	ES	CC	D	OCUMENT	CHANGE REQUEST
DCR number	1	Changes rec	quired for: Ger	neral	Originator: John Howley
Date: 2002/11	/27	Date sent: 2	2002/11/27		Organisation: Enterprise Ireland
Status: IMPLE	MENTED				
Title:	Thermistors (th	ermally Sensitive	Resistors) Ranç	ge 2000 to 100000) Ohms at +25C with a
Number:	4006/014		Issue:	1	
Other documen	ts affected:				
Page:					
Paragraph:					
Original wording	g:				
Proposed wordi	ng:				
Justification:					
Attachments:					
Attachment_DC	CR_1.pdf, null				
Modifications:					
Justification					
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Approval signat					
15. C.	T(ari-9				

Date signed:	
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2002-11-27

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Originator	JOHI	NHOWLEY (1)	Originator sig	jnature (2)	1
Affiliation	IRISH	EXPERT SCCG		Date: 26 NOV	EMBER 2	002	Page 1 of [22] (3)
	DOCUMENT A	FFECTED				Other c	locuments affected (8)
Doc. No. (4) 4006/014	Status (5) ISSUE 1	Title: Thermistors (T Resistors), NTC	hern	nally Sensitive	(6)	4006/0 4006/0	02 Hahn 13
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PROPOSED WOR	DING OF CHA	NGE					(9)
See attached mark	-up for details.						
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Changes required	Gen	urement (project) eral Improvement of S					IRB decision [] (11)
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Date of registration	1	Order of Priority for	App	r. / Impl.:	1 (high	n) 🗌 2	(medium) 3 (low)
Attachments:		Qualification Status	:	Qualified] In proc	ess of q	ualification N/A)
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Priority 7	Role	Date	20	03-01-24			
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DOCUMENT CHANGE REQUEST

CONTINUATION SHEET FOR BOX [10]



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Justification

- 4. Thermal shock conditions changed to meet the maximum operating temperature.
- 5. Physical dimensions, weight and lead material changed for Variant 06.
- Test temperature tolerance changed to +/- 0.01°C to meet current manufacturing practices.
- 7. Table 2 updated for Variant 06.
- 8. Table 6 updated to include only valid endurance tests.



Page 1

THERMISTORS

(THERMALLY SENSITIVE RESISTORS), NTC, RANGE 2 000 TO 100 000 OHMS AT +25°C WITH &OA TEMPERATURE RANGE OF -40 TO +160 °C

ESCC Detail Specification No. 4006/014

ISSUE == J October 2002



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ESCC Detail Specification No.

PAGE -2-. ISSUE 2

4006/014

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(THERMALLY SENSITIVE RESISTORS), NTC, RANGE 2 000 TO 100 000 OHMS AT +25°C WITH A TEMPERATURE RANGE OF -40 TO +160 °C

THERMISTORS

ESA/SCC Detail Specification No. 4006/014





space components coordination group

		Аррго	proved by		
Issue/Rev.	Date	SCCG Chairman	ESA Director General or his Deputy		
Issue 1	October 1997	Sa-milton	Aron		
Revision 'A'	June 1999	Se Critter	Atom		
Revision 'B'	June 2000	San hill	CALOTTA -		
Revision 'C'	February 2002	7.20	A		



4006/014 ESCC Detail Specification No.

PAGE --3--ISSUE 2

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DOCUMENTATION CHANGE NOTICE

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	CHANGE DESCRIPTION Specification upissued to incorporate editorial and technical changes per DCR.
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1. GENERAL

1.1 <u>SCOPE</u>

This specification details the ratings, physical and electrical characteristics, test and inspection data for Thermistors, Thermally Sensitive Resistors, NTC, Range 2 000 to 100 000 Ohms at $+25^{\circ}$ C with a Temperature Range of -49 to $+160^{\circ}$ C. It shall be read in conjunction with ESA/SCC Generic Specification No. 4006, the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS

Variants of the basic type thermistors specified herein, which are also covered by this specification, 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 thermistors specified herein, are as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

Not applicable.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the thermistors specified herein are shown in Figure 2.

1.6 FUNCTIONAL DIAGRAM

3.

The functional diagram for the thermistors specified herein is shown in Figure 3.

2. APPLICABLE DOCUMENTS

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

(a) ESA/SCC Generic Specification No. 4006, Thermistors (Resistors, Thermally Sensitive).

(C) (MIL-STD-202, Test Methods for Electronic and Electrical Component Parts.

(6) IEC 410, Sampling Moedures and Tables for Engration by Although TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

- 11. 12. 12.138 (2018) (2018) (2018) (2018) 2018 (2018) 20 + 2019 (2018) (

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESA/SCC Basic Specification No. 21300 shall apply. In addition, the following symbols are used:-

- NTC = Negative Temperature Coefficient.
- R_Z = Zero Power Resistance.

ASCC Detail Specification PAGE F No. 4006/014 ISSUE - No. 4006/014 No. 4006/014 ISSUE - No. 4006/014 No. 4006/014 ISSUE - BLE 1(a) - TYPE VARIANTS - - - RESISTANCE/TEMPERATURE CHARACTERISTICS (NOTES 2 AMB ap- 0°C + 25°C + 50°C + 70°C 0°C + 25°C + 50°C + 70°C + 100°C + 140°C 1.57 1.34 1.17 1.05 0.90 1.13 1.57 1.34 1.17 1.05 0.30 1.13 1.57 1.34 1.17 1.05 0.30 1.13 1.57 1.34 1.17 1.05 0.30 1.13 1.57 1.34 1.17 1.05 0.31 1.13 1.57 1.34 1.17 1.05 0.35 1.13 1.57 1.34 1.12 0.35 1.13 1.34 1.57 1.34 1.17 1.05 0.35 1.13 1.57 1.34 1.12 0.35 1.33 1.15 1.57 1.34 1.12 0.35 1.33 1.15 1.57 1.34 1.12 1	CC Detail Specification Rev. *C PAGE No. 4005/014 No. 4005/014 No. 4005/014 Rev. *C I.(a) - TYPE VARIANTS Rev. *C I.(a) - TYPE VARIANTS Rev. *C FESISTANCE/TEMPERATURE CHARACTERISTICS (NOTES 2 AND -4) O°C + 25°C 1.57 1.34 1.57 1.34 1.17 1.05 0.15 0.90 1.57 1.34 1.17 1.05 0.13 1.17 1.57 1.34 1.13 1.17 1.57 1.34 1.13 0.90 1.13 0.90 1.13 1.17 1.157 1.34 1.13 1.17 1.57 1.34 1.13 1.05 1.13 1.10 1.13 1.05 1.13 1.13 1.14 1.05 1.157 1.34 1.157 1.34 1.165 0.374.80 1.17 1.05 1.18 1.17 1.19 1.05 1.11 1.05 1.12 1.13 1.13 1.14	ASCC Detail Specification PAGE 6 No. 4006/014 No. 4006/014 Issue + 2 No. 4006/014 No. 4006/014 Issue + 2 No. 4006/014 No. 4006/014 Issue + 2 AFE I(a) - TYPE VARIATY No. 4006/014 Issue + 2 AFE I(a) - TYPE VARIATY No. 4006/014 Issue + 2 AFE I(a) - TYPE VARIATY No. 4006/013 Issue + 100°C AFE I(a) - TYPE VARIATY Issue + 100°C Issue + 128°C AFE I(a) - TYPE VARIATY Issue + 100°C Issue + 128°C AFE I(a) - 1300 815, O 422, O 137, 400 157 1.34 1.17 1.06 0.30 11300 4 000 1630, 0 843, O 244, Mo 11300 1.030 1.17 1.06 0.30 11300 1.030 1.17 1.06 0.30 11300 1.17 1.06 1.13 - 11300 1.17 1.06 1.13 - 11300 1.167 1.13 - - 11300 1.167 1.13 - - 11300 1.167 1.13 - - 11300 1.122 1.13 - - 1142		
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		is held as specified, the value is referred to as R_Z (Zero Power Resistance).	TOL. (+ 2) 10.00 6.30 3.35	

- ±0.5°C from -40°C to -1°C and +101°C to +125°C. ±0.35°C from 0°C to +100°C. ±0.5°C from +101°C to +100°C. ±0.5°C from +101°C to +150°C. ±0.5°C from +101°C to +150°C. ±0.5°C from 0°C to +100°C. Variants 01, 02 ,03: Variant 04:
 - X. J The reference resistance is specified at +25°C. X For reference purposes only. Variant 05:

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TABLE 1(b) - MAXIMUM RATINGS

No,	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNIT	REMARKS
1	Power Dissipation	PD	2.0	mW	Note 1
2	Operating Temperature Range	T _{op}	Note 2	°C	
3	Storage Temperature Range	T _{stg}	Note 3	°C	
4	Soldering Temperature	T _{sol}	+ 245	°C	Note 4

NOTES

1. Never to be exceeded in the temperature measurement mode. The thermistors specified herein shall not be used in the self-heat mode.

2. See Column 4 of Table 1(a).

4. Duration 10 seconds maximum at a distance of not less than 10mm from the device body and the same lead shall not be resoldered until 3 minutes have elapsed.

3. - 40°C for Variants 01 to 05 and - 60°C for Variant 06 to the Maximum Operating Temperature specified in Clump 4 of Table 1(a). FIGURE 1 - PARAMETER DERATING INFORMATION

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NOTES

1. The leads shall not be bent, or the means of fastening them cause bending in any direction from the place of the thermistor fastening disc within a distance of 15mm from the centre of the thermistor.

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FIGURE 3 - FUNCTIONAL DIAGRAM



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4. <u>REQUIREMENTS</u>

4.1 <u>GENERAL</u>

The complete requirements for procurement of the thermistors specified herein are stated in this specification and ESA/SCC Generic Specification No. 4006 for Thermistors (Resistors, Thermally Sensitive). 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 ESA/SCC 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 <u>Deviations from Special In-process Controls</u> None.
- 4.2.2 Deviations from Final Production Tests (Chart II)

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- 4.2.3 <u>Deviations from Burn-in and Electrical Measurements (Chart III)</u> None.
- 4.2.4 Deviations from Qualification Tests (Chart IV)
- (a) Para. 9.3.1.2, Dissipation Constant: Not applicable.
 - (b) Para. 9.15, Short Time Lead: Not applicable.

(c) Para-9:17, High Temperature Storage: Not applicable.

- 4.2.5 Deviations from Lot Acceptance Tests (Chart V)
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4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the thermistors specified herein shall be verified in accordance with the requirements set out in Para. 9.4 of ESA/SCC Generic Specification No. 4006 and they shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight

4.3.3

The maximum weight of the thermistors specified herein shall be 4.0 grammes, with the exception of Vahant Ob, whose maximum weight shall be 2.3 <u>Terminal Strength</u> grannes

The requirements for terminal strength testing are specified in Para. 9.13 of ESA/SCC Generic Specification No. 4006. The test conditions shall be as follows:-

Applied Force: 4.45(+1.1-0)N. Duration: 5 seconds.

* (a) Thermal Shock - Test condition "c" except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this specification.

KI (Q) Thermal Shork - Tert Condition (C) extend that the

maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1 (a) of this specification.

(4) Paragraph 9.3.1.2, Distipation constant : Not Applicable (4) Paragraph 9.15, Short Time Overload : Not Applicable (4) Paragraph 9.17, High Temperature Storage : Not Applicable

\$2 (a) Thermal shock - Test condition (c) except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this specification.

C SEE	ESA/SCC Detail Specification No. 4006/014	Rev. YO	PAGE 10 ISSUE 2

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 thermistors 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.

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4.4.1 Case

The housing shall be aluminium filled with a black epoxy encapsulant.

4.4.2 Lead Material and Finish

The lead material shall be in accordance with ESA/SCC Detail Specification No. 3901/012 Variant 04. One lead shall carry an identification sleeve which shall carry all part marking specified

	III Fara. 4.5.	of with the exception of Variant Ob, which
4.5	MARKING	shall be in accordance with ESAYSCE Detail
4.5.1	General	Specification No. 3901/012 Variant 03.

The marking of all components delivered to this specification shall be in accordance with the requirements of ESA/SCC 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 ESA Symbol, for qualified components only.
- (b) The SCC Component Number.
- (c) Traceability Information.
- 4.5.2 The SCC Component Number

The SCC Component Number shall be constituted and marked as follows:



4.5.3 Traceability Information

Each component shall be marked in respect of traceability information in accordance with the requirements of ESA/SCC Basic Specification No. 21700.

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4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured at room temperature are scheduled in Table 2. Unless otherwise specified, the measurements shall be performed at $T_{amb} \approx \pm 25 \pm 0.05 = 0.01 \circ C$

4.6.2 Electrical Measurements at High and Low Temperatures

The parameters to be measured at high and low temperatures are scheduled in Table 3. The erature tolerance chall be +/- 0.010C. Circuits for Electrical Measurements (Figure 4)

Not applicable.

4.7 BURN-IN TESTS

4.6.3

4.7.1 Parameter Drift Values

+25 ±0,010 (

RWC

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at $T_{amb} = +25\pm0.05$ °C. The parameter drift values (Δ) applicable to the parameters scheduled, shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit value specified in Table 2 shall not be exceeded.

4.7.2 <u>Conditions for Burn-in</u>

The requirements for burn-in are specified in Section 7 of ESA/SCC Generic Specification No. 4006. The conditions for burn-in shall be as specified in Table 5 of this specification.

4.7.3 <u>Electrical Circuits for Burn-in (Figure 5)</u>

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TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - d.c. PARAMETERS

No.	CHARACTERISTICS	SYMBOL	ESA/SCC 4006 TEST METHOD AND CONDITION		IITS MAX.	UNIT	0•01°C)
1	Zero Power Resistance	Rz	Para. 9.3.1.1 T _{amb} = +25°C	Note 1		Ω	
2	Insulation Resistance	Ri	Para. 9.3.1.4 Note 2	100	-	MΩ	
43	Thermal Time Constant Variants 01-05 Variant 06	КН	Para. 9.3.1.3 In Still Air Note 3	× II	₽£ ¥	SOC.	1 8 60

NOTES

- See Column 4 of Table 1(a) for resistance values. 1.
- If more than 20 devices have to be measured, the test shall be performed on a sample basis in accordance with Level II, Table IIA, AQL = 1.0 of MIL-STD-105.
 Test to be performed on 10 samples during Chart II only.

Normal Inspection, AQL = 1.0 of IEC 410,

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

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No.	CHARACTERISTICS	SYMBOL	ESA/SCC 4006 TEST METHOD AND CONDITION	LIM MIN,	ITS MAX.	UNIT
1	Zero Power Resistance	Rz	Para. 9.3.1.1 At each specified temperature, over operating range	Not		Ω

NOTES

1. See Column 4 of Table 1(a) for resistance values.

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

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TABLE 4 - PARAMETER DRIFT VALUES

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No.	CHARACTERISTICS	SYMBOL	SPEC. AND/OR TEST METHOD	TEST CONDITIONS	CHANGE LIMITS (Δ)	UNIT
1	Zero Power Resistance Change	ΔR _Z Rz	As per Table 2	As per Table 2 Vayante 0) to06	±0.2	%

TABLE 5 - CONDITIONS FOR BURN-IN AND OPERATING LIFE TESTS

No.	CHARACTERISTICS	SYMBOL	CONDITION	UNIT
.1	Ambient Temperature	T _{amb}	Note 1 Note 2	°C
2	Power Dissipation	PD	2.0	mW

NOTES

1. Maximum Operating Temperature specified in Column 4 of Table 1(a). 2. The Temperture Tolerance = (+0-3) °C.

FIGURE 5 - ELECTRICAL CIRCUIT FOR BURN-IN AND OPERATING LIFE TESTS



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4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION No. 4006)

4.8.1 <u>Measurements and Inspections on Completion of Environmental Tests</u>

The parameters to be measured and inspections to be performed on completion of environmental tests are scheduled in Table 2. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +25 \pm 0.05 \approx C^2 + 2.5 + 1.5 + 1.5 + 1.5 = 0.01 \circ C$

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests

The parameters to be measured and inspections to be performed at intermediate points during endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +25\pm0.05$ G. +25 +/-0.01

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 are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +\frac{25\pm0.05}{5}$ °C. $1 \rightarrow 5 + 1 - 0.01$ °C.

4.8.4 <u>Conditions for Operating Life Tests (Part of Endurance Testing)</u>

The requirements for operating life testing are specified in Section 9 of ESA/SCC Generic Specification No. 4006. The conditions for operating life testing shall be as specified in Table 5 for the burn-in test.

4.8.5 <u>Electrical Circuits for Operating Life Tests</u>



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TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

	ESA/SCC GENERIC SPEC. No. 4006		MEASUREMENTS	AND INSPECTIONS		LIN	IITS	
No.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
01	Thermal Shock	Para. 9.2 (2)	-	-	-	~	-	<u> </u>
02	Dissipation Constant	Para. 9.3.1.2 and Para. 4.2.4 of this spec.	Initial Measurements Zero Power Resistance Final Measurements	Not-applicable	Rz			
			Dissipation Constant	Not applicable	K _{DISS}		ļ	
02 02	Thermal Time Constant	Para. 9.3.1.3 In Still Air	Initial Measurements Zero Power Resistance Final Measurements Thermal Time Constant	Para. 9.3.1.3(c)	R _z	Record	Values	Ω
-04-	External Visual Inspection	Para. 9.5	ESA/SCC 20500	Para. 9.3.1.3(f)	КН		40	sec.
*****	Shock (Specified Pulse)	Para. 9.7	Initial Méasurements	-				
<u>0</u> 4			Zero Power Resistance During Shock	Table 2 Item 1	Rz	Table 2	1 2 Item 1	
			Intermittent Contact	No Open or Short Circuiting	-	-	-	•
			Zero Power Resistance Change		∆R _Z ∕R _Z	-2.0	+ 2.0	%
			Visual Examination	No evidence of damage	-	-		-
-06 05	Vibration	Para. 9.8	Initial Measurements Zero Power Resistance During Vibration	Table 2 item 1	Rz	Table 2	litem 1	
			Intermittent Contact	No Open or Short Circuiting		-	-	-
			After Vibration Zero Power Resistance Change Visual Examination	Table 2 Item 1 No evidence of damage	ΔR _Z /R _Z	-2.0	+2.0	%
97 -	Immersion	Para. 9.9	Visual Examination	No evidence of damage	-	-	-	-
¢ گ	Dielectric Withstanding Voltage	Para. 9.10	During Test Visual Examination	No evidence of				- -
			After Test	breakdown or flashover				
			Visual Examination	No evidence of damage, arcing or breakdown	-	.•	•	-
1	Resistance to Soldering Heat	Para. 9.11	After Test	After a recovery period of 24 ± 4 hrs			**************************************	
ų			Zero Power Resistance Visual Examination		Rz	Table :	2 (tem 1	
- 10 - 09	Moisture Resistance	Para. 9.12	Initial Measurements	Not less than 1.5 hrs after removal from drying oven				56608000000000000
-			Zero Power Resistance Final Measurements	Table 2 Item 1 Within 24 hrs of removal	R _z	Table 2	ltern 1	
	ан 1997 - Сарана 1997 - Саран	· · · ·	Zero Power Resistance	from 1.5 to 3.5 hr conditioning Table 2 Item 1	ΔR _z /R _z	~2.0	 +2.0	%
			Change Insulation Resistance	Table 2 Item 2	R)	100		мΩ

NOTES

1. The tests in this Table refer to either Chart IV or V and shall be used as applicable. 2. Thermal Shock test Method and Conditions shall use the deviation of this specification as applicable.

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TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING (CONT'D)

								4
	ESA/SCC GENERIC	SPEC. No. 4006	MEASUREMENTS	AND INSPECTIONS		LIN	AITS	
Na,	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
10	Terminal Strength	Para. 9.13	Initial Measurements Zero Power Resistance Final Measurements Zero Power Resistance Change Visual Examination	Table 2 Item 1	R _Z ∆R _Z /R _Z	Table -2.0	2 Item 1 +2.0	%
72 - 11	Operating Life	Para. 9.14	Initial Measurements Zero Power Resistance Intermediate Measurements	No evidence of damage Table 2 Item 1	- R ₂	- Table 2	- 2 Item 1	-
			Zero Power Resistance Change Insulation Resistance Final Measurements	Table 2 Item 1 Table 2 Item 2	ΔR _Z /R _Z Ri	-1.0 100	+1.0	% MΩ
			Zero Power Resistance Change Insulation Resistance	Table 2 Item 1 Table 2 Item 2	ΔR _Z /R _Z Ri	- 1.0 100	+1.0	% MΩ:
13	Short Time Load	Para. 9.15	Zero Power Resistance Visual Examination	Table 2 Item 1 No evidence of arcing, burning or charring	Rz		2 Item 1	-
#12	Low Temperature Storage	Para. 9.16	Initial Measurements Zero Power Resistance Final Measurements Zero Power Resistance Change	Table 2 Item 1 Table 2 Item 1	R _z ΔR _z /R _z	Table 2 - 2.0	tem 1 +2.0	%
_			Visual Examination	No evidence of damage	-	-	-	•
15	Fligh Temperature Storage		Initial Measurements Zero Power Resistance Intermediate Measurements	Table 2 item t	Rz	Tablo 2	Item 1	
			Zero Power Resistance Change	Table 2 Item 1 Table 2 Item 2	∆R _Z /R _Z	-1.0	+1.0	%
			Final Measurements Zero Power Resistance Change	Table 2 Item 1	Ri AFIZ/R _Z	100	- + 1.0	ΜΩ %
-16-	Solderability	Para. 9.18	Insulation Resistance	Table 2 Item 2	Ri	100		MΩ
<u></u>		**************************************				-	-	-
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NOTES

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

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APPENDIX 'A'

AGREED DEVIATIONS FOR BETATHERM (IRL)

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ITEMS AFFECTED	DESCRIPTION OF DEVIATION	
Para. 4.2.4	(a) Para. 9.2, Thermal Shock: May be performed as follows:	
	"Test Condition 'C' except that the maximum temperature shall be the maximum operating temperature specified in Column 4 o Table 1(a) of this specification."	
Para, 4.2.5	 (b) Para. 9.17, High Temperature Storage: May be omitted. (a) Para. 9.2, Thermal Shock: May be performed as follows: 	
	(a) Farat sta, mermai chock, way be performed as follows:	
	"Test Condition 'C' except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this specification."	