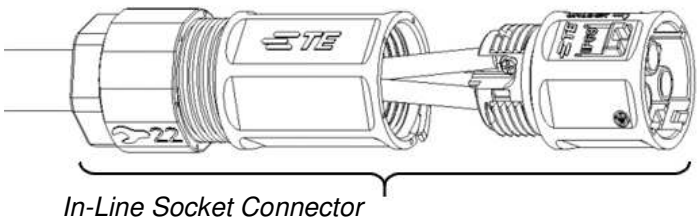
Nector T Connector- 3 Position Sealed

NOTE
All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ±0.1mm and angles have a tolerance of ± 2 °. Figures and illustrations are for identification only and are not drawn to scale.

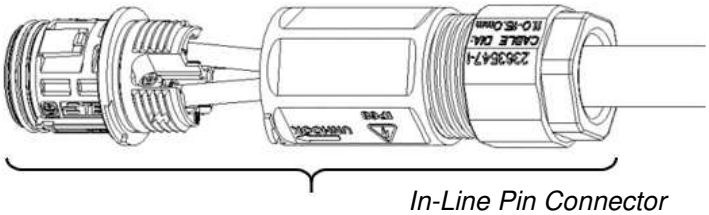
1. INTRODUCTION

This specification covers the requirements for application and assembly of Nector T 3 position connector product range used for electrical power distribution. Connectors are available in four variants to suit for different applications and all four variants are rated for ingress protection. Available in both screw and crimp terminations, wires ranging from 1.5 mm² to 4.0 mm² or 18 AWG to 12 AWG.

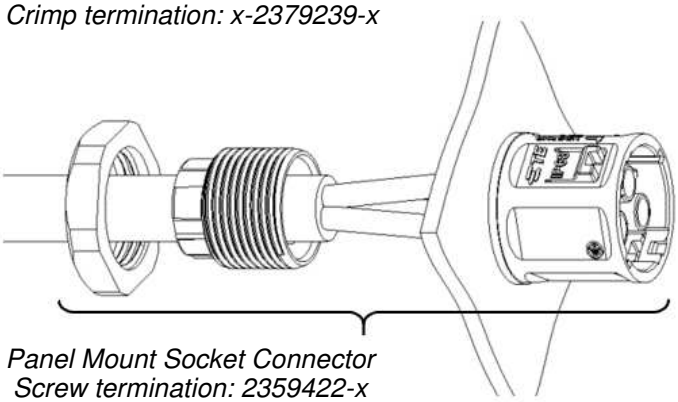
When corresponding with TE Connectivity personnel, use the terminology provided in this specification to facilitate inquiries for information. Basic terms and features of this product are provided in Figure 1



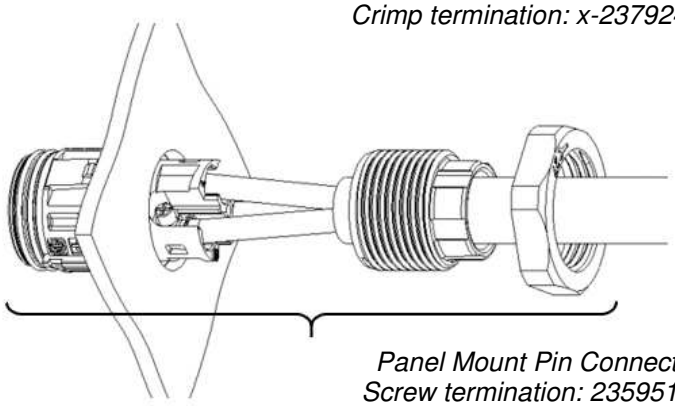
In-Line Socket Connector
Screw termination: x-2379237-x
Crimp termination: x-2379239-x



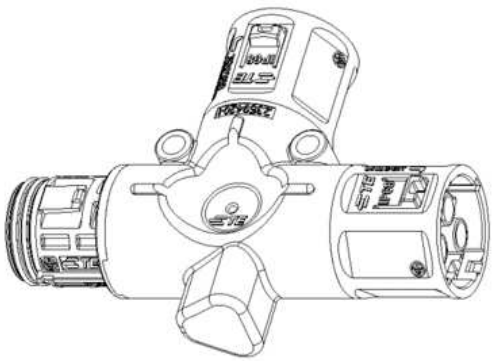
In-Line Pin Connector
Screw termination: x-2379238-x
Crimp termination: x-2379240-x



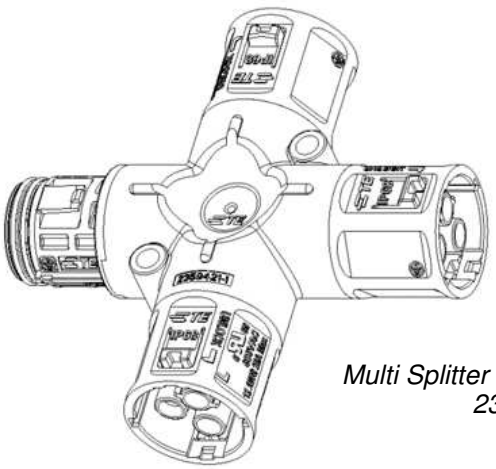
Panel Mount Socket Connector
Screw termination: 2359422-x
Crimp termination: x-2359422-x



Panel Mount Pin Connector
Screw termination: 2359518-x
Crimp termination: x-2359518-x



T-Splitter (Branch) Connector
2359420-x



Multi Splitter (Branch) Connector
2359421-x

Figure 1, Product overview

1.1. Ratings

IEC		UL	
Voltage	Current – Wire size	Voltage	Current – Wire size
500 V ac	16 A – 1.5 mm² 20 A – 2.5 mm² 25 A – 4.0 mm²	600 V ac / dc	7 A – 18 AWG 10 A – 16 AWG 15 A – 14 AWG 20 A – 12 AWG

Table 1, Ratings

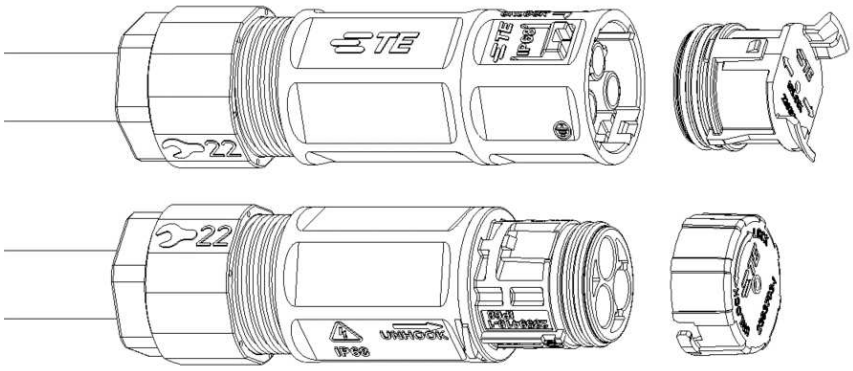
1.2. ***Warning:***

- *Connectors are intended only for connection and disconnection without electrical load.*
- *Connectors are not suitable for installation in readily accessible areas.*
- *Standard connectors are not replacements for the prevailing national domestic plug and socket outlet system.*
- *Do not mate connectors with comparable products from different manufacturers since this will result in dangerous compatibilities.*
- *Caution: Not for interrupting current*

  Attention: ne pas utiliser pour couper le courant

1.3. Accessories

Dust caps for both Pin connector and Socket connector are available as accessories to purchase. These are recommended to use when an un-utilized device/connector to be protected from dust and water ingress. Both caps provide ingress protection.



Socket Connector Dust cap 2366866-1

Pin Connector Dust cap 2363703-1

Figure 2, Accessories

1.4. Seal lubrication

Over the time due to handling and/or evaporation the natural lubricant of the seal may be removed which could result in difficulty in mating & un-mating. If these operations are difficult, it is recommended to lubricate the seal with a silicone-based lubricant (*example: DOW Corning 550 fluid*). A small amount of lubricant be applied over the seal using a lint free swab.

1.5. Wire termination types

Connector offers screw clamp and crimp type termination. Both terminations designed for wires sizes ranging from 1.5 mm² to 4.0 mm² or 18 AWG to 12 AWG. Screw clamp is a field installable and crimp type is part of factory fitted cable assemblies.

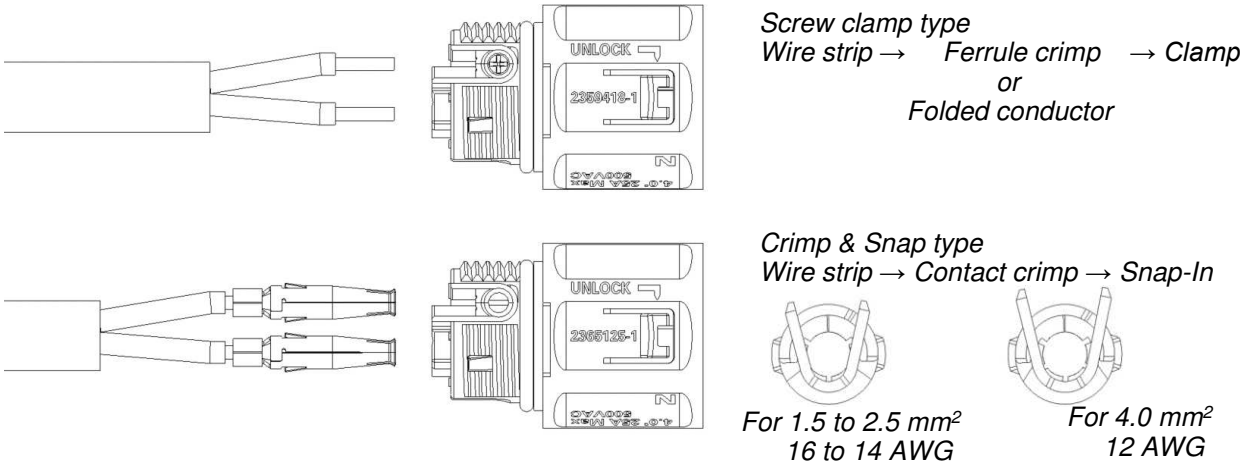


Figure 3, Termination Types

1.6. Polarization Keys

Connector available in different polarizing keys to ensure safety against improper mating of male female connector with different current ratings. Connector part number with suffix xxxxxxx-1 are Key A and xxxxxxx-2 are Key B.

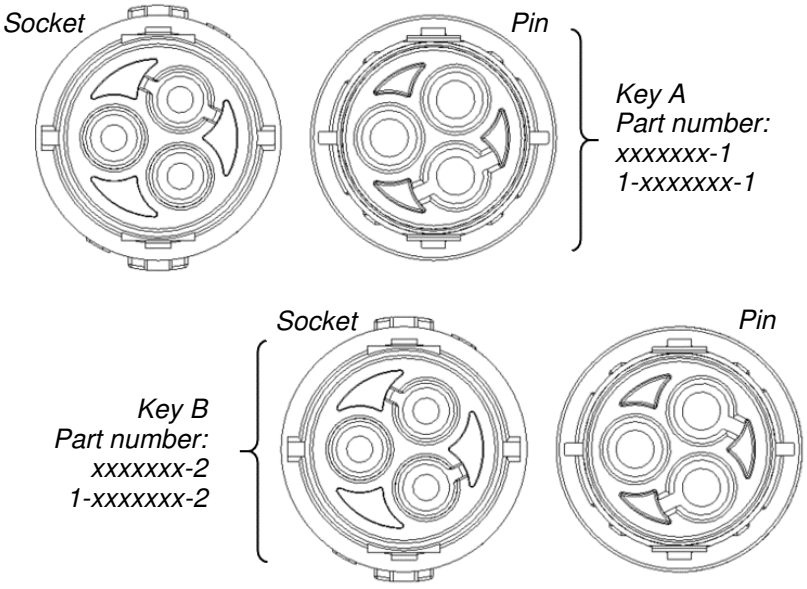


Figure 4, Polarization keys

1.7. Cable gland range

Backshell assembly available in two variants to cover cable OD range from 7.5 mm to 15.0 mm diameter. Backshell assembly packed with connectors as a kit. Must order suitable backshell to fit the required cable diameters.

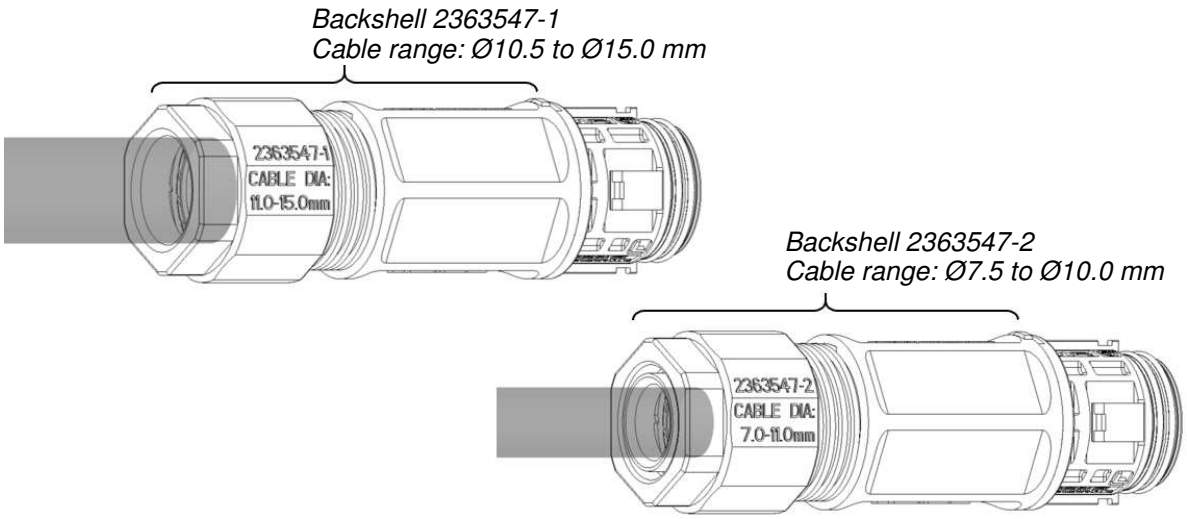


Figure 5, Cable gland

2. REFERENCE MATERIAL

2.1. Revision Summary

Initial release of application specification

2.2. Customer Assistance

Reference product part numbers listed in Table 1 are representative of Nector T 3 position Connector. Use of these numbers will identify the product line and help you to obtain product and tooling information when visiting www.te.com

2.3. Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

2.4. Specifications

108-133123	Product Specification, Nector T 3Pos. Connector
107-133123	Packaging Specification, Nector T 3Pos. Connector
114-20165	Application Specification, Nector X and Nector T crimped contacts

3. REQUIREMENTS

3.1. Storage

a) 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.

b) Chemical Exposure

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

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

3.2. Cable Selection and Preparation

Product accepts three core stranded conductor cable, sizes ranging from 1.5 mm² to 4.0 mm² or 18 AWG to 12 AWG. The cable type must be H05VV-F or H07RN-F for Europe and STOW for Americas region. Wire stripping must be according to Figure 6:

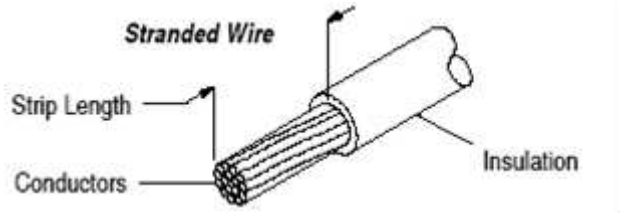


Figure 6, Wire preparation

The insulation must be cut uniform and torn off the conductor. No remainders of the insulation are allowed on the stripped conductor; single strands of the conductor may neither be cut nor damaged nor pulled during stripping operation. After pulling off the insulation sleeve the single strands of the conductor may not split open. Separated single strands are not allowed. The strands of the conductor are not allowed to be twisted. If the stripped wire isn't crimped immediately, the stripped conductor end is to be protected against dirt splitting off the single strands, for example by partial pull off the insulation sleeve. Any protruding wire strands must not impede the mating and basic function of the contact.

3.3. Cable types

No. of cores x Cross section	Conductor type	Max. rated Voltage	Max. operating temperature	Outer diameter (mm) *For reference only*
Cable type: H05VV-F				
3 x 1.5 mm²	Stranded	500 V	70 °C	8.0
3 x 2.5 mm²				10.0
3 x 4.0 mm²				12.0
Cable type: H07RN-F				
3 x 1.5 mm²	Stranded	500 V	70 °C	10.0
3 x 2.5 mm²				12.0
3 x 4.0 mm²				13.5
Cable type: STOW				
3 x 18 AWG	Stranded	600 V	60 °C	9.3
3 x 16 AWG				10.0
3 x 14 AWG				13.5
3 x 12 AWG				15.0

Table 2, Cable types

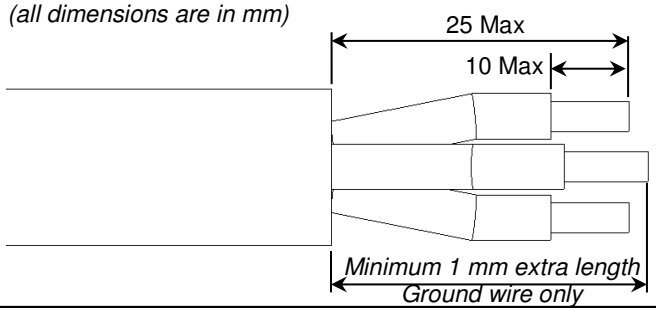
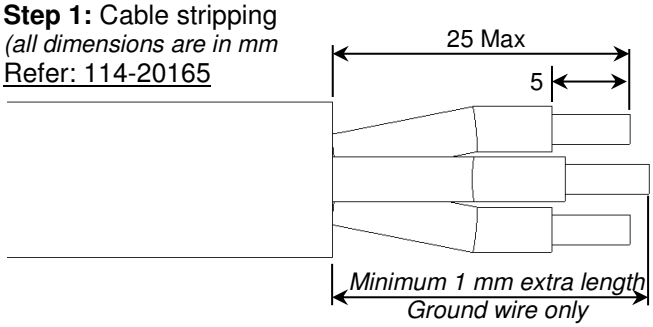
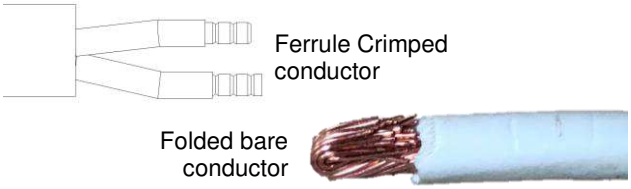
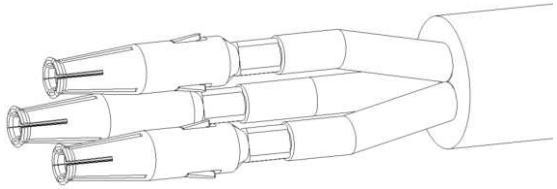
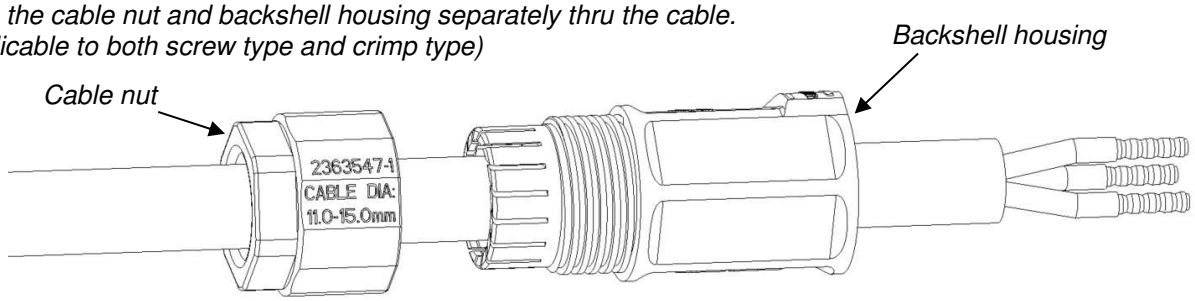
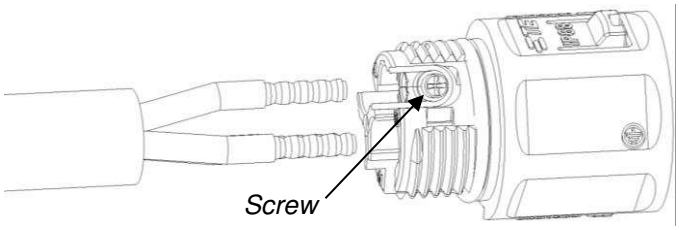
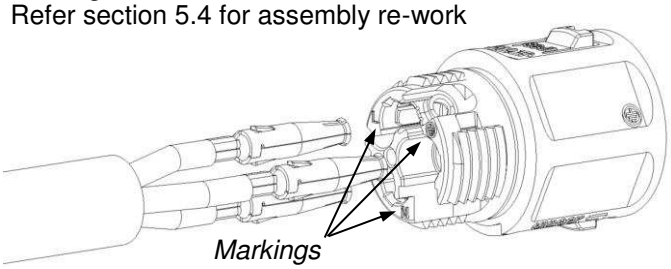
3.4. Contacts and Ferrule part number selection. Refer 114- 20165 for contacts crimping.

Wire size	Type	TE Part Number	Wire strip length (mm)	Crimp Tool Part number
18 AWG	Pin Contact	2359528-3	5 +0.5 / -0.0	Refer 114-20165 specification
1.5 mm² / 16 AWG		2359528-1		
2.5 mm² / 14 AWG				
4.0 mm² / 12 AWG		2359528-2		
18 AWG	Socket Contact	2359527-3		
1.5 mm² / 16 AWG		2359527-1		
2.5 mm² / 14 AWG				
4.0 mm² / 12 AWG		2359527-2		
18 AWG	Ferrule	-	10 +0 / -1	PZ 10 HEX (Maker: Weidmuller)
1.5 mm² / 16 AWG		-		
2.5 mm² / 14 AWG		-		
4.0 mm² / 12 AWG		-		

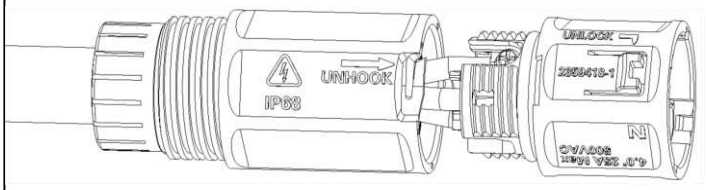
Table 3, Part Numbering

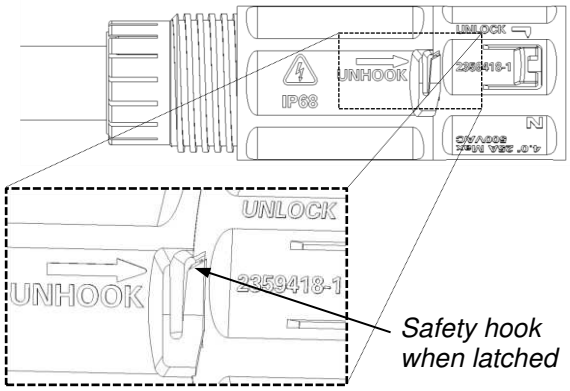
4. CABLE ASSEMBLY INSTRUCTION

4.1. In-line connector assembly preparation: Applicable to both Pin and Socket connectors.

<table>
<tr><th>Screw Clamp Type</th><th>Crimp & Snap Type</th></tr>
<tr><td>Step 1: Cable stripping
(all dimensions are in mm)
 
</td><td>Step 1: Cable stripping
(all dimensions are in mm
Refer: 114-20165
 
</td></tr>
<tr><td>Step 2: Conductor Preparation
TE recommends ferrule to be crimped for all wire sizes. For 1.5 mm², folded conductor also acceptable (applicable to European market only). For 18 & 16 AWG, wire tinning is an alternate for the ferrule crimp (only for USA & Canada)
 
</td><td>Step 2: Contact crimping. Refer 114-20165
Crimp the contacts to the wires with recommended crimp tool. Ensure ground contact is 1mm longer than other two wires. Refer Table 3 for contact part numbers.
  </td></tr>
<tr><td colspan="2">Step 3: Cable with backshell assembly
Pass the cable nut and backshell housing separately thru the cable. (applicable to both screw type and crimp type)
 
</td></tr>
<tr><td>Step 4: Wire clamping
- Align the wires with housing entry holes. Line, Neutral & Earth marked at the hole entry.
- Push thru the screw contacts.
- Torque the screw using PH0 Philips screwdriver. Max torque 0.25 Nm
 
</td><td>Step 4: Crimped contacts assembly
- Align the contacts with housing entry holes. Line, Neutral & Earth marked at the hole entry.
- Push thru the holes till the contacts are snapped to housing.
Refer section 5.4 for assembly re-work
 
</td></tr>
</table>

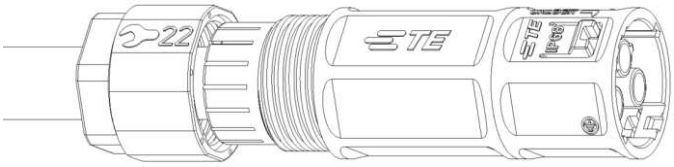
Step 5: Backshell assembly onto housing
Screw the backshell housing to the connector housing by hands.
Ensure the safety hook is latched.





Step 6: Cable Nut onto Backshell housing
Engage and screw the cable nut to the backshell housing with hands.
Then, torque the nut for tightness using 22-size spanner by gripping the backshell housing.

H05VV-F Torque	*1.5 & 2.5 mm²: 4 Nm* *4.0 mm²: 3 Nm*	***H07RN-F Torque***	*1.5 & 2.5 mm²: 4 Nm* *4.0 mm²: 4 Nm*	***STOW Torque***	*18 to 14 AWG: 4 Nm* *12 AWG: 4 Nm*



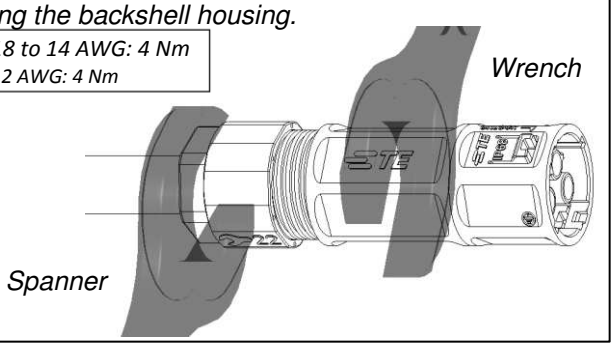
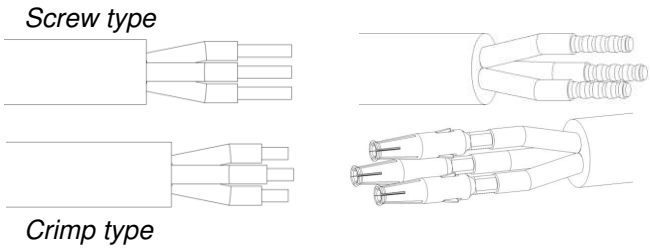


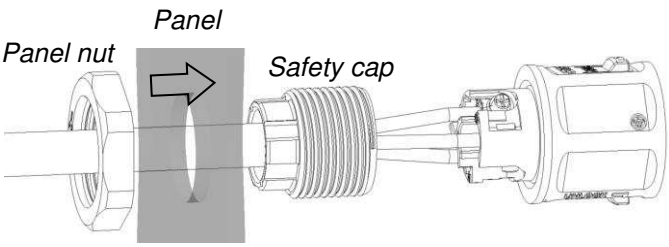
Figure 7, In-Line connector preparation

4.2 Panel mount connector assembly preparation:

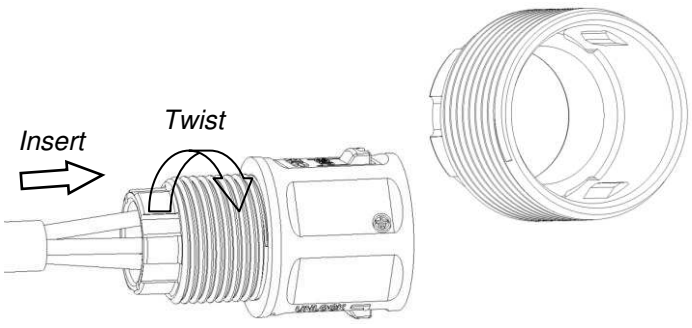
Step 1: Cable Preparation
Follow the steps 1 & 2 from In-line connector preparation. Figure 11



Step 2: Wire assembly
Pass the wire through the panel nut, panel cut-out from inside to outside & through the safety cap. Terminate the wire/push the contacts thru the connector.



Step 3: Panel safety cap assembly
Insert the safety cap onto housing's body to the end and twist clockwise to hook with housing.



Step 4: Assemble to panel
Pass the connector assembly through the panel cut-out.
Screw the panel nut using 27 size spanner.
Torque: 0.8 Nm

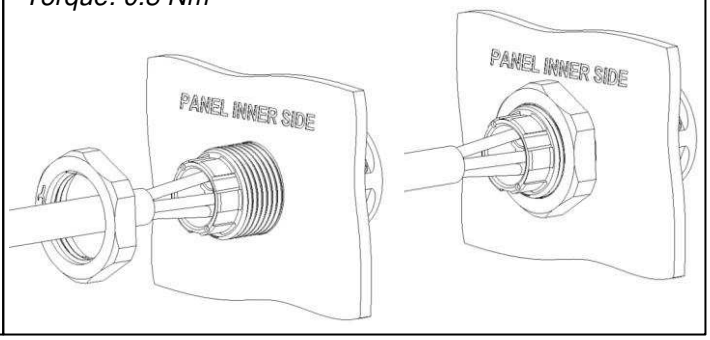


Figure 8, Panel Mount connector preparation

5. CONNECTOR FUNCTIONAL INSTRUCTION

5.1. Connector mating and un-mating

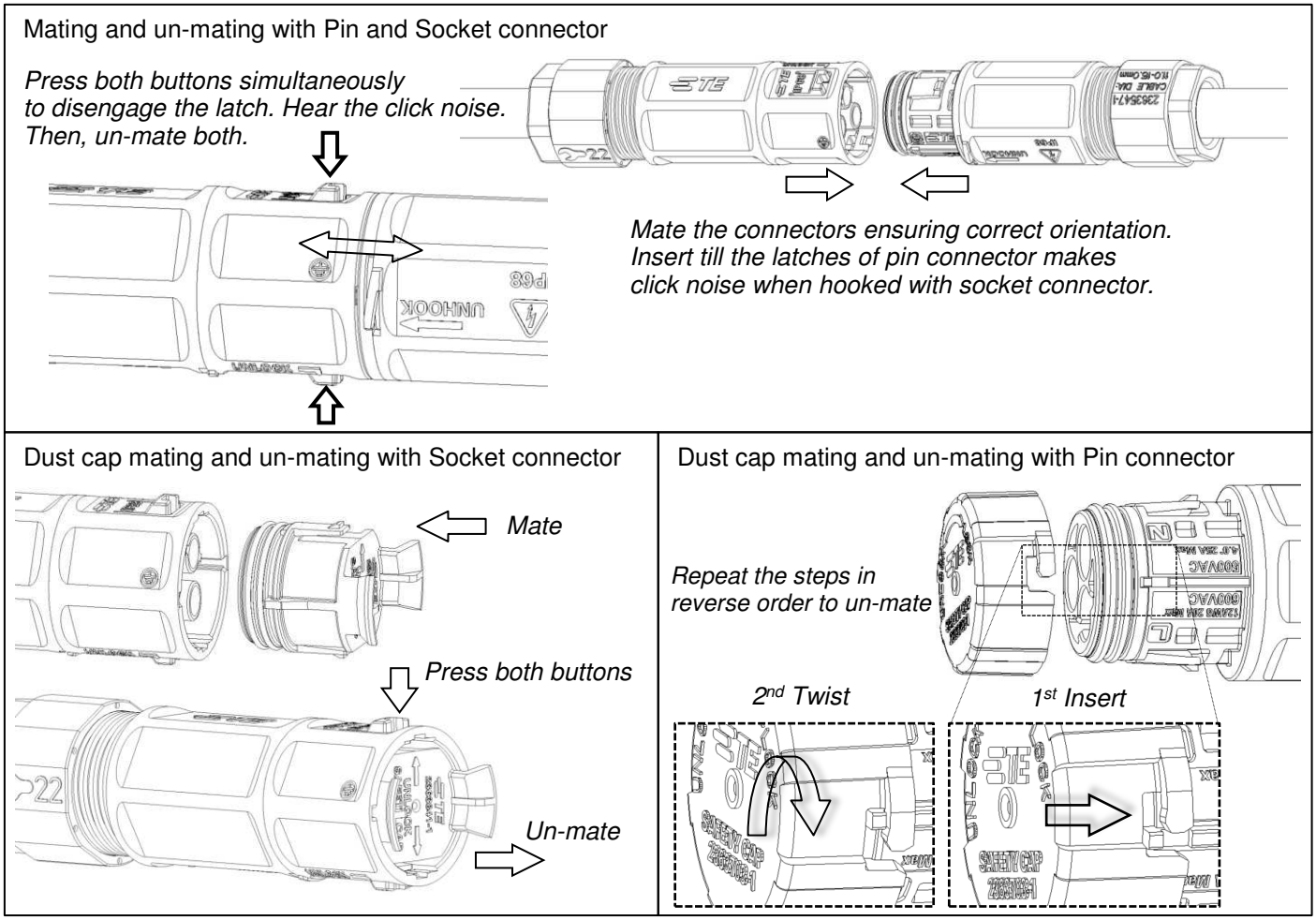


Figure 9, Mating & Un-mating function

5.2. Backshell un-locking

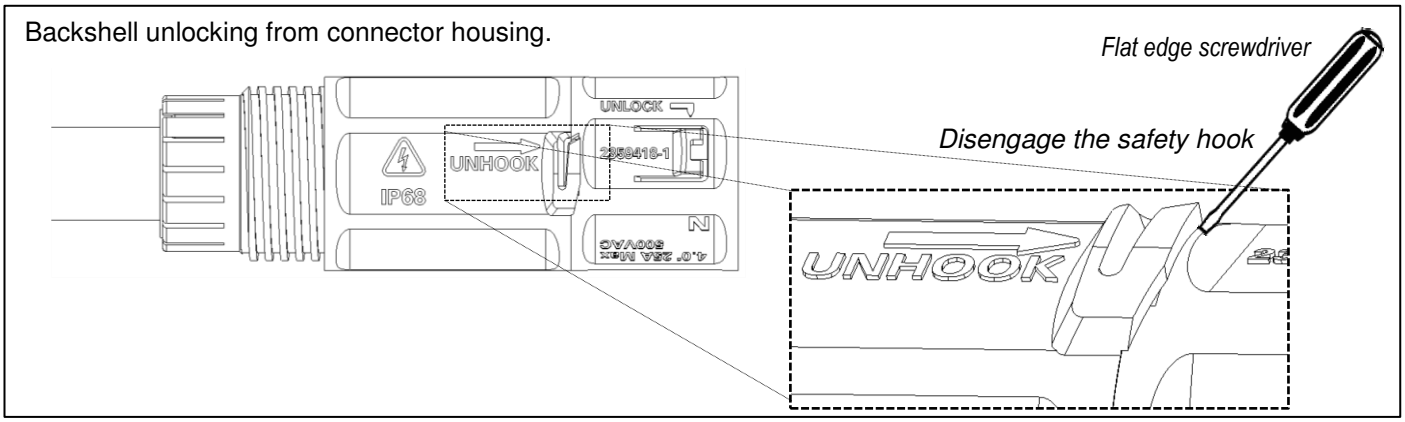
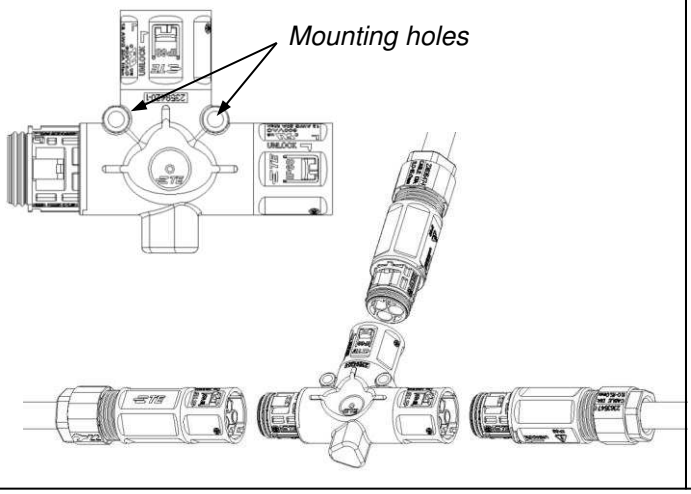


Figure 10, Backshell un-locking

5.3. T-splitter and Multi splitter

T- Splitter mounting
M4 size clearance holes for fixing
Mating and un-mating function refer to 5.1 section.



Multi Splitter mounting
M4 size clearance holes for fixing
Mating and un-mating function refer to 5.1 section.

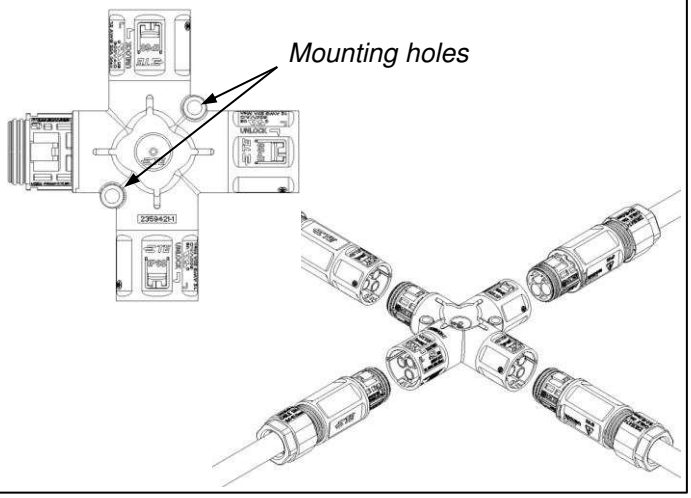


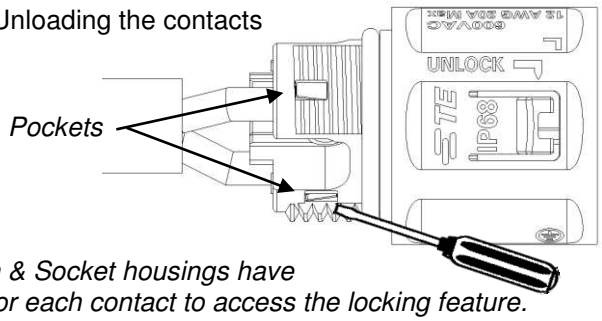
Figure 11, Splitter mounting

5.4. Instructions for Contact assembly re-work

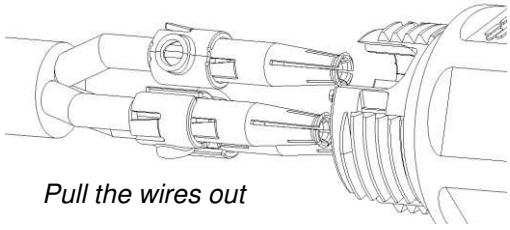
In case of improper assembly of crimped version contacts into the housing, the following procedures to be followed for safely re-working to avoid damage to the housing and contacts.

Note: *TE do not recommend for re-working of improper assembled connector. Hence, it is cable manufacture's responsibility to ensure the quality of re-work and liable for any product failures. Below instructions are only for information.*

Step 1: Unloading the contacts



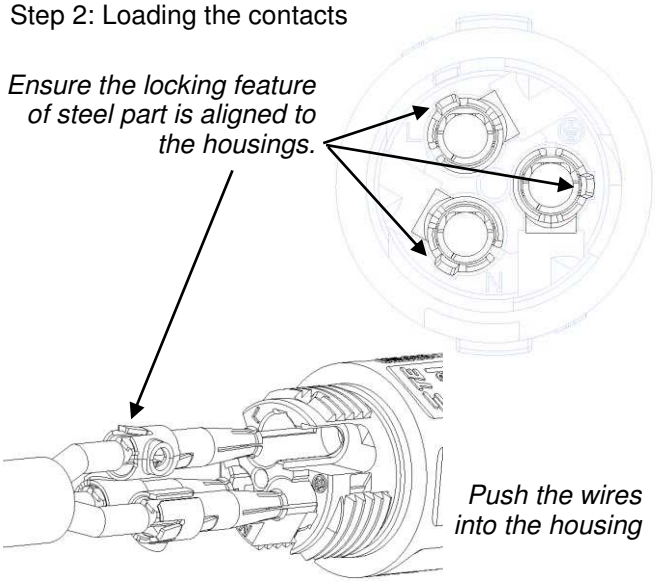
Both Pin & Socket housings have pocket for each contact to access the locking feature. Using the extraction tool, insert the tool's nose between contact and housing which will disengage the contact.



Pull the wires out

Step 2: Loading the contacts

Ensure the locking feature of steel part is aligned to the housings.



Push the wires into the housing

Figure 12, Re-work Instruction

6. QUALIFICATION

All variants of connector are CE certified, certificate number CE_CERT_520_00002_C3

All variants of connector are certified to IEC61535, certificate number SE-104069M1

All variants of connector are listed under UL2238, certificate number E193908-20210304

All variants of connector are listed under CSA C22.2 No. 182.3: E193908-20210304

7. ADDITIONAL TOOLING *(Image below for representation only)*

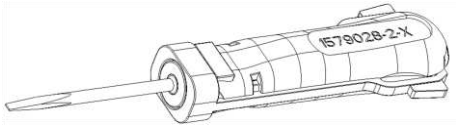
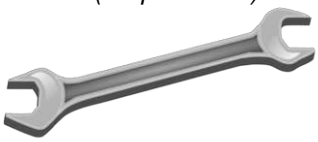
Ferrule Crimp tool *Hex or star shaped crimp profile* *P/N: PZ 10 HEX* 	Extraction Tool *P/N: 1579018-2* 	Philips screwdriver *PH0 size* 
Spanner *Size 22 (for cable nut) & Size 27 (for panel nut)* 	Adjustable wrench 	Flat edge screwdriver 

Figure 13, Application tools

== END ==