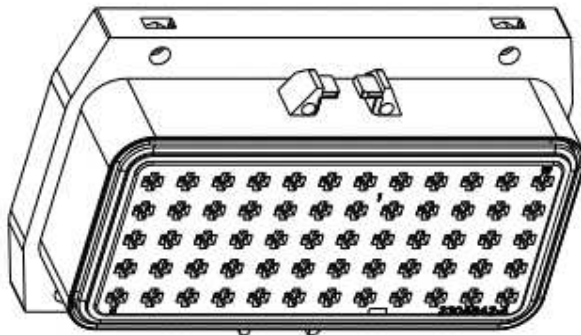


## Fuse and Relay Box Assembly

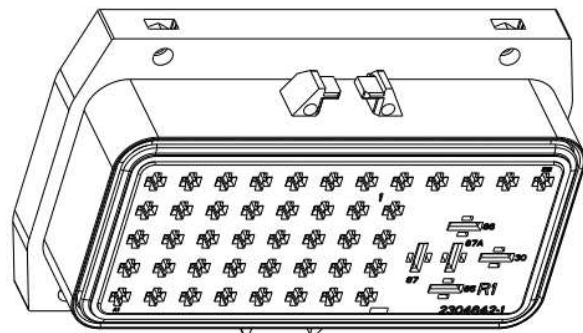
### 1. INTRODUCTION

This specification covers the requirements for application of the Fuse and Relay Box Assemblies. The assemblies accept AMP MCP terminals.

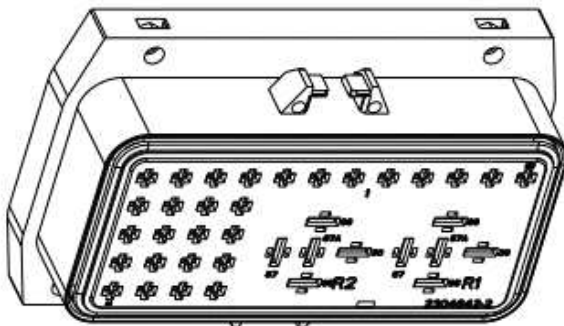
When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate inquiries for information. Basic terms and features of this product are provided in Figure 1 and Figure 2.



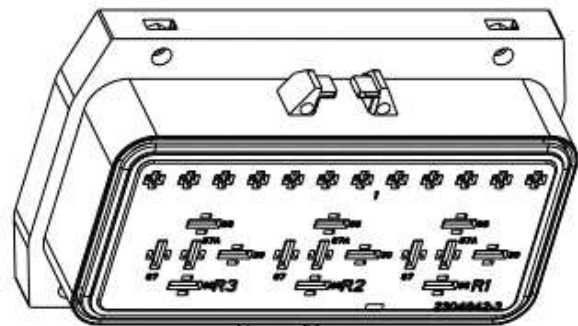
60 Pos. Flanged Fuse and Relay Box Assembly



49 Pos. Flanged Fuse and Relay Box Assembly

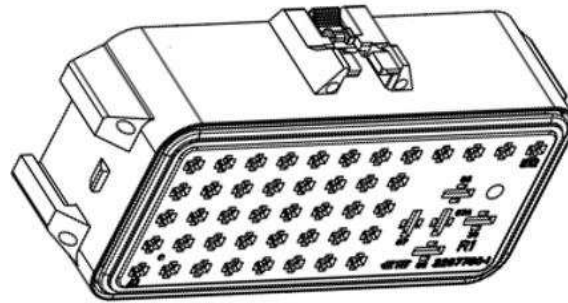


38 Pos. Flanged Fuse and Relay Box Assembly

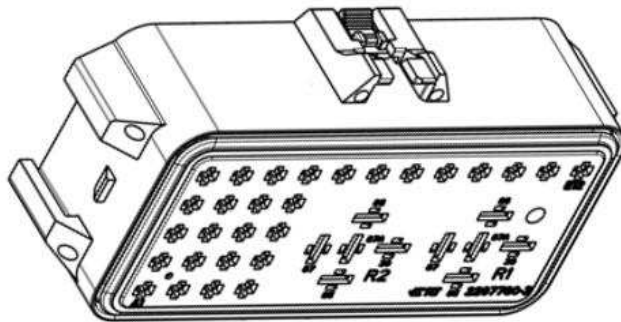


27 Pos. Flanged Fuse and Relay Box Assembly

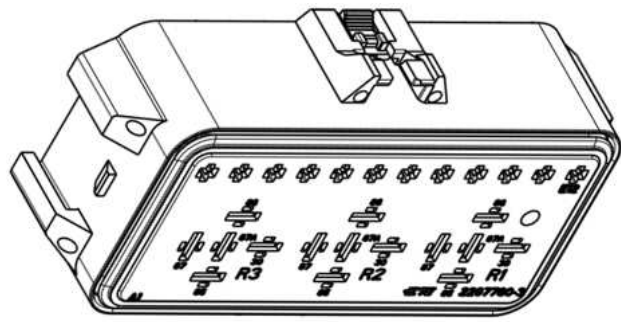
Figure 1



49 Pos. ISO Fuse and Relay Box Assembly



38 Pos. ISO Fuse and Relay Box Assembly



27 Pos. ISO Fuse and Relay Box Assembly

Figure 2

**2. REFERENCE MATERIAL**

**2.1. Revision Summary**

Initial release of application specification

**2.2. Customer Assistance**

Reference Product Base Part Number 2304643 and 2297813. Use of these numbers will identify the product and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, visit our website at [www.te.com](http://www.te.com), or by calling the PRODUCT INFORMATION number at the bottom of page 1.

**2.3. Drawings**

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the information contained in the Customer Drawings takes priority.

<a href="#">828922</a>	CAVITY PLUG FOR 2.8 CAVITY
<a href="#">967652</a>	CAVITY PLUG FOR 6.3 CAVITY
<a href="#">1443996</a>	COVER, 60 POSITION
<a href="#">2098164</a>	COVER, 60 POSITION
<a href="#">2297813</a>	ISO FUSE AND RELAY BOX
<a href="#">2304643</a>	FUSE AND RELAY BOX, FLANGED

**2.4. Specifications**

Refer to Application Specification [114-18148](#) for information on terminal termination and applicator tooling for the 2.8mm MCP terminal system

Refer to Application Specification [114-18388](#) for information on terminal termination and applicator tooling for the 6.3mm MCP terminal system.

Refer to Application Specification [114-151051](#) for information on ISO Fuse and Relay Box Mounting Bracket.

**3. REQUIREMENTS**

**3.1. Safety**

Do not stack product shipping containers so high that the containers buckle or deform.

**3.2. Storage**

**A. Reel Storage**

When using reeled contacts, store coil wound reels horizontally and traverse reels vertically.

**B. Shelf Life**

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

**C. Chemical Exposure**

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the materials.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur	Nitrites	Tartrates

**3.3. Shipping Features**

**A. Shipped Condition**

The “As Shipped” state of the assembly is as shown in Figure 3. In the ISO Fuse and Relay Box Assemblies, the CPA is in the “Staged” position. See Figure 3.

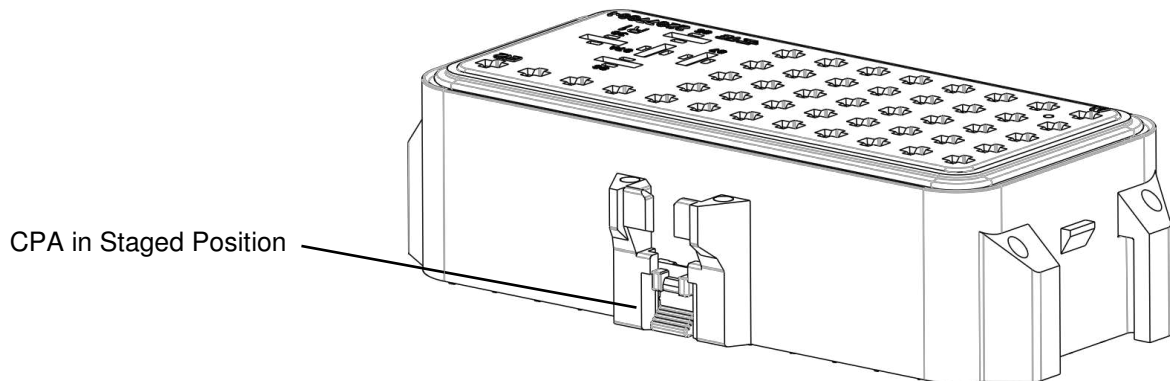


Figure 3

### 3.4. Sealing

The connector system provides for sealing to the wires using a single wire seal installed onto the terminal during crimping and sealing to a cover using a peripheral seal.

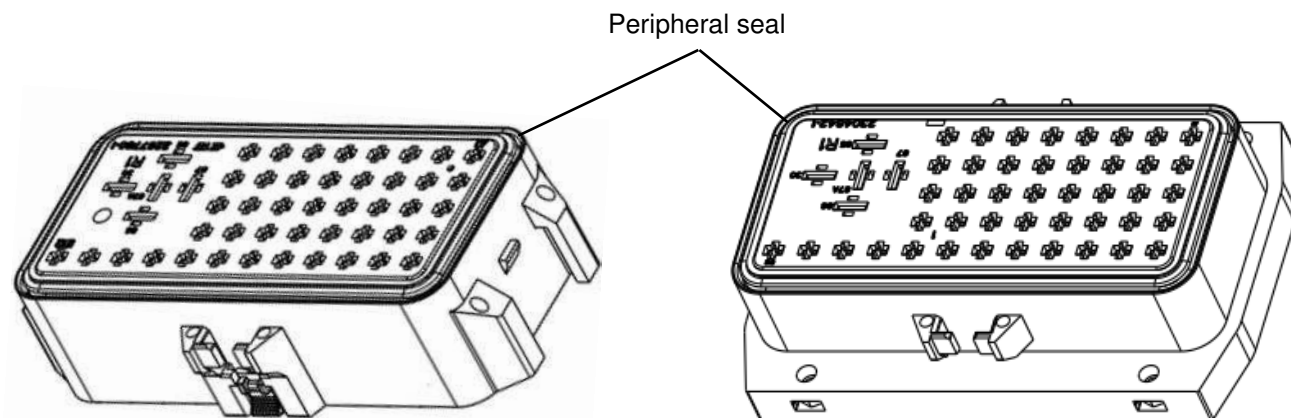


Figure 4

### 3.5. Flange Fuse and Relay Box Panel Cutout

The panel cutout dimensions are as shown in Figure 5, refer to latest revision of customer drawing 2304643.

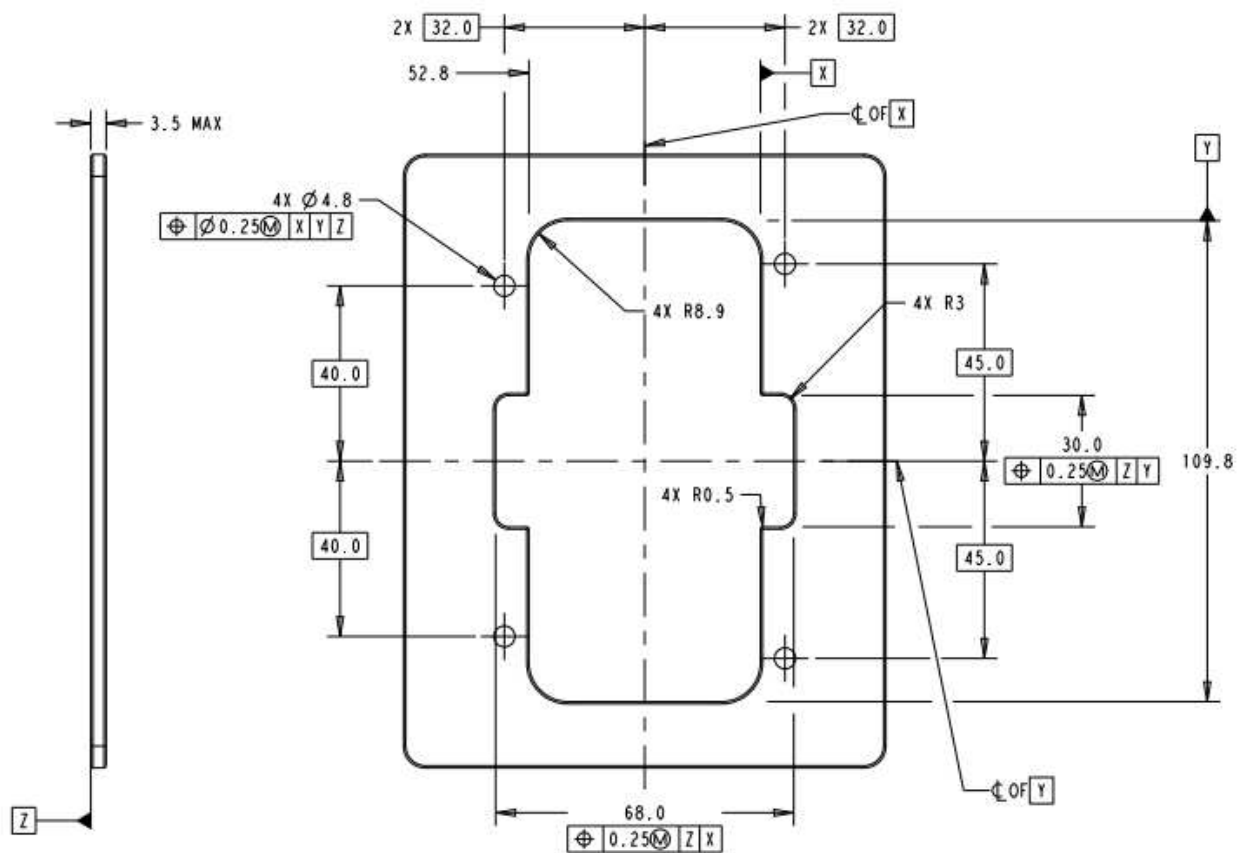


Figure 5

### 3.6. Assembly Procedure

#### A. Terminal insertion



##### **CAUTION**

Unused cavities must be closed with appropriate cavity seal plugs. TE part number 828922-1 or 828922-2 cavity plugs to be used with 2.8 circuit cavities. TE part number 967652-1 cavity plugs to be used with 6.3 circuit cavities.

Terminals crimped on leads per the applicable crimp specifications (refer to Section 2.4) shall be manually loaded into the assemblies. Refer to Figure 6 and 7 along with the steps outlined below to insert terminals into the assemblies.

1. Align the appropriate crimped terminal with the desired cavity at the rear of the assembly.
2. While holding the wire as close as possible to the wire seal push it straight into the cavity until the terminal latches snap behind the housing retention shoulder as indicated by a tactile and audible “click”.

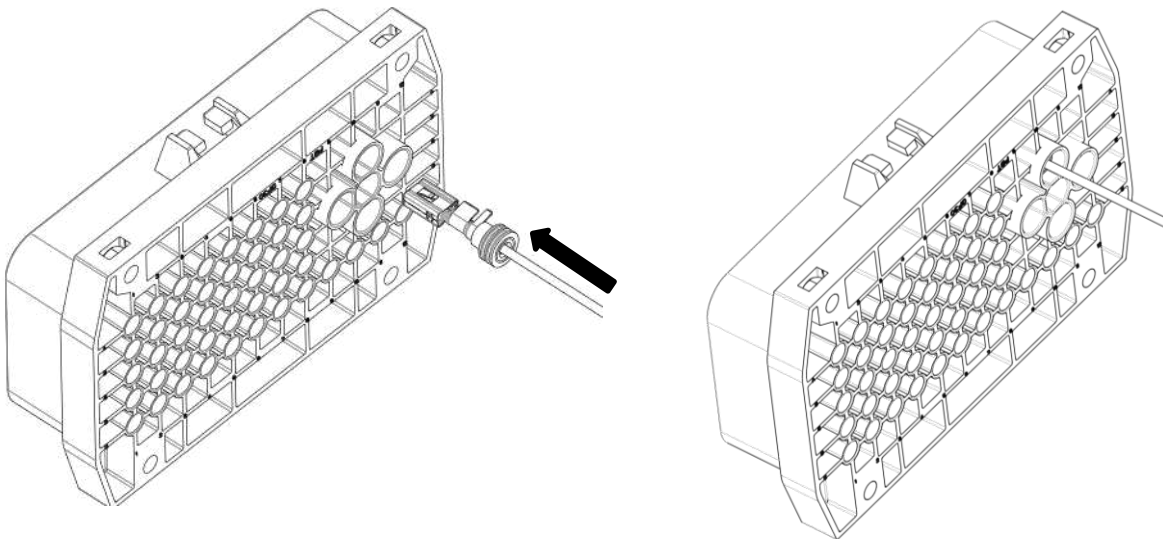


Figure 6: 6.3mm AMP MCP Terminal Insertion

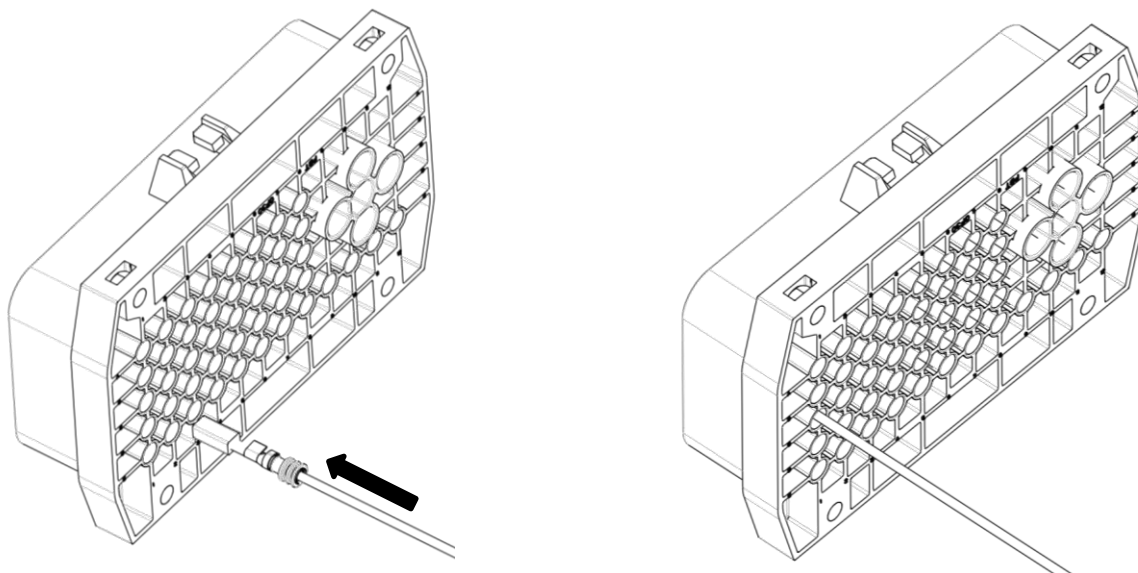


Figure 7: 2.8mm AMP MCP Terminal Insertion

## B. Terminal Extraction

Terminal extraction tools per the applicable crimp specifications (refer to Section 2.4) are used to remove terminals in the assemblies. Refer to Figure 8 along with the steps outlined below to remove terminals from the assemblies.

1. Align the appropriate terminal removal tool with the desired cavity at the front of the assembly.
2. While holding the tool, push it straight into the cavity until the terminal latches depress. As the terminal latches depress, lightly pull on the back of the wire to remove it from the cavity.

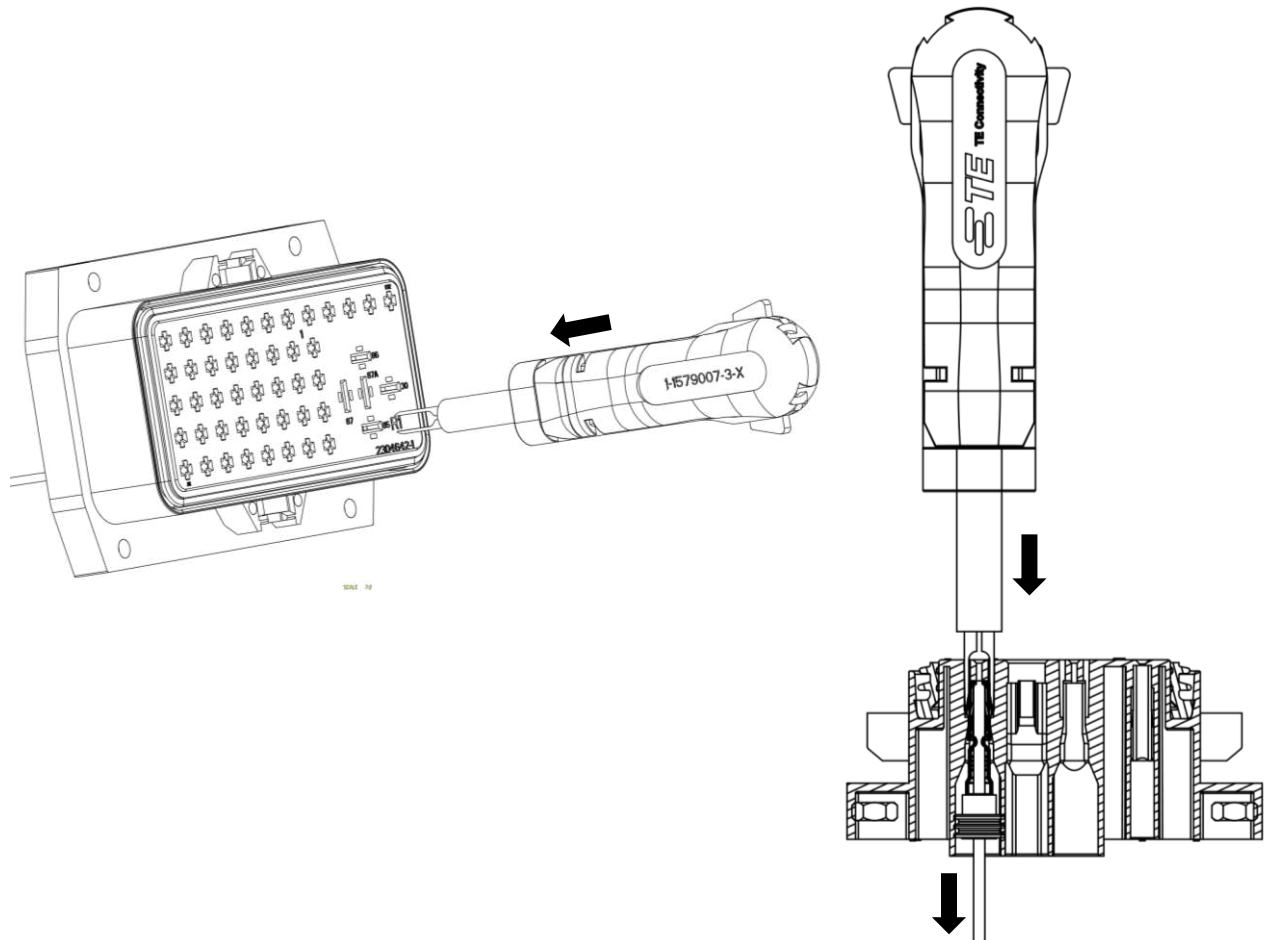


Figure 8

### C. Cavity Plug Insertion

Unused cavities have to be closed with cavity plugs. The cavity plugs must be installed at a specified depth of 1 to 4 mm shown in Figure 9.

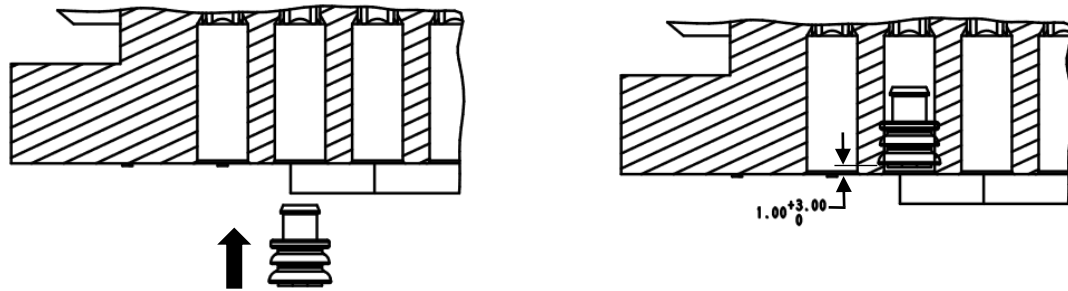


Figure 9

### D. Cover Installation

Optional covers (refer to Section 2.4) can be used in a sealed application. Align the cover latches with the slots on an assembly and push the cover so that the latches snap into place. See Figure 10. When using ISO or Mini relays, it is recommended to use a cover without a fuse holder.

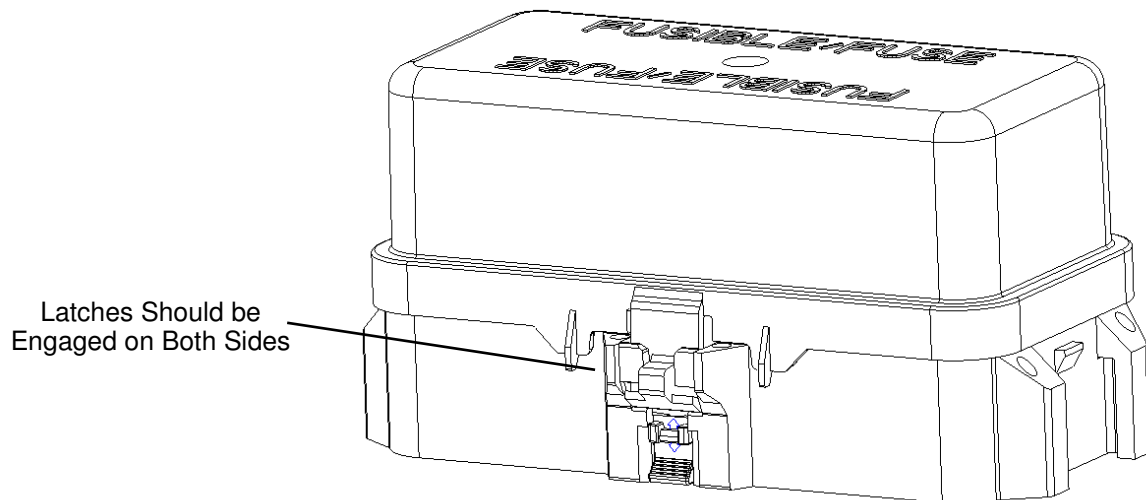


Figure 10

To ensure cover's retention to the assembly, the ISO Fuse and Relay Box has a CPA for each cover latch. To lock CPA into place, push on back of CPA until it slides up under the cover latch. See Figure 11.

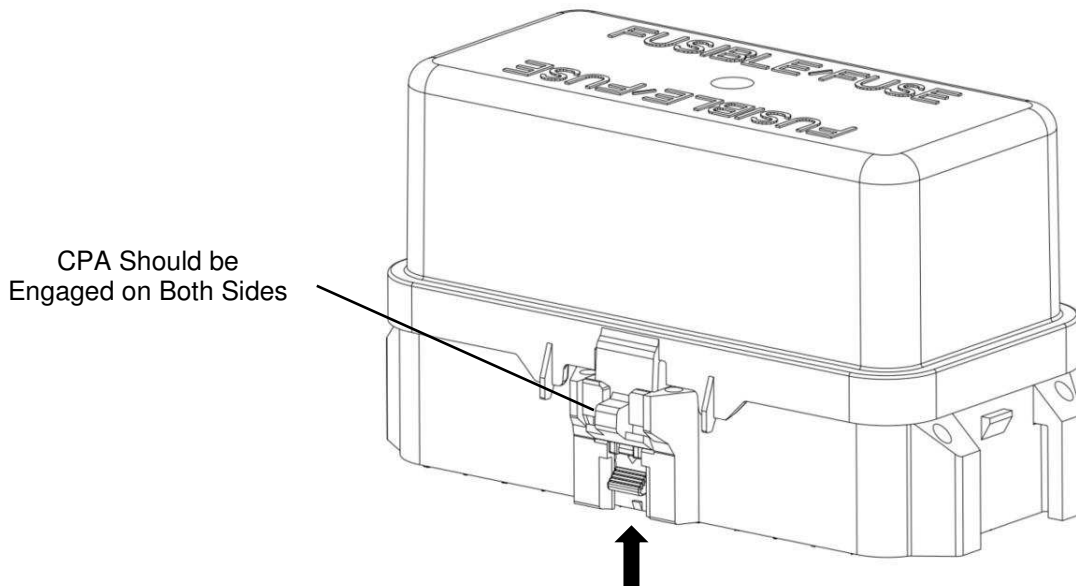


Figure 11

### 3.7. Panel Mounting

When mounting a Flanged Fuse and Relay Assembly, ensure that the four mounting holes are aligned on the part and the panel. Secure the assembly to a panel with four M4 screws. Recommend torque value is 1.7-2.15 Nm. To ensure proper engagement with the M4 nuts in the Flanged Fuse and Relay Assembly, use M4 screws with a minimum length of 10 mm are recommended. See Figure 12.

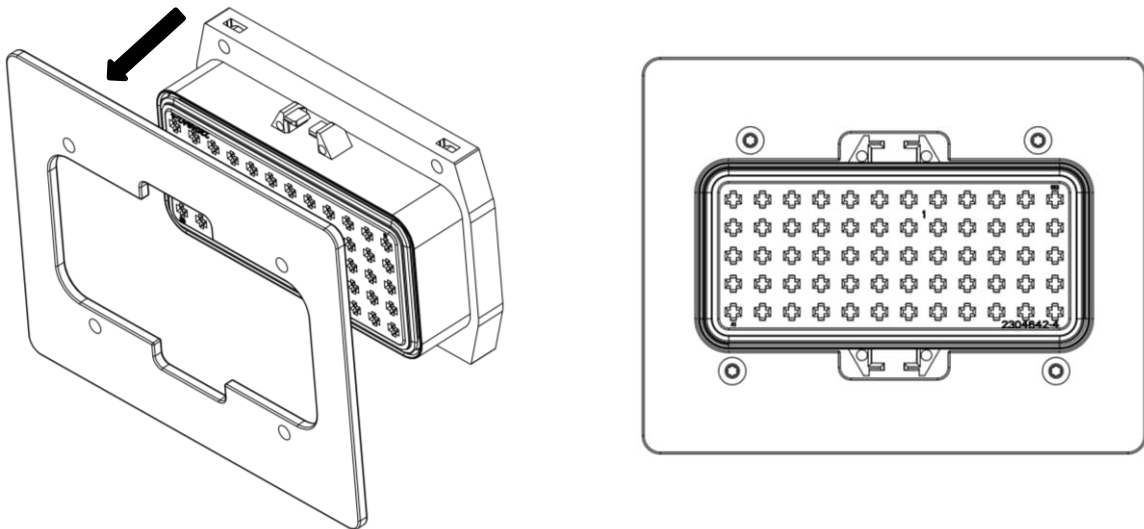


Figure 12



### 3.8. Wire Management

Once assembly is populated with the necessary wires for the application, wire bundles must be wrapped with a protectant tape to prevent any nicking of the wire when using a mounting bracket, see Figure 14 and 15. Take care to not bend the wires too closely to the back of the Fuse and Relay Assembly, which may result in a possible leak path. It is recommended to start taping the wires at least 5 mm from the back of the assembly with a loose tape to prevent side loading the seals, see Figure 13.

**CAUTION**

*When routing wires, care must be taken to provide a proper protectant to the wires. Improper wire management can lead to possible leak, as well as nicked wires.*

**CAUTION**

*When routing wires, it is recommended that the wire bundle be clamped down within 100 mm from the back of the assembly.*

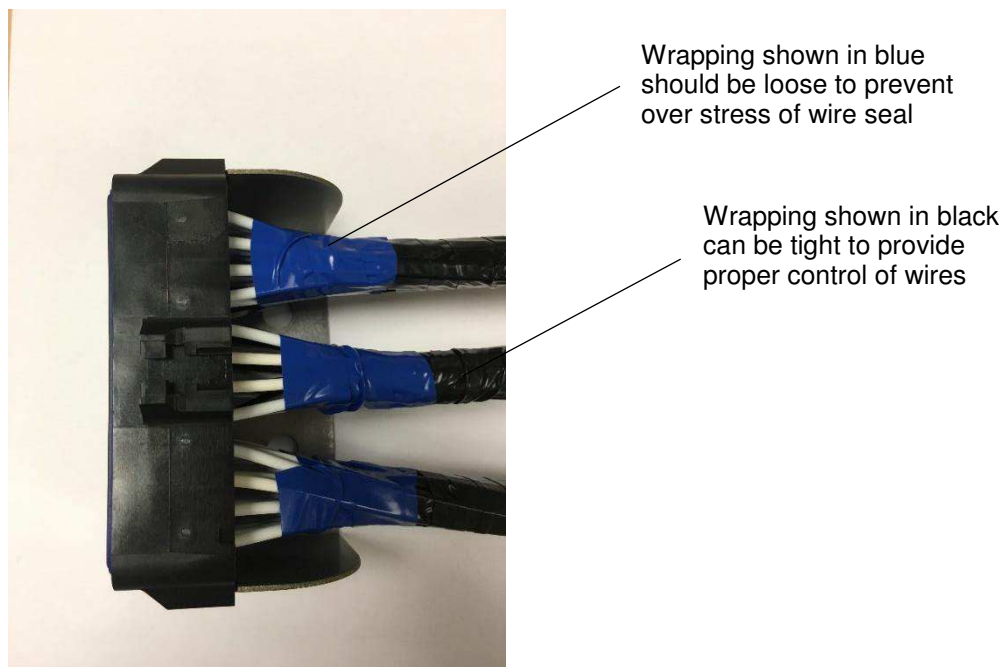
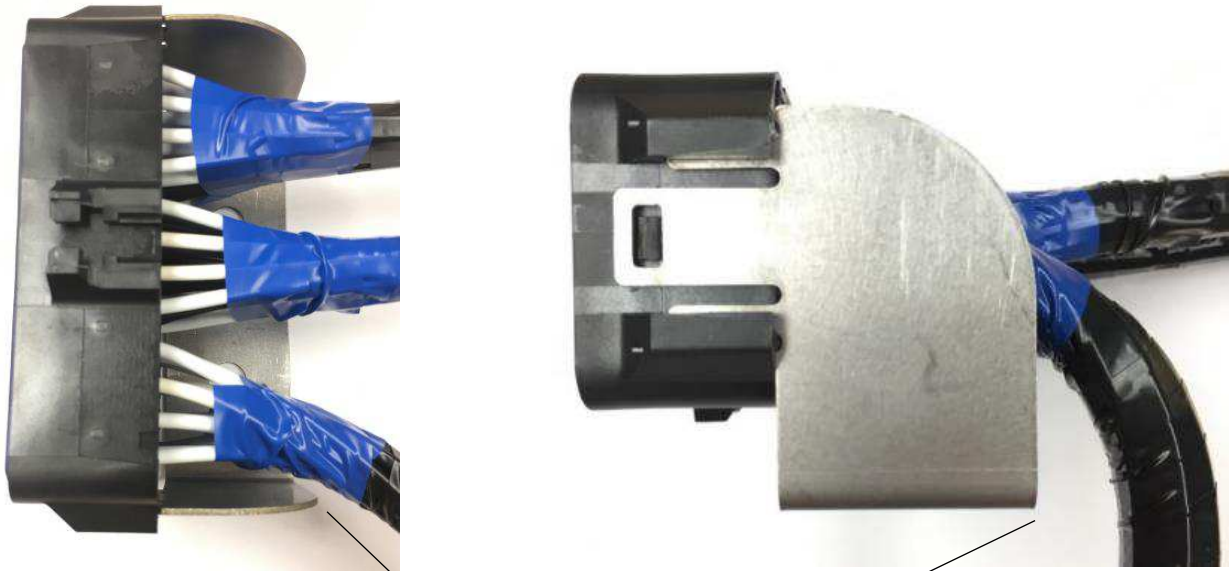


Figure 13



Wrapping recommended to protect wire insulation from nicking

Figure 14



Tape wrapped around wires and conduit to secure the conduit

Conduit used to better protect against nicking

Figure 15

#### 4. VISUAL AID

The illustrations below show a typical application of the Fuse and Relay Box assemblies. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

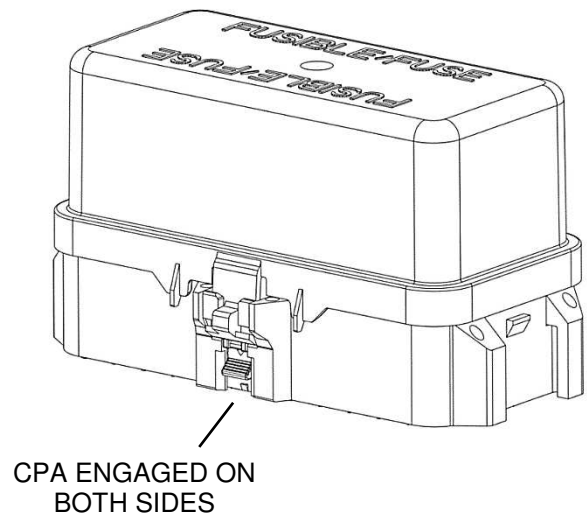
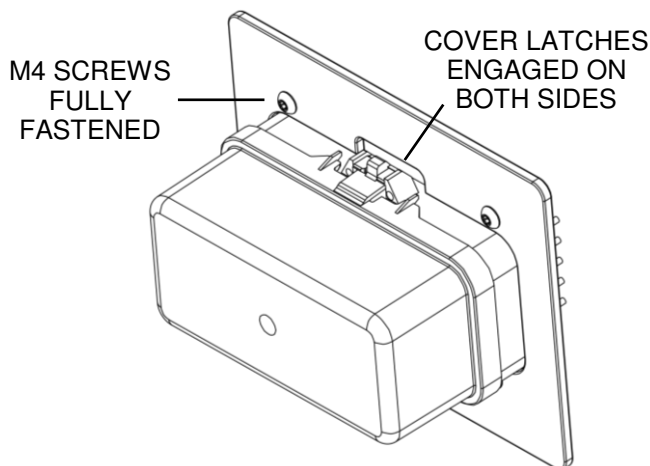
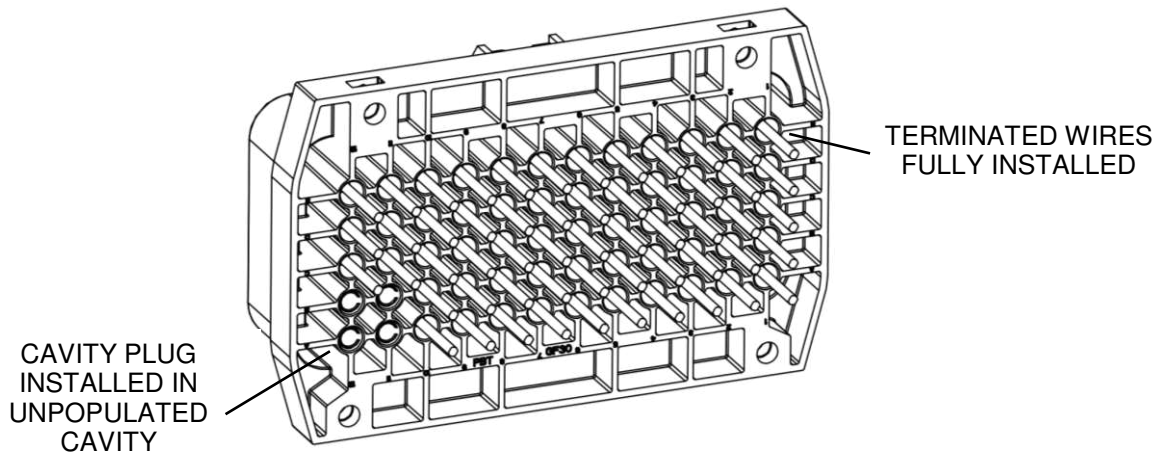


Figure 16