NICOMATIC

NICOMATIC Test report summary

CMM Family

VIBRATION Test

CREATIVE
INTERCONNECT
SOLUTIONS

I. Introduction

A. Purpose

The CMM connectors' family are manufactured to meet or exceed the requirements of **MIL-DTL-55302G 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 report **QTR0935a**.

C. Conclusion

The CMM connectors' family are **qualified** regarding **VIBRATION** according to **MIL-DTL-55302G**.

Vibration test according to MIL-DTL-55302F Test Condition III 147.1 m/s2 (15 g_n) peak]

II. Test Method and Requirements

A. List of Test Samples

a. CMM 200 Series

- 201Y50L – LF male contacts Straight PCB _ 13507
- 202Y50 – LF female contacts Straight PCB _ C14764

b. CMM 220 Series

- 221V50FXX – LF male contacts 90° PCB _ 13507
- 222S50MXX – LF female crimp contacts _ C12468
- 222YL26MXX – LF male contacts Straight PCB _ C14810
- 221S26FXX – LF male crimp contacts _ 12969
- 221D00FXX-0008-3400CMM – HP30 male contacts 90° PCB _ 30-3400-CMM
- 222E00MXX-0008-4320 – HP30 female straight contacts on cable _ 30-4320
- 222Y08SXX-0004-4300CMM – HP30 + LF female contacts Straight PCB _ 30-4300-CMM + C14764
- 221S08FXX-0004-3308 – HP30 + LF male contacts Straight on cable _ 30-3308 + 12969
- 221S06FXX-0003-3320 – HP30 + LF male contacts Straight on cable _ 30-3320 + 12969
- 222S06MXX-0003-4308 – HP30 + LF female contacts Straight on cable _ 30-4308 + C12468

c. CMM 320 Series

- 321C057FXX – LF male crimp contacts _ 12960
- 322C057MXX – LF female crimp contact _ C13064-P
- 321V096FXX – LF male contacts 90° PCB _ 13507
- 322Y096MXX – LF female contacts Straight PCB _ C14812
- 341D000FXX-0018-340014 – HP22 male contacts 90° PCB _ 22-3400-XX
- 342E000MXX-0018-4310 – HP22 female straight contacts on cable _ 22-4310
- 342D000MXX-0048-430014 – HP22 female contacts Straight PCB _ 22-4300-14
- 341E000FXX-0048-3310 – HP22 male straight contacts on cable _ 22-3310

B. Requirements

According to **MIL-DTL-55302G** standard and **EIA-364-28E** test condition III:

- 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 (condition III):

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

C. Test Method and Results

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/s2 (15 gn) peak, 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).

CMM equipped with	VIBRATION		
	Axis		
	X	Y	Z
LF contacts	OK	OK	OK
HP 22 contacts	OK	OK	OK
HP 30 contacts	OK	OK	OK