

INCH-POUND

MIL-DTL-21097/4G  
23 June 2008  
SUPERSEDING  
MIL- DTL-21097/4F  
18 August 2005

### DETAIL SPECIFICATION SHEET

### CONNECTORS, ELECTRICAL, PRINTED WIRING BOARD COMPOSITE, RECEPTACLE, CONTACT SPACING (.200) ALTERNATE DUAL ROW, TYPE CR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-21097.

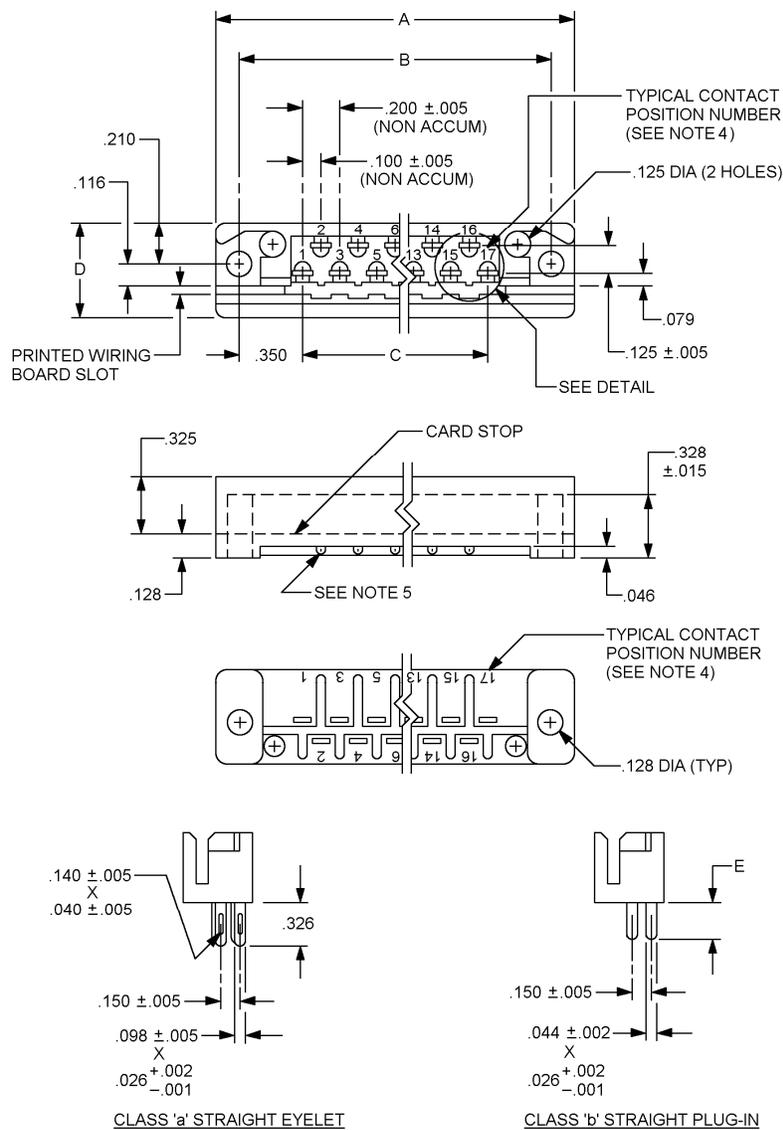
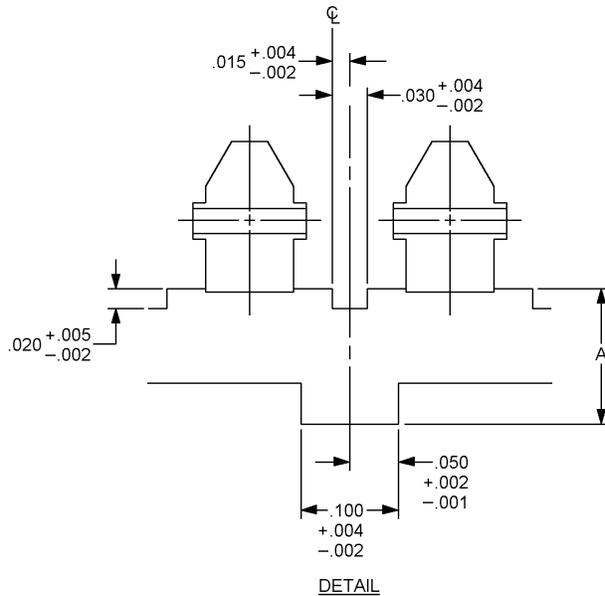


FIGURE 1. Dual row contacts, type CR.

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POLARIZING CAVITY FOR EVEN NUMBER OF CONTACT POSITIONS

Inches	mm	Inches	mm
.001	.03	.098	2.49
.002	.05	.100	2.54
.004	.10	.116	2.95
.005	.13	.125	3.18
.015	.38	.128	3.25
.020	.51	.140	3.56
.026	.66	.150	3.81
.030	.76	.200	5.08
.040	1.02	.210	5.33
.044	1.12	.325	8.26
.046	1.17	.326	8.28
.050	1.27	.328	8.33
.079	2.01	.350	8.89

Board guide	A dim
	+ .002 (.05)
	- .004 (.10)
.06 (1.52)	.119 (3.02)
.09 (2.29)	.150 (3.81)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only .
3. Unless otherwise specified, tolerance is  $\pm .010$  (.25 mm) for three place decimals.
4. Contacts and terminals shall be designated on the connector using numerals in the locations shown.
5. The shape of the barriers is optional except that barriers shall not protrude beyond the plane of the underside of the mounting flange.
6. Slot shall accept the following thickness printed wiring boards:
  - Size 2 - .054 (1.37 mm) to .071 (1.80 mm)
  - Size 3 - .086 (2.18 mm) to .103 (2.62 mm)
 Slot shall prevent entry of printed wiring board having the following thickness:
  - Size 2 - .084 (2.13 mm)
  - Size 3 - .113 (2.87 mm)

FIGURE 1. Dual row contacts, type CR – Continued.

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TABLE I. Connector, electrical, composite, receptacle, type CR, mounting provision A.

Dash number	Style	Class	Size	Dimensions (inches) <u>1/</u> <u>2/</u>				
				A (Maximum)	B ±0.015 (0.38)	C ±0.005 (0.13)	D ±0.010 (0.25)	E ±0.010 (0.25)
01	17	a	2	2.570 (65.28)	2.300 (58.42)	1.600 (40.64)	0.531 (13.49)	.123 (3.12)
02		a	3					
03		b	2					
04		b	2					
05		b	2					
06		b	3					
07		b	3					
08		b	3					
09	23	a	2	3.170 (80.52)	2.900 (73.66)	2.200 (55.88)	0.531 (13.49)	.123 (3.12)
10		a	3					
11		b	2					
12		b	2					
13		b	2					
14		b	3					
15		b	3					
16		b	3					

See footnotes at end of table.

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TABLE I. Connector, electrical, composite, receptacle, type CR, mounting provision A – Continued.

Dash number	Style	Class	Size	Dimensions (inches) <u>1/</u> <u>2/</u>				
				A (Maximum)	B $\pm 0.015$ (0.38)	C $\pm 0.005$ (0.13)	D $\pm 0.010$ (0.25)	E $\pm 0.010$ (0.25)
17	29	a	2	3.770 (95.76)	3.500 (88.90)	2.800 (71.12)	0.531 (13.49)	.123 (3.12)
18		a	3					
19		b	2					
20		b	2					
21		b	2					
22		b	3					
23		b	3					
24		b	3					
25	35	a	2	4.370 (111.00)	4.100 (104.14)	3.400 (86.36)	0.531 (13.49)	.123 (3.12)
26		a	3					
27		b	2					
28		b	2					
29		b	2					
30		b	3					
31		b	3					
32		b	3					
33	41	a	2	4.970 (126.24)	4.700 (119.38)	4.000 (101.6)	0.531 (13.49)	.123 (3.12)
34		a	3					
35		b	2					
36		b	2					
37		b	2					
38		b	3					
39		b	3					
40		b	3					

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

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REQUIREMENTS

Dimensions and configuration: See figure 1 and table I.

Polarizing keys: Part or Identifying Number (PIN). M21097/11-03 or M21097/11-04. A key is inserted into the card slot at even contact numbers, 2, 4, 6, etc.

Mating male adapters: Shall be in accordance with MIL-DTL-21097/5.

Finish: Gold plating in accordance with ASTM B488, type II, code C, class 1.27, over nickel plating in accordance with MIL-DTL-38999, Appendix A, class 2, 30 to 150 microinches.

PIN: M21097/4-(dash number from table I).

Qualification: Not required.

First article testing: First article testing shall be as specified in table II, tests shall be in accordance with MIL-DTL-21097.

Sample size: 8 connectors shall be subjected to the first article testing. All sample units shall be subjected to the inspections in group I. The sample units shall be divided equally into 2 groups of four and subjected to the inspection for their particular groups.

TABLE II. First article tests.

Inspection
<u>Group I</u> (8 samples)
Visual and mechanical inspection
Permeability
Insulation resistance
Dielectric withstanding voltage
Contact resistance
<u>Group II</u> (4 samples)
Temperature cycling
Shock
Bond strength, body assembly
Contact retention
Resistance to soldering heat
Resistance to solvents
<u>Group III</u> (4 samples)
Salt spray (corrosion)
Low-signal level contact resistance
Contact resistance
Bond strength, body assembly

Failures: One or more failures shall be cause for refusal to grant first article approval.

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Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-DTL-21097, this document references the following:

MIL-DTL-21097/5  
MIL-DTL-38999  
ASTM B488

## CONCLUDING MATERIALS

### Custodians:

Army – CR  
Navy – EC  
Air Force – 85  
DLA – CC

Preparing activity:  
DLA - CC

(Project 5935-2008-085)

### Review activities:

Army – AR, AT, AV, CR4, MI  
Navy – AS, MC, OS, SH

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.