APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Relays, electromagnetic, non-latching, type TL

Executive Member: CNES Date: 17/07/2020

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Appl. No. 88L

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Components (including series and families) submitted for Extension of Qualification Approval:

ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3602 002	01 to 06	Rated coil Voltage	TL relays	SCC 3602 002 01 26V	All variants

2 Component Manufacturer

REL-STPI

3 Location of Manufacturing Plant(s)

22 Rue des Chaises

45 140 Saint Jean de la Ruelle - France

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Date of original qualification approval:

Date: 01/01/1982

Certificate Ref No. 88

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ESCC Specifications used for Maintenance of qualification testing:

Generic: 3602 Issue: 4

Detail(s): 3602/002 Issue: 3

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Deviations to LVT testing and Detail Specification used:

No ☒ Yes ☐ (supply details in Box 15)

Deviation from current Specifications:

No ☒ Yes ☐ (Supply details)

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Qualification Extension Report reference and date:

Report 3687.01.20, 27/05/2020,
Report 3633.10.18, 30/10/2018
See also Report 3607.03.18 Ind.A, 18/07/2018 for qualification of new coil wire brazing material,

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Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

Project Name	Testing Level	LAT	Date code	Quantity Delivered
Data livraisons T & TL SCC - MAJ 29052020.xlsx				
Customer: TAS	TL 26 F7011	Chart F4 Endurance & Assembly Capability Tests	18-36	49
VOQ ESCC	TL 26 F70	Chart F4 Periodic Tests	19-48	27

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PID changes since start of qualification

None ☐

Minor* ☐

Major* ☒ *Provide details in box:

10

Current **PID** Verified by: Mr Leny Baczkowski ,CNES

Name of Agency Representative

Ref No: PID TL – IND X

Issue: X Date: 15/01/2019

Rev Date: 19/11/2018

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Current Manufacturing facilities surveyed by: B. Marty, CNES
S. Hernandez, D. Lacombe, ESA on 14/09/2016

(Name of Agency Representative) (Date)

Satisfactory: Yes ☒ No ☐ Explain

Report Reference: ESCC-AUD-RELF2016

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Failure Analysis, DPA, NCCS available: Yes ☒ No ☐ (Supply data)

Ref. No's and purposes: NCCS 2CSTPI501 (coil wire dissolution), new coil wire brazing material implemented from DC 19-05, NCCS closed in May 2019 (appended)

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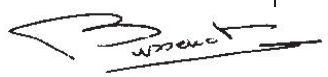
The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; - that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence (except as stated in box 15;) - that the reports and data are available at the ESCC Executive and therefore applies on behalf of CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.



Date: 17/07/2020

JP. BUSSENOT

(Signature of the Executive Coordinator)

Continuation of Boxes above:

14

15

Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance
1	3602 issue 4	Chart F2	Chart F2 Thermal Shock replaced with five Monitored Thermal Cycles with continuous coil resistance measurements.

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Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

None, initially requested by ESCC MRB in the context of NCCS 2CSTPI501, maintained by STPI REL despite closure of NCCS resulting from change in coil brazing material. Implemented in Appendix to ESCC 3602/002 issue 4, November 2018

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Executive Manager Disposition

Application Approval: Yes ☒ No ☐

Action / Remarks:

Digitally signed by Britta Schade
Date: 2020.08.28 11:10:04 +02'00'

Date:

B. Schade: Head of the Product Assurance and Safety Department

ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION 18

Tests conducted in compliance with:

- ESCC 3602 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

SCC 3602 002 01 26V , lot 1517615, DC 19-48	MoQ
SCC 3602 002 01 26V , lot 1122925, SCC 3602 002 01 26V, lot 1179896,	Qualification of new coil wire brazing material in 2018
SCC 3602 002 01 26V, lot 1253761, DC 18-36	LVT

Detail Specification reference: 3602/002

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup (Column 1)	Thermal Shock	☒	MIL-STD-202, Test Method 107	19-48 1179896	6 6	0	
	Low Level Sine Vibration	☒	MIL-STD-202, Test Method 204	19-48 1179896	6 6	0	
	Random Vibration	☒	MIL-STD-202, Test Method 214	19-48	6	0	
	Low Level Mechanical Shock	☒	MIL-STD-202, Test Method 213	19-48 1179896	6 6	0	
	Resistance to Soldering Heat	☒	MIL-STD-202, Test Method 210	19-48 1179896	6 6	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 1179896	6 6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	19-48 1179896	6 6	0	
Environmental / Mechanical Subgroup (Column 2)	High Level Sine Vibration	☒	MIL-STD-202, Test Method 204	19-48 1179896	6 6	0	
	High Level Mechanical Shock	☒	MIL-STD-202, Test Method 213	19-48 1179896	6 6	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 1179896	6 6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	19-48 1179896	6 6	0	
Endurance Subgroup 1 (Column 1)	Low Level Life	☒	ESCC 3602 Para. 8.11.1	19-48 1122925	3 6	0	
	Inductive Life	☐	ESCC 3602 Para. 8.11.2				
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 1122925	3 6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	19-48 1122925	3 6	0	

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Endurance Subgroup 1 (Column 2)	Coil Life	☒	ESCC 3602 Para. 8.12	1122925	6	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	1122925	6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	1122925	6	0	
Endurance Subgroup 1 (Column 3)	Intermediate Current	☒	ESCC 3602 Para. 8.13	19-48 1122925	3 6	0	
	Mechanical Life	☐	ESCC 3602 Para. 8.14				
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 1122925	3 6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	19-48 1122925	3 6	0	
Endurance Subgroup 2	Resistive Life	☒	ESCC 3602 Para. 8.11.3	19-48 18-36 1122925	6 6 6	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 18-36 1122925	6 6 6	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	19-48 18-36 1122925	6 6	0	
Assembly Capability Subgroup	Solderability	☒	MIL-STD-202, Test Method 208	19-48 18-36	3 3	0	
	Overload	☒	ESCC 3602 Para. 8.16	19-48 18-36	3 3	0	
	Permanence of Marking	☐	ESCC Basic Specification No. 24800				Not applicable for laser marking
	Terminal Strength	☒	MIL-STD-202, Test Method 211	19-48 18-36	3 3	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-202, Test Method 112	19-48 18-36	3 3	0	
Additional Tests	Internal Vapor Analysis	☒	ORS MEL-1053	1122925 1179896	6 2	0	Post various endurance tests Post Thermal Shock
		☐					
		☐					

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL

ENTRIES

Form heading	shall indicate: - the title of the component as given in its detail specification or the name of the series, family; - the Executive Member; - the entering date; - the certificate number and its sequential suffix.
Box 1	shall provide details given in the table; in particular there shall be listed: - the variants or range of variants; - the range of components (the ESCC code is recommended to indicate the values or values range, the tolerance, the voltage, etc); the designation given in the detail specification as 'base on'; - under Test Vehicle enter either an ESCC code or the specific characteristic capable of identifying the component tested (e.g., voltage of coil for a relay); - under component similar enter a cross if relevant.
Box 2; 3 and 4	As per QPL entry; otherwise, an explanation of the changes must be supplied.
Box 5	Will show the ESCC Generic and Detail specifications, including issue number and revision letter, current at the time the tests reported were performed. If the specifications are different from those current on the date of the application, see Box 6.
Box 6	Will show the deviations from the Generic and Detail Specifications listed in Box 5, in particular deviations from testing. In case of deviations this must be listed in Box 15. In case the referenced specification in Box 5 have currently a different issue and/or revision indicate also whether the test data deviates or not from such current documents.
Box 7	Must reference the report(s) supplied in support of the application.
Box 8	Should provide the details of procurement to the full ESCC System, documentation of all of which should already have been delivered to the ESCC Executive under the terms of the relevant Generic Specification. An appropriate table has been drawn in this box.
Box 9	If the PID evolved after the Original Qualification or after the last Extension of Qualification, adequate details of such evolution shall be provided together with the reasons for the changes. Major changes shall be clearly marked.
Box 10	Identify the current PID issue status, date and actual date of verification. The date of verification of the current PID should be arranged as close as possible to the required date of extension.
Box 11	This box can be completed only after a physical visit to the plant to confirm that no unexplained changes occurred and that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded.
Box 12	Provide details of, or reference to, any Destructive Physical Analysis (DPA) and Failure Analysis reports as well as any Nonconformance(s) (NCCS) occurred during the qualification validity period, stating if established corrective action have produced satisfactory results.
Box 13	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
Box 14	To be used when there is a need to expand any of the boxes from 1 through 12. Identify box affected and reference the Box 14 in the relevant Box. Box 14 can be broken into 14a, 14b, etc. if several boxes have to be expanded.
Box 15	Fill in Table as requested.
Box 16	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 17	All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the QPL or QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 19, signed by the representative for ESA, and dated.
Box 18	Fill in Table as requested.
Box 19	Confidential Details of PID changes including those of a confidential nature, shall be provided.
Box 20	State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 16 each nonconformance shall be sequentially numbered. If relevant state 'None'.
Box 21	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 22	Additional Comments.