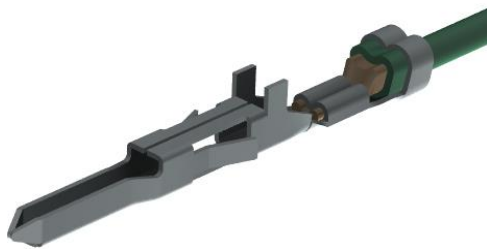


MINI-FIT SIGMA SEALED CONNECTOR SYSTEM WIRE-TO-WIRE

1.0 SCOPE

This Application Specification covers the application and end-usage requirements for the Mini-Fit Sigma Sealed Wire-to-Wire, 4.20 mm pitch (.162 inch) dual row connector series.

2.0 PRODUCT DESCRIPTION



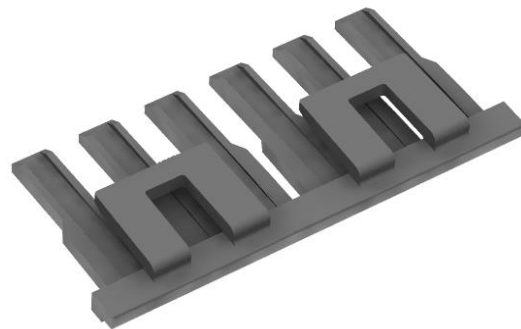
MINI-FIT TPA2 MALE CRIMP TERMINAL
(172765XXX)



MINI-FIT SIGMA SEALED CAP
(20701900XX)



MINI-FIT SIGMA SEALED PLUG HOUSING
(20701700XX)



MINI-FIT SIGMA TPA RETAINER
(172709200X)

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Product Specification: 2070170000-PS

Application Specification for Mini-Fit TPA2: AS-172718-0000

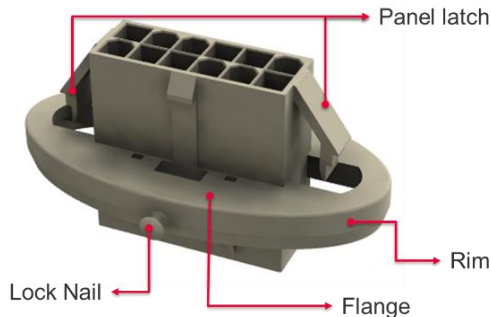
Application Tooling Specification (Insertion tool): ATS-638120800

See appropriate sales drawings for information on dimensions, materials, plating and markings.

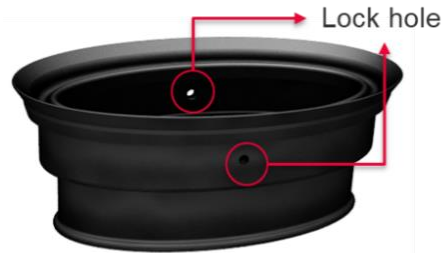
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DOCUMENT NUMBER: 2070170000-AS	CREATED / REVISED BY: KCHIKKANNA	CHECKED BY: NCSR	APPROVED BY: NCSR

4.0 APPLICATION PROCEDURE

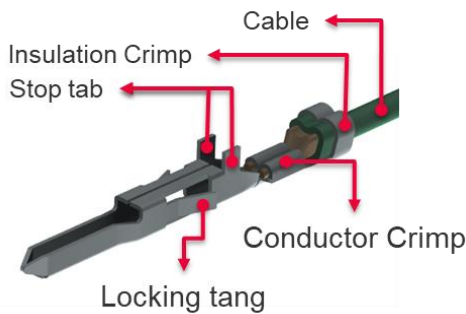
4.1 PRODUCT DEFINITION



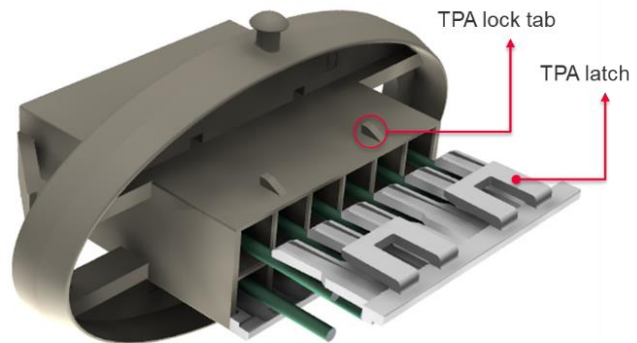
SEALED PLUG HOUSING (PLUG)



SEALED CAP (CAP)



TERMINAL AND CABLE



PLUG AND TPA



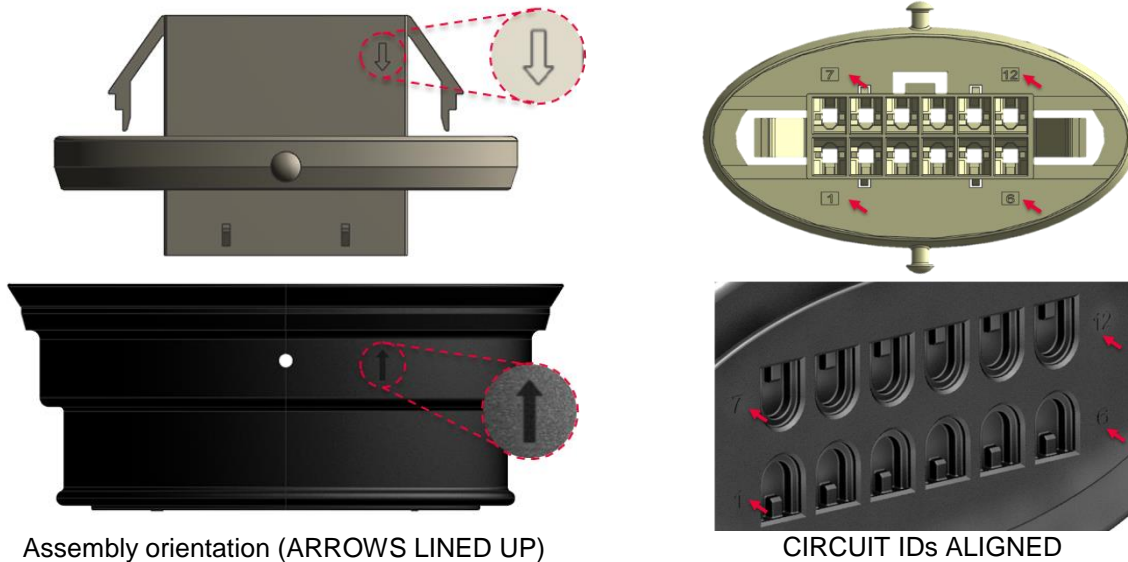
CAP AND PLUG ASSEMBLY

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4.2 ASSEMBLY INSTRUCTIONS

A. PLUG AND CAP ASSEMBLY

Caps are to be assembled on to the Plugs as described. Position and orient the parts by lining up the arrows on the two parts (the arrows must be pointing each other – see picture below). This shall make the circuit number identification markings align between the two parts. Maneuver the plug into the cap to initiate assembly process (see sequence pictures 1 and 2). The inner lip will need to be slightly stretched to position it over the flange area (see sequence picture 3). Do not to overstretch the inner lip as it may result in permanent deformation. Push the cap with slight pressure on the edge shown in blue arrow (in sequence picture 5) while pushing the plug on the face (see yellow arrow) and rotating it along the axis of the nail. The inner lip of the cap must cover the rim of the flange at A & B and the nails at X and Y (see sequence picture 6). The cap has two lock holes across the minor axis. The two lock nails on the plug are pushed into these holes to lock the cap on to the plug. Push with slight pressure on the walls of the cap around the nail (see sequence picture 7). This action will make the nail pop through the hole in the cap (see sequence picture 8). Be sure to check that the entire head of the nail is visible over the cap surface. For effective sealing, the inner lip must keep the rim/flange covered with nails locking the cap. Be sure not to stress the panel latches during this assembly.

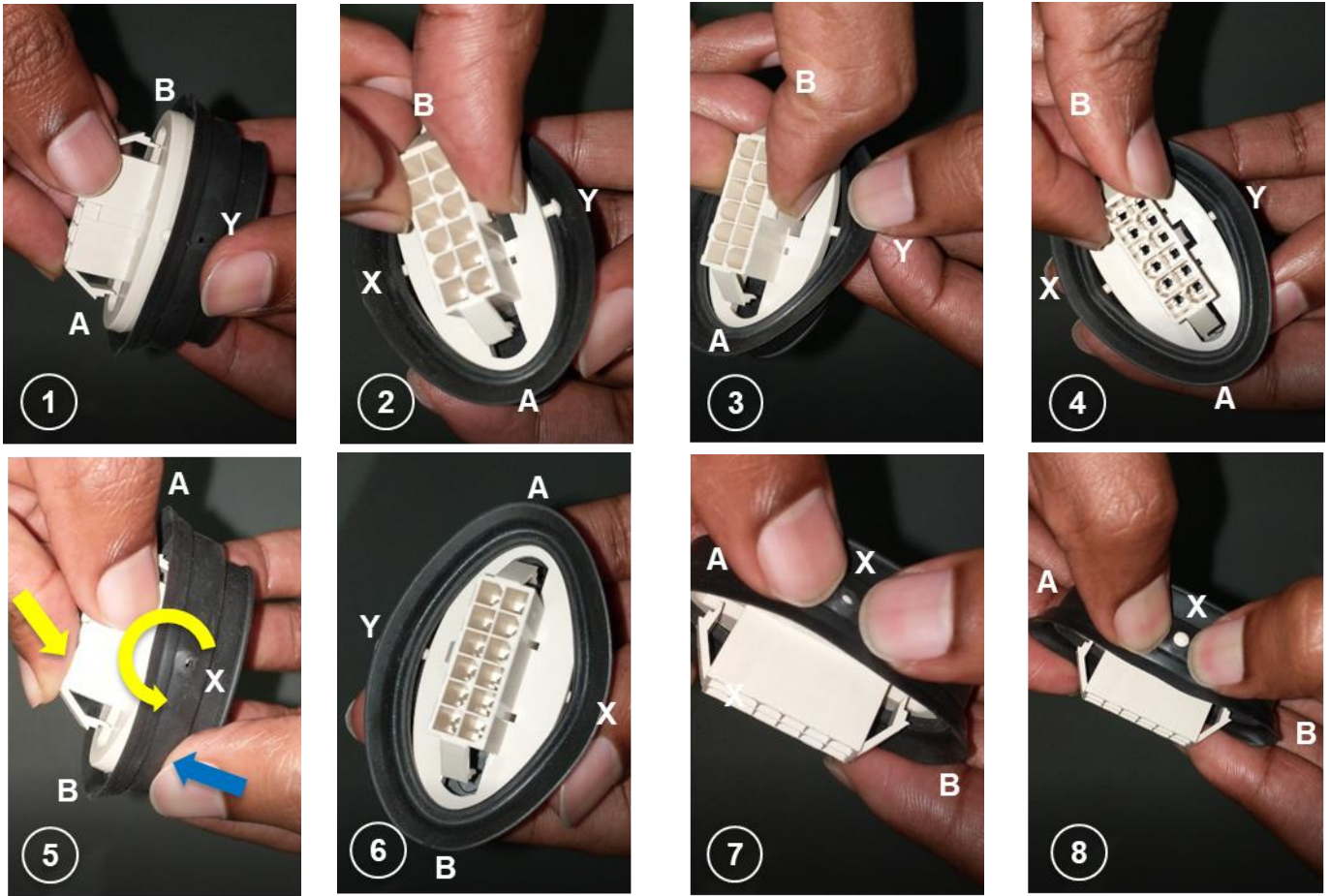


Assembly orientation (ARROWS LINED UP)

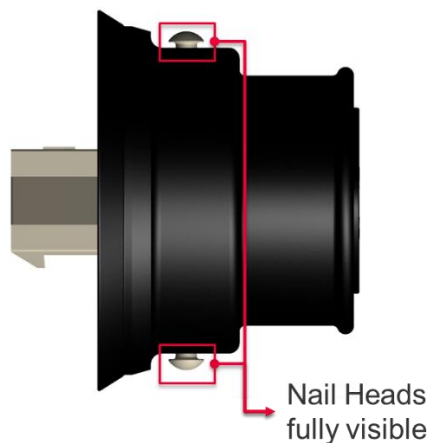
CIRCUIT IDs ALIGNED

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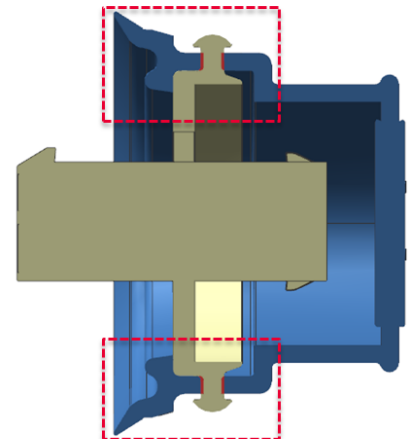
RECOMMENDED ASSEMBLY SEQUENCE
(A, B, X and Y represent the 4 sides of plug housing / seal cap)



EXAMPLES OF CORRECT ASSEMBLY:

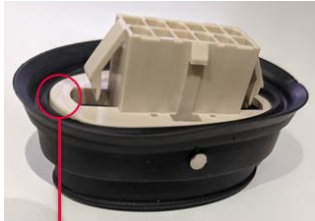


Inner lip covers the rim and over the flange.
Lock nails projecting through lock holes.



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EXAMPLES OF INCORRECT ASSEMBLY:



Exposed rim



Lock nails not visible



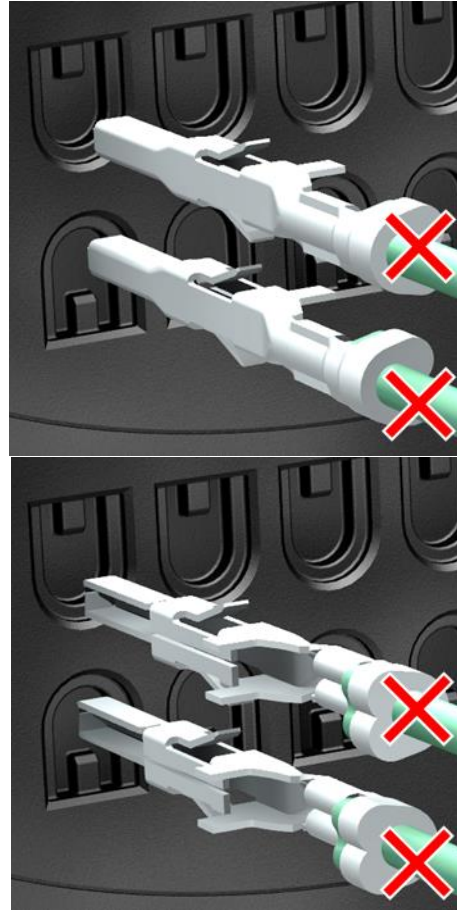
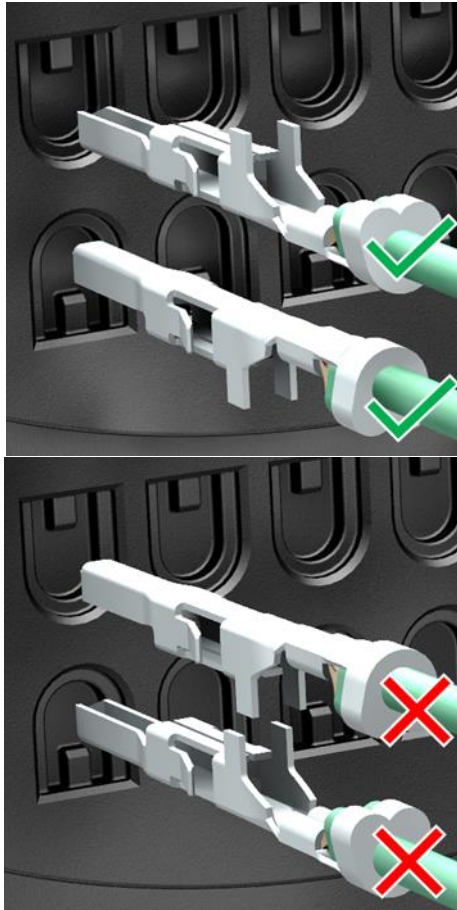
Lock nails partially visible

B. TERMINAL INSERTION

Terminals are to be assembled into the plug through the cap. Note the orientation of the crimped terminal relative to the plug-cap assembly. It is recommended to keep the plug-cap assembly on a flat surface as shown in picture. Hold the crimped terminals at about 5 to 10 mm from crimp barrel. (Note: If the cables are thin and buckling while piercing the cap, an insertion tool can be used to poke the terminals in. Refer to part number 638120800 on molex.com for details on insertion tool). Poke the crimped terminals into the plug through the terminal piercing point of the cap. Be sure that the tip of the terminal pierces the cap at the center of the crosshair. You may feel slight resistance to insertion as the terminal enters in. The stop tabs on the terminal will cut through the cap at designated slots (see hatched area in picture). It is normal to feel slight resistance as the stop tab enters in. If excessive resistance is felt during insertion, pull the terminal back, double check the orientation. Terminals are to be inserted until they are fully seated, and audible click is heard. The housing provides a stopping surface beyond which terminal cannot be pushed. To indicate a fully inserted terminal. You can use the PUSH → CLICK → PULL method during terminal insertion to ensure fully seated terminal.

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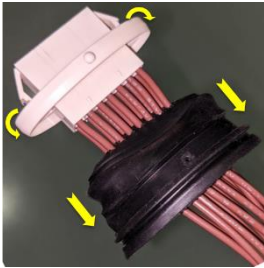
EXAMPLES OF CORRECT (✓) AND INCORRECT (✗) TERMINAL ORIENTATIONS RELATIVE TO THE CAP:



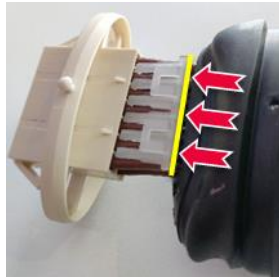
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C. TPA ASSEMBLY (OPTIONAL)

Note that the use of TPA is optional for this product. Disassemble the cap from the plug by folding the cap inside out (see picture). You may have to displace the nails from lock holes to accomplish this. Pull the cap away from plug to make room for assemble of TPA. Position the TPA in orientation shown in the picture and slide it into the plug housing (push using edges highlighted in yellow) until the TPA latches engage. Be sure to check that both latches have engaged. In cases of incomplete engagement, just push the TPA a bit further to allow the latch to engage. Unfold and reinstate the cap. Verify assembly against checks and examples shown in 4.2 A.



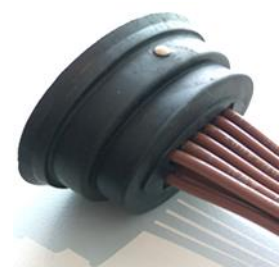
DISSASSEMBLE
CAP



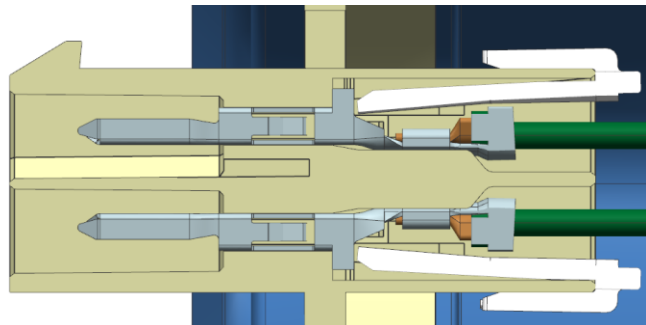
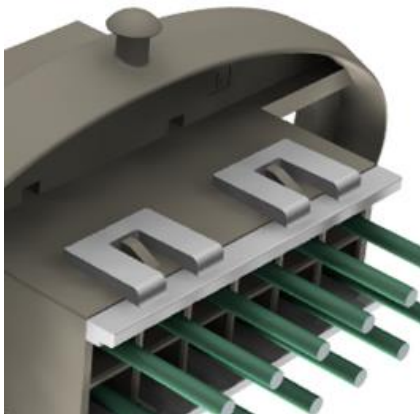
POSITION TPA AND
SLIDE



LOCK TPA



UNFOLD AND
REINSTATE CAP



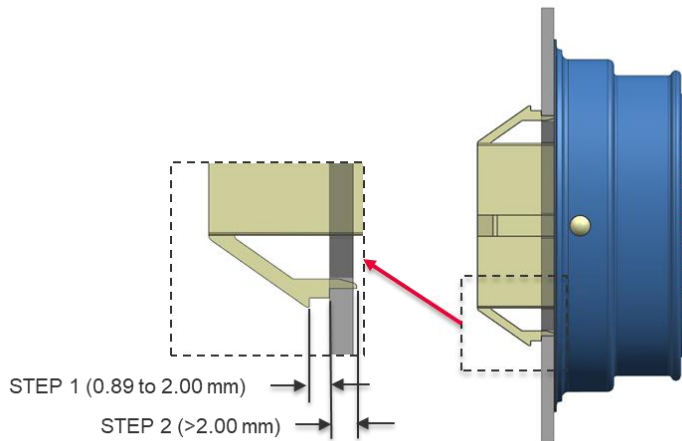
Pictures showing fully seated TPA

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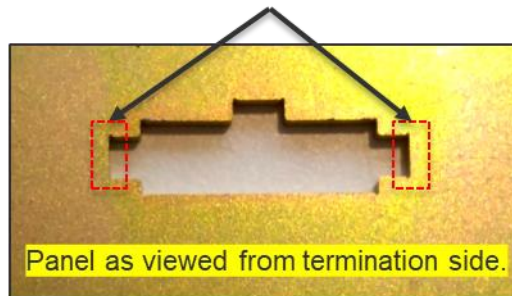
D. PLUG (WITH CAP AND TERMINAL) ASSEMBLY INTO PANEL

Firmly hold the plug assembly (assembly contains cap and crimped terminals) and insert it into the panel cut-out. Push until the panel latches engage. Be sure to check that both latches have engaged. In cases of incomplete engagement, just push the cap a bit further to allow the latch to engage. Note that there are 2 steps on the panel latch to engage panels of different thicknesses. Step 1 is ideal for use with panel thickness 0.89 to 2.00 mm. Step 2 is ideal for panel thicknesses > 2 mm. Refer sales drawing for details on maximum and minimum range of panel thickness you can use with this product.

Note: Be sure to eliminate sharp edges shown in picture to ease plug assembly into panel.



Eliminate sharp edges.



4.3 REMOVAL INSTRUCTIONS

A. CAP DISASSEMBLY

Refer 4.1.C

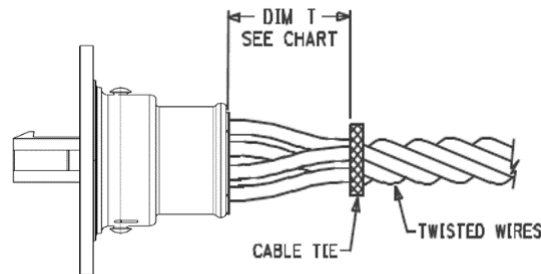
B. TERMINAL EXTRACTION

Refer to "Extraction Tool for Mini-Fit TPA2 Crimp Terminal" available on Molex website.

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5.0 CABLE TIE OR WIRE TWIS LOCATION

CKT Size	Dim T Min
4-6	.50" (12.7MM)
8	.75" (19.1MM)
10-12	1.00" (25.4MM)
14-16	1.34" (34.0MM)
18	1.45" (37.0MM)



Note: Pictorial view shown for illustration purpose.

- The "T" dimension defines a "free" length of wire, or a length of wire that is not subject to significant bias by external factors such as a wire tie, wire twisting, or other means of bending or deforming of the wires that repositions them from their natural relaxed state or location where they enter the housing. This dimension is a general recommendation and may need to be adjusted for different wire gauges and wire type and insulation thickness and insulation material.
- Wires are to be dressed in such a manner to allow the terminals to float freely in the housing pocket.

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