NICOMATIC R&D LABORATORY	QUALIFICATION TEST REPORT	QTR18021b
EMM SERIE ACCORDING TO MIL-DTL-83513G STANDARD		Page : 1 /11
		Qualification status : PASSED

DURABILITY (500 CYLCES)

According to MIL-DTL-83513G §3.5.14 & 4.5.16

ISSUE	MODIFICATION	VISA	DATE
a	Original Issue	AJ	04/10/18
b	60 contacts connector added	AJ	30/06/20
c			

	Name	Duty	Date	Visa
Written by	A.JAGHMIM	Test & Measurement Manager	30/06/20	AJ
Test Operator(s)	A.JAGHMIM	Test & Measurement Manager	30/06/20	AJ
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Approved by	C.CHIFFARD	Product Manager	30/06/20	CC
Requested by	J.RIGAT	Project Manager	30/06/20	JR

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1 Conclusion

The EMM connectors are **qualified** regarding TEMPERATURE CYCLING (-65°C to +260°C) according to MIL-DTL-83513G standard.

2 Technical Features Proposal

EMM connectors:
The connectors are not showing any evidence of cracking or breaking having undergoes 500 cycles of Mating / Unmating

3 Connate Reports

4 Information about the tests

4.1 Object

The object of this test is to check the impact of 500 mating / un-mating cycles on EMM connectors.

4.2 Reference documents/Qualification Plan

- MDC.P16020.a
- MIL-DTL-83513G
- EIA-364-32D

4.3 Tested Products

Designation	Article Reference*	Drawing issue*	Batch / DI*	Quantity
C18892-30 (Female, Straight on PCB, E60 guiding)	C18892-30	na	DI7576	20
C18900-30 (Female Straight on PCB, E50)	C18900-30	na	DI7577	20
C18891-30 (Male, Straight on PCB, E10)	C18891-30	na	DI7579	20
C18904-30 (Male, 90° on PCB, E11 guiding)	C18904-30	na	DI7578	20
C18893-30 (Female, 90° on PCB, E61 guiding)	C18893-30	na	DI7580	20
C18901-30 (Female, 90° on PCB, E51 jackscrew)	C18901-30	na	DI7581	20
C18981-30-0250 (Male, on cable AWG30, E01 jackscrew)	C18981-30-0250	na	DI7592	20
C18980-30-0250 (Male, on cable AWG28, E01 jackscrew)	C18980-30-025	na	DI7591	20
C18902-30-0250 (Male, on cable AWG26, E01 jackscrew)	C18902-30-0250	na	DI7588	20
C18979-30-0250 (Male, on cable AWG24, E01 jackscrew)	C18979-30-0250	na	DI7589	20
C18902-30-0250-BP (Male, on cable AWG26, E01 jackscrew BP)	C18902-30-0250-BP	na	DI7586	20
18224-AWG24	18224-AWG24	na	DI7594	25
18224-AWG26	18224-AWG26	na	DI7596	25
18240-AWG28	18240-AWG28	na	DI7597	25

18240-AWG30	18240-AWG30	na	DI7598	25
Connector EMM 220 female straight on PCB, 60 LF contacts, E60	E222Y60E60	na	LCT1901318	10
Connector EMM 220 male Y straight on PCB, 60 LF contacts, E10	E221Y60E10	na	LCT1901319	10
Connector EMM 220 female 90° on PCB, 60 LF contacts, E61	E222V60E61	na	LCT1901320	10
Connector EMM 220 female straight on PCB, 60 LF contacts, E50	E222Y60E50	na	LCT1901321	10
Connector EMM 220 female 90° on PCB, 60 LF contacts, E51	E222V60E51	na	LCT1901322	10
Connector EMM 220 male 90° on PCB, 60 LF contacts, E11	E221V60E11	na	LCT1901323	10
Harness EMM220 male to crimp AWG24, 60 LF contacts, E01 fixing hardware, 250 mm	HE221J6P60E01ZF0250	na	LCT1904265	3
Harness EMM220 male to crimp AWG26, 60 LF contacts, E01 fixing hardware, 250 mm	HE221I2P60E01ZF0250	na	LCT1904264	3
Harness EMM220 male to crimp AWG28, 60 LF contacts, E01 fixing hardware, 250 mm	HE221H6P60E01ZF0250	na	LCT1904266	3
Harness EMM220 male to crimp AWG30, 60 LF contacts, E01 fixing hardware, 250 mm	HE221D5P60E01ZF0250	na	LCT1904268	3

4.4 Persons present during the tests

Name	Duty
A.JAGHMIM	Test & Measurement Manager

4.5 Date and place of the tests

NICOMATIC France Lab. from 25/06/18 to 29/06/18 (30 pts connectors)
NICOMATIC France Lab. from 12/09/19 to 20/09/19 (60 pts connectors)

4.6 Environmental conditions

Ambient temperature: 24°C
Pressure: 953 mbar
Humidity: 36%

4.7 Incidents during the test

None

4.8 Test Equipments

Designation	Calibration Data	
	Last calibration date	
	Next calibration date	

4.9 Test Tooling

Designation	Tooling reference
Durability test bench	

5 Requirements according to MIL-DTL-83513G standard

Counterpart connectors shall show no mechanical or electrical defects detrimental to the operation of the connector after 500 cycles of mating and unmating.

Electrical requirement after 500 cycles: The contact resistance shall be as shown in table VI.

TABLE VI. Contact resistance (milliohms).

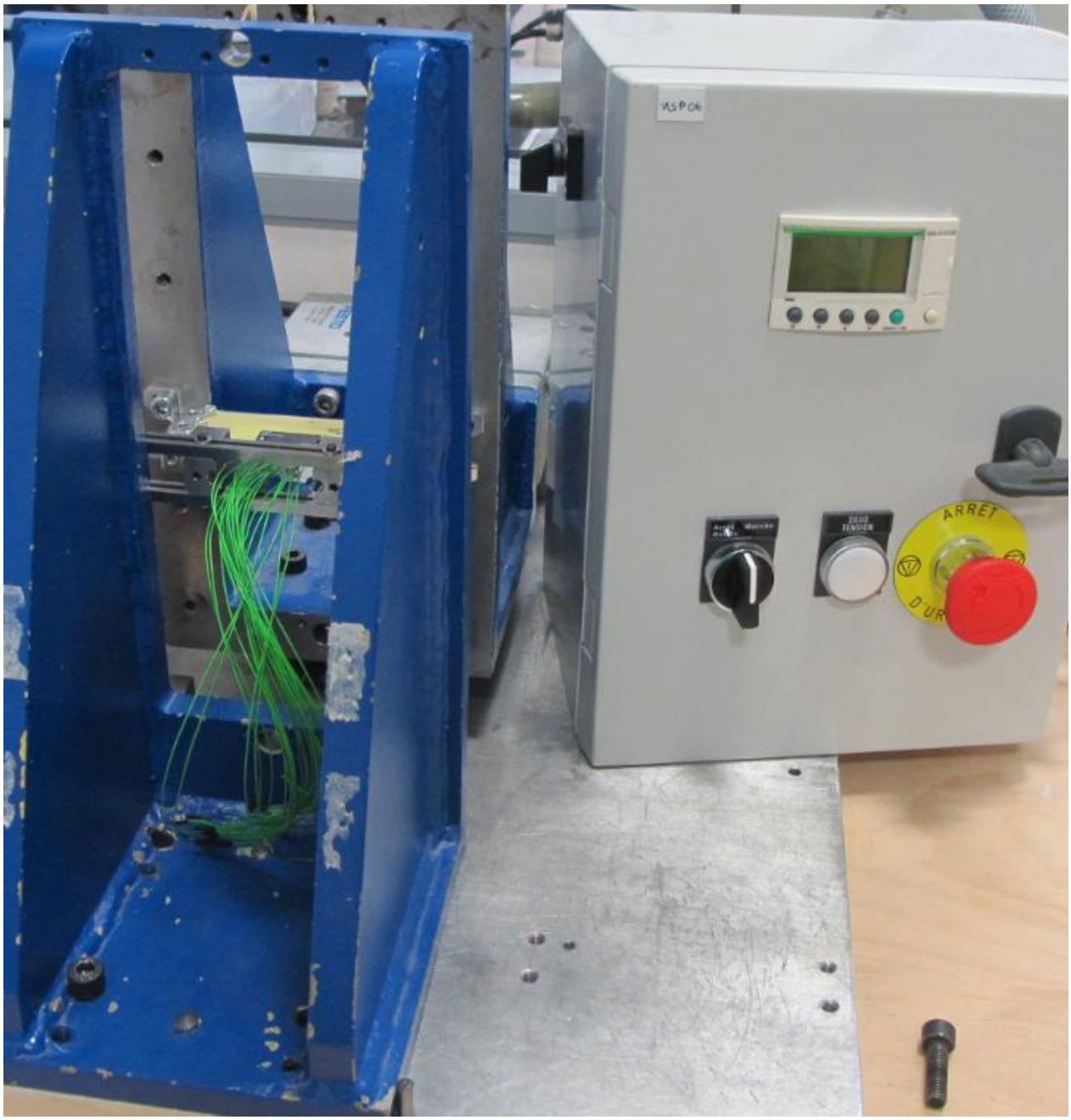
Contact size	Wire size AWG	Milliohms maximum	Wire type
24	26	28	SAE AS22759/11 (stranded)
24	26	32	SAE AS22759/33 (stranded)
24	25	25	A-A-59551 (solid)
24	24	25	A-A-59551 (solid)

Mechanical requirement after 500 cycles: The maximum mating and un-mating force shall not exceed a value equal to 10 ounces times the number of contacts.
[10 ounces = 283,5 gr = 283,5/1000*9,81 = 2,781 N]

6 Test Procedure

Counterpart connectors shall be mated and unmated 500 times at a rate of 200 ± 100 cycles per hour in a manner to simulate actual service

7 Test setup



8 Measurements results

No visual damage after tests.

Electrical requirement after 500 cycles: see QTR18022 and QTR18023.

Mechanical requirement after 500 cycles: see QTR18024 and QTR18025.

9 Visual Inspection

Required by the applicable standard ?			
YES		NO	☐

**********END OF REPORT**********

10 APPENDIX

Internal use only ?			
YES	☐	NO	☒

10.1 The Laboratory Advice

10.2 Pictures

**********END OF APPENDIX**********