



Tyco Electronics AMP GmbH
a TE Connectivity Ltd. company

SOLARLOK Contact Crimp Termination

Application Specification

114-94061-1

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AMP GmbH

Application specification

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Note

All measurements contained in the drawings are in mm. Unless otherwise stated the free tolerances of all linear measurements are $\pm 0,2$ and $\pm 2^\circ$ for all angles. The measurements shown in the sketches and pictures are for identification purposes only.

1. Purpose

The general purpose of this specification is to outline the application requirements of female and male contacts in the SOLARLOK-HVT series. This specification is valid for hand crimp tooling applications and for semi- or completely automatic crimp tool applicators. For industrialized cable termination please note Testspecification 109-18192-1.

Only the SOLARLOK-HTS tooling listed under point 4.3 are approved for the application of this contact

2. Additional Documents

2.1 Customer Drawings

For measurements, materials and plating please refer to the appropriate customer drawing.

2.2 Product Specification

„SOLARLOK“ 114-18488

See additional information at the application Spec.114-18488 connecting system for solar panels

“SOLARLOK Contact” 107-18059-1

„SOLARLOK” 109-18192-1 Specification for crimp test and crimp validation.

2.3 Information Sheets

Instruction Sheet 411-18305-1

Additional information concerning using of the hand application tool is contained in the information sheets that are provided with tool and contacts.

2.4 National Standards

DIN EN 61984 Connectors – Safety requirements and tests

DIN IEC 60352 P.2 Solderless, crimped connections

3. Description

The naming shown in the figures below is used further on in this specification.

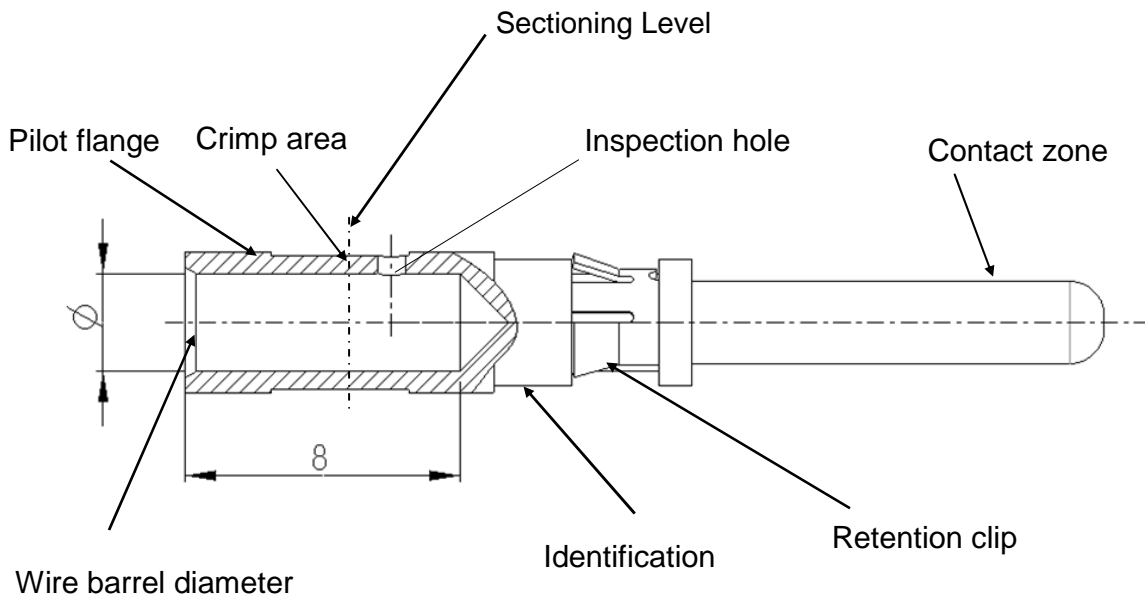


Fig. 1 Crimpcontact Pin

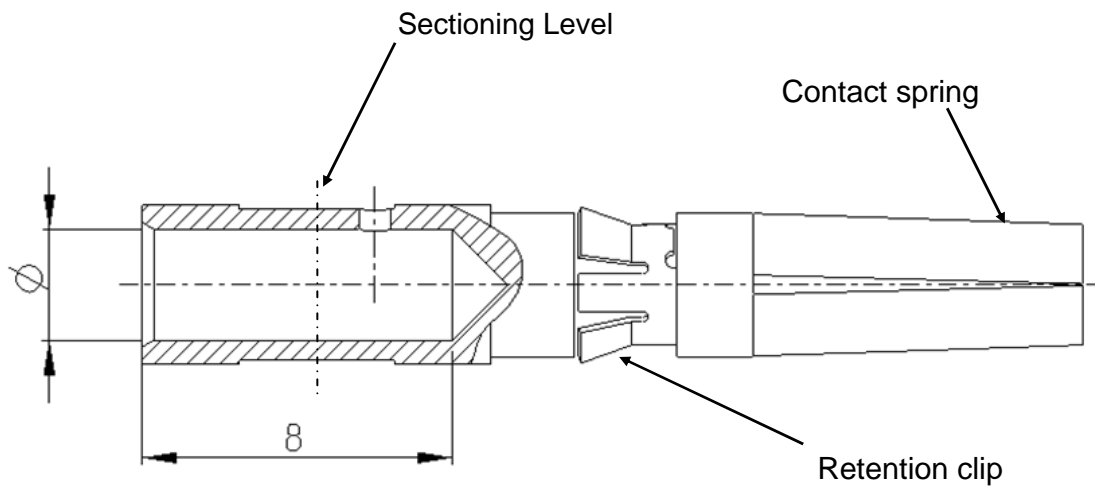


Fig. 2 Crimpcontact Socket

4. Crimp Termination

Terminals, wires and applicators must be compatible. ***The use of the correct components during the application has to be ensured by the harness manufacturer.*** (See Section 4.2 Selection of released Solar Cables Table 2)



Only cables approved from Tyco Electronics are recommended to be used with SOLARLOK component cable assemblies

The wire insulation must be stripped before crimping. The stripping length has to be adjusted, so that the specifications for the position of conductor- and insulation end are fulfilled (see also Tab 1 Strip length).



The insulation must be cut uniformly and cleanly removed from the conductor wire. No remainders of the insulation are allowed on the stripped conductor.

Single strands of the conductor are not permitted to be cut nor damaged nor pulled during stripping operation

After removal of 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 and splitting off of the single strands, for example by partial pull off the cable insulation sleeve.

Cut wire is to be crimped within a maximum of 8 weeks.

Insert the cable - stripped according to table 1 - into the wire barrel of the contact. The wire strands must be visible in the reference hole of the contact.

Then, crimp the contact in the crimp area, using the correct tool for this type of contact. (See Table 2)

Kontakteinsatz	Abisolierlänge l für alle Querschnitte [mm]
SOLARLOK	9±1mm

Tab.1 Strip Length l

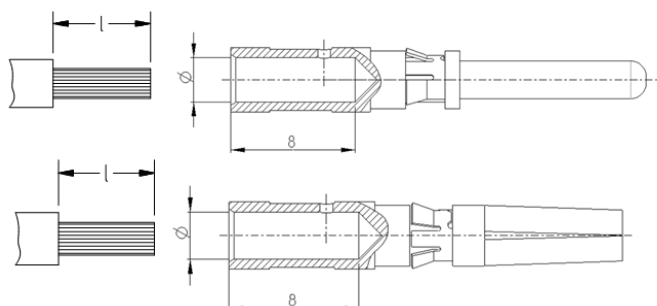


Fig 3 Strip Length

During the termination process make sure that the contact in the contact zone is not damaged or deformed. Also make sure that the retention clip is not damaged or deformed. The retention clip must move freely on the contact.

After crimping the centreline of the contact may deviate by no more than $\pm 0,1\text{mm}$. This value is achieved with the application tools as listed in Section 4.3. In order to achieve this, the tools must be properly maintained and adjusted.

When using manual crimp tools the following points must be followed:

1) Insert the contact according to its crimp cross-section into the locator (See Fig 4).
A crimp termination which is not made in correct crimper locator, does not comply with DIN IEC 60352 P2.

2) Fully insert contacts into the locator. This is the only way the correct crimping position can be guaranteed.

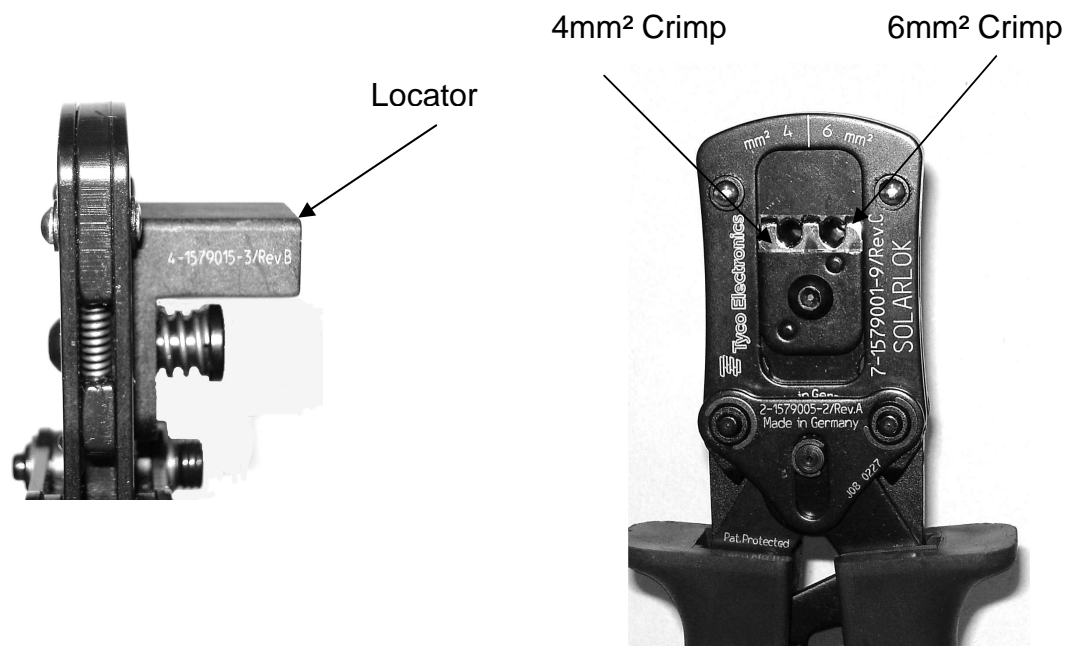


Fig 4 Designations at the Crimping Tool (e.g. Hand tool TE-PN: 1-1579004-2 (see Table 3 SOLARLOK Tools)



4.1. Storage

The contacts should remain in the shipping packaging until required. The contacts should be used on a first in, first out basis to avoid storage contamination.

Don't store SOLARLOK contacts in aggressive environments.

Generally Tyco Electronics products should not be exposed to extreme high temperatures, high humidity or damaging media such as sulphurous, acid or basic atmospheres. Unless other specific requirements are documented, Tyco Electronics recommends in accordance with EN 60068-1 as standard atmospheric conditions a storage temperature between 15 and 35 °C (59 to 95 °F) and a relative humidity between 25 and 75 %.

See also Packaging Specification 107-18059-1 (especially section 13)

4.2 Approved solar cables for SOLARLOK contacts

Producer	Description	Wires size	Contact PN Bold = preferred		Crimp tooling	CW *	CH *	Remarks
Tyco Electronics SOLARLOK	ZHSCG-35-2.5 956 297-4 956 297-5 956 297-6	2.5mm ² / AWG14	0-1987280-1; or **4-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-1 (2.5mm ²); or alternatively: 0-1579004-8 (2.5mm ²) <i>For UL regions</i> 1-1579004-8 (AWG14)	3.15 ±0.05	2.95 ±0.08	
			0-1987281-1; or **4-1105301-1	Socket				
Tyco Electronics SOLARLOK	ZHSCG-35-4.0 956 298-4 956 298-5 956 298-6	4.0mm ² / AWG12	0-1987280-2; or **5-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-2 (4.0mm ²); or alternatively: 0-1579004-8 (4.0mm ²) <i>For UL regions</i> 1-1579004-9 (AWG12)	3.7 ±0.08	3.7 ±0.08	
			0-1987281-2; or **5-1105301-1	Socket				
Tyco Electronics SOLARLOK	ZHSCG-35-6.0- 956 299-4 956 299-5 956 299-6	6.0mm ² / AWG 10	0-1987280-4; or **7-1105300-2	Pin	<i>For TUEV regions</i> 1-1579004-2 (6mm ²); or alternatively: 0-1579004-8 (6mm ²) <i>For UL regions</i> 2-1579004-0 (AWG10)	4.0 ±0.08	4.0 ±0.08	
			0-1987281-3; or **7-1105301-2	Socket				
Studerlabel	Solar wire Betaflam 125 PN 1987025-2	2,5mm ² / AWG 14	0-1987280-1; or **4-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-1 (2.5mm ²); or alternatively: 0-1579004-8 (2.5mm ²) <i>For UL regions</i> 1-1579004-8 (AWG14)	3.15 ±0.05	2.95 ±0.08	
			0-1987281-1; or **4-1105301-1	Socket				
Studerlabel	Solar wire Betaflam 125 PN 1987025-1	4.0mm ² / AWG 12	0-1987280-2; or **5-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-2 (4.0mm ²); or alternatively: 0-1579004-8 (4.0mm ²) <i>For UL regions</i> 1-1579004-9 (AWG12)	3.7 ±0.08	3.7 ±0.08	
			0-1987281-2; or **5-1105301-1	Socket				
Studerlabel	Solar wire Betaflam 125 "R" PN 19870905-1	4.0mm ² / AWG 12	0-1987280-2; or **5-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-2 (4.0mm ²); or alternatively: 0-1579004-8 (4.0mm ²) <i>For UL regions</i> 1-1579004-9 (AWG12)	3.7 ±0.08	3.7 ±0.08	
			0-1987281-2; or **5-1105301-1	Socket				
Studerlabel	Solar wire Betaflam 125 PN 1987026-1	6.0mm ² / AWG 10	0-1987280-4; or **7-1105300-2	Pin	<i>For TUEV regions</i> 1-1579004-2 (6mm ²); or alternatively: 0-1579004-8 (6mm ²) <i>For UL regions</i> 2-1579004-0 (AWG10)	4,0 ±0.08	4,0 ±0.08	
			0-1987281-3; or **7-1105301-2	Socket				
DIXIE Wire	Dixie wire solar cable PN 1986165-1	AWG 12	0-1987280-2; or **5-1105300-1	Pin	<i>For TUEV regions</i> 1-1579004-2 (4.0mm ²); or alternatively: 0-1579004-8 (4.0mm ²) <i>For UL regions</i> 1-1579004-9 (AWG12)	3.7 ±0.08	3.7 ±0.08	This AWG12 cable has to be crimped with metric contacts (4mm ²)
			0-1987281-2; or **5-1105301-1 2	Socket				

** Outdated Part Number * See Section 5 Evaluation of crimp quality

Table 2 Released solar cables with assigned contacts and crimp tools



Only cables approved from Tyco Electronics are permitted to be used!

4.3 Tools for stranded wires

For the application of the crimp contacts, hand tools and semi-automatic machines listed in the following table are available.

Pos. Nr.	Tyco Electronics-Part number	Wire Size	Approval	Order text
1	4-1579002-2	2.5 + 4.0 + 6.0 mm ²	N/A	SOLARLOK insulating Stripper
2	1-1579004-1	2.5 mm ²	TÜV	Hand-Crimp tool (complete) for Solarlok screw machined contacts
3	1-1579004-2	4.0 + 6.0 mm ²	TÜV	Hand-Crimp tool (complete) for Solarlok screw machined contacts
4	0-1579004-8	2.5 + 4.0 + 6mm	TÜV	Hand-Crimp tool (complete) for Solarlok screw machined contacts (Alternativ to Pos 2 und 3).
5	1-1102855-3	For all wire sizes	N/A	Ejection Tool
6	0-1579000-4	For all wire sizes	N/A	Adapter for Crimphead (To use with the Electric Terminator CS200)
7	539630-1	For all wire sizes	TÜV / UL	Electric Terminator CS 200
8	7-1579001-8	2,5 mm ²	TÜV	Crimp head for Solarlok screw machined contacts
9	7-1579001-9	4.0 + 6,0 mm ²	TÜV	Crimp head for Solarlok screw machined contacts
10	2-1579005-1	Recommended for 2.5 mm ² wire size	N / A	Basic Tool short (to use as hand tool together with a Crimphead (Pos 8))
11	2-1579005-2	Recommended for 4 - 6 mm ² wire size	N / A	Basic Tool long (to use as hand tool together with a Crimp head (Pos 9))
12	1-1579004-8	AWG 14	UL	Hand-Crimp tool (complete) for SOLARLOK screw machined contacts
13	1-1579004-9	AWG 12	UL	Hand-Crimp tool (complete) for SOLARLOK screw machined contacts
14	2-1579004-0	AWG 10	UL	Hand-Crimp tool (complete) for SOLARLOK screw machined contacts
15	1534858	N / A	N / A	SOLARLOK Field Service Kit

Table 3 Overview SOLARLOK Crimping Tools



5.4 General requirements for the crimped terminal

5.4.1 Faultlessly

The contact and the retention clip must not show evidence of damage or deformation as a result of the crimping process. Contact and latching functionality must be maintained. Apart from the resistance due to retention clip, the contacts must fit easily into the cavities. The crimp requirements are detailed in TE Spec. 109-18192-1.

5.4.1. Further processing of the crimped terminals

It should be ensured, that during transport, storage or further processing of the crimped terminals and wires any damage or contamination of the terminal body or the crimp is avoided.

When processing the other crimped wire end or at the non crimped end of the cable wire, any damage or impairment of the crimped terminal must be avoided.