

INCH-POUND

MS90556F

14 JUNE 1995

SUPERSEDING

MS90556E

7 February 1980

## MILITARY SPECIFICATION SHEET

## CONNECTOR, PLUG, ELECTRICAL, STRAIGHT, CLASS L

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 the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-22992.

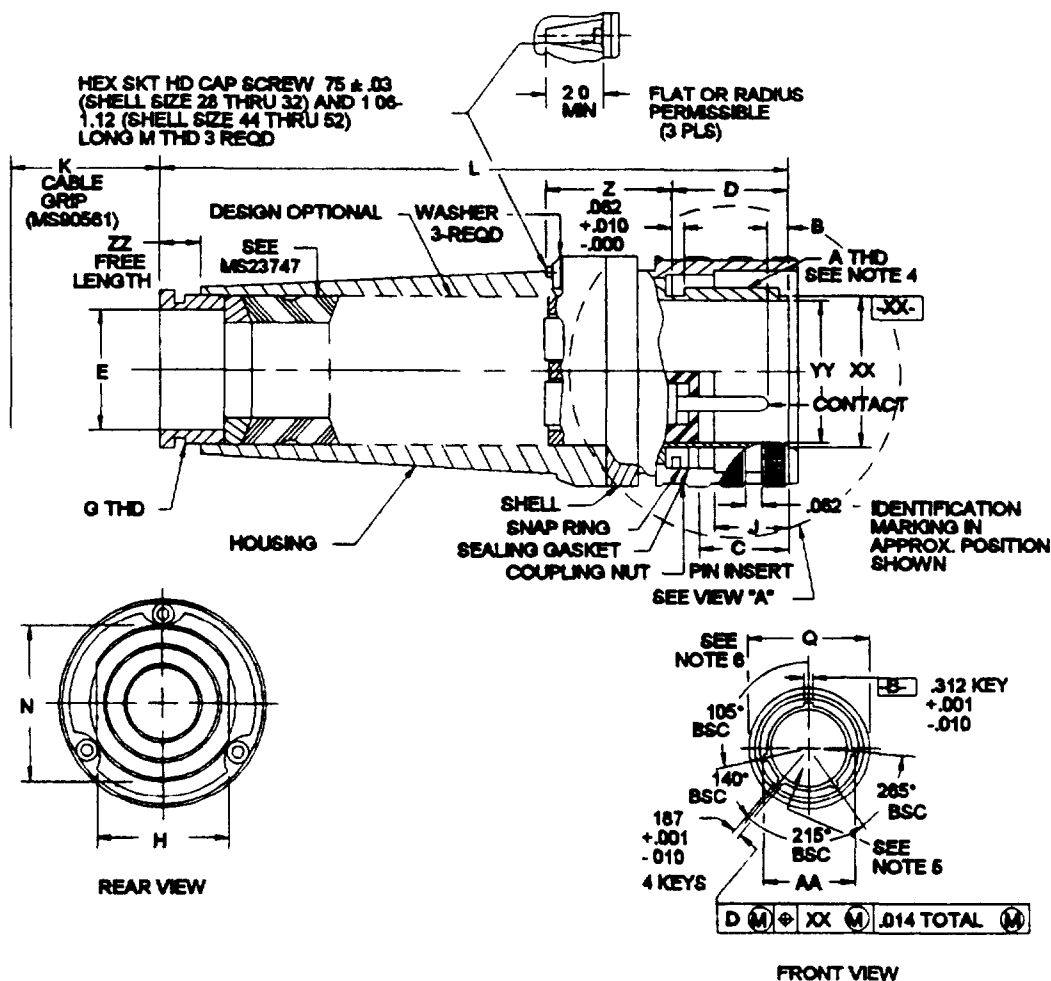


FIGURE 1. Dimensions and configurations

AMSC N/A

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FSC 5935

DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.



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TABLE I. Plug dimensions.

Shell size	B $\pm .047$			C $\pm .016$	D $\pm .005$	J $\pm .031$	M thread	A thread class 2B	Q dia max	Z $\pm .047$	AA dia $+ .006$ $- .005$	XX dia $+ .001$ $- .010$	YY dia $+ .010$ $- .001$	ZZ $\pm .035$ free length
	Phase	Neutral	Ground											
28	.196	.078	.078	1.370	1.557	1.062	.164-32UNC	2.000-.1428P-.2857L	2.312	1.422	1.672	1.522	1.370	.562
32	.196	.078	.078	1.370	1.557	1.062	.164-32UNC	2.250-.1428P-.2857L	2.562	1.422	1.922	1.772	1.620	.562
44	.196	.078	.547	1.589	1.776	1.281	.250-28UNC	3.000-.1428P-.2857L	3.531	1.625	2.672	2.522	2.296	.672
48	.196	.078	.547	1.589	1.776	1.281	.250-28UNC	3.250-.1428P-.2857L	3.782	1.625	2.891	2.725	2.551	.672
52	.196	.078	.547	1.589	1.776	1.281	.250-28UNC	3.500-.1428P-.2857L	4.016	1.625	3.141	2.975	2.801	.672

Shell size	MM dia	BB dia	CC dia min	EE dia	FF dia	Packing preformed	HH thread	Hex socket head size	JJ dia	KK thread	
										Size	Mod minor dia
28	1.685	1.539	1.405	1.693	1.776	MS29513-128	.164-32UNC-2B	9/64	.198	.164-32UNC-2B	.143
	1.674	1.531		1.687	1.765				.187		.137
32	1.935	1.789	1.655	1.943	2.026	MS29513-132	.164-32UNC-2B	9/64	.198	.164-32UNC-2B	.143
	1.924	1.781		1.937	2.015				.187		.137
44	2.685	2.539	2.405	2.693	2.776	MS29513-144	.250-28UNF-2B	3/16	.286	.250-28UNF-2B	.229
	2.674	2.531		2.687	2.765				.275		.223
48	2.935	2.789	2.655	2.943	3.026	MS29513-148	.250-28UNF-2B	3/16	.286	.250-28UNF-2B	.229
	2.924	2.781		2.937	3.015				.275		.223
52	3.185	3.039	2.905	3.193	3.276	MS29513-151	.250-28UNF-2B	3/16	.286	.250-28UNF-2B	.229
	3.174	3.031		3.187	3.265				.275		.223

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.562	14.27	1.765	44.83	2.562	65.07	2.975	75.57
.005	0.13	.672	17.07	1.772	45.01	2.655	67.44	3.015	76.58
.006	0.15	1.062	26.97	1.776	45.11	2.672	67.87	3.026	76.86
.010	0.25	1.281	32.54	1.781	45.24	2.674	67.92	3.031	76.99
.016	0.41	1.370	34.80	1.789	45.44	2.685	68.20	3.039	77.19
.031	0.79	1.405	35.69	1.922	48.82	2.687	68.25	3.141	79.78
.035	0.89	1.422	36.12	1.924	48.87	2.693	68.40	3.174	80.62
.047	1.19	1.522	38.66	1.935	49.15	2.725	69.22	3.185	80.90
.078	1.98	1.531	38.89	1.937	49.20	2.765	70.23	3.187	80.95
.137	3.48	1.539	39.09	1.943	49.35	2.776	70.51	3.193	81.10
.143	3.63	1.557	39.55	2.015	51.18	2.781	70.64	3.265	82.93
.187	4.75	1.589	40.36	2.026	51.46	2.789	70.84	3.276	83.21
.196	4.98	1.620	41.15	2.296	58.32	2.801	71.15	3.531	89.69
.198	5.03	1.625	41.28	2.312	58.72	2.891	73.43	3.782	96.06
.223	5.66	1.655	42.04	2.405	61.09	2.905	73.79	4.016	102.01
.229	5.82	1.672	42.47	2.522	64.06	2.924	74.27		
.275	6.99	1.674	42.52	2.531	64.29	2.935	74.55		
.286	7.26	1.687	42.85	2.539	64.49	2.937	74.60		
.547	13.89	1.693	43.00	2.551	64.80	2.943	74.75		

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TABLE II. "U" diameter by contact size.

Contact size	"U" diameter ( metric equivalent in parentheses)
4/0	.614/.624 (15.60/15.85)
2/0	.520/.530 (13.21/13.46)
1/0	.471/.481 (11.96/12.22)
4	.339/.349 (8.61/8.86)
6	.292/.302 (7.42/7.67)

TABLE III. Accessory interface dimensions.

Size	Arrangement no.	E cable range	H +.001 -.010	L max free length	N dia +.011 -.020	G thread class 2 left hand	K approx free length	DD dia basic	GG dia	LL	NN
28	-02, -04 -03, -05, -06 -07, -12 -13	.844/.719 .969/.844 1.047/.922 1.130/1.005	1.750	8.188	2.000	1.8750-16UN	6.688 7.188	2.104	2.439 2.428	.417 .406	.338 .322
32	-02, -04 -03, -05, -12 -07 -13 -06	.969/.844 1.130/1.005 1.259/1.135 1.342/1.217 1.047/.992	1.750	8.188	2.000	1.8750-16UN	7.188 7.188 8.188 8.688 7.188	2.354	2.689 2.678	.417 .406	.338 .322
44	-02, -04 -03, -05 -12 -13 -06 -51 -52 1/ -56 1/2/	1.312/1.187 1.438/1.313 1.516/1.391 1.672/1.547 1.375/1.250 1.734/1.609 1.525/1.435 1.135/1.065	2.250	10.172	2.500	2.3125-16UNS	10.688 9.688 10.688 12.688 9.688 11.688 11.188 7.188	3.156	3.667 3.646	.605 594	.526 .510
48	-13	2.000/1.867	2.750	10.734	2.953	2.7500-16UN	14.188	3.406	3.917 3.896	.605 .594	.526 .510
52	-02 -12 -13 -06	1.703/1.558 2.328/2.183 2.453/2.308 1.797/1.652	2.875	11.109	3.250	3.0000-16UN	13.688 17.188 18.188 13.688	3.656	4.167 4.146	.605 .594	.526 .510

- 1/ Arrangements 44-52 and 44-56 are for stub cable applications only; they are not to be used in a cable assembly  
2/ Arrangement 44-56 to include 4 each MS3348-1-6L contact bushings.

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	1.047	26.59	1.609	40.87	2.428	61.67	6.688	169.88
.005	0.13	1.065	27.05	1.652	41.96	2.439	61.95	7.188	182.58
.010	0.25	1.130	28.70	1.672	42.47	2.453	62.31	8.188	207.98
.011	0.28	1.135	28.83	1.703	43.26	2.500	63.50	8.688	220.68
.020	0.51	1.187	30.15	1.734	44.04	2.678	68.02	9.688	246.08
.322	8.18	1.217	30.91	1.750	44.45	2.689	68.30	10.172	258.37
.338	8.59	1.250	31.75	1.797	45.64	2.750	69.85	10.688	271.48
.406	10.31	1.259	31.98	1.812	46.02	2.875	73.02	10.734	272.64
.417	10.59	1.312	33.32	1.867	47.42	2.953	75.01	11.109	282.17
.510	12.95	1.313	33.35	1.938	49.23	3.156	80.16	11.188	284.18
.526	13.36	1.342	34.09	2.000	50.80	3.250	82.55	11.688	296.88
.594	15.09	1.375	34.93	2.104	53.44	3.406	86.51	12.688	322.28
.605	15.37	1.391	35.33	2.125	53.97	3.646	92.61	13.688	347.68
.719	18.26	1.435	36.45	2.183	55.45	3.656	92.86	14.188	360.38
.844	21.44	1.438	36.53	2.188	55.58	3.667	93.14	17.188	436.58
.922	23.42	1.516	38.51	2.250	57.15	3.896	98.96	18.188	461.98
.969	24.61	1.525	38.74	2.308	58.62	3.917	99.49		
.992	25.20	1.547	39.29	2.328	59.13	4.146	105.31		
1.005	25.53	1.558	39.57	2.354	59.79	4.167	105.84		

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TABLE IV. Insert arrangements, crimp bushings, and contacts.

Insert arrangement	Contacts 1/		Cable conductors 1/		Contact bushing required	
	Quantity	Size	Quantity	Size	Quantity	PIN MS3348-
28-02	2	6	2	8	2	6-8L
28-04	2	6	2	8	2	6-8L
	1	6 (G)	2	10 (G)	---	---
28-06	3	6	3	8	3	6-8L
	1	4 (G)	3	12 (G)	1	4-8L
28-07	3	6	3	6	---	---
	1	4 (G)	3	10 (G)	1	4-5L
28-12	4	6	4	8	4	6-8L
	1	6 (G)	4	12 (G)	---	---
32-02	2	4	2	6	2	4-6L
32-04	2	4	2	6	2	4-6L
	2	6 (G)	2	10 (G)	2	4-10L
32-05	2	4	2	4	---	---
	2	6 (G)	2	8 (G)	2	6-8L
32-06	3	4	3	6	3	4-6L
	1	4 (G)	3	12 (G)	1	4-8L
32-12	4	4	4	6	4	4-6L
	1	6 (G)	4	12 (G)	---	---
44-02	2	1/0	2	2	2	1-2L
44-04	2	1/0	2	2	2	1-2L
	2	4 (G)	2	6 (G)	2	4-6L
44-05	2	1/0	2	1	---	---
	2	4 (G)	2	5 (G)	2	4-5L
44-06	3	1/0	3	2	3	1-2L
	3	6 (G)	3	8 (G)	3	6-8L
44-12	4	1/0	4	2	4	1-2L
	4	6 (G)	4	9 (G)	4	6-9L
44-13	4	1/0	4	1	---	---
	4	6 (G)	4	8 (G)	4	6-8L
44-52	3	1/0	3	2	3	1-2L
	1	1/0 (G)	1	2 (G)	1	1-2L
44-56	3	1/0	3	6	3	1-6L
	1	1/0 (G)	1	6 (G)	1	1-6L
52-02	2	4/0	2	2/0	2	4/0-2/0L
52-06	3	4/0	3	2/0	3	4/0-2/0L
	3	4 (G)	3	5 (G)	3	4-5L

1/ (G) designates grounding.

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**REQUIREMENTS:**

Dimensions and configurations: See figure 1 and tables I, II, and III.

Mating: See MS90555 for mating receptacles.

Inserts and contacts: Removable.

For final installation: Contacts will be assembled in all insert holes.

Shell and nut finish: C (conductive) or N (nonconductive).

Normal keyway position: See figure 1.

Alternate keyway position: See figure 2.

Insert arrangements: See MS90565, MS90567, MS14054, MS14055, and MS14057.

Cover: In accordance with MS90564. Cover shall be attached to cap screw on body.

Crimp bushings: Shall be supplied with the contacts in accordance with MS3348 and table IV herein.

Cable sealing gland: In accordance with MS23747. Shall be supplied with each connector.

Cable grip: In accordance with MS90561. Shall be supplied with each connector.

Part or Identifying Number (PIN): The PIN shall include the shell finish, shell size, shell key alternate position, insert arrangement number, style (P), and insert alternate position.

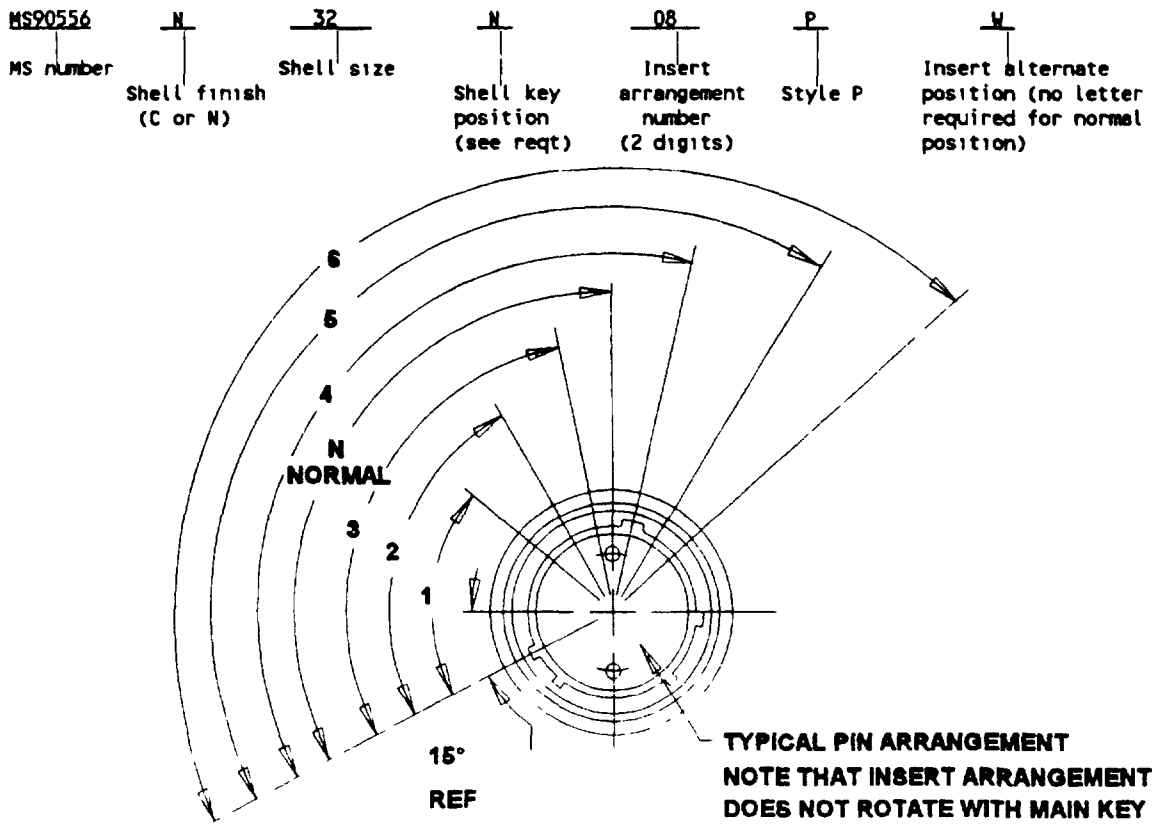
**EXAMPLE:**

FIGURE 2 Alternate key position.

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Finish N (nongrounding assemblies)

Shell size	Shell main key positions 2 wire, 28 V dc
28	N (105°)
32	N (105°)
44	N (105°)
48	N (105°)
52	N (105°)

Finish C (grounding assemblies)

Shell size	Shell main key position						
	60 Hz and 400 Hz (see note 1)						
	1 $\phi$			3 $\phi$			3 $\phi$ (see note 2)
	2 wire		3 wire	4 wire			3 wire
	120 V	240 V	120/240 V	120/208 V	240/416 V	277/480 V	450/480 V
28	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
32	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
44	4 (120°)	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	1 (60°)
48	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
52	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---

## NOTES:

1. Discrimination of 60 Hz and 400 Hz assemblies is accomplished by alternate positioning of inserts. See applicable insert drawing for keying.
2. For Navy ground support equipment use only.
3. Shell main key positions 2 and 3 are not used.

FIGURE 2. Alternate key position - Continued.

Revision letters are not used to denote changes due to the extensiveness of the changes.

## CONCLUDING MATERIAL

## Custodians:

Army - CR  
Navy - EC  
Air Force - 85

## Preparing activity:

DLA - ES

## Review activities:

Army - AT, AV, ME, MI  
Navy - AS, CG, MC, OS, SH  
Air Force - 13, 14, 17, 19, 99

(Project 5935-3996-01)