SOLARLOK* Slim Line Connector

Application specification
114-18952-1

SOLARLOK* Slim Line Connector

Content

Purpose

This specification covers the installation and termination of the TE Connectivity SOLARLOK* Slim Line connectors.

Remark:

The application of the TE Connectivity SOLARLOK*Slim Line connectors as well as the installation of the Solar connectors is not part in the scope of services from TE Connectivity. TE Connectivity does not offer warranty for Solar connectors with mounted solar cable assemblies, if those cable assemblies will be exchanged or unfixed after the delivery by TE Connectivity. A cable assembly has exclusively to be only with from TE Connectivity for this purpose released solar cables. In cases of delivery of single connectors without attached cable, the mounting of the cable is also not in the service scope of TE. The assembly location and also the assembly procedure have to agree with JEDEC standard JESD22-114F.

1. SUPPORTING DOCUMENTS

1.1 Customer Drawings

PN 1987286, 2120346	Photovoltaic Connector Pin 1 pos.
PN 1987287, 2120347	Photovoltaic Connector Socket 1 pos.
PN 1987558	Photovoltaic Connector Pin 1 pos., incl. contact
PN 1987559	Photovoltaic Connector Socket 1 pos., incl. contact
PN 1987594, ~~2120009~~, 2120229	Solar Cable Black With Pin Connector
PN 1987592, ~~2120010~~, ~~2120025~~, 2120231, 2120412	Solar Cable Black With Socket Connector

Dimensions and material specifications for SOLARLOK* Slim Line products may be found in the customer drawings.

1.2 Product Specification

Performance specification (such as rated current or rated voltage) for the SOLARLOK* Slim Line products can be found in TE Product Specification

108-94205-1 SOLARLOK* Slim Line Connector

1.3 Application Specification

Connectors shall be assembled per TE Application specification 114-18022 and 114-74013 to ensure correct connector assembly and crimp quality.
Please refer to HVT application specification 114-74013 for additional details on contact termination.
At big packaging the application specification lies by at instruction sheet.

1.4 Cleaning agent

It is not permitted to use cleaning agents which can affect/damage the used plastics. We recommend a soft, Isopropanol-moistened cloth.

2. SOLARLOK* SLIM LINE CONNECTOR

Attention: Do not disconnect under load!
Current path should only be disconnected using approved devices.
Cable assemblies shall be labeled with lettering or label PN 0-1718077-1

To protect against shock, ensure that conductors and their associated connectors are separated from opposite polarity components.

2.1 General Comments

Any kind of pollution (dust, humidity, etc.) during the assembly process can degrade contact and connector performance. This applies in particular to the seals and the crimping of the contacts. A clean assembly environment is therefore essential.

2.2 Termination of the Cable Wires / Crimping of the Contacts

SOLARLOK* Slim Line connectors use different crimp contacts for various wire gauges. Possible wire gauges are 2,5 sqmm / AWG 14 or 4sqmm / AWG 12. The tools to be used are selected based upon the wire gauge. For the crimping process please refer to specification 114-94061-1.

Use copper stranded wire only!

2.3 Handling of Connectors and Cables

The cable must not be bent or crushed on the direct exit of the cable screw joint.
A minimum bending radius R ≥ 5 x cable diameter must be maintained.
The cable must be routed in a way, that tensile stress on the conductor or connections is prevented.

Figure 1

Figure 2

2.3.1 Sealing Grommet Selection for Cable Connectors

Use only wire which is released by TE Connectivity!

Preassembled connectors PN 1987286-x, PN 1987287-x, PN 1987558-x and PN 1987559-x are used (with pinchring) for cableeter 6.3mm up to 6.8mm (see figure 3).
Preassembled connectors PN 2120346-x, PN 2120347-x, PN 1-1987558-x and PN 1-1987559-x are used (with pinchring) for cableeter 5.8mm up to 6.3mm (see figure 3).

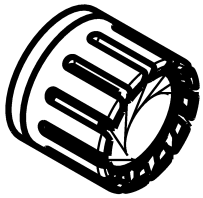

Figure 3

The cable grommet should be selected based upon the insulation diameter of the wire being used (see customer drawings PN 1987286 ,1987287, 1987558, 1987559, 2120346 and 2120347). The grommet should not fit to hard on the wire because of the risk that the contact cannot be inserted correctly in the chamber.

2.3.2 Assembly of Cable Connectors

When assembling the connectors, the following sequence must be followed (refer to Application spec. 114-74013):

1. Stripping the wire.

Figure 4

2. Crimp a contact with an appropriate cross section.

Figure 5

Insert the stripped wire into the wire crimp barrel until it stops. While holding the wire in place, squeeze tool handles together until ratchet releases. Take care to correct position the contacts in the applicator (especially with the handtool). For easier handling use the locator.

3. Cable can be inserted directly into the preassembled connector housing

Figure 6

4. Push contact with cable into the connector housing untl hearing the locking noice, try pull back to be sure that the contact is locked.

Figure 7

5. Then screw cable screw nut onto connector housing

Figure 8

6. Tighten cable screw nut to max. 0.8 Nm depending on wire type

Cable Type	TE PN	Tightening torque for preassembled connectors
TE Connectivity Dual Rated Solar Cable ZHSCG UL ZKLA rated, 2.5sqmm / 14 AWG	956297	0,8 Nm + 0,2 Nm
~~Studer Cable Betaflam 125 14 AWG R~~	~~1987025 2~~	~~0,8 Nm + 0,2 Nm~~
Huber + Suhner Cable RADOX smart 4sqmm / AWG 12	2120219-1	0,8 Nm + 0,2 Nm

2.3.3 Connector Latching

When mating the SOLARLOK* Slim Line connectors, ensure the following;

- Connectors labeled with a + or – are keyed and can only be mated to similarly marked and keyed connectors.

Caution: The "neutral" designated pin-connectors incorporate no keying features and may be freely mated to either + or – keyed female-connectors. The neutral product should not be used where maintaining polarity is critical. It is only admitted for seriell connections.

- The polarity of the "neutral" connector must labeled with PN 1394725-1 or -2 nearby the connector
- The connector system is fully latched only when the latch are flush with the mating connector (see fig. 10). A clear "click" must be heard.

Figure 9 (Female connector)

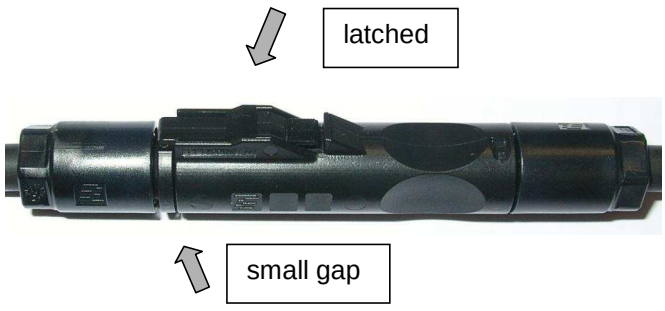

Figure 10 (correct latching)

Figure 11 (incorrect latching)

2.3.4 Unmating of the Connectors

CAUTION: Do not disconnect the connector under load!
PV plug connections must not be disconnected while under load. They can be placed in a no load state by switching off the DC/AC converter or breaking the AC circuit.

Cable assemblies should be labeled using Tyco Label PN 0-1718077-1

Toolless Unmating of the Connector

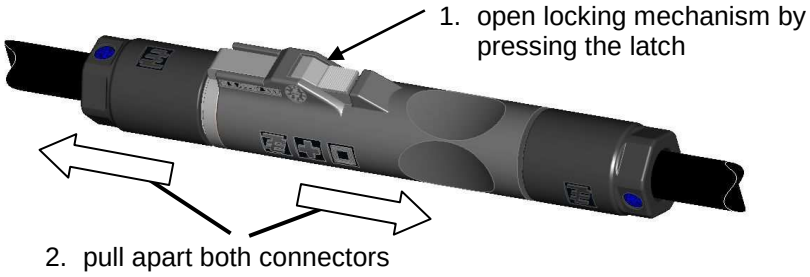

Figure 12

Unmating of the UL version Connector with Tool (Screwdriver)

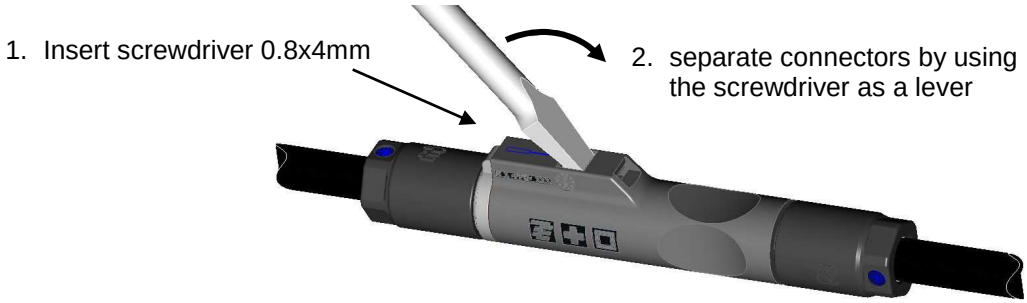

Figure 13

3 STORAGE

See Product specification 108-94205

4 TOOLS

The following tools are available for the contact crimping and connector assembly:

TE Connectivity Part Number	Usable Wire Size	Description
4-1579002-2	2.5 + 4.0 sqmm / 14 AWG + 12 AWG	*SOLARLOK* **Insulating Stripper Tool***
1-1579004-1	2.5 sqmm / 14 AWG	***Hand-Crimptool**(complete) for SOLARLOK* screw machined contacts*
3-1579014-7	2.5 + 4.0 sqmm / 14 AWG + 12 AWG	***Hand-Crimptool** (complete) for SOLARLOK* screw machined contacts*
1-1579004-2	4.0 sqmm / 12 AWG	***Hand-Crimptool** (complete) for SOLARLOK* screw machined contacts*
1102855-9	For all wire sizes	***Extraction tool** for screw machined contacts*
7-1579001-8	2.5 sqmm / 14 AWG	***Crimphead** for SOLARLOK* screw machined contacts*
3-1579016-8	2.5 + 4.0 sqmm / 14 AWG + 12 AWG	***Crimphead** for SOLARLOK* screw machined contacts*
7-1579001-9	4.0 sqmm / 12 AWG	***Crimphead** for screw machined contacts*
523229-3	all	***Slotted nut** for 1/4" torque wrench*
2161345-1	all	*1/4" **Torque wrench***