METRIC

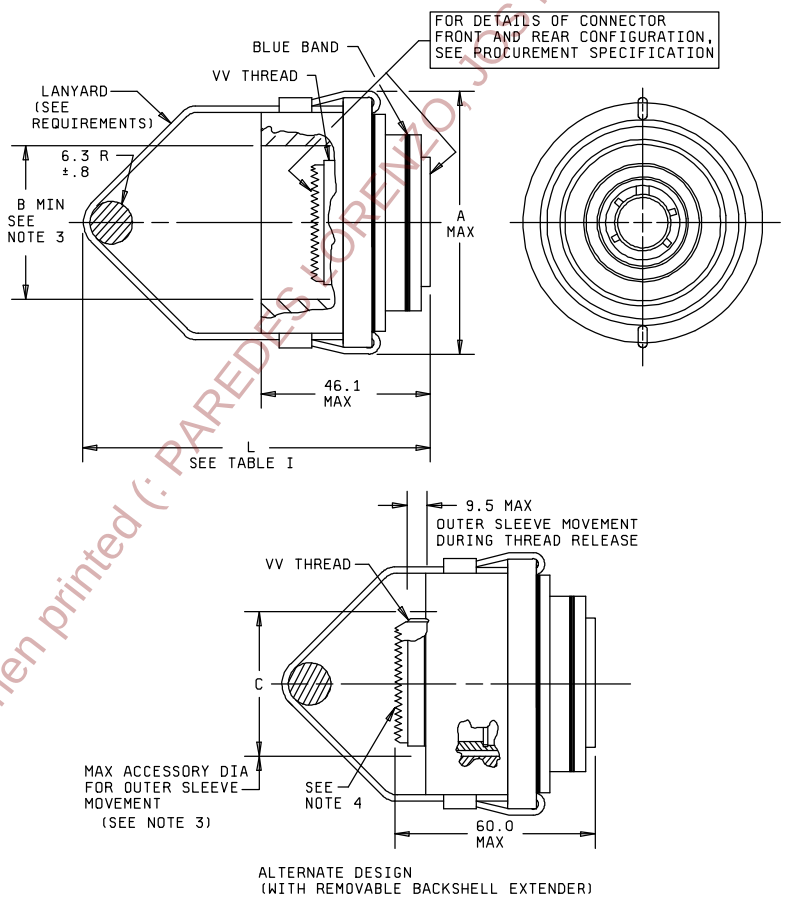
MIL-DTL-38999/30B
11 June 2001
SUPERSEDING
DOD-C-38999/30A
15 August 1985

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 and MIL-DTL-38999.



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

Shell size	Shell size code	A max	B min	C max	VV thread	Backshell extender torque
11	B	46.9	25.5	25.0	M15x1.0-6g 0.100R	5.6 Newton meters min.
13	C	50.1	29.9	29.4	M18x1.0-6g 0.100R	5.6 Newton meters min.
15	D	52.8	33.0	32.5	M22x1.0-6g 0.100R	5.6 Newton meters min.
17	E	56.0	36.2	35.7	M25x1.0-6g 0.100R	5.6 Newton meters min.
19	F	59.2	39.0	38.5	M28x1.0-6g 0.100R	5.6 Newton meters min.
21	G	62.8	42.2	41.7	M31x1.0-6g 0.100R	5.6 Newton meters min.
23	H	65.9	45.4	44.9	M34x1.0-6g 0.100R	5.6 Newton meters min.
25	J	68.7	48.5	48.0	M37x1.0-6g 0.100R	5.6 Newton meters min.

NOTES:
1. Dimensions are in millimeters.
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 MIL-C-85049 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 and X. - 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.

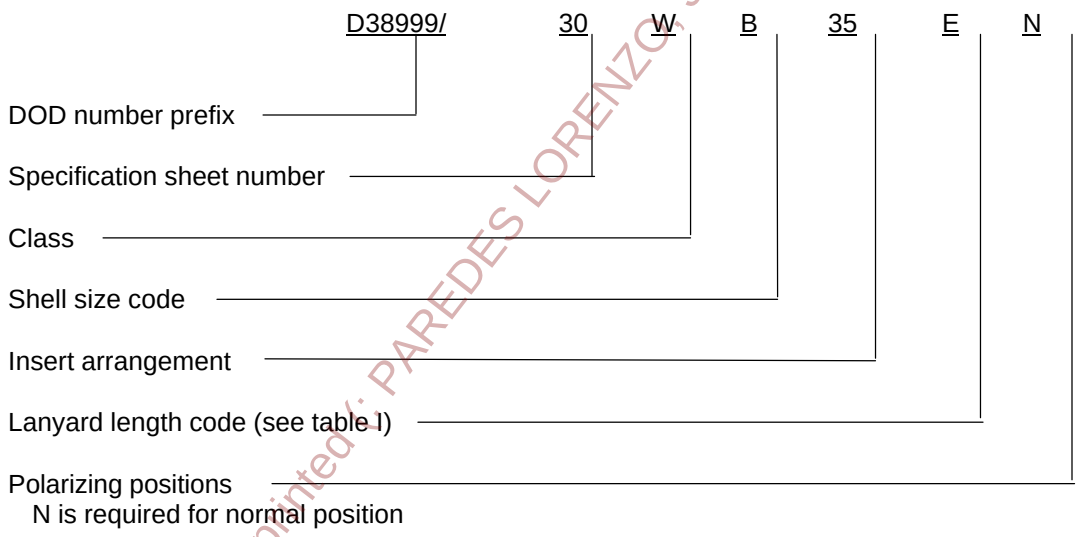
Lanyard:

a. 1.57millimeter diameter, seven strands of stainless steel capable of withstanding 890 Newtons pull test after assembly with connector.
b. Cable shall be covered with a suitable protective sleeving to preclude possible chaffing 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	Code	L ± 6 mm
A	102	M	254
B	115	N	267
C	127	P	280
D	140	R	293
E	153	S	305
F	166	T	318
G	178	U	331
H	191	V	356
I	203	W	381
J	216	X	407
K	229	Y	432
L	242	Z	458

QUALIFICATION: Connectors shall meet the qualification requirements of MIL-DTL-38999 with the following exceptions and additions.

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

The 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: 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. Each connector shall have one straight pull and one pull at 15° from straight, with a pull rate not exceeding 13 cm/second. After being exposed for one hour minimum at the specified temperature the test will be at -65°C, at ambient, and at the maximum temperature of the specified class. The 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 II.

Fail-safe disengagement: Connectors shall be partially mated with the plug coupling ring rotated approximately 50% of full coupling. Pull-separation both straight and15° from straight at ambient temperature shall be accomplished within the limits as specified in table II.

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 method 2005 of MIL-STD-1344, 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: The mated, wired connectors with accessories attached shall be placed in a chamber and the temperature reduced and stabilized such that the item is maintained at -17.8°C (0°F) for 1 hour. After stabilization of the chamber temperature, the test item shall be sprayed with water precooled to 1.7°C (35°F), for a period of five (5) minutes. The test item shall be located a maximum of 305 millimeter (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 -17.8°C (0°F) 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%.

Qualification and group C periodic test table of MIL-DTL-38999, group 11, replace Coupling Torque requirements with Pull-Separation. Failsafe Disengagement shall follow Pull-Separation test.

TABLE II. 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

CONCLUDING MATERIAL

Custodians:
Army – CR
Navy - AS
Air Force – 11
DLA - CC

Review activities:
Army - AR, MI
Navy - EC, MC, OS
Air Force - 19, 99

Preparing activity:
DLA - CC

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