APPLICATION FOR ESCC QUALIFICATION APPROVAL

Page 1

Component Title: CONNECTORS, ELECTRICAL, RECTANGULAR, MICROMINIATURE BASED ON TYPE MDM and MDSA D-CLICK

Appl. No. 370

Executive Member: CNES Date: 26/11/2020

1 Components (including series and families) submitted for Qualification Approval

ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3401/029	01	Layout : 09-15-21-25-31-37-51 contacts Non removable crimp contacts Termination type : FR112 to FR116, FR112A to FR115A, FR112B to FR115B, FR123, FR123A, FR123B, FR139,75SBB, 75SBT, 75RBB, 75RBT, CBRB, CBRT	MDSA	See box 16	
3401/032	07, 08, 21 to 38	accessories			
3401/091	01 to 09	Layout : 09-15-21-25-31-37 contacts Non removable crimp contacts	MDDCSA		

2 Component Manufacturer

Axon cable S.A

3 Location of Manufacturing Plant

Route de châlons, 51210 Montmirail, France

4 ESCC Specification used for Qualification

Generic: 3401

Issue 5

Detail/s:	3401/029	3401/032	3401/091
Issue	17	12	1

5 Qualification Report Reference and date:

17021-QTR-µD_Standard-1, 17021-QTR-µD D-Clicks-1, 17021-QTR µD DClick DC safe-01

Date: 23/12/2019

6 **PID** used for manufacturing Qualification Lot

Ref No:	CNES-PID generic -02	CNES-PID-17
Issue:	02	1
Date:	21/01/2020	18/03/2020

7 **PID** changes since start of qualification

None ☒

Minor* ☐

Major* ☐

(* Details not published, provided in confidential annex 2.)

8 Current **PID** Verified by François Nouals, CNES

Name of Executive Representative

Ref No:	CNES-PID-generic
Issue 1	1
Date	18/03/20

9 Current Manufacturing facilities surveyed by:

Jean-baptiste Sauveplane (CNES), Denis Lacombe (ESA), François Nouals (CNES) — 12/06/2019

(Name of Executive Responsible) (Date)

AXON-AUD-2019

Report Reference

Satisfactory: Yes ☒ No ☐ Explain Some actions were nedded on Axon's side, all actions are now closed

10 Quality and Reliability Data

Evaluation testing performed Yes ☒ No ☐

Report Ref. No.: Date:

Equivalent Data:

Certification: EPPL2 since 2006

Failure analysis, DPA, NCCS available Yes ☐ No ☒

(supply data)

Ref Nos. and purpose:

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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 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC qualification status to be given to the component(s) listed herein.

Date: 26/11/2020

JP. BUSSENOT

(Signature of the Executive Coordinator)

Continuation of Boxes above: (Only non-confidential comments) 12

13

Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

14

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

15

Executive Manager Disposition

Application Approval: Yes ☒ No ☐

Action / Remarks:

Digitally signed by Britta Schade
Date: 2021.02.03 10:39:35 +01'00'

Date:

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

ANNEX 1: LIST OF TESTS DONE TO SUPPORT QUALIFICATION

16

Tests conducted in compliance with:

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

Tests vehicle identification/description:

Cross table 3401/029 / Axon' part number

Axon' Part Number	ESA codification	Sample description / Comments	Number of samples					Date code
			Group 1	Group 2	Group 3	Group 4	Group 5	(YY/WW)
P569829A^	Connector : 340102901B9PXXXXX Wire : According to 390100257B Hardware : 340103222B	µD male connector, nickel plated, 9 pin contacts, with screws The XXXXX in the ESA connector codification is because the wire variant isn't yet in 3401/029. It will be added later in a DCR	1	1	1	1	0	19/04
P569837A^	Connector : 340102901B25PFR123A Hardware : 340103222B	µD male connector, nickel plated, 25 points, pin contacts,with screws	1	1	1	1	0	19/21
P569838A^	Connector : 340102901B25SFR123A Hardware : 340103225B	µD female connector, nickel plated, 25 points, socket contacts, panel mount jackposts	1	1	1	1	0	19/10
P569832A^	Connector : 340102901B15SFR123 Hardware : 340103222B	µD female connector, nickel plated, 15 socket contacts, with screws	2	2	0	0	0	19/08
P569833A^	Connector : 340102901B31PXXXXX Wire : According to 390101303B Hardware : 340103222B	µD male connector, nickel plated, 31 pin contacts, with screws The XXXXX in the ESA connector codification is because the wire variant isn't yet in 3401/029. It will be added later in a DCR	2	2	2	2	0	19/13
P569836A^	Connector : 340102901B51SXXXXX Wire : According to 390101303B Hardware : 340103222B	µD female connector, nickel plated, 51 socket contacts, with screws The XXXXX in the ESA connector codification is because the wire variant isn't yet in 3401/029. It will be added later in a DCR	1	1	0	0	0	19/08
P569830A^	Connector : 340102901B9SFR139 Hardware : 340103227B	µD female connector, nickel plated, 9 socket contacts, jackposts, PCB mount, straight (BS) version	1	1	1	1	0	19/09
P569831A^	Connector : 340102901B15PCBRT Hardware : 340103233B	µD male connector, nickel plated, 15 pin contacts, jackposts, PCB mount, condensed right angle (CBR) version	1	1	0	0	0	19/16
P569831A^V1	Connector : 340102901B15PCBRT Hardware : 340103233B	µD male connector, nickel plated, 15 pin contacts, jackposts, PCB mount, condensed right angle (CBR) version, T insert	1	1	0	0	0	19/13
P569834A^	Connector : 340102901B31SCBRT Hardware : 340103233B	µD female connector, nickel plated, 31 socket contacts,jackposts, PCB mount, condensed right angle (CBR 0,075") version	1	1	1	1	0	19/16
P569834A^V1	Connector : 340102901B31SCBRT Hardware : 340103233B	µD female connector, nickel plated, 31 socket contacts,jackposts, PCB mount, condensed right angle (CBR 0,075") version T Insert	1	1	1	1	0	19/10
P569835A^	Connector : 340102901B51P75SBT Hardware : 340103227B	µD male connector, nickel plated, 51 pin contacts,jackposts, PCB mount, straight (BS 0,075") version	1	1	0	0	0	19/09
P569841A^	Connector : 340102901B15PFR112A	µD male connector, nickel plated, 15 pin contacts, without hardware	0	0	0	0	2	19/08
P569842A^	Connector : 340102901B15PXXXXXX Wire : According to 390100257B	µD male connector, nickel plated, 15 pin contacts, without hardware The XXXXX in the ESA connector codification is because the wire variant isn't yet in 3401/029. It will be added later in a DCR	0	0	0	0	2	19/08

Cross table 3401/091 / Axon part number							
Axon' Part Number	ESA Codification	Sample Description	Number of samples				Date code (YY/WW)
			Group 1	Group 2	Group 3	Group 4	
P565379A	340109101B37PXXXXXL300B	Top drawing for pigtail type MDDCA237Pxx300DC The ESA codification contains XXXXX because the wire used isn't ESA qualified, this sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/17
P565380A	340109101B09SXXXXXL300B	Top drawing for pigtail type MDDCA209Sxx300DC The ESA codification contains XXXXX because the wire used isn't ESA qualified, this sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/13
P565381A	340109101B15PXXXXXL300B	Top drawing for pigtail type MDDCA215Pxx300DC+backshell The ESA codification contains XXXXX because the wire used isn't ESA qualified, this sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/17
P565382B	340109101B21PXXXXXL300B	Top drawing for pigtail type MDDCA221Pxx300DC The ESA codification contains XXXXX because more than one type of wires are used and they aren't ESA qualified, this sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/17
P565383B	340109102B21SXXXXXL300P	Top drawing for pigtail type MDDCA221Sxx300G The ESA codification contains XXXXX because more than one type of wires are used and they aren't ESA qualified, this sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/21
P565024C	Similar to 340109103B15SBW4	Top drawing for µD, female connector, nickel plated, 15 socket contacts, guide pin attachment system, PCB mount, condensed right angle (CBR) version (MDA2 series) The shell of this connector is a special one, this why the ESA codification is a similar one. This sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/12
P565025A	Similar to 340109103B37SBW4	Top drawing for µD, female connector, nickel plated, 37 socket contacts, guide pin attachment system, PCB mount, condensed right angle (CBR) version with remote tray This sample is similar to the variant 03 of the 3401/091 but between the tray of the connector is remoted of shell by a short length of wires. This sample comes from an earlier qualification for the ONEWEB project. The use of this sample to qualify D-Click was agreed with the CNES	1	1	1	1	17/15
MDDCA209PCBRHG3	340109103B9PCW	µD, male connector, 9 pin contacts, PCB mount, guide pin attachement system, condensed right angle (CBR) version (MDDCA series)	1	1	1	1	17/14
P569843A^	340109101B25P00256L300S	µD male connector, nickel plated, 25 pin contacts, D-clicks clips + system DC safe	6	0	0	0	19/26
P569844A^	340109102B25S00256L300P3	µD female connector, nickel plated, 25 socket contacts, D-clicks panel mount guide-pins (1,6mm)	6	0	0	0	19/26

Detail Specification reference: 3401/029, 3401/032, 3401/091

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Subgroup I	Wiring	☒	ESCC 3401 Para. 9.10	19/08	34	0	
	Vibration	☒	ESCC 3401 Para. 9.11	19/08	34	0	
	Shock or Bump	☒	IEC Publication No. 512-4	19/08	34	0	
	Climatic sequence	☒	ESCC 3401 Para. 9.13	19/08	34	0	
	Seal	☐	ESCC 3401 Para. 9.9				Not applicable
	Plating thickness	☒	ESCC 3401 Para. 5.2.3	19/08	34	0	
	Joint strength	☐	ESCC 3401 Para. 9.15				Not applicable
Subgroup II	Wiring	☒	ESCC 3401 Para. 9.10	19/08	22	0	
	Rapid change of temperature	☒	ESCC 3401 Para. 9.16	19/08	22	0	
	Contact retention	☒	ESCC 3401 Para. 9.17	19/08	22	0	
	Endurance	☒	ESCC 3401 Para. 9.18	19/08	22	0	
	Permanence of marking	☒	ESCC 24800	19/08	22	0	
	Seal	☐	ESCC 3401 Para. 9.9				Not applicable
	Joint strength	☐	ESCC 3401 Para. 9.15				Not applicable
Subgroup III	Wiring	☒	ESCC 3401 Para. 9.10	19/08	16		
	Mating / Unmating forces	☒	ESCC 3401 Para. 9.20	19/08	16		
	High temperature storage	☒	ESCC 3401 Para. 9.21	19/08	16		
	Corrosion	☒	IEC Publication No. 68-2-11	19/08	16		
	Insert retention	☒	ESCC 3401 Para. 9.23	19/08	16		
	Jackscrew retention	☐	ESCC 3401 Para. 9.24				Not applicable
	Seal	☐	ESCC 3401 Para. 9.9				Not applicable
Subgroup IV	Wiring	☒	ESCC 3401 Para. 9.10	19/08	16		
	High temperature measurement	☒	ESCC 3401 Para. 9.25	19/08	16		
	Overload test	☒	ESCC 3401 Para. 9.26	19/08	16		
	Maintenance aging	☐	ESCC 3401 Para. 9.27				Not applicable
	Joint strength	☐	ESCC 3401 Para. 9.15				Not applicable

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Subgroup V	Engagement / Separation forces	☒	ESCC 3401 Para. 9.28	19/08	40		
	Oversize pin Excursion	☐	ESCC 3401 Para. 9.29				Not applicable
	Probe damage	☐	IEC Publication No. 512-8				Not applicable
	Plating thickness	☒	ESCC 3401 Para. 5.2.3	19/08	40		
Subgroup VI	Solderability	☐	IEC Publication No. 512-6				No soldercup in the qualification
Aditional Tests		☐					
		☐					
		☐					

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

ENTRIES

Form Heading	shall indicate:— the title of the component as given in its detail specification or the name of the series or family; — the entering date; — the serial number and the suffix of the form.
Box 1	shall provide details given in table; in particular there shall be listed - the variants or range of variants; the range of components by using the ESCC code for values tolerances, etc.; the designation given in detail specification as 'based on'; ---under Test Vehicle enter either a cross or the specific characteristic capable to identify the component tested; — under component similar enter a cross.
Box 2 and 3	Manufacturer's name and location of plant where the components were manufactured and tested.
Box 4	Generic and detail specifications used during qualification program.
Box 5	Reference to test report(s) submitted in support of application.
Box 6	Enter details to identify the PID that was applicable at the time the qualification lot was manufactured.
Box 7	If the PID was evolved after qualification lot manufacture, adequate details of such evolution shall be provided together with reasons for changes. Major changes shall be clearly marked.
Box 8	The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence.
Box 9	This box can be completed only after a physical visit to the plant to confirm that the practices, procedures, materials, 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 10	Details entered shall be sufficient to evidence that an evaluation program according to ESCC Basic Specification No. 22600 has been performed and that the results thereof are summarized in the survey and test reports. If the evaluation program has not been carried out according to established ESCC documents, the applicant Executive Representative shall provide alternative data and declare its assessed degree of satisfactory compliance with the ESCC basic requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis and Non conformance (NCCS) issued during the Evaluation and/or Qualification Phase.
Box 11	Enter the name of the Executive Coordinator and the signature.
Box 12	To be used when there is a need to expand any of the boxes from 1 through 10. Identify box affected and reference the Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several Boxes have to be expanded.
Box 13	Fill table as requested.
Box 14	Fill in any additional tasks required to achieve full compliance.
Box 15	All Executive recommendations on the application itself, special conditions or restrictions, modifications of the QPL or ESCC QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the ESA Representative.
Box 16	Fill in Table as requested.
Box 17	Confidential details of PID changes shall be provided.
Box 18	State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 18 each nonconformance shall be sequentially numbered. If relevant state 'None'
Box 19	Any additional action deemed necessary by the Executive Representative 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 nonconformance.
Box 20	Additional Comments