DOCUMENT CHANGE REQUEST

DCR number 653	Changes required for: General	Originator: S Jeffery
Date: 2011/08/18	Date sent: 2011/02/23	Organisation: ESA/ESTEC
Status: IMPLEMENTED		

Title:	Connector Savers Electrical Rectangular Miniature Removable Contacts, based on type D*BMA		
Number:	3401/020	Issue:	5

Other documents affected:

3401/080-2

Page:

Paras. 1.1, 2, 4.4.6 [Pages 6 and 13]

Paragraph:

Paras. 1.1, 2, 4.4.6 [Pages 6 and 13]

Original wording:

Proposed wording:

See Attached.

Justification:

Reference to the related Detail Specification No. 3401/085 is required.

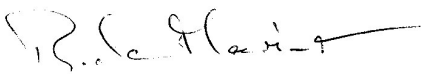
Attachments:

3401020_Issue_6_Draft_A_080_Issue_2_Draft_A.pdf, null

Modifications:

N/A

Approval signature:



Date signed:

2011-08-18

ESCC Detail Specification No. 3401/085, Fast-Locking Screw Lock Assemblies for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Connector Savers, Electrical, Rectangular, with Removable Contacts, Standard (Gauge 20) and High Density (Gauge 22) Contact Arrangements, based on type D*BMA.

It shall be read in conjunction with:

~~(a)~~ ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
~~(b)~~ ESCC Detail Specification No. 3401/021, Contacts, Electrical, Male/Female Type, for 3401/020 Connector Savers.
~~(c)~~ ESCC Detail Specification No. 3401/022, Accessories for Rectangular Connectors, 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.

the requirements of which are supplemented herein.

1.2 RANGE OF COMPONENTS AND COMPONENT TYPE VARIANTS

The different sizes of connector savers specified herein, together with their mechanical characteristics, are given in Table 1(a).

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the connector savers specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The applicable derating information for the connector savers specified herein is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the connector savers specified herein and the available contact arrangements are shown in Figure 2.

2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

(a) ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
(b) ESCC Detail Specification No. 3401/021, Contacts, Electrical, Male/Female Type, for 3401/020 Connector Savers.
(c) ESCC Detail Specification No. 3401/022, Accessories for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.
(e) ~~(d)~~ MIL-DTL-24308, Rack and Panel Connectors, Miniature.
(d) ESCC Detail Specification No. 3401/085, Fast-Locking Screw Lock Assemblies for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in

4.4.6 Guiding and Locking Devices

As specified in ESCC Detail Specification No. 3401/022 and 3401/085.

4.4.7 Magnetism Level

The allowable value of magnetism shall not exceed that specified for the relevant level (see Para. 4.5.4.6)

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. When the component is too small to accommodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany the component in its primary package.

Each component shall be marked in respect of:

(a) Contact Identification.
(b) The ESCC Component Number.
(c) Characteristics.
(d) Traceability Information.

4.5.2 Contact Identification

Contact identification shall be marked in accordance with Figure 2.

4.5.3 The ESCC Component Number

Each component shall bear the ESCC Component Number which shall be constituted and marked as follows:

340102001B

- Detail Specification Number: 3401020
- Type Variant (See Table 1(a)): 01
- Testing Level: B

4.5.4 Characteristics

The characteristics to be marked in the following order of precedence are:

(a) Series.
(b) Shell Size.
(c) Insert Type.
(d) Contact Arrangement.
(e) Type of Contact.
(f) Magnetism Level.
(g) Modification Code.
(h) Contact Information.

The information shall be constituted and marked as follows (example): DABMA15PSNMB FO

ESCC Detail Specification No. 3401/085, Fast-Locking Screw Lock Assemblies for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Connector Savers, Electrical, Rectangular, with Non-Removable Standard (Gauge 20) Signal Contacts, and Removable Coaxial and Power Contacts, based on type D*BM.

It shall be read in conjunction with:

~~(a)~~ ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
~~(b)~~ ESCC Detail Specification No. 3401/004, Contacts, Coaxial, Crimp-Type, Solder-Type and PCB-Type for 3401/001 Connectors and Male/Female-Type for 3401/080 Connector Savers.
~~(c)~~ ESCC Detail Specification No. 3401/040, Contacts, Power, Crimp-Type, Solder-Type and PCB-Type for 3401/001 Connectors and Male/Female-Type for 3401/080 Connector Savers.
~~(d)~~ ESCC Detail Specification No. 3401/022, Accessories for Rectangular Connectors, 3401/001, 3401/002 and Connector Savers 3401/020 and 3401/080.

the requirements of which are supplemented herein.

1.2 RANGE OF COMPONENTS

The different sizes of connector savers specified herein, together with their mechanical characteristics, are given in Table 1(a).

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the connector savers specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The applicable derating information for the connector savers specified herein is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the connector savers specified herein and the available contact arrangements are shown in Figure 2.

2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

(a) ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
(b) ESCC Detail Specification No. 3401/004, Contacts, Coaxial, Crimp-Type, Solder-Type and PCB-Type for 3401/001 Connectors and Male/Female-Type for 3401/080 Connector Savers.
(c) ESCC Detail Specification No. 3401/040, Contacts, Power, Crimp-Type, Solder-Type and PCB-Type for 3401/001 Connectors and Male/Female-Type for 3401/080 Connector Savers.
(d) ESCC Detail Specification No. 3401/022, Accessories for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020 and 3401/080.
(f) ~~(e)~~ MIL-DTL-24308, Rack and Panel Connectors, Miniature.
(g) ~~(f)~~ NASA/GSFC Specification S-311-P-10, Connectors, Electrical, Rectangular, Miniature, Polarised

(e) ESCC Detail Specification No. 3401/085, Fast-Locking Screw Lock Assemblies for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020, 3401/080.

Shell, Rack and Panel, for Space Flight Use.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. 21300 shall apply.

TABLE 1(a) - RANGE OF COMPONENTS

Shell Size (1)	Max. Weight (g) (2)	Mating Force (N max)	Unmating Force	
			N min	N max
E	8.9	30	3.5	20
A	12.4	50	4.5	34
B	14.7	83	8	55
C	18.5	123	11	83
D	20	166	14.5	120

NOTES:

1. See Figure 2(a).
2. Connector weight without contacts or accessories.
3. Total connector weights shall be calculated with:.
   - Connector weight (see Table 1(a)).
   - Quantity of Male/Female Signal Contacts used according to Figure 2(b) and weight of contacts: 0.25g (if applicable).
   - Quantity of Male/Female Coaxial or Power Contacts according to Figure 2(b) and weight of contacts given in ESCC Detail Specification No. 3401/004 or 3401/040 (if applicable).
   - Accessories weight given in ESCC Detail Specification No. 3401/022 (if applicable).

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and 3401/085

TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristics	Symbol	Maximum Rating	Unit	Remarks
1	Working Voltage (Sea Level) Signal Contacts (Gauge 20) Coaxial and Power Contacts	U_R	 300 250	 Vrms Vrms	Note 1
2	Rated Current Signal Contacts (Gauge 20) and Coaxial Centre Contacts Power Contacts	I_R	 7.5 40	A	-
3	Operating Temperature Range	T_{op}	-55 to +125	°C	T_{amb}
4	Storage Temperature Range	T_{stg}	-65 to +125	°C	-

NOTES:

1. Between contact and shell.

Contacts	Test Pin Dia. (mm)		Force (N) Max.
	Min.	Max.	
Signal	1.166	1.17	3.33

See ESCC Detail Specification Nos. 3401/004 and 3401/040 for coaxial and power contacts.

4.3.11 Probe Damage

The probe diameter and the moment at the end of the probe shall be as follows.

Contacts	Probe Dia. (mm)		Moment (N.cm)
	Min.	Max.	
Signal	1.007	1.033	5.65

See ESCC Detail Specification Nos. 3401/004 and 3401/040 for coaxial and power contacts.

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 brass. The plating shall be 0.7µm minimum of gold over 1.0µm of copper.

4.4.2 Inserts

Inserts shall be made of glass-fibre filled diallylphtathalate resin or a suitable thermoplastic material.

4.4.3 Spacers

Spacers shall be made of polyimide material.

4.4.4 Contacts

The contacts shall be made of copper base alloy selected from raw materials with a minimum of impurities. Gold plating thickness shall be 1.27µm minimum over 1.0µm of copper.

The female spring element shall be made of copper base alloy selected from raw materials with a minimum of impurities. Gold plating thickness shall be 1.27µm minimum over 1.0µm of copper or nickel.

4.4.5 Contact Retaining Clip

Not applicable to signal contacts. See ESCC Specification Nos. 3401/004 and 3401/040 for coaxial and power contacts.

4.4.6 Guiding and Locking Devices

As specified in ESCC Detail Specification No. 3401/022S and 3401/085.