

INCH-POUND

MIL-PRF-39012/115B

1 2 June 2018

SUPERSEDING

MIL-C-39012/115A

3 October 1986

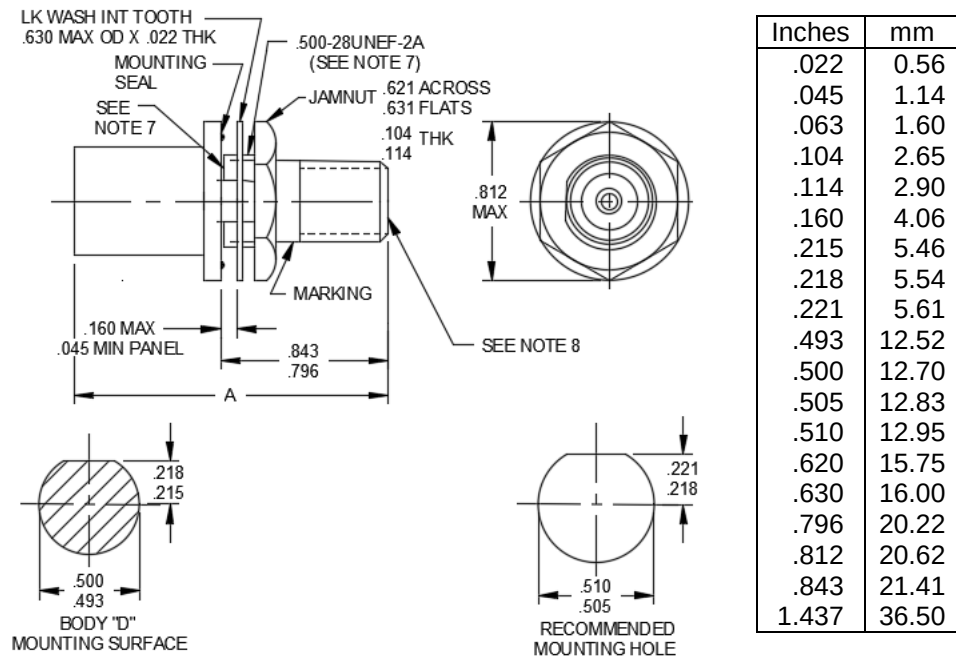
PERFORMANCE SPECIFICATION SHEET

CONNECTORS, RECEPTACLE, ELECTRICAL, COAXIAL, RADIO FREQUENCY (SERIES TNC (CABLED) – SOCKET CONTACT, JAM NUT MOUNTED, CLASS 2) FOR SEMI-RIGID CABLE

Reinstated after 12 June 2018 and may be used for new and existing designs and acquisitions.

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

The requirements for acquiring the connectors described herein shall consist of this specification and the latest issue of MIL-PRF-39012.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Dimension .812 (20.62 mm) is the largest overall diameter of the connector.
4. Wrench flats are to accommodate standard wrench openings in accordance with FED-STD-H28, appendix 10.
5. Dimension A (see table I and III) defines the maximum length of the connector when assembled to the appropriate cable.
6. All undimensioned pictorial configurations are for reference purposes only.
7. Full threads to within .063 (1.60 mm) of shoulder.
8. Series TNC, socket contact interface per MIL-STD-348.

FIGURE 1. General configuration.



TABLE I. Dash number and applicable cable.

Dash No.	Applicable Cable No.	Dimension A
0001 <u>1/</u> <u>2/</u>	M17/130 – RG402	1.203
0002 <u>1/</u> <u>3/</u>	M17/129 – RG401	1.250

1/ These connectors have captivated-center-contacts.

2/ This connector accommodates all cables listed in MIL-DTL-17/130.

3/ This connector accommodates all cables listed in MIL-DTL-17/129.

ENGINEERING DATA:

Nominal impedance: 50 ohms.

Frequency range: 0 to 15,000 MHz.

Voltage rating: 500 volts rms, maximum working voltage at sea level. 125 volts rms, maximum at 70,000 feet.

Temperature rating: -65° to +105°C.

REQUIREMENTS:

Dimensions and construction: See figure 1.

Force to engage and disengage:

Longitudinal force – Not applicable.

Torque – 2 inch-pounds, maximum.

Coupling proof torque: Not applicable.

Inspection conditions:

Coupling torque – 4 to 6 inch-pounds.

Mating characteristics: See MIL-STD-348.

Center contact (socket):

Oversize test pin - .057 diameter minimum (nonclosed entry contacts only).

Insertion depth - .125 minimum.

Number of insertions – 1.

Insertion force test: Steel test pin diameter .054 minimum.

Test pin finish – 15 microinches.

Insertion force – 2 pounds, maximum.

Withdrawal force test – Steel test pin diameter .052 maximum.

Withdrawal force – 2 ounces, minimum.

Test pin finish – 16 microinches.

Hermetic seal: Not applicable.

Leakage: Connector shall be mounted in mounting hole specified on figure 1 with mating end capped. Test applicable to mounting seal only. Air pressure – 30 psi.

Duration: 30 seconds, minimum.

Insulation resistance: MIL-STD-202-302, test condition B. 5,000 megohms, minimum.

Center contact retention: 6 pounds, minimum axial force. Applicable to captivated-center-contact connectors only.

Corrosion (salt spray): MIL-STD-202-101, test condition B.

Voltage standing wave ratio (VSWR): From 2,000 to 15,000 MHz, or approximately 80 percent of upper cutoff frequency of the cable, whichever is lower; 1.35 maximum.

Swept frequency VSWR test setup:

Item 6 – VSWR shall be less than $1.02 + .003 F$ (F in GHz).

Item 16 – VSWR shall be less than $1.02 + .003 F$ (F in GHz).

Second step of VSWR checkout procedure – VSWR shall be less than $1.06 + .007 F$ (F in GHz).

Group B inspection – VSWR shall be less than $1.05 + .005 F$ (F in GHz).

Qualification and group C inspection – VSWR shall not exceed 1.10.

Connector durability: 500 cycles at 12 cycles per minute maximum. The connector shall meet the mating characteristics and force to engage and disengage requirements.

Contact resistance: In milliohms maximum:

	Initial	After environment
Center contact	1.5	2.0
Outer contact	0.2	Not applicable
Outer cable conductor to body	0.5	Not applicable

Dielectric withstanding voltage: MIL-STD-202-301. 1,500 volts rms, minimum at sea level.

Vibration, high frequency: MIL-STD-202-204, test condition B, except the method of mounting shall be approved by the qualifying activity.

Shock: MIL-STD-202-213, test condition I.

Thermal shock: MIL-STD-202-107, test condition B, except test high temperature shall be 115°C.

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

Corona level:

Voltage – 375 volts, minimum.

Altitude – 70,000 feet.

RF high potential withstanding voltage:

Voltage and frequency: 1,000 volts rms at a frequency between 5 and 7.5 MHz, inclusive.

Leakage current: Not applicable.

Cable retention force:

Cable	Pounds (min.)	Torque inch-pounds <u>1/</u>
M17/130 – RG402	60	3.5
M17/129 – RG401	90	5

1/ Torque shall be applied one cable diameter from the end of the connector. Bend not applicable.

Coupling mechanism retention force: Not applicable.

RF leakage: -60 dB, minimum, tested at a frequency between 2 and 3 GHz.

Insertion loss:

.06 $\sqrt{F}$ (GHz), dB, maximum tested at 3 GHz.

Part number: M39012/115 (and dash number from table I or "B" number from table III).

TABLE II. Group qualification.

Group	Submission and qualification of any of the following connectors	Qualifies the following connectors
I	M39012/113-0001 M39012/113-0002 M39012/115-0001 M39012/115-0002 M39012/116-0001 M39012/116-0002	M39012/113-0001 M39012/113-0002 M39012/115-0001 M39012/115-0002 M39012/116-0001 M39012/116-0002

TABLE III. Category B nonfield replaceable (special tools may be required).

M39012/115B <u>1/ 2/</u>	Applicable Cable No.	Dimension A
0005	M17/130 – RG402	1.203
0006	M17/129 – RG401	1.250

1/ These connectors have captivated-center-contacts.

2/ For field maintenance purposes these connectors shall be replaced by category A connector.

TABLE IV. Cross-reference of part numbers.

Part number <u>1/</u> M39012/115B	Superseded part number M39012/115-
0005	0005, 0003
0006	0006, 0004

1/ The new "B" part numbers will be required marking 6 months after the date of this specification. The previous part number may be used in the interim.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Referenced documents. In addition to MIL-PRF-39012, this document references the following:

FED-STD-H28
MIL-STD-202-101
MIL-STD-202-106
MIL-STD-202-107
MIL-STD-202-204
MIL-STD-202-213
MIL-STD-202-301
MIL-STD-202-302
MIL-STD-348

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 5935-2018-072)

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>.