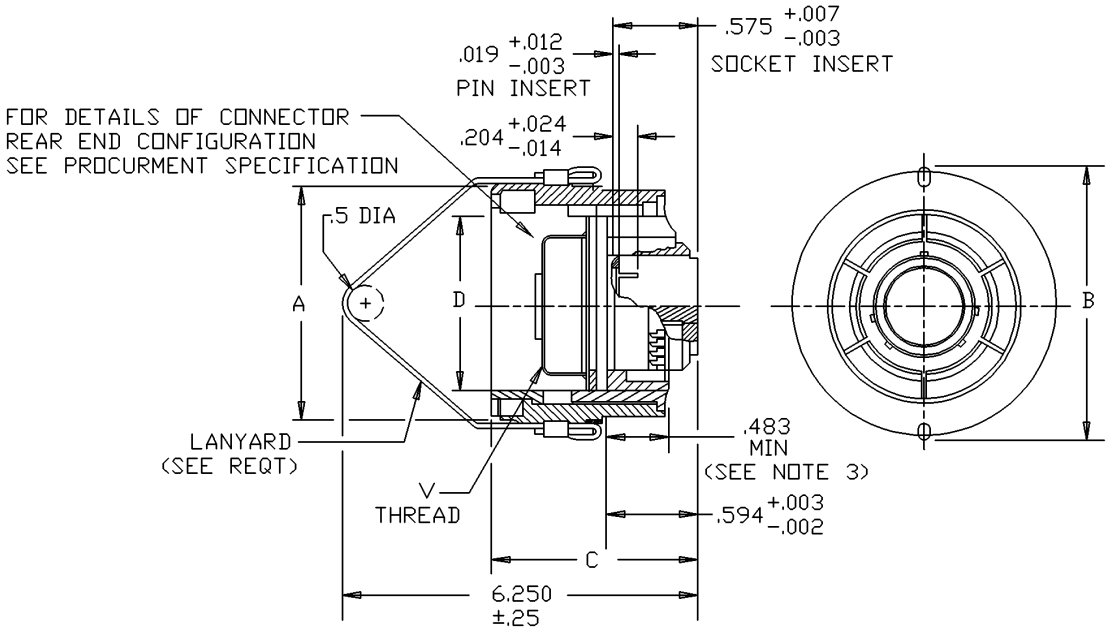
INCH-POUND
MS27661F
29 August 2011
SUPERSEDING
MS27661E
12 July 2002

DETAIL SPECIFICATION SHEET

CONNECTORS, PLUG, ELECTRICAL, CRIMP TYPE, LANYARD RELEASE, FAIL-SAFE, SERIES I

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.



Inches	mm	Inches	mm	Inches	mm
.002	0.05	.019	0.48	.500	12.70
.003	0.08	.024	0.61	.5625	14.29
.007	0.18	.204	5.18	.575	14.61
.012	0.30	.250	6.35	.594	15.09
.014	0.36	.483	12.27	6.25	158.75

FIGURE 1. Plug, classes E and T.

Shell size	A max	B max	C max	D min	V Thread UNEF-2A
11	1.437	1.843	1.703	.745	.5625-24
13	1.562	1.969		.931	.6875-24
15	1.672	2.078		1.056	.8125-20
17	1.812	2.203		1.181	.9375-20
19	1.938	2.328		1.306	1.0625-18
21	2.062	2.469		1.431	1.1875-18
23	2.188	2.594		1.556	1.3125-18
25	2.297	2.703	1.766	1.681	1.4375-18

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. A point at which a gage pin, having the same basic diameter as the mating contact and a square face, touches the contact spring.
4. Operating voltages are listed in table I for guidance.
5. Increase values by 50% for arrangements having contacts size 22, 22M and 22D.

FIGURE 1. Plug, classes E and T - Continued.

TABLE I. Operating voltage.

Service rating	Operating voltage (sea level)	
	AC (rms)	DC
M	400	550
I	600	850
II	900	1250

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Interface dimensions shall conform to MIL-DTL-38999.

Mating connectors: MS27466, MS27468, MS27469, MS27470, MS27471, MS27496, MS27505, MS27515, MS27652, MS27654, MS27656 and MS27662.

Insert arrangements: See MIL-STD-1560.

Finish: Finish shall be in accordance with MIL-DTL-38999.

Class E is inactive for new design.

Lanyard: Coupling design optional.

a. .062 diameter, 7 strands of stainless steel capable of withstanding 200 pounds pull test after assembly with connector.
b. Cable shall be covered with a suitable protective sleeving to preclude possible chafing of wires.

Durability and separation:

The number of cycles of normal mating and unmating shall be 200. This shall be followed by 50 cycles of normal mating and straight pull. Following this, the connector shall be subjected to the below separation test. The pull rate shall be 5-inches/second max and each pull test shall be performed within 3 minutes of removal from the temperature chamber. Connector to be in chamber for 1 hour minimum. Separation values shall be within those listed in table II.

TABLE II. Separation forces.

Shell size	Straight pull (lbs) max (see figure 1, note 5)	15 degree pull (lbs) max (see figure 1, note 5)	Separation forces (lbs) max after cold soak	Separation forces (lbs) min
11	15	20	150	5.5
13	20	25	150	5.5
15	25	30	150	12.0
17	30	35	250	12.0
19	35	45	250	12.0
21	45	55	250	12.0
23	55	65	250	12.0
25	65	75	250	12.0

SEPARATION TEST

Pull Type	Step 1	Step 2	Step 3
Straight, 0° Pull	Room ambient	-65° C	maximum temperature of connector
15° Pull	Room ambient	-65° C	maximum temperature of connector

Vibration (qualification only):

Wired mated connectors shall meet the vibration requirements of MIL-DTL-38999 when subjected to the random vibration test specified in method 214 of MIL-STD-202. The following details and exceptions shall apply:

a. Receptacles shall be mounted on the vibration fixture by normal means. The wire bundle shall be clamped to nonvibrating points at least 8 inches from the rear of the connector.

b. Test condition II, letter E shall be used.

c. All contacts shall be wired in a series circuit and 100 to 150 milliamperes of current allowed to flow through the circuit during the test.

d. Duration of the test shall be 8 hours in the longitudinal axis and 8 hours in the perpendicular axis.

e. An extender adapter, Bendix Part or Identifying Number (PIN) 10-494596-xx (xx-applicable shell size) or equivalent, shall be used with SAE-AS85049/49-2 strain relief. Only the SAE-AS85049/49-2 strain relief needs to be used on the mating receptacle.

Shock (qualification only):

Wired, mated connectors shall meet the shock requirements of MIL-DTL-38999 with the following exception: The pulse shall be approximately half sine wave of 150 G ± 15% magnitude with a duration of 3 ± 1 milliseconds.

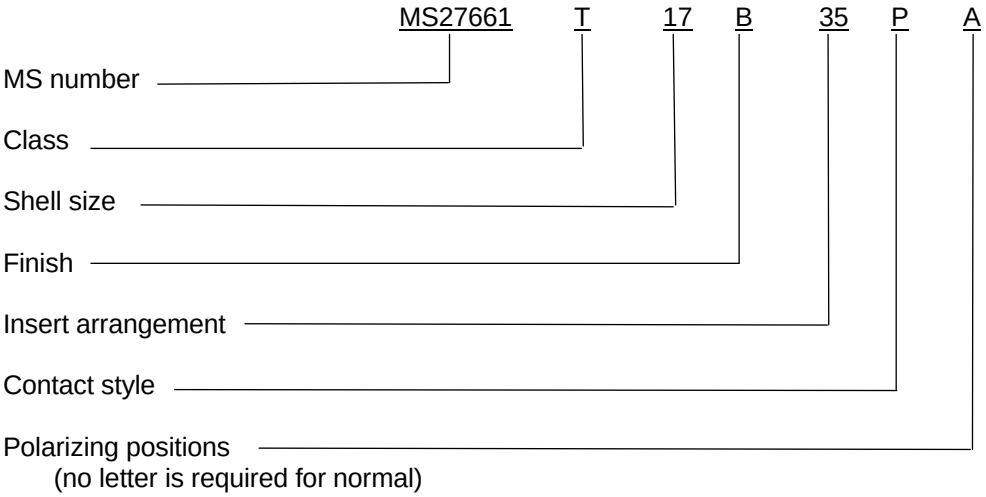
Connector shall disengage from any coupling condition including partially mated.

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

Maximum separation force lanyard not operational:

The maximum straight pull force required to separate mated plug and receptacle connectors when lanyard is broken or not hooked up is 950 pounds.

PIN example:



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-DTL-38999, this document references the following:

MIL-STD-202
MIL-STD-1560
MS27466
MS27468
MS27469
MS27470
MS27471
MS27496
MS27505
MS27515
MS27652
MS27654
MS27656
MS27662

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 5935-2011-083)

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.daps.dla.mil.