

INCH-POUND

MS27661E
 12 July 2002
 SUPERSEDING
 MS27661D
 24 June 1983

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 and MIL-DTL-38999.

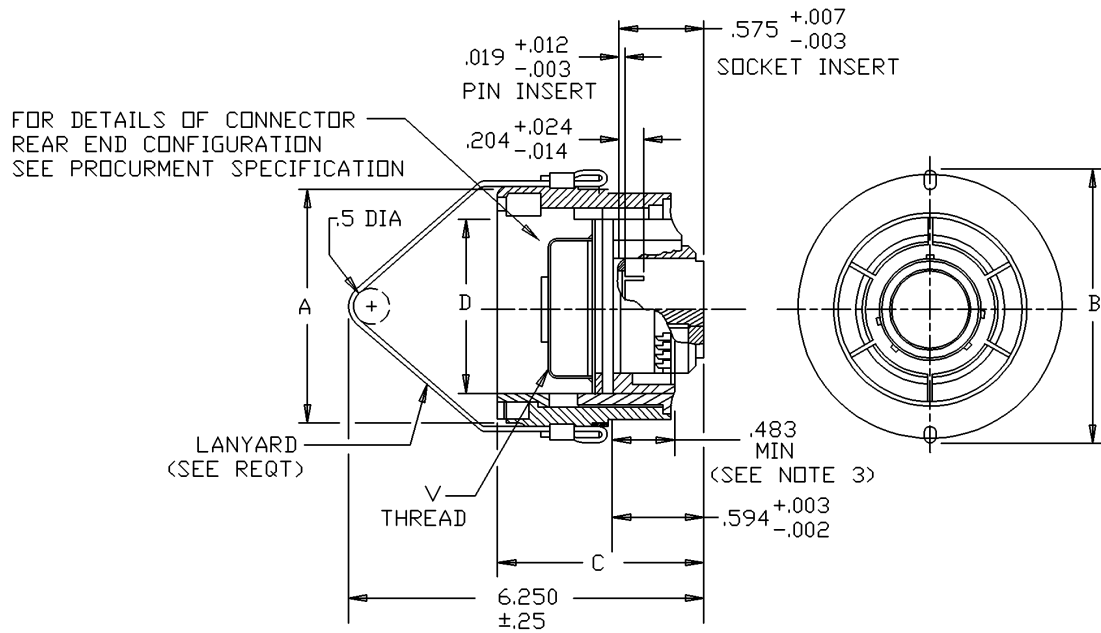


FIGURE 1. Plug, classes E and T.

MS27661E

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 general 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: 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 chaffing of wires.

Durability and separation:

The number of cycles of normal mating and unmating shall be 200. This shall be followed by 50 cycles

MS27661E

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 note 6	15 degree pull (lbs) max see note 6	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	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:

- 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.
- Test condition II, letter E shall be used.
- 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.
- Duration of the test shall be 8 hours in the longitudinal axis and 8 hours in the perpendicular axis.
- An extender adapter, Bendix Part or Identifying Number (PIN) 10-494596-xx (xx-applicable shell size) or equivalent, shall be used with M85049/49-2 strain relief. Only the M85049/49-2 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:

MS27661E

The pulse shall be approximately half sine wave of 150 G $\pm 15\%$ magnitude with a duration of 3 ± 1 milliseconds.

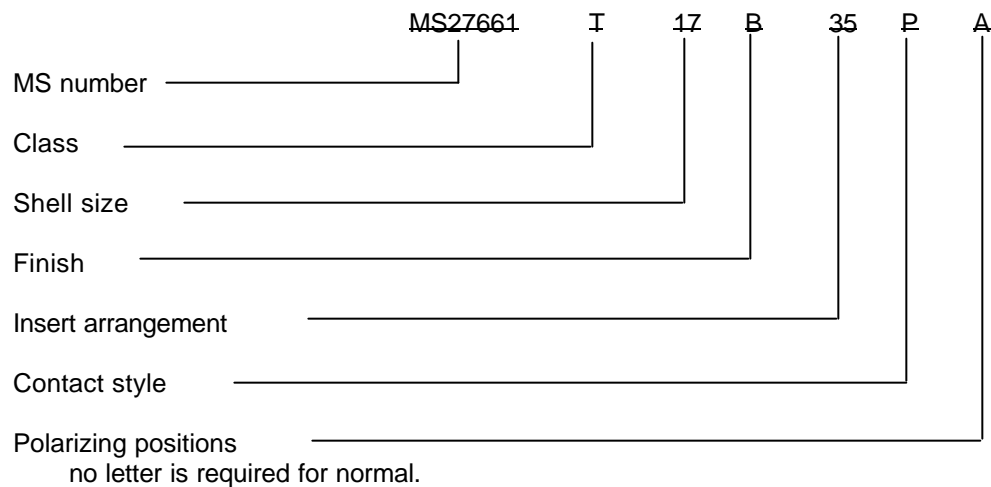
Connector shall disengage from any coupling condition including partially mated.

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:



CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - AS
Air Force - 11
DLA - CC

Preparing activity:

DLA - CC

(Project 5935-4408)

Review activities:

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