CONNECTOR, ELECTRICAL, RECTANGULAR, MICROMINIATURE, SOLDER BUCKET CONTACTS, WITH EMI BACKSHELL

BASED ON TYPE MDM

ESCC Detail Specification No. 3401/071

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TABLE OF CONTENTS

1	GENERAL	6
1.1	SCOPE	6
1.2	RANGE OF COMPONENTS	6
1.3	MAXIMUM RATINGS	6
1.4	PARAMETER DERATING INFORMATION (FIGURE 1)	6
1.5	PHYSICAL DIMENSIONS	6
1.6	CONTACT ARRANGEMENTS	6
2	APPLICABLE DOCUMENTS	6
3	TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS	6
4	REQUIREMENTS	15
4.1	GENERAL	15
4.2	DEVIATIONS FROM GENERIC SPECIFICATION	15
4.2.1	Deviations from Special In-process Controls	15
4.2.2	Deviations from Final Production Tests (Chart II)	15
4.2.3	Deviations from Burn-in and Electrical Measurements (Chart III)	15
4.2.4	Deviations from Qualification Tests (Chart IV)	15
4.2.5	Deviations from Lot Acceptance Tests (Chart V)	15
4.3	MECHANICAL REQUIREMENTS	15
4.3.1	Dimension Check	15
4.3.2	Weight	15
4.3.3	Contact Capability	16
4.3.4	Contact Retention (In insert)	16
4.3.5	Mating and Unmating Forces	16
4.3.6	Insert Retention (In shell)	16
4.3.7	Jackscrew Retention	16
4.3.8	Contact Insertion and Withdrawal Forces	16
4.3.9	Engagement and Separation Forces (Male Contacts)	16
4.3.10	Oversize Pin Exclusion	16
4.3.11	Probe Damage	16
4.3.12	Solderability	16
4.4	MATERIALS AND FINISHES	17
4.4.1	Shells	17
4.4.2	Inserts	17
4.4.3	Contacts	17
4.4.3.1	FEMALE CONTACTS	17
4.4.3.2	MALE CONTACTS	17

4.4.4	Seals Interfacial	17
4.4.5	Rear Potting	17
4.4.6	EMI Backshell	17
4.5	MARKING	17
4.5.1	General	17
4.5.2	The ESCC Component Number	18
4.5.3	Characteristics	18
1.1.1.1	SHELL SIZE	18
4.5.3.2	CONTACT TYPE	18
4.5.3.3	TERMINATION TYPE	18
4.5.3.4	FIXING OPTION	18
4.5.4	Traceability Information	19
4.6	ELECTRICAL MEASUREMENTS	19
4.6.1	Electrical Measurements at Room Temperature	19
4.6.2	Electrical Measurements at High and Low Temperatures	19
4.6.3	Circuits for Electrical Measurements	19
4.7	BURN-IN AND ELECTRICAL MEASUREMENTS (TABLES 4 AND 5)	19
4.8	ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESCC GENERIC SPECIFICAION NO. 3401)	21
4.8.1	Measurements and Inspections on Completion of Environmental Tests	21
4.8.2	Measurements and Inspections at Intermediate Points during Endurance Tests	21
4.8.3	Measurements and Inspections on Completion of Endurance Tests	21
4.8.4	Conditions for Operating Life Test (Part of Endurance Testing)	21
4.8.5	Electrical Circuit for Operating Life Test	21
4.8.6	Conditions for High Temperature Storage Test (Part of Endurance Testing)	21
APPENDIX ‘A’		25

1 GENERAL

1.1 SCOPE

This specification details the values, physical and electrical characteristics, test and inspection data for Electrical, Rectangular, Microminiature Connectors with non-removable Solder Bucket Contacts and EMI Backshell, based on Type MDM.

It shall be read in conjunction with:

(a) ESCC Generic Specification No. 3401, Connectors, Electrical, Rectangular and Circular.

1.2 RANGE OF COMPONENTS

The different sizes of the basic type connectors specified herein, which are also covered by this specification, together with their mechanical characteristics, are scheduled 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 connectors specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

The derating information applicable to the connectors specified herein is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical characteristics of the connectors specified herein are shown in Figure 2.

1.6 CONTACT ARRANGEMENTS

Contact arrangements are shown in Figure 3.

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 for Connectors, Electrical, Circular and Rectangular.
(b) MIL-G-45204, Gold Plating, Electro-deposited.
(c) MIL-C-14550, Copper Plating, Electro-deposited.
(d) MIL-PRF-83513, Generic Specification for Connectors, Electrical, Rectangular, Microminiature, Polarised Shell.

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	Max. Weight (grammes) (1)	Max. Weight of EMI Backshell (grammes)	Mating Force (N) Max.	Unmating Force	
				N Max.	N Min.
9	2.2	2.1	20	20	1.3
15	3	2.8	33	33	2
21	3.8	3.5	47	47	2.9
25	4.3	4	55	55	3.5
31	5.1	4.7	69	69	4.3
37	5.9	5.4	82	82	5.1

NOTES:

1. Connector with contacts and rear potting. Add 0.4 grammes for connectors with floating mounts and 1 gramme for connectors with captive nuts.

TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristics	Symbol	Maximum Rating	Unit	Remarks
1	Working Voltage Sea Level	U_R	150	Vrms	Note 1
2	Rated Current	I_R	3	A	Note 2
3	Operating Temperature Range	T_{op}	-55 to +125	°C	T_{amb}
4	Storage Temperature Range	T_{stg}	-65 to +125	°C	-
5	Soldering Temperature	T_{sol}	+260	°C	Note 3

NOTES

1. Between contacts, and contact and shell.
2. I_R requires derating if the number of current-carrying contacts in the connector is 2 or greater. See Figure 1(b).
3. Duration 5 seconds maximum and the same contact shall not be resoldered until 3 minutes have elapsed.

FIGURE 1 - PARAMETER DERATING INFORMATION

FIGURE 1(a) - WORKING VOLTAGE VERSUS ALTITUDE

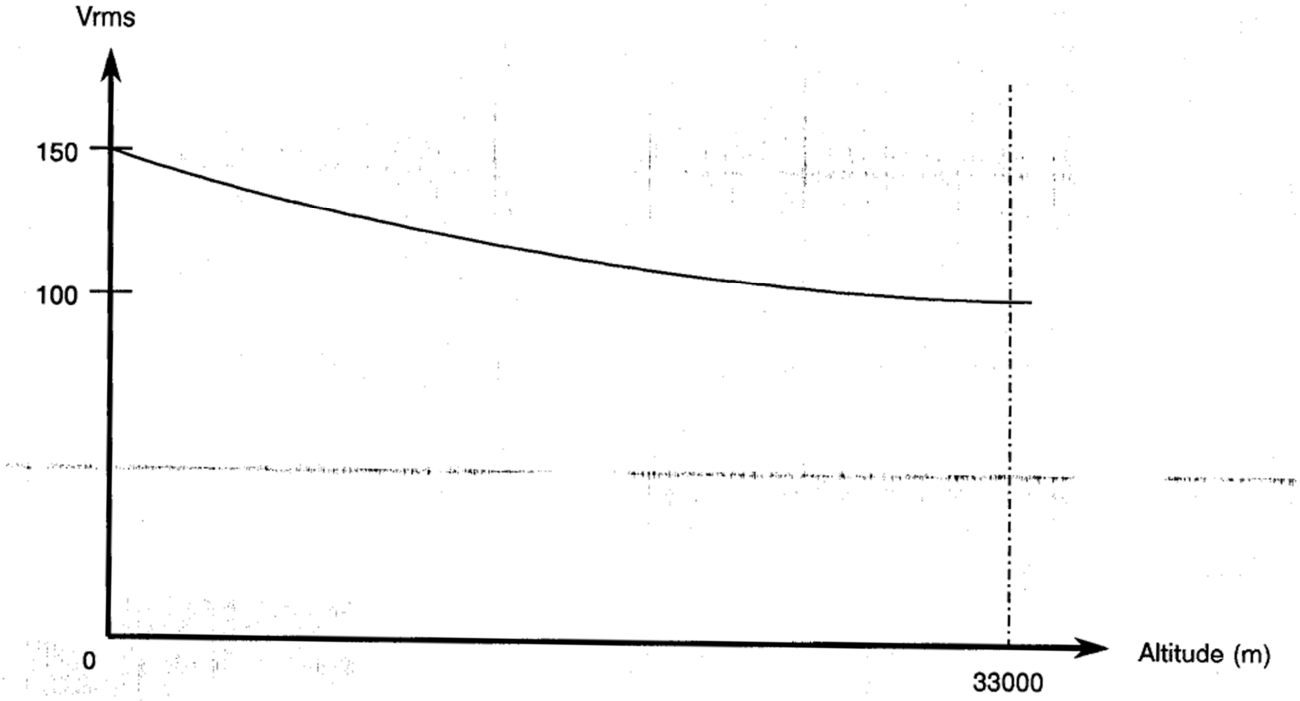


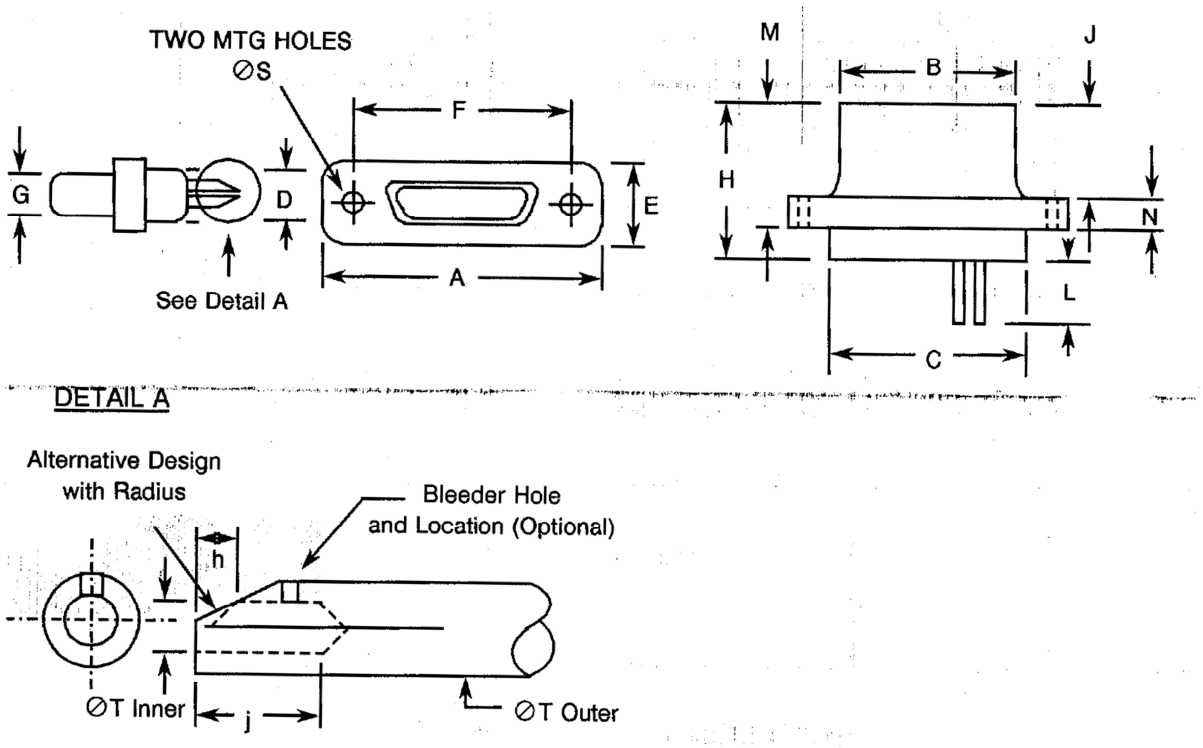
FIGURE 1(b) - MAXIMUM CURRENT VERSUS NUMBER OF CONTACTS

Number of Current-Carrying Contacts per Connector	Maximum Current per Contact (A)
2 - 4	2.4
5 - 14	2.2
15 and over	1.7

FIGURE 2 - PHYSICAL DIMENSIONS

FIGURE 2.1(a) – CONNECTOR SHELLS

PLUG MALE CONTACTS



Shell Size	A Max.	B Max.	C Max.	D Max.	E Max.	F Min.	F Max.	G Max.	H Max.	J Max.	L Max.	M Max.	N Min.	N Max.	ØS Min.	ØS Max.
9	19.94	8.46	10.16	6.86	7.82	14.22	14.48	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39
15	23.75	12.27	13.97	6.86	7.82	18.03	18.29	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39
21	27.56	16.08	17.78	6.86	7.82	21.84	22.1	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39
25	30.1	18.62	20.32	6.86	7.82	24.38	24.64	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39
31	33.91	22.43	24.13	6.86	7.82	28.19	28.45	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39
37	37.72	26.24	27.94	6.86	7.82	32	32.26	4.69	10.57	4.72	2.8	7.26	2.23	2.49	2.23	2.39

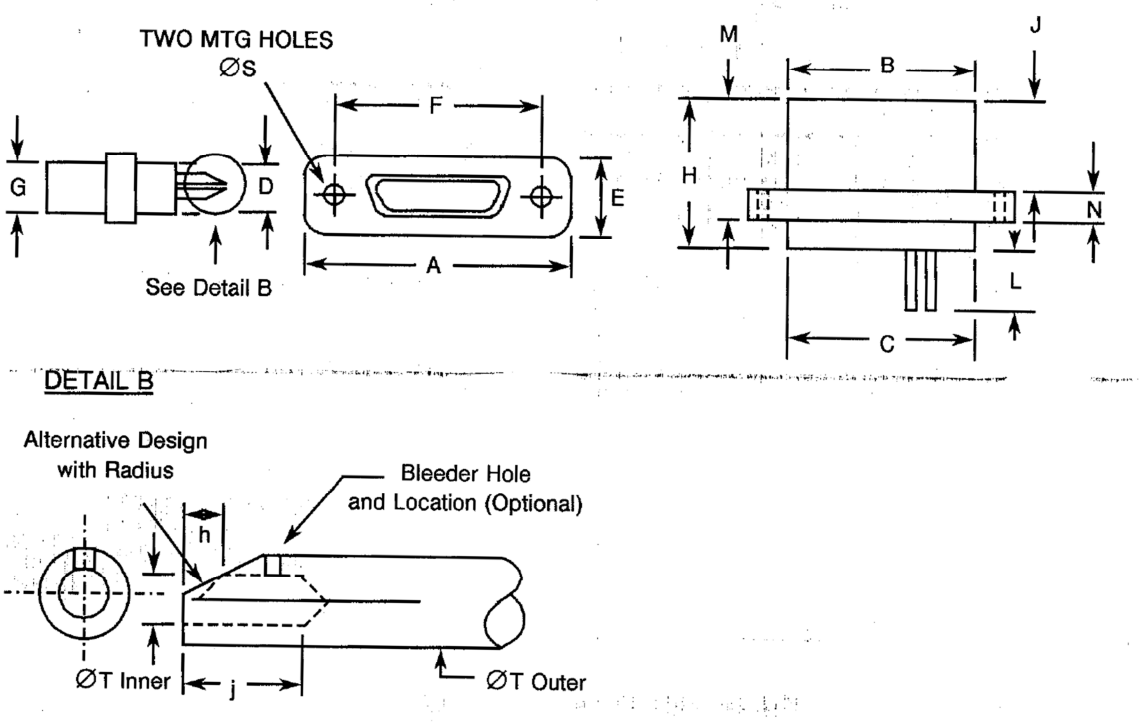
DIMENSIONS FOR DETAIL A

h		j		ØT	
Min.	Max.	Min.	Max.	Inner (Min.)	Outer (Max.)
1.14	1.78	1.78	2.41	0.56	0.86

NOTES

1. All dimensions are in millimetres.
2. Only the underlined dimensions shall be checked during the dimension check during procurement.

FIGURE 2.1(b) – CONNECTOR SHELLS
RECEPTACLE FEMALE CONTACTS



Shell Size	A Max.	B Max.	C Max.	D Max.	E Max.	F		G Max.	H Max.	J Max.	L Max.	M Max.	N		ØS	
						Min.	Max.						Min.	Max.	Min.	Max.
9	19.94	10.16	10.16	6.86	7.82	14.22	14.48	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39
15	23.75	13.97	13.97	6.86	7.82	18.03	18.29	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39
21	27.56	17.78	17.78	6.86	7.82	21.84	22.1	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39
25	30.1	20.32	20.32	6.86	7.82	24.38	24.64	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39
31	33.91	24.13	24.13	6.86	7.82	28.19	28.45	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39
37	37.72	27.94	27.94	6.86	7.82	32	32.26	6.38	10.9	5.05	2.80	7.59	2.23	2.49	2.23	2.39

DIMENSIONS FOR DETAIL B

h		j		ØT	
Min.	Max.	Min.	Max.	Inner (Min.)	Outer (Max.)
1.14	1.78	1.78	2.41	0.56	0.86

NOTES
1. All dimensions are in millimetres.
2. Only the underlined dimensions shall be checked during the dimension check during procurement.

FIGURE 2.2 – CONTACT POSITION

FIGURE 2.2.1 – MOUNTING CONDITION

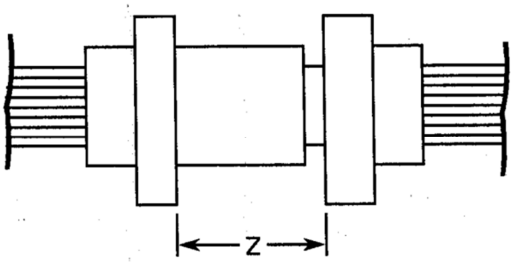


FIGURE 2.2.2 – PLUG MALE CONTACT

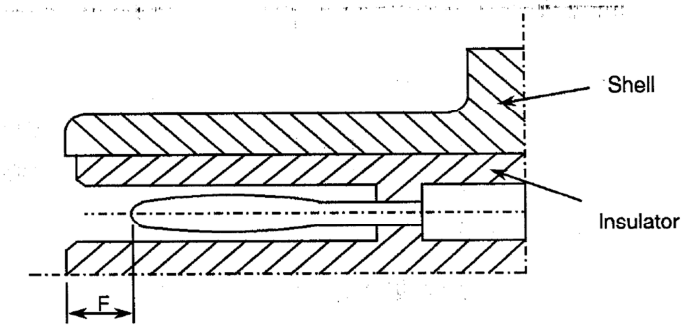
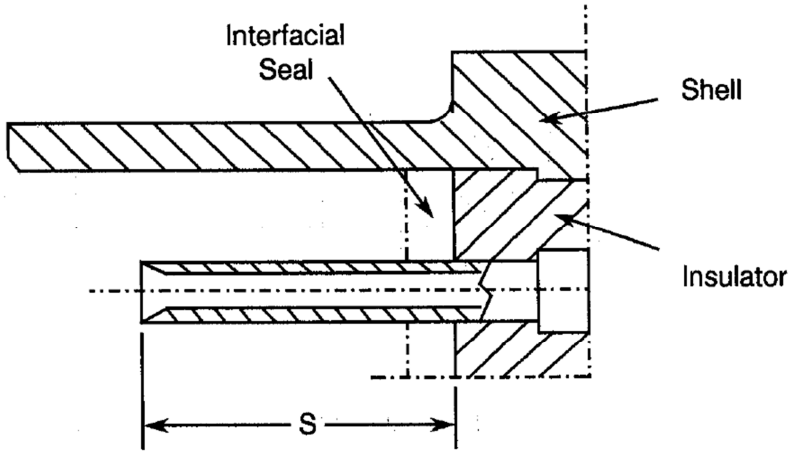


FIGURE 2.2.3 – RECEPTACLE FEMALE CONTACT

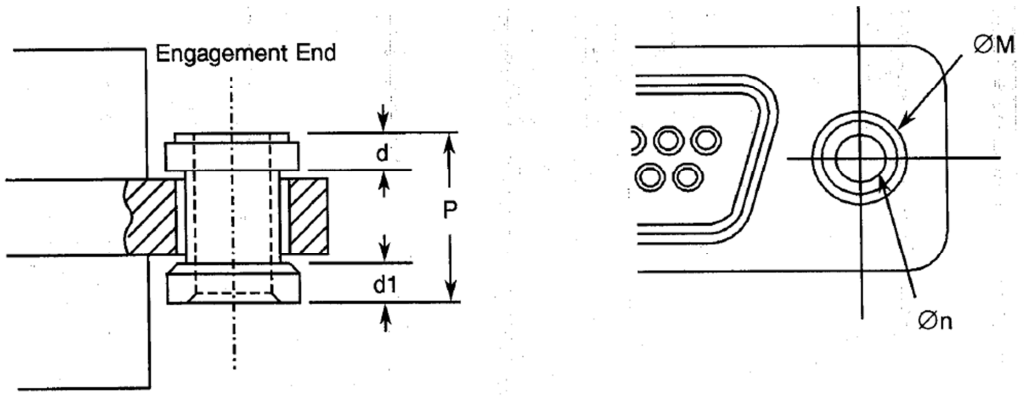


F		S		Z
Min.	Max.	Min.	Max.	Max.
0.25	0.91	3.3	3.66	5.49

NOTES

1. All dimensions in millimeters.

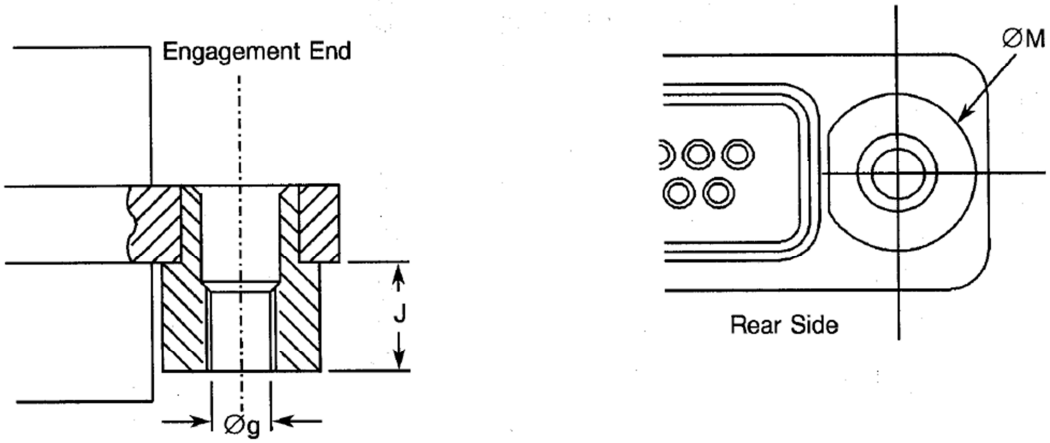
FIGURE 2.3 – FLOATING MOUNT



d	d1	ØM Max.	ØN Min.	P Max.
1	0.8	4	2.26	4.7

NOTES
1. All dimensions are in millimetres.
2. Total Lateral Float 0.4.
3. Total Axial Float 0.4.

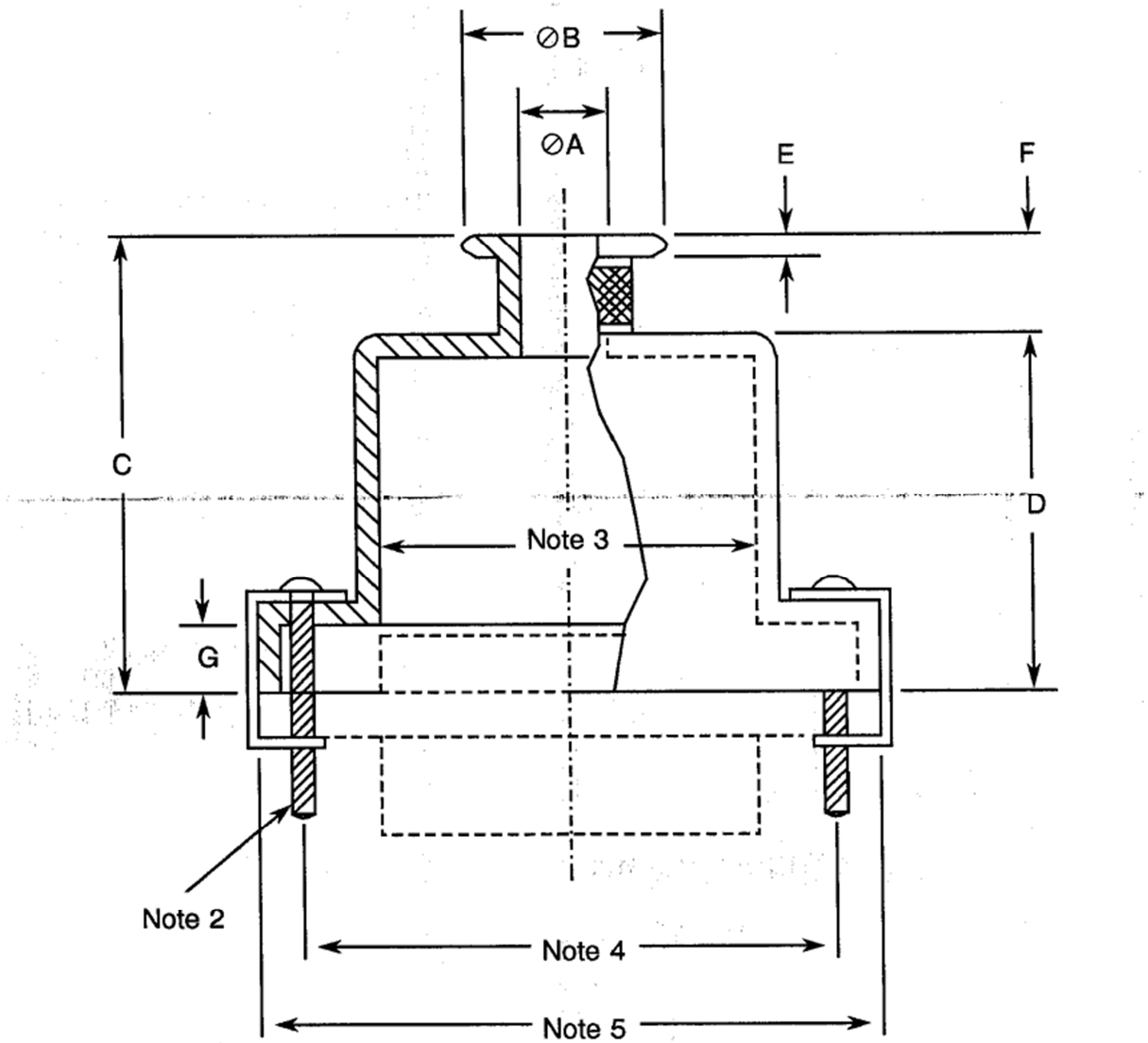
FIGURE 2.4 - CAPTIVE NUT



Øg	J Max.	ØM Max.
Note 2	2.6	5.1

NOTES
1. All dimensions are in millimetres.
2. Øg: 2-56 UNC 28, Maximum Torque 0.44Nm.

FIGURE 2.5 – EMI BACK SHELL



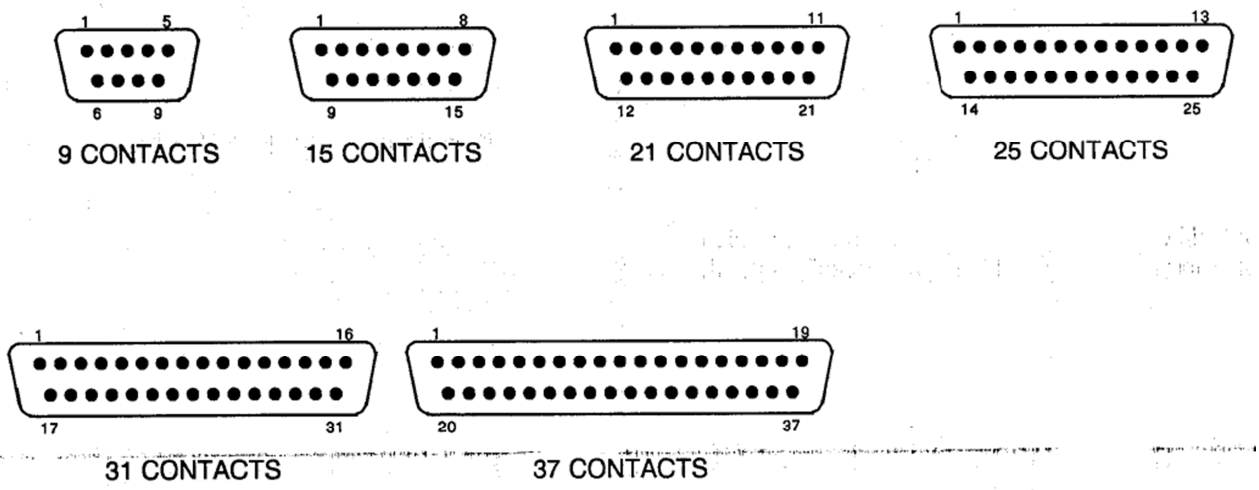
Shell Size	ØA Max.	ØB Max.	C Max.	D Max.	E Min.	F Min.	G Min
9	7.2	11.1	20	8.1	1.5	11.2	4
15	7.2	11.1	23.2	11.2	1.5	11.2	4
21	7.2	11.1	26.2	14.2	1.5	11.2	4
25	7.2	11.1	27.7	15.7	1.5	11.2	4
31	7.2	11.1	29.2	17.3	1.5	11.2	4
37	7.2	11.1	30.3	18.3	1.5	11.2	4

NOTES

1. All dimensions are in millimetres.
2. 2-56 UNC 2A.
3. See Dimension C of Figure 2.1.
4. See Dimension F of Figure 2.1.
5. See Dimension A of Figure 2.1.

FIGURE 3 – CONTACT ARRANGEMENTS

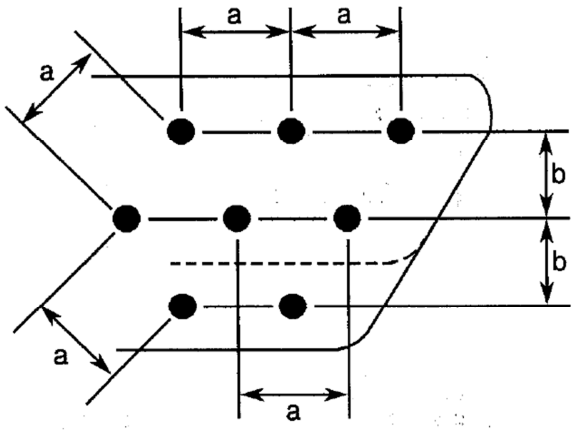
FRONT VIEW OF MALE INSERT – USE MIRROR VIEW FOR FEMALE INSERT



NOTES

1. Only the outside contact cavities on each row are identified in the drawing, the remainder follow sequentially. Contact numbers are shown outside the insert for readability.

Contact Centres



NOTES

1. a = Distance between contact centres: 1.27mm.
2. b = Distance between rows: 1.09mm.

4 REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the connectors specified herein are stated in this specification and ESCC Generic Specification No. 3401. Deviations from the Generic Specification, applicable to this specification only, are listed in Para. 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

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. 9.4, Contact Capability: This test shall be performed on the male contacts. For details see Para. 4.3 of this specification.
(b) Para. 9.5, Magnetism Level: Not applicable.

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

None

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.9, Seal Test: Not applicable.
(b) Para. 9.15, Joint Strength: Not applicable.
(c) Para. 9.17, Contact Retention (In insert): Not applicable with male contact.
(d) Para. 9.27, Maintenance Ageing: Not applicable.
(e) Para. 9.29, Oversize Pin Exclusion: Not applicable.
(f) Para. 9.30, Probe Damage: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.9, Seal Test: Not applicable.
(b) Para. 9.15, Joint Strength: Not applicable.
(c) Para. 9.17, Contact Retention (In insert): Not applicable with male contact.
(d) Para. 9.27, Maintenance Ageing: Not applicable.
(e) Para. 9.29, Oversize Pin Exclusion: Not applicable.
(f) Para. 9.30, Probe Damage: Not applicable.

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.

4.3.2 Weight

The maximum weight of the connectors specified herein shall be as given in Table 1(a).

4.3.3 Contact Capability
For the purpose of this test, the pick-up and drop weights shall be as follows.

Measurements	Pick-up Weight	Drop Weight
Weight (g)	14	170
Inner Gauge Diameter (mm) (1)	0.582 – 0.587	0.559 – 0.564
Insertion Depth (mm)	1.5	1.5

NOTES
1. See Figure 4 for ØA.

4.3.4 Contact Retention (In insert)
Contact retention within the insert shall be 22.25 Newtons. There shall be no displacement of the contact.

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
Not applicable.

4.3.9 Engagement and Separation Forces (Male Contacts)
The contact engagement and separation forces of the male contacts shall be tested to a depth of 1.5mm with the applicable test gauge fixtures specified in Figure 4 of this specification, and shall not exceed the values of the table hereunder.

Measurements	Inner Diameter (mm)		Engagement Force Max. (N)	Separation Force Min. (N)
	Min.	Max.		
Max. Gauge Fixture	0.559	0.564	1.667	-
Min. Gauge Fixture	0.582	0.587	-	0.137

4.3.10 Oversize Pin Exclusion
Not applicable.

4.3.11 Probe Damage
Not applicable.

4.3.12 Solderability
Size A soldering iron shall be used.

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 connectors 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 plated with a minimum thickness of 25.4µm of electroless nickel.

4.4.2 Inserts

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

4.4.3 Contacts

4.4.3.1 Female Contacts

The contact body shall be made of copper alloy with an underplate of 1µm minimum of copper, gold plated with 1.27µm minimum of gold, Type 2, Grade C of MIL-G-45204. Measurement of thickness shall be performed at a distance of 1.5mm from the engagement

4.4.3.2 Male Contacts

The contact body and the bundle shall be made of copper alloy with an underplate of 1µm minimum of copper, gold plated with 1.27µm minimum of gold, Type 2, Grade C of MIL- G- 45204. Measurement of thickness shall be performed at a distance of 1.5mm from the engagement end.

4.4.4 Seals Interfacial

Interfacial seals shall be made of silicon base rubber.

4.4.5 Rear Potting

Rear potting shall be made of epoxy resin.

4.4.6 EMI Backshell

EMI Backshell shall be made of aluminium alloy plated with a minimum thickness of 25.4µm of electroless nickel.

4.5 MARKING

4.5.1 General

The marking of all 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.

The information to be marked and the order of precedence shall be as follows:

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

4.5.2 The ESCC Component Number

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

Example: 340107101B

- Detail Specification Number: 3401071
- Type Variant: 01
- Testing Level: B

N.B.

Marking of the Type Variant is mandatory. No further reference to type variant is made in this specification.

4.5.3 Characteristics

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

(a) Shell Size
(b) Contact Type
(c) Termination Type
(d) Floating Mount or Captive Nut.

The information shall be constituted and marked as follows:

Example: 37PFR164F

- Shell size: 37
- Contact Type: P
- Termination type: FR164
- Floating mount: F

4.5.3.1 Shell Size

Shell size shall be designated by the number of contacts.

Specified numbers are: 9, 15, 21, 25, 31 and 37.

4.5.3.2 Contact Type

Contact types shall be indicated by the following code letters.

Code Letter	Contact Type
P	Male
S	Female

4.5.3.3 Termination Type

Termination code FR164 defines the solder bucket termination, according to Figure 2.1.

4.5.3.4 Fixing Option

The letter "F" shall indicate a floating mount. The letter "E" shall indicate a captive nut. If the shell has standard mounting holes, the letter shall be omitted.

4.5.4 Traceability Information
Traceability information shall be marked in accordance with the requirements of ESCC Basic Specification No. 21700.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature
The parameters to be measured in respect of electrical characteristics are scheduled in Table 2. Unless otherwise specified, the measurements shall be performed at T_{amb} = +22±3 ºC

4.6.2 Electrical Measurements at High and Low Temperatures
Not applicable.

4.6.3 Circuits for Electrical Measurements
Not applicable.

4.7 BURN-IN AND ELECTRICAL MEASUREMENTS (TABLES 4 AND 5)
Not applicable.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

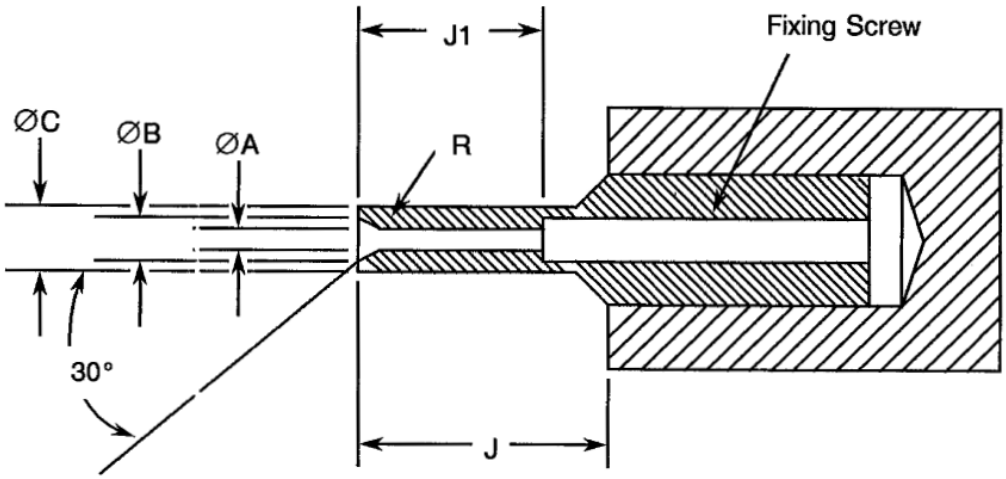
No.	Characteristic	Symbol	ESCC 3401 Test Method	Test Condition	Limits		Unit
					Min.	Max.	
1	Insulation Resistance	Ri	Para. 9.1.1.1	Para. 9.1.1.1	5000	-	MΩ
2	Voltage Proof Leakage Current	I_L	Para. 9.1.1.2	600 Vrms	-	2	mA
3	Mated Shell Conductivity (Voltage Drop) (1)	Vd	Para. 9.1.1.4	Para. 9.1.1.4	Not applicable		mV
4	Contact Resistance (Low Level Current)	Rcl max.	Para. 9.1.1.3	Para. 9.1.1.3	-	6	mΩ
5	Contact Resistance (Rated Current)	Rcr max.	Para. 9.1.1.3	3.0A	-	5	mΩ

NOTES
1. Applicable to mated connectors with grounding option.

TABLES 3, 4 AND 5

Not applicable.

FIGURE 4 - GAUGE FIXTURE



MAXIMUM GAUGE

WEIGHT (g) 170			REMARKS
	MIN.	MAX.	
ØA	0.559	0.564	-
ØB	0.749	0.775	-
ØC	0.813	0.825	-
J	4	-	-
J1	3.13	3.23	-
R	0.381	0.483	Note 1

MINIMUM GAUGE

WEIGHT (g) 14			REMARKS
	MIN.	MAX.	
ØA	0.582	0.587	-
ØB	0.749	0.775	-
ØC	0.813	0.825	-
J	4	-	-
J1	3.13	3.23	-
R	0.381	0.483	Note 1

NOTES

1. Radius 'R', must be tangent to entry chamfer and ∅A.
2. ØA and entry chamfer must be polished to N8 .

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESCC GENERIC SPECIFICATION No. 3401)

4.8.1 Measurements and Inspections on Completion of Environmental Tests
The parameters to be measured and inspections to be performed on completion of environmental testing shall be those specified in Table 6. Unless otherwise specified, these measurements shall be performed at T_{amb} = +22±3 ºC.

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests
Not applicable.

4.8.3 Measurements and Inspections on Completion of Endurance Tests
The parameters to be measured and inspections to be performed on completion of endurance tests shall be those specified in Table 6. Unless otherwise specified, these measurements shall be performed at T_{amb} = +22±3 ºC.

4.8.4 Conditions for Operating Life Test (Part of Endurance Testing)
Not applicable.

4.8.5 Electrical Circuit for Operating Life Test
Not applicable.

4.8.6 Conditions for High Temperature Storage Test (Part of Endurance Testing)
The requirements for the high temperature storage test are specified in Section 9 of ESCC Generic Specification No. 3401. The temperature to be applied shall be the maximum storage temperature specified in Table 1(b) of this specification.

TABLE 6 – MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTING

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests (1)	Test Method and Conditions	Identification	Conditions		Min.	Max.	
01	Seal Test	Para. 9.9	ESCC 3401 Para. 9.9	-	-	Not applicable		-
02	Wiring	Para. 9.10 and Table 1(a) of this spec.	Low Level Contact Resistance	Table 2 Item 4	Rcl	-	-	-
03	Vibration	Para. 9.11	**Initial Measurements** Coupling Screw(s) Unlocking Torque **Final Measurements** Full Engagement Coupling Screw(s) Unlocking Torque Drift Visual Examination	 - - -	 - - Δ -	 Record Values - -25 -	 - +25 -	 - % -
04	Shock or Bump	Para. 9.12	Full Engagement Visual Examination	-	-	-	-	-
05	Climatic Sequence	Para. 9.13	**Dry Heat** Insulation Resistance **Low Air Pressure** Voltage Proof Leakage Current **Damp Heat** Insulation Resistance **Final Measurements** External Visual Inspection Insulation Resistance Voltage Proof Leakage Current	At High Temperature Table 2 Item 1 Figure 1 Immediately after test Table 2 Item 1 After 1-24 hrs Recovery ESCC 3401 Para. 9.7 Table 2 Item 1 Table 2 Item 2	 Ri I_L Ri Ri I_L	 10 ESCC 3401 Para. 9.13.5 100 ESCC 3401 Para. 9.7 Table 2 Item 1 Table 2 Item 2	 - - 	 MΩ MΩ
06	Plating Thickness	Para. 9.14	Thickness	-	-	Para. 4.4.3 of this spec		-
07	Joint Strength (N/A to solder contacts)	Para. 9.15	ESCC 3401 Para. 9.15	-	-	Not applicable		-
08	Rapid Change of Temperature	Para. 9.16	Visual Examination Insulation Resistance Voltage Proof Leakage Current	- Table 2 Item 1 Table 2 Item 2	- Ri I_L	- Table 2 Item 1 Table 2 Item 2	- 	
09	Contact Retention (in Insert)	Para. 9.17 & Para. 4.3.4 of this spec.	Contact Displacement	-	-	ESCC 3401 Para. 9.17		-

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests (1)	Test Method and Conditions	Identification	Conditions		Min.	Max.	
10	Endurance	Para. 9.18	**Initial Measurements**					
			Mating/Unmating Forces		F	Para. 4.3.5 of this spec.		
			Low Level Contact Resistance	Table 2 Item 4	Rcl	Record Values		
			Mated Shell Conductivity	Table 2 Item 3	Vd	Not applicable		
			Final Measurements					
			Visual Examination	-	-	-	-	-
			Mating/Unmating Forces	Table 2 Item 4	F	Para. 4.3.5 of this spec.		
			Low Level Contact Resistance Drift	Table 2 Item 5	ΔRcl	-	3	mΩ
			Mated Shell Conductivity	Table 2 Item 3	Vd	Not applicable		
			Insulation Resistance	Table 2 Item 1	Ri	Table 2 Item 1		
			Voltage Proof Leakage Current	Table 2 Item 2	I_L	Table 2 Item 2		
11	Permanence of Marking	Para. 9.19	-		-	-	-	-
12	Mating / Unmating Forces	Para. 9.20	Force	-	F	Para. 4.3.5 of this spec.		
13	High Temperature Storage	Para. 9.21	**Initial Measurements**					
			Low Level Contact Resistance	Table 2 Item 4	Rcl	Record Values		
			Mated Shell Conductivity		Vd	Not applicable		
			Final Measurements					
			Visual Examination	-	-	-		-
			Mating/Unmating Forces	-	F	Para. 4.3.5 of this spec.		
			Low Level Contact Resistance Drift	Table 2 Item 4	ΔRcl	-	3	mΩ
			Rated Current Contact Resistance	Table 2 Item 5	Rcr	Table 2 Item 5		
			Mated Shell Conductivity	Table 2 Item 3	Vd	Not applicable		
			Insulation Resistance	Table 2 Item 1	Ri	Table 2 Item 1		
			Voltage Proof Leakage Current	Table 2 Item 2	I_L	Table 2 Item 2		
			Contact Retention (In Insert)	Para. 4.3.4 of this spec.		ESCC 3401 Para. 9.17		
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 & Para. 4.2.7 of this spec.	Visual Examination	-	-	Not applicable		

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests (1)	Test Method and Conditions	Identification	Conditions		Min.	Max.	
17	High Temperature Measurements	Para. 9.25	Insulation Resistance	Table 2 Item 1	Ri	5000	-	MΩ
18	Overload Test	Para. 9.26	Internal Temperature	-	T	-	+100	ºC
			Rated Current Contact Resistance	Table 2 Item 5	Rcr	Table 2 Item 5		
			Mated Shell Conductivity	Table 2 Item 3	Vd	Not applicable		
			Insulation Resistance	Table 2 Item 1	Ri	Table 2 Item 1		
			Voltage Proof Leakage Current	Table 2 Item 2	I_L	Table 2 Item 2		
19	Maintenance Ageing	Para. 9.27 & Para. 4.2.4 of this spec.	Visual Examination	-	-	-	-	-
			Contact Retention (In insert)	Para. 4.3.4 of this spec	-	-	-	-
20	Engage/Separation Forces	Para. 9.28 & Para. 4.3.9 of this spec.	Force	-	F	Para. 4.3.9 of this spec		-
21	Oversize Pin Exclusion	Para. 9.29 & Para. 4.3.10 of this spec.	-	-	-	Not applicable		-
22	Probe Damage	Para. 9.30 & Para. 4.3.11 of this spec.	Contact Separation Force	-	F	Not applicable		-
23	Solderability	Para. 9.31 & Para. 4.3.12 of this spec.	-	-	-	ESCC 3401 Para. 9.31		-

NOTES

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

APPENDIX 'A'

AGREED DEVIATIONS FOR C&K COMPONENTS (F)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para. 4.2.2, Deviations from Final Production Tests (Chart II)	Para. 9.4, Contact Capability: 100% Contact Capability Test may be omitted provided that a 100% visual inspection of the contacts is performed on each batch submitted to tests defined in the C&K PID requirements.