



**APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL**

Component Title: WIRES AND CABLES, LOW FREQUENCY, INSULATED, POLYIMIDE/FLUOROTHERMOPLAST, BASED ON ESCC 3901-018, -019, -021  
 Executive Member: DLR Date: 05/08/2021

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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
ESCC 3901/018	01 to 88		3901/018	3901/A18-69C	
ESCC 3901/019	All variants except 01, 09, 17, 24, 25, 32, 48, 56, 64, 72 and 79		3901/019	3901/A19-61	
ESCC 3901/021	01 to 41		3901/019	3901/A19-61	

Component Manufacturer LEONI Special Cables GmbH	2	Location of Manufacturing Plant(s) Eschstraße 1 26169 Friesoythe Germany	3	Date of original qualification approval: Date: 01/10/2009  Certificate Ref No. 294E, 295E, 296E	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: ESCC 3901 Issue: 3 Detail(s): ESCC 3901-018 Issue: 3 3901-019 Issue: 3 3901-021 Issue: 4	5	Deviations to LVT testing and Detail Specification used: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (supply details in Box 15)  Deviation from current Specifications:  No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)	6	Qualification Extension Report reference and date: - Electrical test 3901-018-69-C 2805-5m 2021-03-09 - Electrical test 3901-019-61 6815-5m 2021-06-22 - Final test 3901-018-69-C 2805 2021-03-10 - Final test 3901-019-61- 6815 2021-06-16 - Qualification 3901-018-69-C 2805 2021-07-22 - Qualification 3901-019-61 6815 2021-06-16	7
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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
Reference attached list of deliveries				9274 m

PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box: Annex 2	9	Current PID Verified by: Burak Gökgöz, DLR  Name of Executive Representative  Ref No: L1200 PID Issue: 17 Date: 07/04/2020 Rev Date: 16/03/2020	10
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Current Manufacturing facilities surveyed by:  Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain  Report Reference: REF.: LEONI-AUD-CAB-2018	G. Joorman, DLR  (Name of Executive Representative)	on  (Date)	25/01/2018	11
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Failure Analysis, DPA, NCCS available: Yes  No  (Supply data)

Ref. No's and purposes:

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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 DLR as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 16/08/2021

Burak Gökgöz, DLR

(Signature of the Executive Coordinator)

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Continuation of Boxes above:



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance

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

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Executive Manager Disposition

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Application Approval: Yes  No

Action / Remarks:

Date:

**Britta Schade** Digitally signed by Britta Schade  
Date: 2021.10.07 18:34:38 +02'00'

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



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

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Tests conducted in compliance with:

- ESCC 3901 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

3901-018-69-C Int. 2805	
3901-019-61 Int. 6815	

Detail Specification reference: 3901-018, 3901-019

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Test sequence 1	Accelerated Ageing	<input checked="" type="checkbox"/>	As specified in Table A of Detail Specification		2	0	
	Wrap Test at Ambient Temperature	<input checked="" type="checkbox"/>	As specified in Table A and B of Detail Specification		2	0	
	Voltage Test	<input checked="" type="checkbox"/>	ESCC 3901 Para. 9.7 (a)		2	0	
Test sequence 2	Cold Bend Test	<input checked="" type="checkbox"/>	As specified in Table C of Detail Specification		2	0	
	Voltage Test	<input checked="" type="checkbox"/>	ESCC 3901 Para. 9.7 (a)		2	0	
Test sequence 3	Resistance to Fluids	<input type="checkbox"/>	ESCC 3901 Para. 9.21				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Wrap Test at Ambient Temperature	<input type="checkbox"/>	As specified in Table A and B of Detail Specification				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Voltage Test	<input type="checkbox"/>	ESCC 3901 Para. 9.7 (a)				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
Test sequence 4	Radiation Resistance	<input type="checkbox"/>	ESCC 3901 Para. 9.26				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Voltage Test	<input type="checkbox"/>	ESCC 3901 Para. 9.7 (a)				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
Test sequence 5	Long-term Ageing Test	<input type="checkbox"/>	ESCC 3901 Para. 9.28 and 9.12				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Wrap Test at Ambient Temperature	<input type="checkbox"/>	As specified in Table A and B of Detail Specification				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Voltage Test	<input type="checkbox"/>	ESCC 3901 Para. 9.7 (a)				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
Other tests	Mechanical Properties of Conductor	<input checked="" type="checkbox"/>	FED-STD-228-3211		2	0	
	Shrinkage	<input checked="" type="checkbox"/>	ESCC 3901 Para. 9.15		2	0	
	Blocking	<input checked="" type="checkbox"/>	As specified in Table A and B of Detail Specification		2	0	
	Cut-through Resistance	<input checked="" type="checkbox"/>	As specified in Detail Specification		2	0	
	Notch Resistance	<input checked="" type="checkbox"/>	As specified in Detail Specification		2	0	
	Surface Resistance	<input checked="" type="checkbox"/>	FED-STD-228-6041		2	0	

	Abrasion Resistance	<input checked="" type="checkbox"/>	ESCC 3901 Para. 9.23		2	0	
	Soldering Shrinkage	<input checked="" type="checkbox"/>	ESCC 3901 Para. 9.24		2	0	
	Solderability	<input checked="" type="checkbox"/>	IEC 68-2-20		2	0	
	Overload Resistance	<input type="checkbox"/>	ESCC 3901 Para. 9.27				N/A Acc. To ESCC 20100 Lot Acceptance Test Level 1 required
	Anthony and Brown Test	<input checked="" type="checkbox"/>	ESA PSS-01-720		2	0	
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					



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**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.