

Segmented Radial Crimp (SRC) on Terminals for Charging Inlets



Fig. 1 / Charging Inlet and SRC terminated Closed Barrel Terminal - exemplary -

<u>LTR</u>	<u>REVISION RECORD</u>	<u>DRAWN</u>	<u>APPROVED</u>	<u>DATE</u>
A	Initial release	U. Bluemmel	E. Glombitza	31.01.2024

While TE has made every reasonable effort to ensure the accuracy of the information in this specification, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without prior notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose.

1 Scope

This specification gives detailed application data for specific terminals which are used in Charging Inlets Assemblies, and which are terminated to the wire by Segmented Radial Crimp (SRC).

2 Additional documents

General guidelines for Segmented Radial Crimp (SRC) termination for closed barrel crimp terminals on stranded copper conductor wire are given in

114-97858 Segmented Radial Crimp (SRC) - General Guideline

'Product associated Charging Inlet Application Specifications' give information on specific Charging Inlet Assembly.

Information in these has - for the specific Charging Inlet - priority over the 'General Guidelines' and over this 'Terminal Associated Application Specification'.

114-94762 'Product associated Charge Inlet Application Specification' (exemplary)

Other additional documents:

2439743 Customer Drawing - TE Connectivity PN of Measure Tips

ISO 6722 Road vehicles - single-core copper conductor cables / 2011-10

ISO 19642 Road vehicles – Automotive cables

ZVEI TLF 0214 Validierung von Automotive-Niedervolt-Steckverbindern / Feb. 2021 [Link](#)

3 Description

Features of the crimp barrel and crimped terminal are described in SRC General Guide 114-97858. For the crimped situation see Fig. 2.

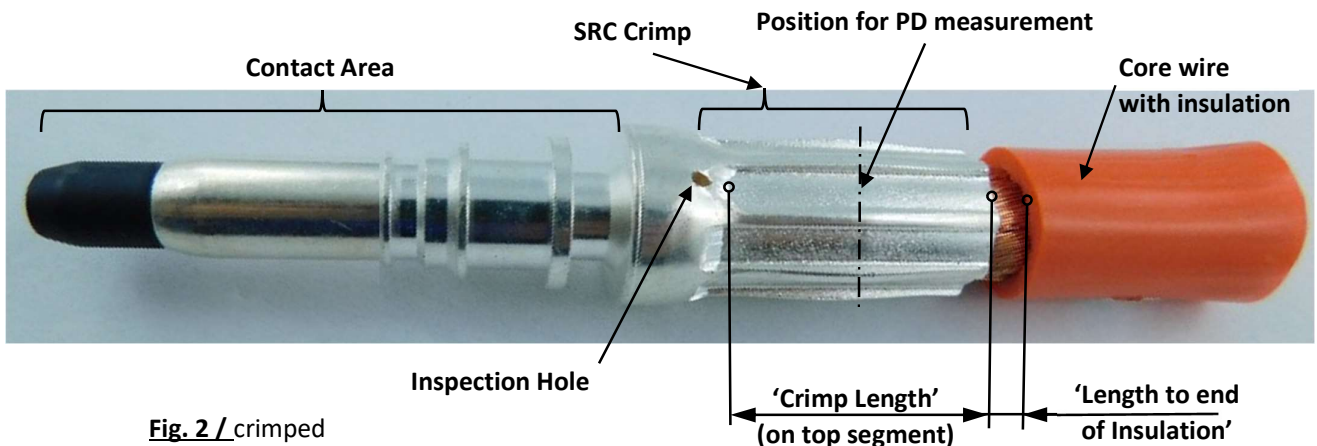


Fig. 2 / crimped
Closed Barrel terminal

4 Wire

For a specific terminal the validated wire type(s) are shown in Table 1.

The use of other than the validated wire type(s) stays within the responsibility of the user or needs to be aligned with the associated TE Connectivity Engineering Department.

4.1 Wire preparation

The wire insulation must be stripped before crimping. The suggested **stripping length SL** of the inner conductor insulation sheet is given in Table 2.

The stripping length may be adopted to fulfill the requirements on the crimped terminal of 'Length to end of Insulation' to the crimped barrel end (see Fig 2) and visibility of conductor in the inspection hole.

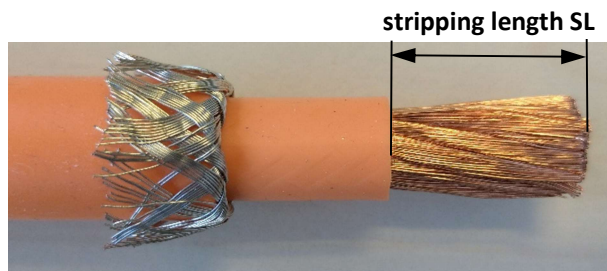


Fig. 3 / stripped wire

The insulation must be separated in a straight cut perpendicular to the wire axis. Flitters or threads of insulation material, which may get into the crimp barrel, are not permitted.

Single strands may not be damaged, fanned out, cut, or pulled out.

The operator should avoid touching the strands. Sticking out strands are not permitted.

The strands of the conductor may not be additionally twisted.

Preparation lengths of shield braid and outer insulation sheet (if exists) need to be given in the 'Product associated Charge Inlet Application Specification'.

5 Requirements on the crimped terminal

The general requirements on the crimped terminal, like

- Conductor position,
- 'Press Diameter' & Measurement,
- Form and Position
- 'Length to end of Insulation'
- 'Crimp Length',
- and Wire Pull Force

are described in SRC General Guide 114-97858.

5.1 Crimp data for the conductor crimp

The '**Press Diameter**' **PD** is the key quality feature of this crimp connection. The measurement allows a non-destructing examination and an ongoing process inspection. The 'Press Diameter' value including its tolerance is provided for every wire size to terminal combination in Table 2.

The 'Press Diameter' must be checked for each batch and after every change or switchover of terminal or wire or application equipment.

Measurement of the 'Press Diameter' is done in the middle (axial location) of the SRC-crimp (see Fig. 2) at the convex surface of opposing pressed surfaces. It is also described in SRC General Guide 114-97858.

It is done with a micrometer having **defined tips** (see Fig. 5 and Table 2) – to assure the measurement is between the ribs.

For the 4 directions, the 'Press Diameter' is intended to be of same dimension (tolerance see 114-97858). Measurement is to be done in only one of the 4 directions (preferred: vertical direction). Assure to not include a rib between the press surfaces in the measurement. Assure to measure via the center of the crimp barrel (see Fig. 4 & 5).

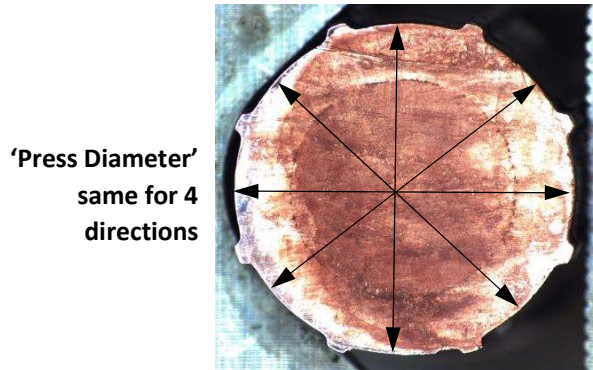


Fig. 4 / cross section through SRC crimp
- exemplary -

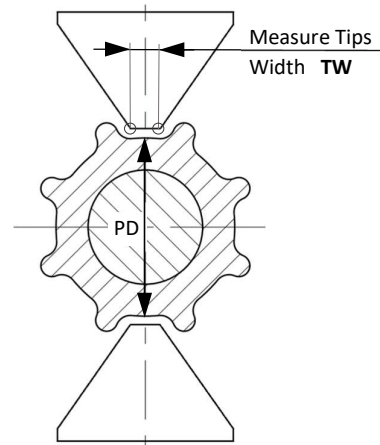


Fig. 5 / 'Press Diameter' PD
Measurement



It is preferred to place the inspection hole to the top direction – for easy view in it - and to identify the topmost press segment. It is not necessary to statistically monitor the stripping length, the 'Crimp Length', nor the 'Length to end of Insulation'.

5.2 Contact area

The contact area of the terminal may not be bent, scratched, damaged, or deformed after crimping or further processing.

Form- and Position requirement is given general in 114-97858, or, if case specific, in the 'Product associated Charge Inlet Application Specification'.

6 Crimp Data and Application Tools

The Crimp Data and Application Tool PNs for a terminal to wire combination are given in Table 2.

Table 1 Validated Wires

ID	Nominal Wire Size	Type	Designation / Conductor Construction	Conductor Diameter (Info)	Outer Diameter (Info)	Manufacturer	Manufacturers code
	[mm ²]			[mm]	[mm]		
4/I	4	HV					
6/I	6	HV	FHL2X/T4			Coficab	
6/II	6	HV	FHLR2GCB2G		6,5 -0,5	Coroplast	Coroflex 9-2611/6
2x6/I	$n \times 6$ mm ²	HV Multicore	FHLR2G2GCB2G 84 x ø0,31mm	3,4 max	4,3 -0,3 ^{a)}	Coficab	2GCB2Gn6xxxxx
2x6/II	$n \times 6$ mm ²	HV Multicore	FHLR91X91XCB91X T3 84 x ø0,31mm	3,4 max	4,3 -0,3 ^{a)}	Coficab	H3XXCBXn60Hxx
16/I	16	HV	FLY 500 x ø0,21mm			Coficab	
16/II	16	HV	C-T3 XPO 512 x ø0,21mm			Coficab	
25/I	25	HV					
35/I	35	HV	FHLR2GCB2G		14,4 -0,6	Coroplast	Coroflex 9-2611/35
50/I	50	HV	FHLR2GCB2G		15,8 -0,6	Coroplast	Coroflex 9-2611/50
70/I	70	HV			18,2 -0,8	Coroplast	Coroflex 9-2611/70
95/I	95	HV	FHLR2GCB2G 3000 x ø0,21mm	14,8 max	20,9 -0,8	Coroplast	Coroflex 9-2611/95
120/I	120	HV	FHLR2GCB2G		23,0 -0,8	Coroplast	Coroflex 9-2621/120

a) Insulation diameter of on core wire in the multicore cable



**Segmented Radial Crimp (SRC)
on Terminals for Charging Inlets**

114-97859

Table 2 Crimp Data and Application Tools

Nominal Wire Size	Terminal	Terminal Name	Validated Wire(s)	Wire Strip Length SL (suggested)	'Press Diameter' PD	'Crimp Length'	SRC Type	SRC Die Set	Measure Tip Width TW	Measure Tip
[mm ²]	PN	-	Table 1 ID	[mm]	[mm]	[mm]	-	PN	[mm]	PN
4	2293269-2	PIN DIA 6 L/N	4/I	13 ±0,8	4,3 ±0,1		SRC-A	2466181-1	0,4	2439743-1
4	2293270-2	PIN DIA 6 PE	4/II Exemplary	13 ±0,8	4,3 ±0,1		SRC-A	2466181-1	0,4	2439743-1
6	2293269-3	PIN DIA 6 L/N	6/I 6/II	13 ±0,8	4,3 ±0,1		SRC-A	2466181-1	0,4	2439743-1
6	2293270-3	PIN DIA 6 PE	6/I 6/II	13 ±0,8	4,3 ±0,1		SRC-A	2466181-1	0,4	2439743-1
2 x 6 mm ² [12mm ²]	2293266-8	PIN DIA 3.6 L/N	2x6/I 2x6/II	16 ±1	5,2 ±0,15	13,3 ±0,8	SRC-A preferred	2443560-1	0,8	2439743-3
							SRC-M	Segment Set 2443926-1 Terminal Holder 2452795-1		
16	(2-) 2293270-4	PIN DIA 6 PE	16/I 16/II Exemplary	16,5 ±1	6,15 ±0,2	12 ±0,8	SRC-A	2466183-1	1,0	2439743-4



**Segmented Radial Crimp (SRC)
on Terminals for Charging Inlets**

114-97859

Nominal Wire Size	Terminal	Terminal Name	Validated Wire(s)	Wire Strip Length SL	'Press Diameter' PD	'Crimp Length'	SRC Type	SRC Die Set	Measure Tip Width TW	Measure Tip
[mm ²]	PN	-	Table 1 ID	[mm]	[mm]	[mm]	-	PN	[mm]	PN
25	2293270-5	PIN DIA 6 PE	25/I	18 ±1,2	7,4 ±0,2	14,5 ±0,8	SRC-A	2466182-1	1,2	2439743-5
35	#####		35/I				SRC-M			
50	#####		50/I				SRC-M			
70	#####		70/I				SRC-M			
95	#####		95/I				SRC-M			
120	#####		120/I				SRC-M			

Exemplary
Data to be added / checked

grey text = exemplary or preliminary / Data to be added / checked

7 Illustrations of Application Equipment – exemplary -

7.1 SRC-A – on Electric Excentre Press

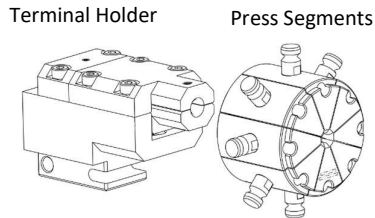


Fig. 6 / Terminal specific
SRC-A Die Set

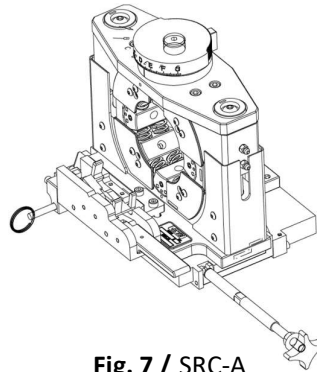


Fig. 7 / SRC-A
Base Applicator
PN 2510896



Fig. 8 / Crimp Terminator
PN 2335500-x HF20 w/o CQM
PN 2348822-x HV20 with CQM

7.2 SRC-M – on Hydraulic Press

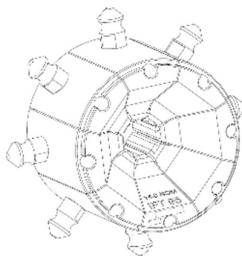


Fig. 9 / SRC-M
Segment Set

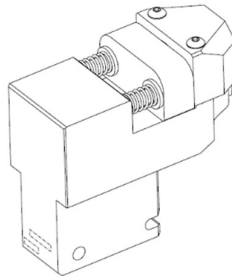


Fig. 10 / SRC-M
Terminal Holder

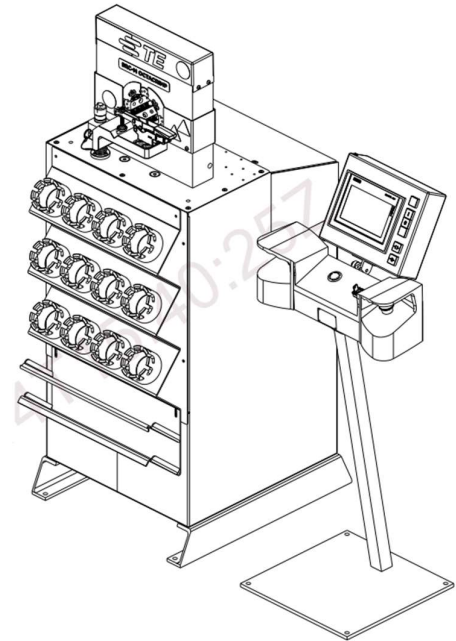


Fig. 11 / SRC-M OCTACRIMP Hydraulic
Press PN 2335600-1 w/o CQM
PN 2335600-2 with CQM