

NICOMATIC Test report summary

CMM Family

CONTACT ENGAGEMENT AND SEPARATION FORCES 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

Measure the engagement and separation forces of LF and HP contact using standard maximum and minimum diameter pins and rings gauges.

The following data has been taken from NICOMATIC Qualification test reports **QTR0803**.

C. Conclusion

The CMM connectors' family are **qualified** regarding **CONTACT ENGAGEMENT** and **SEPARATION FORCES** according to **MIL-DTL-55302G**.

	Contact Engagement Force Max (N)	Contact Separation Force Min (N)
LF Contacts	2	0.2
HP22 Contacts	3	0.5
HP30 Contacts	5	0.5

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-364-37B** test procedure method A:

	Contact Engagement Force		Contact Separation Force	
	Max (N)	Min (N)	Max (N)	Min (N)
LF Contacts	2			0.2
HP Contacts	0.6	5	0.5	2

C. Test Method and Results

The gauge shall be cleaned prior to use and periodically (typically every 10 cycles) to remove any foreign surface film that may affect the engagement and separation force recorded.

Each contact shall be aligned with the pins (or rings gauges).

The spring member of the contact shall be conditioned by inserting and withdrawing (one times)

The maximum size pins shall be engaged to the specified depth and the force required to mate the pins shall be measured. The pins shall then be removed.

The minimum size pins shall be engaged to the specified depth. The pins shall then be withdrawn and the force required to withdraw shall be measured.

A total of 7 contacts shall be measured per each subgroup.

	CONTACT ENGAGEMENT (Max measured - N) Pin Ø 0.488mm		CONTACT SEPARATION (Min measured - N) Pin Ø 0.452mm	
	Max (N)	Min (N)	Max (N)	Min (N)
C14764	0.53	0.40	0.49	0.24
C12468	0.66	0.32	0.51	0.26
C14810	0.62	0.39	0.49	0.34
C13064-P	0.60	0.42	0.58	0.36
C14812	0.51	0.37	0.49	0.34

	CONTACT ENGAGEMENT (Max measured - N) Pin Ø 1.868mm		CONTACT SEPARATION (Min measured - N) Pin Ø 1.852mm	
	Max (N)	Min (N)	Max (N)	Min (N)
22-4310	2.66	1.44	2.21	1.28
22-430014	1.75	0.91	1.64	0.64

	CONTACT ENGAGEMENT (Max measured - N) Ring Ø 2.628mm		CONTACT SEPARATION (Min measured - N) Ring Ø 2.602mm	
	Max (N)	Min (N)	Max (N)	Min (N)
30-3400-CMM	4.26	2.97	2.92	2.23
30-3308	2.69	1.85	1.87	1.46
30-3320	4.20	3.21	2.94	2.35