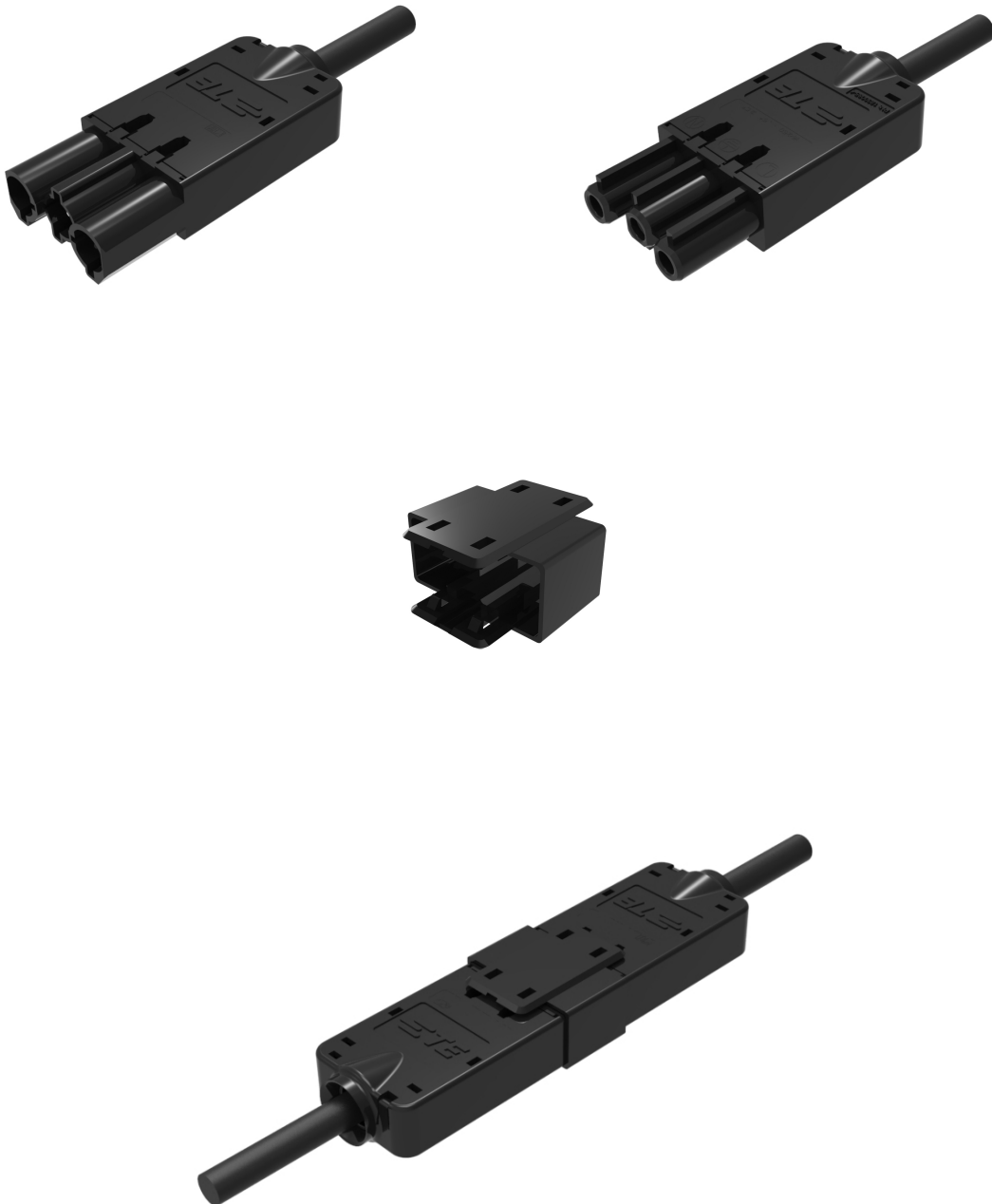
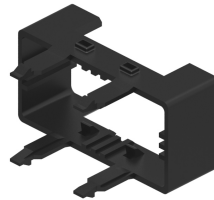
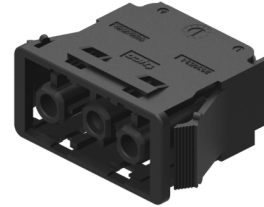
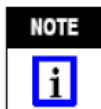

Nector Classic free hanging crimped contacts and panel mount versions, IEC 61535 compatible

FREE HANGING VERSIONS, PLUG AND RECEPTACLE CONNECTORS

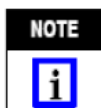


PANEL MOUNT VERSIONS, PLUG AND RECEPTACLE CONNECTORS

G.P.L.: Z83 ; Product Code: K679, K681



*All dimensions are in millimetres.
Figures and illustrations are for identification only and are not drawn to scale*



Parts are tested and meet the requirements of IEC 61535, Attestation of Conformity available upon request. To receive the full Certification of Conformity for IEC 61535, production of cable assemblies needs to be audited



Dangerous compatibility between different manufacturer installation coupler systems is not automatically prevented by compliance with IEC 61535

1 INTRODUCTION

This specification contains the regulations to crimp contacts used on Nector* Classic connector as well as the regulations to assemble Nector* Classic connector.

2 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, call the Product Information Centre.

The following Customer drawings are relevant to this Specification:

- 1230085-3: Male cable housing
- 1230085-4: Female cable housing
- 1105100: Pin contact for free hanging version
- 1105101: Socket contact for free hanging version
- 293129: Locking for free hanging version
- 293130: Locking for panel mount version
- 293110: Male panel mount connector, spring clamp contacts
- 293111: Female panel mount connector, spring clamp contacts
- 293112: Male panel mount connector, screw contacts
- 293114: Female panel mount connector, screw contacts
- 2176816 : De-latching tool for Nector* Classic connector

3 SPECIFICATIONS

Design Objective 108-111056 provides expected product performance and test information. Standard Norm for reference is IEC 61535: Installation couplers for permanent connection in fixed installations. Additional instruction sheets are available in the kit package for panel mount spring clamp and spring contacts.

4 REQUIREMENTS

4.1 Storage

- Ultraviolet light: Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the contacts.
- Storage life: the parts should remain in the shipping containers until ready for use to prevent deformation to the contacts and/or damage to the housings. The contacts should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.
- Chemical exposure: do not store contacts near any chemical listed below. As they may cause stress corrosion cracking in the contacts:
 - Alkalies
 - Ammonia
 - Citrates
 - Phosphates citrates
 - Sulfur compounds
 - Amines
 - Carbonates
 - Nitrites
 - Sulfur nitrites
 - Tartrates

4.2 Materials

The pin and socket contacts are made of copper alloy with tin plating.
The housing and plastic locking parts are made in PA.

5 TOOLS

5.1 Crimp hand tool

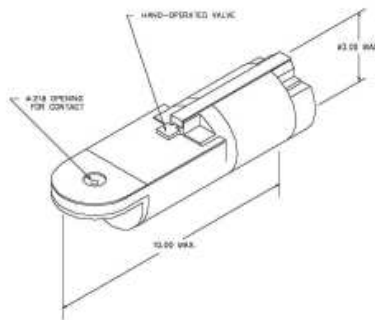
- 601967-1: 4 indent hand tool frame by DMC



- 523168-6: turret (contact positioner)

5.2 Mini applicators

- Pneumatic tool WA27F by DMC



- CM 25-3 by Rennsteig Werkzeuge



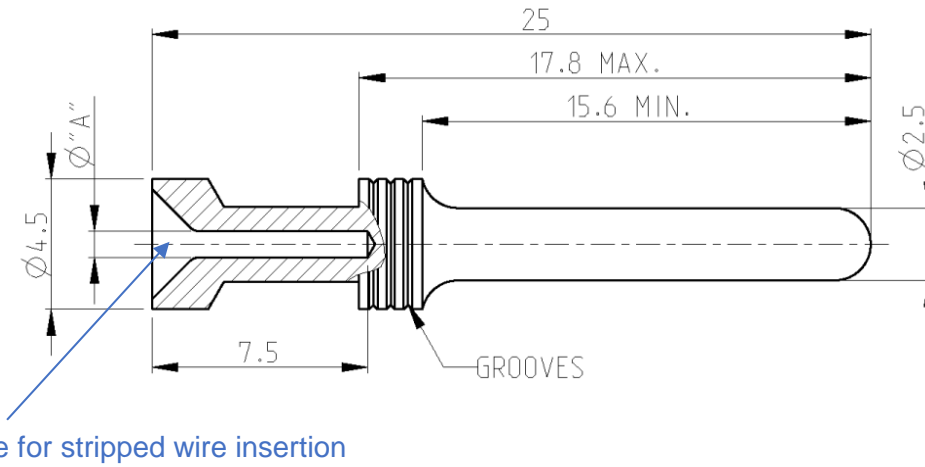
6 PACKAGING

The following Packaging Specification are applicable to Nector* Classic connector:

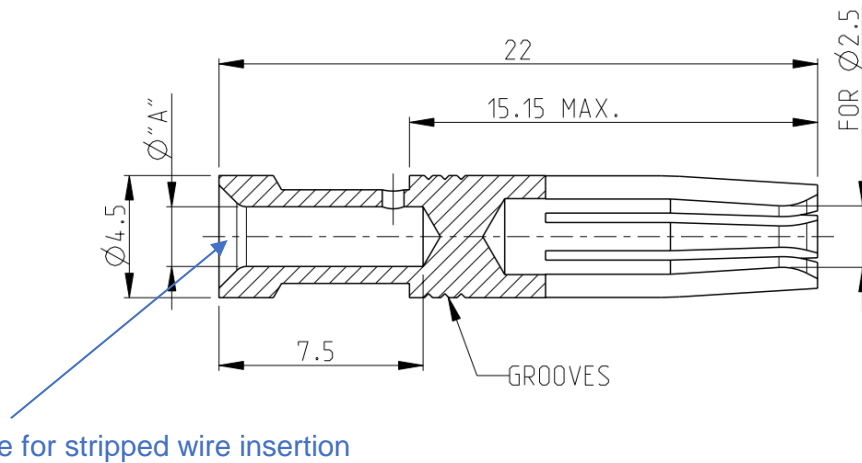
- 107-111004: Male and Female Housings and Locking, free hanging connector (crimped version)
- 107-20255: Nector* Connectors kit packaging specification
- Customer drawings 1105100 and 1105101 for contacts packaging

7 CONTACTS

HE series, pin contact P/N X-1105100-X



HE series, socket contact P/N X-1105101-X

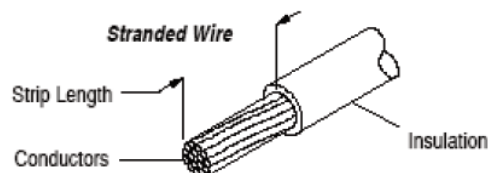


The following contacts parts have to be used:

Pin contact	Socket contact	Wire size
3-1105100-3	3-1105101-3	1.5mm ²
4-1105100-3	4-1105101-3	2.5mm ²

8 CABLE TYPE AND WIRE SIZE

The contacts have to be terminated to stranded wire:



For proper strip length and wire preparation refer to paragraph X.



Do not nick, scrape or cut the wire conductor during stripping operation

9 CABLES

The following cables shall be used on Nector* Classic connector:

9.1 Cable H05VV-F

- Conductor: flexible copper conductor class 5 CEI 20-29
- Insulation: PVC, TI2 quality
- Sheath: PVC, TM2 quality
- Max operating temperature: 60 °C
- Typical conductor resistance DC @ 20°C [Ω/km]:
 - 1.5 mm²: 13.3
 - 2.5 mm²: 7.98

Cable/Wire size used	Insulation medium thickness [mm]	Cable outer diameter range [mm]
3G / 1.5 mm ²	0.7	8.2 - 8.4
3G / 2.5 mm ²	0.8	9.9 - 10.3

9.2 Cable FROR 450/750 V

- Conductor: flexible copper conductor class 5 CEI 20-29
- Insulation: PVC, TI2 quality
- Sheath: PVC, TM2 quality
- Max operating temperature: 60 °C
- Typical conductor resistance DC @ 20°C [Ω/km]:
 - 1.5 mm²: 13.3
 - 2.5 mm²: 7.98

Cable/Wire size used	Insulation medium thickness [mm]	Cable outer diameter range [mm]
3G / 1.5 mm ²	0.7	8.2 - 8.4
3G / 2.5 mm ²	0.8	9.9 - 10.3

10 CRIMPING TOOLS



Wire insulation shall not be cut or broken during the crimping operation, nor shall the insulation be crimped

10.1 DMC tool

- Choose proper wire size with the selector placed on the frame.

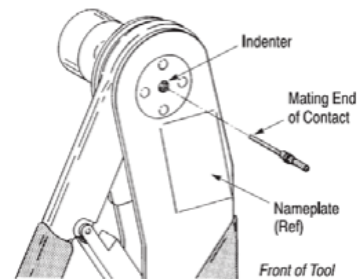
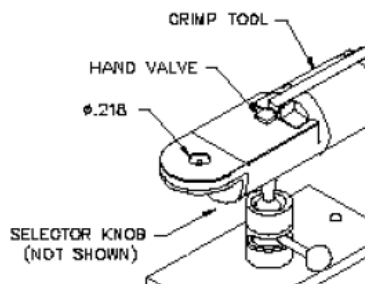
For the hand tool: the handles must be fully opened when changing the positioner selector setting

Wire size	Wire selector (sel no.)
1.5 mm ²	6
2.5 mm ²	7

- Choose proper contact type by rotating the turret selector.
Align and insert the mating end of the contact into the indenter from the front of the tool until the contact bottoms.

For the hand tool:

- The ratchet ensures proper crimping of the contacts
- Once engaged, the ratchet will not release until the tool handles are fully closed



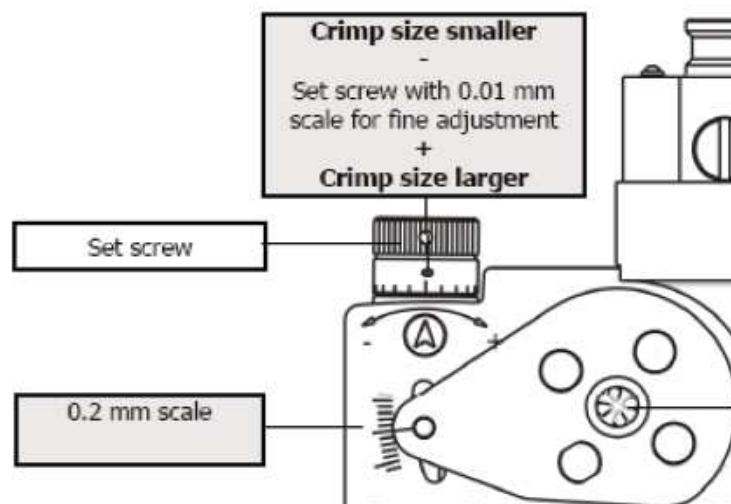
- Insert the proper wire into the contact barrel, taking care not to bend or damage the wire strands and then crimp

For hand tool: while holding the wire in place, squeeze the tool handles until the ratchet releases. Allow the handles to open

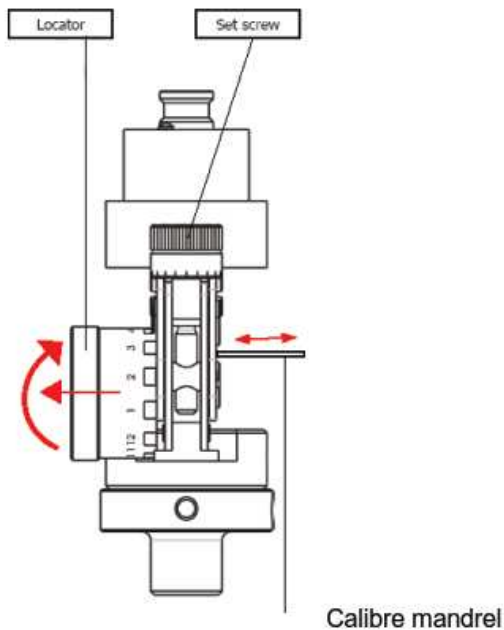
After crimping, remove the crimped contact from the tool. As visual inspection, check the crimp connection.

10.2 Rennsteig Werkzeuge tool

- The calibre mandrel size must be set in correspondence to the four-mandrel crimp unit with the set screw. Insert the calibre mandrel between crimp mandrels



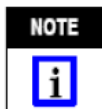
- Set the requires crimp parameters according to proper wire size and bring the locator into the desired position by raising sideward and turning; turn the set screw to adjust the crimp mandrel depth



- Align the four-mandrel crimp unit to the work conditions and insert the contact. Insert the prepared wire, taking care not to bend or damage the wire strands and then crimp. After crimping, remove the crimped contact from the tool. As visual inspection, check the crimp connection.

11 CRIMP INSPECTION

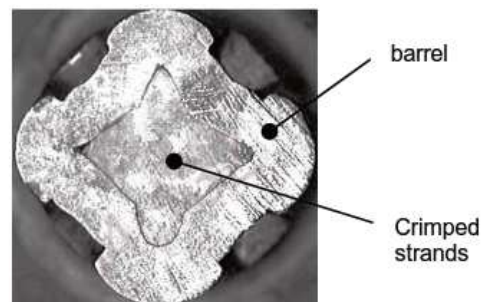
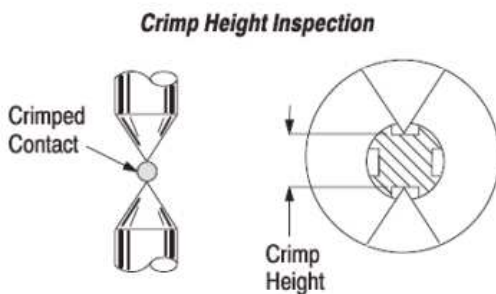
The inspection requires the use of a micrometer as shown below (or equivalent).



There shall be no deformation or other damage to the mating portion of the crimped contact that will impair usage of the contact.



Contacts are not repairable once a termination has been made. Do not re-terminate the contacts.



According to the crimp tool used, refer to the following crimp height dimensions:

- Tools by DMC:

Tool selector setting	Wire size [mm ²]	Hand tool CH [mm]	WA27F tool CH [mm]
6	1.5	1.45 / 1.65	1.45 / 1.65
7	2.5	1.70 / 1.90	1.70 / 1.90

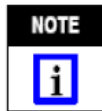
- Tools by Rennsteig Werkzeuge::

Set screw / Crimp mandrel	Wire size [mm ²]	CM25-3 CH [mm]
Settings for 1.5 mm ²	1.5	1.45 / 1.65
Settings for 2.5 mm ²	2.5	1.70 / 1.90

12 CRIMP PULL-OUT TEST

Crimped contacts shall not be separated from their associated wires when subjected to forces as specified in the following table:

Wire size [mm ²]	Minimum force [N]
1.5	240
2.5	450



Adjust the tensile strength machine for head travel of 25.4 mm/min

13 CONNECTOR ASSEMBLY

13.1 Male connector, free hanging version

Installation couplers are intended for connection and disconnection without load.

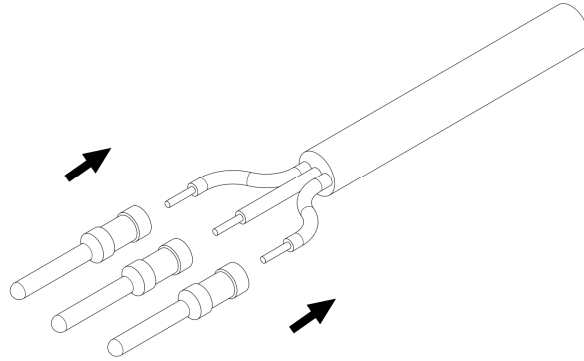
Dangerous compatibility between different installation systems is not automatically prevented by compliance with IEC 61535.

No dangerous interchangeability with systems specified in Standard sheets of IEC 60309, IEC 6032, IEC 60906 and with the declared national domestic plug and socket outlet system.

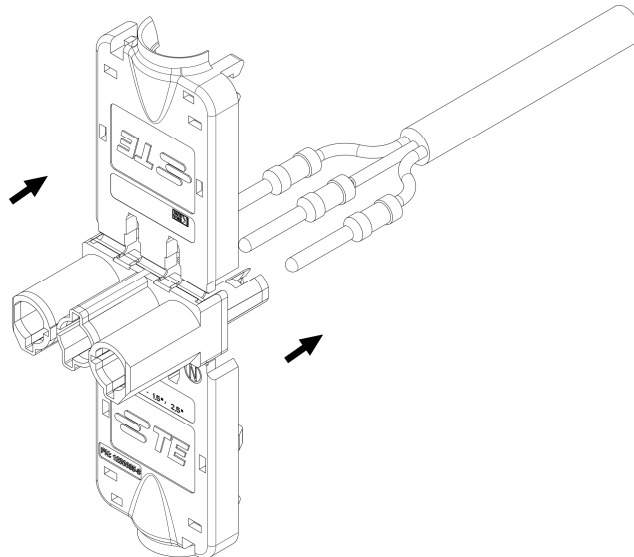
This installation system is not a replacement for national domestic plug and system outlet system.

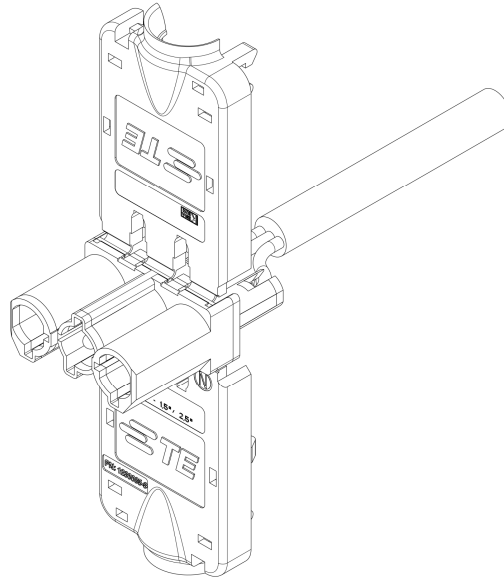
Assembly procedure:

- Remove the cable insulation jacket for a length of 22 ± 1 mm
- Strip the PE conductor wire for a length of 7.0 mm
- Strip the other conductor wires to 9.5 mm and trim the length at 7.0 mm
- Crimp contacts P/N X-1105100-3 as described above

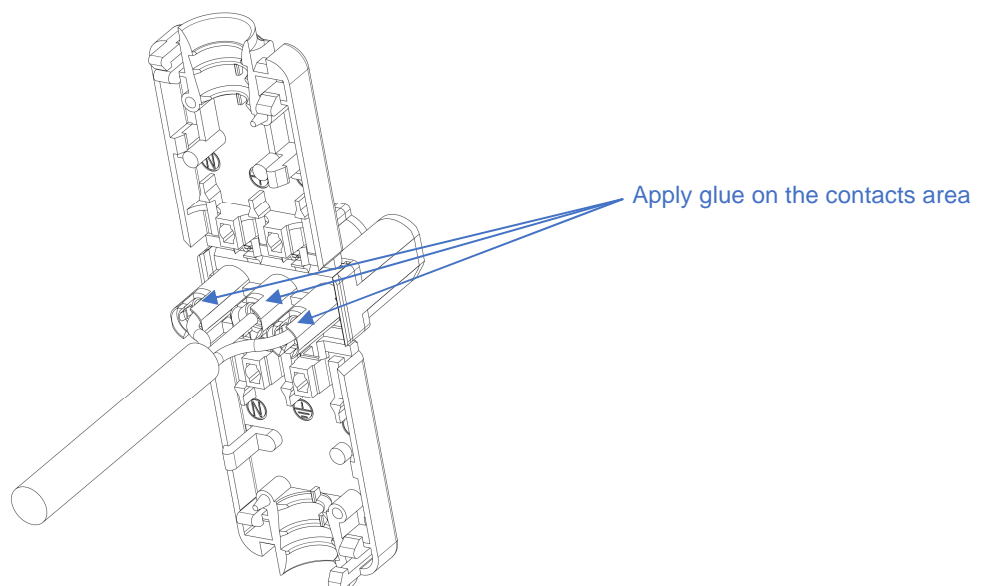


- Align the male connector housing P/N 1230085-3 as shown and insert the contacts into the cavity housing, until all the contact reach their stops:

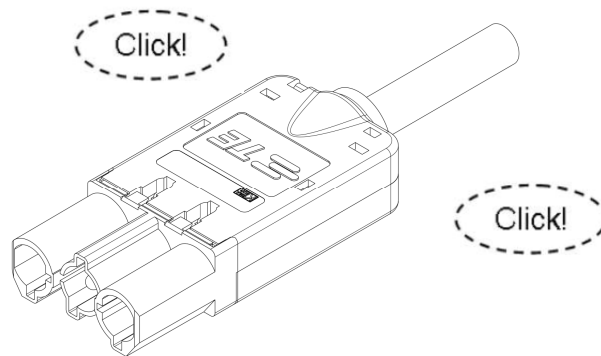
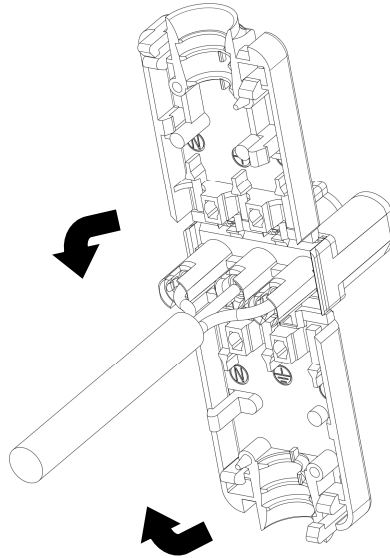




- To secure the contact position in the housing cavities, apply glue as shown below:



- Close the housing case until all latches are locked properly:



13.2 Female connector, free hanging version

Installation couplers are intended for connection and disconnection without load.

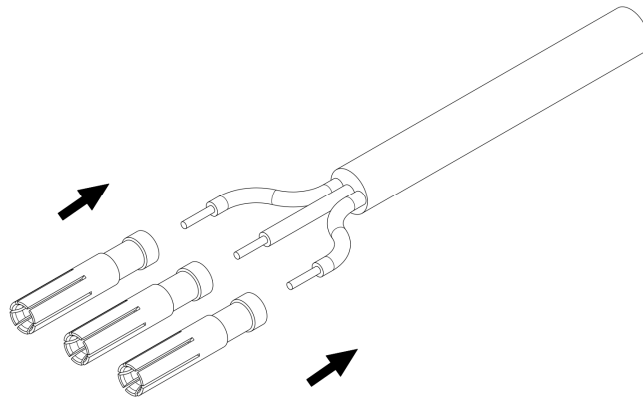
Dangerous compatibility between different installation systems is not automatically prevented by compliance with IEC 61535.

No dangerous interchangeability with systems specified in Standard sheets of IEC 60309, IEC 6032, IEC 60906 and with the declared national domestic plug and socket outlet system.

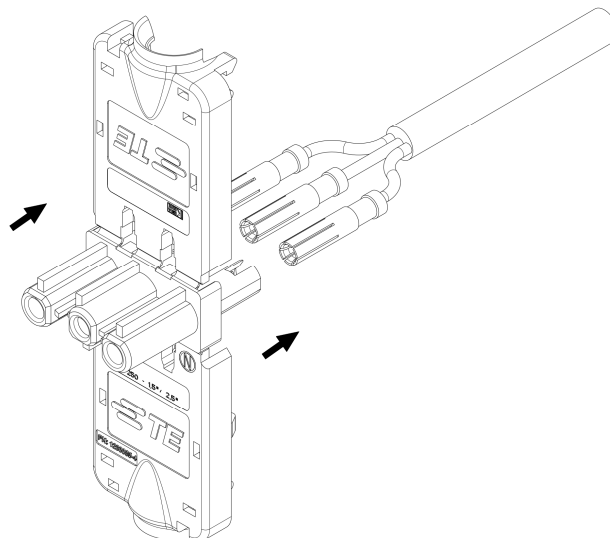
This installation system is not a replacement for national domestic plug and system outlet system.

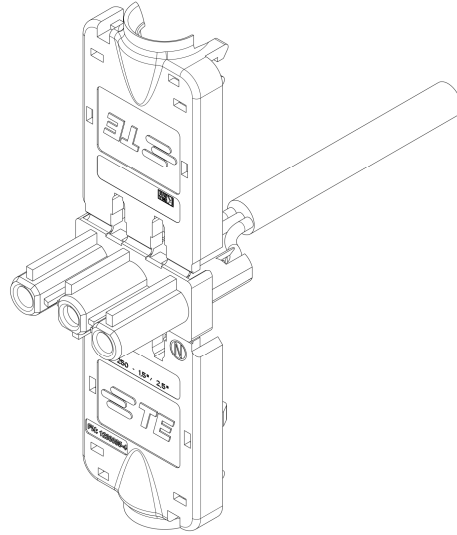
Assembly procedure:

- Remove the cable insulation jacket for a length of 22 ± 1 mm
- Strip the PE conductor wire for a length of 7.0 mm
- Strip the other conductor wires to 9.5 mm and trim the length at 7.0 mm
- Crimp contacts P/N X-1105101-3 as described above

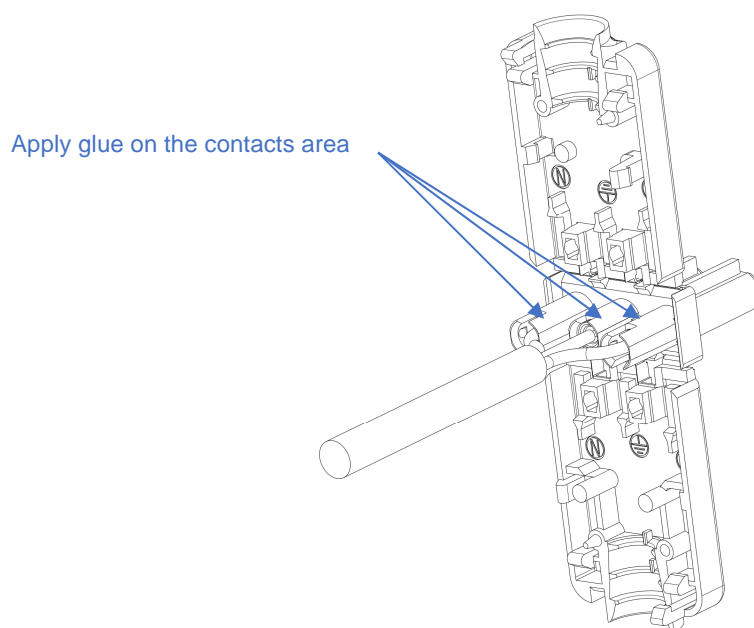


- Align the male connector housing P/N 1230085-4 as shown and insert the contacts into the cavity housing, until all the contact reach their stops:

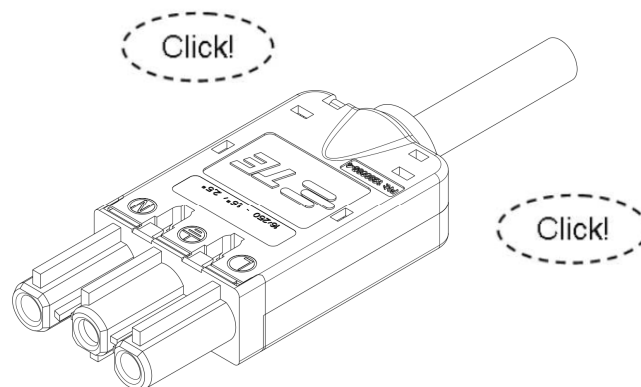
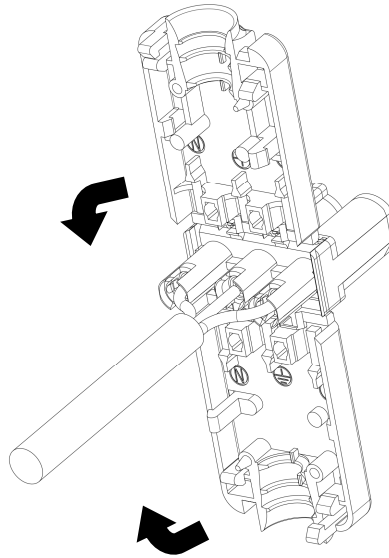




- To secure the contact position in the housing cavities, apply glue as shown below:



- Close the housing case until all latches are locked properly:



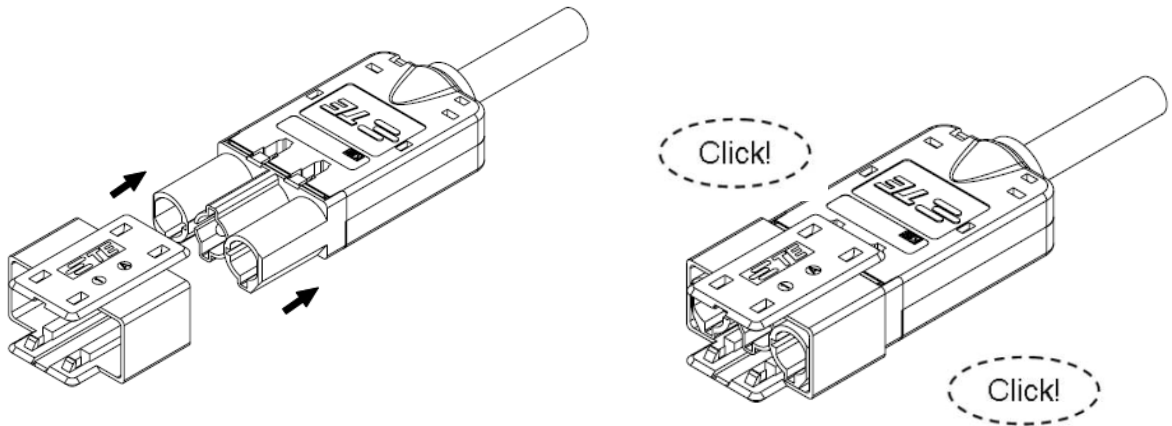
13.3 Male and Female housing, panel mount version

The relevant instruction sheets are provided in the kit packages for both male and female version, spring clamp and screw contacts. Please refer to those instruction sheets for assembling operation.

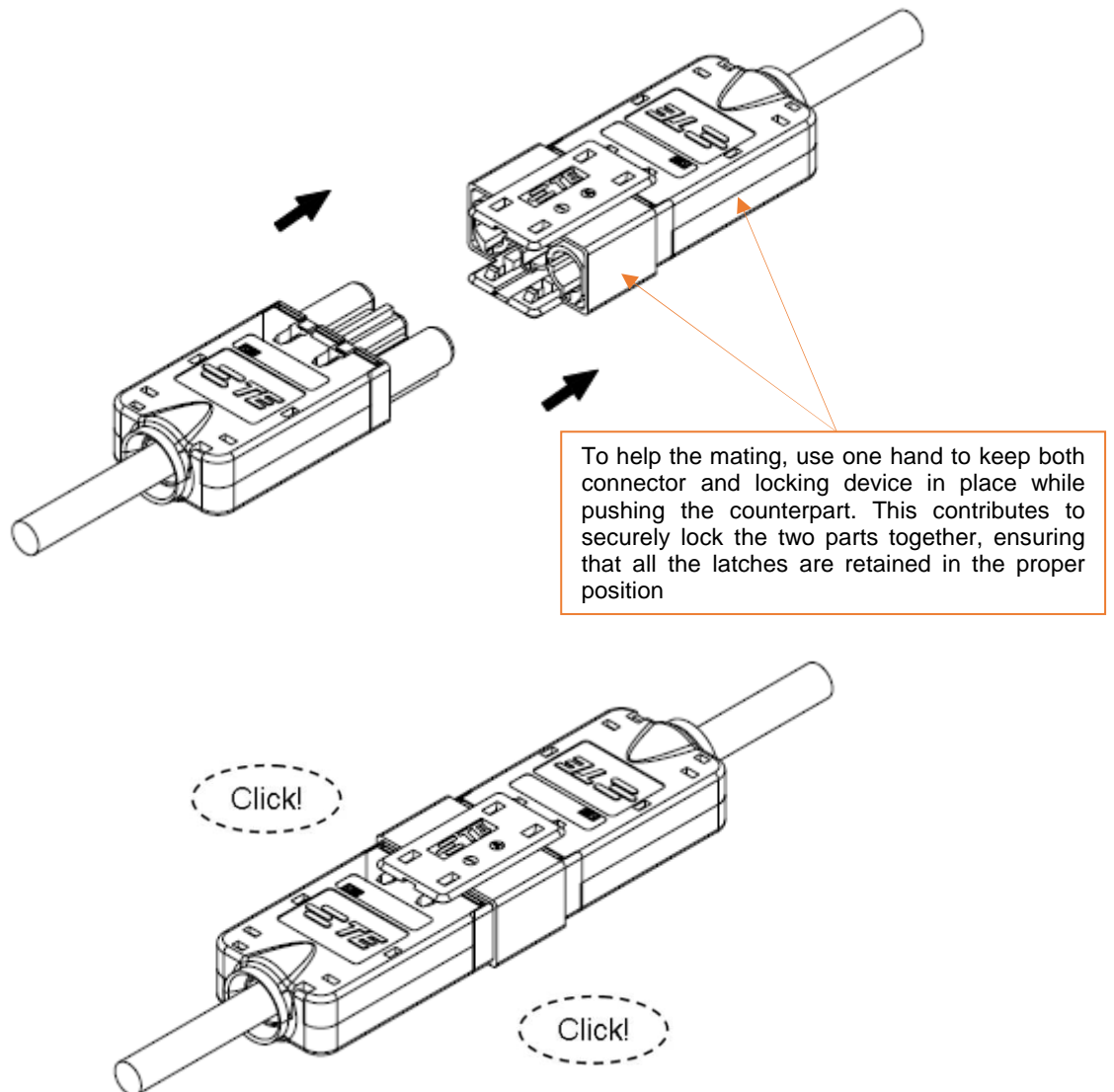
13.4 Secondary lock

To comply with IEC 61535 a locking device shall be installed when the pin and the socket connector are mated.

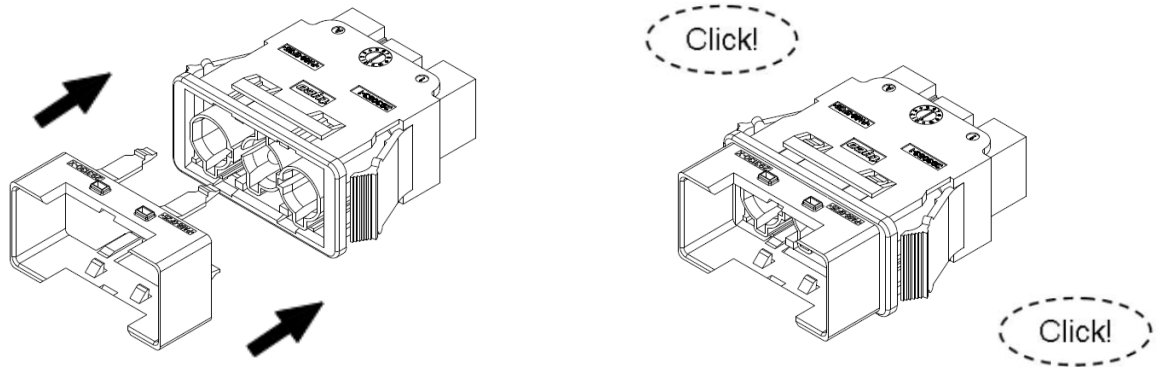
The picture below shows the locking device PN 293129-X, that has to be assembled either on the pin housing (suggested option) or on the socket housing before mating the couplers:



Align and push the counterpart (female connector shown below for reference) until it is fully mated and the latches are properly retained:



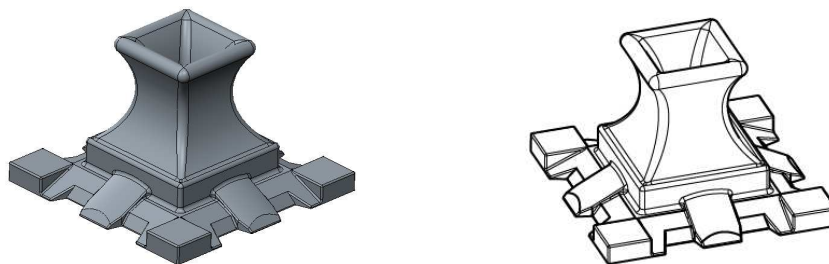
A secondary lock for panel mount is also available, refer to PN 293130-X for details. The picture below shows the locking device that has to be assembled on the pin housing (suggested option) or on the socket housing (depending on the panel mount configuration) before mating the couplers:



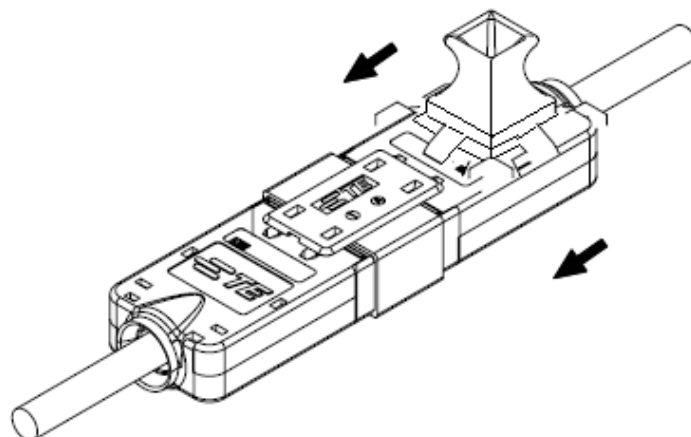
The free hanging counterpart mating operation is the same as described in the above paragraphs

14 DE-LATCHING OPERATION

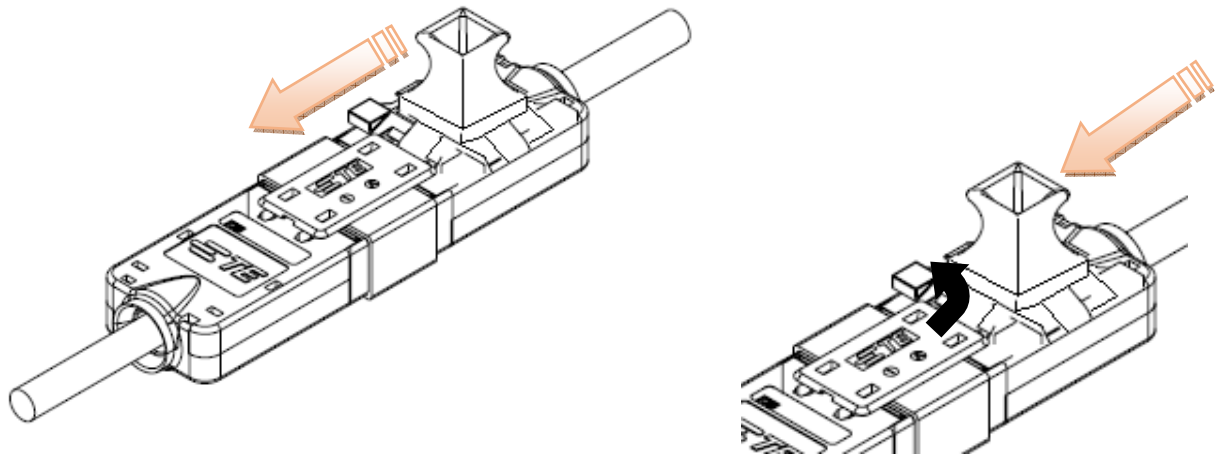
A de-latching tool is available to allow the dis-engagement of the mated coupler. The related PN is 2176816-1. The following picture shows the de-latching tool for reference:



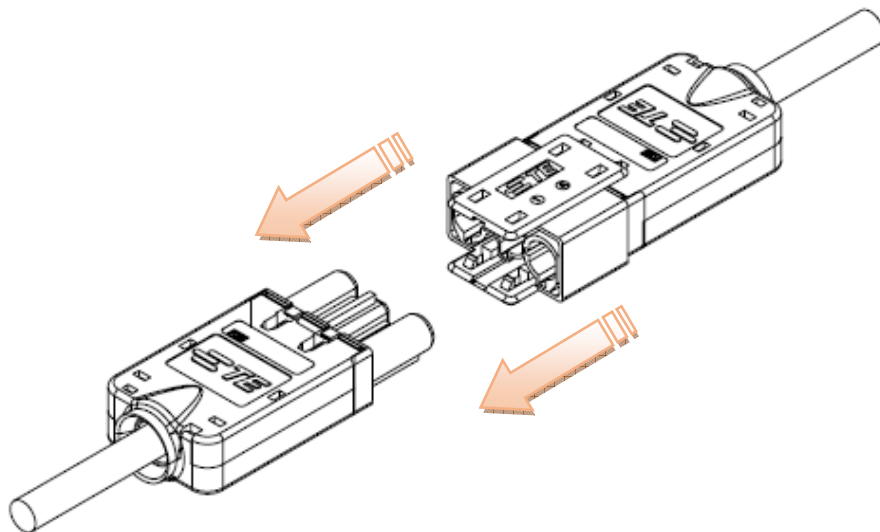
To dis-engage the coupler, align the de-latching tool part onto one of the two housings and push it against the locking part 293129 as shown below:

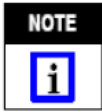


When the de-latching tool is properly aligned, its front part will deflect the plastic on the locking part, opening the retention latches (shown in the right detailed picture as a black arrow for reference):

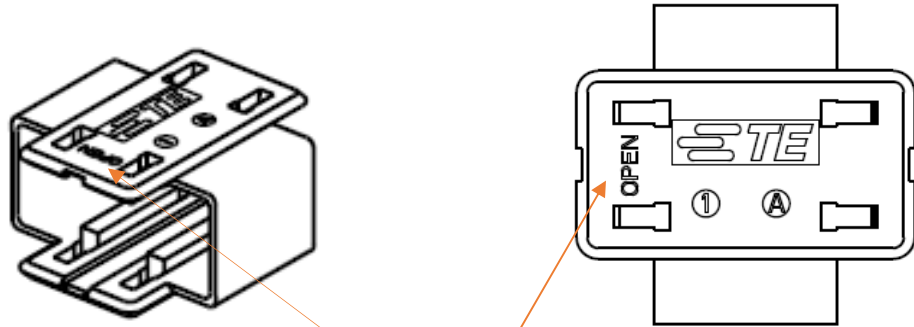


Pull the connector apart with hands and dis-engage the coupler:





To dis-engage couplers when locking part 293129-3 is used, check one of two inscriptions “OPEN” on the locking part (shown below for reference only) and align the de-latching tool on that side to ensure the de-latching tool will work against the retention latches



The “OPEN” marking indicates where the retention latches are on PN 293129-3 to help in un-mating operations