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MIL-PRF-39012/21A
22 October 1969
SUPERSEDING
MIL-C-39012/21
29 April 1966
MS27035
6 February 1967
MS35179
24 July 1963

PERFORMANCE SPECIFICATION

CONNECTORS, COAXIAL, RADIO FREQUENCY

(SERIES BNC (UNCABLED) - RECEPTACLES, FEMALE, JAM NUT MOUNTED, CLASS II)

The complete requirements for procuring the connectors described herein shall consist of this document and the latest issue of Specification MIL-PRF-39012.

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

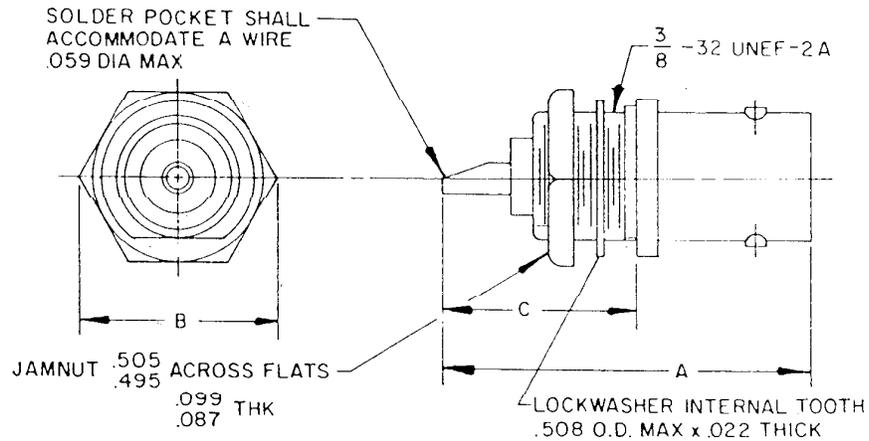


FIGURE 1. General configuration.

MIL-C-39012/21A

~~22 October 1969~~

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MILITARY SPECIFICATION SHEET

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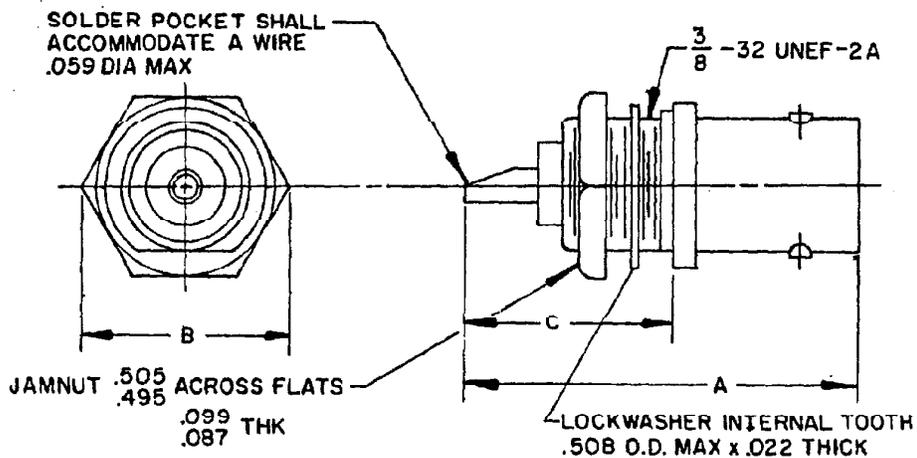
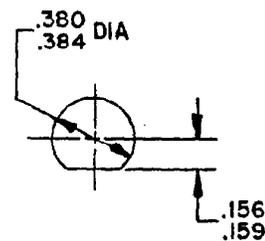
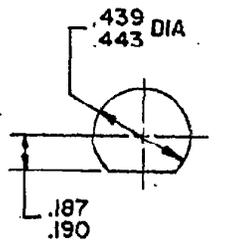
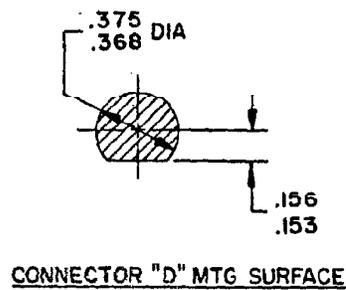
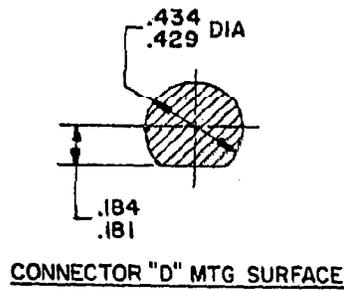


FIGURE 1. General configuration.



M 39012 /21-0001
M 39012 /21-0003

M 39012 /21-0002

INCHES	MM	INCHES	MM
.022	.56	.368	9.35
.059	1.50	.375	9.53
.087	2.21	.380	9.65
.099	2.51	.384	9.75
.153	3.89	.429	10.90
.156	3.96	.434	11.02
.159	4.04	.439	11.15
.181	4.60	.443	11.25
.184	4.67	.495	12.57
.187	4.75	.505	12.83
.190	4.83	.508	12.90

NOTES:

1. Dimensions are in inches.
2. For dimensions 'A', 'B', 'C' see table I.
3. Dimension 'B' is the largest overall diameter of the connector.
4. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
5. Orientation of mounting flats and bayonet studs shall be within $\pm 3^\circ$ of the orientation shown.
6. All undimensioned pictorial representations are for reference purposes only.

FIGURE 1. General configuration—Continued.

TABLE I. Dash number and overall dimensions.

PART NO. ^{1/}	DIM	INCHES-MILLIMETERS ^{2/}		PANEL THICKNESS	
		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
M39012/21-0001	A	---	1.187 (30.15)	.045 (1.14)	.130 (3.30)
	B	---	.585 (14.86)		
	C	.529 (13.44)	.653 (16.59)		
M39012/21-0002 (Not for new design)	A	---	1.312 (33.32)	.045 (1.14)	.260 (6.60)
	B	---	.585 (14.86)		
	C	.654 (16.61)	.778 (19.76)		
M39012/21-0003	A	---	1.312 (33.32)	.045 (1.14)	.260 (6.60)
	B	---	.585 (14.86)		
	C	.654 (16.61)	.778 (19.76)		

^{1/} For cross reference of dash number to superseded part number or type designation see table III.

^{2/} Millimeters are in parentheses.

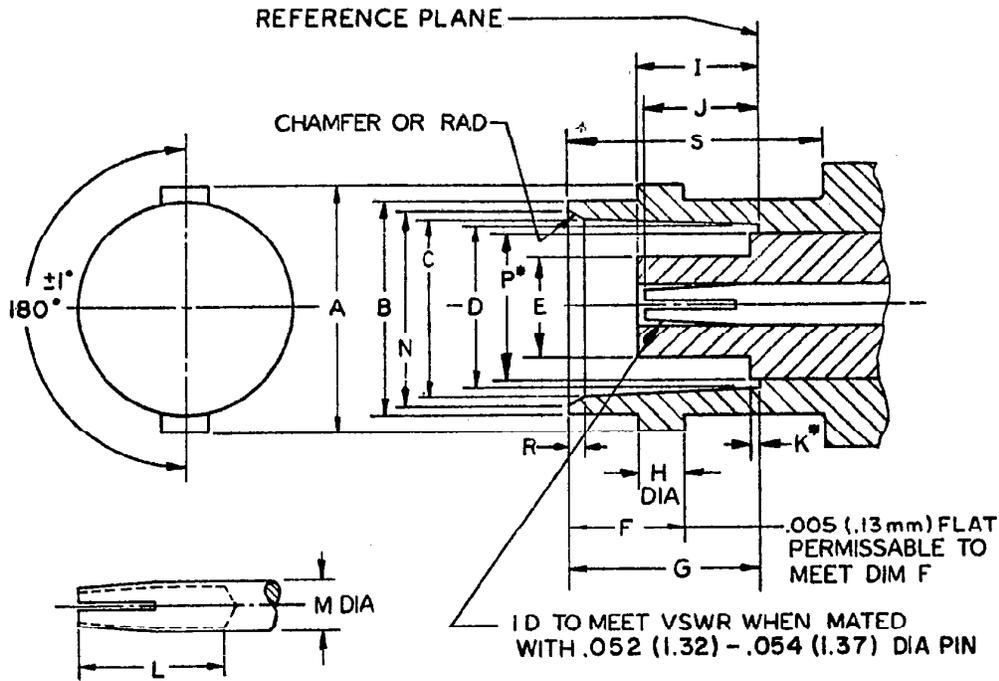
TABLE II. Group qualification.

Group	Submission and qualification of any of the following connectors	Qualifies the following connectors
I	M39012/21-0001, M39012/21-0002, M39012/21-0003, M39012/22-0001	M39012/21-0001, M39012/21-0002, M39012/21-0003, M39012/22-0001

TABLE III. Cross reference of part numbers.

Part number	Substitute for type ^{1/} designation
M39012/21-0001	UG-625/U
M39012/21-0002	UG-1094/U
M39012/21-0003	

^{1/} The superseded part number or the type designation is for cross reference only. The part number M39012/21-XXXX shall be used in all cases for marking and identifying the connector.



Ltr	Dimensions in inches with metric equivalents (mm) in parentheses	
	Minimum	Maximum
A	.432 (10.97)	.436 (11.07)
B	.378 (9.60)	.382 (9.70)
C	.327 (8.31)	.333 (8.46)
D	.319 (8.10)	.321 (8.15)
E		.186 (4.72)
F	.204 (5.18)	.208 (5.28)
G	.327 (8.31)	.335 (8.51)
H	.075 (1.91)	.081 (2.06)
I		.208 (5.28)
J		.206 (5.23)
K*		.006 (.15)
L	.195 (4.95)	
M	.081 (2.06)	.087 (2.21)
N	.346 (8.79)	.356 (9.04)
P*		.256 (6.50)
R	.015 (.38)	.030 (.76)
S	.414 (10.52)	

P dimension applies to that portion (if applicable) of dielectric which extends beyond reference plane by dimension K.

NOTES:

1. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 Inch = 25.4 mm.
2. Concave depression .100 (2.54 mm) X .005 (.13 mm) deep between studs permissible.

FIGURE 2. Mating dimensions for female terminations.

ENGINEERING DATA:

Nominal impedance: 50 ohms.
 Frequency range: 0 to 4,000 MHz.
 Voltage rating: 500 volts rms maximum working voltage at sea level. 125 volts rms maximum at 70,000 feet.
 Temperature rating: -65°C to +165°C.

REQUIREMENTS:

Design and construction: See figure 1.
 Center contacts: 4 lbs minimum axial force.
 4 inch-ounces minimum radial torque.

Force to engage and disengage:
 Longitudinal force - 3 lbs maximum.
 Torque - 2-1/2 inch-pounds maximum.

Coupling mechanism retention force:
 Not applicable.

Mating characteristics:
 See figure 2 for dimensions.
 Contacts with spring members:
 Center contact (female):
 Oversize test pin - .057 diameter minimum (non-closed entry contacts only).
 Insertion depth - .125 minimum.
 Number of insertions - 1.

Insertion force test - Steel test pin dia - .054 minimum.
 Test pin finish - 16 microinches.
 Insertion force - 2 lbs maximum.

Withdrawal force test: Steel test pin dia - .052 maximum.
 Withdrawal force - 2 oz minimum.
 Test pin finish - 16 microinches.

Hermetic seal: Not applicable.

Leakage (pressurized connectors):
 Not applicable.

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

Contact resistance: In milliohms maximum.

	<u>Initial</u>	<u>After environment</u>
Center contact	2.0	2.5
Outer contact	.2	Not applicable

Resistance to test prod damage: Not applicable.

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

Voltage standing wave ratio (VSWR):
 Not applicable.

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

Corona level: Voltage - 375 volts minimum.
 Altitude - 70,000 feet.

RF high potential withstanding voltage:
 Voltage and frequency - 1,000 volts rms at 5 MHz.
 Leakage current - Not applicable.

Contact durability:
 Insertion and withdrawal force 500 cycles minimum at 12 cycles/min maximum.
 The mating force shall meet the mating characteristics requirements.

Vibration, high frequency: Method 204, test condition B, MIL-STD-202. No discontinuities.

Shock: Method 202 of MIL-STD-202.
 Acceleration - 50 G's at 7 milliseconds.
 No discontinuities.

Temperature cycling: Method 102, test condition C, MIL-STD-202, except high temperature shall be 200°C.

Thermal shock: Not applicable.

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

Cable retention force: Not applicable.

RF leakage: Not applicable.

Insertion loss: Not applicable.

MIL-C-39012/21A

Custodians:

Army - EL
Navy - EC
Air Force - 85

Review activities:

Army - MI, MU, EL
Navy - EC
Air Force - 11, 17, 85
DSA - ES

User activities:

Army - AT, AV, ME
Navy - AS, OS
Air Force - 19

Preparing activity:
Army - EL

Agent:
DSA - ES

(Project 5935-1654-6)