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IN REPLY

REFER DSCC-VAI (Mr. Ron Gary/(614) 692-0568

May 21, 2004

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial Drafts of MIL-PRF-49142/3F through /12D; Connectors, Plugs and Receptacles, Electrical, Triaxial, Radio Frequency, Series TRB and TRT; Project Numbers 5935-4682-001 through -010.

The initial drafts for this subject documents will be available for viewing and downloading from the DSCC-VAI Web site within the next 5 working days:

<http://www.dsccl.dla.mil/Programs/MilSpec/initialdrafts.asp>

Changes to this document include new part number additions that allow for the use of Nickel plated adapter bodies, contact resistance values for the new plating and format up dates. However, the entire set of specification sheets are offered up for comment.

Concurrence or comments are required at this Center within 45 days from the date of this letter. Late comments will be held for the next coordination of this document. Comments from Military Departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians, as applicable, in sufficient time to allow for consolidation of the Department reply.

Please forward your comments or concurrence electronically to the project officer listed below. This can be in the form of a return e-mail, with or without attached text files. If an electronic response is not possible, we will accept comments via letter, facsimilie, or phone call. Any further coordination concerning this document will be circulated only to firms and organizations that furnish comments or reply that they have an interest.

The point of contact for this document is Mr. Ron Gary. The preferred method of contact is via e-mail: Estel.Gary@dla.mil. Mr. Gary can also be reached at 614-692-0568/DSN 850-0568, or by facsimilie 614-692-6940.

Sincerely,

/signed/

RICHARD L. TAYLOR
Chief,
Interconnection Devices Team

Note: This draft dated 12 May 2004, prepared by the Defense Supply Center Columbus (DSCC-VAI) has not been approved and is subject to modification.

DO NOT USE PRIOR TO APPROVAL (5935-4682-002)

INCH-POUND

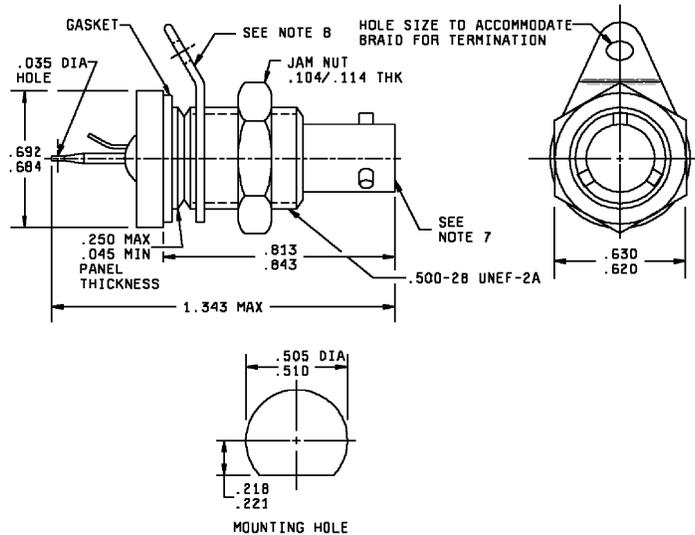
MIL-PRF-49142/4H
DRAFT
 SUPERSEDING
 MIL-PRF-49142/4G
 27 February 2002

PERFORMANCE SPECIFICATION SHEET

CONNECTORS, RECEPTACLE, ELECTRICAL, TRIAXIAL, RADIO FREQUENCY, UNCABLED, (SERIES TRB, SOCKET CONTACT, JAMNUT MOUNTED, CLASS 2) HERMETIC AND NONHERMETIC

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-PRF-49142.



Inches	mm	Inches	mm
.022	.56	.505	12.71
.035	.88	.510	12.95
.045	1.14	.620	15.75
.104	2.64	.630	16.00
.114	2.90	.684	17.37
.218	5.54	.692	17.58
.221	5.61	.813	20.65
.250	6.35	.843	21.41
.500	12.70	1.343	34.11

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Wrench flats are to accommodate standard wrench openings in accordance with H-28, appendix 10.
4. All undimensioned pictorial representations are for reference purposed only.
5. Panel thickness, .045 (1.14 mm) minimum, .250 (6.35 mm) maximum.
6. Unless otherwise specified, all tolerances are ± 0.005 inch (0.13 mm).
7. Interface as specified in MIL-STD-348, series TRB, socket contact.
8. Other dash numbers -***6 and -***7 are supplied with braid termination lock washer rings. All previous dash numbers are supplied with standard lock washers (internal tooth .630 max dia. x .022 thick).

FIGURE 1. General configuration.

MIL-PRF-49142/4H

ENGINEERING DATA:

Nominal impedance: Non-constant.

Frequency range: 0 to 500 MHz minimum.

Voltage rating: 400 V rms maximum working voltage at sea level. 100 V rms maximum working voltage at 70,000 feet.

Temperature range: -65°C to +165°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and MIL-STD-348.

Force to engage and disengage:

Longitudinal force: 4 pounds maximum.

Torque: 2.5 inch-pounds maximum.

Coupling proof torque: Not applicable.

Mating characteristics: See figure 1 and MIL-STD-348 for dimensions.

Center contact (socket):

Oversize test pin: .040 inch diameter minimum (nonclosed entry contacts only).

Insertion depth: .125 inch minimum.

Number of insertions: 1

Insertion force test:

Steel test pin finish: 16 microinches.

Insertion depth: 2 pounds, maximum.

Steel test pin diameter: .039 minimum +.001 inch.

Withdrawal force test:

Steel test pin diameter: .037 maximum-.001 inch.

Withdrawal force: 2 ounces minimum.

Test pin finish: 16 microinches.

Permeability: Applicable.

Hermetic seal: See table I.

Leakage: Connector shall be mounted in mounting hole shown on figure 1 with mating end capped.

Air pressure: 30lbf/in/in.

Insulation resistance: 5,000 megohms.

Conductor retention: 6 pounds, minimum, axial force.

Dielectric withstanding voltage: At sea level, 1,200 V rms, between center conductor and intermediate conductor. 500 V rms, between intermediate conductor and outer conductor.

Corrosion (salt spray): Applicable.

Vibration: Applicable.

Shock: Applicable.

Thermal shock: Applicable.

Moisture resistance: Applicable.

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Conductor resistance: In milliohms, maximum.

	<u>Connector type</u>	<u>Initial</u>	<u>After environment</u>
Center conductor:	Non-hermetic	2.0	2.5
	Hermetic	12.0	12.5
Intermediate conductor	Non-hermetic	0.5	0.6
	Hermetic	1.0	1.5
Outer conductor (Silver plated)	Non-hermetic	0.5	0.6
	Hermetic	0.5	0.6
Outer conductor (Nickel plated)	Non-hermetic	1.0	1.2
	Hermetic	1.0	1.2

Corona level:

Altitude: 70,000 feet.

Voltage: 200 V rms, minimum.

RF high potential withstanding voltage:

800 V rms, between center conductor and intermediate conductor.

200 V rms, between intermediate conductor and outer conductor at 5 to 7.5 MHz.

Leakage current: Not applicable.

Cable retention: Not applicable.

Coupling mechanism: Not applicable.

Rise time degradation: Not applicable.

Connector durability: 500 cycles minimum at 12 cycles per minute, maximum.

Part or Identifying Number (PIN): M49142/04- (dash number from table I). **CAUTION: A NICKEL PLATED BODY COMBINATION IS AVAILABLE. THIS COMBINATION IS NOT FOR USE IN APPLICATIONS WHERE PASSIVE INTERMODULATION GENERATION (PIM) MAY BE A CONCERN.**

Not for Naval Air Systems Command (AS) use.

Retention of qualification: See table II.

MIL-PRF-49142/4H

TABLE I. Cross reference of PIN.

Dash number <u>3/</u> (X in the dash number allows material options, refer to the basic document)	Superseding PIN
-X004 <u>1/</u> -X006 <u>1/ 2/</u> -X104, -X106 <u>2/</u> -X204, -X206 <u>2/</u>	M49142/04-0001, -0002 Non-hermetic
-X005 <u>1/</u> -X007 <u>1/ 2/</u> -X105, -X107 <u>2/</u> -X205, -X207 <u>2/</u>	M49142/04-0003 Hermetic

1/ Preferred keying.

2/ These connectors supplied with braid termination lock washer rings.

3/ The "X" is placed in the dash number to allow the user connector body plating options provided in the General specification. Only connectors of the same materials are to be intermated to reduce the possibility of dissimilar problems, including galvanic corrosion.

TABLE II. Retention of qualification. 1/ 2/

Subgroup	/3 & /8		/4 & /10	/5 & /9		/6 & /11	
1	/3-X*08	---	/4-X*04	---	---	---	---
2	/3-X*08	/8-X*06	/4-X*04	---	---	---	/11-X*06
3	/3-X*08	/8-X*06	---	---	---	---	---
4	/3-X*08	/8-X*06	---	---	---	/6-X*07	/11-X*06
5	/3-X*08	---	/4-X*04	---	---	---	---
Units	15	9	9	0	0	3	6

1/ The X in the dash number refers to body material and finish combinations. Only connector combinations of the same material and finish allow for retention of that specific connector. Refer to the basic specification for the material and finish requirements.

2/ The * signifies connector keying configuration. Only one keying configuration is required to retain all keying combinations.

Referenced documents:

MIL-PRF-49142
MIL-C-17
MIL-C-22520
MIL-STD-348

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 11
NASA - NA
DLA - CC

Preparing activity:

DLA - CC

(Project 5935-4682-002)

Review activities:

Army - AR, AT, MI
Navy - AS, MC, OS, SH
Air Force - 19, 99

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 www.dodssp.daps.mil.