

Application Specification
114-18056-1
CI2 contact system

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1. SCOPE

This specification contains the guidelines for the application of C12 pin and socket contacts. It applies primarily to the fully or semi-automatic application of all versions for both wires and for single-wire seals; if agreed, it can also be applied to manual crimp tools. The contacts are listed by their use, the wire size ranges and crimp data in Tables 1 and 2 (section 6). Only the AMP* crimp tools specified in section 6 may be used for application of the contacts. Any exceptions to this rule are defined by customer-specific documents.

2. REFERENCED DOCUMENTS

2.1 Customer Drawings

The dimensions and materials of the contacts are shown in the table drawings, which numbers are equal to the AMP part numbers. In case of any differences between this document and customers drawings the data of the customer drawing overrules this specification.

2.2 Product Specification

The product specification 108-18011-1 describes the electrical and mechanical characteristics of these contacts. This product specification can be obtained only from the development department.

2.3 Application Specifications

The crimp quality must also comply with the general guidelines laid down in the application specifications 114-18018 and 114-18022. If these are not available, they must be ordered separately.

2.4 Instructional Material

CM 5128 contains information about crimping machines for MQC crimp tools.
AI 8025 describes the MQC crimp tool.
IS 6764 is the operating instructions for the AMP CERTI-LOK* hand crimp tool.

2.5 Information Sheets

IS 7424 explains how to measure the crimp height.

2.6 Standards

DIN 72551 T5/05.92	: Ungeschirmte Niederspannungsleitungen (FLR)
DIN 72551 T6/01.92	: Ungeschirmte Niederspannungsleitungen (FLR)
DIN ISO 6722 T1/04.85	: Ungeschirmte Niederspannungsleitungen (FLK)
DIN ISO 6722 T2/04.84	: Ungeschirmte Niederspannungsleitungen (FLK)
DIN ISO 6722 T3/08.87	: Ungeschirmte Niederspannungsleitungen (FLK)
DIN IEC 352 T2/04.92	: Lötfreie elektr. Verbindungen, Crimpverbindung

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3. APPLICATION

For application, single-wire seals are fed automatically as loose items by a vibrator, in a defined orientation, to an automatic application machine, the SCAT (Sealed Contact Automatic Terminator) module. Here, they are separated, stretched by an application sleeve, positioned on the externally provided wire and pushed from the sleeve. The wire with the single-wire seal then passes to the second station, the crimping machine with MQC crimp tool, where it is crimped into the contact.

4. DESCRIPTION

The following terms are used in the specification.

4.1 Contacts for Wires

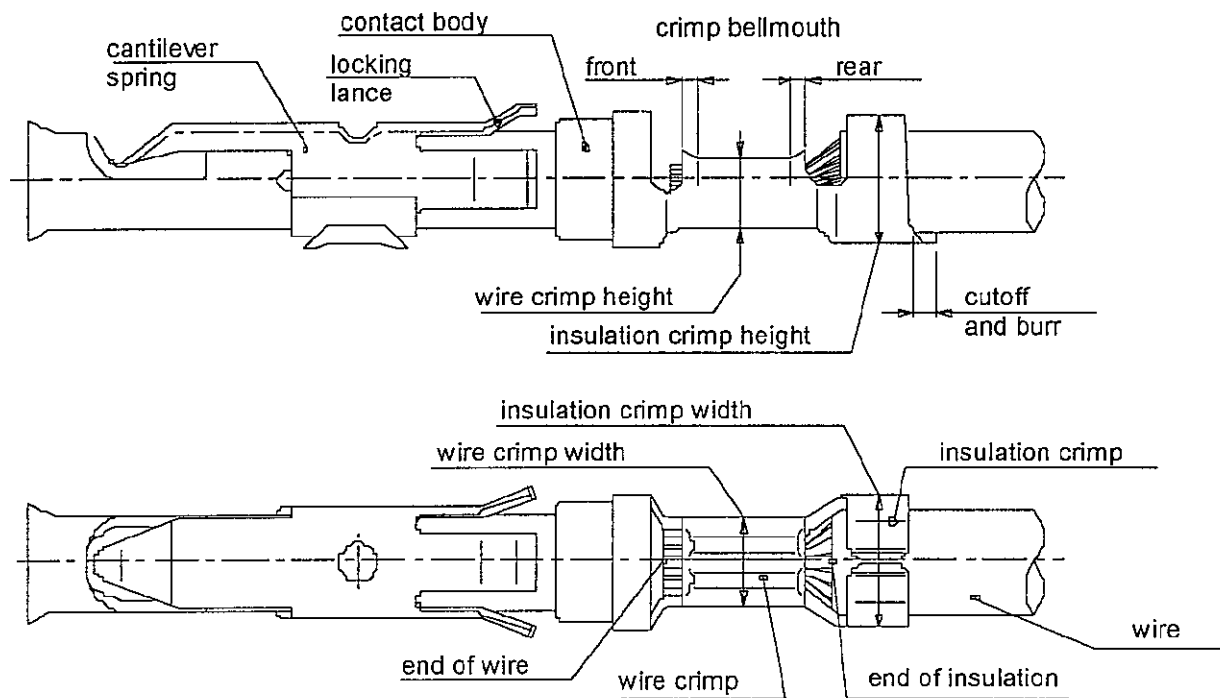


Fig. 1

4.2 Contacts for Single-Wire Seals

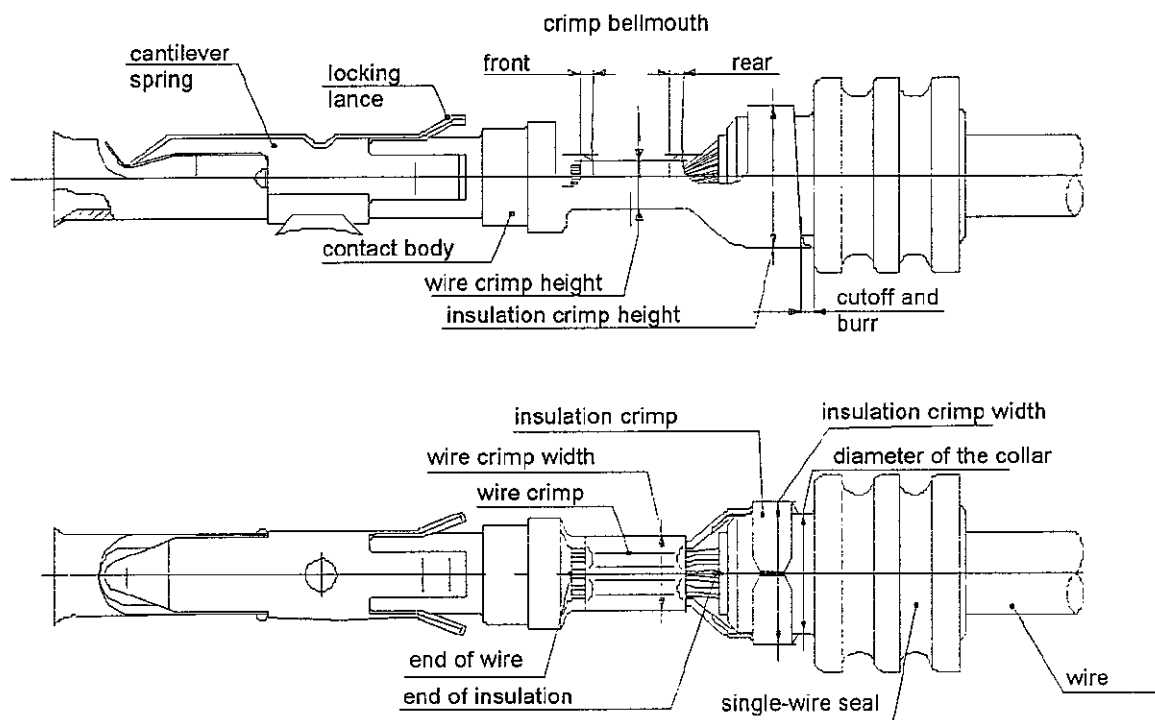


Fig. 2

5. REQUIREMENTS

5.1 Wires

A Selection

The contacts and single-wire seals are designed for FLR wires to DIN 72551 Part 5 and 6 or for FL-Y wires to ISO 6722 Part 1-3 (old DIN 72 551 Part 2).

Other wires require approval from the development department.

Wires are connected only as single terminations.

B Preparation

The wire must be stripped to the length specified in Tables 1 and 2 (section 6), taking care that the individual strands are neither bent nor cut off.

For single-wire sealing, care must be taken that the insulation in the seal area is not damaged or compressed.

The insulation surface must be clean and free of contamination.

5.2 Cutoff and Burr

The cutoff must be visible after crimping. Its length may not exceed 0.5 mm.

The burr at the cutoff point may not exceed 0.08 mm.

5.3 Wire Crimp

A Wire position

After crimping, the end of the wire must extend 0.1 to 1.0 mm beyond the front edge of the wire crimp.

B Crimping data

The shape, height and width of the crimp, and the wire range, are shown in Tables 1 and 2 (section 6).

C Extraction forces

The crimp extraction forces must comply with the requirements of DIN IEC 352 Part 2.

D Crimp bellmouth

In contrast to the general guidelines, the size of the rear bellmouth is $0.4 \pm 0.2\text{mm}$ for all wire ranges.

Absence of a front bellmouth is permitted.



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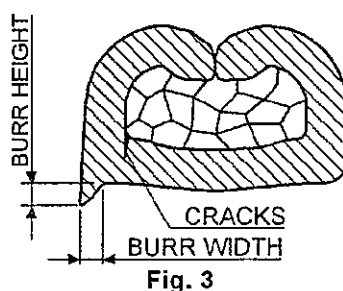
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E Burr on base of crimp



Any burr on the base of the crimp may not be higher than one half of the contact material thickness and not wider than one half of the contact material thickness. Cracks in the base of the crimp are not permitted.

5.4 Insulation Crimp

A Position of the end of the insulation

The end of the insulation must be visible in the transition between the wire crimp and the insulation crimp. In no case may the end of the insulation be crimped in the wire crimp; conversely, the insulation must extend at least to the front edge of the insulation crimp.

B Crimping data for wires

The shape, width and height of the crimp, and the insulation diameter, are shown in Tables 1 and 2 (section 6).

The tolerances for the specified crimp heights are selected such that secure seating of the wire (similar to the bending test DIN 41611 Part 3 or the "insulation security in crimped connections" test to DIN IEC 352 Part 2) is guaranteed at the upper tolerance limit while the insulation may be penetrated without damage to the wire at the lower tolerance limit.

5.5 Crimp for Single-Wire Seals

A Position of the single-wire seal on the wire

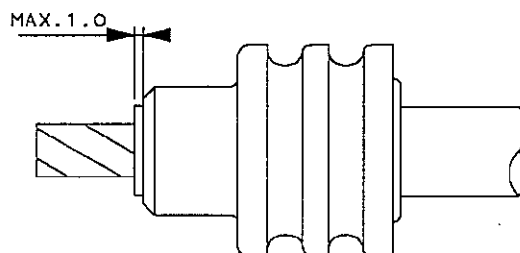


Fig. 4

The end of the wire insulation must at least be flush with the front face of the seal and may extend not more than 1.0 mm beyond this (see Fig. 4).

B Crimping data for single-wire seals

The shape, width and height of the crimp are shown in Table 2 (section 6.2).

The crimp height is correctly adjusted if the crimp encloses the seal in the shape of a circle. Oval enclosure as the result of differing insulation diameters is permissible.

C Position of the single-wire seal

The collar of the single-wire seal must be visible in the window in the base of the crimp. At the most, it may touch the edge of the crimp.

D Visual inspection

After crimping, the single-wire seal may have no visible cuts or notches around the diameter of the collar. Pressure points are permitted.

5.6 Contact Area

After crimping, neither the cantilever spring with locking lances nor the contact body with collar for secondary retention may be bent or deformed.

5.7 Shape and Position Tolerances

A Contacts for wires (see Fig. 5)

The vertical angular displacement of the longitudinal axis in the crimp area may not exceed 5° upwards or downwards.

The horizontal angular displacement of the longitudinal axis in the crimp area may not exceed 3° to either side.

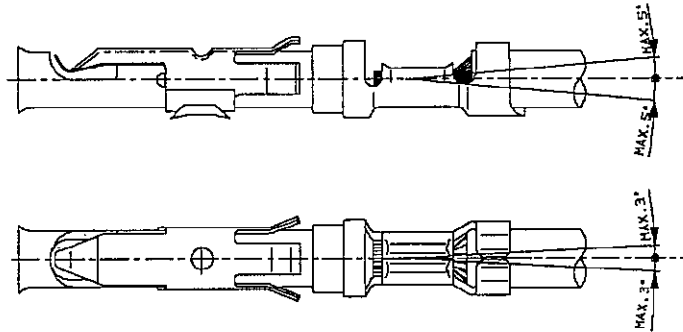


Fig. 5

B Contacts for single-wire seals (see Fig. 6)

The crimped single-wire seal must be coaxial with the contact body within a tolerance of $\varnothing 1.0$ mm.

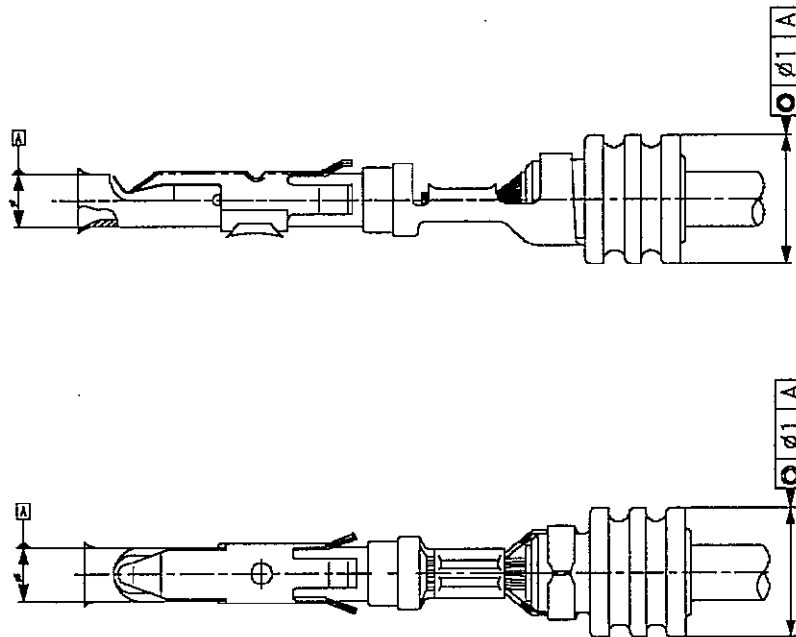


Fig. 6

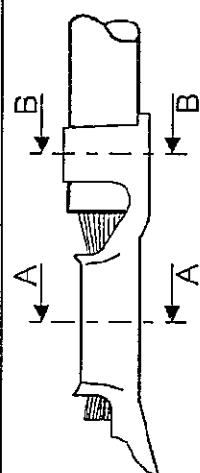
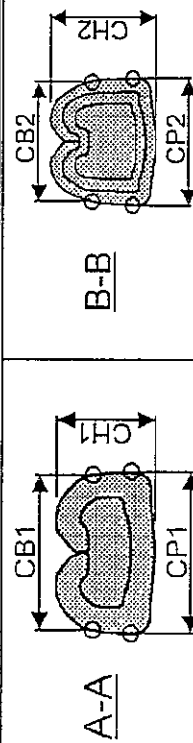
6. CRIMPING DATA / 6.1 Crimping data for CI2 Contacts with wires

TABELLE 1: CRIMPING DATA FOR CI2 CONTACTS WITH WIRES

Contact	Order No.	Wire size [mm ²]	Insulation Range [mm Ø]	Stripping length ±0.3 [mm]	Wire crimp				Insulation crimp			Hand crimp tool and/or MQC	
					Width CB1 [mm]	Height CH1 ±0.05 [mm]	Shape	Crimper width Test dimension CP1 [mm]	Width CB2 [mm]	Height CH2 [mm]	Shape	Crimper width Test dimension CP2 [mm]	
Socket	Strip	Loose piece		4,0	2,03	C 1,19 B 1,28 A 1,33	F	2,05 ±0,15	3,05	-	O	3,1 ±0,10	825582-2 734372-1 734387-1
					2,79	D 1,32 C 1,45 B 1,58 A 1,70	F	2,81 ±0,15	3,94	-	F	4,0 ±0,10	825582-2 734372-1 734387-1
					2,03	C 1,18 B 1,27 A 1,36	F	2,05 ±0,15	2,80	-	OV	2,85 ±0,10	169400-1 734468-0
Pin	Strip	Loose piece		3,8	2,79	C 1,51 B 1,64 A 1,77	F	2,81 ±0,15	3,56	-	OV	3,6 ±0,1	169400-1 734468-0
					2,03	C 1,18 B 1,27 A 1,36	F	2,05 ±0,15	2,80	-	OV	2,85 ±0,10	169400-1 734468-0
					2,79	C 1,51 B 1,64 A 1,77	F	2,81 ±0,15	3,56	-	OV	3,6 ±0,1	169400-1 734468-0

Note:

Measure crimp height as described in Operating Instructions IS 7424 with crimp height micrometer, AMP-Order No. 675836-0. The crimp width is a tool related dimension and is defined as the distance between the tangential points of the two rolling radii from the edges. The crimp width cannot be measured for production monitoring. The test dimensions CP1 and CP2 serve only to check the crimp width in the tool, not to statistically monitor the crimp width and/or the crimp quality.



Note:
Measure crimp height as described in
Operating Instructions IS 7424 with crimp
height micrometer, AMP-Order No. 675836-0.
The crimp width is a tool related dimension and
is defined as the distance between the tangen-
tial points of the two rolling radii from the edges
The crimp width cannot be measured
for production monitoring.
The test dimensions CP1 and CP2 serve only
to check the crimp width in the tool, not to
statistically monitor the crimp width and/or the crimp
quality.

6.2 Crimping Data for C12 Contacts with Single-Wire Seals

TABLE 2: CRIMPING DATA FOR C12 CONTACTS WITH SINGLE-WIRE SEALS

Contact	Order No.		Wire size [mm ²]	Insulation range [mm Ø]	Stripping length ±0.3[mm]	Wire crimp				Crimp for single-wire seal				Crimp tool MQC	Hand crimp tool	Single- wire seal
	Strip	Loose piece				Width CB1 [mm]	Height CH1 ±0.05 [mm]	Shape	Crimper width test dimension CP1 [mm]	Width CB2 [mm]	Height H2 [mm]	Shape	Crimper width test dimension CP2 [mm]			
Socket Pin	964138	963704	0,50FLR	1,4-2,1	4,0	2,03	C 1,18 B 1,27 A 1,36	F	2,05 ±0,15	4,06	-	"O"	4,10 ±0,15	878817-2	734773-1	963294-1 blue
	964136	963700	0,75FLR 1,00FLR													
Socket	968013	968014	1,50FLR 2,50FLR	2,2-2,4 2,7-3,0	4,0	2,54	C 1,23 B 1,33 A 1,43	F	2,56 ±0,15	4,19	-	"O"	4,25 ±0,15	878913-2	734772-1	828920-1 red/brown 963292-1 yellow

Note:
Measure crimp height as described in
Operating Instructions IS 7424 with crimp
height micrometer, AMP-Order No. 675836-0.
The crimp width is a tool related dimension and
is defined as the distance between the tangen-
tial points of the two rolling radii from the edges.
The crimp width cannot be measured
for production monitoring.
The test dimensions CP1 and CP2 serve only
to check the crimp width in the tool, not to
statistically monitor the crimp width and/or the crimp
quality.

