

INCH-POUND

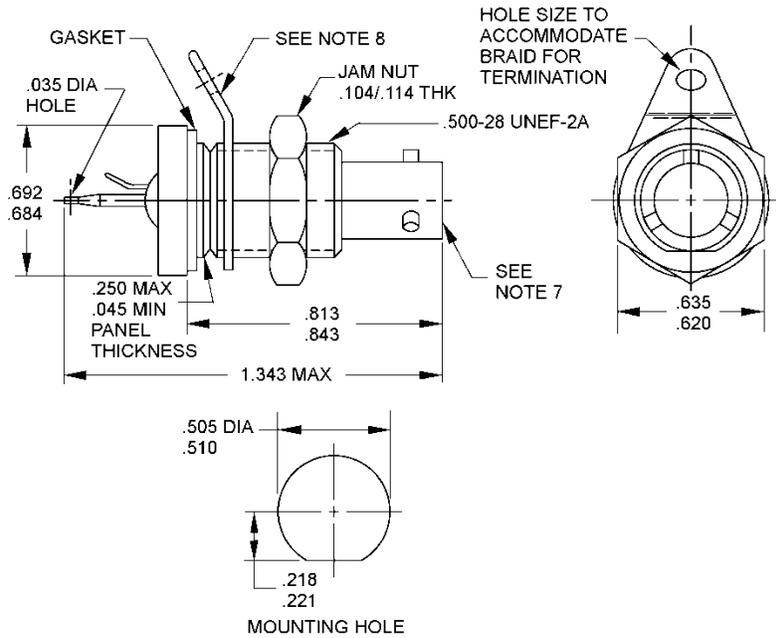
MIL-PRF-49142/4H
w/Amendment 1
22 March 2016
SUPERSEDING
MIL-PRF-49142/4H
18 April 2005

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	.635	16.13
.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

FIGURE 1. General configuration.

AMSC N/A

FSC 5935



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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Wrench flats are to accommodate standard wrench openings in accordance with FED-STD-H28, 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 – Continued.

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 (4.437 kPa).

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 (17.79 N) maximum.

Torque: 2.5 inch-pounds (0.28 Nm) 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 (1.02 mm) diameter minimum (nonclosed entry contacts only).

Insertion depth: .125 inch (3.17 mm) minimum.

Number of insertions: 1

Insertion force test:

Steel test pin finish: 16 microinches (0.406 μm).

Insertion force: 2 pounds (8.90 N), maximum.

Steel test pin diameter: .039 inch (0.99 mm) minimum.

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Withdrawal force test:

Steel test pin diameter: .037 inch (0.94 mm) maximum.

Withdrawal force: 2 ounces (0.56 N) minimum.

Test pin finish: 16 microinches (0.406 μm).

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: 30 lbf/in/in.

Insulation resistance: 5,000 megohms.

Conductor retention: 6 pounds (26.69 N), 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.

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 (4.437 kPa).

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.

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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.

TABLE I. Cross reference of PIN.

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

1/ 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.

2/ Preferred keying.

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

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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.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Referenced documents. In addition to MIL-PRF-49142, this document references the following:

FED-STD-H28
MIL-STD-348

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-2016-056)

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 <https://assist.dla.mil>.