

RoHS  
Ready 

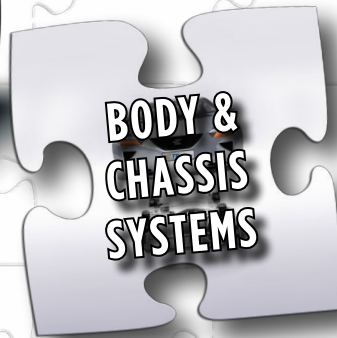
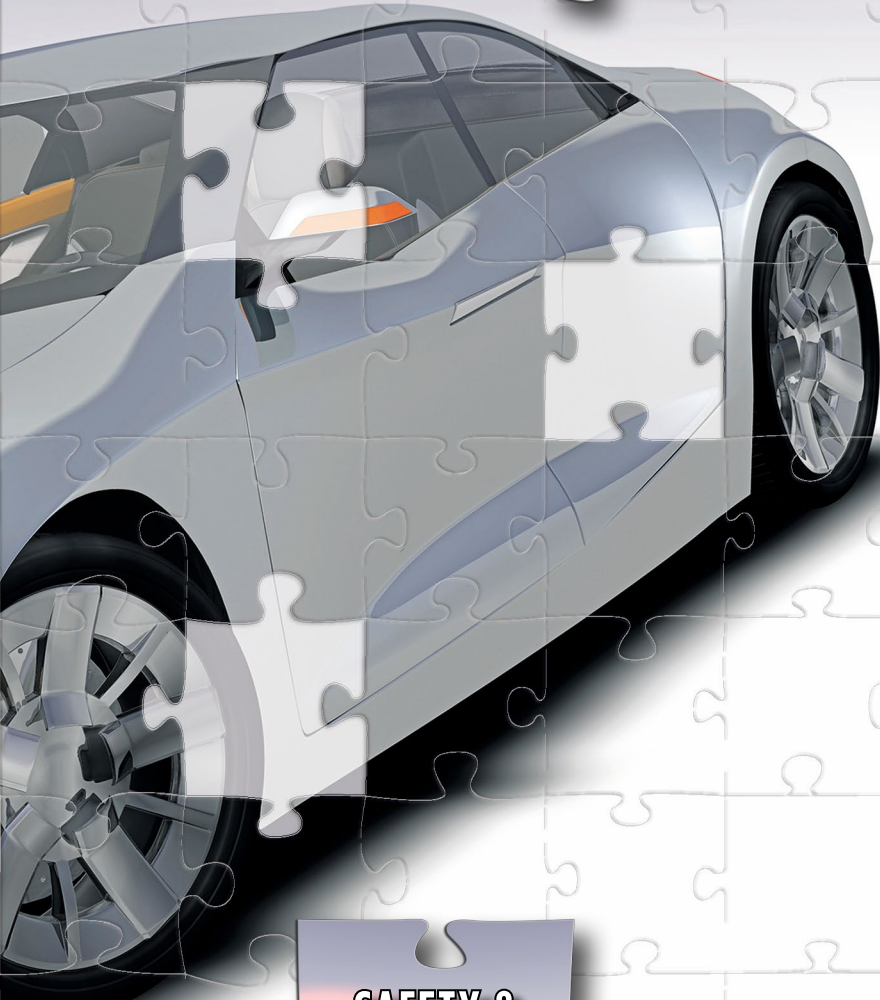
MFINITY

Modular Hard Wired Fuse and Relay Box

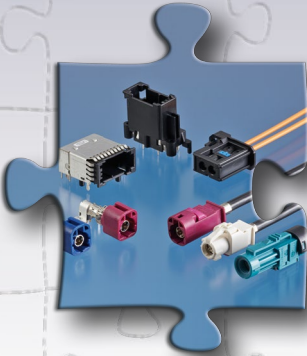


AUTOMOTIVE





TE Automotive - a business segment of TE Connectivity - 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.



### INFOTAINMENT

TE Automotive is focused on providing the best in class Infotainment technology to support high speed data communication in the automotive industry. Data communication based optical, coaxial as well as shielded electrical physical layers are supported by a wide product portfolio of Automotive grade connector systems.

Through a deep understanding of the technical properties and requirements of signal integrity and combined with our application knowledge both in the vehicle as well as in the logistics chain, TE Automotive is well positioned to offer the right solution for all current and next generation Infotainment Systems.



### HYBRID & ELECTRIC MOBILITY SOLUTIONS

Complete the connections you need to safely, and reliably make hybrid and electric mobility a reality for everyone, everyday. With over 50 years experience in automotive, industrial and energy connectivity, TE is an expert in pushing innovation from one industry to the next.

Our portfolio of AMP+ high voltage relays, resistors, AMP+ headers, connectors, IPT/APT and cable assemblies and vehicle charging solutions are designed to connect and protect electric distribution inside and outside of the vehicle.

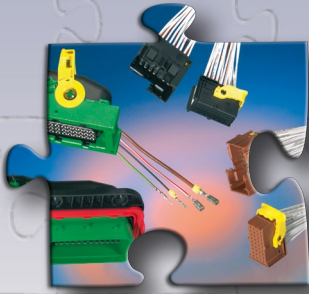


### SENSORS

Contact-less measuring eliminates interference effects, wear and tear, and provides increased reliability. TE Automotive, 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, TE Automotive 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.

TE Automotive has a broad electro-mechanical 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.



### TERMINALS & CONNECTORS

TE Automotive 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.

TE Automotive expanding capabilities include new copper and fiber-optic connectors, wires, cables/cable management systems that are designed to meet automotive industry demands. Our brands encompass the broadest range of connectors in the world, including high-density, high-speed designs for leading-edge communications equipment.



### CABLE ASSEMBLY SYSTEMS

TE Automotive is your partner for special cable assemblies. We offer 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.



### INDUCTIVE COIL SYSTEMS

TE Automotive is your source for interconnection technologies for automotive, truck and off-highway OEMs and Tier 1 suppliers. With our global design center in Belgium and manufacturing sites in all regions, TE Automotive's Inductive Coil Systems (ICS) group is ready to design your next-generation coil modules and provide local production support.

The ICS group maintains a leading market position in braking modules and other automotive coil applications. Through early involvement with you on your next design, TE Automotive can offer the benefits of miniaturization, design-in of platform components and optimized process flow for your standard, hybrid and electric vehicle project needs.



**TE Automotive Online**

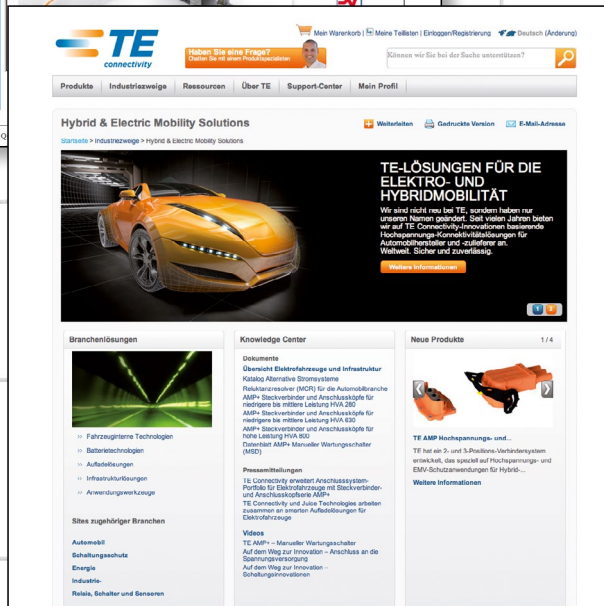
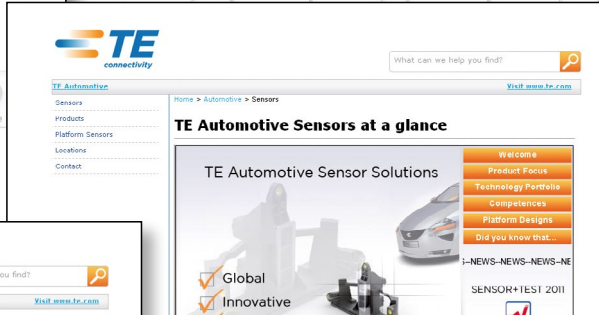
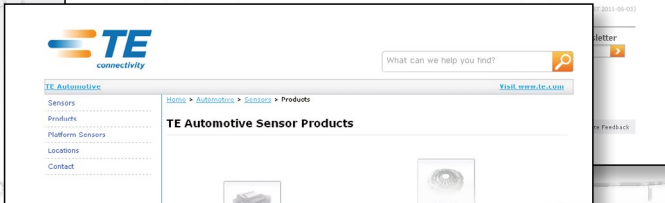
The TE Automotive website is an innovative and interactive source for application information, product updates and technical solutions. Please contact us at: [www.te.com/automotive](http://www.te.com/automotive)

**Internet**

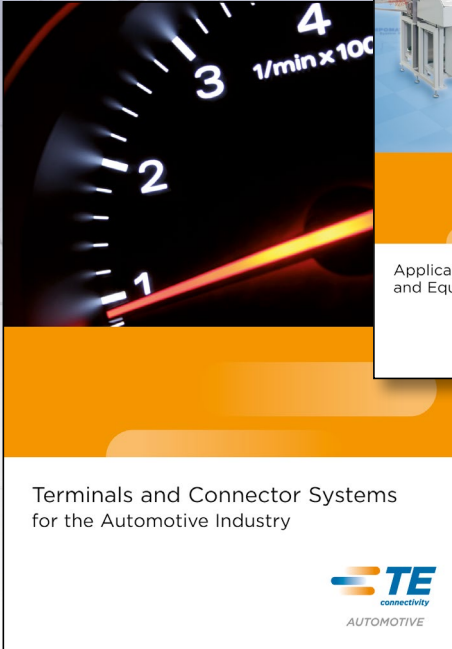
- [www.te.com](http://www.te.com)
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**Electronic Internet Catalog**

[www.te.com/components](http://www.te.com/components)



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- [www.te.com/automotive/most](http://www.te.com/automotive/most)
- [www.te.com/en/industries/hybrid-electric-mobility-solutions](http://www.te.com/en/industries/hybrid-electric-mobility-solutions)



## Product and Machine Literature

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

For more information on literature for TE Automotive, please contact your local organization or go to [www.te.com/automotive](http://www.te.com/automotive)



## Product Information Center (PIC)

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

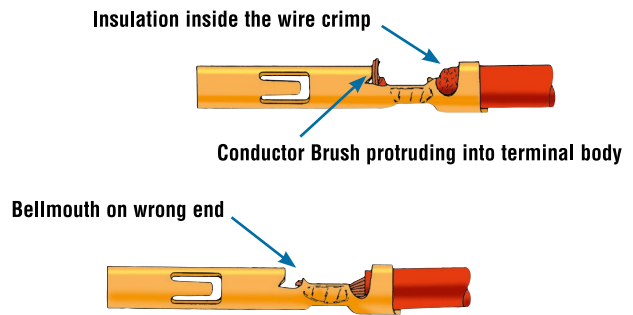
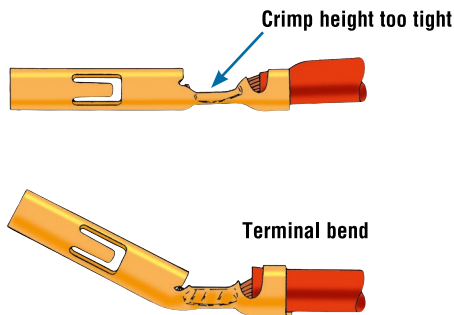
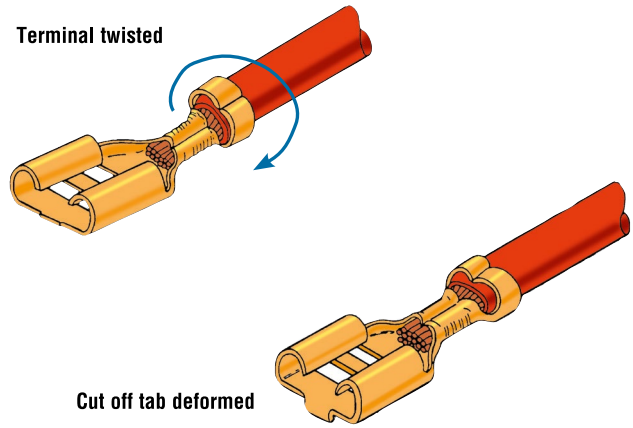
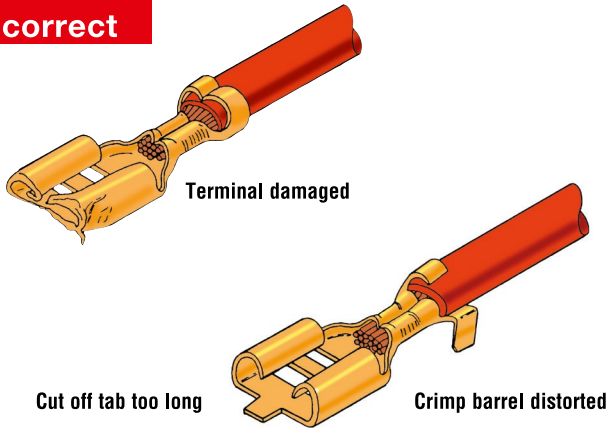
To reach our PIC staff, please contact your local organization or see our Global Contacts page.

Please contact us at:

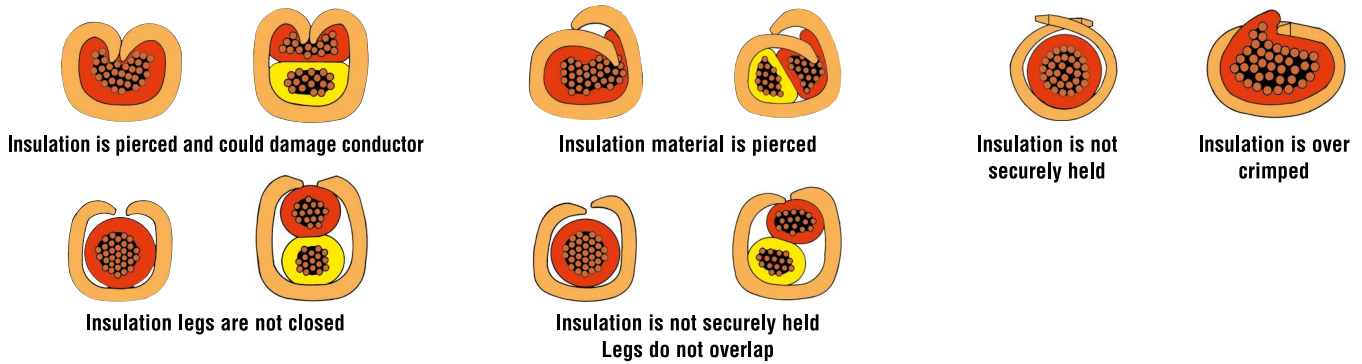
<http://www.te.com/customersupport/support.asp>

Quality Guidelines

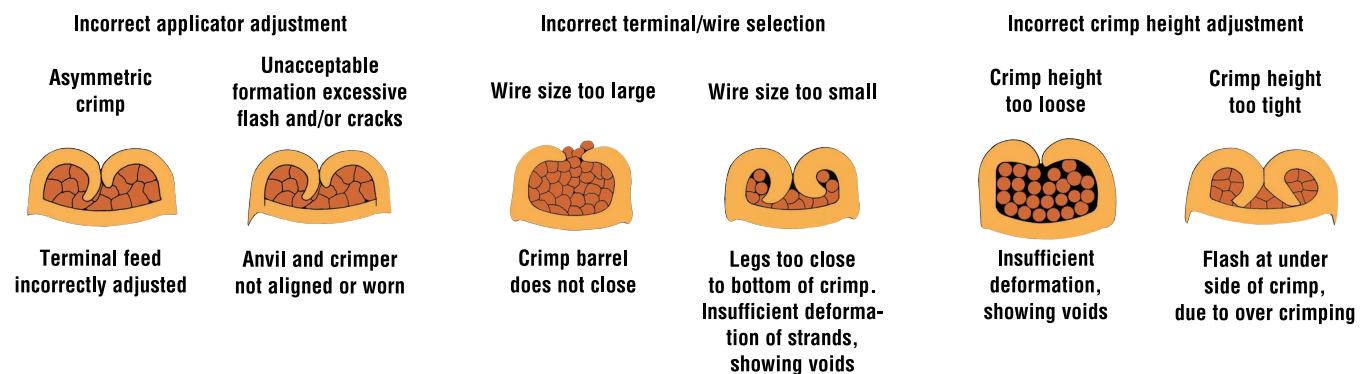
**Incorrect**



**INSULATION CRIMP**



**WIRE CRIMP**

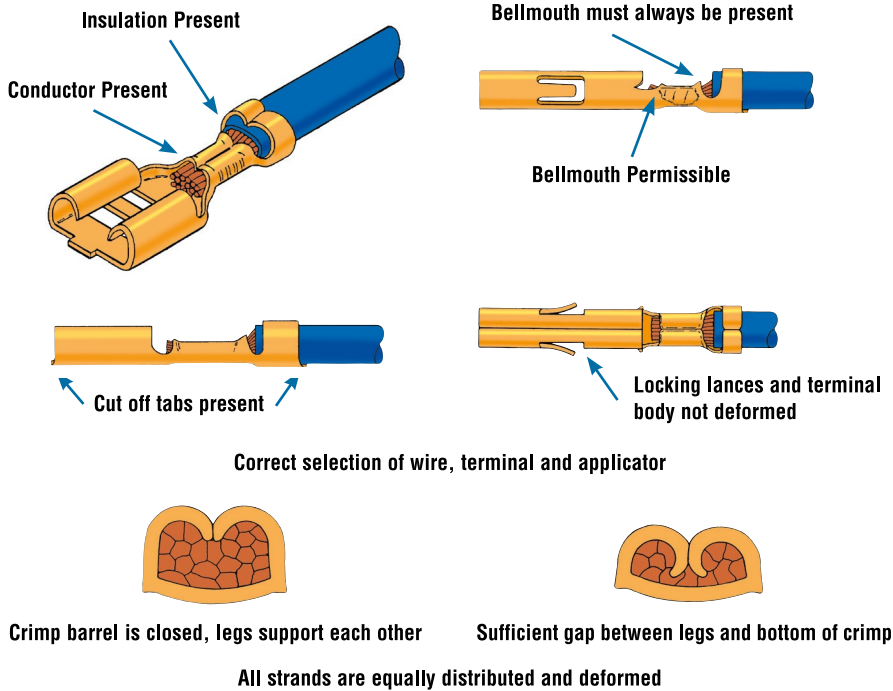




Quality Guidelines

**Correct**

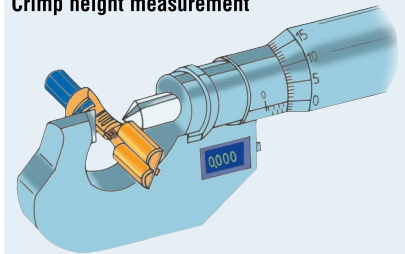
**WIRE CRIMP**



**Test**

**WIRE CRIMP**

Crimp height measurement



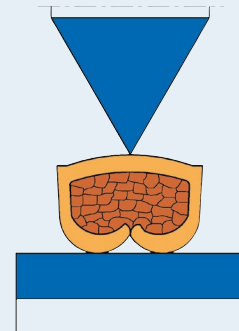
Crimp heights and tolerances

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

Examples:

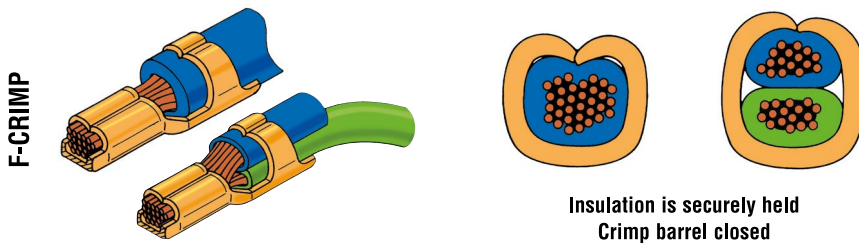
| Con-<br>tact | Part<br>No.      | Wire<br>Range<br>(mm <sup>2</sup> ) | Toler-<br>ance<br>(mm) | Appli-<br>cation<br>Spec. |
|--------------|------------------|-------------------------------------|------------------------|---------------------------|
| MQS          | 962885<br>962886 | 0.2–0.5                             | ±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

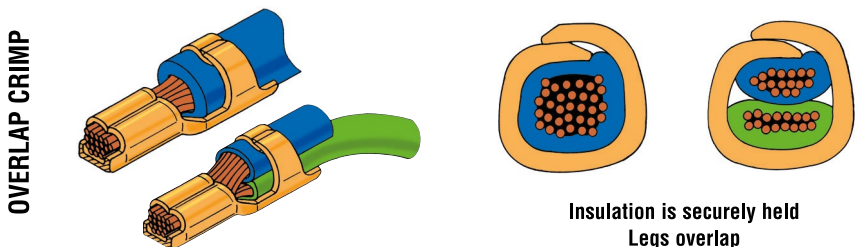


**INSULATION CRIMP**

Correct Insulation Diameter, Applicator and Terminal

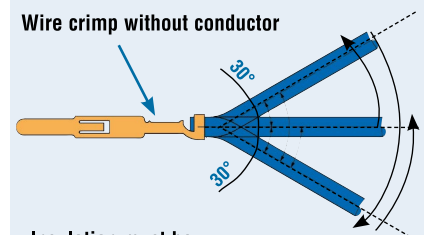


For double wire applications with different size wires always place wire with smallest outer diameter in the bottom





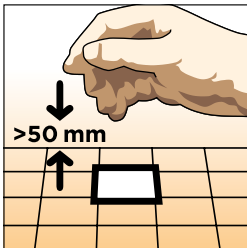
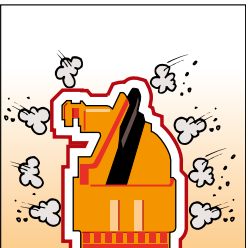
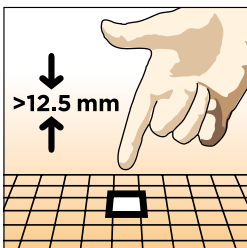
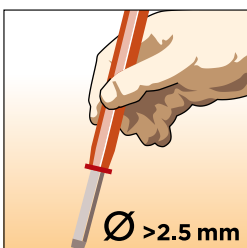
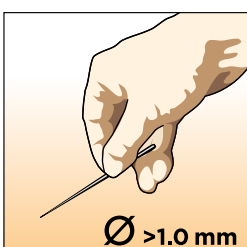
**INSULATION CRIMP**

Wire crimp without conductor


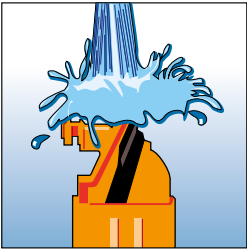
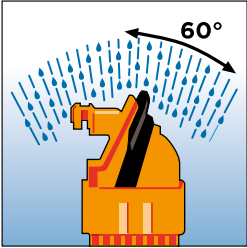
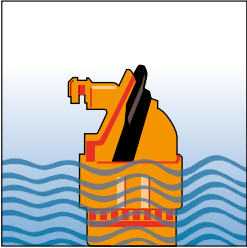

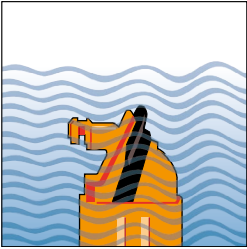




Insulation must be securely held after bend test

IP Code (Elements and Significance acc. to IEC 60529 and DIN 40050)

| 1st Digit | Against Foreign Objects (incl. Dust)  | 1st Digit | Against Foreign Objects (incl. Dust)  |
|-----------|---|-----------|---|
| 0         |  <p>Not protected.</p>   | 5K        |  <p>Dust protected.</p> |
| 1         |  <p>Protected against solid objects greater than 50 mm (ex. back of hand).</p> | 6K        |  <p>Dust tight.</p>     |
| 2         |  <p>Protected against solid objects greater than 12.5 mm (ex. finger).</p>    |           |   |
| 3         |  <p>Protected against solid objects greater than 2.5 mm (ex. tool).</p>      |           |   |
| 4         |  <p>Protected against solid objects greater than 1.0 mm (ex. wire).</p>      |           |   |

IP Code (Elements and Significance acc. to IEC 60529 and DIN 40050)

| 2nd Digit | Against Water   | 2nd Digit | Against Water  |
|-----------|---|-----------|--|
| 0         |  <p>Not protected.</p>   | 5         |  <p>Protected against jetting water.</p>   |
| 1         |  <p>Protected against vertically dripping water.</p>                 | 6         |  <p>Protected against powerfully jetting water.</p>  |
| 2         |  <p>Protected against dripping water when tilted up to 15°.</p>     | 6K        |  <p>Protected against powerfully jetting water with increased pressure (Automotive).</p>            |
| 3         |  <p>Protected against spraying water (up to 60° inclination).</p>  | 7         |  <p>Protected against the temporary effects of immersion up to 1 meter.</p>                        |
| 4         |  <p>Protected against splashing water.</p>                         | 8         |  <p>Protected against continuous submersion agreed with customer, but more severe than code 7.</p> |
| 4K        |  <p>Protected against splashing water with increased pressure.</p> | 9K        |  <p>Protected against high-pressure/steam-jet cleaning (Automotive).</p>                           |

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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 TE Connectivity, 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://www.te.com/commerce/alt/RohsAltHome.do>
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above

So whatever your questions when it comes to RoHS, we've got the answers at <http://www.te.com/customersupport/rohssupportcenter/>

RoHS  
Customer  
Support  
Center 

**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 page X and page XI.

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**

| <b>Inch</b> | <b>0</b> | <b>0.001</b> | <b>0.002</b> | <b>0.003</b> | <b>0.004</b> | <b>0.005</b> | <b>0.006</b> | <b>0.007</b> | <b>0.008</b> | <b>0.009</b> |
|-------------|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 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       | 2.1062       | 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  |              |              |              |              |              |              |              |              |              |
| <b>Inch</b> | <b>0</b> | <b>0.001</b> | <b>0.002</b> | <b>0.003</b> | <b>0.004</b> | <b>0.005</b> | <b>0.006</b> | <b>0.007</b> | <b>0.008</b> | <b>0.009</b> |

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 | 24.5872 | 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   |



Page

## MFINITY Modular Hard Wired Fuse and Relay Box

### MFINITY Modular Hard Wired Fuse and Relay Box

|   |         |   |
|---|---------|---|
| Introduction  | 1       |   |
| <b>Modules for Relays</b>   |         |   |
| Mini Relay Module, 2 Positions  | 2       | ✓ |
| Micro Relay Module, 4 Positions   | 3       | ✓ |
| Maxi Relay Module, 2 Positions  | 4       | ✓ |
| <b>Relays</b>   |         |   |
| Micro ISO Micro Relay A / VFMA, Mini ISO Power Relay B, Maxi ISO Power Relay F7 | 5       | ✓ |
| <b>Modules for Fuses</b>  |         |   |
| Medium Fuse Module, 12 Positions  | 6       | ✓ |
| Miniature Fuse Module, 16 Positions   | 7       | ✓ |
| Spare Fuse Module   | 8       | ✓ |
| <b>Modules for Pre-Fuses</b>  |         |   |
| Type A Fuse Module, 14 Positions – Busbar Version                               | 9       | ✓ |
| Type A Fuse Module, 14 Positions – Wire-by-Wire Version                         | 10      | ✓ |
| Pre-Fuse – SF30 – Module, 8 Positions   | 11      | ✓ |
| <b>Recommended Parts</b>  |         |   |
| Cover for Pre-Fuse Module – SF30  | 12      | ✓ |
| Cover for Fuse Module Type A  | 13      | ✓ |
| <b>Bracket Module and Interface</b>   |         |   |
| Bracket Module, 180°  | 14      | ✓ |
| Bracket Module, 90°   | 15      | ✓ |
| <b>Application Tooling</b>  |         |   |
| M2000MC Automatic Insertion Machine   | 16 – 17 |   |
| <b>Disclaimer   Trademarks</b>  |         |   |
| Disclaimer   Trademarks   | 20      |   |



# THE PRODUCTS



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Engineering Notes

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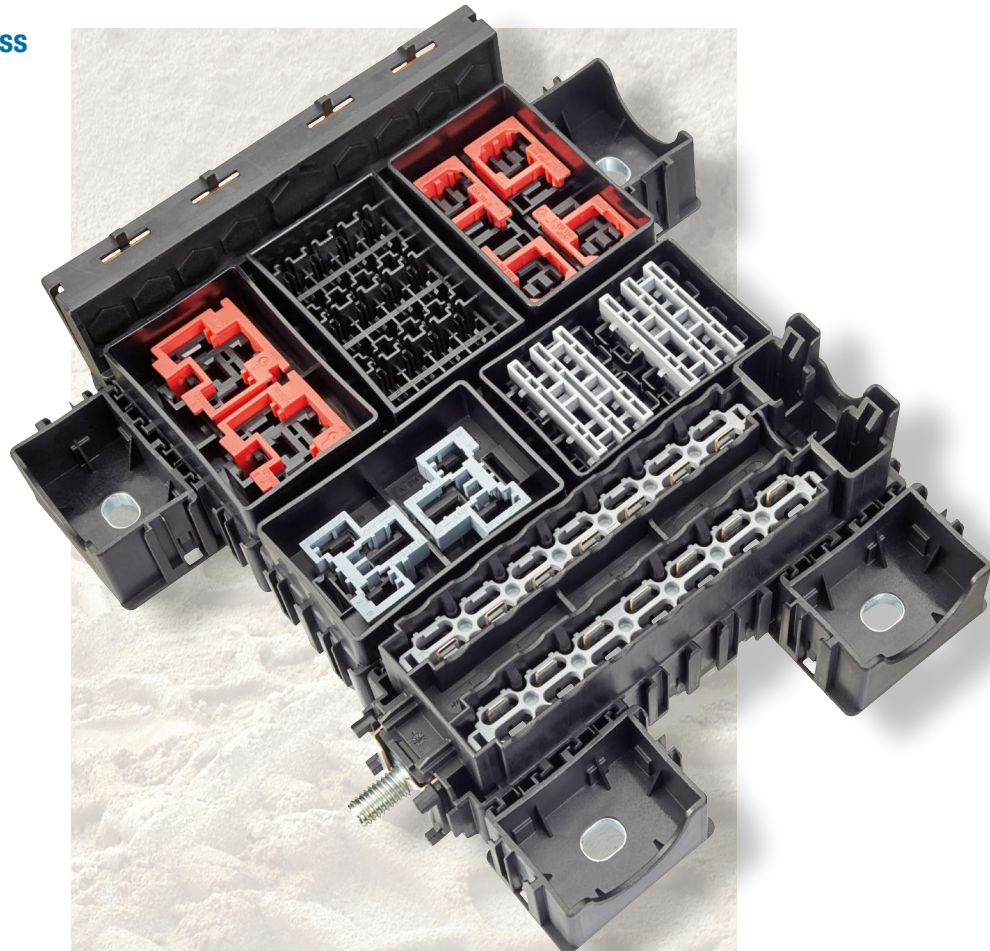
A large grid of graph paper for engineering notes, consisting of a uniform pattern of small squares covering the majority of the page.

**Introduction**



**MFINITY offers limitless combinations with its various modules.**

**Easily assembled into a complete power distribution panel, without any tooling cost.**



All modules and accessories shown in this catalogue are standard products. Upon request, TE Connectivity (TE) will design and manufacture custom modules, wire dress, frame or cover to meet specific customer requirements.

With its proven technology, MFINITY offers flexible, off the shelf products targeting low volume customers to create their own configurations.

**Product Facts Overview**

- ISO standard
- Modular design
- Temperature class  
-40° C to +85° C
- Vibration class on body
- Unsealed
- Overview 114-94092
- Pre-Fuse modules for SF30 (Midi) and Type A (J-Case) Fuses

Modules for Relays

Mini Relay Module, 2 Positions

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

**Application Specification**

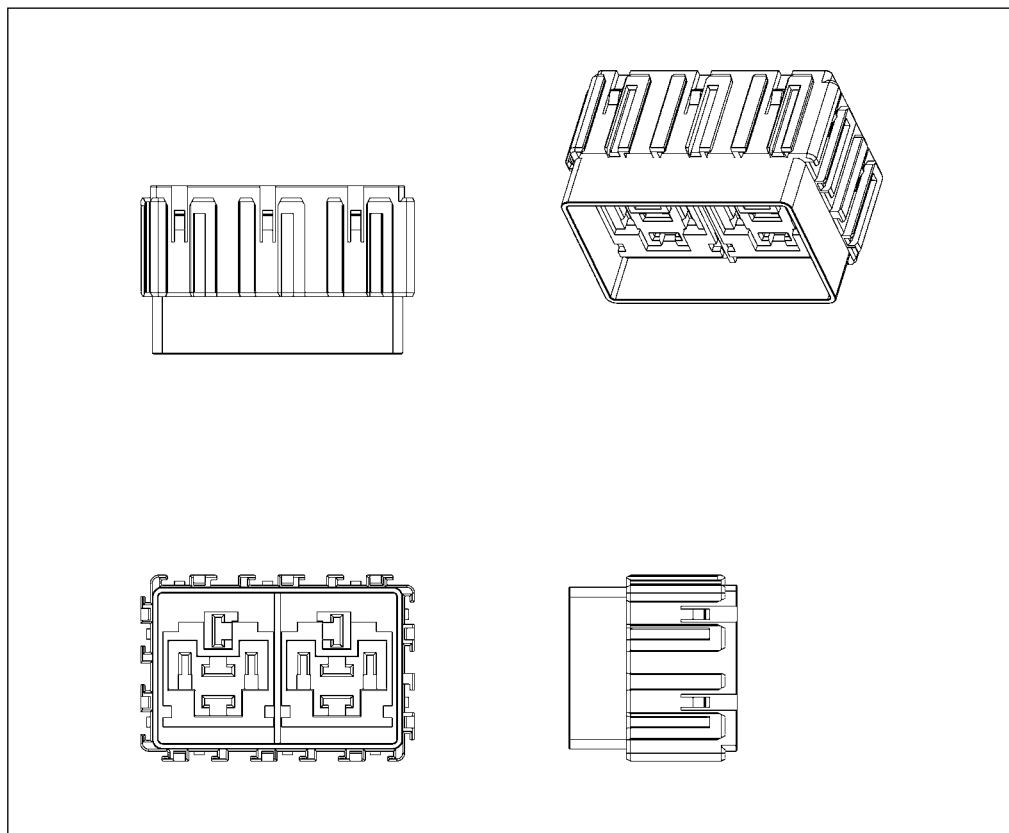
114-94090

**Order Informations**

2x ISO Mini Relays

**Part Number 2141024-1**

Please find suitable relays  
on page 5



**Mini Relay Module 2 Positions**

| Module P/N | Name              | Product Dimensions<br>L x W x H (mm) |
|------------|-------------------|--------------------------------------|
| 2141024-1  | Mini Relay Module | 69.3 x 47 x 42.5                     |

**Suitable Terminals**

| Terminal<br>TE P/N | Description                  | Material | Plating    | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|------------------------------|----------|------------|---------------------------------|
| 2208343-1          | LEAR - 6.3mm<br>361330-YF200 | N/A      | Pre-Tinned | 0.5 – 1.5                       |
| 2208343-3          | LEAR - 6.3mm<br>361030-YF200 | N/A      | Pre-Tinned | 3 – 5                           |

**Modules for Relays**

**Micro Relay Module, 4 Positions**

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

**Application Specification**

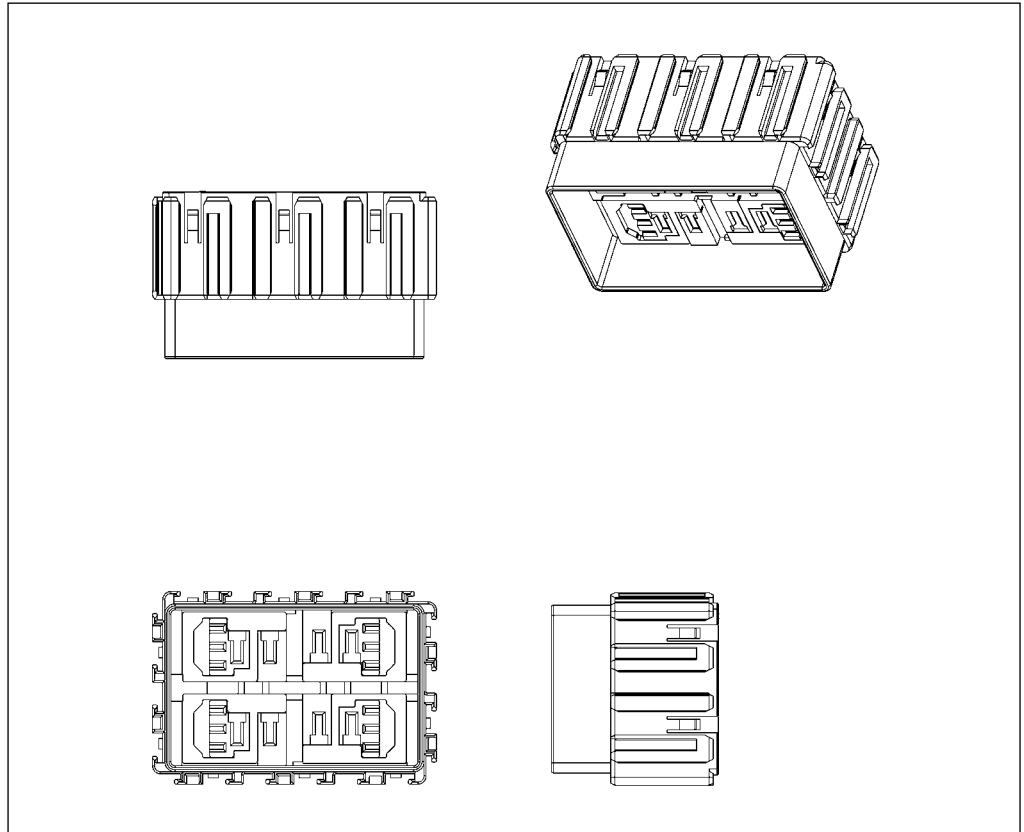
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**Order Informations**

4x ISO Micro Relays

**Part Number 2141022-1**

**Please find suitable relays  
on page 5**



**Micro Relay Module 4 Positions**

| Module P/N | Name               | Product Dimensions<br>L x W x H (mm) |
|------------|--------------------|--------------------------------------|
| 2141022-1  | Micro Relay Module | 69.3 x 47 x 40.75                    |

**Suitable Terminals**

| Terminal<br>TE P/N | Description                  | Material | Plating    | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|------------------------------|----------|------------|---------------------------------|
| 2208343-2          | LEAR - 6.3mm<br>361430-YF200 | N/A      | Pre-Tinned | 1.5-2.0                         |
| 2208342-2          | Molex - 4.8mm<br>33113-0003  | N/A      | N/A        | N/A                             |
| 2208342-1          | Molex - 4.8mm<br>33113-0005  | N/A      | N/A        | N/A                             |

**Modules for Relays**

**Maxi Relay Module, 2 Positions**

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

**Application Specification**

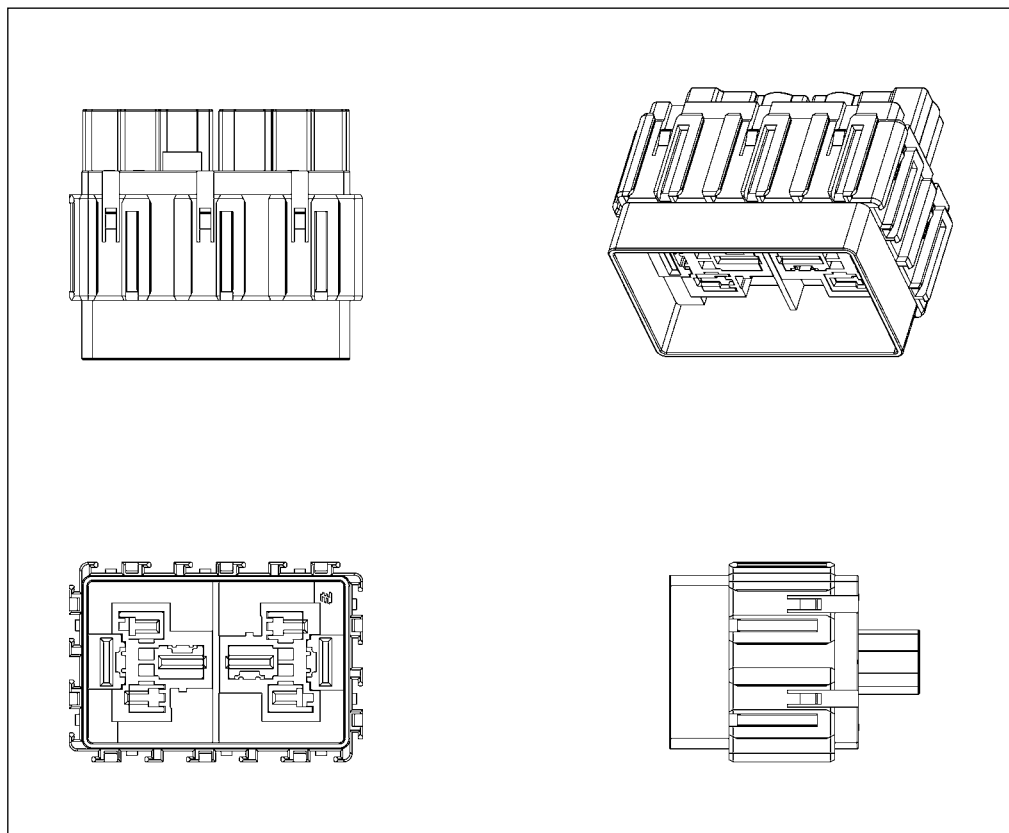
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**Order Informations**

2x ISO Maxi Relays

**Part Number 2141026-1**

**Please find suitable relays  
on page 5**



**Maxi Relay Module 2 Positions**

| Module P/N | Name              | Product Dimensions<br>L x W x H (mm) |
|------------|-------------------|--------------------------------------|
| 2141026-1  | Maxi Relay Module | 69.3 x 47 x 59                       |

**Suitable Terminals**

| Terminal<br>TE P/N | Description                  | Material | Plating    | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|------------------------------|----------|------------|---------------------------------|
| 1-1355849-1        | 9.5 Single Tab               | CuNiSi   | Pre-Tinned | 6-10                            |
| 2208343-1          | LEAR - 6.3mm<br>361330-YF200 | N/A      | Pre-Tinned | 0.5-1.5                         |

**Relays**

**Micro ISO Micro Relay A / VFMA, Mini ISO Power Relay B, Maxi ISO Power Relay F7**

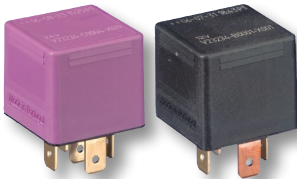
**Micro ISO, Micro Relay A / VFMA (24 V)**



| Arrangement           | Cover    | Coil. Suppr.     | Part Number       |             |
|-----------------------|----------|------------------|-------------------|-------------|
| Micro Make (NO)       | Standard | Diode            | V23074-A2002-A402 | 6-1393292-2 |
|                       |          | Resistor (680 Ω) | V23074-A1002-A402 | 8-1393292-9 |
|                       |          |                  | VFMA-11H41-S01    | 6-1415008-2 |
| Micro Changeover (CO) | Standard | Diode            | V23074-A2002-A403 | 6-1393292-3 |
|                       |          | Resistor (680 Ω) | V23074-A1002-A403 | 3-1393292-8 |

For detailed information find our data sheets under <http://relays.te.com/telectronics.asp>

**Mini ISO, Power Relay B (24 V)**



| Arrangement           | Cover             | Coil. Suppr.       | Part Number       |                  |
|-----------------------|-------------------|--------------------|-------------------|------------------|
| Mini Changeover (C/O) | Standard          | –                  | V23234-A0004-X055 | 2-1904025-6      |
|                       |                   | Diode (cathode 86) | V23234-A0004-X051 | 2-1904025-3      |
|                       |                   | Resistor (1400 Ω)  | V23234-A0004-X053 | 2-1904025-5      |
|                       | Bracket           | –                  | V23234-A1004-X050 | 1-1904027-1      |
|                       |                   | Resistor (1400 Ω)  | V23234-A1004-X054 | 3-1904027-2      |
| Mini Make (NO – 2x87) | Standard          | –                  | V23234-C0004-X020 | 1-1904015-3      |
|                       |                   | Resistor (1400 Ω)  | V23234-C0004-X018 | 2-1904015-1      |
|                       |                   | Bracket            | –                 | V23234-C1004-X17 |
| Resistor (1400 Ω)     | V23234-C1004-X085 |                    | 1904015-5         |                  |

For detailed information find our data sheets under <http://relays.te.com/telectronics.asp>

**Maxi ISO Power Relay F7 (24 V)**



| Arrangement    | Cover    | Coil. Suppr.      | Part Number       |             |
|----------------|----------|-------------------|-------------------|-------------|
| Maxi Make (NO) | Standard | –                 | V23134-J0053-D642 | 9-1393303-7 |
|                |          | Resistor (1200 Ω) | V23134-J0056-X408 | 1393304-5   |
|                | Bracket  | –                 | V23134-J1053-D642 | 1-1393304-1 |

For detailed information find our data sheets under <http://relays.te.com/telectronics.asp>

Modules for Fuses

Medium Fuse Module, 12 Positions

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

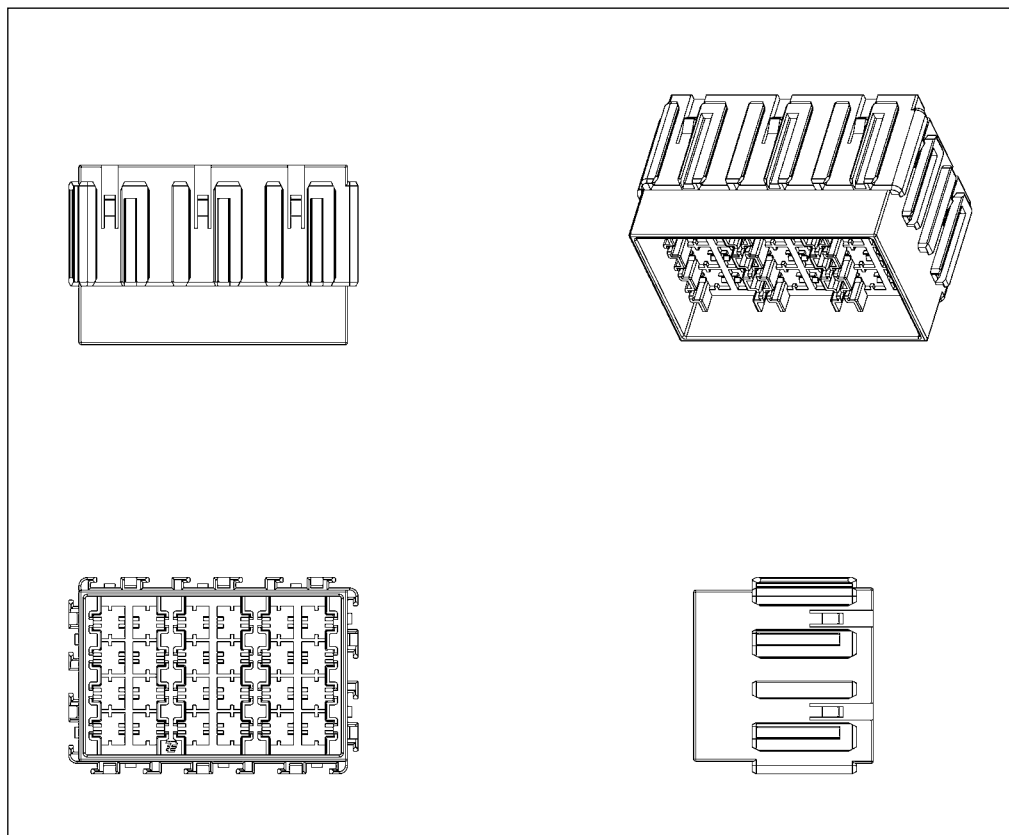
**Application Specification**

114-94090

**Order Informations**

12x (ATO) Medium Fuse

**Part Number 2141028-1**



**Medium Fuse Module 12 Positions**

| Module P/N | Module Name        | Product Dimensions<br>L x W x H (mm) |
|------------|--------------------|--------------------------------------|
| 2141028-1  | Medium Fuse Module | 69.3 x 47 x 43                       |

**Suitable Terminals**

| Terminal<br>TE P/N | Description         | Material | Plating    | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|---------------------|----------|------------|---------------------------------|
| 881572-3           | Fuse Contact Busbar | Brass    | Pre-Tinned | 4–6                             |
| 880397-2           | Fuse Contact Single | Brass    | Pre-Tinned | 0.5–1.5                         |
| 880398-1           | Fuse Contact Single | Brass    | –          | >1–2.5                          |
| 880398-2           | Fuse Contact Single | Brass    | Pre-Tinned | >1–2.5                          |



**Modules for Fuses**

**Miniature Fuse Module, 16 Positions**

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

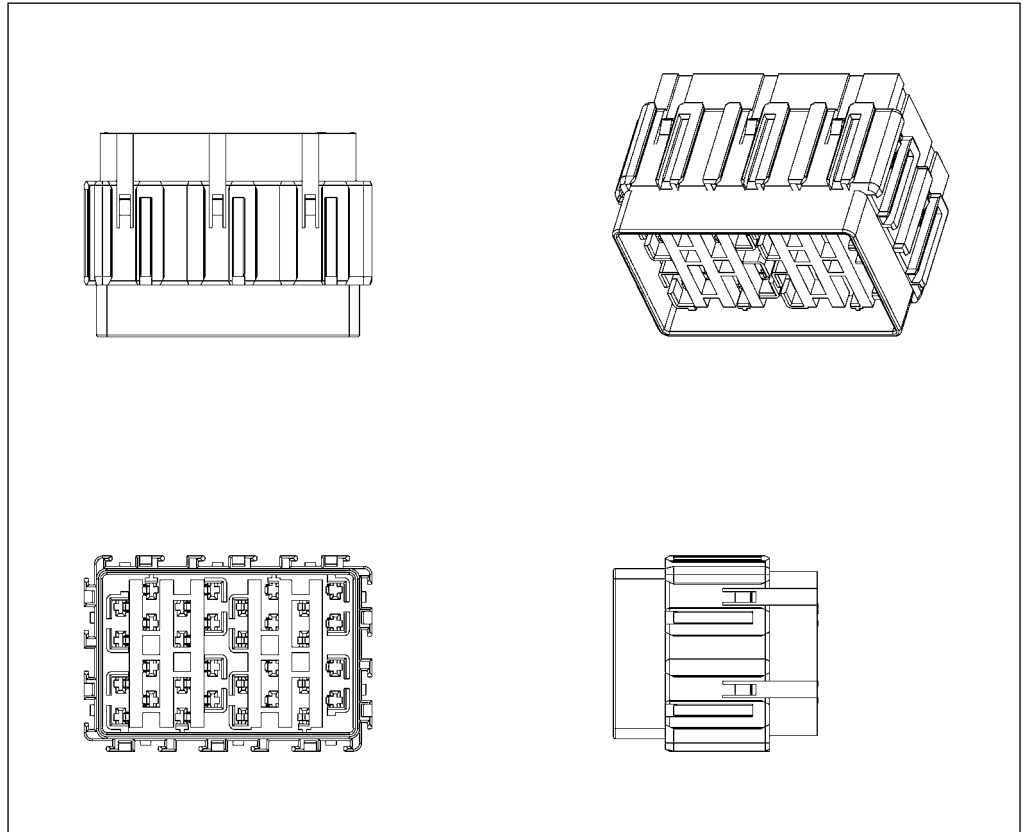
**Application Specification**

114-94090

**Order Informations**

16x Miniature (Mini) Fuse

**Part Number 2141029-1**



**Miniature Fuse Module 16 Positions**

| Module P/N | Module Name           | Product Dimensions<br>L x W x H (mm) |
|------------|-----------------------|--------------------------------------|
| 2141029-1  | Miniature Fuse Module | 69.3 x 47 x 43                       |

**Suitable Terminals**

| Terminal<br>TE P/N | Description         | Material | Plating    | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|---------------------|----------|------------|---------------------------------|
| 1-1355844-1        | Fuse Contact Busbar | CuNiSi   | Pre-Tinned | 4–6                             |
| 1-1355877-1        | Fuse Contact Single | CuNiSi   | Pre-Tinned | 1–2.5                           |
| 1-1355833-1        | Fuse Contact Single | CuNiSi   | Pre-Tinned | 0.5–1.0                         |
| 1-1355880-1        | Fuse Contact Single | CuNiSi   | Pre-Tinned | 2.5–4                           |

Modules for Fuses

Spare Fuse Module

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

**Application Specification**

114-94090

**Order Informations**

Spare Fuse Module

**Part Number 1-2141095-1**

Can contain up to:

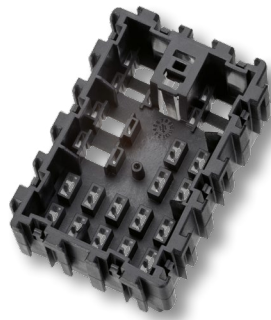
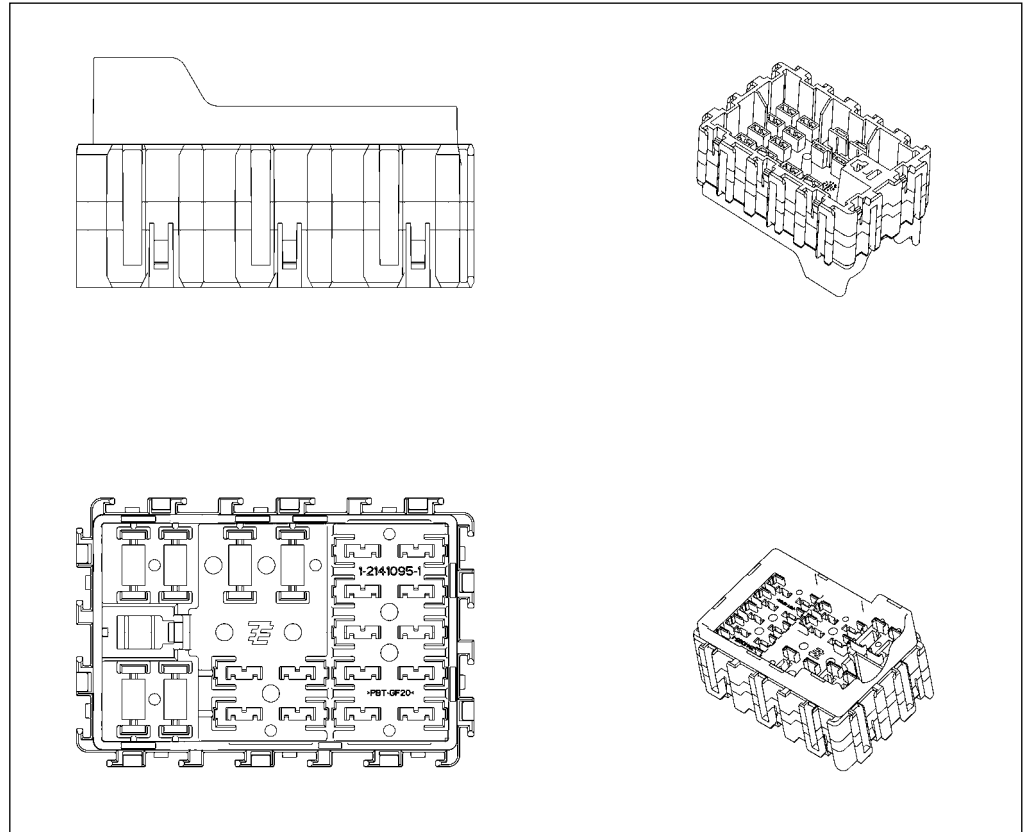
- 7x Medium (ATO) Fuses used in module

**Part Number 2141028-1**

- 6x Miniature (Mini) Fuses used in module

**Part Number 2141029-1**

- 1x Fuse Puller



**Spare Fuse Module**

| Module P/N  | Module Name       | Product Dimensions<br>L x W x H (mm) |
|-------------|-------------------|--------------------------------------|
| 1-2141095-1 | Spare Fuse Module | 69.1 x 46.7 x 40                     |

**Modules for Pre-Fuses**

**Type A Fuse Module, 14 Positions – Busbar Version**

**Technical Features**

**Material**

PA6

**Product Specification**

108-94263

**Application Specification**

114-94090

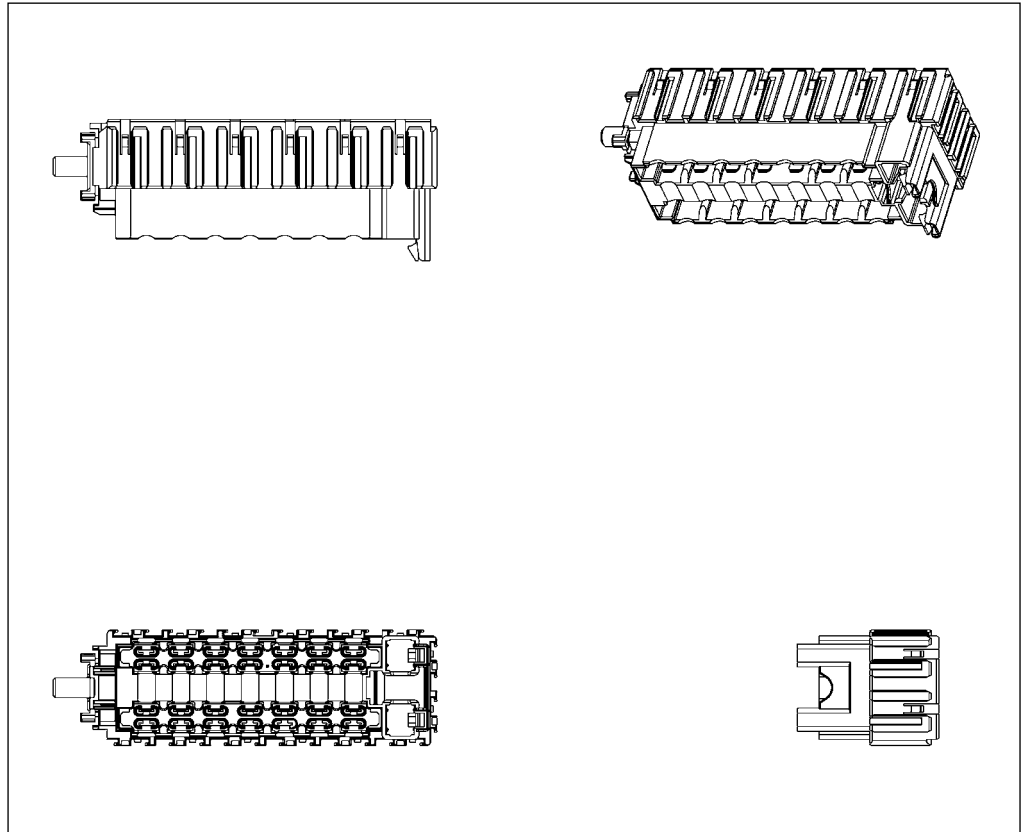
**Order Informations**

Screw M8 for B+ Connection  
with wire up to 35mm<sup>2</sup>

14x Type A Fuse (J-Case)

**Part Number 2141040-1**

2x Spare Fuse places



**Type A Fuse Module 14 Positions – Busbar Version**

| Module P/N | Module Name                            | Product Dimensions<br>L x W x H (mm) |
|------------|--|--------------------------------------|
| 2141040-1  | Type A Fuse Module<br>(Busbar Version) | 155.55 x 47 x 57.3                   |

Mating Cover see page 13  
Part Number 2141039-1



Modules for Pre-Fuses

Type A Fuse Module, 14 Positions – Wire-by-Wire Version

**Technical Features**

**Material**

PA6

**Product Specification**

108-94263

**Application Specification**

114-94090

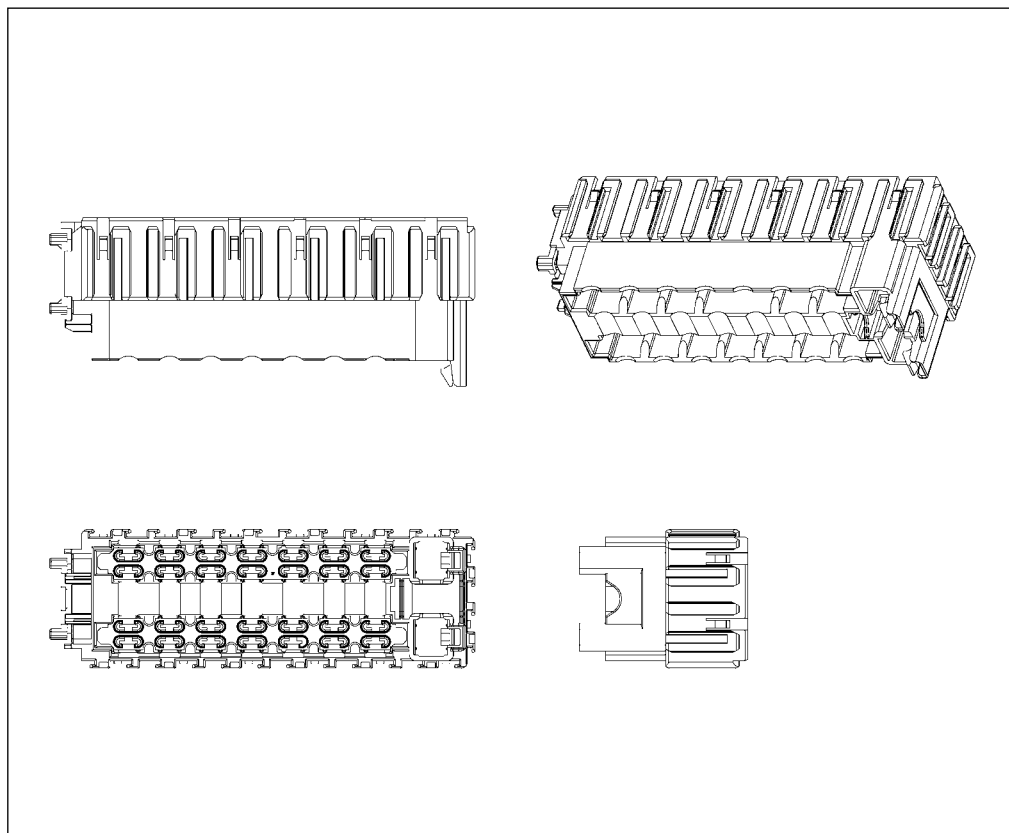
**Order Informations**

B+ Connection via  
wire to busbar – Tab

14x Typ A Fuse (J-Case)

**Part Number 2141040-2**

2x Spare Fuse places



**Type A Fuse Module 14 Positions – Wire by Wire Version**

| Module P/N | Module Name        | Product Dimensions<br>L x W x H (mm) |
|------------|--------------------|--------------------------------------|
| 2141040-2  | Type A Fuse Module | 144.55 x 47 x 57.3                   |

**Suitable Terminals**

| Terminal<br>TE P/N | Description             | Material | Plating        | Wire Size<br>(mm <sup>2</sup> ) |
|--------------------|-------------------------|----------|----------------|---------------------------------|
| 1670225-1          | 6.3 Busbar & Single Tab | –        | Tin Hot Dipped | 4–6                             |
| 963755-1           | 6.3 Single Tab          | N/A      | Pre-Tinned     | 2.5-4                           |

**Modules for Pre-Fuses**

**Pre-Fuse – SF 30 – Module, 8 Positions**

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

**Application Specification**

114-94090

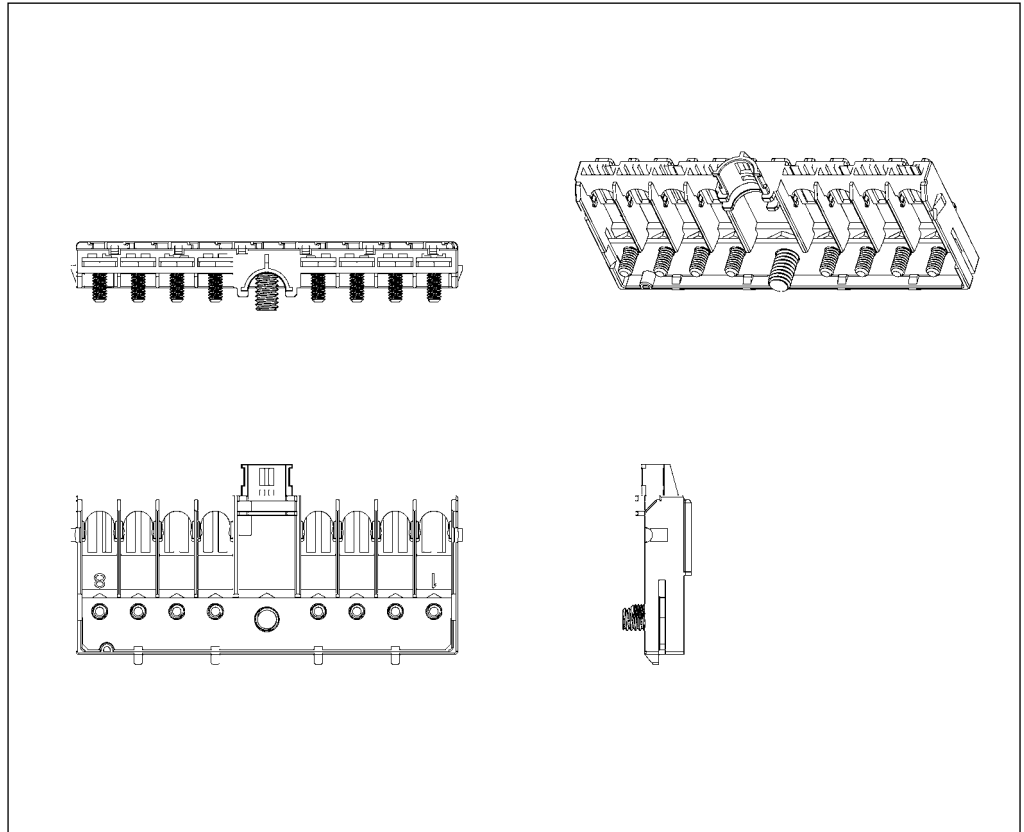
**Order Informations**

Screw M8 for B+ Connection  
with wire up to 35mm<sup>2</sup>

**Part Number 2141034-1**

Used with 8 x M5 Bolt

**Part Number 1534968-2**



**Pre-Fuse – SF30 – Module, 8 Positions**

| Module P/N | Module Name           | Product Dimensions<br>L x W x H (mm) |
|------------|-----------------------|--------------------------------------|
| 2141034-1  | Pre-Fuse SF 30 Module | 137 x 70 x 24.1                      |

Mating Cover see page 12  
Part Number 2141033-1



**Recommended Parts**

**Cover for Pre-Fuse Module – SF 30**

**Technical Features**

**Material**

PP

**Product Specification**

108-94263

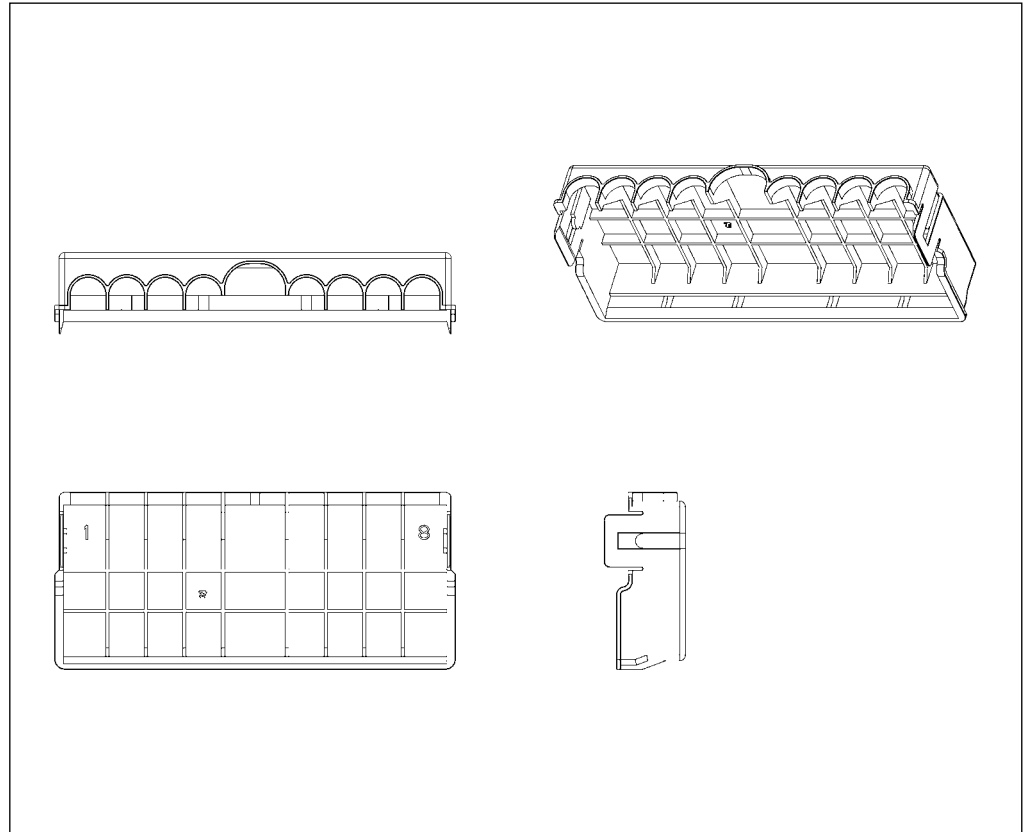
**Application Specification**

114-94090

**Order Informations**

Cover for Pre-Fuse Module

**Part Number 2141033-1**



**Cover for Pre-Fuse Module – SF 30**

| Module P/N | Module Name                | Product Dimensions<br>L x W x H (mm) |
|------------|----------------------------|--------------------------------------|
| 2141033-1  | Cover for SF30 Fuse Module | 140.4 x 62 x 28.5                    |

Mating Module see page 11  
Part Number 2141034-1



**Recommended Parts**

**Cover for Fuse Module Type A**

**Technical Features**

**Material**

PP

**Product Specification**

108-94263

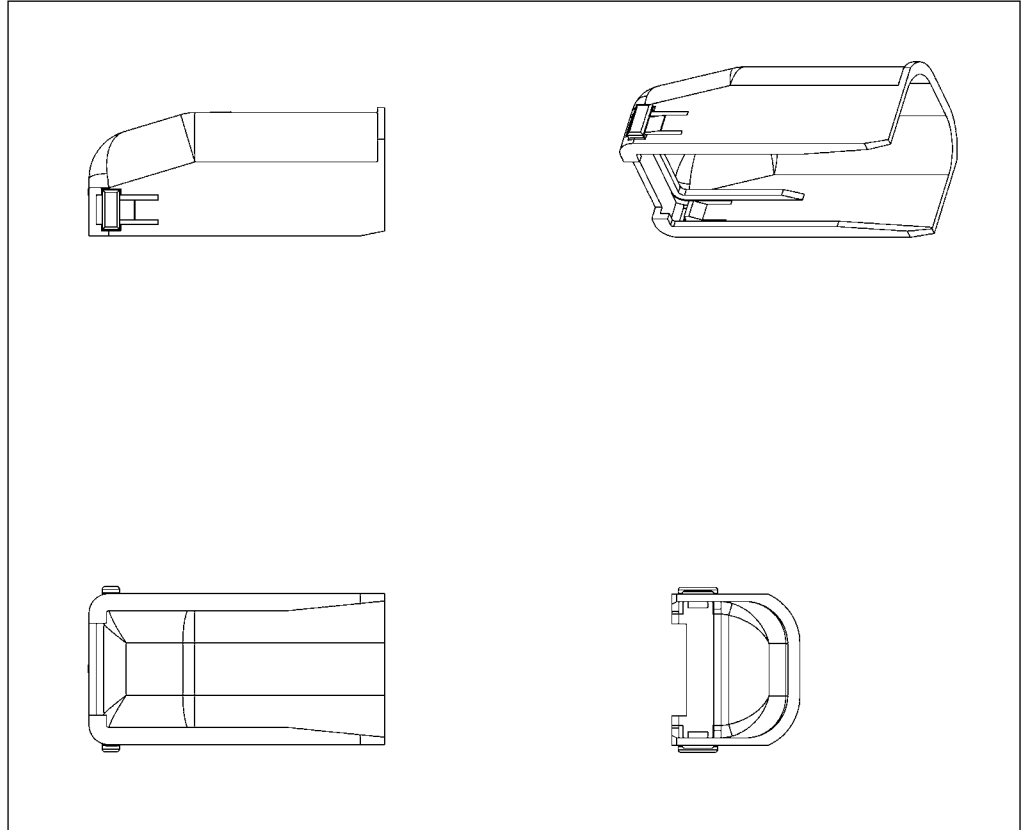
**Application Specification**

114-94090

**Order Informations**

Cover for B+ Protection

**Part Number 2141039-1**



**Cover for Fuse Module Type A**

| Module P/N | Module Name                     | Product Dimensions<br>L x W x H (mm) |
|------------|---------------------------------|--------------------------------------|
| 2141039-1  | Cover for<br>Type A Fuse Module | 60 x 33.4 x 26                       |

Mating Module    see page 9  
Part Number        2141040-1



Bracket Module, 180°

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

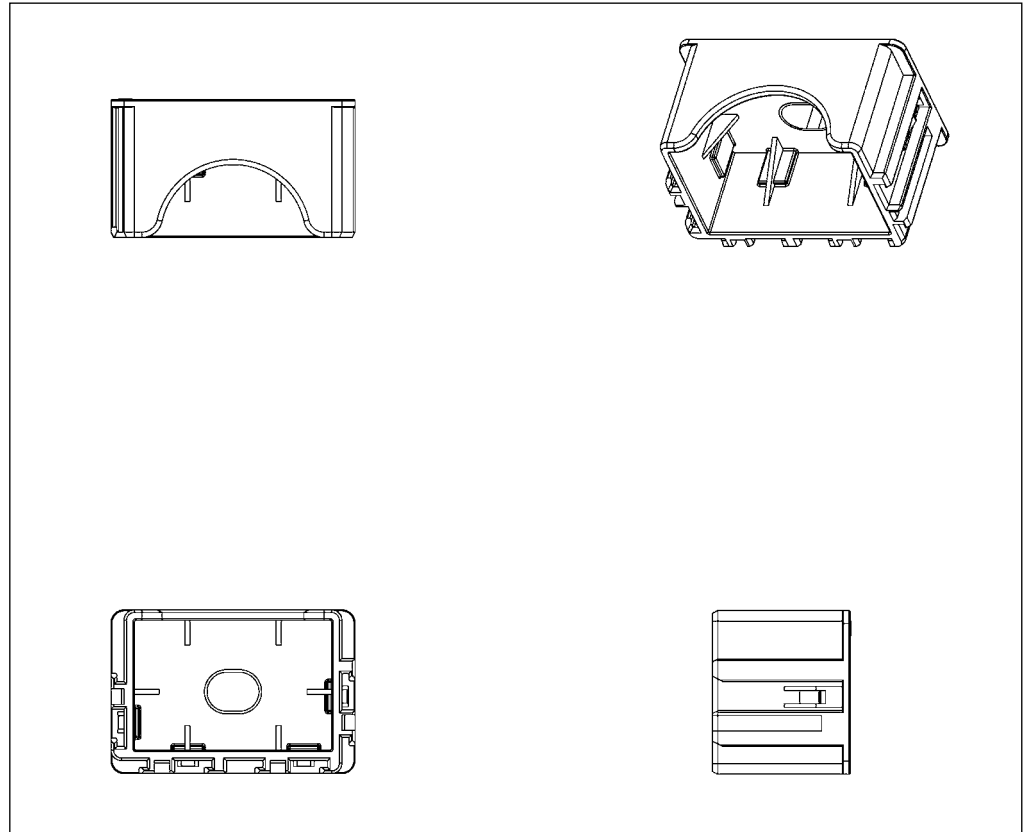
**Application Specification**

114-94090

**Order Informations**

Mounting Bracket for Screw M8

**Part Number 2141031-1**



**Bracket Module, 180°**

| Module P/N | Module Name            | Product Dimensions<br>L x W x H (mm) |
|------------|------------------------|--------------------------------------|
| 2141031-1  | Bracket Module<br>180° | 42 x 31.5 x 26.5                     |



**Bracket Module and Interface**

**Bracket Module, 90°**

**Technical Features**

**Material**

PBT

**Product Specification**

108-94263

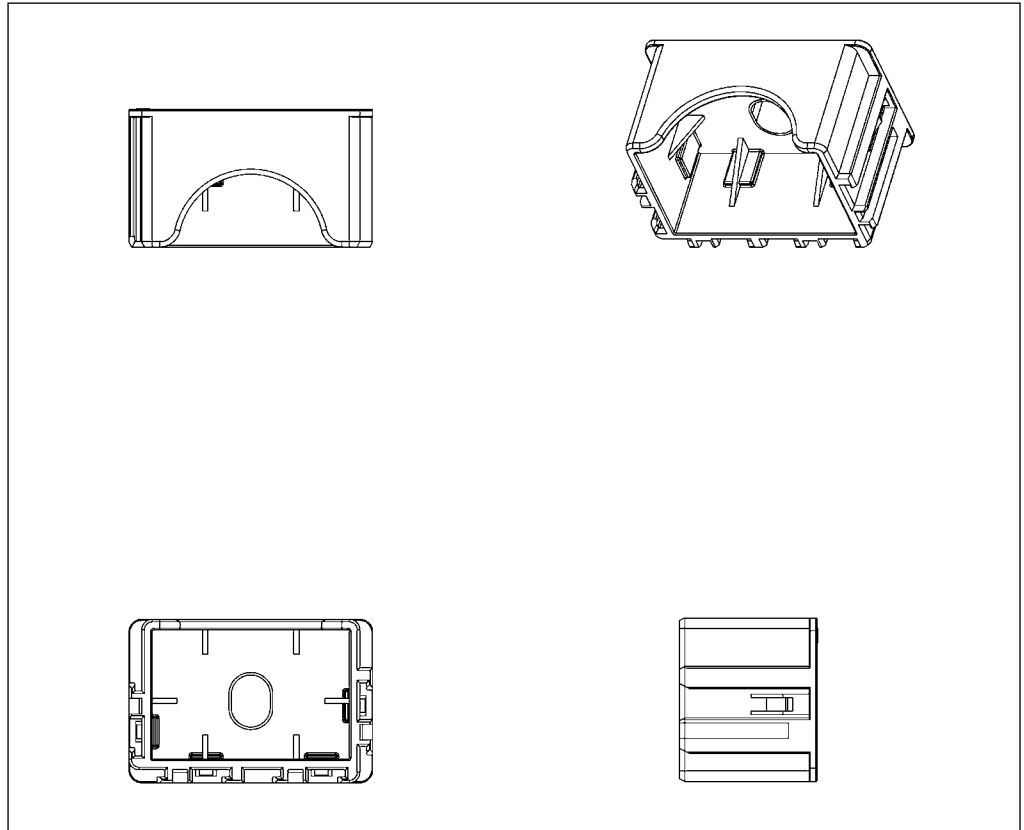
**Application Specification**

114-94090

**Order Informations**

Mounting Bracket for Screw M8

**Part Number 2141031-2**



**Bracket Module, 90°**

| Module P/N | Module Name           | Product Dimensions<br>L x W x H (mm) |
|------------|-----------------------|--------------------------------------|
| 2141031-2  | Bracket Module<br>90° | 47 x 31.5 x 26.55                    |

**High Quality.  
High Reliability.  
High Volume.**



**Application Tooling**

**M2000MC Automatic Insertion Machine**

**With the CE approved M2000MC automatic insertion machine for fuses and relays, TE Application Tooling provides a high-quality solution for high-volume production within the automotive industry.**

The M2000MC automatically inserts mini fuses into a Junction Box (J/B) according to the programmed sequence, ensuring that the correct fuses are inserted in the correct location for consistent quality.

The machine reduces the number of operators required in the production process, increasing productivity in the factory, whereat the operator needs to ensure that the machine is supplied with junction boxes and fuses.

The M2000MC can also be optionally equipped with insertion force monitoring and insertion depth control.

**Outstanding features deliver tangible benefits**

- Dependable high-volume production
- Insertion depth checking by linear scale
- Insertion force monitoring – checking maximum force during insertion
- OCR of fuse before insertion to prevent wrong fuse insertion
- No stopping of production during supply to the bowl feeder
- Robot arm with ionizer that cleans inside the robot arm
- XY table positioning
- Up to 6 heads (fuse)

**Machine specification**

**Layout**

LxDxH = 1957.6 x 2584 x 1627.1mm (without tower lamp)  
– dimensions may be altered following a technical meeting.

**Machine weight**

2,500 kg (inc. blow feeders)  
– Changeable with various J/B design.

**Electrical supply**

AC 110 V, single phase, 50/60 Hz, 30 KVA – other specific requirements may be met.

**Power consumption**

2.1 kW

**Air supply**

4.5-7.0 kgf /cm<sup>2</sup>

**Air consumption**

600 l/min

**Temperature and humidity**

10~35° C, 30~70%

**Noise level**

< 75 dB(A)

**Operating system**

Windows XP Professional (Embedded POS-READY2009) Service pack3

**PC specification (incl. accessories)**

Intel Pentium(R) 2.6 GHz, 1GB RAMSSD hard disk drive by SATA (capacity: 120 GB) 17" LCD touch screen & equipped with keyboard, mouse, DVD ROM drive

**Available languages**

English and Korean

**XY table speed**

90 m/min

**Device insertion speed (per point)**

Various per component size and J/B design.

- Low profile mini fuse: 0.35~0.55 sec

- Relay: 0.8 ~ 1.0 sec

- SB fuse: 0.45~0.7 sec

**Max. J/B size**

250 x 250 mm – may be altered to meet specific customer requirements

**XY positioning accuracy**

+/- 0.01 mm

**Insertion depth monitoring**

available in 0.01 mm steps

**Insertion force monitoring**

available in 0.01 N steps

**Cmk assessment data**

>1.67 (X and Y axis)

**Machine configuration**

Stand-alone only.

Inline configuration is available on request.

**Abbreviation Explanation**

OCR: Optical character recognition. (Vision sensor checks color or characters on the components.)

SATA: Connection type between PC mother board and memory unit (CDRom or hard disk).

SB fuse: Slow Blow fuse (type of electric fuse)

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Engineering Notes

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A large grid area for engineering notes, consisting of a uniform grid of small squares, intended for technical drawings or calculations.

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## Disclaimer, Trademarks

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Phone: +91-080-2854-0800  
Fax: +91-080-2854-0820/21

**Italy** - Collegno (Torino)  
Phone: +39-011-4012-111  
Fax: +39-011-4031-116  
Product Information Center:  
Phone: +39-011-4012-632  
Fax: +39-011-4028-7632

**Lithuania and Latvia**  
**Lithuania** - Vilnius  
Phone: +370-5-213-1402  
Fax: +370-5-213-1403

**Morocco** - Tangier  
Phone: +212-5-31-06-2700  
Fax: +212-5-31-06-2728

**Netherlands** - 's-Hertogenbosch  
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Fax: +31-73-6212-365  
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Phone: +31-73-6246-999  
Fax: +31-73-6246-998

**Norway** - Nesbru  
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Fax: +46-8-50-72-50-01  
Product Information Center:  
Phone: +46-8-50-72-50-00

**Poland** - Warsaw  
Phone: +48-22-4576-700  
Fax: +48-22-4576-720

**Romania** - Bucharest  
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**Slovenia** - Ljubljana  
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Fax: +27-41-581-0440

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Fax: +34-93-564-4819  
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**Sweden** - Upplands Väsby  
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**Ukraine** - Kiev  
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