 3,000            | 962977-8    | 500              |                         |                        |
|                                       |                          |          | tin plated          | 929971-1     | 3,000            | 962978-1    | 500              |                         |                        |
| ≥1.0–2.5                              | –                        | 1.9–3.0  | silver plated       | 929971-7     | 3,000            | 962978-7    | 500              | 878482                  | 734285-2               |
|                                       |                          |          | gold plated         | 929971-8     | 3,000            | 962978-8    | 500              |                         |                        |
| ≥2.5–4.0                              | –                        | 2.7–3.0  | tin plated          | 929972-1     | 3,000            | 962979-1    | 500              | 878483                  | 734285-3               |

**\*) Contact Material:**

xxx-1 = CuNiSi  
xxx-7 = CuNiSi  
xxx-8 = CuNiSi

**♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.**

**Note:** All Part Numbers are RoHS and ELV compliant.

#### Diameter 2.5 mm Socket Contacts with Single Wire Sealing System

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish | Part Numbers |                  |             |                  | Applicator <sup>♦</sup> | Hand Tool <sup>♦</sup> |
|---------------------------------------|--------------------------|---------|---------------------|--------------|------------------|-------------|------------------|-------------------------|------------------------|
|                                       | FLK                      | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |                         |                        |
| 0.2–0.4                               | –                        | 1.2–2.1 | tin plated          | 929973-1     | 3,000            | 962980-1    | 500              | 878484                  | 734289-1               |
|                                       |                          |         | tin plated          | 929974-1     | 3,000            | 962981-1    | 500              |                         |                        |
|                                       |                          |         | gold plated         | 929974-8     | 3,000            | 962981-8    | 500              |                         |                        |
| 0.5–1.0                               | –                        | 1.2–2.1 | silver plated       | 929974-7     | 3,000            | 962981-7    | 500              | 878485                  | 734289-1               |
|                                       |                          |         | 1-929974-4          | 3,000        | 1-962981-4       | 500         |                  |                         |                        |
|                                       |                          |         | tin plated          | 929974-4     | 3,000            | 962981-4    | 500              |                         |                        |
|                                       |                          |         | tin plated          | 929975-1     | 3,000            | 962982-1    | 500              |                         |                        |
|                                       |                          |         | gold plated         | 929975-8     | 3,000            | 962982-8    | 500              |                         |                        |
| ≥1.0–2.5                              | –                        | 2.2–3.0 | silver plated       | 929975-7     | 3,000            | 962982-7    | 500              | 878486                  | 58606-1                |
|                                       |                          |         | tin plated          | 929975-4     | 3,000            | 962982-4    | 500              |                         |                        |
|                                       |                          |         | tin plated          | 929975-4     | 3,000            | 962982-4    | 500              |                         |                        |

**\*) Contact Material:**

xxx-1 = CuNiSi  
xxx-4 = CuFe2  
xxx-7 = CuNiSi  
xxx-8 = CuNiSi  
1-xxx-4 = CuNiSi

**♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.**

**Note:** All Part Numbers are RoHS and ELV compliant.

Pin Contacts

**Diameter 2.5 mm Pin Contacts**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |          | Material and Finish | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool ♦ |
|---------------------------------------|--------------------------|----------|---------------------|--------------|------------------|-------------|------------------|--------------|-------------|
|                                       | FLK                      | FLR      |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |             |
| 0.2–0.4                               | –                        | 1.15–1.6 | tin plated          | 929962-1     | 3,500            | 962966-1    | 500              | 878480       | 734285-1    |
|                                       |                          |          | tin plated          | 929963-1     | 3,500            | 962967-1    | 500              |              |             |
| 0.5–1.0                               | –                        | 1.4–2.1  | gold plated         | 929963-8     | 3,500            | 962967-8    | 500              | 878481       | 734285-1    |
|                                       |                          |          | gold plated         | 1-929963-0   | 3,500            | 1-962967-0  | 500              |              |             |
| ≥1.0–2.5                              | –                        | 1.9–3.0  | tin plated          | 929964-1     | 3,500            | 962968-1    | 500              | 878482       | 58606-1     |
|                                       |                          |          | gold plated         | 1-929964-0   | 3,500            | 1-962968-0  | 500              |              |             |
| ≥2.5–4.0                              | –                        | 2.7–3.6  | tin plated          | 929965-1     | 2,500            | 962969-1    | 500              | 878483       | 734285-3    |

**\*) Contact Material:**

- xxx-1 = CuNiSi
- xxx-4 = CuFe2
- xxx-8 = CuNiSi
- 1-xxx-0 = CuFe2

♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.

**Note:** All Part Numbers are RoHS and ELV compliant.

**Diameter 2.5 mm Pin Contacts with Single Wire Sealing System**

| Wire Size Range<br>(mm <sup>2</sup> ) | Insulation Diameter (mm) |         | Material and Finish | Part Numbers |                  |             |                  | Applicator ♦ | Hand Tool ♦ |
|---------------------------------------|--------------------------|---------|---------------------|--------------|------------------|-------------|------------------|--------------|-------------|
|                                       | FLK                      | FLR     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |             |
| 0.2–0.4                               | –                        | 1.2–2.1 | tin plated          | 929966-1     | 3,500            | 962970-1    | 500              | 878484       | 734289-1    |
|                                       |                          |         | silver plated       | 929966-7     | 3,500            | 962970-7    | 500              |              |             |
| 0.5–1.0                               | –                        | 1.2–2.1 | tin plated          | 929967-1     | 3,000            | 962971-1    | 500              | 878485       | 734289-1    |
|                                       |                          |         | silver plated       | 929967-7     | 3,000            | 962971-7    | 500              |              |             |
|                                       |                          |         | tin plated          | 1-929967-4   | 3,000            | 1-962971-4  | 500              |              |             |
|                                       |                          |         | gold plated         | 929967-8     | 3,000            | 962971-8    | 500              |              |             |
|                                       |                          |         | tin plated          | 1-929967-0   | 3,000            | 1-962971-0  | 500              |              |             |
| ≥1.0–2.5                              | –                        | 2.2–3.0 | tin plated          | 929967-4     | 3,000            | 962971-4    | 500              | 878486       | 58606-1     |
|                                       |                          |         | tin plated          | 929968-1     | 3,000            | 962972-1    | 500              |              |             |
|                                       |                          |         | silver plated       | 929968-7     | 3,000            | 962972-7    | 500              |              |             |
|                                       |                          |         | gold plated         | 929968-8     | 3,000            | 962972-8    | 500              |              |             |
|                                       |                          |         | tin plated          | 929968-4     | 3,000            | 962972-4    | 500              |              |             |

**\*) Contact Material:**

- xxx-1 = CuNiSi
- xxx-4 = CuFe2
- xxx-7 = CuNiSi
- xxx-8 = CuNiSi
- 1-xxx-0 = CuFe2
- 1-xxx-4 = CuNiSi

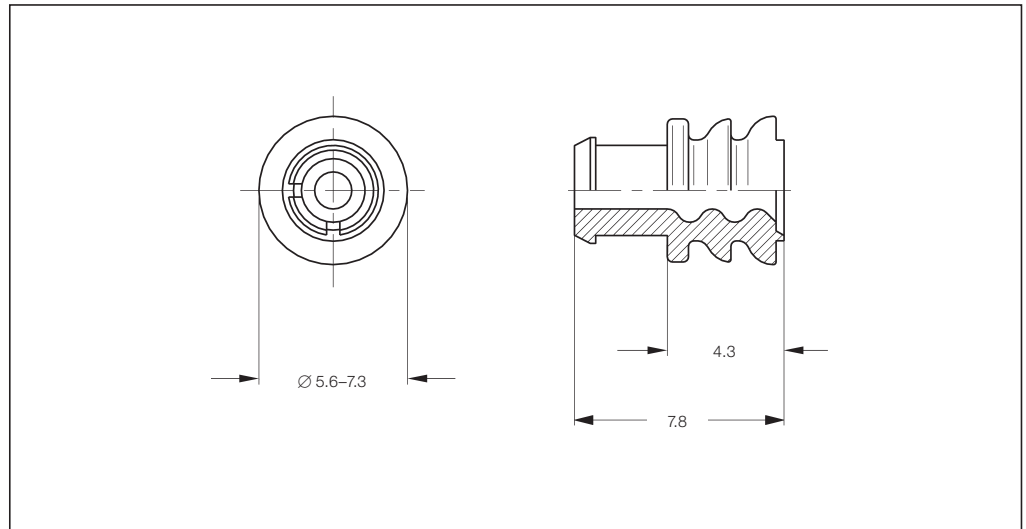
♦) This Applicator and Hand Tool Part Number is only one of a part number selection.  
Please call your local Tyco Electronics representative for personal assistance or visit our website.

**Note:** All Part Numbers are RoHS and ELV compliant.

Single Wire Seals and Sealing Plugs

**Technical Features**

- 1.5 mm and 2.5 mm system accommodates insulation diameters of 1.2–3.7 mm
- Made from silicon rubber material
- Wire seal is crimped simultaneously with the contact



**Diameter 1.5 mm Pin and Socket Contact**

| Insulation Diameter (mm) |         | Color      | Part Number  | Package Quantity |
|--------------------------|---------|------------|--------------|------------------|
| FLK                      | FLR     |            |              |                  |
| -                        | 1.2-2.1 | Light Blue | 828904-1     | 1,000            |
|                          |         |            | 828904-2     | 10,000           |
|                          |         |            | 828904-3     | 5,000            |
| -                        | 2.2-3.0 | White      | 828905-1     | 10,000           |
|                          |         |            | Sealing Plug | Natural          |
|                          |         | Green      | 828922-2     | 10,000           |

**Diameter 2.5 mm Pin and Socket Contact**

| Insulation Diameter (mm)                             |         | Color   | Part Number | Package Quantity |
|--|---------|---------|-------------|------------------|
| FLK  | FLR     |         |             |                  |
| -  | 1.2-2.1 | Grey    | 828920-1    | 5,000            |
| -  | 2.2-3.0 | Violet  | 828921-1    | 5,000            |
|  |         | Yellow  | 828921-2    | 5,000            |
| Sealing Plug for cavities up to diameter 3.0 mm wire |         | Natural | 828922-1    | 10,000           |
|  |         | Green   | 828922-2    | 10,000           |
| Sealing Plug for cavities up to diameter 3.7 mm wire |         | Natural | 828986-1    | 5,000            |

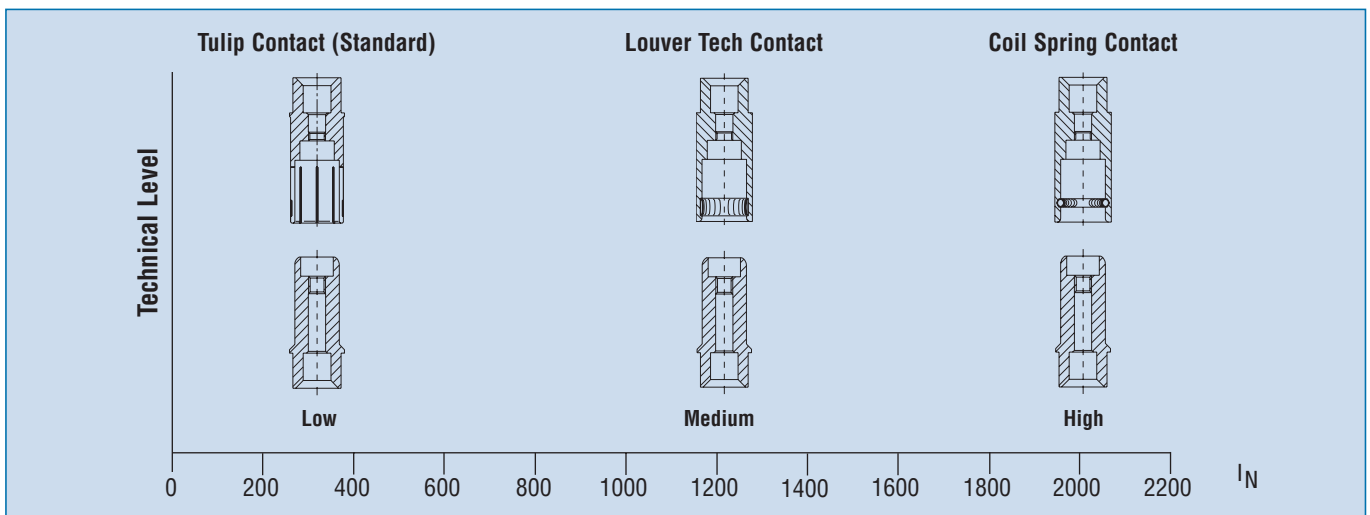
Introduction



The demand for shortest possible periods of machine shut-downs and assembly times requires the use of connectors at the interfaces of the connector wires, as well as energy feeding and power circuits. To satisfy the demand of the various applications the series Power Connector was designed.

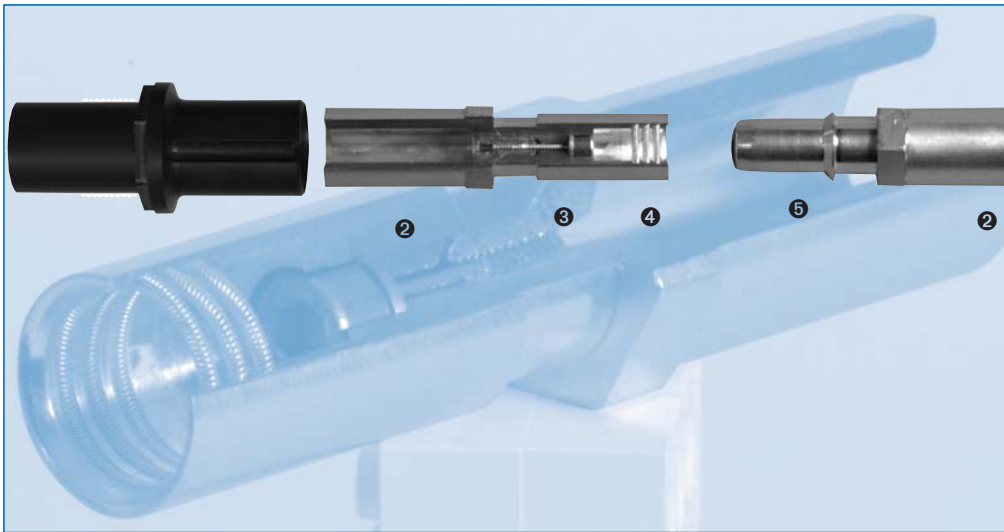
On the basis of the standard series HSB.6/35 (power supply up to 35 A, 6-poles) the development and the elaboration of this series is being continued rigorously as a result, almost any application up to current of 2,000 A can be realized by using a series of different power contacts.

Due to the modular structure the different varieties of customer requirements in this sector can be met. We also offer solutions for your application specific requirements.

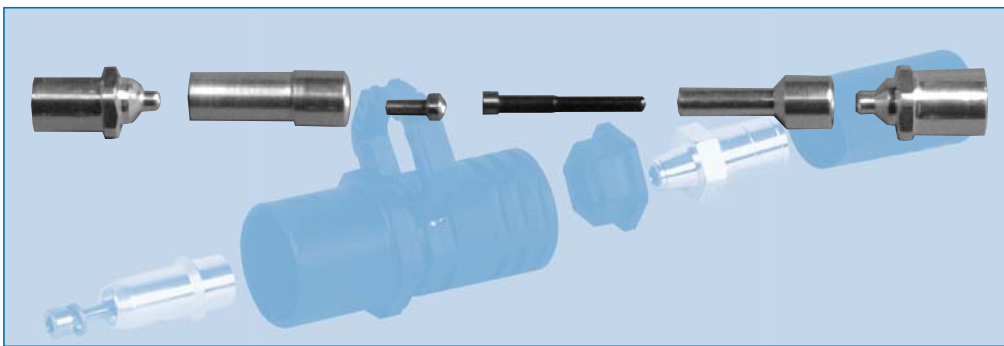


Coil Spring Power Contact

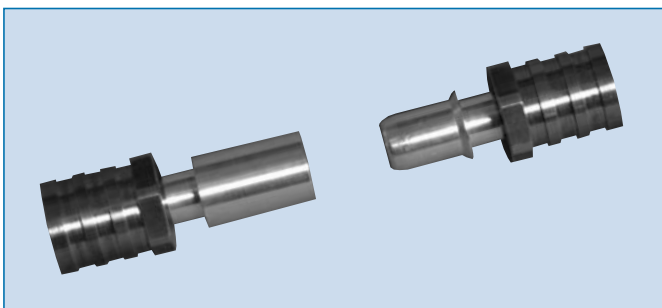
**Coil Spring Power Contact**



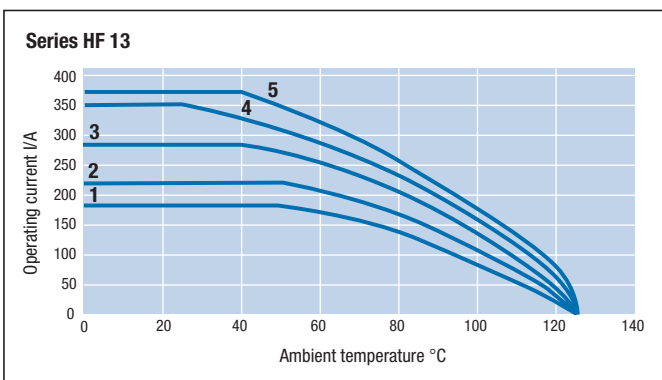
- Insulating Material Plastic
- ② Crimp Ferrule
- ③ Female Contact
- ④ Coil Spring
- ⑤ Male Contact



- ② Crimp Ferrule**
- Optimum material adaptation acc. to customer's application
  - Adaptation to special customer wire size and crimping tools
  - Same crimp ferrule for male, female and grounding contact
  - Robust crimp ferrule for tough applications



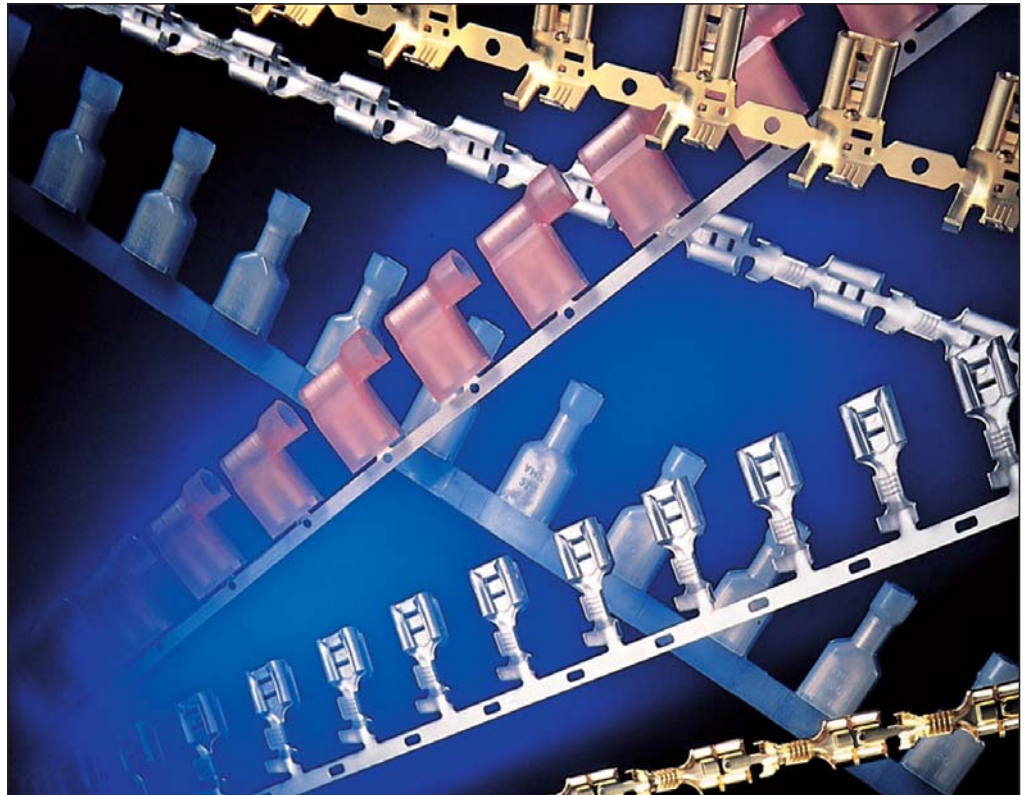
- ② Male Contact**  
**③ Female Contact**
- Wear-resistant basic material
  - Worn parts can be individually exchanged
  - Surface coating according to customer application
  - Reduced mating and pulling forces
  - Vibration test
  - High current capability through many contact points
  - Variable wire termination



**Derating Diagram**

- Curve 1 = 35 mm<sup>2</sup>
- Curve 2 = 50 mm<sup>2</sup>
- Curve 3 = 70 mm<sup>2</sup>
- Curve 4 = 95 mm<sup>2</sup>
- Curve 5 = 105 mm<sup>2</sup>

Introduction



The Tyco Electronics FASTON Terminals product line consists of receptacles, tabs and splices specifically designed for quick connections.

The large variety of sizes and available types will enable you to select contact to fit your needs.

Receptacles available in both straight and flag type, come in a variety of sizes and are designated numerically by a series number which corresponds to the width of the mating tab.

Straight receptacles are available with or without insulation support. Insulation diameters of 1.2 mm to 6.7 mm are accommodated by the insulation support receptacle.

The product line offers speed of application, uniform reliability and low per line cost. These advantages have made FASTON products the number one choice of leaders in the automotive industries.

Speed of application is achieved through the use of application tools for which a complete line has been developed specifically for these terminals.

Over forty years of history has proven the reliability of this product line.

Built-in features also add to the reliability of FASTON products which include: crimping dimensions for each terminal which are precisely controlled providing all connections with excellent performance;

low per line cost derived from low initial product cost, high application speeds, and plug-in assemblies of the finished termination as well.

The combination of these features brings the user the lowest overall costs for quick connect/disconnect terminations.

**FASTON products find their way in numerous applications through many industries.**

**Please consult your local sales representative for your specific automotive connection.**

**Some examples are presented on the next pages.**



FASTON Connection System

**Technical Features**

**Material and Finishes**

Generally, the various materials and finishes available for AMP FASTON products should be chosen according to the operating temperature. The corrosion factor is also important. Final contact selection should consider the application and the wire size range.

Brass, phosphor bronze and steel are the normal materials for AMP FASTON receptacles. Various finishes are available.

**Test Specifications**

All AMP FASTON products are rigorously and extensively tested in our testing laboratories. The testing is done under the hardest application conditions and meet all the requirements set for each individual product, in some cases even exceeding these requirements.

**Temperature Rise and Millivolt Drop**

The temperature rise and millivolt drop characteristics are the lowest in the industry. They exceed all safety requirements and exhibit extreme stability during extended time tests.

**Resistance to Oxidation and Corrosion**

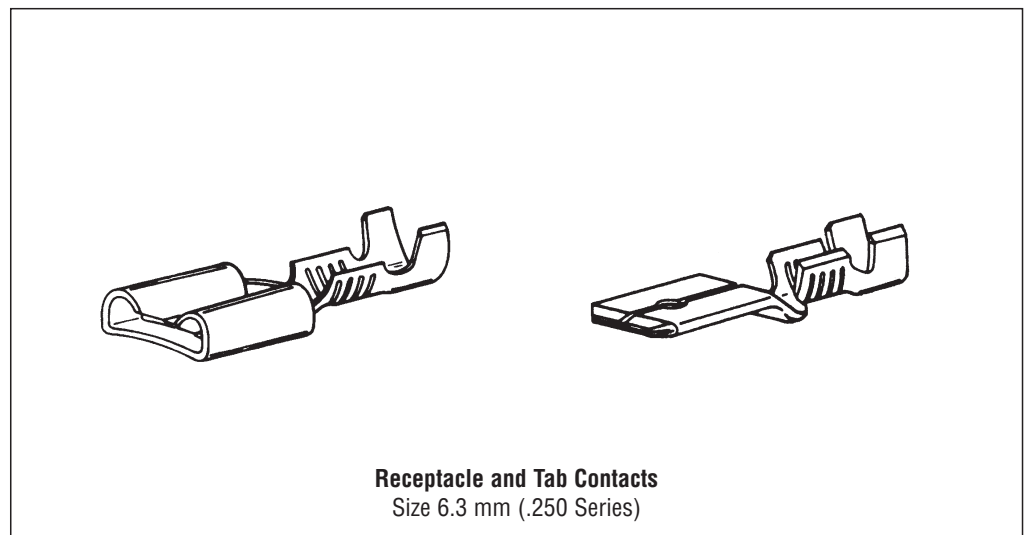
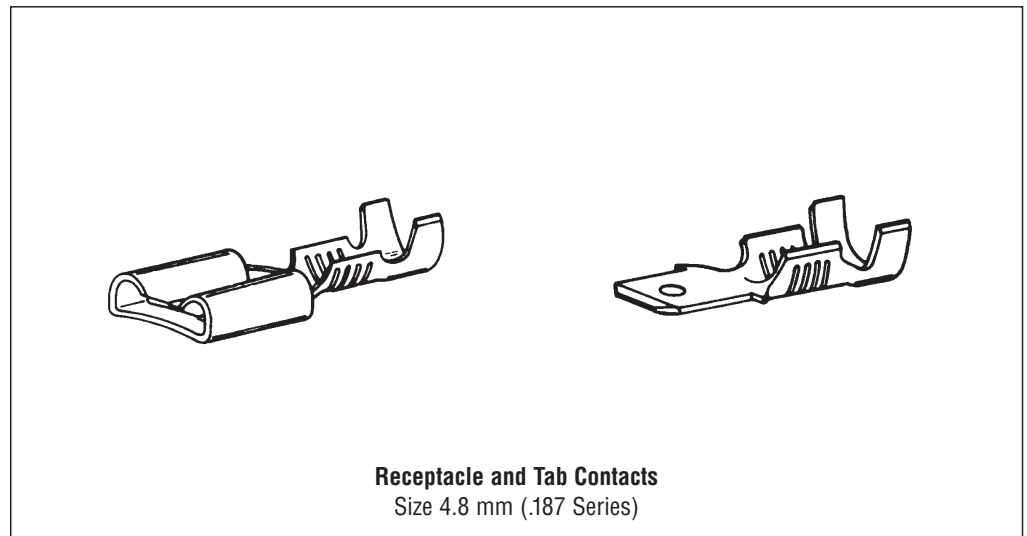
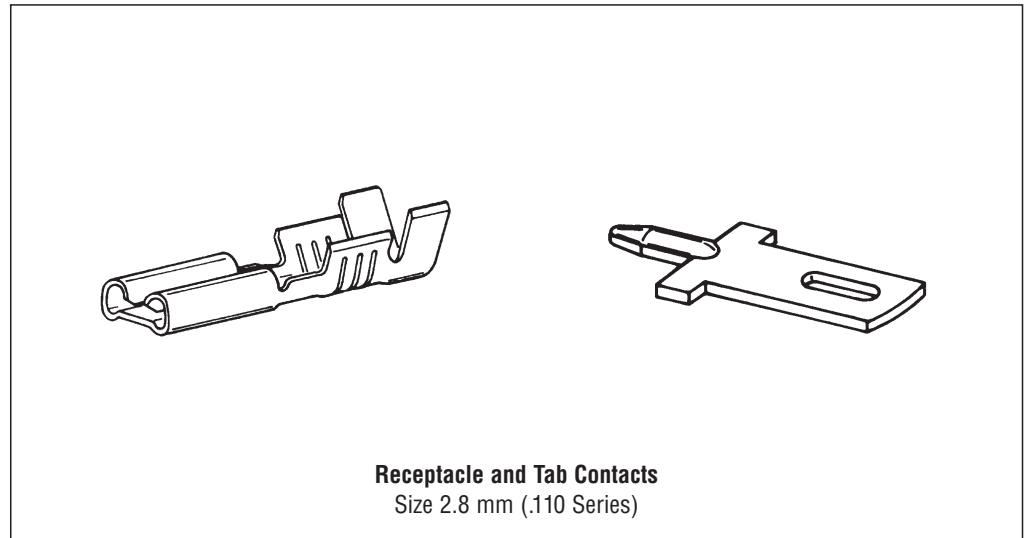
Intimate contact between the inner barrel walls and conductor surfaces plus their becoming an almost homogenous mass when subjected to the controlled dimensions of the matched crimping tool results in inhibition of corrosion and oxidation. Long life operation with low temperature and low millivolt drop is further assured by the quality of plating used on the terminal itself.

**Tensile Strength**

Normally the tensile strength is 70% to 100% greater than the force required to disconnect the tab from the receptacles. Therefore this satisfies most safety requirements.

**Vibration Resistance**

The insulation support of AMP FASTON contacts fully insures reliable vibration resistance in the crimp area.

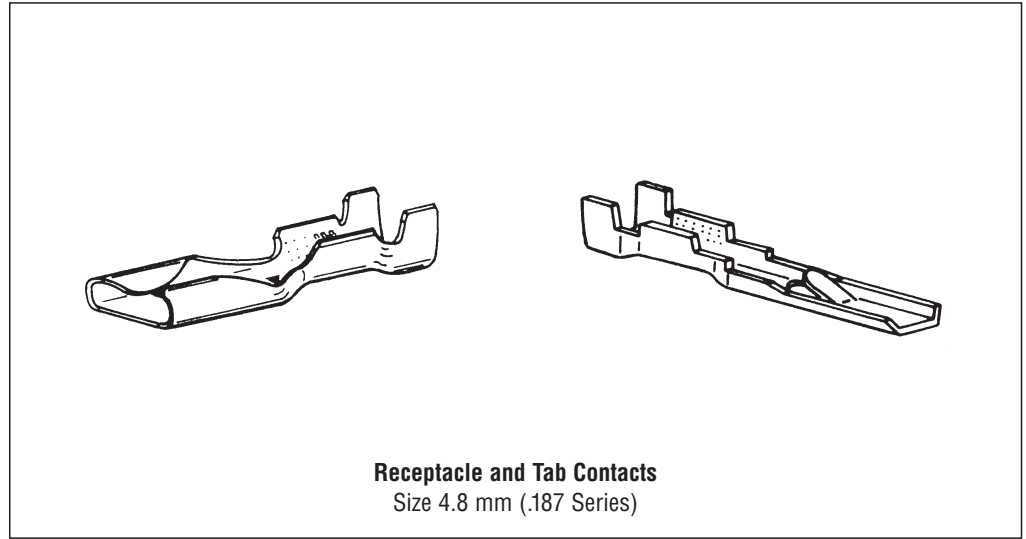


**FASTIN-FASTON Connection System**

**Technical Features**

The Tyco Electronics FASTIN-FASTON connectors offer the advantages of the FASTON technology in multiple applications. In wiring harnesses, they are mainly used as multi-position and coupling connectors. Up to 8 position connectors can be mated in one operation with a maximum of 20 leads terminated. The modular version of the .187 series allows 3 position housings to fit together for up to 15 separate circuits.

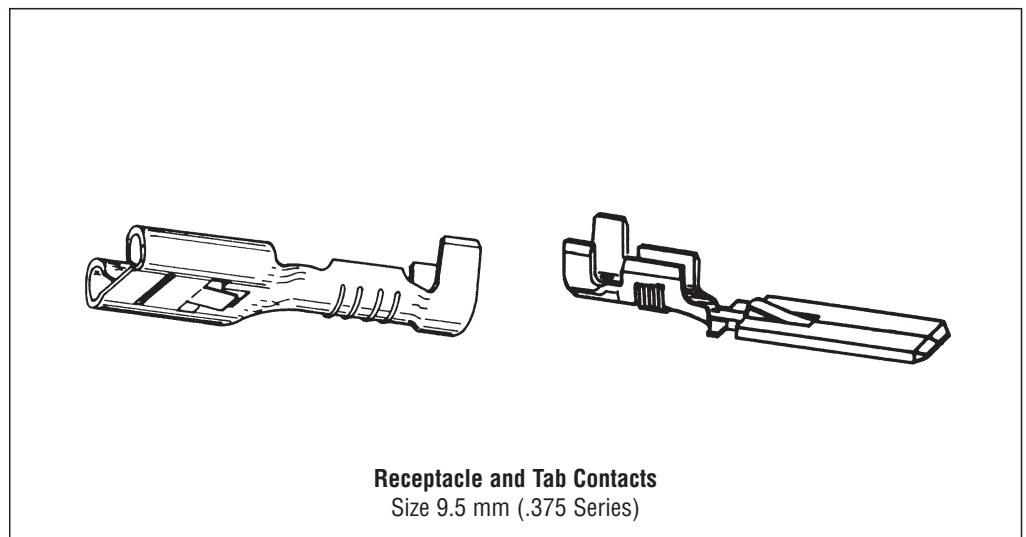
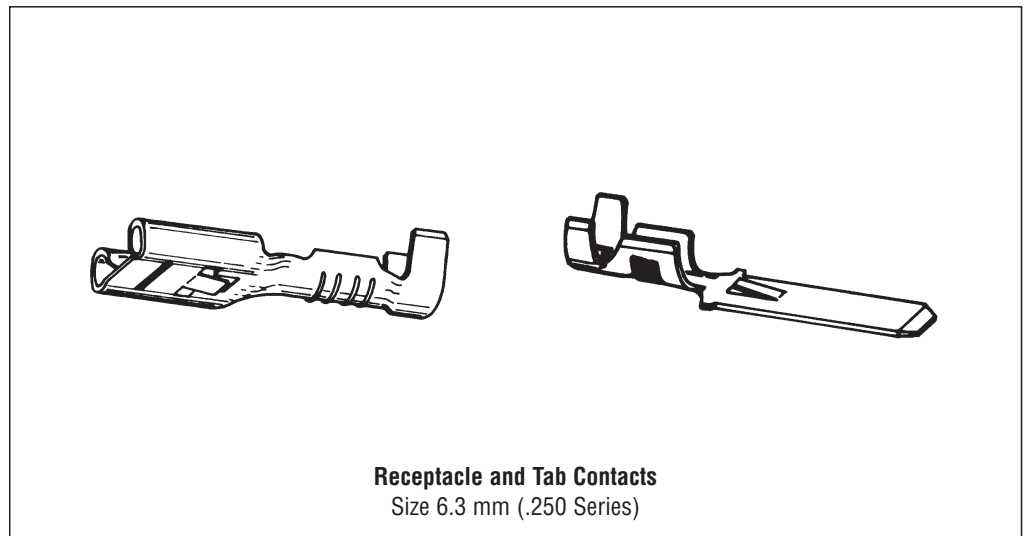
The automotive industry uses this technique to assemble a complete wiring harness from separate smaller sections.



**Locking Contacts**

Receptacles and tabs in this version comply fully with the FASTON technology. The only difference is the addition of a locking lance, which ensures firm retention of contacts when snapped into housings.

Wiring harnesses pre-fabricated with male or female connectors can be easily connected to mating counterparts, even if manufacturing occurred at a different site. Any application of this technology leads to essential time savings in final assembly.





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Engineering Notes

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Introduction



Proner Comatel is a supplier of lead frames and connectors for electrical and electronic devices serving the automotive industry (e.g. power connectors and electronic connectors) and household industry (e.g. low insertion force terminals).

The products are supplied worldwide and the company is operating with sales offices in Germany, France, Spain and Italy.

The combination of Tyco Electronics with Proner Comatel is an exciting step in the strategy of Tyco Electronics to expand the technical strength and product offerings in the electronics marketplace.

The business of Proner Comatel is a perfect fit as the products are complementary and expand the existing product portfolio.

**NG1 Receptacles**

**Application**

- 3, 4 and 5 ways connectors
- Cockpit harness

**Technical Features**

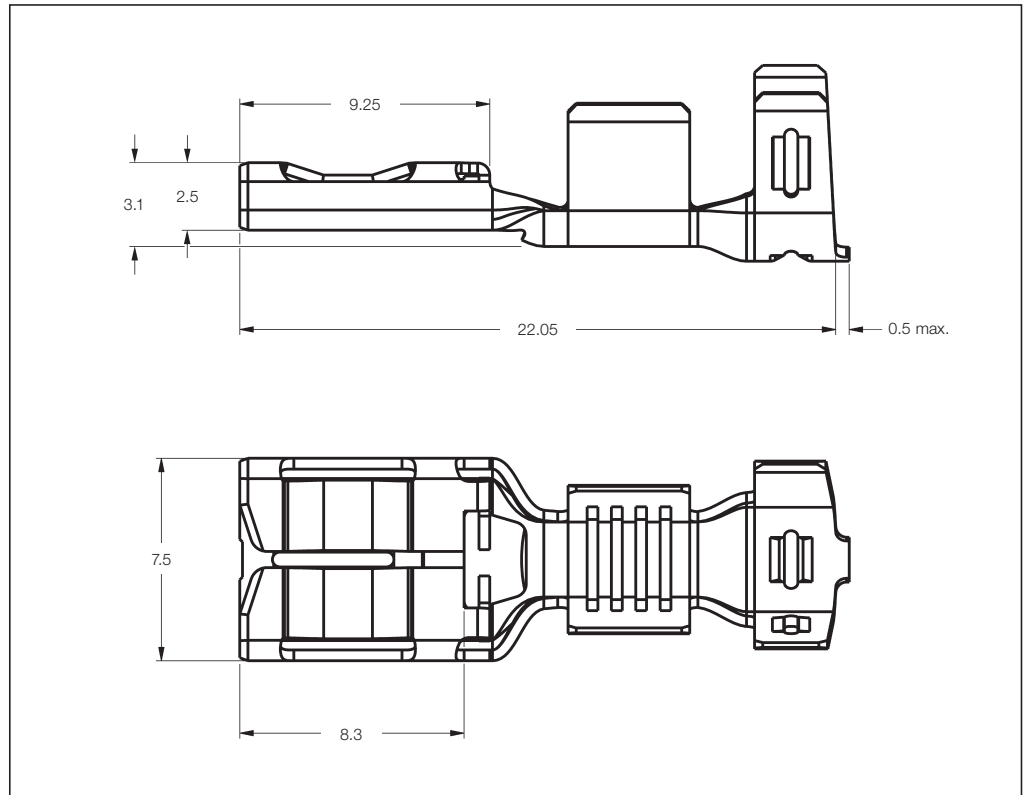
- Low insertion force
- Reversible in housing cavity

**Contact Resistance:**  
< 1 mΩ

**Current Capacity for 40 °C Rise in T°:**  
2.5 mm<sup>2</sup> = 31 A  
6.0 mm<sup>2</sup> = 46 A

**Insertion Force:**  
< 15 N

**Withdrawal Force:**  
< 15 N



**NG1 Receptacle Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter    |                         | Material and Finish       | Part Numbers |                  |             |                  | Applicator | Hand Tool with Die Set |
|---|------------------------|-------------------------|---------------------------|--------------|------------------|-------------|------------------|------------|------------------------|
|   | FLK<br>mm<br>(Inch)    | FLR<br>mm<br>(Inch)     |                           | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |            |                        |
| 0.35-0.75<br>(22-19)                        | -                      | 1.25-1.8<br>(.050-.071) | UZ 15 tin plated,<br>Sn   | 1544615-1    | 8,000            | -           | -                | 1528286    | -                      |
| 2.5-6.0<br>(14-10)                          | 3.2-4.4<br>(.126-.173) | 2.8-4.1<br>(.111-.161)  | Micro Alloy Copper,<br>Sn | 1544133-1    | 5,100            | -           | -                | 1528379    | -                      |

NG1 Tabs

**Application**

- 3, 4 and 5 ways connectors
- Cockpit harness

**Technical Features**

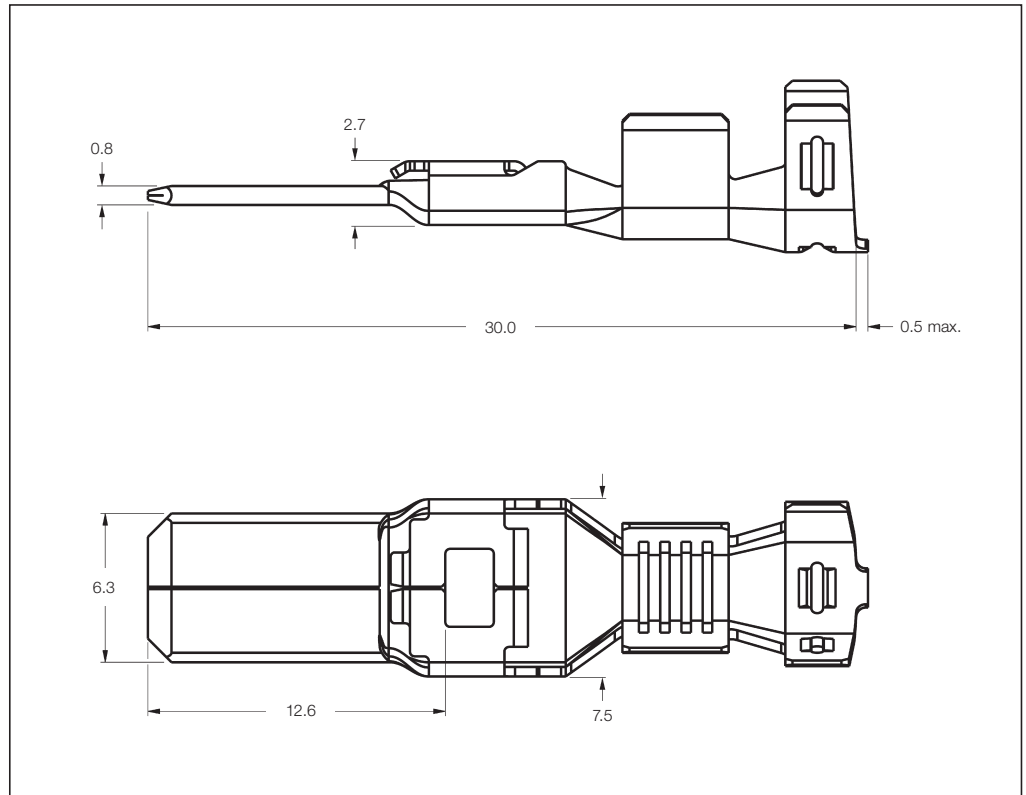
- Low insertion force
- Reversible in housing cavity

**Contact Resistance:**  
<1 mΩ

**Current Capacity for 40 °C Rise in T°:**  
2.5 mm<sup>2</sup> = 31 A  
6.0 mm<sup>2</sup> = 46 A

**Insertion Force:**  
<15 N

**Withdrawal Force:**  
<15 N



**NG1 Tab Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter    |                        | Material and Finish       | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|------------------------|------------------------|---------------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   | FLK<br>mm<br>(Inch)    | FLR<br>mm<br>(Inch)    |                           | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 2.5-6.0<br>(14-10)                          | 3.2-4.4<br>(.126-.173) | 2.8-4.1<br>(.111-.161) | Micro Alloy Copper,<br>Sn | 1544218-1    | 5,100            | -           | -                | upon request | -                      |

Flag Terminal Receptacles

**Application**

- 1 and 2 ways connectors
- Car H1 and H7 lamps

**Technical Features**

- Low insertion force
- Low profile

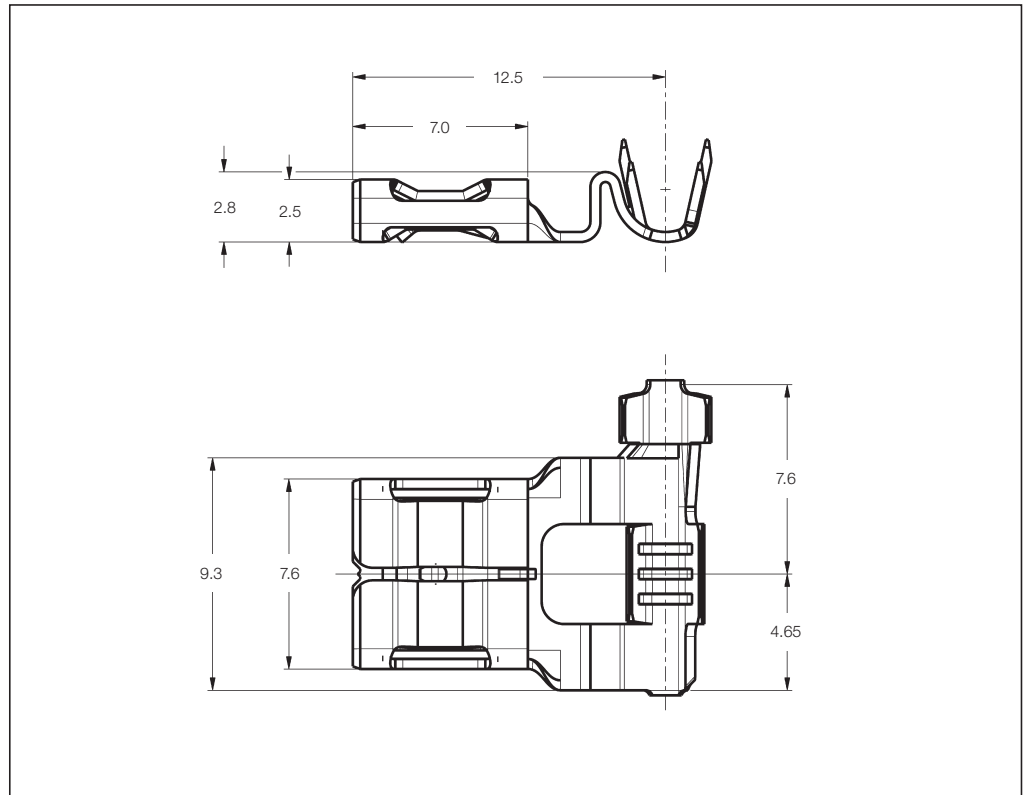
**Initial Contact Resistance:**  
<3 mΩ

**Raw Material:**  
German Silver

**Current Capacity for 40 °C Rise in T°:**  
1.0 mm<sup>2</sup> = 11 A  
3.0 mm<sup>2</sup> = 14 A

**Insertion Force:**  
<20 N

**Withdrawal Force:**  
>27 N



**Flag Terminal Receptacles**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Diameter<br>FLR<br>mm<br>(Inch) | Material<br>and Finish | Part Numbers  |                     |                 |                     | Applicator   | Hand Tool<br>with<br>Die Set |
|---|--|---------------------------------|------------------------|---------------|---------------------|-----------------|---------------------|--------------|------------------------------|
|   |  |                                 |                        | Strip<br>Form | Package<br>Quantity | Loose-<br>Piece | Package<br>Quantity |              |                              |
| 0.35-1.00<br>(22-17)                        | 1.3-2.0<br>(.052-.079)                     | -                               | German Silver,<br>Sn   | 1544113-4     | 8,000               | -               | -                   | upon request | -                            |
| 1.4-3.0<br>(16-12)                          | 2.4-3.5<br>(.095-.138)                     | -                               | German Silver,<br>Sn   | 1544114-4     | 6,000               | -               | -                   | upon request | -                            |

Microlock Receptacles

**Application**

- Cockpit harness
- Engine harness
- Fuse box, relay holder

**Technical Features**

- Low insertion force

**Contact Resistance:**

<1 mΩ

**Current Capacity for 40 °C Rise in T° for Micro Alloy Copper Receptacle:**

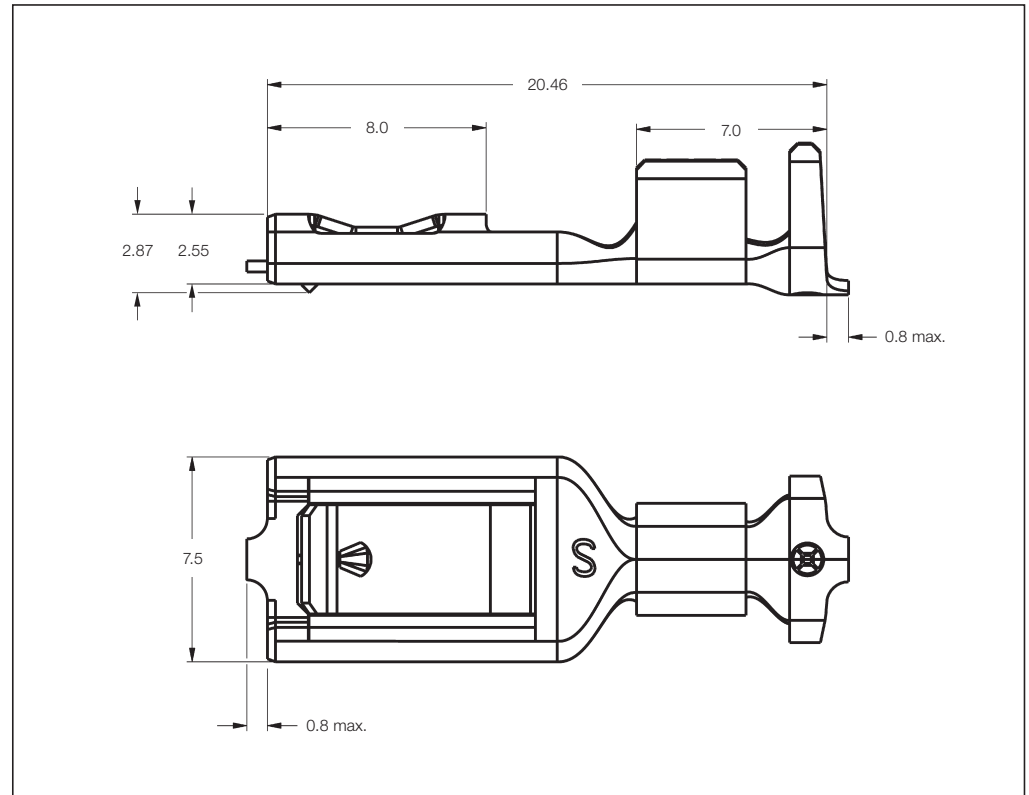
1.0 mm<sup>2</sup> = 21 A

2.5 mm<sup>2</sup> = 31 A

4.0 mm<sup>2</sup> = 38 A

**Insertion Force:**

<15 N



**Microlock Receptacles**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish    | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|--|---------------------------------|------------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   |  |                                 |                        | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 0.35-1.0<br>(22-17)                         | 1.3-2.6<br>(.052-.102)                     | -                               | Brass, Sn              | 1544132-2    | 15,000           | -           | -                | 1529064      | -                      |
|   |  |                                 | Micro Alloy Copper, Sn | 1544132-1    | 15,000           | -           | -                |              |                        |
| 1.0-2.5<br>(17-14)                          | 2.2-3.35<br>(.087-.132)                    | -                               | Brass, Sn              | 1544275-2    | 12,000           | -           | -                | 1529031      | -                      |
|   |  |                                 | Micro Alloy Copper, Sn | 1544275-1    | 12,000           | -           | -                |              |                        |
| 2.5-4.0<br>(14-12)                          | 2.7-3.6<br>(.107-.142)                     | -                               | Brass, Sn              | 1544454-1    | 10,000           | -           | -                | upon request | -                      |

**NG1 Receptacles**

**Application**

- Sealed power connectors
- Engine harness
- Cockpit harness
- Fuse box

**Technical Features**

- High current capacity
- Compatible with single wire sealing
- Reversible in housing cavity

**Contact Resistance:**

<1 mΩ

**Current Capacity for 40 °C Rise in T° for Micro Alloy Copper Receptacle:**

3.0 mm<sup>2</sup> = 30 A

6.0 mm<sup>2</sup> = 41 A

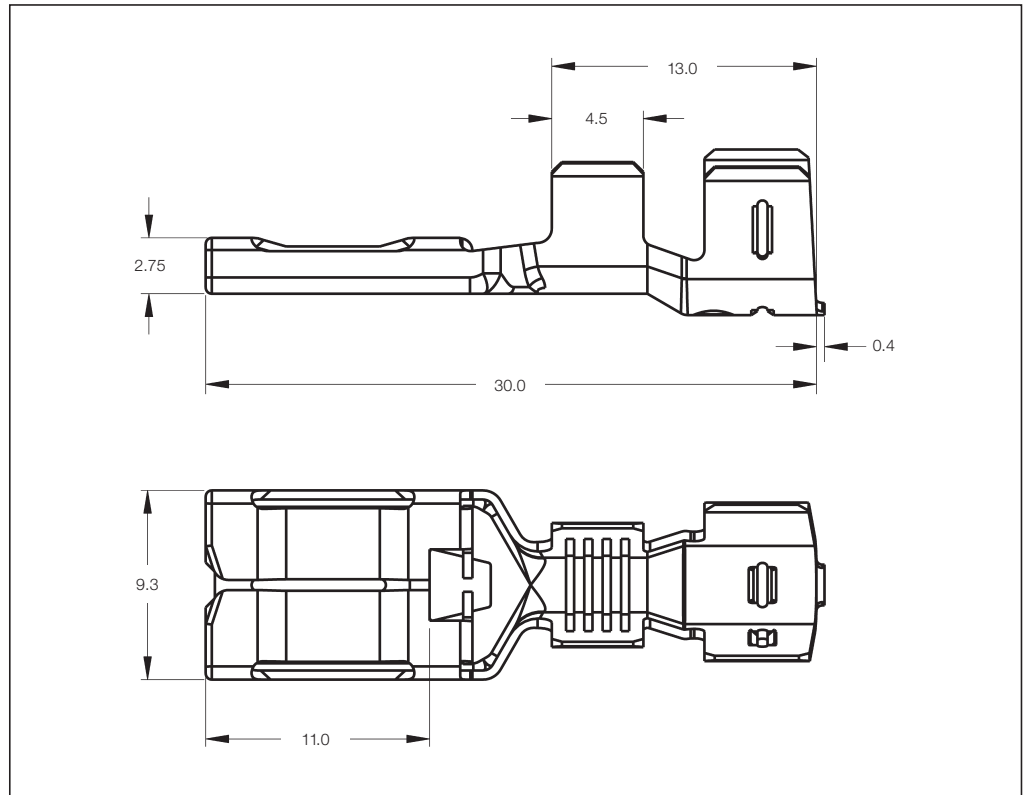
10.0 mm<sup>2</sup> = 55 A

**Insertion Force:**

<20 N

**Withdrawal Force:**

<20 N



**NG1 Receptacle Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Insulation Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish       | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|--|--|---------------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   |  |  |                           | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 3.0-6.0<br>(12-10)                          | 3.2-4.4<br>(.126-.173)                     | -  | Micro Alloy Copper,<br>Sn | 1544107-1 *  | 3,900            | -           | -                | upon request | -                      |
|   |  |  |                           | 1544227-1    | 3,900            |             |                  |              |                        |
| 7.0-10.0<br>(9-7)                           | 4.9-6.0<br>(.193-.237)                     | -  | Micro Alloy Copper,<br>Sn | 1544106-1 *  | 3,900            | -           | -                | upon request | -                      |
|   |  |  |                           | 1544228-1    | 3,900            |             |                  |              |                        |

**Note:**

For all Part Numbers Standard Tab Dimension = 8 x 1.0 mm

\*) Tab Dimension = 8 x 0.8 mm

NG1 Tabs

**Application**

- Sealed power connectors
- Engine harness
- Cockpit harness
- Fuse box

**Technical Features**

- High current capacity
- Compatible with single wire sealing
- Reversible in housing cavity

**Contact Resistance:**

<1 mΩ

**Current Capacity for 40 °C Rise in T° for Micro Alloy Copper Receptacle:**

3.0 mm<sup>2</sup> = 30 A

6.0 mm<sup>2</sup> = 41 A

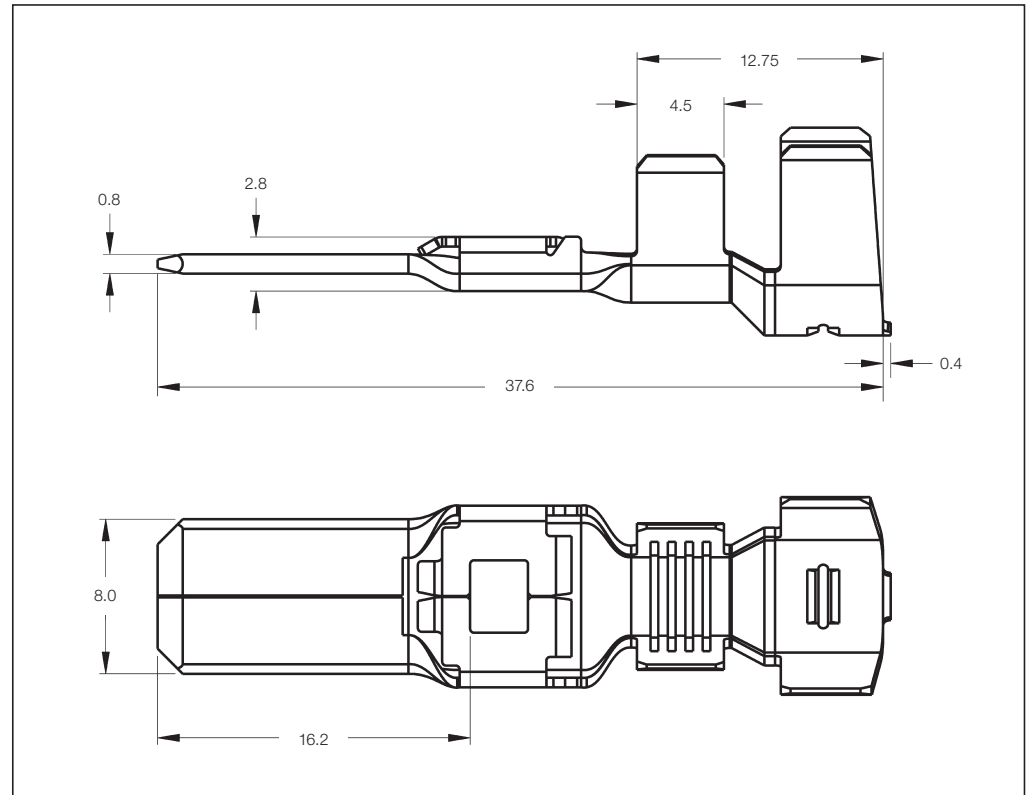
10.0 mm<sup>2</sup> = 55 A

**Insertion Force:**

<20 N

**Withdrawal Force:**

<20 N



**NG1 Tab Contacts**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter |                         | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|---------------------|-------------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   | FLK<br>mm<br>(Inch) | FLR<br>mm<br>(Inch)     |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 3.0-6.0<br>(12-10)                          | -                   | 3.35-4.1<br>(.132-.161) | Brass               | 1544332-1    | 2,200            | -           | -                | upon request | -                      |
| 7.0-10.0<br>(9-7)                           | -                   | 4.9-5.9<br>(.193-.232)  | Brass               | 1544333-1    | 1,700            | -           | -                | upon request | -                      |

**NG1 Seals**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter |                     | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|---------------------|---------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   | FLK<br>mm<br>(Inch) | FLR<br>mm<br>(Inch) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 3.0-6.0<br>(12-10)                          | -                   | -                   | Silicon, Green      | 1544316-1    | 18,000           | -           | -                | upon request | -                      |
| 7.0-10.0<br>(9-7)                           | -                   | -                   | Silicon, Orange     | 1544316-2    | 18,000           | -           | -                | upon request | -                      |

**NG1 Cavity Plug**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter |                     | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|---------------------|---------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   | FLK<br>mm<br>(Inch) | FLR<br>mm<br>(Inch) |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| -   | -                   | -                   | Silicon, White      | 1544316-3    | 18,000           | -           | -                | upon request | -                      |



Microlock Receptacles

**Application**

- Cockpit harness
- Engine harness
- Fuse box, relay holder

**Technical Features**

- High current capacity

**Contact Resistance:**

<1 mΩ

**Current Capacity for 40 °C Rise in T° for Micro Alloy Copper Receptacle:**

3.0 mm<sup>2</sup> = 30 A

6.0 mm<sup>2</sup> = 41 A

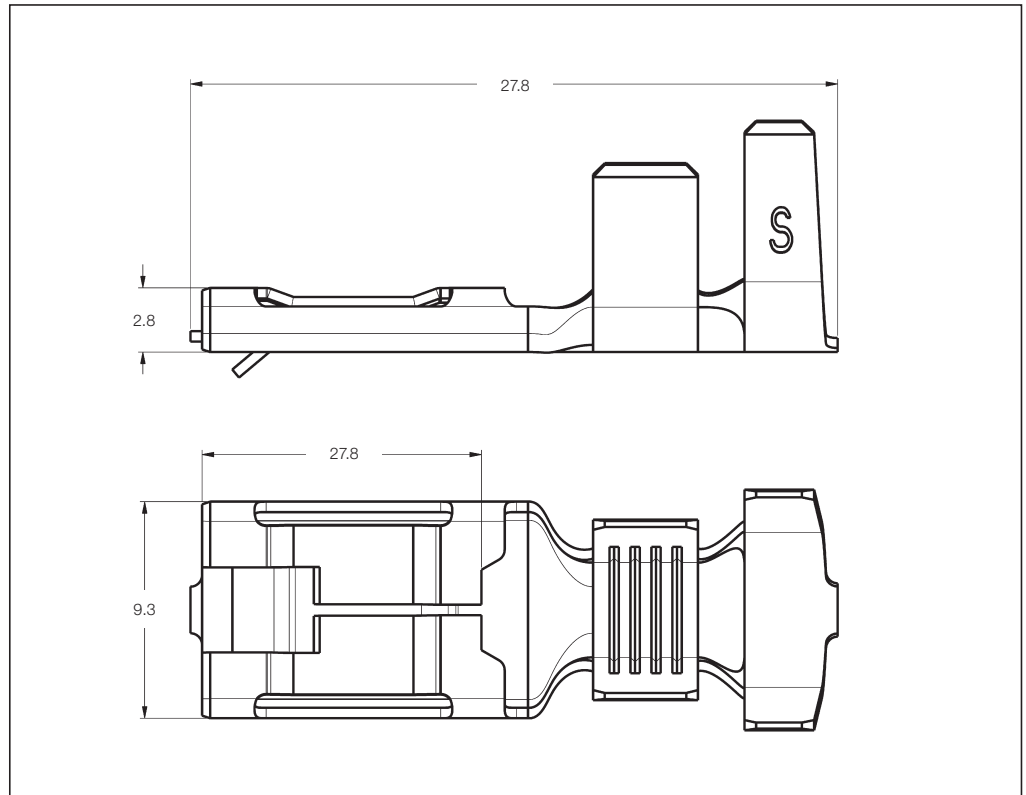
10.0 mm<sup>2</sup> = 55 A

**Insertion Force:**

<20 N

**Withdrawal Force:**

<20 N



**Microlock Receptacles**

| Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Insulation Diameter<br>FLK<br>mm<br>(Inch) | Diameter<br>FLR<br>mm<br>(Inch) | Material and Finish       | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|---|--|---------------------------------|---------------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|   |  |                                 |                           | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| 1.0-3.0<br>(17-12)                          | 2.15-3.45<br>(.085-.136)                   | -                               | Brass,<br>Sn              | 1544455-1    | 6,000            | -           | -                | 1529246      | -                      |
| 3.0-6.0<br>(12-10)                          | 3.2-5.16<br>(.120-.185)                    | -                               | Brass,<br>Sn              | 1544141-1    | 4,000            | -           | -                | 1339690      | -                      |
|   |  |                                 | Micro Alloy Copper,<br>Sn | 1544129-1    | 4,000            | -           | -                | 1529069      | -                      |
| 6.0-10.0<br>(10-7)                          | 3.9-6.3<br>(.152-.244)                     | -                               | Brass,<br>Sn              | 1544142-1    | 3,000            | -           | -                | upon request | -                      |
|   |  |                                 | Micro Alloy Copper,<br>Sn | 1544128-1    | 3,000            | -           | -                |              |                        |

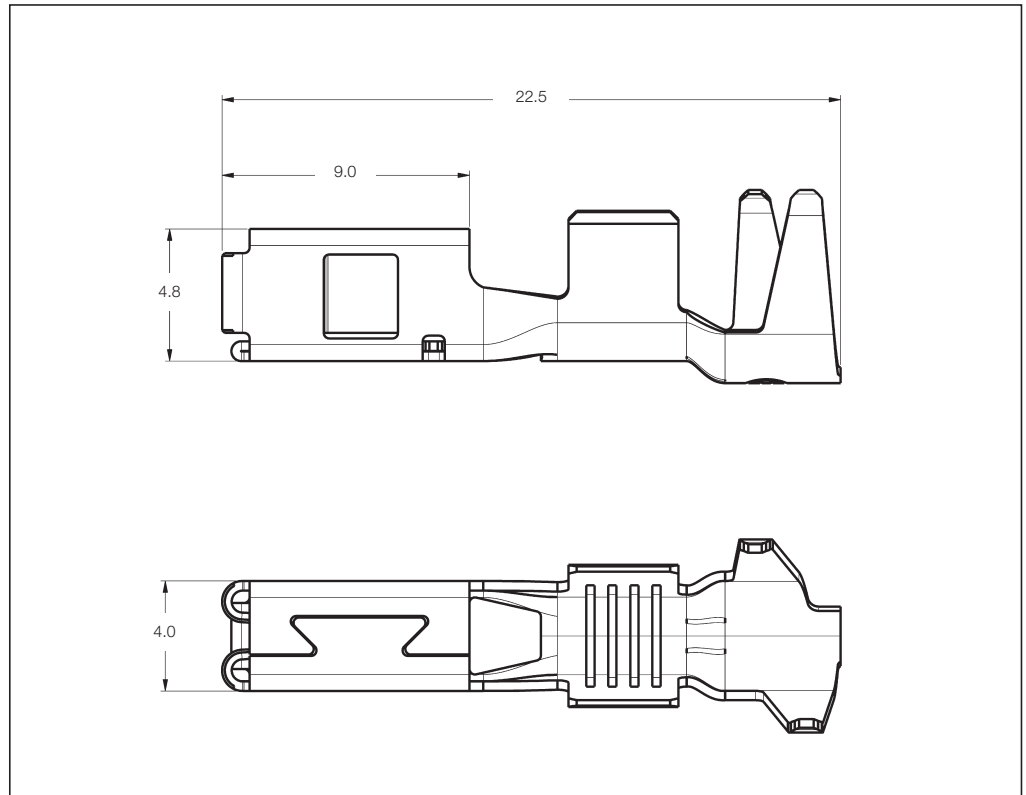
High Power Receptacle Terminal 2.8 mm NGP

**Application**

- Cockpit harness
- Engine harness
- Fuse and relay holder
- Sealed power connector

**Technical Features**

- Low insertion force
- Reversible at 180 °C in the housing cavity
- **Initial Contact Resistance:**  
<2 mΩ
- **Raw Material:**  
CuMg, plating SnAg
- **Current Capacity for 40 °C Rise in T°:**  
6.0 mm<sup>2</sup> = 41 A
- **Max. Admissible Temperature:**  
150 °C
- **Vibration Class:** 3 g
- **Crimping Wire Range:**  
2.5–6.0 mm<sup>2</sup>  
(sealed and unsealed)



**2.8 NGP Receptacle Unsealed Applications**

| Wire Size Range       | Insulation Diameter |                     | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|-----------------------|---------------------|---------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|                       | FLK                 | FLR                 |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch)           |                     |              |                  |             |                  |              |                        |
| 2.5–6.0 (14–10)       | –                   | 2.8–4.2 (.111–.165) | CuMg – SnAg         | 1544555-1    | 4,000            | –           | –                | upon request | –                      |

**2.8 NGP Receptacle Sealed Applications**

| Wire Size Range       | Insulation Diameter |                     | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|-----------------------|---------------------|---------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|                       | FLK                 | FLR                 |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch)           |                     |              |                  |             |                  |              |                        |
| 2.5–4.0 (14–12)       | –                   | 2.8–3.5 (.111–.138) | CuMg – SnAg         | 1544555-1    | 4,000            | –           | –                | upon request | –                      |
| 5.0–6.0 (11–10)       | –                   | 3.8–4.5 (.149–.177) | CuMg – SnAg         | 1544940-1    | 3,400            | –           | –                | upon request | –                      |

**Single Wire Seals**

| Wire Size Range       | Insulation Diameter |                      | Material and Finish | Part Numbers |                  |             |                  | Applicator   | Hand Tool with Die Set |
|-----------------------|---------------------|----------------------|---------------------|--------------|------------------|-------------|------------------|--------------|------------------------|
|                       | FLK                 | FLR                  |                     | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |              |                        |
| mm <sup>2</sup> (AWG) | mm (Inch)           | mm (Inch)            |                     |              |                  |             |                  |              |                        |
| 2.5–4.0 (14–12)       | –                   | 2.65–3.9 (.104–.154) | Silicone            | –            | –                | 1544941-1   | 30,000–          | upon request | –                      |
| 2.5–4.0 (14–12)       | –                   | 2.8–3.5 (.111–.138)  | Silicone            | –            | –                | 967608-1    | 3,000            | upon request | –                      |
| 5.0–6.0 (11–10)       | –                   | 3.8–4.5 (.149–.177)  | Silicone            | –            | –                | 1544941-2   | 30,000–          | upon request | –                      |

Ring Terminals

**Application**






- ECU box
- Power applications

**Technical Features**

- Several holes possible
- Low cost product
- Several designs available








**Ring Terminals**

| Terminal Version  | Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Material Thickness<br>mm<br>(Inch) | Hole Diameter<br>mm<br>(Inch) | Part Numbers |                  |             |                  |
|---|---|------------------------------------|-------------------------------|--------------|------------------|-------------|------------------|
|   |   |                                    |                               | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |
|  | 14.0-41.0<br>(6-1)                          | 2.0<br>(.079)                      | 6.5<br>(.256)                 | -            | -                | 1544112-1   | 1,000            |
|   |   |                                    | 8.5<br>(.335)                 | -            | -                | 1544112-2   | 1,000            |
|  | 14.0-41.0<br>(6-1)                          | 2.0<br>(.079)                      | 8.5<br>(.335)                 | -            | -                | 1544100-1   | 1,000            |
|  | 14.0-41.0<br>(6-1)                          | 2.0<br>(.079)                      | 8.5<br>(.335)                 | -            | -                | 1544390-1   | 350              |
|  | 14.0-41.0<br>(6-1)                          | 2.0<br>(.079)                      | 8.5<br>(.335)                 | -            | -                | 1544204-1   | 600              |
|  | 14.0-41.0<br>(6-1)                          | 2.0<br>(.079)                      | 6.5<br>(.256)                 | -            | -                | 1544384-1   | 600              |
|   |   |                                    | 8.5<br>(.335)                 | -            | -                | 1544383-1   | 700              |

Ring Terminals (continued)



**Ring Terminals**

| Terminal Version  | Wire Size Range<br>mm <sup>2</sup><br>(AWG) | Material Thickness<br>mm<br>(Inch) | Hole Diameter<br>mm<br>(Inch) | Part Numbers |                  |             |                  |
|---|---|------------------------------------|-------------------------------|--------------|------------------|-------------|------------------|
|   |   |                                    |                               | Strip Form   | Package Quantity | Loose-Piece | Package Quantity |
|  | 5.0–13.0<br>(10–6)                          | 1.5<br>(.059)                      | 10.5<br>(.414)                | –            | –                | 1544355-1   | 600              |
|  | 14.0–41.0<br>(6–1)                          | 2.0<br>(.079)                      | 8.5<br>(.335)                 | –            | –                | 1544298-1   | 500              |
|  | 7.0–10.0<br>(8–7)                           | 1.0<br>(.040)                      | 6.25<br>(.246)                | 1544115-1    | 1,600            | –           | –                |
|  | G13<br>40–60                                | CuZn15<br>1.5                      | 8.5                           | NA           | NA               | 1544340-1   | 300              |
|   |   |                                    | 6.5                           | NA           | NA               | 1544340-4   | 300              |
|  | G13<br>40–60                                | CuZn15<br>1.5                      | 8.5                           | NA           | NA               | 1544368-1   | 300              |
|   |   |                                    | 6.5                           | NA           | NA               | 1544368-4   | 300              |

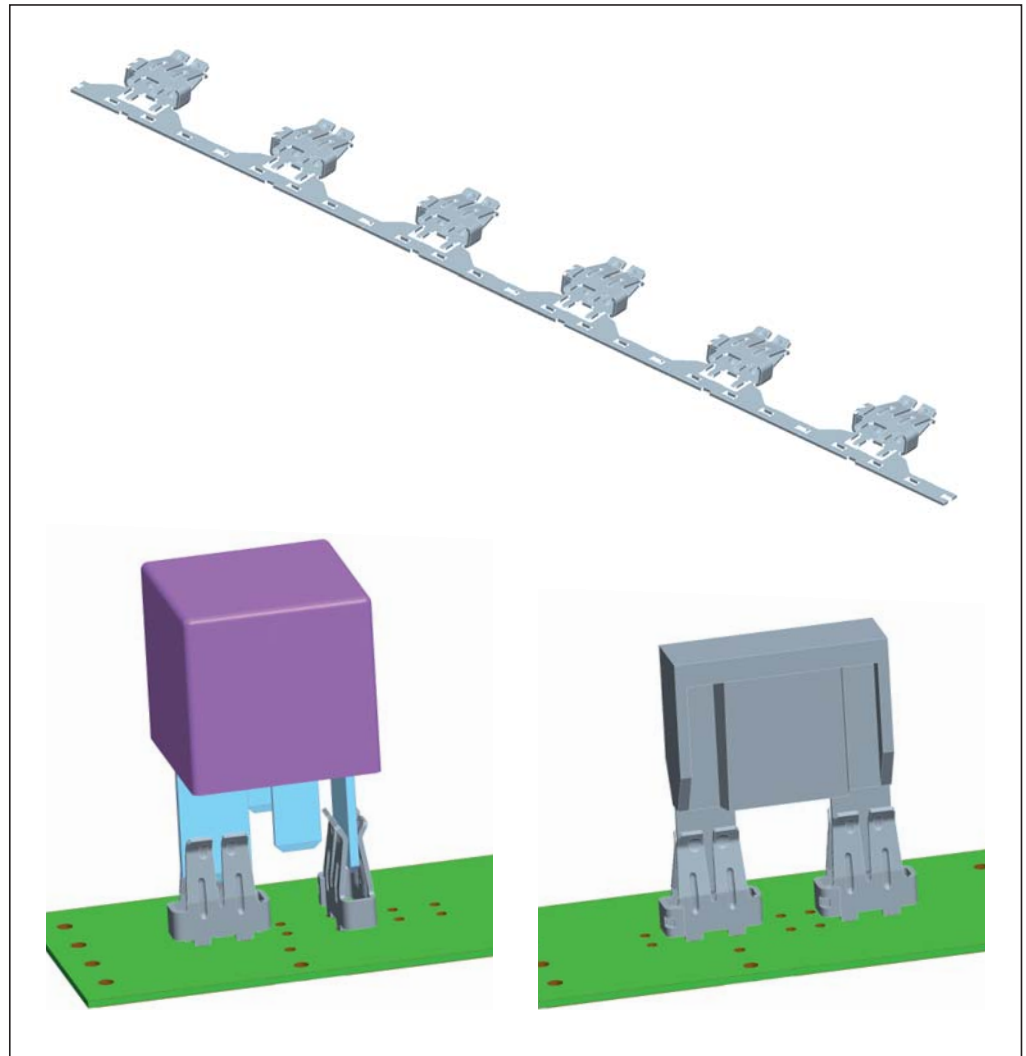
6.3 mm to 9.5 mm Power Receptacle Contact – Solder Version

**Application**

- Power distribution:
  - Fuse box
  - Relay box ...
- Connectable power electrical devices:
  - Relay
  - Maxi fuse
  - Bus bars ...

**Technical Features**

- Adapted to tabs:
  - Width: 6.3 to 9.5 mm
  - Thickness: 0.8 to 1.2 mm
- Solder version
  - Wave soldering process compliant
- No sealing



**6.3 to 9.5 mm Power Receptacle Contacts**

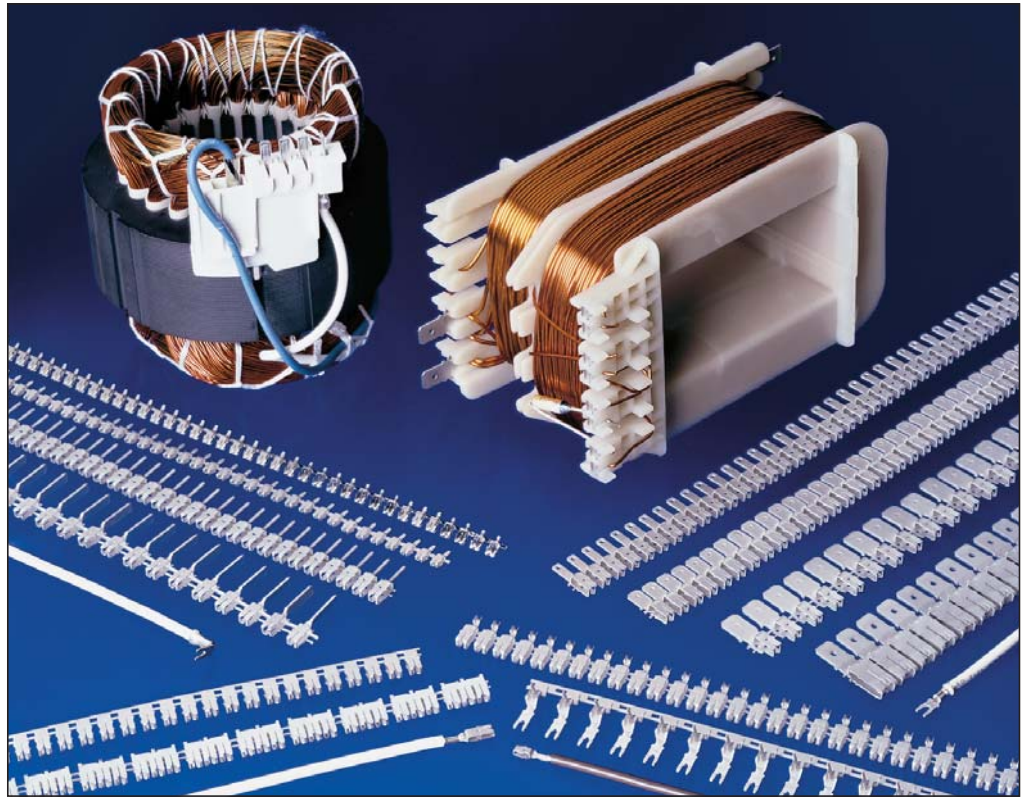
| Material               | Mating Contacts | Part Numbers |                  |             |                  |            |                        |
|------------------------|-----------------|--------------|------------------|-------------|------------------|------------|------------------------|
|                        |                 | Strip Form   | Package Quantity | Loose-Piece | Package Quantity | Applicator | Hand Tool with Die Set |
| CuCrSiTi, tinned edges | –               | 1544627-1    | 3.450            |             |                  |            |                        |
| CuCrSiTi, pre-tinned   | –               | 1544627-2    | 42.000           | –           | –                | –          | –                      |
| CuCrSiTi, pre-tinned   | –               | 1544627-3    | 3.600            |             |                  |            |                        |



## Standard MAG-MATE Terminals

### Technical Features

- Terminates all magnet wire film insulations
- Eliminates need for pre-stripping conductors
- Eliminates need to post insulate termination
- Excess magnet wire is automatically trimmed during the termination process
- Simultaneously terminates two magnet wires of the same size in one terminal (for splicing or bi-filing)
- Various lead wire attachment options available
- Available in strip form for semi-automatic or fully-automatic insertions
- Available in loose-piece form for hand tool insertions
- Varnish resist tab terminals are available for special applications
- High speed, fully automated integrated systems provide uniform terminations reliability at the lowest possible applied cost
- Clean metal-to-metal interface produces stable, gas-tight electrical terminations free of oxides and other contaminants
- Recognised under the Component Recognition Program of Underwriters Laboratories Inc., File No. E13288 



### Applications

- Motor windings and connections
- Coil connections
- Transformer windings and connections
- Bobbin connections
- Lighting ballasts
- Power supplies

Tyco Electronics offers a full selection of Standard MAG-MATE Insulation Displacement Crimp (IDC) terminals for magnet wire terminations.

MAG-MATE terminals are available in poke-in, poke-in tab, splice, crimp wire barrel, solder post, quick connect tab, pin and receptacle styles.



Standard MAG-MATE terminates magnet wire ranging from 34–12 AWG [0.16 mm to 2.05 mm].

Each IDC slot terminates up to four consecutive magnet wire ranges. Two magnet wires with the same diameter can be terminated in one terminal down to 23 AWG [0.57 mm].

According to Tyco Electronics specifications MAG-MATE cavities are either integrated into coil bodies or especially designed cavity housings. The magnet wires are precisely positioned in the “U” shaped designed termination slots.

The MAG-MATE Inserter cuts the terminals from the strip and places the terminals over the magnet wire into the plastic cavities. During this operation

the small stripping devices penetrate the film insulation from the magnet wire.

Residual spring energy in the terminal causes the side walls of each IDC slot to function as opposing cantilever beams. This constant pressure results in an intimate metal-to-metal interface, providing a reliable, long-term connection.

The wiping action between the wire and terminals removes oxides or other contaminants present on both the conductor and the terminal slot side walls, producing a clean, stable, gas-tight electrical termination.

The MAG-MATE Inserter may be used as a semi-automatic bench machine or integrated in production lines for fully-automatic applications.

Standard MAG-MATE Terminals (continued)

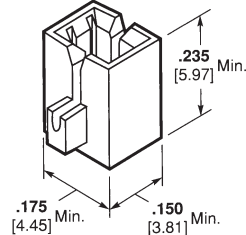
Typical Plastic Cavities

Manufacture only according to Tyco Electronics Specification

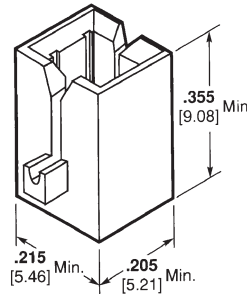
Technical Documents:  
Application Specifications

describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

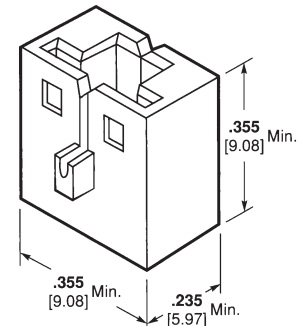
- 114-2050—Poke-In-Tab MAG-MATE Terminals
- 114-2069—Standard MAG-MATE .187 [4.75] Box Height Terminals
- 114-2046—Standard MAG-MATE .300 [7.62] Box Height Terminals
- 114-2066—Standard MAG-MATE .500 [12.7] Box Height Terminals
- 114-2067—Standard MAG-MATE .300 [7.62] Box Height Latch-In Terminals Narrow Body
- 114-2094—Standard MAG-MATE .300 [7.62] Box Height Latch-In Terminals Wide Body



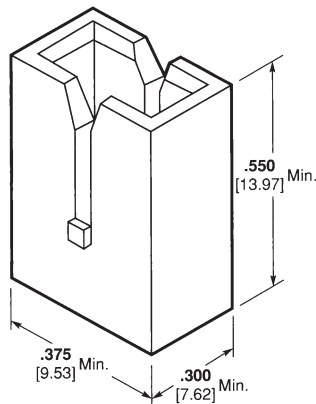
**Cavity Size 1,  
.187 [4.75] Box Height MAG-MATE  
(Reference Application  
Spec. 114-2069)**



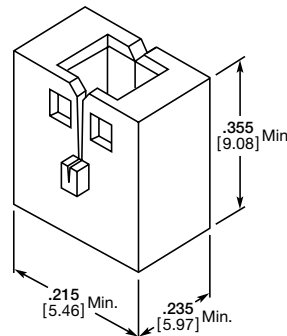
**Cavity Size 2,  
.300 [7.62] Box Height MAG-MATE  
(Reference Application  
Spec. 114-2046)**



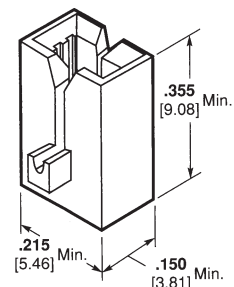
**Cavity Size 3,  
.300 [7.62] Box Height  
Latch-In MAG-MATE, Wide Body  
(Reference Application  
Spec. 114-2094)**



**Cavity Size 4,  
.500 [12.70] Box Height  
MAG-MATE  
(Reference Application  
Spec. 114-2066)**



**Cavity Size 5,  
.300 [7.62] Box Height  
Latch-In MAG-MATE, Narrow Body  
(Reference Application  
Spec. 114-2067)**



**Cavity Size 6,  
.300 [7.62] Box Height  
MAG-MATE  
(Reference Application  
Spec. 114-2046)**

**Note:** MAG-MATE typical plastic cavities are not for design; Tyco Electronics will supply required dimensions of cavity for each customer application.

Plastic cavities, designed to Tyco Electronics specifications, may be molded as part of the coil bobbin or attached to a lamination stack in the area of the magnet wire coil.

Each cavity is a rectangular box with two narrow slots on opposing walls and a plastic post or anvil extending upward from the bottom surface.

During or after the winding process, the magnet wire is placed across the plastic cavities and into the slots, either manually or by coil winding equipment.

Unraveling is prevented by a slight friction fit, suitable bend or by wrapping the magnet wire around a tie-off post.

During insertion, two insulation displacing terminal slots strip the film insulation from the magnet wire producing a stable electrical termination.

The plastic anvil supports the magnet wire, helping to prevent it from being dragged down when the terminal is inserted.

Terminal retention is secured in the plastic cavities by either locking barbs or locking latches in addition to locking barbs for quick disconnect FASTON tab terminals.

Excess magnet wire is trimmed flush with the outside of the plastic cavity by a shear blade travelling with the terminal insertion ram.

The sheared wire end can be tucked inside the plastic cavity, if necessary, by cutting the wire off before the terminal is fully seated allowing the terminal to drag the severed end of the wire into the pocket inside the cavity.

Tyco Electronics will provide design and mould engineering resources to manufacture any specifically designed MAG-MATE cavity housing.

## Standard MAG-MATE Terminals (continued)

### Standard MAG-MATE Interconnection System

#### How the System Operates

##### 1 Wire Cutter

This part cuts off the excess magnet wire and the wire support at the front of the cavity.

##### 2 Insertion Finger

The insertion finger is part of the MAG-MATE Inserter. It pushes the terminal that was sheared from the carrier strip through the inserter "tube" into the positioned cavity.

##### 3 Contact

Various wire attachments in three different sizes, .187, .300, .500 cavity height (see tables).

##### 4 IDC Slot

In different sizes for magnet wire diameters from 34–12 AWG [0.16 mm to 2.05 mm]. Strain relief slots available for high vibration applications.

##### 5 Stripping Shoulders

During the insertion process, these shoulders strip the film insulation from the magnet wire in four areas.

##### 6 Locking Barbs

Terminal retention is secured in the cavity by four locking barbs.

##### 7 Plastic Cavity

Production must be in accordance with Tyco Electronics Application Specifications. Consulting Tyco Electronics is required for design in.

##### 8 Cavity Slot for Wire

The width has to be in accordance with the wire size (see Application Specification).

##### 9 Magnet Wire

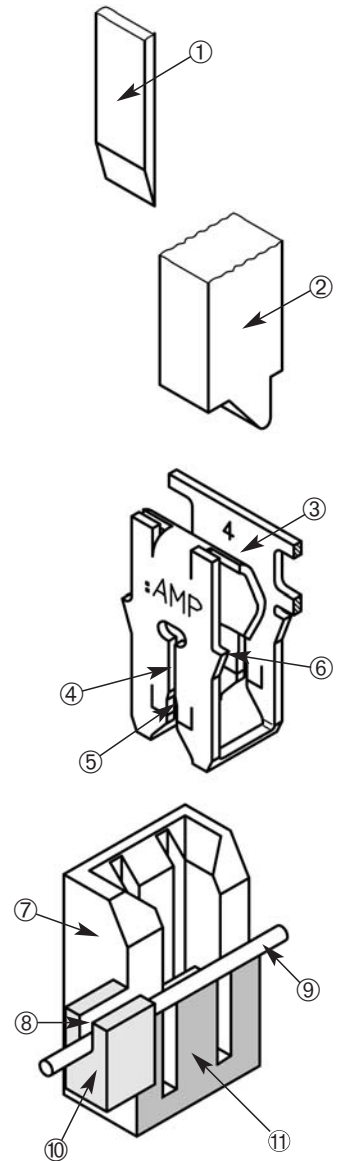
The magnet wire is positioned in the "U" slot.

##### 10 Wire Support Block

The block supports the magnet wire during the cutting process. The magnet wire is cut flush to the cavity front side.

##### 11 Anvil

The anvil supports the wire during the insertion process.



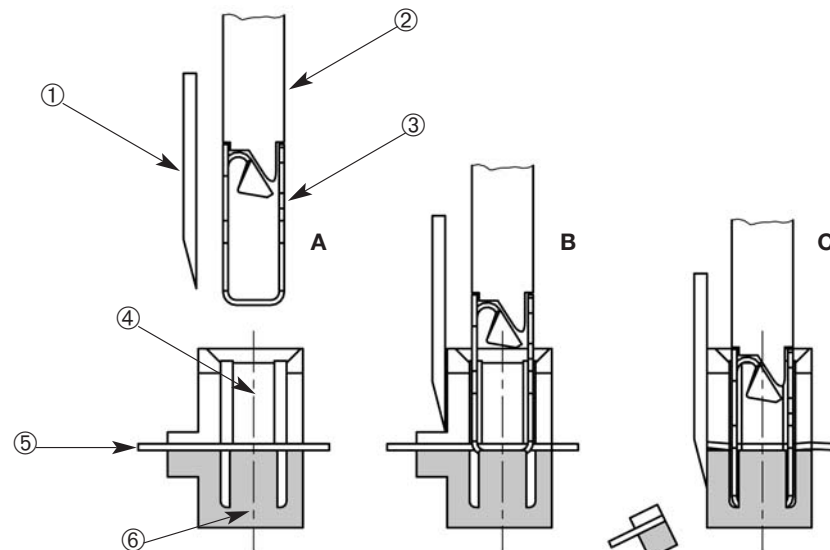
#### Termination Sequence

A = Prepare

B = Insert

C = Finish

- 1 Post Trim Blade
- 2 Insertion Finger
- 3 Poke-In Contact
- 4 MAG-MATE Cavity
- 5 Magnet Wire
- 6 Support Anvil





Standard MAG-MATE Terminals (continued)

**Test Results**

**Standard and Slim Line MAG-MATE** products have been submitted to the following tests without significant millivolt increase:

**Current Cycling**

480 cycles with each cycle consisting of 15 minutes "ON" followed by 15 minutes "OFF".

**Thermal Shock**

25 cycles with each cycle consisting of 30 minutes at 125°C followed by 30 minutes at -65°C.

**Humidity**

**Temperature Cycling**  
10 cycles between 25°C and 65°C at 95% RH

**Heat Age**

33 days at 118°C

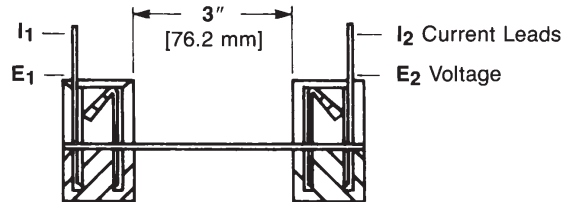
**Mini MAG-MATE** products have been submitted to the following tests in addition to those listed without significant millivolt increase:

**Vibration**

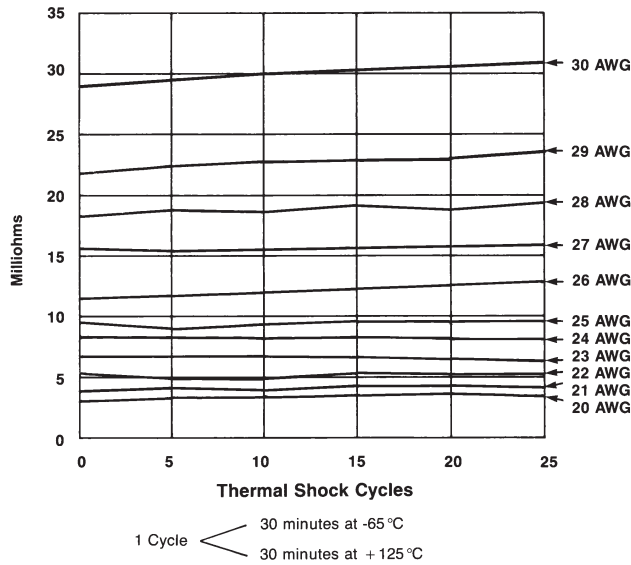
10-55-01- Hz traversed in 1 minute at .06 inches total excursion; 2 hours in each of 3 mutually perpendicular directions.

**Industrial Gas with Chlorine**

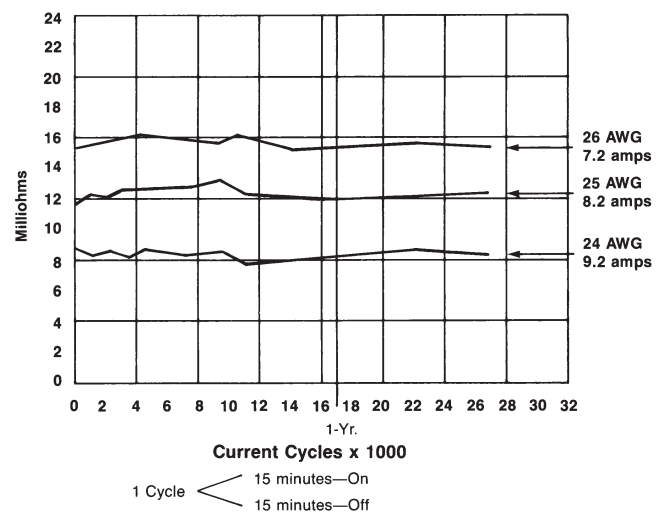
1000 exposure to 200 ppb each of sulphur dioxide, nitrogen dioxide, hydrogen sulphide and 50 ppb chlorine.



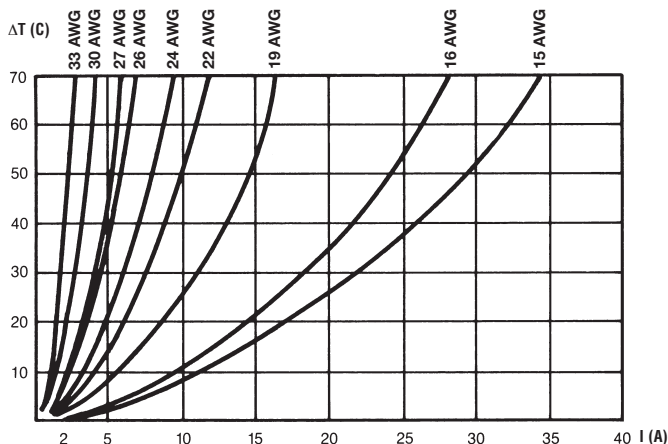
Resistance vs Thermal Shock (Copper Wire)



Resistance vs Current Cycles (Copper Wire)



Test Current produces 100°C Magnet Wire Operating Temperature



**Current Rating Curves**

The diagram shows the temperature rise of the contact, depending on the magnet wire size being applied.

**Product Specifications**

describe technical performance characteristics and verification tests. They are intended for the Design, Test and Quality Engineer.

108-2012 Standard .187 and .300 MAG-MATE Terminals

108-2053 Standard .500 Box MAG-MATE Terminals

108-1484 Slim Line MAG-MATE Terminals

108-2016 Mini MAG-MATE Terminals

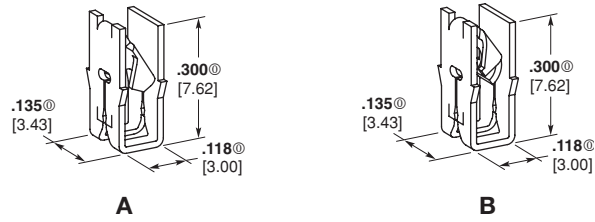
**Note:** For all applications, Tyco Electronics recommends that samples of the magnet wire to be used be submitted for engineering evaluation.

## Standard MAG-MATE Terminals (continued)

### 300 Box Poke-In Terminals

**Material:**  
Tin Plated Brass

**Typical Cavity Size 2**  
(See page 26-2)



| Type  | Copper Magnet Wire Range |           | Lead Wire Range |                 | Stock Thickness | Part Numbers         |             |
|---|--------------------------|-----------|-----------------|-----------------|-----------------|----------------------|-------------|
|   | AWG                      | mm        | AWG             | mm <sup>2</sup> |                 | Strip                | Loose-Piece |
| <b>A</b><br>300 Box<br>Standard IDC<br>Locking<br>Poke-In     | 34-33                    | 0.16-0.18 | 20-18           | 0.5-0.9         | 0.25            | 63662-1              | —           |
|   | 33-31                    | 0.18-0.23 | 20-18           | 0.5-0.9         | 0.25            | <b>62431-1</b>       | 62527-1     |
|   | 30-27                    | 0.25-0.36 | 20-18           | 0.5-0.9         | 0.30            | <b>62429-1</b>       | 62526-1     |
|   | 27-23                    | 0.36-0.57 | 20-18           | 0.5-0.9         | 0.41            | 62935-1              | 63044-1     |
|   | 22-20 <sup>2</sup>       | 0.64-0.81 | 20-18           | 0.5-0.9         | 0.41            | <b>62420-1</b>       | 62524-1     |
|   | 19-17 <sup>2</sup>       | 0.91-1.15 | 20-18           | 0.5-0.9         | 0.41            | <b>62833-1</b>       | 62912-1     |
| <b>B</b><br>300 Box<br>Standard IDC<br>Non-Locking<br>Poke-In | 30-27                    | 0.25-0.36 | —               | —               | 0.30            | 63590-1 <sup>5</sup> | —           |
|   |                          |           |                 |                 |                 | 63590-2              | —           |
|   | 27-23                    | 0.36-0.57 | —               | —               | 0.41            | 63590-3 <sup>4</sup> | —           |
|   |                          |           |                 |                 |                 | 63551-1 <sup>5</sup> | —           |
|   |                          |           |                 |                 |                 | 63551-3 <sup>4</sup> | —           |

- 1 Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- 2 Single magnet wire only; 22 AWG [0.64 mm] or larger unless otherwise noted.
- 3 Solid or overcoated stranded lead wire only. Product will also accept Poke-In Tab Terminal.
- 4 Finish is tin plated phosphor bronze.
- 5 Finish is tin over nickel plated brass.

Preferred part numbers are printed in bold.

## Standard MAG-MATE Terminals (continued)

### 300 Leaf Terminals

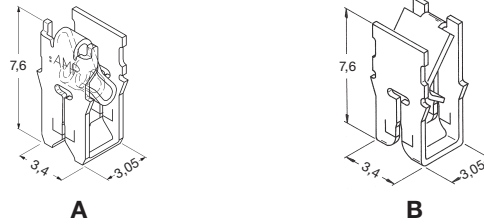
**Material:**

Type A: CuNiSi

Type B: Brass, except note (\*)

**Cavity Drawing:**

77-9597



|                                 | Copper Magnet Wire Range |           | Diameter    | Code No.<br>(Stamped-in) | Finish                  | Part Number<br>Strip  |
|---------------------------------|--------------------------|-----------|-------------|--------------------------|-------------------------|-----------------------|
|                                 | AWG                      | mm        |             |                          |                         |                       |
| <b>A</b><br>300 Leaf<br>Mark II | 33-31                    | 0.18-0.23 | 0.180-0.265 | 4                        | plain                   | 964337-1              |
|                                 |                          |           |             |                          | pre-tin plated          | 964337-2              |
|                                 | 30-27                    | 0.25-0.36 | 0.265-0.400 | 6                        | plain                   | 964338-1              |
|                                 |                          |           |             |                          | pre-tin plated          | 964338-2              |
|                                 | 26-23                    | 0.40-0.57 | 0.400-0.630 | 10                       | plain                   | 964339-1              |
|                                 |                          |           |             |                          | pre-tin plated          | 964339-2              |
| <b>B</b>                        | 22-20                    | 0.64-0.81 | 0.630-0.850 | 12                       | plain                   | 964340-1              |
|                                 |                          |           |             |                          | pre-tin plated          | 964340-2              |
|                                 | 19-17                    | 0.91-1.15 | 0           | 24                       | plain                   | 964341-1              |
|                                 |                          |           |             |                          | pre-tin plated          | 964341-2              |
|                                 | 33-31                    | 0.18-0.23 | 0.180-0.265 | 4                        | pre-tin plated          | 926850-1 <sup>2</sup> |
|                                 |                          |           |             |                          | plain                   | 926850-2 <sup>2</sup> |
|                                 | 30-27                    | 0.25-0.36 | 0.265-0.400 | 6                        | pre-tin plated          | 926851-1              |
|                                 |                          |           |             |                          | plain                   | 926851-2              |
|                                 |                          |           |             |                          | pre-tin plated          | 926851-4 <sup>1</sup> |
|                                 |                          |           |             |                          | tin plated              | 926852-2 <sup>3</sup> |
|                                 |                          |           |             | tin plated               | 928770-2 <sup>3</sup>   |                       |
|                                 |                          |           |             | pre-tin plated           | 928771-4 <sup>1,3</sup> |                       |

1 Material: CuNiSi

2 Stock thickness 0.25 mm

3 Stock thickness 0.40 mm

Standard MAG-MATE Terminals (continued)

**Slide Spring Contact**

**Material:**

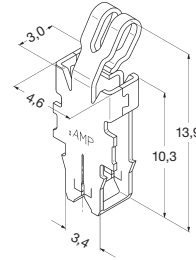
CuNiSi

**Stock Thickness:**

0.32mm

**Cavity Drawing:**

96-52884-70



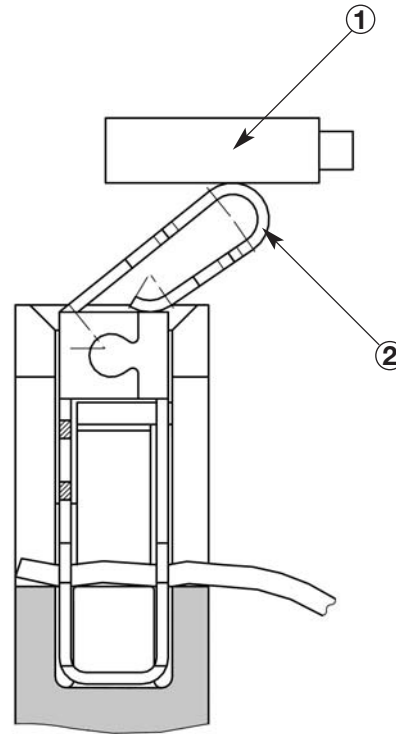
| Copper Magnet Wire Range |             | Diameter    | Code No.<br>(Stamped-in) | Finish         | Part Number<br>Strip |
|--------------------------|-------------|-------------|--------------------------|----------------|----------------------|
| AWG                      | mm          |             |                          |                |                      |
| 22-20 <sup>1</sup>       | 0.630-0.850 | 0.630-0.850 | 12                       | pre-tin plated | 969125-1             |

1 Single magnet wire only.

**Principle of Function**

1 Brushholder or similar Components

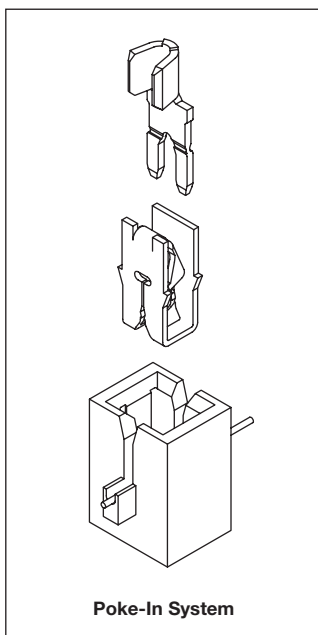
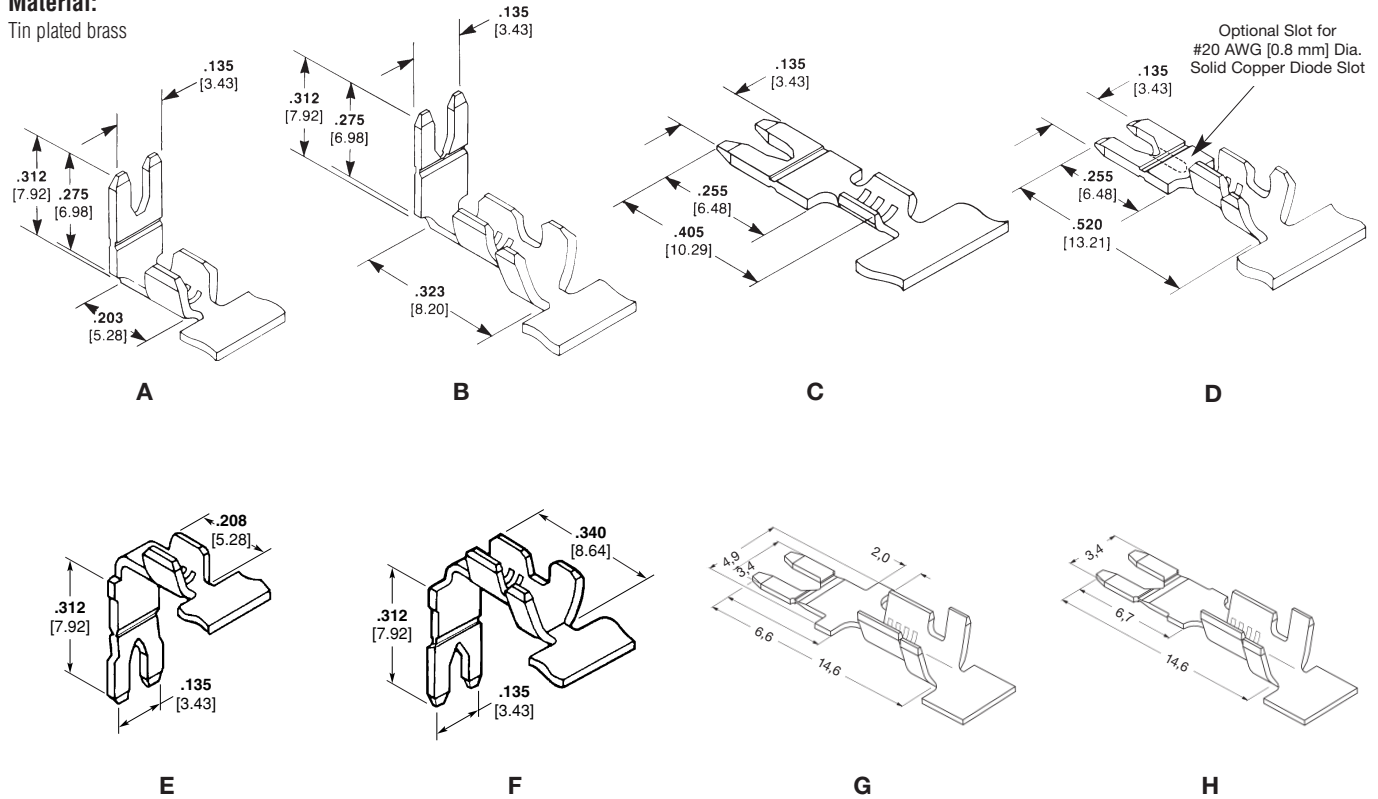
2 Slide Spring



## Standard MAG-MATE Terminals (continued)

### Poke-In Tab Terminals

**Material:**  
Tin plated brass



| Type  | Lead Wire Size |         | Insulation Outer Diameter | Stock Thickness | Part Number Strip                 |
|---|----------------|---------|---------------------------|-----------------|-----------------------------------|
|   | AWG            | mm      |                           |                 |                                   |
| <b>A</b><br>90° Up                            | 22-18          | 0.3-0.9 | —                         | 0.46            | 62895-1                           |
|   |                |         |                           | 0.51            | 63410-1                           |
| <b>B</b><br>90° Up<br>w/Ins. Sup.             | 22-18          | 0.3-0.9 | 1.52-2.54                 | 0.46            | 62896-1                           |
|   | 18-14          | 0.8-2.0 | 2.29-3.56                 | 0.51            | 1217132-1 <sup>1</sup><br>63218-1 |
| <b>C</b><br>Straight                          | 22-18          | 0.3-0.9 | —                         | 0.51            | 62897-1                           |
|   | 18-14          | 0.8-2.0 | —                         | 0.51            | 63775-1                           |
| <b>D</b><br>Straight<br>w/Ins. Sup.           | 22-18          | 0.3-0.9 | 1.52-2.54                 | 0.46            | 62898-1                           |
|   | 18-14          | 0.8-2.0 | 2.29-3.56                 | 0.51            | 63397-1                           |
| <b>E</b><br>90° Down                          | 22-18          | 0.3-0.9 | —                         | 0.46            | 63364-1                           |
| <b>F</b><br>90° Down w/Ins. Sup.              | 18-14          | 0.8-2.0 | 2.29-3.56                 | 0.51            | 63458-1                           |
| <b>G</b><br>Straight w/Ins. Sup. <sup>2</sup> | 22-18          | 0.3-1.0 | 3.00 max                  | 0.45            | 281622-2 <sup>2</sup>             |
| <b>H</b><br>Straight w/Ins. Sup.              | 22-18          | 0.3-1.0 | 3.00 max                  | 0.45            | 281623-2 <sup>3</sup>             |

- 1 Shallow tab serrations.
- 2 With support flanges.  
To be used in combination with modified cavity IA-84-5157.
- 3 This part number can be bent by applicator.

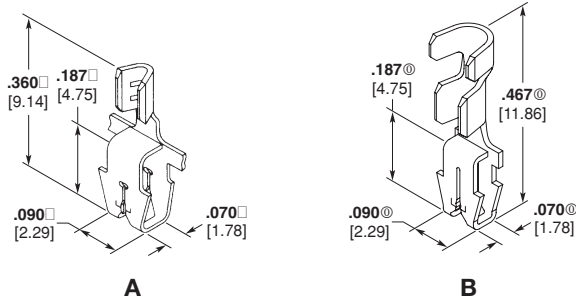
All terminals accept stranded wire.  
Solid wire upon request.

## Standard MAG-MATE Terminals (continued)

### 187 Box F-Crimp Terminals

**Material:**  
Tin plated brass

**187 Series Box  
Typical Cavity Size 1**  
(See page 26-2)



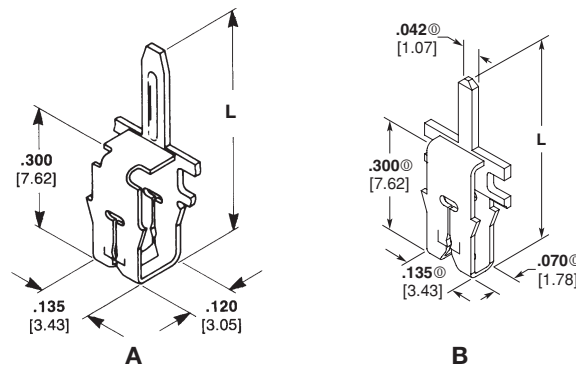
| Type                                    | Copper Magnet Wire Range <sup>1</sup> |           | Lead Wire Range <sup>3</sup> |                 | Ins. O.D  | Stock Thickness | Part Number Strip  |
|---|---------------------------------------|-----------|------------------------------|-----------------|-----------|-----------------|--|
|   | AWG                                   | mm        | AWG                          | mm <sup>2</sup> |           |                 |  |
| A<br>187 Box<br>Standard IDC<br>F-Crimp | 33-31                                 | 0.18-0.23 | 26-22                        | 0.12-0.3        | —         | 0.25            | 63039-1<br>63039-2 <sup>3,5</sup><br>63036-1                         |
|   | 30-28                                 | 0.25-0.32 | 26-22                        | 0.12-0.3        | —         | 0.30            | 62608-1 <sup>4</sup><br>62608-3 <sup>4</sup><br>62609-1 <sup>4</sup> |
|   | 27-25                                 | 0.36-0.46 | 26-22                        | 0.12-0.3        | —         | 0.30            | 62609-3 <sup>4</sup>   |
|   | 26-24                                 | 0.40-0.51 | 22-18                        | 0.3-1.0         | —         | 0.30            | 1217146-1  |
|   | 24-22 <sup>2</sup>                    | 0.51-0.64 | 26-22                        | 0.12-0.3        | —         | 0.30            | 62610-1 <sup>4</sup>   |
| B<br>187 Box F-Crimp<br>w/Ins Sup.      | 27-25                                 | 0.36-0.46 | 22-18                        | 0.3-1.0         | 1.80-2.23 | 0.30            | 63856-1<br>63856-2   |

- Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- Single magnet wire only.
- Stranded, fused stranded or solid lead wire.
- Strip rereeled to feed through mini-applicator to crimp lead wire first, magnet wire termination is secondary operation.

### 300 Box Posted PCB Terminals Solder Terminals

**Material:**  
Tin over copper plated brass

**Typical Cavity Size**  
(See page 26-2)  
Type A—Cavity Size 2  
Type B—Cavity Size 6



| Type                                     | Copper Magnet Wire Range <sup>1</sup> |           | Dim L | Stock Thickness |          | Part Number Strip |
|--|---------------------------------------|-----------|-------|-----------------|----------|-------------------|
|  | AWG                                   | mm        |       | Tab Section     | Mag Wire |                   |
| A<br>300 Box<br>Standard IDC<br>PCB Post | 33-31                                 | 0.18-0.23 | 13.72 | 0.25            | 0.25     | 63253-1           |
|  | 31-28                                 | 0.23-0.32 | 13.72 | 0.25            | 0.25     | 62928-1           |
|  | 29-26                                 | 0.29-0.40 | 13.72 | 0.30            | 0.30     | 62958-1           |
|  | 27-23                                 | 0.36-0.57 | 11.68 | 0.41            | 0.41     | 63659-1           |
|  | 22-20 <sup>2</sup>                    | 0.64-0.81 | 11.68 | 0.41            | 0.41     | 63660-1           |
|  | 19-17 <sup>2</sup>                    | 0.91-1.15 | 11.68 | 0.41            | 0.41     | 63661-1           |
| B - PCB Post<br>Shallow Box              | 33-31                                 | 0.18-0.23 | 12.07 | 0.51            | 0.30     | 1217302-1         |

- Two magnet wires may be terminated in the same terminal slot if diameters are equal.
  - Single magnet wire only.
- Note: PC Board hole size .050 [1.27 mm].

Standard MAG-MATE Terminals (continued)

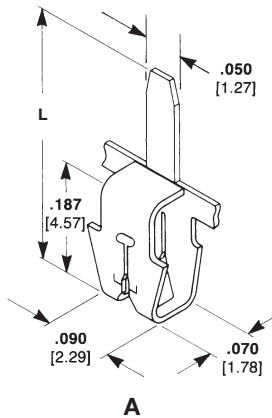
187 Box Posted PCB Terminals

Material:

Tin plated brass, except where noted

Typical Cavity Size 1

(See page 26-2)



| Type                                     | Copper Magnet Wire Range <sup>1</sup> |           | Dim. L | Stock Thickness      | Part Number          |         |
|--|---------------------------------------|-----------|--------|----------------------|----------------------|---------|
|  | AWG                                   | mm        |        |                      | Strip                | L.P.    |
| A<br>300 Box<br>Standard IDC<br>PCB Post | 33-31                                 | 0.18-0.23 | 6.78   | 0.25                 | 63565-1              | —       |
|  |                                       |           | 8.38   | 0.25                 | 62938-1              | 62934-1 |
|  |                                       |           | 6.78   | 0.30                 | 62938-2 <sup>3</sup> | —       |
|  | 30-28                                 | 0.25-0.32 | 6.78   | 0.30                 | 63160-1              | —       |
|  |                                       |           | 7.29   | 0.30                 | 63818-1              | —       |
|  |                                       |           | 8.38   | 0.30                 | 62430-1              | 62874-1 |
| 27-25                                    | 0.36-0.46                             | 8.38      | 0.30   | 62430-2 <sup>3</sup> | —                    |         |
|  |                                       | 8.38      | 0.30   | 62438-1              | —                    |         |
|  |                                       | 7.29      | 0.30   | 62438-2              | —                    |         |
| 24-22 <sup>2</sup>                       | 0.51-0.64                             | 7.29      | 0.30   | 63819-1              | —                    |         |
|  |                                       | 8.38      | 0.30   | 62439-1              | —                    |         |
|  |                                       | 8.38      | 0.30   | 62439-2 <sup>4</sup> | —                    |         |
|  |                                       |           |        |                      | 62439-3 <sup>3</sup> | —       |

- 1 Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- 2 Single magnet wire only.
- 3 Reverse reeled version of -1.
- 4 Finish is tin over nickel plated brass.

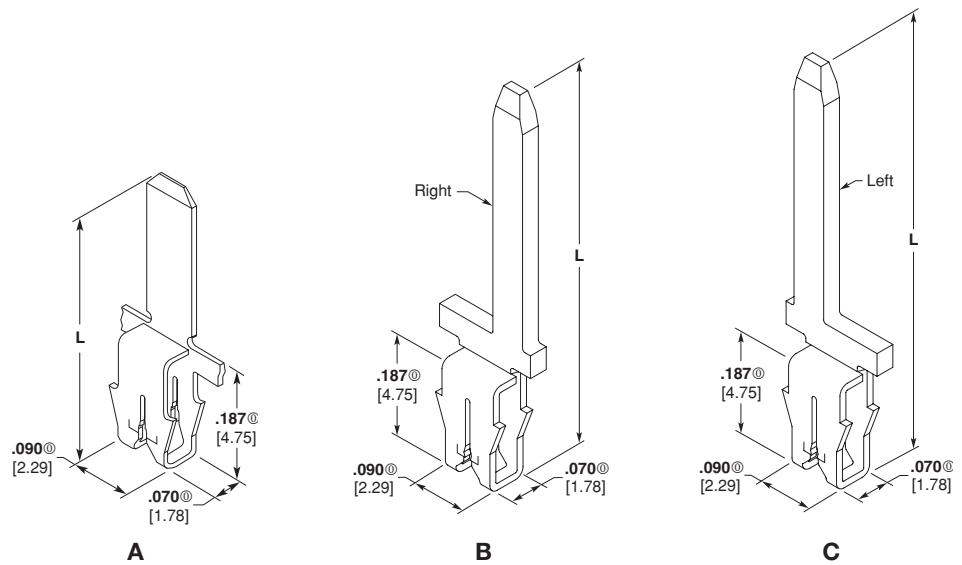
187 Box Tab Terminals

Material:

Tin plated brass, except when noted

Typical Cavity Size 1

(See page 26-2)



| Type   | Copper Magnet Wire Range <sup>1</sup> |           | Dim. L | Tab Size  | Stock Thickness |          | Part Number Strip      |
|--|---------------------------------------|-----------|--------|-----------|-----------------|----------|------------------------|
|  | AWG                                   | mm        |        |           | Tab Section     | Mag Wire |                        |
| A<br>187 Box<br>Standard IDC<br>Straight Tab   | 30-28                                 | 0.25-0.32 | 10.97  | 2.8 x 0.5 | 0.51            | 0.30     | 63702-1                |
|  | 29-27                                 | 0.29-0.36 | 10.97  | 2.8 x 0.5 | 0.51            | 0.30     | 1217196-1 <sup>3</sup> |
|  | 30                                    | 0.25      | 14.00  | 1.8 x 0.6 | 0.63            | 0.30     | 1217405-1              |
|  | 25-22 <sup>2</sup>                    | 0.46-0.64 | 17.78  | 1.5 x 0.8 | 0.81            | 0.30     | 1217013-1              |
| B<br>187 Box<br>Standard IDC<br>Offset Tab-R.H | 27-25                                 | 0.36-0.45 | 14.36  | 1.5 x 0.8 | 0.81            | 0.30     | 1217641-1              |
|  |                                       |           | 17.78  | 1.5 x 0.8 | 0.81            | 0.30     | 1217459-1              |
| C<br>187 Box<br>Standard IDC<br>Offset Tab-L.H | 27-25                                 | 0.36-0.45 | 14.36  | 1.5 x 0.8 | 0.81            | 0.30     | 1217642-1              |
|  |                                       |           | 17.78  | 1.5 x 0.8 | 0.81            | 0.30     | 1217460-1              |

- 1 Two magnet wires may be terminated in the same terminal if diameters are equal.
- 2 Single magnet wire only.
- 3 Finish is tin over nickel plated brass.

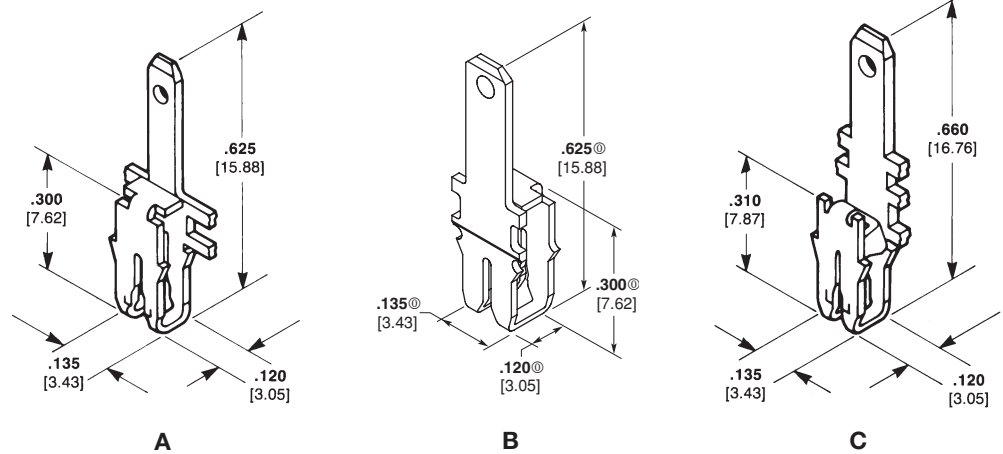
## Standard MAG-MATE Terminals (continued)

### 2.8 mm Series FASTON Tab Terminals

**Material:**  
Tin plated brass

**Typical Cavity Size 2**  
(See page 26-2)

**Note:**  
2.8 mm Tab Terminals mate with compatible FASTON receptacles.



| Type   | Copper Magnet Wire Range <sup>1</sup> |           | Tab Size  | Stock Thickness |          | Part Number          |                        |
|--|---------------------------------------|-----------|-----------|-----------------|----------|----------------------|------------------------|
|  | AWG                                   | mm        |           | Tab             | Mag Wire | Strip                | L.P.                   |
| <b>A<sup>5</sup></b><br>300 Box<br>Standard IDC<br>.110 [2.79]<br>Faston Tab | 30-27                                 | 0.25-0.36 | 2.8 x 0.5 | 0.51            | 0.30     | 63777-1              | —                      |
|  | 27-23                                 | 0.36-0.57 | 2.8 x 0.5 | 0.51            | 0.41     | 63746-1              | —                      |
|  | 23-20 <sup>2</sup>                    | 0.45-0.64 | 2.8 x 0.5 | 0.51            | 0.41     | 63486-1              | —                      |
|  | 19-17                                 | 0.91-1.15 | 2.8 x 0.5 | 0.51            | 0.51     | —                    | —                      |
| <b>B<sup>5,6</sup></b><br>300 Box<br>Single IDC Strain<br>w/ Relief Slot     | 27-23                                 | 0.36-0.57 | 2.8 x 0.5 | 0.51            | 0.41     | 63827-1              | —                      |
|  | 23.5-20 <sup>2</sup>                  | 0.54-0.81 | 2.8 x 0.5 | 0.51            | 0.41     | —                    | —                      |
| <b>C<sup>4,5</sup></b><br>Poke-In<br>Combination<br>Tab                      | 28-24                                 | 0.32-0.51 | 2.8 x 0.5 | 0.51            | 0.30     | 63062-1 <sup>3</sup> | 1217430-1 <sup>3</sup> |
|  | 25-22 <sup>2</sup>                    | 0.45-0.64 | 2.8 x 0.5 | 0.51            | 0.30     | 63063-1 <sup>3</sup> | —                      |
|  |                                       |           |           |                 |          | 63063-2              | —                      |

- 1 Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- 2 Single magnet wire only; 22 AWG [0.64 mm] or larger.
- 3 Varnish resist coating.
- 4 Poke-In feature accepts 20-18 AWG [0.5-0.8 mm 2] Solid or overcoated stranded lead wire or 90° Poke-In tab.
- 5 After insertion into plastic cavity, tab portion must be bent over 45°-90° or potted in to prevent pullout when mating receptacle is disconnected.
- 6 Strain relief slot for high vibration applications.

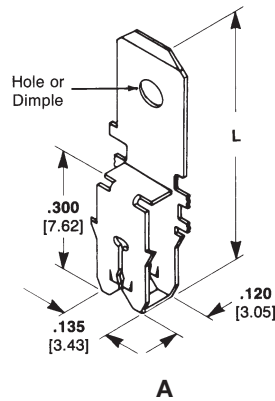


Standard MAG-MATE Terminals (continued)

4.8 mm Series  
FASTON Tab Terminals

**Material:**  
Tin plated brass

**Typical Cavity Sizes**  
(See page 26-2)  
Type A—Cavity Size 2



| Type   | Copper Magnet Wire Range <sup>1</sup> |           | Dim. L | Tab Feature | Tab Size  | Stock Thickness |                 | Part Number            |         |
|--|---------------------------------------|-----------|--------|-------------|-----------|-----------------|-----------------|------------------------|---------|
|  | AWG                                   | mm        |        |             |           | Tab Sect.       | Mag. Wire Sect. | Strip                  | L.P.    |
|  | 33-31                                 | 0.18-0.23 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.25            | 62513-1                | 62663-1 |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.30            | 63584-1                | —       |
|  | 30-27                                 | 0.25-0.36 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.30            | 62512-1                | —       |
|  |                                       |           |        | Dimple      | 4.8 x 0.8 | 0.81            | 0.30            | —                      | —       |
|  | 27-23                                 | 0.36-0.57 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | 62514-1                | 63852-1 |
|  |                                       |           |        | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | 62514-2 <sup>5</sup>   | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 63664-1 <sup>5</sup>   | —       |
|  |                                       |           |        | —           | 4.8 x 0.5 | 0.51            | 0.41            | 63664-2                | —       |
|  | 23                                    | 0.57      | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 63461-1                | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 1217243-1 <sup>6</sup> | —       |
| A <sup>4</sup><br>300 Box<br>Standard IDC<br>4.8 mm<br>Faston<br>Tab | 22-20 <sup>2</sup>                    | 0.64-0.81 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 63585-1                | —       |
|  |                                       |           |        | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | 62511-1                | 62661-1 |
|  |                                       |           |        | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | 62511-2 <sup>5</sup>   | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 63663-1 <sup>5</sup>   | —       |
|  | 21-19 <sup>3</sup><br>Aluminium       | 0.72-0.91 | 16.00  | Dimple      | 4.8 x 0.8 | 0.81            | 0.41            | 63663-2                | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.8 | 0.81            | 0.41            | 1217065-1              | —       |
|  | 20-18 <sup>2</sup>                    | 0.81-1.02 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | 1217128-1              | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | —                      | —       |
|  | 19-17 <sup>2</sup>                    | 0.91-1.15 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.51            | 62904-1 <sup>7</sup>   | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.51            | 63670-1                | —       |
|  | 18.5-16.5 <sup>3</sup><br>Aluminium   | 0.97-1.22 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.51            | 63273-1                | 63829-1 |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.51            | 63511-1 <sup>5</sup>   | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.51            | 63665-1 <sup>5</sup>   | —       |
|  |                                       |           |        | Dimple      | 4.8 x 0.5 | 0.51            | 0.41            | —                      | —       |
|  |                                       |           |        | Hole        | 4.8 x 0.5 | 0.51            | 0.41            | 63668-1                | —       |

- 1 Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- 2 Single magnet wire only.
- 3 Single aluminum magnet wire only.
- 4 After insertion into plastic cavity, tab portion must be bent over 45°-90° or potted in to prevent pullout when mating receptacle is disconnected.
- 5 Varnish resist coating.
- 6 Special wide body cut off for added stability.
- 7 Single bare copper wire only.

## Standard MAG-MATE Terminals (continued)

### 4.8 mm Series FASTON Tab Terminals (continued)

**Material:**  
Tin plated brass

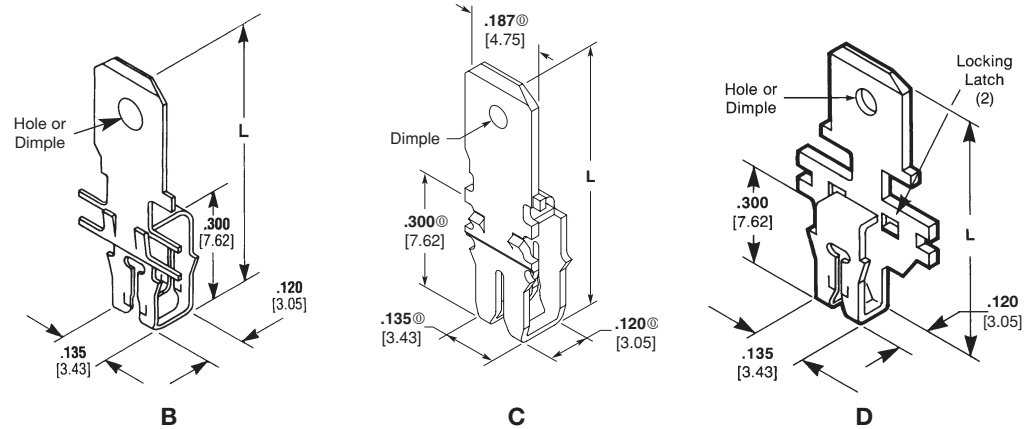
**Typical Cavity Sizes**

(See page 26-2)

Type B—Cavity Size 5

Type C—Cavity Size 5

Type D—Cavity Size 3



### 4.8 mm Series Combination Poke-In FASTON Terminals

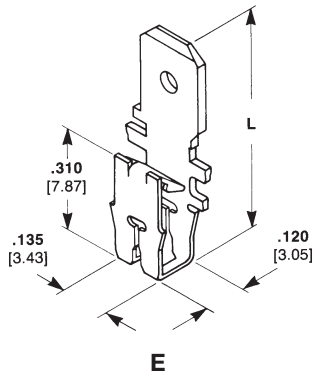
**Material:**  
Tin plated brass

**Typical Cavity Sizes**

(See page 26-2)

Type E—Cavity Size 2

Type F—Cavity Size 3



| Material  | Copper Magnet Wire Range <sup>1</sup> |           | Dim. L | Tab Feature | Tab Size  | Stock Thickness |                   | Part Number Strip               |
|---|---------------------------------------|-----------|--------|-------------|-----------|-----------------|-------------------|---------------------------------|
|   | AWG                                   | mm        |        |             |           | Tab Section     | Mag. Wire Section |                                 |
| B<br>300 Box<br>Standard IDC<br>Narrow Body<br>Latch Type | 27-23                                 | 0.36-0.57 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.41              | 63107-1                         |
|   |                                       |           |        | —           | 4.8 x 0.5 | 0.51            | 0.41              | 1217493-1                       |
|   | 23-20 <sup>2</sup>                    | 0.57-0.81 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.41              | 63340-1                         |
|   |                                       |           |        | —           | 4.8 x 0.5 | 0.51            | 0.41              | 1217493-1                       |
|   | 22-20 <sup>2</sup>                    | 0.64-0.81 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.41              | 63429-1<br>63429-2 <sup>6</sup> |
|   |                                       |           |        | —           | 4.8 x 0.5 | 0.51            | 0.41              | 62888-1<br>62888-2 <sup>6</sup> |
| 19-17 <sup>2</sup>  | 0.91-1.15                             | 16.00     | —      | 4.8 x 0.5   | 0.51      | 0.41            | 63782-1           |                                 |
| C<br>Narrow Body<br>Latch Type w/<br>Strain Relief Slot   | 23.5-20 <sup>2</sup>                  | 0.54-0.81 | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.41              | 1217004-1                       |
|   |                                       |           |        | —           | 4.8 x 0.5 | 0.51            | 0.25              | 63255-1                         |
| D<br>300 Box<br>Standard IDC<br>Wide Body<br>Latch Type   | 33-31                                 | 0.18-0.23 | 18.54  | Hole        | 4.8 x 0.5 | 0.51            | 0.25              | 63505-1                         |
|   |                                       |           | 16.00  | Dimple      | 4.8 x 0.5 | 0.51            | 0.25              | 63255-1                         |
|   | 31-28                                 | 0.23-0.32 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.30              | 63760-1                         |
|   |                                       |           |        | 30-27       | 0.25-0.36 | 18.54           | Hole              | 4.8 x 0.5                       |
| 27-23   | 0.36-0.57                             | 16.00     | Dimple | 4.8 x 0.5   | 0.51      | 0.41            | 63256-2           |                                 |
| E <sup>4,5</sup><br>Poke-In<br>Combination<br>Tab         | 33-31                                 | 0.81-0.23 | 16.00  | Hole        | 4.8 x 0.5 | 0.51            | 0.25              | 63018-1                         |

- Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- Single magnet wire only; 22 AWG [0.64 mm] or larger.
- Strain relief slot for high vibration applications.
- Poke-In feature accepts 20-18 AWG [0.5-0.8 mm<sup>2</sup>] solid, fused stranded lead wire or 90° poke-in tab terminal.
- After insertion into plastic cavity, tab portion must be bent over 45°-90° or potted in to prevent pullout when mating receptacle is disconnected.
- Splice free reeling.

Standard MAG-MATE Terminals (continued)

**4.8 mm Series  
FASTON Tab Terminals**

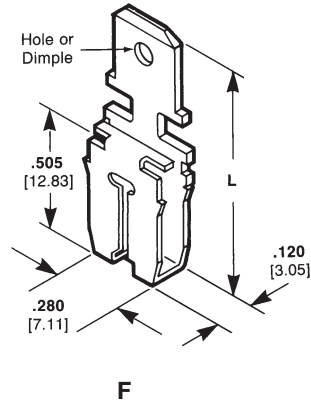
(continued)

**Material:**

Tin plated brass

**Typical Cavity Size 4**

(See page 26-2)




| Type                                      | Copper Magnet Wire Range <sup>1</sup> |           | Dim. L | Tab Feature | Tab Size  | Stock Thickness |                   | Part Number <sup>3</sup> |                      |
|---|---------------------------------------|-----------|--------|-------------|-----------|-----------------|-------------------|--------------------------|----------------------|
|   | AWG                                   | mm        |        |             |           | Tab Section     | Mag. Wire Section | Strip                    | L.P.                 |
| F <sup>3</sup><br>500 Box<br>Standard IDC | 22-20                                 | 0.64-0.81 | 21.08  | Dimple      | 4.8 x 0.5 | 0.51            | 0.51              | —                        | 63708-1 <sup>4</sup> |
|   | 19-17                                 | 0.91-1.15 | 21.08  | Hole        | 4.8 x 0.5 | 0.51            | 0.51              | 63643-1                  | —                    |
|   | 17.5-16                               | 1.09-1.29 | 21.08  | Hole        | 4.8 x 0.5 | 0.51            | 0.51              | 63667-1 <sup>4</sup>     | 63599-1 <sup>4</sup> |
|   |                                       |           |        | Hole        | 4.8 x 0.8 | 0.81            | 0.51              | 1217075-1                | —                    |
|   | 16-15                                 | 1.29-1.45 | 21.08  | Hole        | 4.8 x 0.5 | 0.51            | 0.51              | 63666-1 <sup>4</sup>     | —                    |
|   |                                       |           |        | Dimple      | 4.8 x 0.5 | 0.51            | 0.51              | 63353-1                  | —                    |
|   | 14.5-13 <sup>2</sup>                  | 1.54-1.83 | 21.08  | Dimple      | 4.8 x 0.5 | 0.51            | 0.41              | 63428-1                  | —                    |

- 1 Two magnet wires may be terminated in the same terminal slot if diameters are equal.
- 2 Single magnet wire only.
- 3 After insertion into plastic cavity, tab portion must be bent over 45-90° or potted in to prevent pullout when mating receptacle is disconnected.
- 4 Varnish resist coating.
- 5 Strain relief slot for high vibration applications.

Mini MAG-MATE Terminals

Technical Features

- Terminates all fine gauge magnet wire film insulations
- Eliminates need to pre-stripping conductors
- Eliminates need to post insulate termination
- Terminates 52-30 AWG [0.254-0.0198 mm] diameter copper magnet wire
- Poke-In leaf style accepts 22-18 AWG [0.3-0.9 mm] overcoated stranded or solid lead wire
- Available in strip form for semi-automatic or fully-automatic insertions
- Available in both open and closed cavity systems
- High speed, fully automated integrated systems provide uniform terminations reliability at the lowest possible applied cost
- Recognised under the Component Recognition Program of Underwriters Laboratories Inc, File No. E13288 



Applications

- Ignition coils
- Small motors
- Synchronist timers
- Electric meter coils
- Solenoids
- Relays

Tyco Electronics offer Mini MAG-MATE poke-in, crimp wire barrel, post and quick disconnect tab insulation displacement (IDC) terminals for fine gauge magnet wire terminations.

Mini MAG-MATE terminals are designed to terminate 52-30 AWG [0.254-0.198 mm] diameter copper magnet wire; poke-in leaf terminals accept 22-18 AWG [0.3-0.9 mm<sup>2</sup>] overcoated stranded or solid lead wire.

The terminal design uses the AMPLIVAR serrated burr technology to penetrate the film insulation of copper magnet wire.

Mini MAG-MATE cavity pockets, designed to Tyco Electronics specifications, include a wire receiving slot and wire tie-off post that is either integrated into coil bodies or specially designed cavity housings.

The magnet wire is wrapped around the tie-off post and placed across the cavity slot. After the coil is wound, the finish end of the magnet wire is dressed through the second cavity slot and tied to its tie-off post.

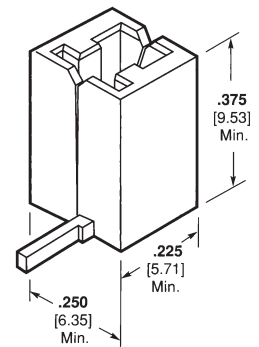
The Mini MAG-MATE Inserter shears the terminal from the carrier strip and insert the terminal into the cavity by a dual ram insertion mechanism.

As the unexpanded terminal approaches the bottom of the cavity the upper ram stops. The lower ram continues to push to a pre-scribed depth to expand the terminal and complete the termination process.

The fully seated terminal fits squarely into the cavity, while the serrated leg of the terminal cams against the pre-positioned magnet wire to penetrate the film insulation and provide a stable electrical termination.

Typical Plastic Cavity

Not for design, Tyco Electronics will supply required dimensions of cavity for each customer application.



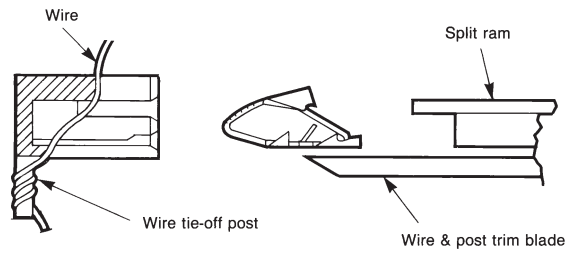
Reference Application Spec. 114-2047

Technical Documents

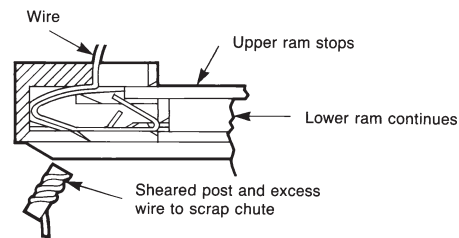
**Application Specifications** describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person. 114-2047 Mini MAG-MATE Terminals

## Mini MAG-MATE Terminals (continued)

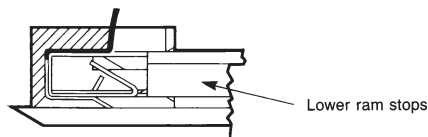
### Termination Sequence



Terminal Removed from Carrier



Terminal Inserted

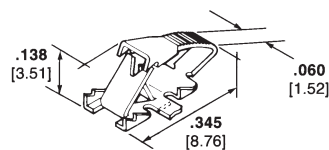


Termination Complete

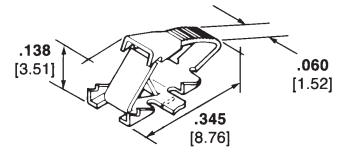
### Poke-In Tab Terminal

#### Material

.010 [0.25] tin plated brass



A



B

| Type                      | Copper Magnet Wire Range |           | Lead Wire Range <sup>1</sup> |                 | Mating Tab                 | Stock Thickness |               | Strip Part Number                              |
|---------------------------|--------------------------|-----------|------------------------------|-----------------|----------------------------|-----------------|---------------|--|
|                           | AWG                      | mm        | AWG                          | mm <sup>2</sup> |                            | Poke-In Beam    | Mag Wire      |  |
| A<br>Lead Wire<br>Poke-In | 52-42                    | 0.02-0.06 | 22-18                        | 0.3-0.9         | —                          | 0.010<br>0.25   | 0.010<br>0.25 | 62781-1  |
|                           | 44-36                    | 0.05-0.13 | 22-18                        | 0.3-0.9         | —                          | 0.010<br>0.25   | 0.010<br>0.25 | 62780-1  |
|                           | 38-30                    | 0.10-0.25 | 22-18                        | 0.3-0.9         | —                          | 0.010<br>0.25   | 0.010<br>0.25 | 62606-1  |
| B<br>Tab<br>Poke-In       | 52-42                    | 0.02-0.06 | —                            | —               | .050 x .020<br>1.27 x 0.51 | 0.010<br>0.25   | 0.010<br>0.25 | 63613-1 <sup>3</sup>                           |
|                           | 44-36                    | 0.05-0.13 | —                            | —               | .060 x .020<br>1.52 x 0.51 | 0.010<br>0.25   | 0.010<br>0.25 | 63795-1 <sup>2</sup><br>63845-1 <sup>2,3</sup> |
|                           | 38-30                    | 0.10-0.25 | —                            | —               | .060 x .020<br>1.52 x 0.51 | 0.010<br>0.25   | 0.010<br>0.25 | 63844-1 <sup>2,3</sup>                         |

<sup>1</sup> Solid or overcoated stranded lead wire only.

<sup>2</sup> Radius on beam leaf tip.

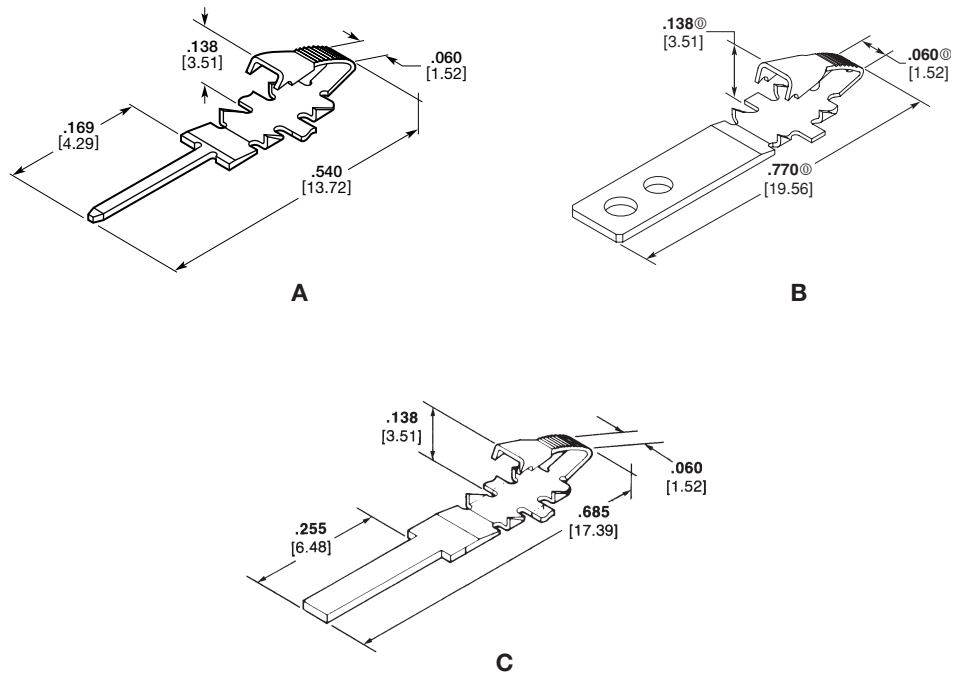
<sup>3</sup> Finish is select gold plated on lead tip.

## Mini MAG-MATE Terminals (continued)

### Posted Terminal

#### Material

Tin over premilled brass



| Type                | Copper Magnet Wire Range |           | Post Size                  | Stock Thickness |              | Strip Part Number |
|---------------------|--------------------------|-----------|----------------------------|-----------------|--------------|-------------------|
|                     | AWG                      | mm        |                            | Post            | Mag Wire     |                   |
| A<br>PCB Post       | 44-36                    | 0.05-0.13 | .024 x .020<br>0.62 x 0.51 | .020<br>0.51    | .010<br>0.25 | 1217804-1†        |
|                     | 38-30                    | 0.10-0.25 | .024 x .020<br>0.62 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63675-4           |
| B<br>Solder Post    | 44-36                    | 0.05-0.13 | .150 x .020<br>3.81 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63955-1           |
|                     | 38-30                    | 0.10-0.25 | .150 x .020<br>3.81 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63956-1           |
| C<br>Wire Wrap Post | 38-30                    | 0.10-0.25 | .070 x .020<br>1.78 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63041-1           |

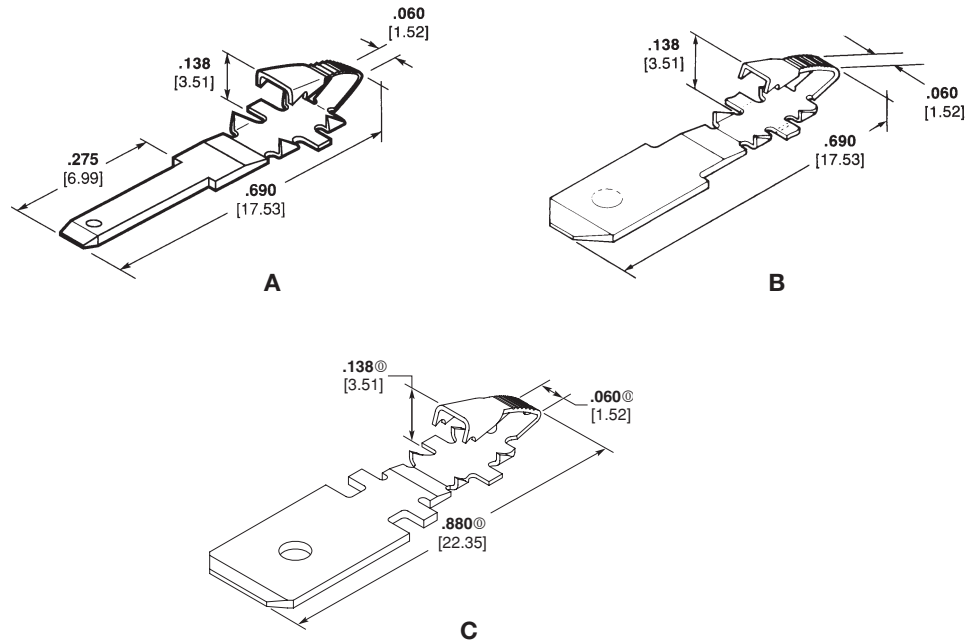
† These part numbers are available upon special request; contact Tyco Electronics Engineering for details.

## Mini MAG-MATE Terminals (continued)

### FASTON Tab Terminals

#### Material

Tin over premilled brass

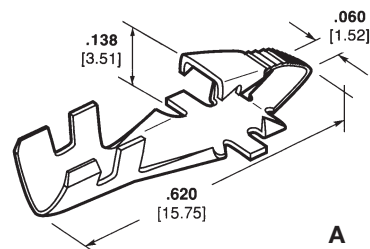


| Type                           | Copper Magnet Wire Range |           | Tab Size                   | Stock Thickness |              | Strip Part Number    |
|--------------------------------|--------------------------|-----------|----------------------------|-----------------|--------------|----------------------|
|                                | AWG                      | mm        |                            | Post            | Mag Wire     |                      |
| A<br>.110 [2.79]<br>FASTON Tab | 38-30                    | 0.10-0.25 | .110 x .020<br>2.79 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63161-1              |
|                                | 44-36                    | 0.05-0.13 | .187 x .020<br>4.75 x 0.51 | .020<br>0.51    | .010<br>0.25 | 63778-1              |
| B<br>.187 [4.75]<br>FASTON Tab | 38-30                    | 0.10-0.25 | .187 x .020<br>4.75 x 0.51 | .020<br>0.51    | .010<br>0.25 | 62816-1<br>1217529-1 |
|                                | 44-36                    | 0.05-0.13 | .250 x .032<br>6.35 x 0.81 | .032<br>0.81    | .010<br>0.25 | 1217000-1            |
| C<br>.250 [6.35]<br>FASTON Tab | 38-30                    | 0.10-0.25 | .250 x .032<br>6.35 x 0.81 | .032<br>0.81    | .010<br>0.25 | 63999-1              |

### Crimp Wire Barrel Terminal

#### Material

Tin plated brass



| Type                         | Copper Magnet Wire Range |           | Lead Wire Range |                 | Stock Thickness |               | Strip Part Number                              |
|------------------------------|--------------------------|-----------|-----------------|-----------------|-----------------|---------------|--|
|                              | AWG                      | mm        | AWG             | mm <sup>2</sup> | Crimp Barrel    | Mag Wire      |  |
| A<br>Crimp<br>Wire<br>Barrel | 52-42                    | 0.02-0.06 | 26-22           | 0.12-0.30       | 0.010<br>0.25   | 0.010<br>0.25 | 63828-1  |
|                              | 44-36                    | 0.05-0.13 | 26-22           | 0.12-0.30       | 0.010<br>0.25   | 0.010<br>0.25 | 1217830-1 <sup>1,†</sup>                       |
|                              | 38-30                    | 0.10-0.25 | 22-18           | 0.3-0.9         | 0.010<br>0.25   | 0.010<br>0.25 | 63199-1 <sup>1</sup><br>1217231-1 <sup>†</sup> |


<sup>1</sup> Wire and insulation barrel reversed so lead wire exits over magnet wire termination area.

<sup>†</sup> These part numbers are available upon special request; contact Tyco Electronics Engineering for details.



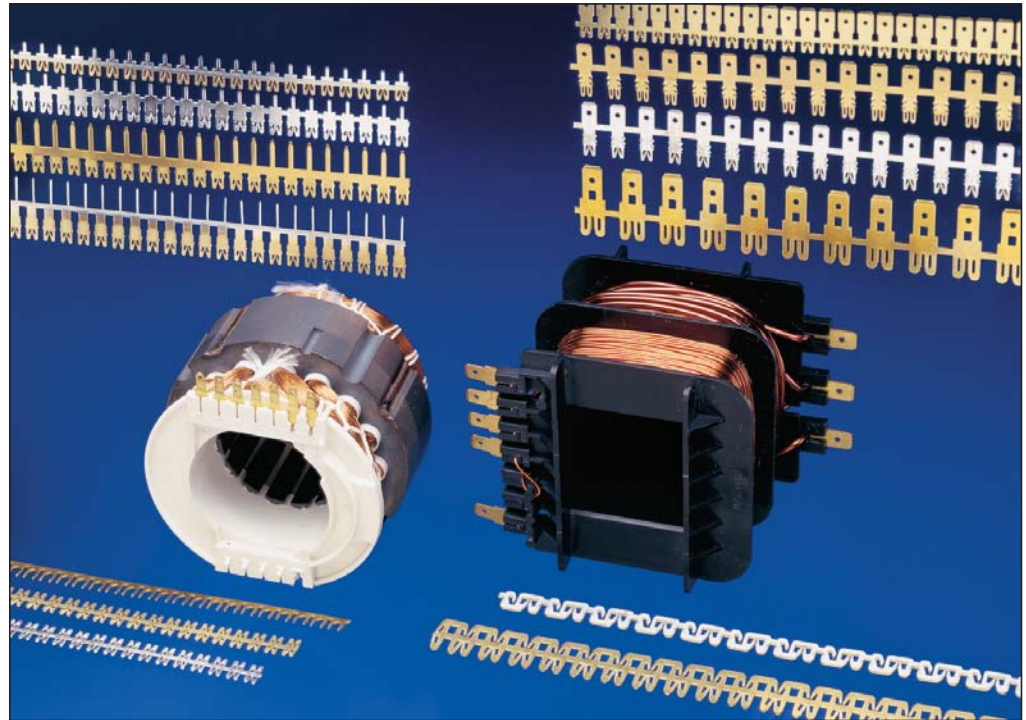
## SIAMEZE Terminals

### Technical Features

- Terminates all copper magnet wire film insulations
- Eliminates need for pre-stripping conductors
- Moving Beam contact design connects a wide range of magnet wire sizes with a single terminal
- Standard range terminals connect 34-18 AWG [0.16-1.0 mm] magnet wire
- Fine range terminals connect 36-27 AWG [0.13-0.38 mm] magnet wire
- Medium range terminals connect 23-12 AWG [0.56-2.03 mm] magnet wire
- Excess magnet wire is automatically trimmed during the termination process
- Available in strip form for semi-automatic or fully-automatic insertions
- Loose piece terminals available for hand tool insertions
- High-speed automatic coil winding machine terminations provide uniform reliability at the lowest possible applied cost
- Clean metal-to-metal interface produces stable, gas-tight electrical terminations free of oxides and other contaminants
- Recognised under the Component Program of Underwriters Laboratories Inc.,  File No. E13288

### Applications

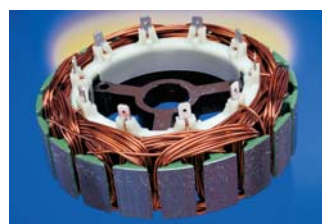
- Motor windings and connections
- Coil connections
- Transformer windings and connections
- Ballasts
- Power supplies
- Solenoids
- Actuators



Tyco Electronics offers a full selection of AMP SIAMEZE insulation displacement (IDC) terminals for interconnecting copper magnet wires, lead wires, and other components.

The AMP SIAMEZE insulation displacement (IDC) technology eliminates the need to strip the film insulation from copper magnet wires and lead wires. Terminals are available in wire-to-wire, Lead Lok, quick disconnect tabs, posts, pin and receptacle terminals.

Standard Range SIAMEZE terminals terminate 34-18 AWG [0.16-1.0 mm] copper magnet wires.



Fine Range SIAMEZE terminals terminate 36-27 AWG [0.13-0.38 mm] copper magnet wires. Medium Range and Heavy Range SIAMEZE terminals terminate 23-12 AWG [0.56-2.03 mm] copper magnet wires.

Available with either Moving Beam contacts whereby a single terminal connects to a very wide range of magnet wire sizes, or a Compliant Beam for contacting two magnet wires of the same diameter in one terminal for splicing or bi-filar applications.

According to Tyco Electronics specifications SIAMEZE cavities are either integrated into coil bodies or specially designed cavity housings. The magnet wires are positioned in the "U" shaped slots.

The SIAMEZE Inserter cuts the terminals from the strip and places the terminals over the

magnet wire into the plastic cavities. During this operation the small stripping devices penetrate the film insulation from the magnet wire.

Residual spring energy in the terminal causes the side walls of the IDC slot to function as opposing cantilever beams. This constant pressure results in an intimate metal-to-metal interface, providing a reliable, long-term connection.

The wiping action between the wire and terminals remove all oxides or other contaminants present on both the conductor and the terminal slot side walls, producing a clean, stable, gas-tight electrical termination.

The AMP SIAMEZE Inserter may be used as a semi-automatic bench machine or integrated in production lines for fully-automatic applications.



SIAMEZE Terminals (continued)

Typical Plastic Cavity – Pockets

**Note:** SIAMEZE typical plastic cavities are not for design; Tyco Electronics will supply required dimensions of cavity for each customer application.

Plastic cavities, designed to Tyco Electronics specifications, may be molded as part of the coil bobbin or attached to a lamination stack in the area of the magnet wire coil.

Each cavity is a rectangular box with two narrow slots on opposing walls and a plastic cutoff or tie-off post.

During or after the winding process, the magnet wire is placed across the plastic cavities and into the slots, either manually or by coil winding equipment.

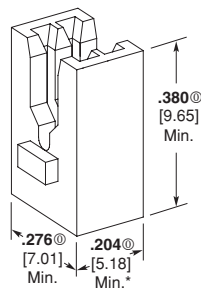
Unraveling is prevented by a slight friction fit, suitable bend or by wrapping the magnet wire around the tie off post.

During insertion, the insulation displacing terminal slot strip the film insulation from the magnet wire producing a stable electrical termination.

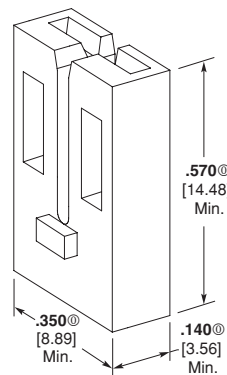
Terminal retention is retained in the plastic cavities by single or multiple locking barbs or locking latches for large quick disconnect FASTON tab terminals.

Excess magnet wire is trimmed flush with the outside of the plastic cavity by a shear blade travelling with the terminal insertion ram.

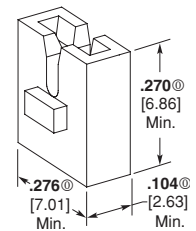
**Tyco Electronics can provide design and mold engineering resources to manufacture most specifically designed SIAMEZE cavity housings.**



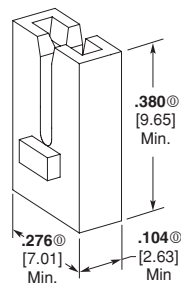
Cavity Part Number 1601421



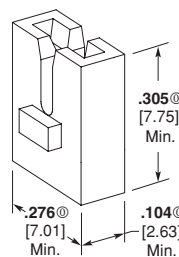
Cavity Part Number 1601423



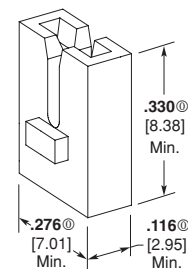
Cavity Part Number 1601424



Cavity Part Number 1601425



Cavity Part Number 1601427

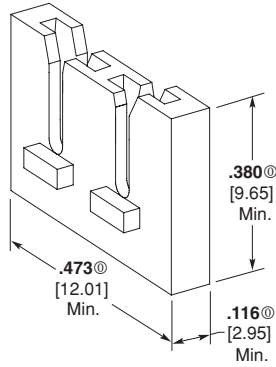


Cavity Part Number 1601431

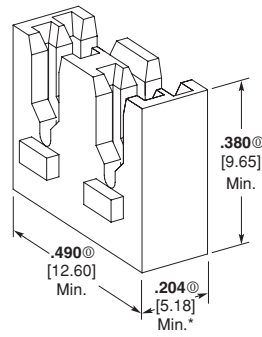
\* Minimum dimension with Lead Lok slot.

SIAMEZE Terminals (continued)

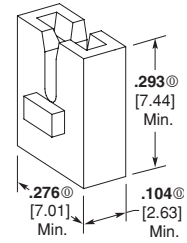
**Typical Plastic Cavity – Pockets**  
(continued)



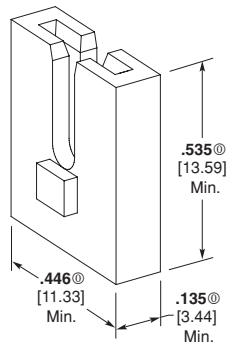
Cavity Part Number 1601432



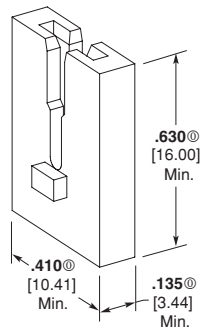
Cavity Part Number 1601433



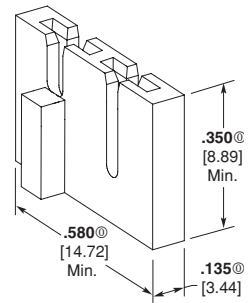
Cavity Part Number 1601434



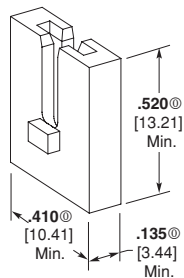
Cavity Part Number 1601435



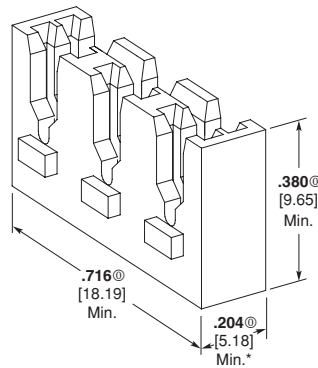
Cavity Part Number 1601436



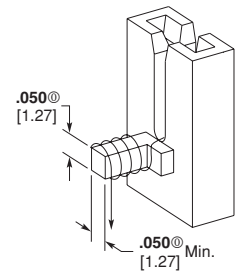
Cavity Part Number 1601437



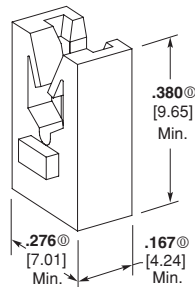
Cavity Part Number 1601438



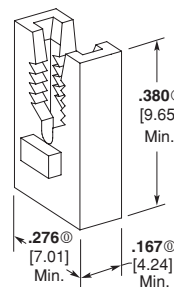
Cavity Part Number 1601440



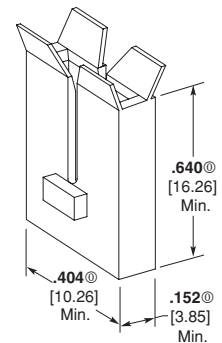
Cavity Part Number 1601447



Cavity Part Number 1601462



Cavity Part Number 1601463



Cavity Part Number 1601470

\* Minimum dimension with Lead Lok slot.

SIAMEZE Terminals (continued)

**SIAMEZE Interconnection System**

**How the System Operates**

**1 Trim Blade**

The trim blade cuts the excess magnet wire and the wire cutoff block at the front of the cavity.

**2 Terminal Insertion Finger**

The terminal insertion finger is part of the SIAMEZE Inserter. It pushes the terminal that was sheared from the carrier strip through the "tube" into the cavity.

**3 Contact**

Various wire attachments in standard, fine, medium and heavy-duty terminals are available (see tables).

**4 IDC Slot**

The IDC slot in the terminal will terminate a wide range of magnet wire sizes.

**5 Stripping Burrs**

During the insertion process, these burrs strip the film insulation from the magnet wire.

**6 Locking Barbs**

Terminal retention is provided in the cavity by single or multiple locking barbs.

**7 Plastic Cavity**

Production has to be in accordance with Tyco Electronics specifications (for cavity drawing numbers see tables).

**Consulting Tyco Electronics is required for design in.**

**8 Cavity Slot for Wire**

The width has to be in accordance with the wire size (see cavity drawings).

**9 Magnet Wire**

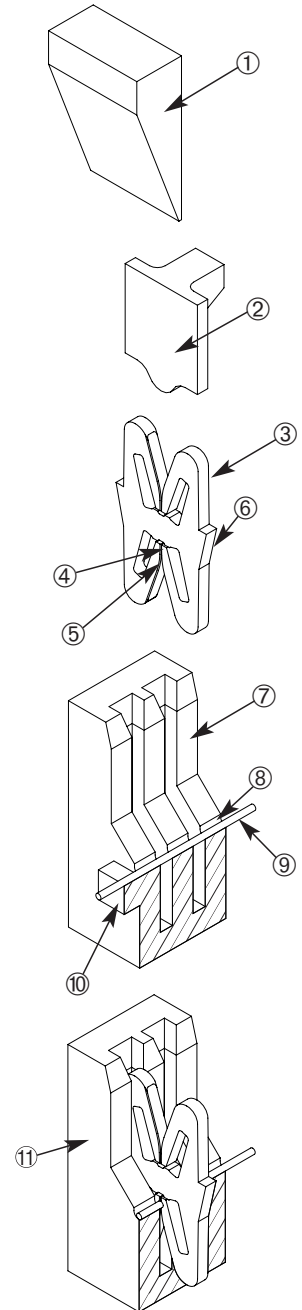
The magnet wire is positioned in "U" slot manually or automatically by coil winding equipment.

**10 Wire Cutoff Block**

The wire cutoff block supports the magnet wire during the trimming process. The magnet wire is cut plain to the cavity front side.

**11 Terminal Insertion Complete**

The magnet wire termination is complete when the terminal is fully seated in the cavity.



**Test Results**

**Standard Range SIAMEZE** products have been submitted to the following tests without significant millivolt increase:

**Current Cycling**  
50 cycles with each cycle consisting of 15 minutes "ON" followed by 15 minutes "OFF"

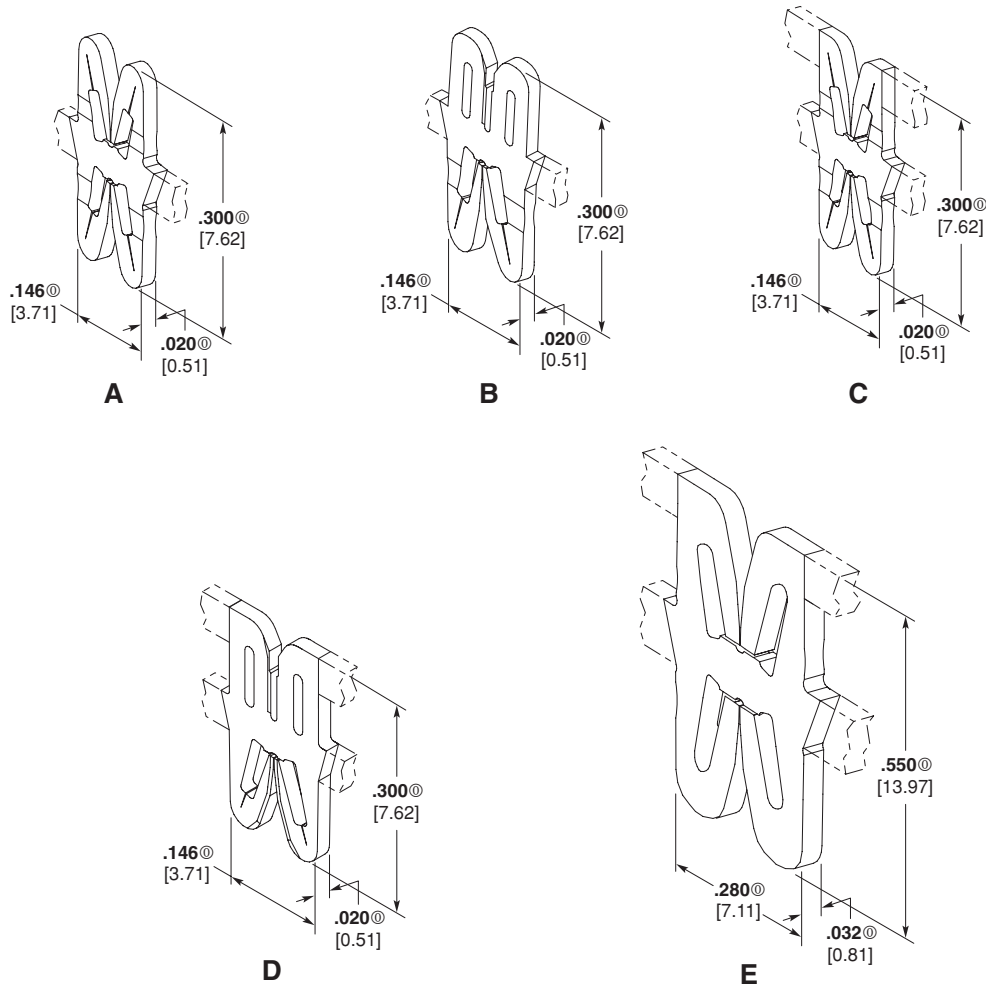
**Thermal Shock**  
10 cycles with each cycle consisting of 30 minutes at 150°C followed by 30 minutes at 21°C

**Humidity Temperature Cycling**  
10 cycles between 25°C and 65°C at 80 to 100% RH

## SIAMEZE Terminals (continued)

### Wire-to-Wire Terminals

**Material:**  
Brass



| Type                            | Recommended Pocket <sup>7</sup> | Copper Magnet Wire Range |                 | Lead Wire Range    |                 | Part Number              |                          |
|---------------------------------|---------------------------------|--------------------------|-----------------|--------------------|-----------------|--------------------------|--------------------------|
|                                 |                                 | AWG                      | mm <sup>2</sup> | AWG                | mm <sup>2</sup> | Reeled                   | Loose                    |
| <b>A</b><br>Moving Beam         | 1601421                         | 27-26                    | 0.36-0.13       | 18-22 <sup>6</sup> | 0.8-0.3         | 1601117-1                | 4-1601117-1 <sup>2</sup> |
|                                 | 1601462                         |                          |                 |                    |                 | 2-1601117-1 <sup>1</sup> |                          |
|                                 | 1601463                         | 18-34                    | 1.02-0.16       | 18-22 <sup>6</sup> | 0.8-0.3         | 1601000-1                | 4-1601000-1 <sup>2</sup> |
| <b>B</b><br>Wire Specific       | 1601421                         | 18-34                    | 1.02-0.16       | 20                 | 0.5             | 1601056-1                | 4-1601056-1 <sup>2</sup> |
|                                 |                                 |                          |                 |                    |                 | 2-1601056-1 <sup>1</sup> |                          |
|                                 |                                 | 18-34                    | 1.02-0.16       | 18                 | 0.8             | 1601074-1                | 4-1601074-1 <sup>2</sup> |
| <b>C</b><br>High Carry          | 1601433                         | 18-34                    | 1.02-0.16       | 18-22 <sup>6</sup> | 0.8-0.3         | 1601046-1                | 4-1601046-1 <sup>2</sup> |
|                                 | 1601440                         |                          |                 |                    |                 | 2-1601046-1 <sup>1</sup> | 6-1601046-1 <sup>3</sup> |
|                                 |                                 |                          |                 |                    |                 |                          | 8-1601046-1 <sup>4</sup> |
| <b>D</b><br>High Carry Specific | 1601433                         | 27-36                    | 0.36-0.13       | 20                 | 0.5             | 1601125-1                | 4-1601125-1 <sup>2</sup> |
|                                 |                                 |                          |                 |                    |                 | 2-1601125-1 <sup>1</sup> | 6-1601125-1 <sup>3</sup> |
| <b>E</b><br>Medium Range        | 1601436                         | 12-23                    | 2.06-0.56       | 16-20              | 1.3-0.5         | 1601136-1                | 4-1601136-1 <sup>2</sup> |
|                                 |                                 |                          |                 |                    |                 | 2-1601136-1 <sup>1</sup> | 6-1601136-1 <sup>3</sup> |

- 1 Reversed Reeled—Consult Tyco Electronics drawing for orientation.
- 2 Loose Single.
- 3 Loose Bussed Pair.
- 4 Loose Bussed Triple.
- 5 Finish is Post Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).
- 6 Lead wire may be stranded, solid or bonded with 105°C PVC insulation. Contact Tyco Electronics Engineering when using other types of insulation.
- 7 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

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**Engineering Notes**

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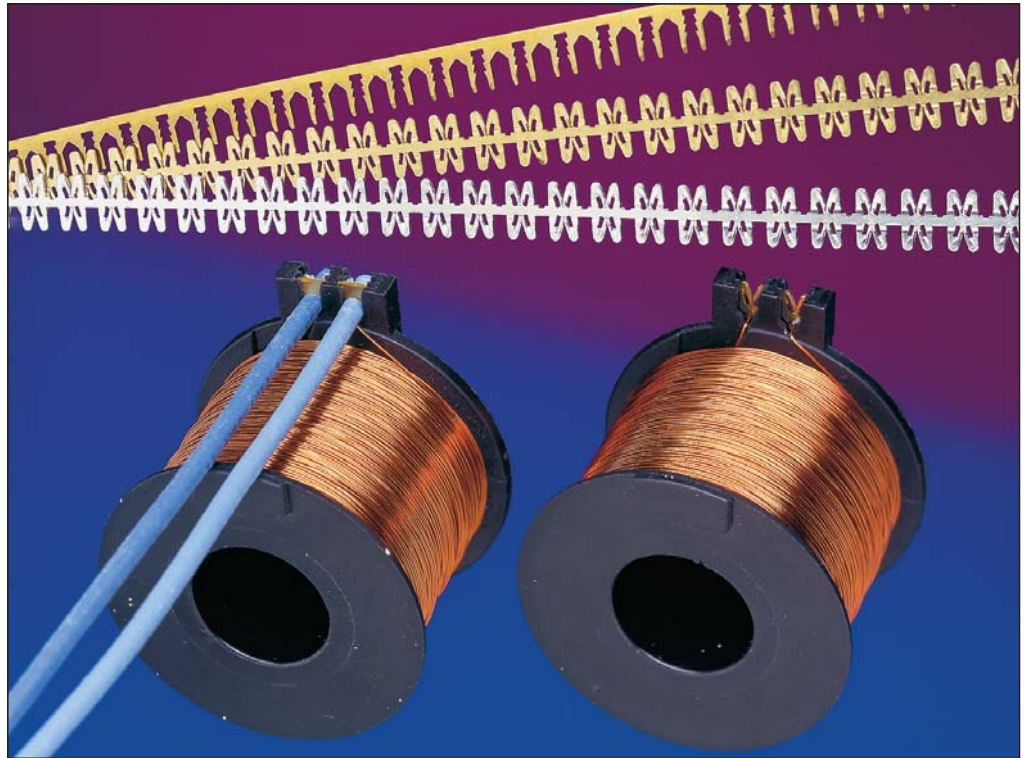


SIAMEZE Terminals

Lead Lok Terminals

Technical Features

- Provides perpendicular and parallel lead wire strain relief retention forces in excess of 20 lbs.
- AMP Inserter automatically positions and secures lead wire during insertion
- Manual, semi-automated, fully automated systems allow for lead wire termination
- Accepts #18–#22 AWG [0.3 mm<sup>2</sup>–0.8 mm<sup>2</sup>] solid or stranded lead wire with .115 [2.92 mm] max. insulation diameter
- No lead wire stripping required



Tyco Electronics features the AMP Lead Lok strain relief terminal system that provides optimum lead wire retention when used in conjunction with SIAMEZE insulation displacement terminals.

After the one-step insertion of AMP SIAMEZE wire-to-wire terminals into Tyco Electronics specified plastic cavities, the application is ready for the secondary lead wire attachment.

The lead wire is manually positioned over the magnet wire terminated SIAMEZE wire-to-wire terminal.

The AMP Lead Lok Inserter cuts the Lead Lok terminals from the strip and places the terminal over the lead wire in the plastic cavities.

During this operation, the lead wire is automatically seated, the insulation pierced and the exposed solid or stranded conductor is terminated in the IDC slot of the SIAMEZE wire-to-wire terminal.

Residual spring energy in the terminal causes the side walls of the IDC slot to function as opposing cantilever beams.

This constant pressure results in an intimate metal-to-metal interface, providing a reliable, long-term connection.

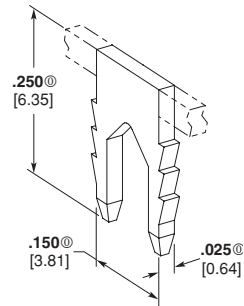
Perpendicular and parallel lead wire strain relief retention forces in excess of 20 lbs are achieved.

The AMP Lead Lok Inserter may be a secondary station in the AMP SIAMEZE wire-to-wire semi-automatic bench machine or a separate semi-automatic bench machine inserter depending on the application and required production rates.

SIAMEZE Terminals (continued)

Lead Lok Interconnection System

How the System Operates

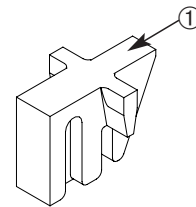


| Type          | Recommended Pocket | Lead Wire Range    |                 | Part Number              |             |
|---------------|--------------------|--------------------|-----------------|--------------------------|-------------|
|               |                    | AWG                | mm <sup>2</sup> | Reeled                   | Loose       |
| A<br>Lead Lok | 1601421            | 18-22 <sup>2</sup> | 0.8-0.3         | 2-1601140-1              | 4-1601140-1 |
|               | 1601433            |                    |                 | 2-1601140-1 <sup>1</sup> |             |
|               | 1601440            |                    |                 |                          |             |

- 1 Reverse Reeled – Consult Tyco Electronics drawing for orientation.
- 2 Lead wire may be stranded, solid or bonded with 105°C PVC insulation. Contact Tyco Electronics Engineering when using other types of insulation.

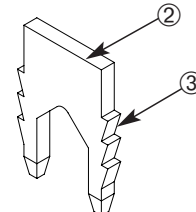
**1 Lead Lok Insertion Finger**

The Lead Lok insertion finger pushes the Lead Lok that was sheared from the carrier strip and positions the Lead Lok and lead wire into the IDC slot.



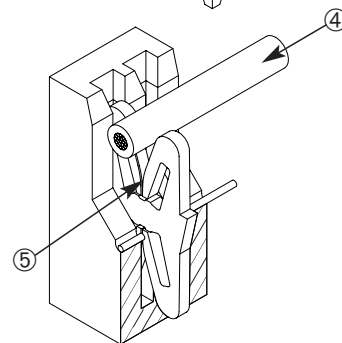
**2 Lead Lok Terminal**

The Lead Lok terminal provides maximum lead wire retention in the cavity.



**3 Locking Barbs**

The Lead Lok multiple locking barbs provide retention in the cavity.



**4 Lead Wire**

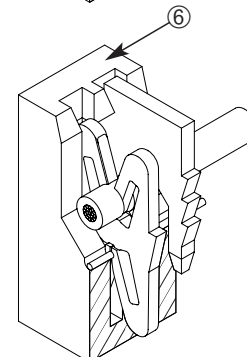
Stranded, solid and bonded lead wire with 105 °C PVC insulation can be used. Contact Tyco Electronics Engineering for other lead wires and insulation under consideration.

**5 IDC Slot**

The IDC slot will pierce the lead wire during insertion.

**6 Lead Wire Insertion Complete**

The lead wire termination is complete when the Lead Lok is fully seated in the cavity.

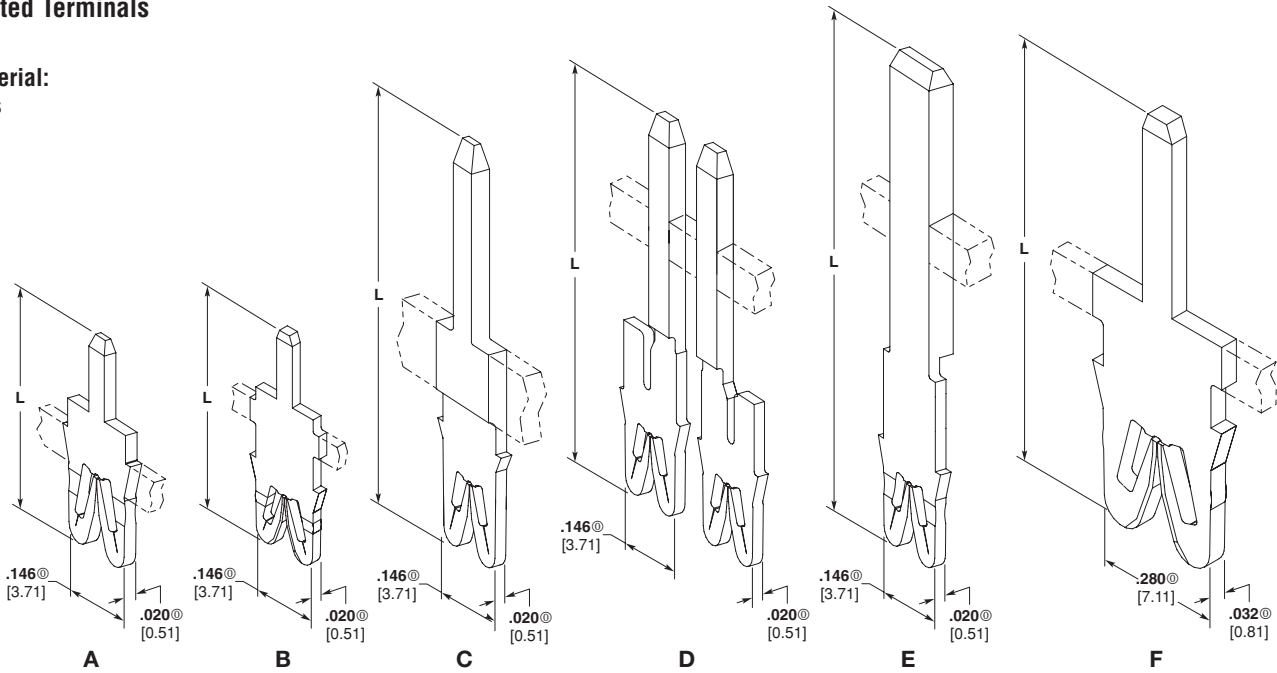




## SIAMEZE Terminals (continued)

### Posted Terminals

**Material:**  
Brass



| Type                                   | Recommended Pocket | Copper Magnet Wire Range |                 | Dim. L                        | Tab Size  | Part Number  |                          |
|--|--------------------|--------------------------|-----------------|-------------------------------|-----------|--|--------------------------|
|  |                    | AWG                      | mm <sup>2</sup> |                               |           | Reeled   | Loose                    |
| A<br>PC Tab                            | 1601424            | 27-36                    | 0.36-0.13       | 8.76                          | 1.0 x 0.5 | 1601120-2 <sup>3</sup><br>2-1601120-2 <sup>1,3</sup> | 4-1601120-2 <sup>3</sup> |
|  |                    | 18-34                    | 1.02-0.16       | 8.76                          | 1.0 x 0.5 | 1601009-2 <sup>2</sup><br>2-1601009-2 <sup>1,2</sup> | 4-1601009-2 <sup>2</sup> |
|  |                    | 16-17 <sup>6</sup>       | 1.27-1.15       | 8.76                          | 1.0 x 0.5 | 1601147-2 <sup>3</sup><br>2-1601147-2 <sup>1,3</sup> | 4-1601147-2 <sup>3</sup> |
|  |                    | 29 <sup>6</sup>          | 0.29            | 8.76                          | 1.0 x 0.5 | 1601155-2 <sup>2</sup><br>2-1601155-2 <sup>1,2</sup> | 4-1601155-2 <sup>2</sup> |
| B<br>Extended PC Tab                   | 1601425            | 27-36                    | 0.36-0.13       | 12.32                         | 1.0 x 0.5 | 1601128-2 <sup>3</sup><br>2-1601128-2 <sup>1,3</sup> | 4-1601128-2 <sup>3</sup> |
|  |                    | 18-34                    | 1.02-0.16       | 12.32                         | 1.0 x 0.5 | 1601041-2 <sup>2</sup><br>2-1601041-2 <sup>1,2</sup> | 4-1601041-2 <sup>2</sup> |
|  |                    |                          |                 | 11.57                         | 1.0 x 0.5 | 1601095-2 <sup>4</sup><br>2-1601095-2 <sup>1,4</sup> | 4-1601095-2 <sup>4</sup> |
| C<br>Long Narrow Width Blade           | 1601431            | 18-34                    | 1.02-0.16       | 19.16                         | 1.2 x 0.8 | 1601110-2 <sup>4</sup><br>2-1601110-2 <sup>1,4</sup> | 4-1601110-2 <sup>4</sup> |
|  |                    |                          |                 | 17.00                         | 1.5 x 0.8 | 1601099-1<br>2-1601099-1 <sup>1</sup>                | 4-1601099-1              |
|  |                    |                          |                 | 19.21                         | 1.5 x 0.8 | 1601063-2 <sup>5</sup><br>2-1601063-2 <sup>1,5</sup> | 4-1601063-2 <sup>5</sup> |
|  |                    |                          |                 | 22.96                         | 1.5 x 0.8 | 1601037-2 <sup>5</sup><br>2-1601037-2 <sup>1,5</sup> | 4-1601037-2 <sup>5</sup> |
|  |                    |                          |                 | 25.53                         | 1.5 x 0.8 | 1601066-2 <sup>4</sup><br>2-1601066-2 <sup>1,4</sup> | 4-1601066-2 <sup>4</sup> |
|  |                    |                          |                 | 24.74                         | 1.8 x 0.6 | 1601104-2 <sup>5</sup><br>2-1601104-2 <sup>1,5</sup> | 4-1601104-2 <sup>5</sup> |
|  |                    |                          |                 | D<br>Tab Pair with Diode Slot | 1601425   | 27-36  | 0.36-0.13                |
| 18-34                                  | 1.02-0.16          | 18.03                    | 1.5 x 0.8       |                               |           | 1601065-2 <sup>4</sup><br>2-1601065-2 <sup>1,4</sup> | —                        |
| E<br>Long Medium Width Blade           | 1601425            | 18-34                    | 1.02-0.16       | 21.26                         | 3.0 x 0.5 | 1601008-2 <sup>4</sup><br>2-1601008-2 <sup>1,4</sup> | 4-1601008-2 <sup>4</sup> |
|  |                    |                          |                 | 21.26                         | 3.0 x 0.8 | 1601051-2 <sup>4</sup><br>2-1601051-2 <sup>1,4</sup> | 4-1601051-2 <sup>4</sup> |
| F<br>Long Medium Blade<br>Medium Range | 1601438            | 12-23                    | 0.56-2.06       | 22.15                         | 3.3 x 0.8 | 1601138-1  | 4-1601138-1              |
|  |                    |                          |                 |                               |           | 2-1601138-1 <sup>1</sup>                             |                          |

1 Reverse Reeled – Consult Tyco Electronics drawing for orientation.  
 2 Finish is Post Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).  
 3 Finish is Post Plated Tin over Nickel (Consult Tyco Electronics drawing for specifics).  
 4 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).

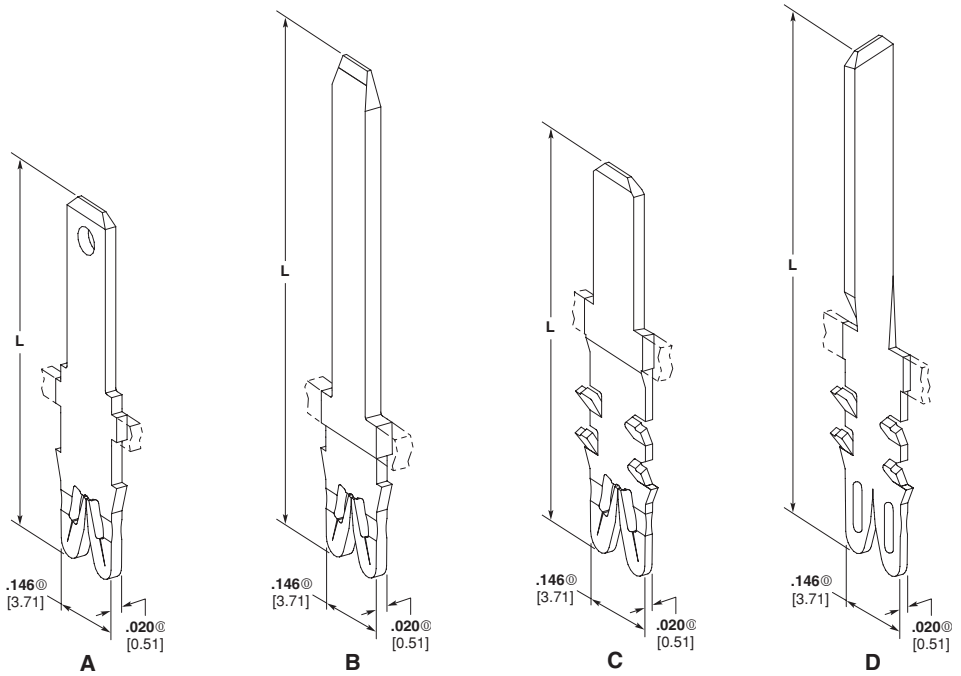
5 Finish is Pre-Plated Tin (Consult Tyco Electronics drawing for specifics).  
 6 Two magnet wires may be terminated in the same slot if diameters are equal.  
 7 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.



SIAMEZE Terminals (continued)

2.8 mm Series  
FASTON Tab Terminals

Material:  
Brass



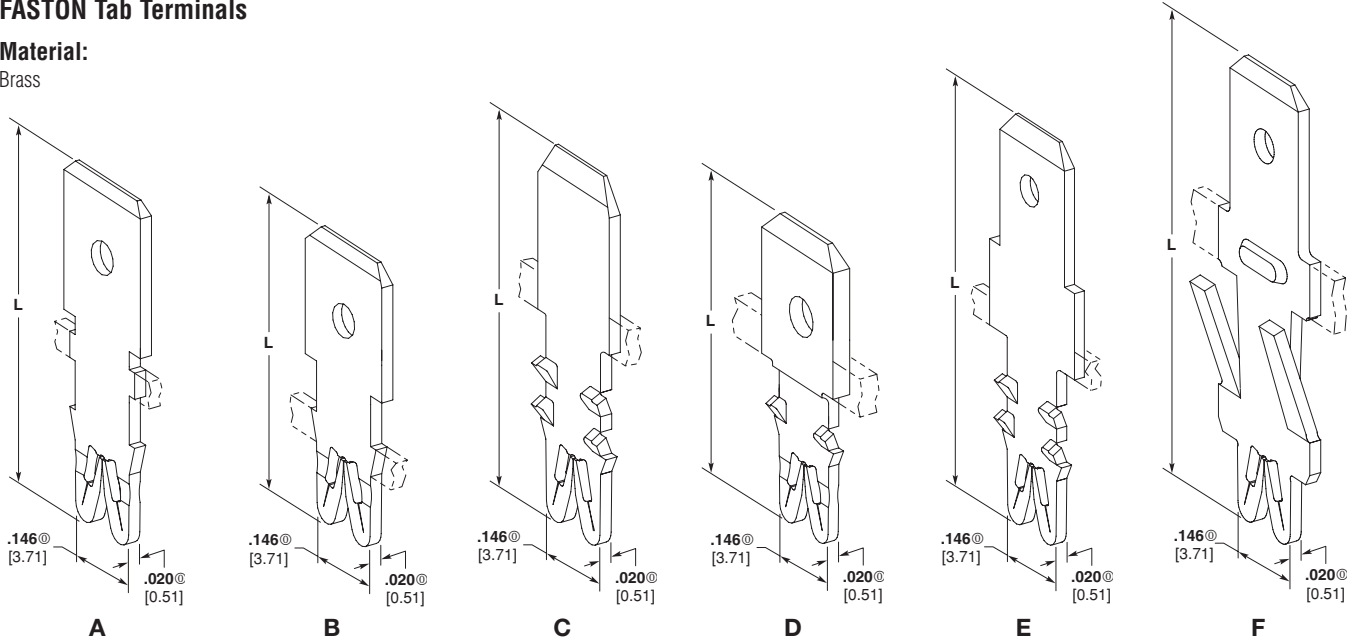
| Type                               | Recommended Pocket <sup>7</sup> | Copper Magnet Wire Range |                 | Dim. L    | Tab Feature | Tab Size                     | Part Number                |                              |                          |
|------------------------------------|---------------------------------|--------------------------|-----------------|-----------|-------------|------------------------------|----------------------------|------------------------------|--------------------------|
|                                    |                                 | AWG                      | mm <sup>2</sup> |           |             |                              | Reeled                     | Loose                        |                          |
| A<br>Single Barb                   | 1601425                         | 27-36                    | 0.36-0.13       | 16.26     | 1601116-1   | 2.8 x 0.5                    | 2-1601116-1 <sup>1</sup>   | 4-1601116-1                  |                          |
|                                    |                                 | 18-34                    | 1.02-0.16       | 16.26     | Hole        | 2.8 x 0.5                    | 1601005-1                  | 4-1601005-1                  |                          |
|                                    |                                 |                          |                 |           |             |                              | 2-1601005-1 <sup>1</sup>   | 4-1601005-2 <sup>3</sup>     |                          |
|                                    |                                 | 18-34                    | 1.02-0.16       | 21.49     | —           | Hole                         | 2.8 x 0.5                  | 1601085-1 <sup>3</sup>       | 4-1601085-1 <sup>3</sup> |
|                                    |                                 |                          |                 |           |             |                              |                            | 2-1601085-1 <sup>1,3</sup>   | 4-1601045-1              |
|                                    |                                 | 18-34                    | 1.02-0.16       | 23.50     | Hole        | 2.8 x 0.5                    | 2.8 x 0.5                  | 1601045-1                    | 4-1601045-1              |
| 2-1601045-1 <sup>1</sup>           | 4-1601059-1                     |                          |                 |           |             |                              |                            |                              |                          |
| 18-34                              | 1.02-0.16                       | 24.00                    | —               | 2.8 x 0.5 | 2.8 x 0.5   | 1601059-1                    | 4-1601059-1                |                              |                          |
|                                    |                                 |                          |                 |           |             | 2-1601059-1 <sup>1</sup>     | 4-1601059-2 <sup>4</sup>   |                              |                          |
| B<br>Single Barb<br>Low Transition | 1601431                         | 18-34                    | 1.02-0.16       | 24.00     | —           | 2.8 x 0.5                    | 1601059-2 <sup>4</sup>     | 4-1601059-2 <sup>4</sup>     |                          |
|                                    |                                 |                          |                 |           |             |                              | 2-1601059-2 <sup>1,4</sup> | 4-1601073-1                  |                          |
| C<br>Multi-Barb                    | 1601425                         | 27-36                    | 0.36-0.13       | 31.50     | —           | 2.8 x 0.8                    | 1601073-1                  | 4-1601073-1                  |                          |
|                                    |                                 | 18-34                    | 1.02-0.16       | 16.63     | Hole        | 2.8 x 0.5                    | 2-1601073-1 <sup>1</sup>   | 4-1601097-2 <sup>3</sup>     |                          |
|                                    |                                 |                          |                 |           |             |                              | 1601097-2 <sup>3</sup>     | 4-1601097-2 <sup>1,3</sup>   |                          |
|                                    |                                 | 18-34                    | 1.02-0.16       | 15.99     | —           | 2.8 x 0.8                    | 2.8 x 0.8                  | 1601133-2 <sup>2,5</sup>     | 4-1601133-2 <sup>2</sup> |
|                                    |                                 |                          |                 |           |             |                              |                            | 2-1601133-2 <sup>1,2,5</sup> | 4-1601039-1              |
| 18-34                              | 1.02-0.16                       | 31.50                    | —               | 2.8 x 0.5 | 2.8 x 0.5   | 1601039-1                    | 4-1601039-1                |                              |                          |
|                                    |                                 |                          |                 |           |             | 2-1601039-1 <sup>1</sup>     | 4-1601039-2 <sup>3</sup>   |                              |                          |
| D<br>Multi-Barb<br>w/ 90° Twist    | 1601425                         | 21-24 <sup>6</sup>       | .51-.72         | 23.24     | —           | 2.8 x 0.5                    | 1601039-2 <sup>3</sup>     | 4-1601039-2 <sup>3</sup>     |                          |
|                                    |                                 |                          |                 |           |             |                              | 2-1601039-2 <sup>1,3</sup> | 4-1601064-1                  |                          |
| 18-34                              | 1.02-0.16                       | 31.50                    | —               | 2.8 x 0.5 | 2.8 x 0.5   | 1601064-1                    | 4-1601064-1                |                              |                          |
|                                    |                                 |                          |                 |           |             | 2-1601064-1 <sup>1</sup>     | 4-1601112-2 <sup>2,5</sup> |                              |                          |
| 18-34                              | 1.02-0.16                       | 31.50                    | —               | 2.8 x 0.5 | 2.8 x 0.5   | 1601112-2 <sup>2,5</sup>     | 4-1601112-2 <sup>2</sup>   |                              |                          |
|                                    |                                 |                          |                 |           |             | 2-1601112-2 <sup>1,2,5</sup> | 4-1601151-2 <sup>3</sup>   |                              |                          |
| 18-34                              | 1.02-0.16                       | 31.50                    | —               | 2.8 x 0.5 | 2.8 x 0.5   | 1601151-2 <sup>3</sup>       | 4-1601151-2 <sup>3</sup>   |                              |                          |
|                                    |                                 |                          |                 |           |             | 2-1601151-2 <sup>1,3</sup>   | 4-1601151-2 <sup>1,3</sup> |                              |                          |

1 Reversed Reeled – Consult Tyco Electronics drawing for orientation.  
 2 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).  
 3 Finish is Pre-Plated Tin (Consult Tyco Electronics drawing for specifics).  
 4 Finish is Pre-Plated Silver over Nickel (Consult Tyco Electronics drawing for specifics).  
 5 Dual Carrier Strip.  
 6 Two magnet wires may be terminated in the same slot if diameters are equal.  
 7 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

SIAMEZE Terminals (continued)

4.8 mm Series  
FASTON Tab Terminals

Material:  
Brass



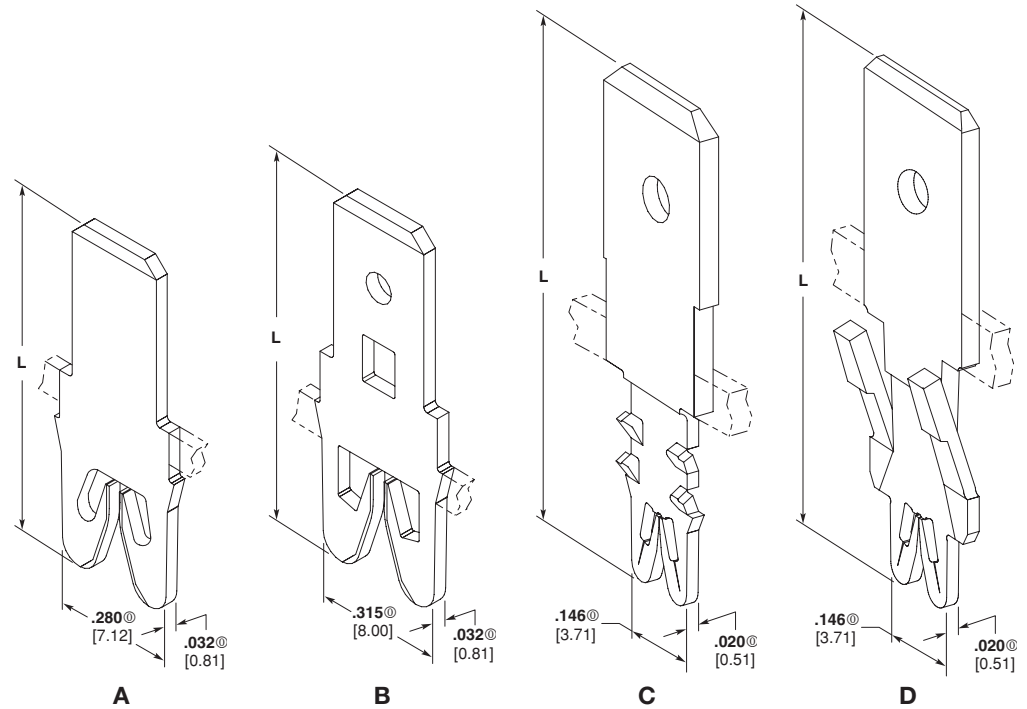
| Type                               | Recommended Pocket <sup>7</sup> | Copper Magnet Wire Range |                 | Dim. L  | Tab Feature | Tab Size  | Part Number                                  |                          |
|------------------------------------|---------------------------------|--------------------------|-----------------|---------|-------------|-----------|--|--------------------------|
|                                    |                                 | AWG                      | mm <sup>2</sup> |         |             |           | Reeled                                       | Loose                    |
| A<br>Single Barb                   | 1601425                         | 18-34                    | 1.02-0.16       | 15.37   | Hole        | 4.8 x 0.5 | 1601006-2 <sup>3</sup><br>2-1601006-21,3     | 4-1601006-2 <sup>3</sup> |
|                                    |                                 |                          |                 | 12.83   | Hole        | 4.8 x 0.5 | 1601011-1<br>2-1601011-1 <sup>1</sup>        | 4-1601011-1              |
| B<br>Single Barb<br>Short Pocket   | 1601427                         | 18-34                    | 1.02-0.16       | 14.99   | —           | 4.8 x 0.5 | 1601018-2 <sup>2,5</sup><br>2-1601018-21,2,5 | 4-1601018-2 <sup>2</sup> |
|                                    |                                 |                          |                 | 25.02   | —           | 4.8 x 0.5 | 1601033-2 <sup>2,5</sup><br>2-1601033-21,2,5 | 4-1601033-2 <sup>2</sup> |
|                                    |                                 |                          |                 | 15.70   | —           | 4.8 x 0.5 | 1601021-2 <sup>2</sup><br>2-1601021-21,2     | 4-1601021-2 <sup>2</sup> |
|                                    |                                 |                          |                 | 16.64   | Hole        | 4.8 x 0.5 | 1601013-1<br>2-1601013-1 <sup>1</sup>        | 4-1601013-1              |
|                                    |                                 |                          |                 | 20.09   | —           | 4.8 x 0.5 | 1601072-2 <sup>2</sup><br>2-1601072-21,2     | 4-1601072-2 <sup>2</sup> |
| C<br>Multi-Barb                    | 1601425                         | 18-34                    | 1.02-0.16       | 21.14   | —           | 4.8 x 0.5 | 1601068-2 <sup>2</sup><br>2-1601068-21,2     | 4-1601068-2 <sup>2</sup> |
|                                    |                                 |                          |                 | 16.64   | Hole        | 4.8 x 0.8 | 1601035-1<br>2-1601035-1 <sup>1</sup>        | 4-1601035-1              |
|                                    |                                 |                          |                 | 16.64   | Hole        | 4.8 x 0.8 | 1601035-2 <sup>3</sup><br>2-1601035-21,3     | 4-1601035-2 <sup>3</sup> |
|                                    |                                 |                          |                 | 18.92   | Hole        | 4.8 x 0.8 | 1601040-1<br>2-1601040-1 <sup>1</sup>        | 4-1601040-1              |
|                                    |                                 |                          |                 | 16.64   | Hole        | 4.8 x 0.5 | 1601142-1<br>2-1601142-1 <sup>1</sup>        | 4-1601142-1              |
|                                    |                                 |                          |                 | 20-23** | 0.58-0.81   | 16.64     | Hole   | 4.8 x 0.5                |
| D<br>Multi-Barb<br>Short Profile   | 1601434                         | —                        | —               | 12.50   | Hole        | 4.8 x 0.8 | 1601020-1<br>2-1601020-1 <sup>1</sup>        | 4-1601020-1              |
| E<br>Multi-Barb<br>4.8/6.3 Profile | 1601425                         | 18-34                    | 1.02-0.16       | 16.64   | Hole        | 4.8 x 0.5 | 1601020-2 <sup>3</sup><br>2-1601020-21,3     | 4-1601020-2 <sup>3</sup> |
|                                    |                                 |                          |                 | 20.45   | Hole        | 4.8 x 0.5 | 1601049-2 <sup>3</sup><br>2-1601049-21,3     | 4-1601049-2 <sup>3</sup> |
| F<br>Latch                         | 1601423                         | 18-34                    | 1.02-0.16       | 19.68   | Hole        | 4.8 x 0.5 | 1601004-1<br>2-1601004-1 <sup>1</sup>        | 4-1601004-1              |

1 Reverse Reeled—Consult Tyco Electronics drawing for orientation.  
 2 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).  
 3 Finish is Pre-Plated Tin (Consult Tyco Electronics drawing for specifics).  
 4 Extra Short Tab—Does not meet UL & NEMA length requirements.  
 5 Carrier strip not in retention barb area as shown.  
 6 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

SIAMEZE Terminals (continued)

6.3 mm Series  
FASTON Tab Terminals

Material:  
Brass



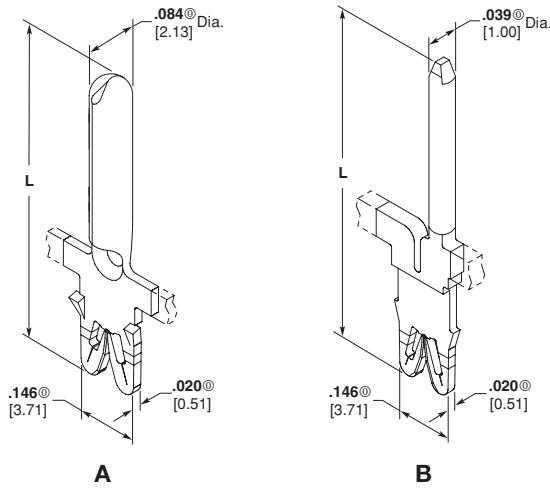
| Type                                    | Recommended Pocket <sup>7</sup> | Copper Magnet Wire Range |                 | Dim. L | Tab Feature | Tab Size  | Part Number  |                          |
|---|---------------------------------|--------------------------|-----------------|--------|-------------|-----------|--|--------------------------|
|   |                                 | AWG                      | mm <sup>2</sup> |        |             |           | Reeled   | Loose                    |
| <b>A</b><br>Single Barb<br>Medium Range | 1601438                         | 12-23                    | 2.03-0.56       | 19.76  | —           | 6.3 x 0.8 | 1601139-2 <sup>3</sup>                                   | 4-1601139-2 <sup>3</sup> |
|   |                                 | 12-20                    | 2.03-0.8        | 22.48  | Hole        | 6.3 x 0.8 | 1601115-1<br>2-1601115-1 <sup>1</sup>                    | 4-1601115-1              |
| <b>B</b><br>Single Barb<br>Heavy Range  | 1601435                         | 16-17 <sup>5</sup>       | 1.27-1.15       | 22.48  | Hole        | 6.3 x 0.8 | 1601159-1<br>2-1601159-1 <sup>1</sup>                    | 4-1601159-1              |
|   |                                 | 14-15 <sup>5</sup>       | 1.60-1.40       | 22.48  | Hole        | 6.3 x 0.8 | 1601161-1<br>2-1601161-1 <sup>1</sup>                    | 4-1601161-1              |
|   |                                 | 27-36                    | 0.36-0.13       | 18.92  | Hole        | 6.3 x 0.8 | 1601118-2 <sup>3</sup><br>2-1601118-2 <sup>1,3</sup>     | 4-1601118-2 <sup>3</sup> |
|   |                                 |                          |                 | 18.92  | Hole        | 6.3 x 0.8 | 1601002-2 <sup>3</sup><br>2-1601002-2 <sup>1,3</sup>     | 4-1601002-2 <sup>3</sup> |
| <b>C</b><br>Multi-Barb                  | 1601425                         | 18-34                    | 1.02-0.16       | 20.45  | Hole        | 6.3 x 0.8 | 1601028-2 <sup>3</sup><br>2-1601028-2 <sup>1,3</sup>     | 4-1601028-2 <sup>3</sup> |
|   |                                 |                          |                 |        |             |           | <b>284937-1</b><br><b>2-284937-1<sup>1</sup></b>         | —                        |
|   |                                 |                          |                 |        |             |           | 1601028-1<br>2-1601028-1 <sup>1</sup>                    | 4-1601028-1              |
|   |                                 |                          |                 |        | Dimple      | 6.3 x 0.8 | 1601061-2 <sup>3</sup><br>2-1601061-2 <sup>1,3</sup>     | 4-1601061-2 <sup>3</sup> |
|   |                                 |                          |                 |        |             |           | 1601044-1<br>2-1601044-1 <sup>1</sup>                    | 4-1601044-1              |
|   |                                 |                          |                 |        |             |           | 1601052-2 <sup>2,4</sup><br>2-1601052-2 <sup>1,2,4</sup> | 4-1601052-2 <sup>2</sup> |
| <b>D</b><br>Latch                       | 1601423                         | 18-34                    | 1.02-0.16       | 21.59  | Hole        | 6.3 x 0.8 | 1601003-1<br>2-1601003-1 <sup>1</sup>                    | 4-1601003-1 <sup>2</sup> |

1 Reverse Reeled—Consult Tyco Electronics drawing for orientation.  
 2 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).  
 3 Finish is Pre-Plated Tin (Consult Tyco Electronics drawing for specifics).  
 4 Double Carrier Strip.  
 5 Two magnet wires may be terminated in the same slot if diameters are equal.  
 6 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

Preferred part numbers are printed in bold.

## SIAMEZE Terminals (continued)

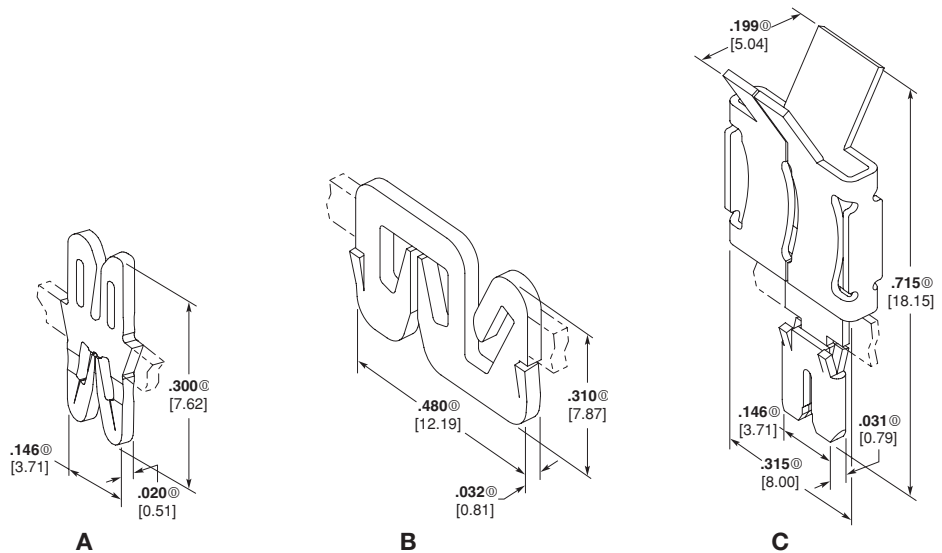
### Pin Terminals



| Type   | Recommended Pocket <sup>5</sup> | Copper Magnet Wire Range |                 | Dim. L | Pin Dia. | Part Number  |             |
|--|---------------------------------|--------------------------|-----------------|--------|----------|--|-------------|
|  |                                 | AWG                      | mm <sup>2</sup> |        |          | Reeled   | Loose       |
| <b>A</b><br>Round Pin                        | 1601424                         | 18-34                    | 1.02-0.16       | 18.24  | 2.13     | 1601077-1<br>2-1601077-1 <sup>1</sup>                    | 4-1601077-1 |
| <b>B</b><br>Pseudo Round Pin with Diode Slot | 1601432                         | 27-36                    | 0.36-0.13       | 21.71  | 1.00     | 1601130-2 <sup>2,3</sup><br>2-1601131-2 <sup>2,3,4</sup> | —           |

- 1 Reverse Reeled – Consult Tyco Electronics drawing for orientation.
- 2 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).
- 3 Diameter is approximate as Pin is not perfectly round.
- 4 Reverse Reeled Mirror Image – Consult Tyco Electronics drawing for orientation.
- 5 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

### Receptacle Terminals



| Type                                 | Recommended Pocket <sup>3</sup> | Copper Magnet Wire Range |                 | Dim. L | Mating Tab Size | Part Number  |                          |
|--------------------------------------|---------------------------------|--------------------------|-----------------|--------|-----------------|--|--------------------------|
|                                      |                                 | AWG                      | mm <sup>2</sup> |        |                 | Reeled   | Loose                    |
| <b>A</b><br>Edge Contact In Line     | 1601425                         | 18-34                    | 1.02-0.16       | 7.62   | 0.5             | 1601075-2 <sup>2</sup><br>2-1601075-2 <sup>1,2</sup> | 4-1601075-2 <sup>2</sup> |
| <b>B</b><br>Edge Contact Off Line    | 1601421                         | 15-23                    | 1.47-0.56       | 7.87   | 0.8             | 1601137-2 <sup>2</sup><br>2-1601137-2 <sup>1,2</sup> | 4-1601137-2 <sup>2</sup> |
| <b>C</b><br>Blind Mate Full Surround | 1601470                         | 21.5                     | 0.71            | 18.15  | 6.3 x 0.5       | 1601149-2 <sup>2</sup><br>2-1601149-2 <sup>1,2</sup> | 4-1601149-2 <sup>2</sup> |

- 1 Reverse Reeled—Consult Tyco Electronics drawing for orientation.
- 2 Finish is Pre-Plated Tin over Copper (Consult Tyco Electronics drawing for specifics).
- 3 Magnet wire 30 AWG [0.25 mm] and smaller also requires a wrap post per drawing 1601447.

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**Engineering Notes**

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Introduction



Application Tooling from Tyco Electronics is designed to perform perfect terminations, time after time. This results in productivity gains, yielding more terminations for less money at the time of application, and in service.

It is this combination of superior quality at a lower installed end cost that distinguishes the Tyco Electronics system solution.

Because production requirements vary, GATD – Global Application Tooling Division – can provide various levels of tooling to meet the full spectrum of output requirements. The continuous support by our field service completes the Tyco Electronics system. Our field service engineers ensure the application equipment fulfill all requirements at any given time.

Please use the tooling website and the online search to find the tooling that best suits your application.

Put your terminal part number either into the hand tool or applicator database and the appropriate tool will be shown.

If you can't find what you are looking for, it does not necessarily mean that there is nothing available for your application.

For cross-referencing information – contact one of our Product Information Centers (PIC), listed in the selection from the left-hand menu box.

For more complex equipment and technical help – find your country contact by selecting from the left-hand menu box or contact your Tyco Electronics representative.

Visit us at the American Website: [www.tooling.tycoelectronics.com](http://www.tooling.tycoelectronics.com)  
and at the European Website: [www.tooling.tycoelectronics.com/europe](http://www.tooling.tycoelectronics.com/europe)



## Lead Makers

**AMPOMATOR System III**

The AMPOMATOR System III is a flexible, open architecture lead maker capable of accepting both Komax and PAWOMAT seal stations as well as SLE crimp force monitoring. It is based on the familiar Komax Alpha 433 platform and utilizes TopWin™ software to give operators a seamless upgrade path to the new machine.

**AMPOMATOR System III  
with Servo Feeder**

In addition, the integral AMP-O-LETRIC ST-III terminators facilitate the use of the new System III Applicator by utilizing an optional servo feed system. The entire system allows unparalleled communication between the applicator die and the lead maker via TopWin™ to significantly decrease set-up times and improve throughput while improving terminal feed and positioning.

TopWin is a trademark of Komax AG

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## Lead Makers

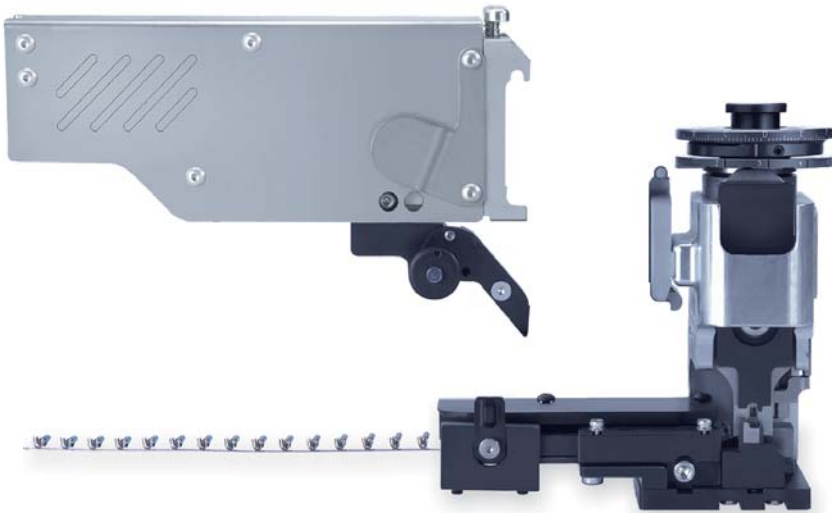
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### System III Applicator

The System III Applicator revolutionizes the traditional applicator market by separating the feed and the termination.

The feed is done via a servo feed unit that is controlled by either the ST-III terminator on the AMPOMATOR System III lead maker or the new Precision Controller.

When the feeder is attached to the applicator, the system reads the specific terminal information from the onboard iButton™ data module permitting the automation of many manual adjustments such as crimp height, feed pitch, etc.



### Precision Controller

The new Precision Controller provides an upgrade path for already installed equipment. By installing the Precision Controller onto a bench terminator or a Komax Gamma 333 PC, the System III-FA Applicator can be used.

An integrated LCD screen allows the user to view the information contained on the iButton™ data module and the controller also allows the operator to accurately position the terminal feed and make fine adjustments.



iButton is a trademark of Maxim Integrated Products, Inc.



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**Lead Makers**

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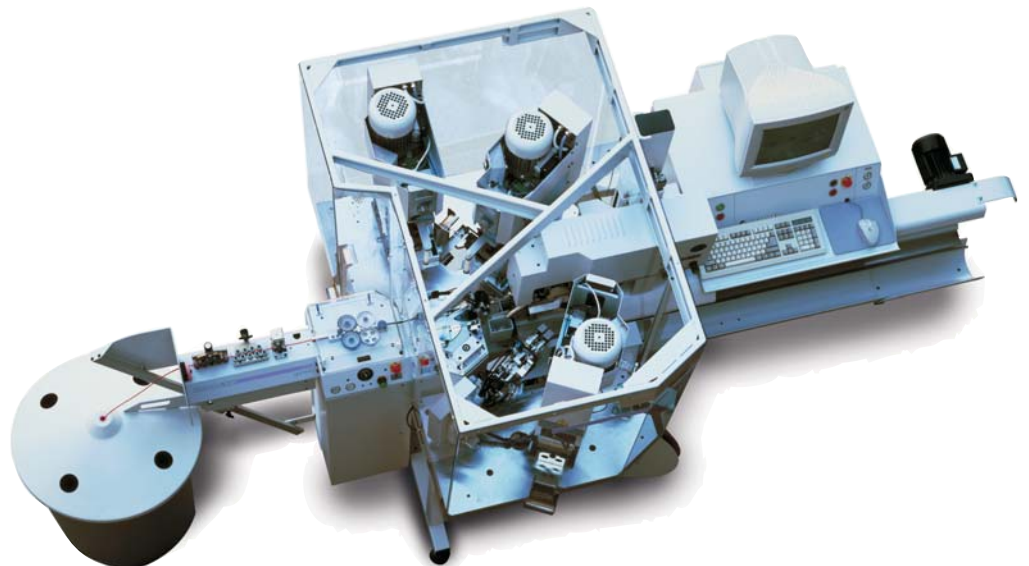
**Gamma 255**

The Gamma 255 is a flexible fully automatic crimping machine for efficient wire processing. It processes cross sections in a range from 0.013 mm<sup>2</sup> to 2.5 mm<sup>2</sup>. The entire cross section is processed using programmable, highly dynamic servo-drives and V stripping blades. As part of its standard equipment, the machine has a prefeeder, splice, wire-end and knot detection, as well as two wire straightening units.

**Gamma 333**

Ultra short conversion times, additional applications and a user-friendly interface with multiple-language capabilities. The Gamma 333 PC Lead Maker machine makes it all possible!

With its additional processing station on side 1, the Gamma 333 PC Lead Maker machine enables the crimping of both ends of the wire, to create double crimp connections with three different contacts, to carry out one-ended seal application, tinning or ink-jet marking. In addition, process monitoring is integrated to ensure that the wire is cut to length and stripped perfectly to specification and that quality control is optimized.



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**Lead Makers**

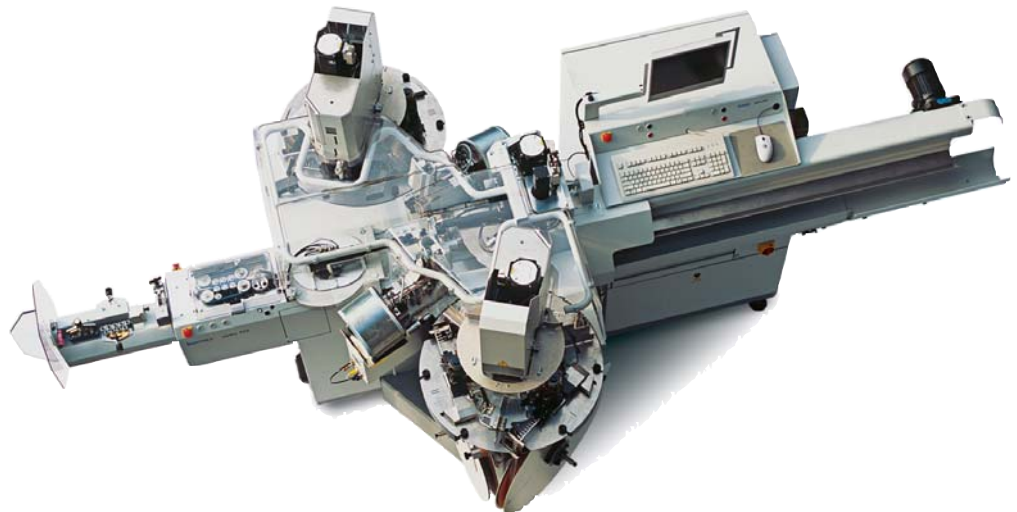
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**Alpha 355/356**

The Alpha 355 and Alpha 356 are four Station Lead Makers. The dual channel cutting head allows for a large range of wire sizes without blade changes. The drive unit for the cutting head is positioned beneath the wire line to give the machine an uncluttered and ergonomic design. All processing stations are readily accessible through the vertically opening safety covers. Applicators, terminal reels and other parts for specific applications can be changed without tools. Controls are positioned locally, allowing the corresponding machine functions to be triggered during set-up. All setting and adjustment procedures can be controlled from the TopWin™ user software in over 20 different languages.

**Alpha 455**

The Alpha 455 is designed especially for just-in-time production. Downtimes become crucial for companies that produce relatively small production batches requiring frequent conversions of the machine. With the Alpha 455, the engineers at Tyco Electronics set out to minimize the time lost on set-up and conversion while ensuring the high quality and reliability you are accustomed to from Tyco Electronics. The MCI 722R is the product that guarantees the efficient set-up of the fully automatic Alpha 455 crimping machine. This innovative new rotary press table was specially developed for the Alpha 455 and allows the latter to be converted while production is still going on. The tools and terminals for the next two jobs can be set-up while the current batch is still in production.



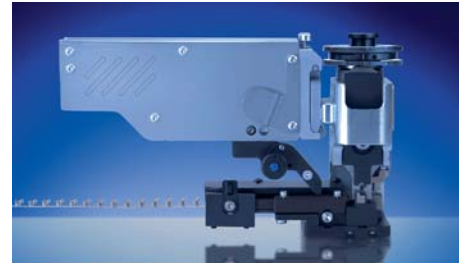
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## Applicators

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### System III-FA Applicator

The applicator eFeed system separates the feed function from the applicator, allowing each component to be optimized for its own function and enabling integration with the crimping system for a complete crimping solution. It also simplifies and speeds applicator changeover, a critical industry requirement.

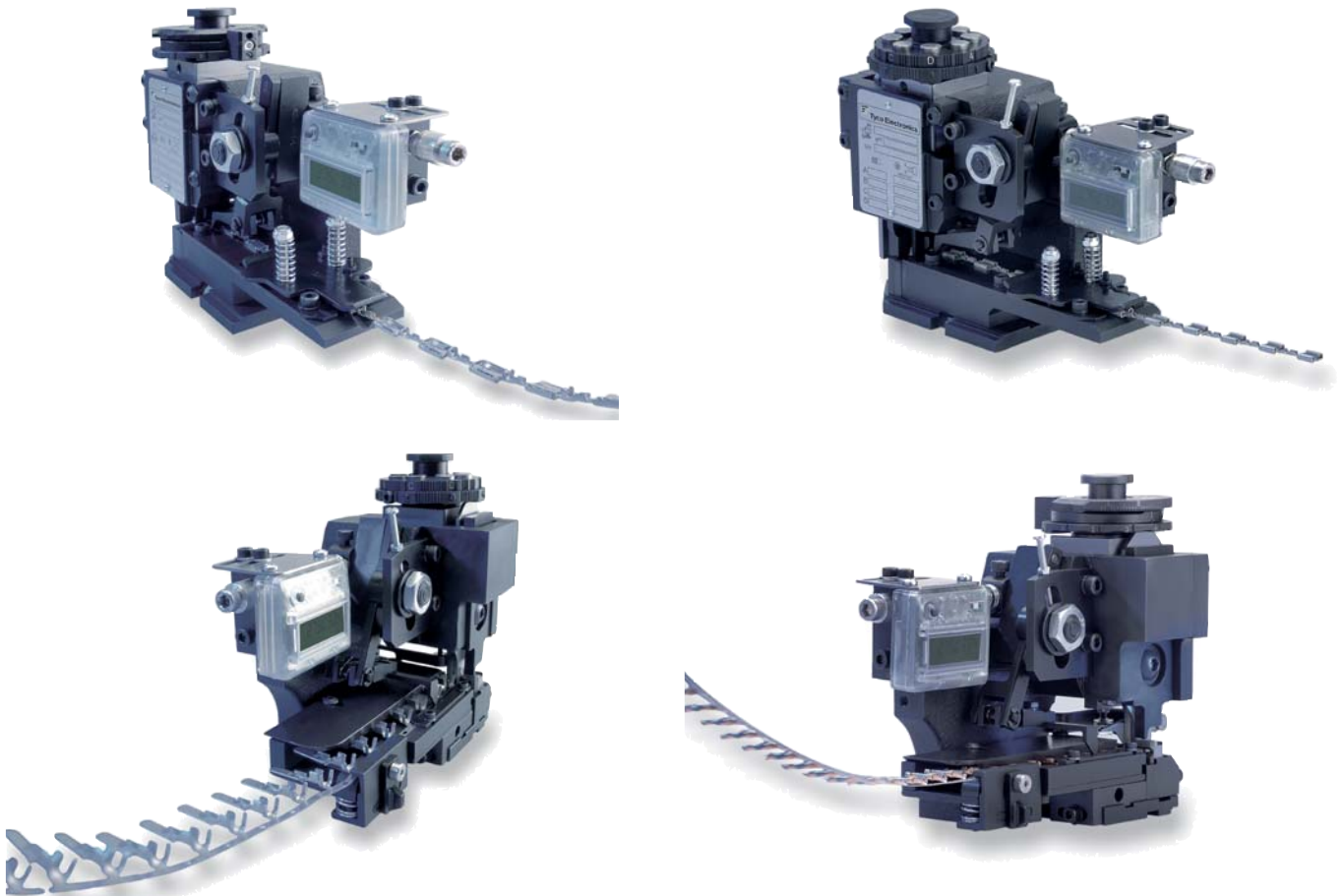


The eFeed applicator with the iButton data module stores vital information of the applicator including its identity, the terminals it can crimp, and all related specifications about the terminals. It also stores all crimping parameters for system configuration and data from previous runs. The end result is quick, reliable setups and maximum productive crimping system uptime.

### HD-I Applicators

A full range of applicator types is offered by Tyco Electronics. HD-I Applicators, designed for use in both Imperial (1 1/8" and 1 5/8") and metric (30 mm and 40 mm) stroke machines, are compatible with most of the terminals sold in the market worldwide.

With this platform, Tyco Electronics offers a flexible and thoroughly supported tool concept for crimping of terminals to wires. Every HD-I Applicator has the option to be equipped with an integrated multiple-function Electronic Cycle Counter, which can be read out via infrared interface either into a local PC or into a laptop. Additional information is available from our website.



Applicators

**HD-I Wear Parts Stocking Program**

To ensure the support of our installed HD-I Applicator base, we have established a stocking program for gently used parts. Subsequently, all crimpers and anvils for your applicator are normally available in stock, ensuring the shortest possible wait times.



**MQC-HD Applicators**

Not for all terminal types a HD-I Applicator can be defined. In such cases our Applicator portfolio is complemented by our MQC-HD Applicators. So Tyco Electronics can solve almost all terminal crimping problem you are presented with.



**Applicator for Large Wire Sizes**

For processing of large contacts, eg for battery terminals, we offer heavy and solidly built tools, which are extremely precise in repetitive work for end-feed and side-feed contacts with large cross sections.

A pneumatically driven feed which is efficient and precisely adjustable, as well as a specially robust crimping unit, produce reliable connections which are extremely stable over the long term.



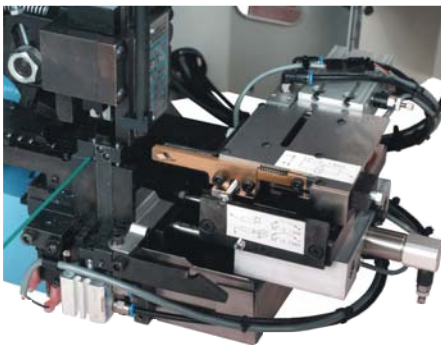


**Terminators**
**AMP 3K/40 and AMP 5K/40 Terminators**

The AMP 3K/40 Terminator provides 13 kN (3,000 lb) crimp force and is capable of crimping approx. 2.5 mm<sup>2</sup> (14 AWG) wire size. The AMP 5K/40 Terminator provides 22 kN (5,000 lb) crimp force and is capable of crimping approx. 6.0 mm<sup>2</sup> (10 AWG) wire size.

As value oriented terminators, the AMP 3K/40 and AMP 5K/40 are designed for customers that require the increased output and quality of a semi-automatic machine at a competitive price.

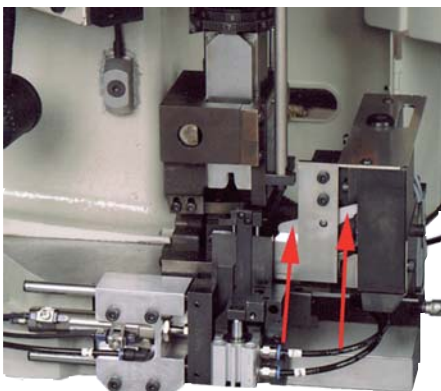
A wide range of optional equipment is available to meet your specific application requirements.


**Stripping Module**

The stripping module is compatible with AMP 3K/40 and 5K/40 Terminators as well as ELT. This quick and flexible working process is supported by good accessibility to module adjustment and wire positioning. The stripping module was designed to produce good quality even used in the most harsh circumstances.

Following features characterize the stripping module:

- Pre-selection Crimp only / Strip only / Strip and Crimp
- Jog Mode
- Pneumatic removal of insulation scraps


**Defective Crimp Cutter (DCC) and Carrier Scrap Chopper (CSC)**

When the CQM detects a bad crimp, the DCC unit will cut off the defective terminal. The wire will be cut close to the terminal.

- All DCC units are equipped with a Carrier Scrap Chopper (CSC).
- The DCC and/or CSC units can be easily hinged out of the way to allow easy access to change applicators.
- DCC provides more consistent wire placement accuracy capability due to the use of the grip jaws, compared to hand placing the wire in a terminator.
- DCC provides a scrap collection bin. It works with AWG 32–12 side-feed and end-feed HDM Style Applicators.

Terminators

### SC15 Stripper Crimper

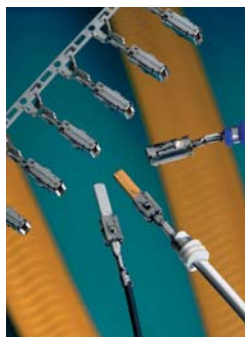
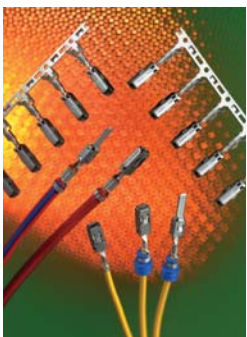
The pneumatically and electrically driven SC15 crimping machine is a particularly efficient and a operator friendly crimping machine with outstanding repetitive precision, which satisfies the highest requirements. It can be adjusted to the specific requirements of any given contact/cable connection.

If you

- Want to strip a multicore cable with a break-out length down to only 13 mm
- Would like to strip single wires from 2 to 6 mm length
- Cover a wire size area of from 0.09 mm<sup>2</sup> to 4 mm<sup>2</sup>

Further features are:

- Automatic bare wire recognition
- Crimp force monitoring
- Remote diagnoses via serial interface



Terminators

**CRIMPMATIC 970 and 971**

Both machine versions permit the cost effective manufacturing of crimp connections with a high production efficiency. The CRIMPMATIC 970 machines are capable of processing wires of up to approx. 16 mm<sup>2</sup> (AWG 5), depending on the terminal stock thickness.

Further features are:

- Compact, space-saving design
- Compatible with MQC Applicators
- Step mode during set-up

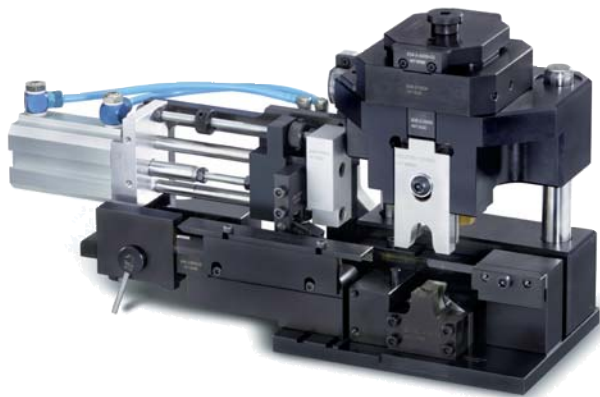
The CRIMPMATIC 971 machine is capable of processing wires of up to approx. 50 mm<sup>2</sup> (AWG 0), depending on the terminal stock thickness. The machines can be equipped with a quick change device for power crimp tools. MQC Applicators with a lower dead center of 135.78 mm can be mounted by means of an adapter plate. These machines can be utilized as manual work stations or can be integrated into fully-automatic processing lines. The terminator as shown is a manual work station CRIMPMATIC 971. The unit can be supplied with or without crimp process monitoring, or it maybe retrofitted later.

Options are available upon request

- Crimp force monitoring
- Paper spooler
- Adapter plate for MQC Applicator

Applicators

- Especially designed for larger wire sizes
- Pneumatic feed
- Can be used with both crimp presses CRIMPMATIC 970 and CRIMPMATIC 971



Terminators

**SSC-2FP**

This highly flexible crimping press, based on the widely used FMP-20 concept, features the utmost in user friendliness and process safety. It crimps insulated and non-insulated terminals in loose-piece form up to 6 mm<sup>2</sup> wire size.

The unique safety mechanism makes it possible to use this press without cumbersome, obtrusive and expensive guarding.

Additionally, a safety double foot switch provides for ease of operation because both hands can be used to position the terminal and wire in the crimping die. This can be especially useful when processing small and open barrel terminals.



**UP/42**

The UP/42 machine is ideal for indent style crimps, with die sets available to cover 6 to 95 mm<sup>2</sup>. It crimps insulated and non-insulated terminals in loose-piece form. The machine is also capable of accommodating Tyco Electronics SDE, premium dies and service tool dies. Through the use of either our ERGOCRIMP or SDE adaptors the processable application range is greatly widened. A comprehensive range of standard crimping dies increases the flexibility and makes the machine suitable to different applications.



**UP/55**

The UP/55 pneumatic press crimps insulated and non-insulated terminals in loose piece form. This press will outperform most hydraulic presses with the same capacity in terms of handling and speed. Processing a 120 mm<sup>2</sup> copper tube lug, for example, will require about one third of the time. There are many optional die adaptors available, e.g. for standard industrial U-Dies that make this machine extremely flexible across a wide range of applications.

A resettable piece counter keeps track of the production run and the crimping speed can also be adjusted. The UP/55 can also be equipped with a cutting device to cut flat material up to 32 mm wide and cables with a maximum insulation diameter of 28 mm.





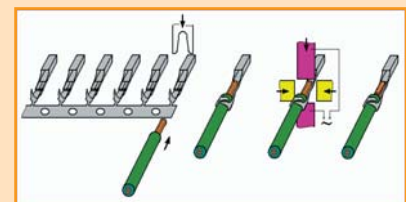
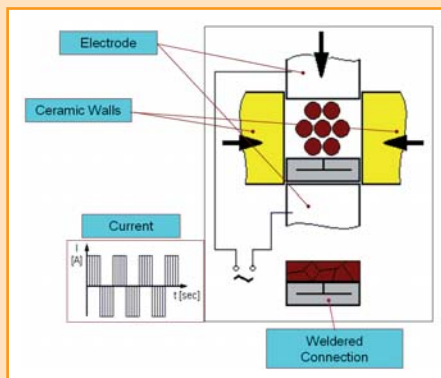
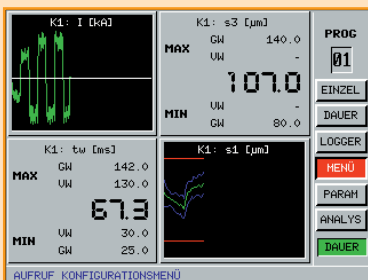
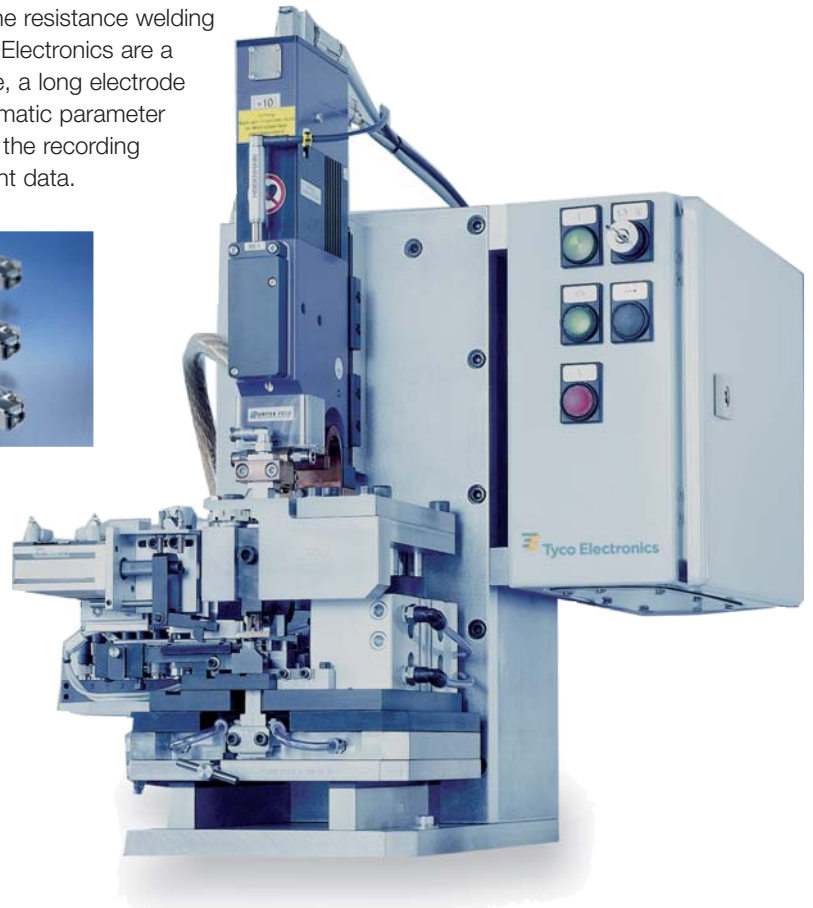
**Resistance Welding Equipment**

**Resistance Welding Module**

Tyco Electronics offers semi- and fully-automatic modules for resistance compact welding of terminals. This resistance welding process allows us to achieve minimum transitional resistance between conductor and contact, higher current capacity and long-term stability of the wire termination.

In this process, the bundle of strands in the conductor is condensed into a block by side mounted ceramic plates. After this the strand bundle is welded to the contact by the introduction of a powerful current via an electrode.

Typical features of the resistance welding unit offered by Tyco Electronics are a very short cycle time, a long electrode life time, a fully automatic parameter setting process and the recording of all process relevant data.



## Insertion Machines

### C 300 In-Line Connector Seating Machine

The number of automotive connectors featuring press-fit technology is constantly increasing. Until now these connectors are either pressed off-line on manual presses with the required force distance monitoring as quality assurance measure or specially designed machines are pressing these connectors into PCBs.

The C300 is offering a new concept for an in-line connector seating machine. It is using the well-known base machine of the Pin Insertion machine P300 for the PCB handling. State-of-the-art electrical presses with a press capacity of up to 6 tons with integrated force distance monitoring guarantee an optimal seating process.



### SEP 3T

The SEP 3T is a servo-electric press to apply PCBs onto compliant pin connectors and housings. The system provides control and monitoring of the press cycle force, distance and speed to meet the quality and traceability essential in the safety and control applications where these components are typically used. Optional Pin Penetration Sensing (PPS) tooling can verify the correct penetration of every pin through the PCB.

PCBs are manually loaded onto the connector/housing and placed in specific support fixtures. When the press cycle is initiated by the operator, the product is shuttled into the SEP 3T and pressed to the required force and/or height.

**Insertion Machines**
**BMEP-3T/5T**

The benchtop press with midrange board handling and pressing capacities utilizes PC control and servo-electric drive system. Pressing capacities of 27 kN [3 tons] and 44 kN [5 tons] allow for a wide range of applications on boards up to 460 mm x 610 mm [18" x 24"].

These features and a compact footprint make this a powerful, versatile and portable press for PCB construction.


**MEP 6T/12T**

A self-contained press on wheels that can easily be relocated almost anywhere on the production floor. The same PC controlled servo-electric drive system as the BMEP units is used to provide a precise and repeatable pressing system to lower overall applied cost.

With up to 107 kN [12 tons] of pressing capacity and board handling up to 910 mm x 1220 mm [36" x 48"] on the MEP-12T, the MEP line is perfectly positioned to handle almost any press-fit application with midrange volumes.


**AEP 6T**

The AEP 6T is a stand-alone automatic servo-electric press for compliant pin connectors. The system is capable of processing 760 mm x 910 mm [30" x 36"] boards with up to 53 kN [6 tons] of force. The system can process PCBs and connectors for all but the largest backplane applications.



Insertion Machines

**AEP 12T**

An automatic unit that combines the same PC controlled servo-electric press process with automatic tool changes and board positioning. Expensive scrap is further reduced by minimizing operator intervention and reducing handling of the boards. Having the press capacity of 107 kN [12 tons] and the capability to handle boards up to 910 mm x 1220 mm [36" x 48"] make the AEP 12T perfectly suited for almost any press-fit application including very large and expensive backplane assemblies.

An optional auto-load configuration is available to further increase throughput on high volume applications.



**CSM 100**

The CSM 100 has been specially designed to press a PCB onto a press-fit connector. The connector gets manually loaded into a connector specific fixture and the PCB is placed on spring loaded support pins.

When the press cycle is started, the unit slides under the press ram and gets pressed. An optional pin presence check in the upper tool guarantees that all pins have been pressed through the board. The press is a Tyco Electronics BMEP-5T. The press has a PC controlled, servo-electric drive, to allow for the monitoring and control of force, speed and distance over the entire press cycle.





Insertion Machines

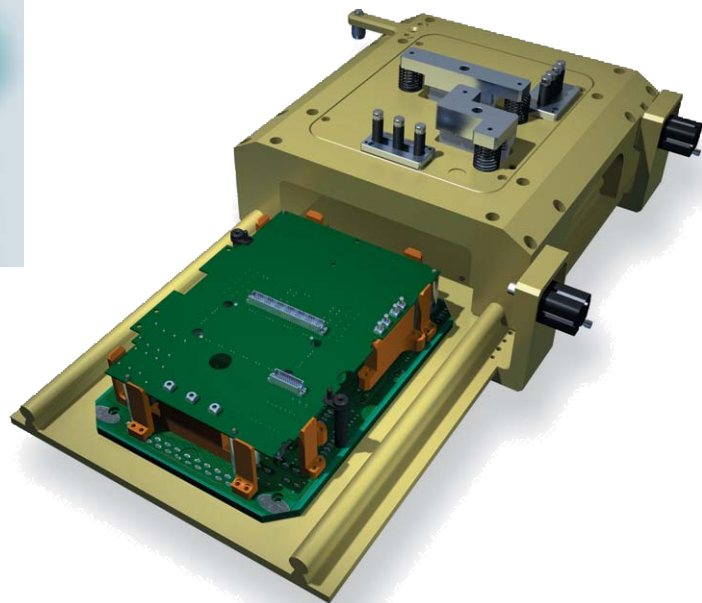
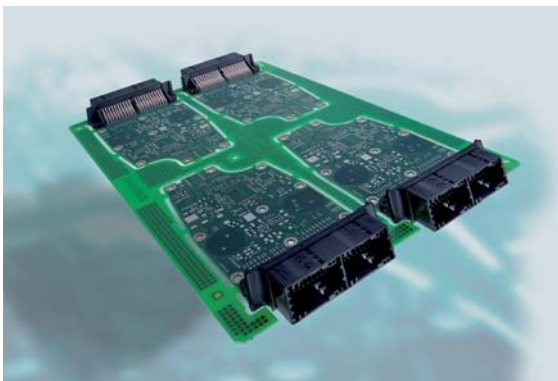
**CSM 200**

The PCB and connectors are loaded manually into fixtures. When started, the machine checks the correct loading of the connectors before placing the connectors onto the PCB. The tool then moves under the press ram where the connectors get pressed one after the other onto the PCB.

The BMEP 5-T servo-electric press is used to seat the PCB which provides a force-distance check to guarantee quality production.

A special tooling plate allows the sequential pressing of a number of different pre-loaded connectors. An intermediate plate, positioned between the PCB with its pre-positioned connectors and the flat rock press ram contains the connector specific press tools.

For each connector a force distance curve is available after completion.



Hand Tools

**SDE Standard Die Envelope**

SDE is a flexible approach to crimp tooling that allows the use of the same dies with tooling across a range of application platforms. A large selection of die options are already available for crimping a broad range of terminals and wire sizes. Many die sets have multiple cavities for crimping more than one wire or terminal size and we can provide custom designs where volumes permit.



**SDE Crimp Tools**

SDE dies are interchangeable in tools from portable hand tools (manual or battery-powered) to pneumatic hand tools and electric bench machines. It's a family of tools that you can take from bench to production or into the field, without the need for different dies to fit each kind of tool. You can rely on SDE to provide for your long term needs because of our commitment to continued development of dies and the tool range.



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## Hand Tools

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### Hand Tool Kits

Tyco Electronics provides standard kits that contain the necessary equipment to carry out specific tasks to the highest professional standards. We can also provide custom kits for volume requirements containing only tools, or a combination of tools and terminals tailored to your specific requirements. Please visit our tooling website to view our online hand tool catalogue for standard kits, or find your local contact to discuss custom kits.





**Hand Tools**





## Hand Tools

**Hydraulic Crimp Tooling**

Tyco Electronics offers a broad selection of hydraulic crimp tooling to support large wire and large cable applications.

Crimp dies based on the industry standard U-Die format are interchangeable between our hand-hydraulic crimp tools, hydraulic crimp heads with hand, foot and electro-hydraulic pumps to cover crimps up to 120 mm<sup>2</sup> (AWG 4/0) in either 12 or 14 ton heads.



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## Hand Tools

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### Insertion and Extraction Tools

Insertion/Extraction Tools are used for inserting discrete terminals into connector housings or removing them, without causing damage to either the terminals or housings. Many different design types currently exist for our vast terminal product range, which we continue to convert. If you would like the tool you use converted to the new design, want a custom kit or tools in this design for other manufacturers products – contact us, and where volumes permit we will be pleased to provide you with a quotation for your requirement.



Engineering Notes

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