



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: CONNECTORS, ELECTRICAL, RECTANGULAR MICROMINIATURE, REMOVABLE CRIMP CONTACTS, BASED ON TYPE MDMA

Executive Member: CNES

Date: 13/01/2022

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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
3401/077	01 & 02	Range of contacts: 9 - 15 - 21- 25 - 31 - 37 Accepts wires AWG 24 or 2x28 in crimping barrel AWG 24 Accepts wires AWG 26 or 28 in crimping barrel AWG 26	MDMA	See test report	MDM
3401/078	01,02,03,04	Nickel or Gold Plated ShellsMax. rating for 1 isolated contact:- AWG 24 wire : 3.5A- AWG 26 wire and uninsulated AWG 25 solid wire: 2.5 A- AWG 28 wire: 1.5 A			
		Working Volage (Max): 150Vrms Operating Temperature Range (°C): -55 to +125			

Component Manufacturer C&K Components	2	Location of Manufacturing Plant(s) 2, rue Berthollet 39100 DOLE - France	3	Date of original qualification approval: Date: 15/06/2009 Certificate Ref No. 290	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: 3401 Issue: 5 Detail(s): 3401/077 Issue: 8 3401/078 7	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: Report n° D210159C (connector test report) Report n° D210161C (contact test report)	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
See appendix				

PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> *Provide details in box:	9	Current PID Verified by: <u>Nouals François, CNES</u> Name of Executive Representative Ref No: CS-FR036 Issue: 2 rev H Date: 13/01/2022 Rev Date: 01/05/2021	10
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Current Manufacturing facilities surveyed by: <u>Nouals François, CNES</u> on <u>15/09/2021</u> (Name of Executive Representative) (Date)	11
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain	
Report Reference: <u>CRIM du 15/09/21</u>	



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

Date: 17/01/2022

JP. BUSSENOT

(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: 2022.01.28 11:29:55 +01'00'

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 3401 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

See page 4/6 document D210159C
Environnemental Subgroup

Traceability	N°	Connector Description	C&K Part Number	Date Code	Contact Description / C&K Part Number	Date Code	Termination Type	Wiring	Crimp Tool	Locator	Selector Position
Appendix 3	1.1	MDMA9P-FO 340107701B	C115373-2100C	2105B	9 Contacts Pin 340107803B C331-8754-000H	2105A	Removable Crimp Contacts (9)AWG 24	Applicable	M22520/2-01	CK-MDMA-P	2
		MDM 95FR116 340102901B	C115366-8451C	2108A	9 Contacts Skt Tube	/	Straight Pigtail Terminations	Not applicable	/	/	/
Appendix 4	1.2	MDM 15FR114 340102901B	C115366-8358C	2108A	15 Contacts Twist Pin	/	Harness Type AWG 28 cable 390101301B	Not applicable	/	/	/
		MDMA15S-FO 340107701B	C115373-2103C	2105A	15 Contacts Skt 340107802B C252-8838-000H	2107B	Removable Crimp Contacts (15) AWG 28	Applicable	M22520/2-01	CK-MDMA-S	2
Appendix 5	1.3	MDMA21P-FO 340107701B	C115373-2104C	2107A	21 Contacts Pin 340107803B C331-8754-000H	2105A	Removable Crimp Contacts (21)AWG 26	Applicable	M22520/2-01	CK-MDMA-P	2
		MDM 21PS 340104103B	C115366-8844C	2107A	21 Contacts Savers	/	Solid Uninsulated AWG 25	Not applicable	/	/	/
		MDM 21SFR164 340102901B	C115366-9129C	2107A	21 Contacts Skt Tube	/	Solder Bucket contacts	Applicable	Solder Iron with wires AWG26		
Appendix 6	1.4	MTB1 8PFR116C 340103101B	C115366-1200C	2107A	4 Contacts Twist Pin + 2 cavities for guide posts and 2 cavities for epoxy-filled	/	90° Bent PCB Terminations	Not applicable	/	/	/
		MTB1 8SFR112 340103101B	C115366-8589C	2108A	4 Contacts Twist Pin + 2 cavities for guide posts and 2 cavities for epoxy-filled	/	Harness Type AWG 26 cable 390101302B	Not applicable	/	/	/
Appendix 7	1.5	MTB1 12PFR114 340103102B	C115366-8956C	2108A	7 Contacts Twist Pin + 2 cavities for guide posts and 2 epoxy-filled cavities at either end plus 1 cavity for latching	/	Harness Type AWG 28 cable 390101301B	Not applicable	/	/	/
		MTB1 12SFR164 340103102B	C115366-1170C	2107A	7 Contacts Skt Tube + 2 cavities for guide posts and 2 epoxy-filled cavities at either end plus 1 cavity for latching	/	Solder Bucket contacts	Applicable	Solder Iron with wires AWG28		

Endurance subgroup

Traceability	N°	Connector Description	C&K Part Number	Date Code	N° of Contacts / Contact Type	Date Code	Termination Type	Wiring	Crimp Tool	Locator	Selector Position
Appendix 8	2.1	MDMA25P-FO 340107701B	C115373-2106C	2105A	25 Contacts Pin 340107803B C331-8754-000H	2105A	Removable Crimp Contacts (25) AWG 24	Applicable	M22520/2-01	CK-MDMA-P	2
		MDM 25SFR116 340102901B	C115366-8453C	2107A	25 Contacts Skt Tube	/	Straight Pigtail Terminations	Not applicable	/	/	/
Appendix 9	2.2	MDM 37PFR112A 340102902B	C115366-7010C	2108A	37 Contacts Twist Pin	/	Harness Type AWG 26 cable 390100256B	Not applicable	/	/	/
		MDMA37S-FO 340107702B	C115373-2161C	2107A	37 Contacts Skt 340107804B C252-8844-000H	2107B	Removable Crimp Contacts (37)AWG 26	Applicable	M22520/2-01	CK-MDMA-S	2
Appendix 10	2.3	MTB1 8PFR116C 340103101B	C115366-1200C	2107A	4 Contacts Twist Pin + 2 cavities for guide posts and 2 cavities for epoxy-filled	/	90° Bent PCB Terminations	Not applicable	/	/	/
		MTB1 8SFR112 340103101B	C115366-8589C	2108A	4 Contacts Twist Pin + 2 cavities for guide posts and 2 cavities for epoxy-filled	/	Harness Type AWG 26 cable 390101302B	Not applicable	/	/	/
Appendix 11	2.4	MTB1 12PFR114 340103102B	C115366-8956C	2108A	7 Contacts Twist Pin + 2 cavities for guide posts and 2 epoxy-filled cavities at either end plus 1 cavity for latching	/	Harness Type AWG 28 cable 390101301B	Not applicable	/	/	/
		MTB1 12SFR164 340103102B	C115366-1170C	2107A	7 Contacts Skt Tube + 2 cavities for guide posts and 2 epoxy-filled cavities at either end plus 1 cavity for latching	/	Solder Bucket contacts	Applicable	Solder Iron with wires AWG28		

Level	N°	Contact Type	C&K Part Number	Batch N°	Date Code	Tracability
2	1 to 10	CTPIN-MDMA-AWG24 340107803B	C331-8754-000H	256	2105A	Appendix 2
	1 to 10	CTPINMCR2626AS EQ SAVER 3401	C031-9092-000S3	273	/	Appendix 3
	1 to 10	CTPINMCR2626AS-TWIST	C031-9092-000	21-0214	/	Appendix 4

Detail Specification reference: 3401/077

PLANT NAME AND ADDRESS : C & K components SAS. B.P. 359 39105 DOLE CEDEX FRANCE	Generic specification number : - Generic specification ESCC 3401 - Issue 5 - March 2018			Test report number : D210159C	
	Detail specification number : - Detail specification ESCC 3401/029 - Issue 1 - October 2020 - Detail specification ESCC 3401/031 - Issue 8 - November 2017 - Detail specification ESCC 3401/041 - Issue 8 - December 2019 - Detail specification ESCC 3401/077 - Issue 8 - January 2019 - Detail specification ESCC 3401/078 - Issue 7 - April 2016 - Applicable documents : ECSS-Q-ST-70-26C - 15 March 2017 - Applicable documents : ECSS-Q-ST-70-08C - 6 March 2009			Test report date : March 10th 2021	
				Product : Connectors : MDM / MDMA / MTB	
Test or Group	ESCC 3401	N° Tested	N° Passed	N° Failed	Remarks
LEVEL 1					
Wiring	§ 9.10	11	11	0	Appendix 1 pages 1 to 6
- low level contact resistance	§ 9.1.1.3				Not Applicable Electrical measurements: chart IV only
Climatic sequence : dry heat	§ 9.13.2				Appendix 1 page 7
- insulation resistance	§ 9.1.1.1				Appendix 1 page 8
Climatic sequence : damp heat	§ 9.13.3				Appendix 1 page 9
Climatic sequence : cold test	§ 9.13.4				Appendix 1 page 10
Climatic sequence : low air pressure	§ 9.13.5				Appendix 1 page 11
- voltage proof	§ 9.1.1.2				Appendix 1 page 12
Climatic sequence : damp heat	§ 9.13.6				Appendix 1 page 13
- insulation resistance	§ 9.1.1.1				Appendix 1 page 14
- voltage proof	§ 9.1.1.2				Appendix 1 page 15
- visual examination	§ 9.13.7				Appendix 1 page 16
Permanence of marking	§ 9.19				Appendix 1 page 17
Corrosion	§ 9.22				Appendix 1 pages 18 & 19
- visual examination	§ 9.22				Appendix 1 page 20
Seal test	§ 9.9				Appendix 1 page 21
Plating thickness	§ 9.14				Appendix 1 page 22
LEVEL 2					
Wiring	§ 9.10	8	8	0	Appendix 2 pages 1 to 5
- low level contact resistance	§ 9.1.1.3				Not Applicable Electrical measurements: chart IV only
Rapid change of temperature	§ 9.16				Appendix 2 page 6
- visual examination	§ 9.16				Appendix 2 page 9
- insulation resistance	§ 9.1.1.1				Appendix 2 page 7
- voltage proof	§ 9.1.1.2				Appendix 2 page 8
Contact retention	§ 9.17				Appendix 2 pages 10 to 13
⇒non-removable contacts	§ 9.17				
Maintenance aging	§ 9.27				Appendix 2 pages 14 & 15
⇒removable contacts	§ 9.27				
- visual examination	§ 9.27				Appendix 2 page 16
- contact retention	§ 9.17				Appendix 2 pages 17 & 18
- contact insertion and withdrawal forces	§ 9.27				Appendix 2 pages 19 & 20
Endurance	§ 9.18				Appendix 2 page 21
Initial measurements :					
- low level contact resistance	§ 9.1.1.3				Appendix 2 pages 24 to 27
- mated shell conductivity	§ 9.1.1.4				Appendix 2 page 30
- mating / unmating forces	§ 9.20				Appendix 2 page 22
Final measurements :					
- visual examination	§ 9.18				Appendix 2 page 23
- mating / unmating forces	§ 9.20				Appendix 2 page 22
- low level contact resistance drift	§ 9.1.1.3				Appendix 2 pages 24 to 27
- mated shell conductivity	§ 9.1.1.4				Appendix 2 page 30
- insulation resistance	§ 9.1.1.1	Appendix 2 page 28			
- voltage proof	§ 9.1.1.2	Appendix 2 page 29			
Seal test	§ 9.9	Appendix 2 page 31			
Joint strength	§ 9.15	Appendix 2 pages 32 & 33			

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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.