

INCH-POUND

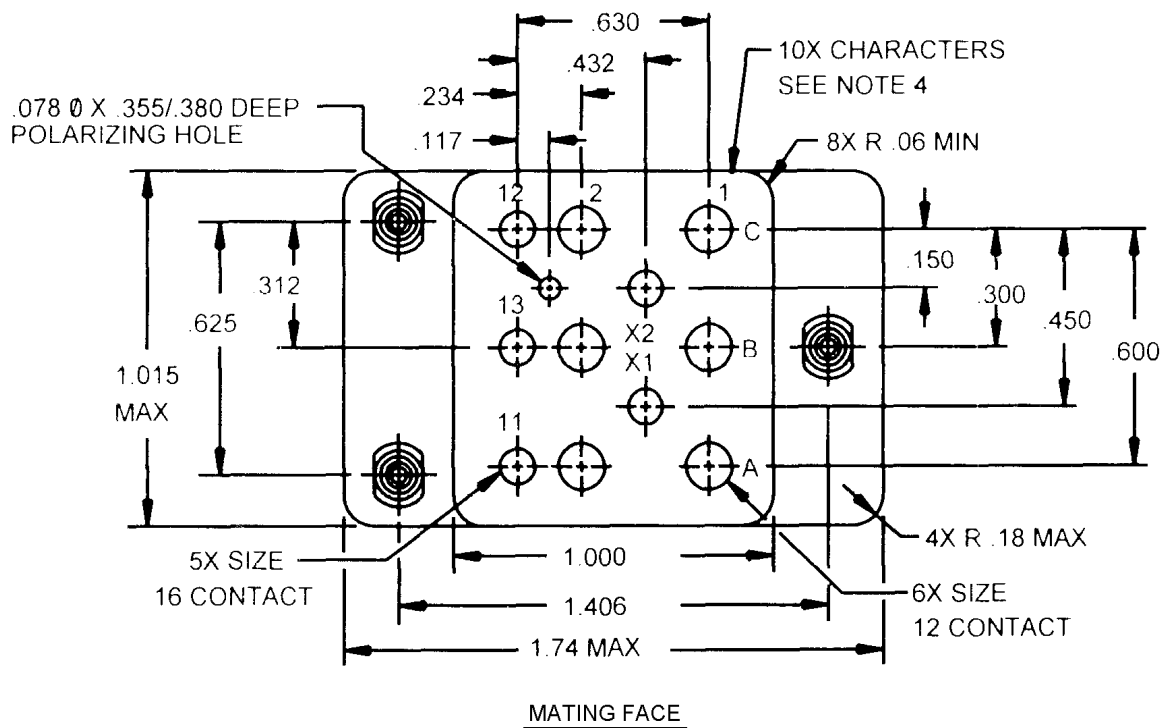
MIL-DTL-12883/54A
w/AMENDMENT 1
4 March 2019
SUPERSEDING
MIL-PRF-12883/54A
18 February 2003

DETAIL SPECIFICATION SHEET

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS SOCKET FOR MIL-PRF 6106 RELAYS AND MS27742 RELAYS

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-12883.



(-01)

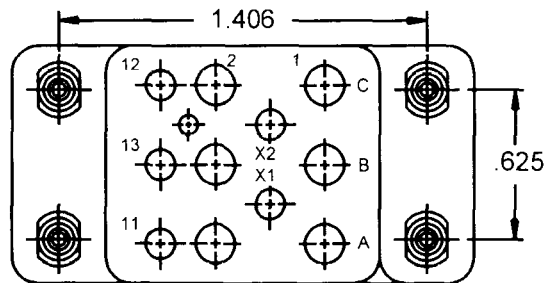
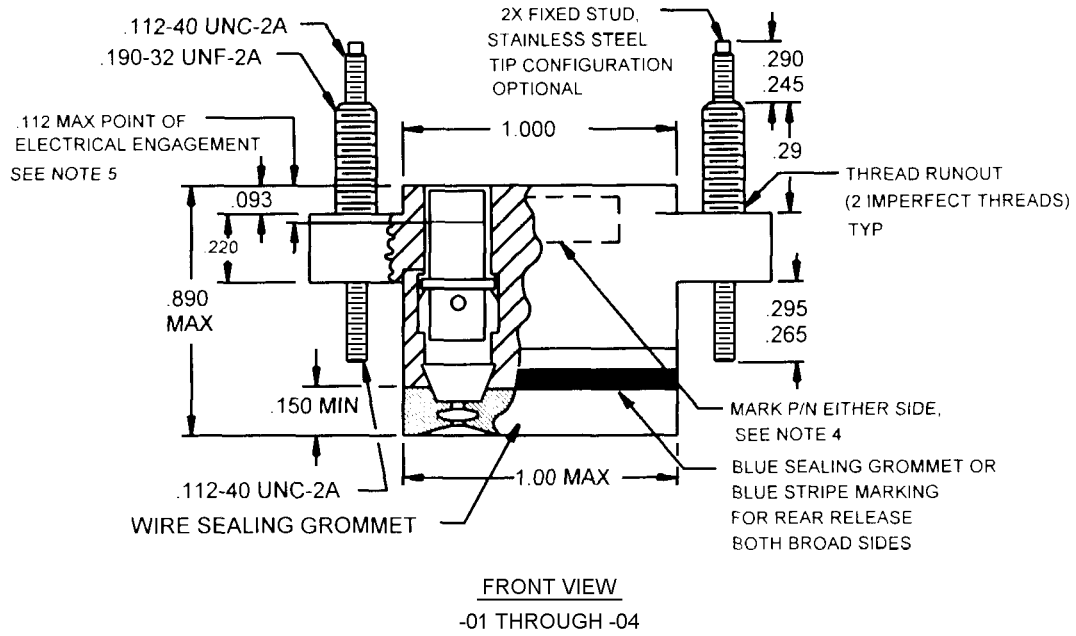
FIGURE 1. Socket configurations.

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ALL OTHER DIMENSIONS SAME AS -01

FIGURE 1. Socket configurations – Continued.

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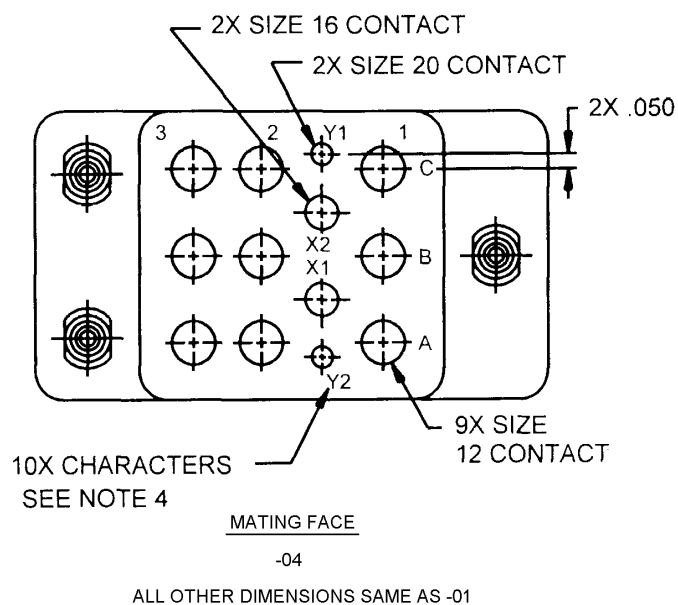
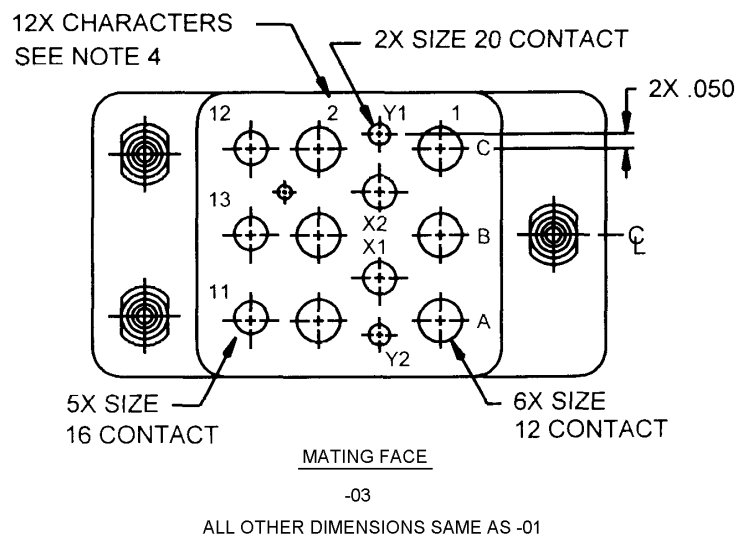


FIGURE 1. Socket configurations – Continued.

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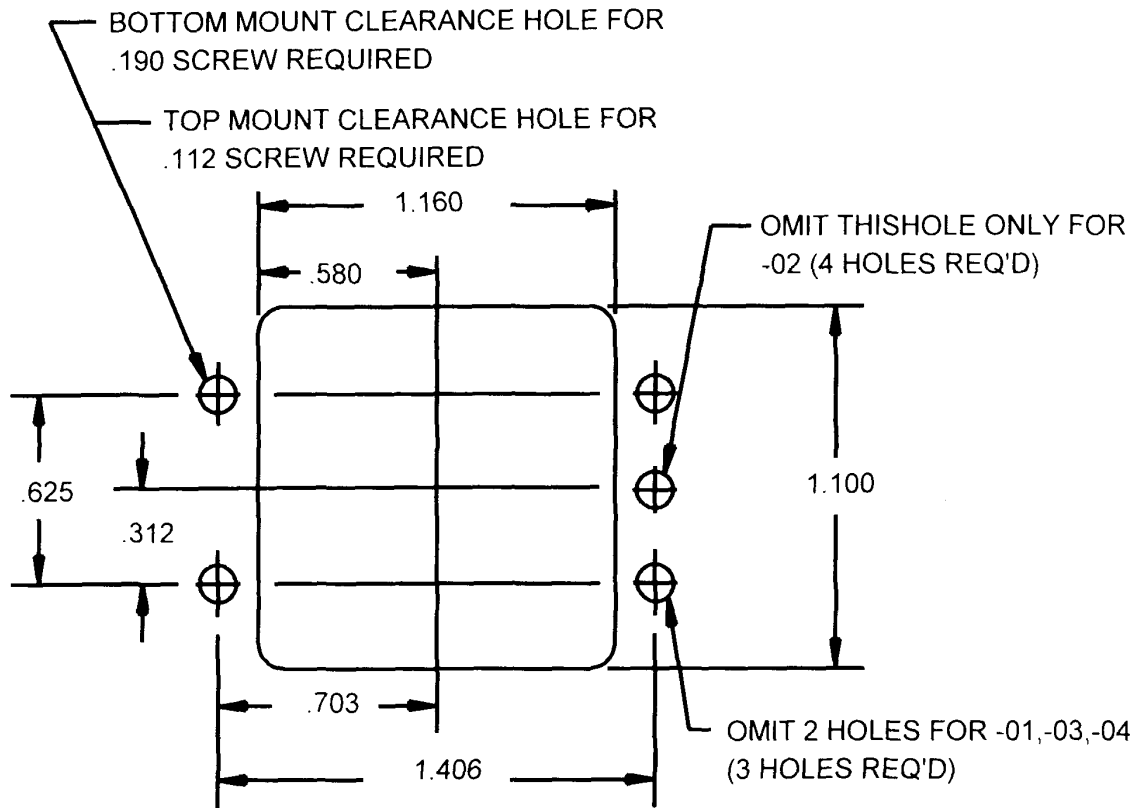
Inches	mm	Inches	mm	Inches	mm
.050	1.27	.245	6.22	.600	15.24
.06	1.5	.265	6.73	.625	15.88
.078	1.98	.202	7.37	.630	16.00
.093	2.36	.29	7.37	.625	15.88
.100	2.54	.295	7.49	.703	17.86
.112	2.84	.300	7.62	.890	22.61
.117	2.97	.312	7.92	1.000	25.40
.150	3.81	.355	9.02	1.015	25.78
.18	4.57	.380	9.65	1.100	27.94
.190	4.83	.432	10.97	1.160	29.46
.220	5.59	.450	11.43	1.406	35.71
.234	5.94	.580	14.73	1.74	44.20

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are $\pm .005$ (0.13 mm) for three place decimals and $\pm .01$ (0.25 mm) for two place decimals.
4. Marking shall be characters which are molded .035 (0.89 mm) minimum, ink marking optional; see MIL-STD-1285.
5. Point of electrical contact from mating face of socket insulator to the socket contact.
6. Configuration mounting (see figure 2).

FIGURE 1. Socket configurations – Continued.

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RECOMMENDED MOUNTING DIMENSIONS

Inches	mm
.112	2.84
.190	4.83
.312	7.92
.580	14.73
.625	15.88
.703	17.86
1.100	27.94
1.160	29.46
1.406	35.71

FIGURE 2. Socket mounting.

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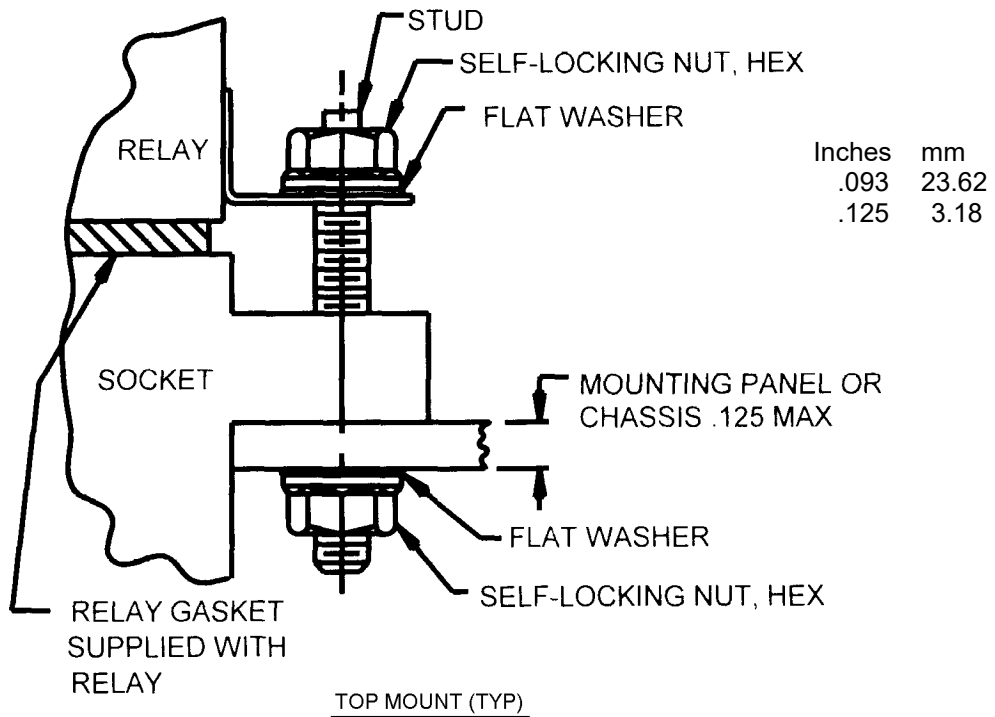
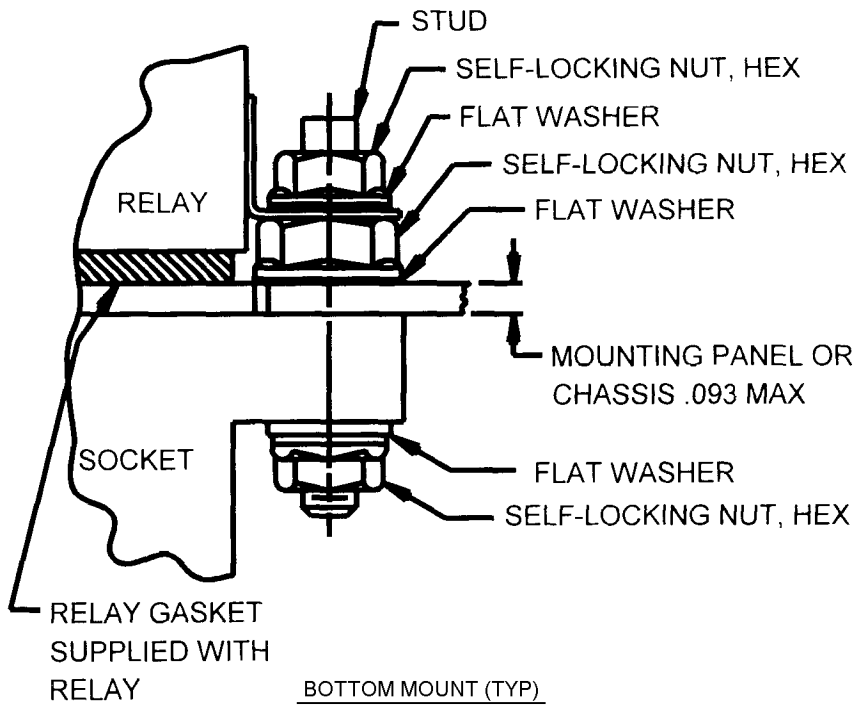


FIGURE 2. Socket mounting – Continued.

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REQUIREMENTS:

Design and construction: See figure 1.

Insulator: Diallyl phthalate in accordance with ASTM D5948, type SDG-F or any glass filled thermoplastic material in accordance with ASTM D5204.

Color: Color shall be optional providing that the color provides a contrasting background for the blue sealing grommet/blue color bands indicating rear release contacts.

Grommet: Silicone rubber.

Mounting hardware: Corrosion resistant steel or steel with cadmium/chromate finish.

Electrical:

Contacts: Contacts shall be removable crimp type in accordance with SAE-AS39029/92 (see table I).

Insulation resistance: 1000 megohms minimum, the following conditions shall apply:

a. Test pin diameter:

Size 12, .0940 $\pm$ 0.0010 inch (2.39 $\pm$ 0.025 mm).

Size 16, .0620 $\pm$.0010 inch (1.575 $\pm$ 0.025 mm)

Size 20, .0400 $\pm$.0010 inch (1.02 $\pm$ 0.03 mm).

TABLE I. Dash numbers and configuration.

Dash Number	Contact size		Number of Contacts	Contact Designation M39029	Mating relay
	Mating End	Wire Barrel			
01	16	16	5	/92-533	M6106/13-002, -008, -011, -013, -015
	12	12	6	/92-535	
02	16	16	5	/92-533	M6106/13-004
	12	16	6	/92/536	
03	20	20	2	/92-532	M6106/12-002
	16	16	5	/92-533	
	12	12	6	/92-535	
04	20	20	2	/92-532	MS27742-2
	16	16	2	/92-533	
	12	12	9	/92-535	

Dielectric withstanding voltage:

Sea level: Test voltage, 1500 V rms.

High altitude (80,000 feet (24,384 meters)): Test voltage, 500 V rms.

Test pin diameter, size 20, .0400 $\pm$.0010 inch (1.02 $\pm$ 0.025 mm), size 16, 0.0625 $\pm$ 0.0010 inch (1.588 $\pm$ 0.025 mm), size 12, .0940 $\pm$.0010 inch (2.388 $\pm$ 0.025 mm).

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Environmental:

Temperature range: Operating temperature range -70°C to +125°C.

Wire sealing: A resilient grommet is permanently bonded to the wire entry face of the socket so as to provide moisture sealing capabilities for AWG size 12, 16, and 20 wire as applicable (see figure 1, front view).

Mechanical:

Vibration sinusoidal): In accordance with MIL-STD-202-204, test condition G.

- a. Except that the frequency range shall be varied logarithmically between the limits of 10 Hz and 3,000 Hz.
- b. Except that the procedure of MIL-STD-202-201 may be applied during 10 Hz to 55 Hz band of the vibration frequency range.
- c. Qualified mating relay used as a test gauge.

Vibration (random): In accordance with EIA-364-28, test condition V, letter G, with a test duration 15 minutes. The mating relay shall be used as the test gage.

Shock (mechanical): In accordance with MIL-STD-202-213, condition C, except peak value shall be 200 g's.

Mounting hardware: The mounting hardware shall allow mounting the socket above or below the panel or chasses (see figure 2), and shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket. The hardware shall provide the nominal spacing between socket surface and relay mounting flange, regardless of mounting configuration.

Supplied with relay socket:

2 each per mounting stud:

.112-40 self locking nuts (.206 max dia x .176 max height).

.112 flat washers (.220 max O.D. x .018 max thick).

1 each per mounting stud:

.190-32 self locking nuts (.330 max dia x .190 max height).

.190 flat washers (.360 max O.D. x .019 max thick).

Fixed mounting studs: Studs shall be fixed into the mounting flange of the socket and shall be designed so as to prevent rotation of the stud within the flange (see figure 2).

Insertion and withdrawal forces: The insertion and withdrawal forces of the relay and socket shall be as specified in table II.

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TABLE II. Insertion and withdrawal forces.

Condition	Test	M12883/54		
		-01, -02	-03	-04
Initial	Insertion force (max)	21 lbf (93.41 N)	23 lbf (102.31 N)	25 lbf (111.21)
	Withdrawal force (min)	2.0 lbf (8.90 N)	2 lbf (8.90N)	2 lbf (8.90 N)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	23 lbf (102.31 N)	25 lbf (111.21 N)	27 lbf (120.10 N)
	Withdrawal force (min)	2.0 lbf (8.90 N)	2 lbf (8.90 N)	2 lbf (8.90 N)
After vibration	Insertion force (max)	23 lbf (102.31 N)	25 lbf (111.21 N)	27 lbf (120.10 N)
	Withdrawal force (min)	2.0 lbf (8.90 N)	2.0 lbf (8.90 N)	2 lbf (8.90 N)

Contact installation tools: See table III.

TABLE III. Contact installation tools.

Nomenclature	Part or Identifying Number (PIN) (size 20-20 contacts)	PIN (size 16-16) contacts	PIN (size 12-12, 12-16) contacts
Crimp tool Positioner	M22520/2-01 M22520/2-02	M22520/1-01 M22520/1-02 BLUE	M22520/1-01 M22520/1-02 YELLOW
Insertion/removal tool Unwired Wired	M81969/30-05 M81969/14-02	M81969/30-06 M81969/14-03	M81969/30-07 M81969/14-04

Torque: Relay socket and hardware shall be subjected to testing as specified in table IV. Sockets shall be installed in mounting panel when test torque is applied. No physical damage shall be permitted. Torque shall be maintained for a reasonable period of time to insure stud, socket, and associated hardware have not been damaged (see table IV).

TABLE IV. Torque requirements (installed in panel conditions.

Thread size	Torque			
	Testing		Installation	
	Inch-pounds	Newton-meters	Inch-pounds	Newton-meters
.112-40	8	0.90	4 ±1	0.45 ±0.11
	+1	+0.11		
	-0	-0		
.190-32	24	2.71	18 ±1	2.03 ±0.11
	+1	+0.11		
	-0	-0		

Weight: Maximum weight of relay, socket, all contacts and all associated hardware shall be as specified in table V.

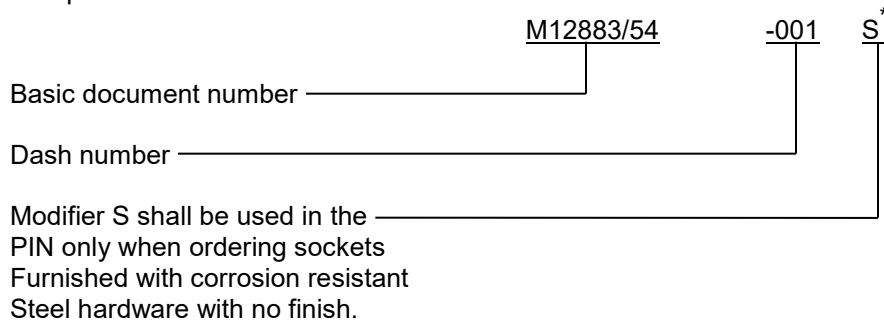
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TABLE V. Weight.

Part designations M12883/54	Maximum weight	
	Pounds	Grams
-01 and -02	.132	60
-03 and -04	.154	70

PIN: The PIN shall be marked on the mounting track as shown in the example (see figure 1). The PIN shall consist of the basic number of this specification sheet and the dash number.

Example:



*For acquisition of these sockets, parts identified with an “S” modifier shall be corrosion resisting steel (CRS) and parts without an “S” modifier shall be cadmium chromate finish. No mixing of hardware types shall be permitted.

Ordering data: Sockets without contacts may be ordered when so indicated in the ordering data (see MIL-DTL-12883). This applies only to original equipment manufacturers (OEM’s) and subcontractors. All direct shipments to the government shall include all applicable contacts and mounting hardware. The PIN to be marked on the socket shall be as shown in the PIN example (see figure 1 and table I).

The Government PIN, specified in table VI, supersedes the following commercial PINs.

TABLE VI. Supersession and cross reference.

Active Government PIN	Superseded number
	CAGE 58982
M12883/54-01	RSE116627
M12883/54-02	RSE116631
M12883/54-03	RSE116629
M12883/54-04	RSE116635

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Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Reference documents. In addition to MIL-DTL-12883, this document references the following:

MIL-PRF 6106
MIL-STD-202-201
MIL-STD-202-204
MIL-STD-202-213
MIL-STD-1285
MS27742
ASTM-D5204
ASTM-D5948
EIA-364-28
SAE-AS39029/92

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-2018-177)

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>.