NICOMATIC

NICOMATIC Test report summary

DMM Family

VIBRATION 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 determine the effects of sinusoidal vibration within the predominant vibration frequency ranges and magnitudes that may be encountered during the life of the connector.

The following data has been taken from NICOMATIC Qualification test reports **QTR1593a** and **QTR1594a**.

C. Conclusion

The DMM Connector with only contacts LF are **qualified** regarding **VIBRATION** test according to **MIL-DTL-85513G** standard.

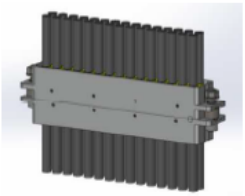
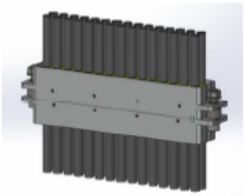
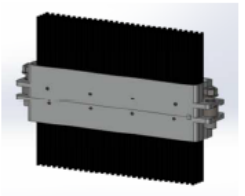
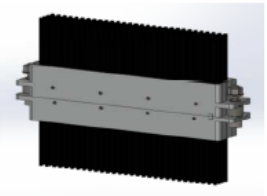
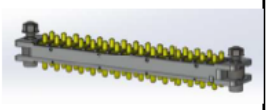
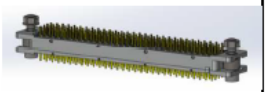
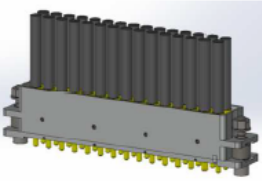
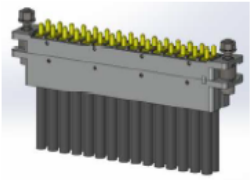
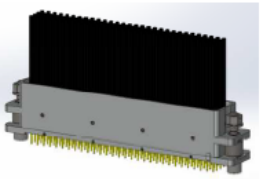
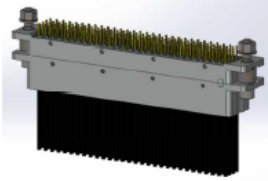
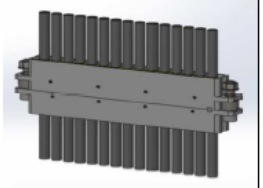
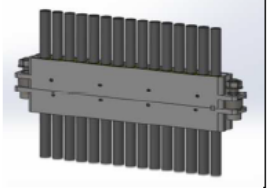
The DMM Connector containing contacts HP are **qualified** regarding **VIBRATION** test according to **NICOMATIC SPEC. SHEET. & "EIA/ECA-364-28E test procedure" condition III: 15G** / (Internal requirement for HP connector).

For HP contacts: Vibration test according to NICOMATIC SPEC. SHEET Test Condition III 147.1 m/s2 (15 g_n) peak]

For LF contacts: Vibration test according to MIL-DTL-83513G Test Condition IV 196.1 m/s2 (20 g_n) peak]

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-83513G** standard and **EIA-364-28E** test condition III and IV:

- No physical or mechanical damage to the connector body or contacts
- During vibration there shall be **no interruption in continuity greater than one microsecond** of the test circuit, which incorporates mated contacts
- After the vibration test, the mounting hardware shall show no signs of loosening, fracture or other deterioration

- Vibration conditions shall be in accordance with the following conditions:

Test condition	Frequency Range Hz	Peak level	
		g_n	m/s^2
III	High 10 Hz to 2000 Hz	15	147.1
IV	High 10 Hz to 2000 Hz	20	196.1

C. Test Method and Results

The connector assembly shall be mounted as specified herein and vibrated in accordance with test procedure EIA-364-28, condition IV.

All contacts shall be wired in series with at least 100 milliamperes of current allowed to flow.

A suitable instrument shall be employed to monitor the current flow and to indicate any discontinuity of contact or interruption of current flow.

Amplitude:

The specimens shall be subjected to a simple harmonic motion having an amplitude of either 1.52 mm (0.06 in) double amplitude (maximum total excursion) or 147.1 m/s^2 (15 gn) peak or 196.1 m/s^2 (20gn), whichever is less. The tolerance on vibration amplitude shall be ±10%.

Frequency range:

The vibration frequency shall be varied logarithmically between the approximate limits of 10 Hz to 2,000 Hz except that the procedure of this standard may be applied during the 10 Hz to 55 Hz band of the vibration frequency range.

Sweep time and duration:

The entire frequency range of 10 Hz to 2,000 Hz and return to 10 Hz shall be traversed in 20 minutes. This cycle shall be performed 12 times in each of three mutually perpendicular directions (total of 36 times), so that the motion shall be applied for a total period of approximately 12 hours. Interruptions are permitted provided the requirements for rate of change and test duration are met. Completion of cycling within any separate band is permissible before going to the next band. When the procedure of this standard is used for the 10 Hz to 55 Hz band, the duration of this portion shall be the same as the duration for this band using logarithmic cycling (approximately 1-1/3 hours in each of three mutually perpendicular directions).

DMM equipped with	VIBRATION		
	Axis		
	X	Y	Z
LF contacts	20g	20g	20g
HP contacts	15g	15g	15g