

INCH-POUND

MIL-PRF-39012/137A
w/AMENDMENT 2
28 July 2023
SUPERSEDING
MIL-PRF-39012/137A
w/AMENDMENT 1
08 August 2018

PERFORMANCE SPECIFICATION SHEET

CONNECTORS, PLUG, ELECTRICAL, SERIES SSMA, RIGHT ANGLE, PIN CONTACT, FOR SEMIRIGID CABLE, CLASS 2

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-39012.

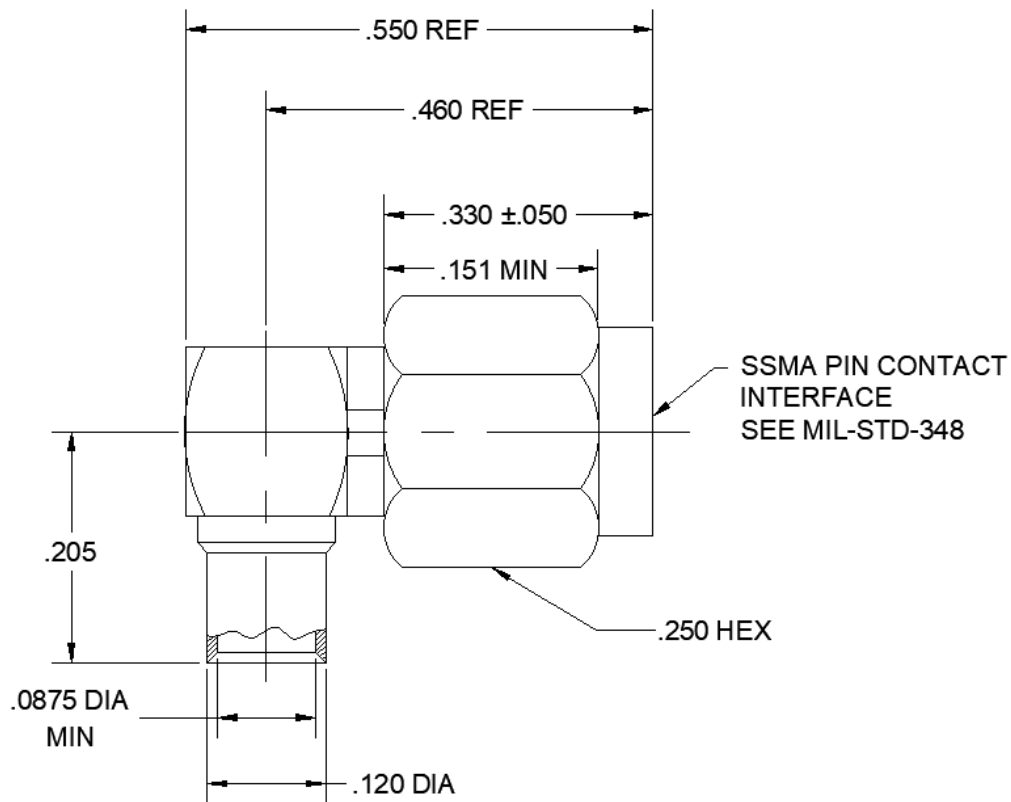


FIGURE 1. General configuration.



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NOTES:

1. Dimensions are in inches.
2. Wrench flats are to accommodate standard wrench opening in accordance with FED-STD-H28, appendix 10.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Dimension .205 defines the maximum overall length of the connector when assembled to the cable.
5. Steel bodied connectors shall be furnished with passivated coupling nuts.
6. Unless otherwise specified, tolerances are $\pm .005$ inch.
7. Safety wire holes, three holes equally spaced $.018 \pm .004$ (0.10 mm), $-.002$ inch diameter.

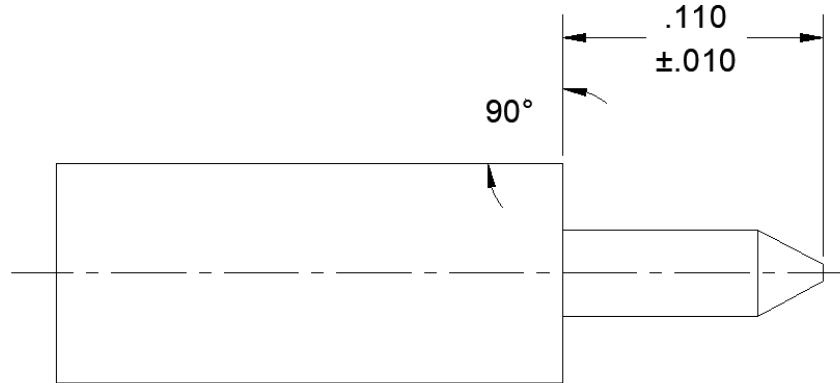
FIGURE 1. General configuration – Continued.

TABLE I. Dash number and applicable cable.

Dash number. <u>1/ 2/ 3/</u>	Applicable cable <u>4/</u>
CATEGORY A – FIELD SERVICEABLE (NO SPECIAL TOOLS REQUIRED)	
3001 3101 <u>5/</u> 4001 4101 <u>5/</u>	M17/133-RG405*
CATEGORY E – FIELD SERVICEABLE <u>6/ 7/</u> (STANDARD ASSEMBLY TOOL KIT, SEE FIGURE 2)	
3002 3102 <u>5/</u> 4002 4102 <u>5/</u>	M17/133-RG405*

* Cable to be used when performing tests requiring cable.

- 1/ These connectors have captivated center contacts.
- 2/ For logistics purposes, only connectors with safety wire holes will be stocked.
- 3/ Coupling nuts shall be corrosion-resistant steel with a passivated finish in accordance with MIL-DTL-14072. (Applies to “-3XXX” series connectors only.
- 4/ Although only one MIL-DTL-17 cable Part Identifying Number (PIN) is specified, all cables in the specification sheet specified accommodate the connectors referenced herein, as shown in table I.
- 5/ No safety wire holes.
- 6/ Kit number – Omni Spectra T-250, Amphenol 901-2500, or equivalent.
- 7/ All corrosion-resistant steel bodied connectors shall be gold plated in accordance with MIL-DTL-45204, type II, grade C, class1, at least in the area of solder attachment.



NOTES:

1. Dimensions are in inches.

FIGURE 2. Cable stripping dimensions for category E connectors.

ENGINEERING INFORMATION:

Impedance: 50 ohms, nominal.

Frequency range: 0 to 26 GHz.

Voltage rating:

250 V rms, at sea level.

60 V rms, at 70,000 feet.

Operating temperature: -65°C to 165°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Interface: MIL-STD-348. The following exception applies.

SSMA pin contact interface, dimension "L" shall not apply.

Force to engage and disengage:

Longitudinal force: Not applicable.

Torque: 2 inch-pounds, maximum.

Coupling proof torque: 7 inch-pounds, minimum.

Recommended mating torque: 2 inch-pounds.

Hermetic seal: Not applicable.

Leakage (pressurized connectors): Not applicable.

Center contact retention: 4 pounds, minimum, axial force.

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Radial torque: Not applicable.

Voltage standing wave ratio (VSWR): $1.15 + .015F$ (F in GHz) dB, maximum, or approximately 80 percent of the upper cutoff frequency of the cable, whichever is lower.

Moisture resistance: In accordance with MIL-STD-202-106, no measurements at high humidity.
Insulation resistance shall be at least 200 megohms within 5 minutes after removal from humidity.

Contact resistance: In milliohms, maximum:

	<u>Initial</u>	<u>After environment</u>
Center contact	4.0	4.0
Outer contact	2.0	Not applicable
Outer conductor to body	0.5	Not applicable

Dielectric withstanding voltage: 750 V rms, minimum at sea level.

Vibration, high frequency: In accordance with MIL-STD-202-204, test condition D.

Corona level:

Altitude: 70,000 feet, 190 V rms, minimum.

Shock (specified pulse): In accordance with MIL-STD-202-213, test condition I.

Insulation resistance: In accordance with MIL-STD-202-302, test condition B, 1,000 megohms, minimum.

Thermal shock: In accordance with MIL-STD-202-107, test condition B, except high temperature shall be +85°C.

Barometric pressure (reduced): Not applicable.

RF high potential voltage: 500 V rms, minimum.

Frequency: 5 MHz.

Leakage current: Not applicable.

Cable retention force: 30 pounds, minimum.

Torque: 16 inch-ounces, minimum.

Coupling mechanism retention force: 60 pounds, minimum.

RF leakage: $-90 + F$ (F in GHz) dB, minimum.

RF insertion loss: $(.04\sqrt{F \text{ (GHz)}})$ dB, maximum, tested to 3 GHz.

Part or Identifying Number (PIN): M39012/137- (dash number from table I).

NOTE: This specification sheet supersedes DSCC drawing 86118 once a QPL source is obtained.

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Amendment notations. 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-39012, this specification references the following:

FED-STD-H28	MIL-STD-202-204
MIL-DTL-14072	MIL-STD-202-213
MIL-DTL-17	MIL-STD-202-302
MIL-DTL-45204	MIL-STD-348
MIL-STD-202-106	DD86118
MIL-STD-202-107	

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

(Project 5935-2023-063)

Review activities:

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

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