NICOMATIC

NICOMATIC Test report summary

DMM Family

HUMIDITY Test

CREATIVE
INTERCONNECT
SOLUTIONS

I. Introduction

A. Purpose

The DMM connectors' family are manufactured to meet or exceed the requirements of **MIL-DTL-83513G standard**.

B. Scope

The object of this test is to assess the ability of electrical components to withstand severities of humidity test.

The following data has been taken from NICOMATIC Qualification test reports **QTR1555** and **QTR1552**.

C. Conclusion

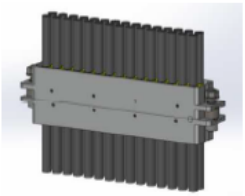
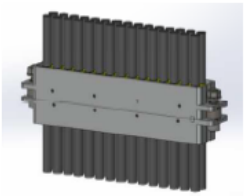
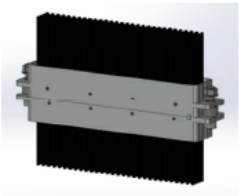
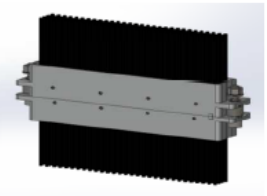
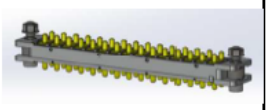
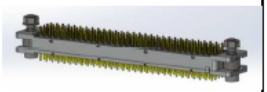
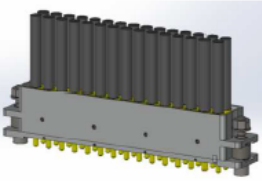
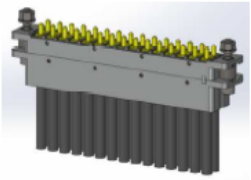
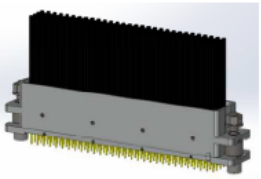
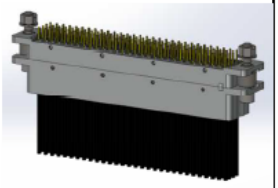
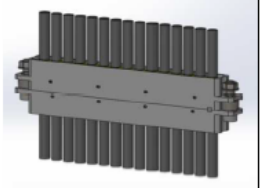
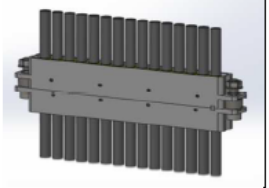
The DMM connectors' family are **qualified** regarding **HUMIDITY** according to **MIL-DTL-83513G**.

Humidity test according to MIL-DTL-83513G _ 10 days (10 cycles of 24 h).

	Initial	After Humidity
LF Contacts		
Visual Inspection	No evidence of cracking or breaking after the test	
Withstanding Voltage @ Sea level	600 V RMS	360 V RMS
Withstanding Voltage @ 70 000 ft	150 V RMS	
Insulation Resistance	> 5 Gohm	> 1 Mohm
HP Contacts		
Visual Inspection	No evidence of cracking or breaking after the test	
Withstanding Voltage @ Sea level	800 V RMS	360 V RMS
Withstanding Voltage @ 70 000 ft	150 V RMS	
Insulation Resistance	> 5 Gohm	> 1 Mohm

II. Test Method and Requirements

A. List of Test Samples

Pair 01 (type 1) D421EL000D51L-0030-3320 D422EL000D53-0030-4320  Connectors D420 wired, 30 contacts HP	**Pair 02 (type 1)** D421EL000D51L-0030-3320 + BP D422EL000D53-0030-4320 + BP  Connectors D420 wired, 30 contacts HP, backpotting	**Pair 03 (type 1)** D421SL120D51L D422SL120D53  Connectors D420 wired, 120 contacts LF	**Pair 04 (type 1)** D421SL120D51L + BP D422SL120D53 + BP  Connectors D420 wired, 120 contacts LF, backpotting
Pair 05 (type 2) D421D000D51L-0030-3300DMM D422D000D53-0030-4300DMM  Connectors D420 on CI, 30 contacts HP	**Pair 06 (type 2)** D421Y120D51L D422Y120D53  Connectors D420 on CI, 120 contacts LF	**Pair 07 (type 1)** D421EL000D51L-0030-3320 D422D000D53-0030-4300DMM  Connectors D420 CI/câble, 30 contacts HP	**Pair 08 (type 1)** D421D000D51L-0030-3300DMM D422EL000D53-0030-4320  Connectors D420 CI/câble, 30 contacts HP
Pair 09 (type 1) D421SL120D51L D422Y120D53  Connectors D420 CI/câble, 120 contacts LF	**Pair 10 (type 1)** D421Y120D51L D422SL120D53  Connectors D420 CI/câble, 120 contacts LF	**Pair 11 (type 1)** D221EL00D51L-0015-3320 D222EL00D53-0015-4320  Connectors D220 wired, 15 contacts HP	**Pair 12 (type 1)** D221EL00D51L-0015-3320 + BP D222EL00D53-0015-4320 + BP  Connectors D220 wired, 15 contacts HP, backpotting

B. Requirements

According to **MIL-DTL-83513GG** standard and **EIA-364-31B** test procedure:

Connectors shall meet the applicable dielectric withstanding voltage and insulation resistance requirements.

The connectors shall be fully wired and mated. Then the connectors shall be subjected to testing in accordance with test procedure EIA-364-31, method IV (except steps 7a and 7b shall not be required). The following exceptions and details shall apply:

a. After the 24-hour conditioning period, the insulation resistance shall be measured.

b. Upon completion of step 6 of the final cycle, connectors shall be removed from the chamber, unmated, and surface moisture removed from the inserts. Dielectric withstanding voltage test (sea level) and insulation resistance test shall be performed for all classes of connectors within 1 to 2 hours.

C. Test Method and Results

a. Withstanding Voltage Test

The Voltage is applied between the body of the connector and the nearest wire and between a central wire and a group of wire around this.

		Atmospheric pressure		45mbar pressure	
Standard reference:		EIA-364-20C		EIA-364-20C	
Voltage:	30 contacts	800 VDC		150 VDC	
	120 contacts	600 VDC		150 VDC	
Application points:	30 contacts	Between ground and nearest wire	Between a central wire and 5 wires around	Between ground and nearest wire	Between a central wire and 5 wires around
	120 contacts	Between ground and nearest wire	Between a central wire and 8 wires around	Between ground and nearest wire	Between a central wire and 8 wires around
Specimen configuration:		specimen not operating		specimen not operating	
Ambient conditions:		Laboratory conditions		Laboratory conditions	

b. Insulation Resistance Measurement Test

The Voltage is applied between the body of the sensor and all the outputs wires of the sensitive element. The test voltage applied is 500V DC / Duration 60s.

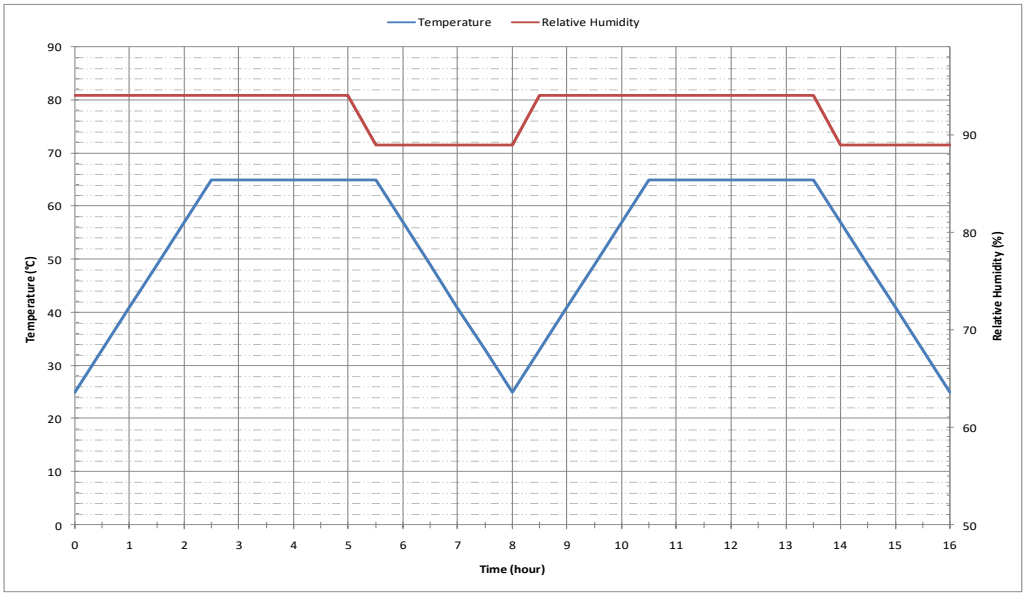
c. Humidity Test

EIA-364-31B prescriptions are respected.

A polarizing potential is applied on the couple of connectors.

- The minimum temperature is 25°C and the maximum temperature is 65°C.
- The minimum relative humidity is 89 ± 9% and the maximum relative humidity is 94 ± 4%.

The climatic cycle is defined below:



REFERENCES	RESULTS
D421EL000D51L-0030-3320 with D422EL000D53-0030-4320	Passed
D421EL000D51L-0030-3320 + BP with D421EL000D51L-0030-3320 + BP	Passed
D421SL120D51L with D422SL120D53	Passed
D421SL120D51L + BP with D422SL120D53 + BP	Passed
D421D000D51L-0030-3300DMM with D422D000D53-0030-4300DMM	Passed
D421Y120D51L with D422Y120D53	Passed
D421EL000D51L-0030-3320 with D422D000D53-0030-4300DMM	Passed
D421D000D51L-0030-3300DMM with D422EL000D53-0030-4320	Passed
D421SL120D51L with D422Y120D53	Passed
D421Y120D51L with D422SL120D53	Passed
D221EL00D51L-0015-3320 with D222EL00D53-0015-4320	Passed
D221EL00D51L-0015-3320 + BP with D222EL00D53-0015-4320 + BP	Passed

	Initial	After Humidity
LF Contacts		
Visual Inspection	No evidence of cracking or breaking after the test	
Withstanding Voltage @ Sea level	600 V RMS	360 V RMS
Withstanding Voltage @ 70 000 ft	150 V RMS	
Insulation Resistance	> 200 Gohm	> 200 Gohm
HP Contacts		
Visual Inspection	No evidence of cracking or breaking after the test	
Withstanding Voltage @ Sea level	800 V RMS	360 V RMS
Withstanding Voltage @ 70 000 ft	150 V RMS	
Insulation Resistance	> 200 Gohm	> 6.66 Gohm