METRIC

MIL-DTL-38999/30C
12 March 2014
SUPERSEDING
MIL-DTL-38999/30B
11 June 2001

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, CIRCULAR, THREADED, PLUG, LANYARD RELEASE, FAIL-SAFE, REMOVABLE CRIMP CONTACTS, SOCKETS, SERIES III, METRIC

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-DTL-38999.

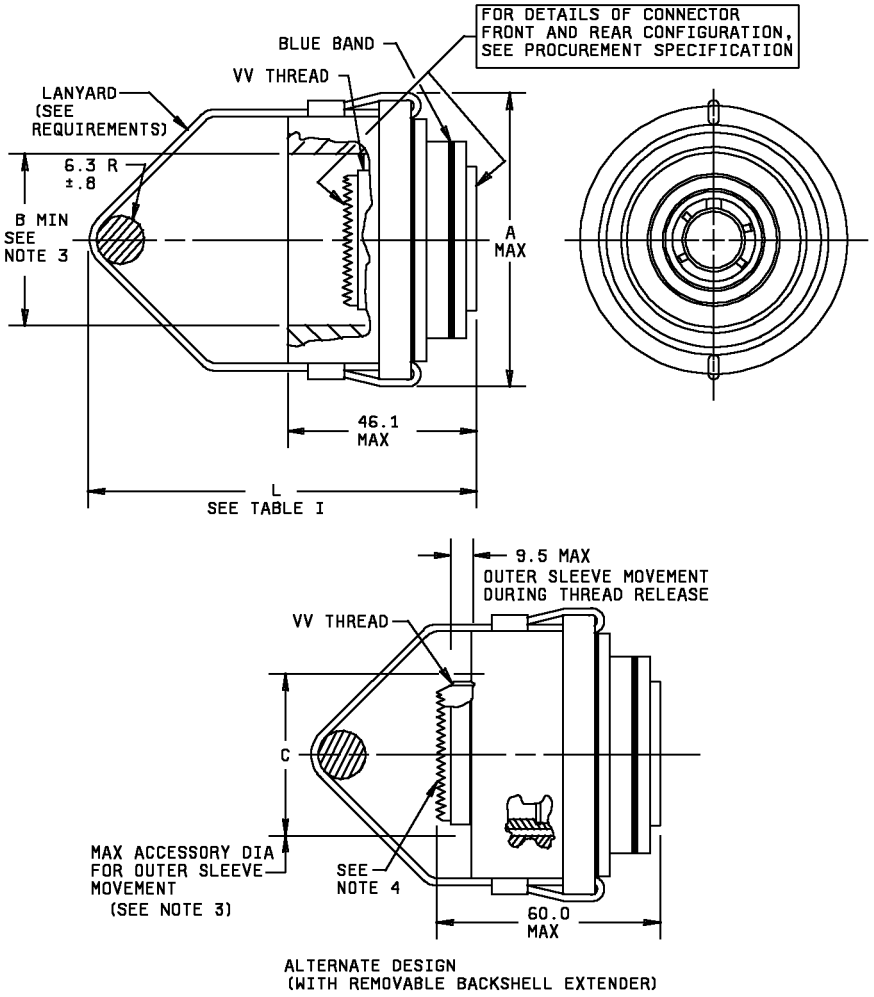


FIGURE 1. Plug, classes F, G, J, K, M, R, S, W, T, X and Z.

mm	Inches	mm	Inches
0.8	.03	46.1	1.81
6.3	.25	60.0	2.36
9.5	.37		

Shell size	Shell size code	A max	B min	C max	VV thread	Backshell extender torque
11	B	46.9 (1.85)	25.5 (1.00)	25.0 (.98)	M15x1.0-6g 0.100R	5.6 Newton-meters min
13	C	50.1 (1.97)	29.9 (1.18)	29.4 (1.16)	M18x1.0-6g 0.100R	
15	D	52.8 (2.08)	33.0 (1.30)	32.5 (1.28)	M22x1.0-6g 0.100R	
17	E	56.0 (2.20)	36.2 (1.43)	35.7 (1.41)	M25x1.0-6g 0.100R	
19	F	59.2 (2.33)	39.0 (1.54)	38.5 (1.52)	M28x1.0-6g 0.100R	
21	G	62.8 (2.47)	42.2 (1.66)	41.7 (1.64)	M31x1.0-6g 0.100R	
23	H	65.9 (2.59)	45.4 (1.79)	44.9 (1.77)	M34x1.0-6g 0.100R	
25	J	68.7 (2.70)	48.5 (1.91)	48.0 (1.89)	M37x1.0-6g 0.100R	

NOTES:

1. Dimensions are in millimeters. Inch equivalents in parentheses are given for information only.
2. EMI grounding feature required on this connector.
3. Dimension indicates clearance required for proper operation. Connector must be capable of accepting and functioning with applicable SAE-AS85049 accessories.
4. Backshell extender is factory installed but may be removed for serviceability if necessary. If removed the extender must be reassembled and torqued to specified value for proper operation of connector.

FIGURE 1. Plug, classes F, G, J, K, M, R, S, W, T, X and Z - Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1. Interface dimensions shall conform to MIL-DTL-38999.

This connector mates with MIL-DTL-38999/20,/21, /22, /23, /24, /25 and /27.

For insert arrangements: See MIL-STD-1560.

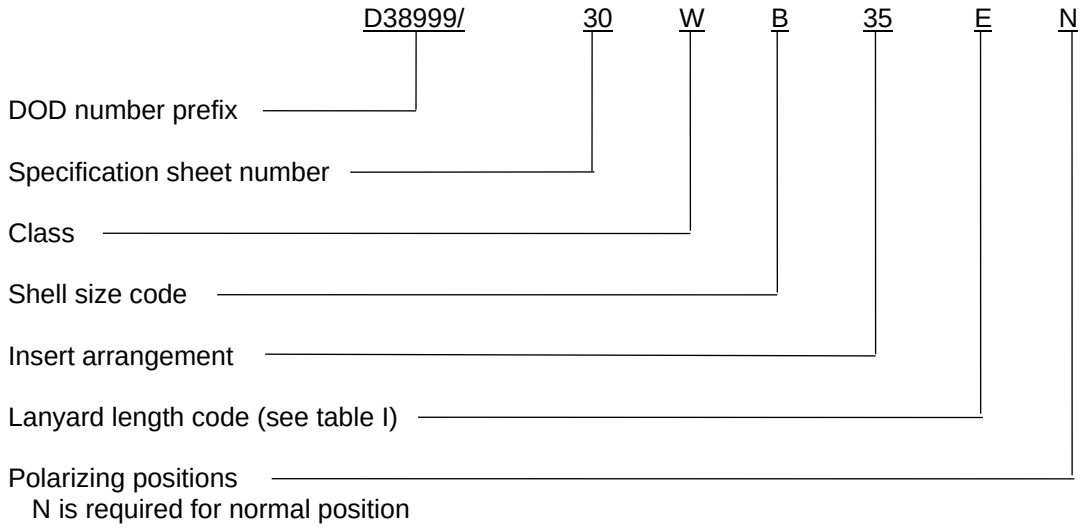
Lanyard:

a. 1.57 millimeter diameter, seven strands of stainless steel capable of withstanding 890 Newton pull test after assembly with connector.
b. Cable shall be covered with a suitable protective sleeving to preclude possible chafing or abrading of wires.

Connector shall disengage from any coupling condition including partially mated.

Connector design shall incorporate a swivel action for the lanyard to prevent twisting of the cable.

Part or Identifying Number (PIN) example:



Class F is not for Navy use and is inactive for Air Force new design use.

NOTE: The term PIN is equivalent to the term (part number, identification number, and type designator) which was previously used in this specification.

TABLE I. Lanyard length codes.

Code	L ± 6 mm (.24)	Code	L ± 6 mm (.24)
A	102 (4)	M	254 (10)
B	115 (4.5)	N	267 (10.5)
C	127 (5)	P	280 (11)
D	140 (5.5)	R	293 (11.5)
E	153 (6)	S	305 (12)
F	166 (6.5)	T	318 (12.5)
G	178 (7)	U	331 (13)
H	191 (7.5)	V	356 (14)
I	203 (8)	W	381 (15)
J	216 (8.5)	X	407 (16)
K	229 (9)	Y	432 (17)
L	242 (9.5)	Z	458 (18)

QUALIFICATION: Connectors shall meet the qualification requirements of MIL-DTL-38999 with the exceptions and additions specified below. Group C periodic requalification testing, including the selection of Group C test samples, shall be in accordance with testing specified in this specification sheet and MIL-DTL-38999 Group C, 24 month testing.

Durability:

Wired connectors shall meet the durability requirements of MIL-DTL-38999, with the following exception: Total number of cycles of normal mating and unmating shall be 250 (200 cycles of normal mating and unmating followed by 50 cycles of normal mating with pull-separation unmating).

Pull-separation at temperature:

In addition to mating and unmating by normal coupling ring rotation, the connector shall be capable of lanyard-pull separation at any angle within 15° of the normal axis after exposure for 1 hour minimum at the following temperatures as shown in table II: Room ambient temperature, -65°C (+ 0°C / -5 °C), and at the maximum temperature of the specified class. Each connector shall have one straight (0°) pull and one pull at 15° from straight, with a pull rate not exceeding 13 cm/second. Each pull test will be conducted within three (3) minutes after removal from the temperature chamber without forced heating or cooling. Maximum separation forces shall be as specified in table III.

TABLE II. Separation test temperatures.

Pull Type	Step 1	Step 2	Step 3
Straight, 0° Pull	Room ambient	-65° + 0° / -5 °C	max temperature of specified connector class
15° Pull	Room ambient	-65° + 0° / -5 ° C	max temperature of specified connector class

TABLE III. Separation forces (max).

Shell size	Straight pull (N)	15° pull (N)
11	200	245
13	200	245
15	200	245
17	400	445
19	400	445
21	400	445
23	400	445
25	400	445

Fail-safe disengagement:

Connectors shall be partially mated with the plug coupling ring rotated approximately 50% of full coupling. Pull-separation at ambient temperature, both straight and 15° from straight, and shall be accomplished within the limits specified in table III.

Vibration:

Wired, mated connectors shall meet the vibration requirements of MIL-DTL-38999 with the following exceptions:

a. Sine vibration: Connectors shall be subjected to the test specified in method 204, test condition G, of MIL-STD-202. Accessory load shall be omitted.

b. Random vibration: Connectors shall be subjected to the test specified in EIA-364-28, test condition VI, letter “J”, ambient temperature. Duration shall be 8 hours in the longitudinal direction and 8 hours in a perpendicular direction, for a total of 16 hours. Accessory load shall be omitted. Additional random vibration tests as specified in MIL-DTL-38999 shall be performed.

Ice resistance:

Wired, mated connectors with accessories attached shall be placed in a chamber and the temperature reduced and stabilized such that the item is maintained at -18°C (tolerance of +0°C, -5°C) for 1 hour. After stabilization of the chamber temperature, the test item shall be sprayed with water precooled to 2°C (tolerance of +5°C, -0°C), for a period of five (5) minutes. The test item shall be located a maximum of 305 millimeters (12 inches) from the spray nozzle. The entire test item shall be exposed to the spray. After completion of water spray, the test item shall remain in the chamber at -18°C (tolerance of +0°C, -5°C) for an additional 30 minutes. Upon completion of the 30 minute cold soak period, the test item shall be removed from the chamber and immediately (within two (2) minutes) subjected to uncoupling by use of the lanyard mechanism. The force required to separate the connector shall not exceed the values in table II by more than 50%.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 and relationship to the last previous issue.

Referenced documents. In addition to MIL-DTL-38999, this document references the following:

MIL-DTL-38999/20
MIL-DTL-38999/21
MIL-DTL-38999/22
MIL-DTL-38999/23
MIL-DTL-38999/24
MIL-DTL-38999/25
MIL-DTL-38999/27
MIL-STD-202
MIL-STD-1560
EIA-364-28
SAE-AS85049

CONCLUDING MATERIAL

Custodians:
Army – CR
Navy - AS
Air Force – 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-2013-147)

Review activities:
Army - AR, MI
Navy - EC, MC, OS
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.