DOCUMENT CHANGE REQUEST

DCR number 523	Changes required for: General	Originator: S Jeffery - ESCC
Date: 2009/05/29	Date sent: 2009/05/29	Organisation: ESA/ESTEC
Status: IMPLEMENTED		

Title:	Connectors, Electrical, Rectangular, Microminiature, Removable Crimp Contacts, Based on Type		
Number:	3401/077	Issue:	1

Other documents affected:

Page:

See attached mark-up of 3401/077 (Issue 2 - Draft A). Note that this mark-up also includes, where noted, the changes of DCR 520; it is proposed that once the DCRs have been approved the content of both DCRs is introduced concurrently.

Paragraph:

See attached mark-up of 3401/077 (Issue 2 - Draft A). Note that this mark-up also includes, where noted, the changes of DCR 520; it is proposed that once the DCRs have been approved the content of both DCRs is introduced concurrently.

Original wording:

Proposed wording:

As per attached mark-up; add test No. 11, Permanence of Marking, to Table 6 of the specification.

Justification:

Amend an error (Table 6 - Measurements and Inspections on Completion of Environmental and Endurance Testing was missing test No 11).

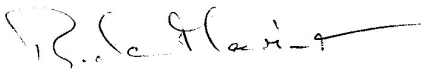
Attachments:

3401077_Issue_2_-_Draft_A.pdf, null

Modifications:

N/A

Approval signature:



Date signed:

2009-05-29

European Space Components Coordination

Pages 1 to 20

CONNECTORS, ELECTRICAL, RECTANGULAR,

MICROMINIATURE, REMOVABLE CRIMP CONTACTS,

BASED ON TYPE MDMA

ESCC Detail Specification No. 3401/077

as applicable

Issue 1 2 - Draft A	October 2008

Document Custodian: European Space Agency - see https://escies.org

as applicable

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DOCUMENTATION CHANGE NOTICE

(Refer to https://escies.org for ESCC DCR content)

DCR No.	CHANGE DESCRIPTION
	Specification up issued to incorporate editorial and technical changes per DCRs.

520, tbd

4.2 DEVIATIONS FROM GENERIC SPECIFICATION

4.2.1 Deviations from Special In-Process Controls

None

4.2.2 Deviations from Final Production Tests (Chart II)

(a) Para. 9.5, Magnetism Level: Not applicable.

4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)

Chart III is not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.9, Seal Test: Not applicable.
(c) ~~(b)~~ Para. 9.30, Probe Damage: Not applicable.
(d) ~~(c)~~ Para. 9.31, Solderability: Not applicable.
(b) Para. 9.29, Oversize Pin Exclusion: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.9, Seal Test: Not applicable.
(c) ~~(b)~~ Para. 9.30, Probe Damage: Not applicable.
(b) Para. 9.29, Oversize Pin Exclusion: Not applicable.

Changes per DCR 520

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the connectors specified herein shall be verified in accordance with the requirements set out in Para. 9.6 of ESCC Generic Specification No. 3401 and shall conform to those shown in Figure 2 of this specification. Only the underlined dimensions shall be checked during procurement.

4.3.2 Weight

The maximum weight of the connectors specified herein, without contacts and interfacial seals, shall be in accordance with the values given in Table 1(a) of this specification.

4.3.3 Contact Capability

As specified in ESCC Detail Specification No. 3401/078.

4.3.4 Contact Retention (in Insert)

As specified in ESCC Detail Specification No. 3401/078.

4.3.5 Mating and Unmating Forces

The forces applied for the mating and unmating of the connectors shall conform to the values specified in Table 1(a).

4.3.6 Insert Retention (in Shell)

Connector inserts shall withstand a pressure of 34.4N/cm^2 applied from the mating side to the rear side.

4.3.7 Jackscrew Retention

Not applicable.

4.3.8 Contact Insertion and Withdrawal Forces

As specified in ESCC Detail Specification No. 3401/078.

4.3.9 Engagement and Separation Forces (Male Contacts)

As specified in ESCC Detail Specification No. 3401/078.

4.3.10 Oversize Pin Exclusion

~~As specified in ESCC Detail Specification No. 3401/078.~~ Not applicable.] ← change per DCR 520

4.3.11 Probe Damage

Not applicable.

4.3.12 Solderability

Not applicable.

4.4 MATERIALS AND FINISHES

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the components specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

4.4.1 Shells

Shells shall be made of aluminium alloy. Variant 01 shall have a minimum plating thickness of 25.4µm of electroless nickel. Variant 02 shall have a minimum plating thickness of 2.54µm of gold over a layer of electroless nickel.

4.4.2 Inserts

Inserts shall be made of a suitable thermoplastic material.

4.4.3 Contacts

As specified in ESCC Detail Specification No. 3401/078.

4.4.4 Contact Retaining Clip

The retaining clip shall be made of beryllium copper.

4.5 MARKING

4.5.1 General

The marking of components delivered to this specification shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and the following paragraphs.

Each component shall be marked in respect of:

(a) The ESCC qualified components symbol (for ESCC qualified components only).
(b) The ESCC Component Number.

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests Note 1	Test Method and Conditions	Identification	Conditions		Min	Max	
			Damp Heat Insulation Resistance	Table 2, Item 1	R_i	100	-	MΩ
			Final Measurements External Visual Inspection	After 1-24 hrs Recovery ESCC 3401 Para. 9.7		ESCC 3401 Para. 9.7		
			Insulation Resistance Voltage Proof Leakage Current	Table 2, Item 1 Table 2, Item 2	R_i I_L	Table 2, Item 1 Table 2, Item 2		MΩ mA
06	Plating Thickness	Para. 9.14	Thickness	-	-	-		
07	Joint Strength	Para. 9.15	ESCC 3401/078	-	-	-		
08	Rapid Change of Temperature	Para. 9.16	Visual Examination	-	-	-	-	-
			Insulation Resistance Voltage Proof Leakage Current	Table 2, Item 1 Table 2, Item 2	R_i I_L	Table 2, Item 1 Table 2, Item 2		MΩ mA
09	Contact Retention (in Insert)	Para. 9.17 & Para. 4.3.4 of this spec.	Contact Displacement	ESCC 3401/078	-	ESCC 3401/078		
10	Endurance	Para. 9.18	**Initial Measurements** Mating/Unmating Forces		F	Para. 4.3.5 of this spec.		N
			Low Level Contact Resistance Mated Shell Conductivity	ESCC 3401/078 Table 2, Item 3	R_{cl} V_D	ESCC 3401/078 Not applicable		mΩ mV
			Final Measurements Visual Examination	-	-	-	-	
			Mating/Unmating Forces	Table 2, Item 4	F	Para. 4.3.5 of this spec		N
			Low Level Contact Resistance Drift	ESCC 3401/078	ΔR_{cl}	ESCC 3401/078		mΩ
			Mated Shell Conductivity Insulation Resistance Voltage Proof Leakage Current	Table 2, Item 3 Table 2, Item 1 Table 2, Item 2	V_D R_i I_L	Not applicable Table 2, Item 1 Table 2, Item 2		mV MΩ mA
12	Mating/Unmating Forces	Para. 9.20	Force	-	F	Para. 4.3.5 of this spec		N
13	High Temperature Storage	Para. 9.21	**Initial Measurements** Low Level Contact Resistance	ESCC 3401/078	R_{cl}	ESCC 3401/078		mΩ
			Mated Shell Conductivity	Table 2, Item 3	V_D	Not applicable		mV
			Final Measurements Visual Examination	-	-	-	-	
11	Permanence of Marking	Para. 9.19	As applicable	-	-	-	-	

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests Note 1	Test Method and Conditions	Identification	Conditions		Min	Max	
			Mating/Unmating Forces	-	F	Para. 4.3.5 of this spec		N
			Low Level Contact Resistance Drift	ESCC 3401/078	ΔR_{cl}	ESCC 3401/078		mΩ
			Rated Current Contact Resistance	ESCC 3401/078	R_{cr}	ESCC 3401/078		mΩ
			Mated Shell Conductivity	Table 2, Item 3	V_D	Not applicable		mΩ
			Insulation Resistance	Table 2, Item 1	R_i	Table 2, Item 1		MΩ
			Voltage Proof Leakage Current	Table 2, Item 2	I_L	Table 2, Item 2		mA
			Contact Retention (in Insert)	ESCC 3401/078		ESCC 3401/078		N
14	Corrosion	Para. 9.22	Visual Examination	-	-	-	-	
15	Insert Retention (in Shell)	Para. 9.23 & Para. 4.3.6 of this spec.	Visual Examination	-	-	Para. 4.3.6 of this spec.		
16	Jackscrew Retention	Para. 9.24 and 4.3.7 of this spec	Not applicable					
17	High Temperature Measurements	Para. 9.25	Insulation Resistance	Table 2 Item 1	R_i	10	-	MΩ
18	Overload Test	Para. 9.26	Internal Temperature	-	T	-	+100	°C
			Rated Current Contact Resistance	ESCC 3401/078	R_{cr}	ESCC 3401/078		mΩ
			Mated Shell Conductivity	Table 2 Item 3	V_D	Not applicable		mV
			Insulation Resistance	Table 2 Item 1	R_i	Table 2, Item 1		MΩ
			Voltage Proof Leakage Current	Table 2 Item 2	I_L	Table 2, Item 2		mA
19	Maintenance Aging	Para. 9.27	Visual Examination	-	-	-	-	
			Contact Retention (in Insert)	ESCC 3401/078		ESCC 3401/078		N
			Contact insertion and withdrawal forces	ESCC 3401/078		ESCC 3401/078		N
20	Engage/Separation Forces	Para. 9.28 & Para. 4.3.9 of this spec.	Force	ESCC 3401/078	F	ESCC 3401/078		N
21	Oversize Pin Exclusion	Para. 9.29 and 4.3.10 of this spec.	~~Force~~ Not applicable	~~ESCC 3401/078~~	~~F~~	~~ESCC 3401/078~~		~~N~~
22	Probe Damage	Para. 9.30 and 4.3.11 of this spec.	Not applicable					
23	Solderability	Para. 9.31 & Para. 4.3.12 of this spec.	Not applicable					

NOTES:

1. The tests in this Table refer to either Chart IV or V and shall be used as applicable.

changes per DCR 520