

MIL-DTL-12883/47D
w/AMENDMENT 1
3 Aug 2015
SUPERSEDING
MIL-DTL-12883/47D
18 February 2003

DETAIL SPECIFICATION SHEET

SOCKET, PLUG-IN ELECTRONIC COMPONENTS, FOR RELAYS, 6-POLE, 10
AMPERES (MIL-PRF-6106 AND MIL-PRF-83536)

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.

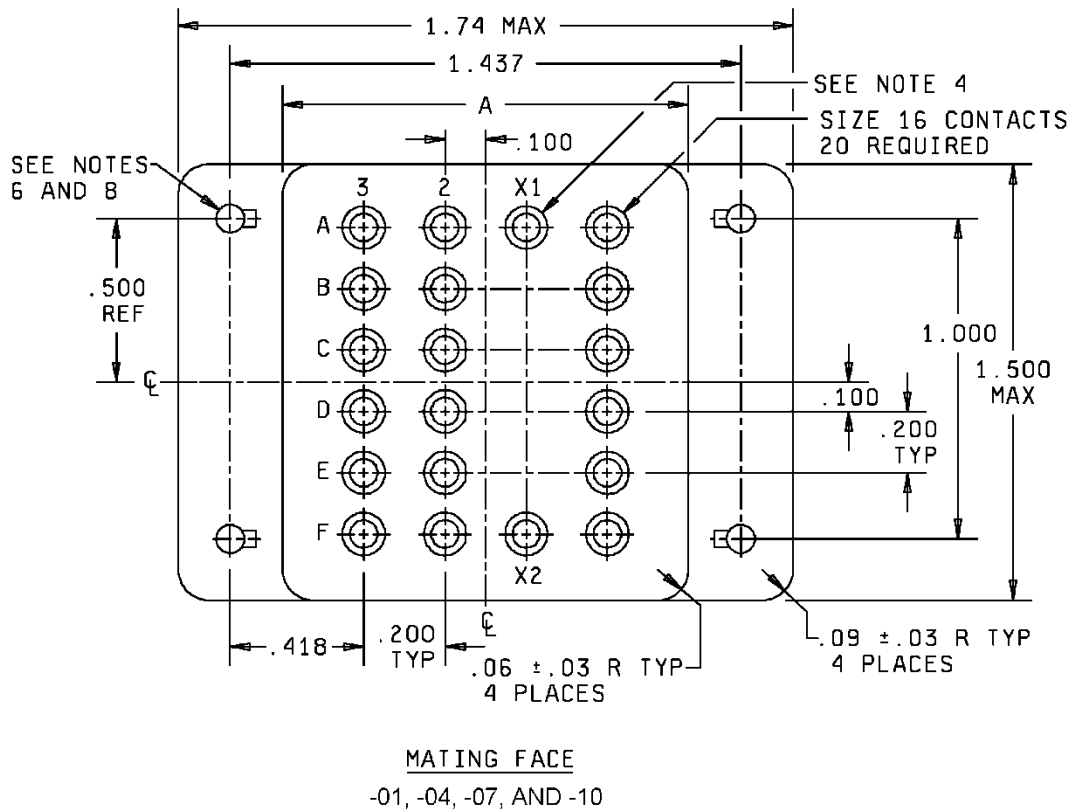


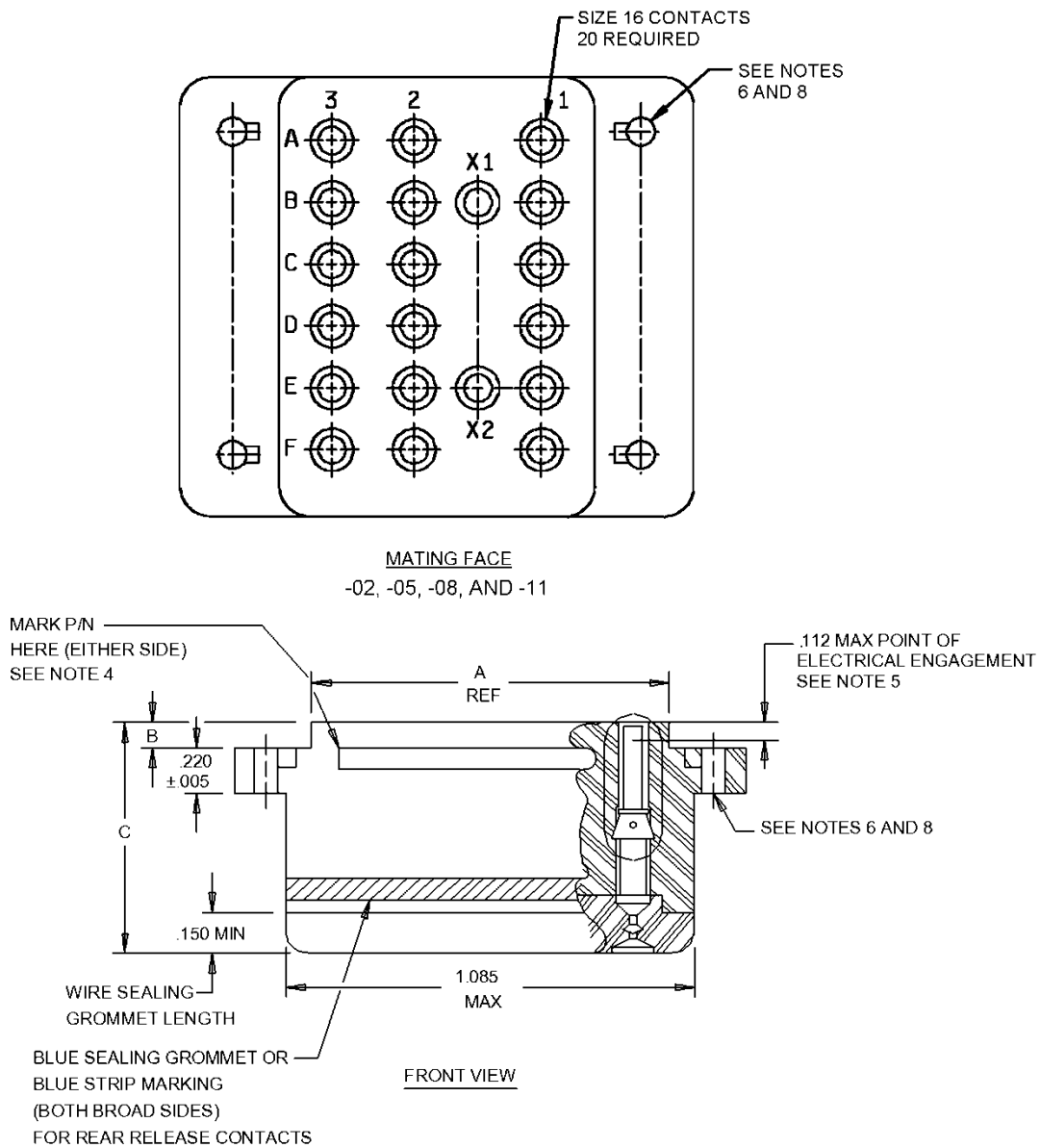
FIGURE 1. Socket configurations.

AMSC N/A

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Dash number	A (mm)	B (mm)	C max (mm)
-01, -02, -04, and -05	1.0175 (25.845)	.093 (2.36)	.890 (22.61)
-07, -08, -10, and -11	1.025 (26.04)	.135 - .140 (3.43 - 3.56)	1.250 (31.75)

FIGURE 1. Socket configurations - Continued.

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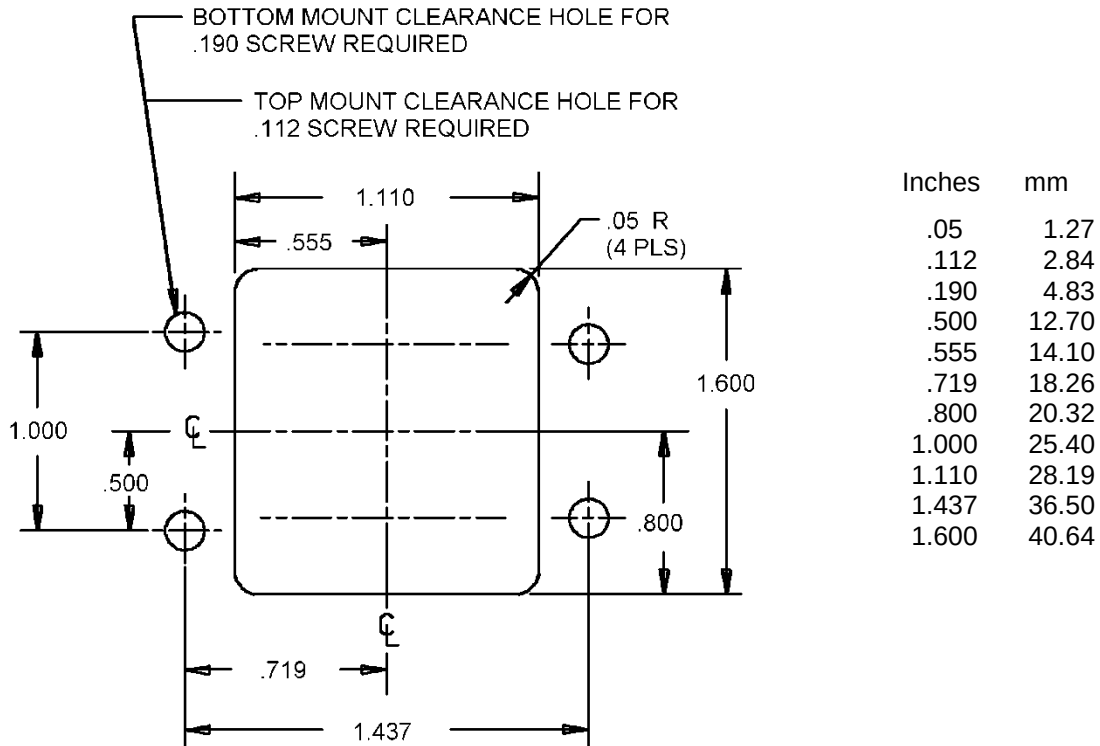
Inches	mm	Inches	mm
.005	0.13	.220	5.59
.03	0.76	.418	10.62
.06	1.52	.500	12.70
.09	2.29	1.000	25.40
.100	2.54	1.085	27.56
.112	2.84	1.437	36.50
.150	3.81	1.500	38.10
.200	5.08	1.74	44.20

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for general information only.
3. Unless otherwise specified, tolerances are $\pm .01$ inch (0.25 mm) for two place decimals and $\pm .005$ inch (0.13 mm) for three place decimals.
4. Marking shall be characters, which are molded .035 inch (0.89 mm) minimum. Ink marking optional in accordance with MIL-STD-1285.
5. Point of electrical contact from mating face of socket insulator to the socket contact.
6. Keyway is shown for loose stud mounting configuration only (see figure 4, detail A).
7. For mating relay (see table I).
8. Configuration for mounting, see figures 3, 4, and table I.

FIGURE 1. Socket configurations - Continued.

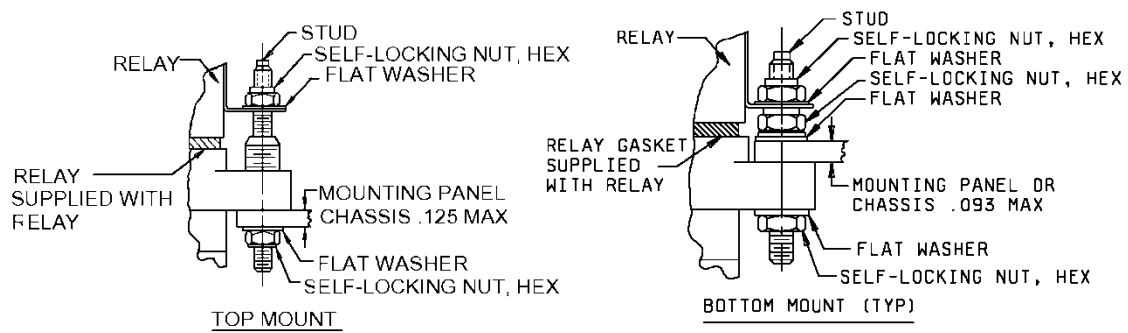
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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for general information only.
3. Unless otherwise specified, tolerances are $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.

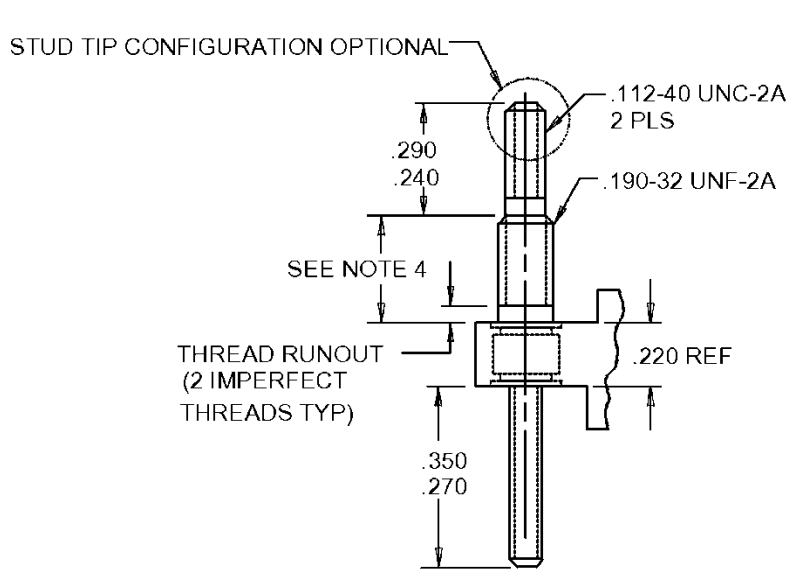
FIGURE 2. Recommended mounting dimensions.



Inches	mm
.093	2.36
.125	3.18

FIGURE 3. Socket mounting, fixed and loose studs.

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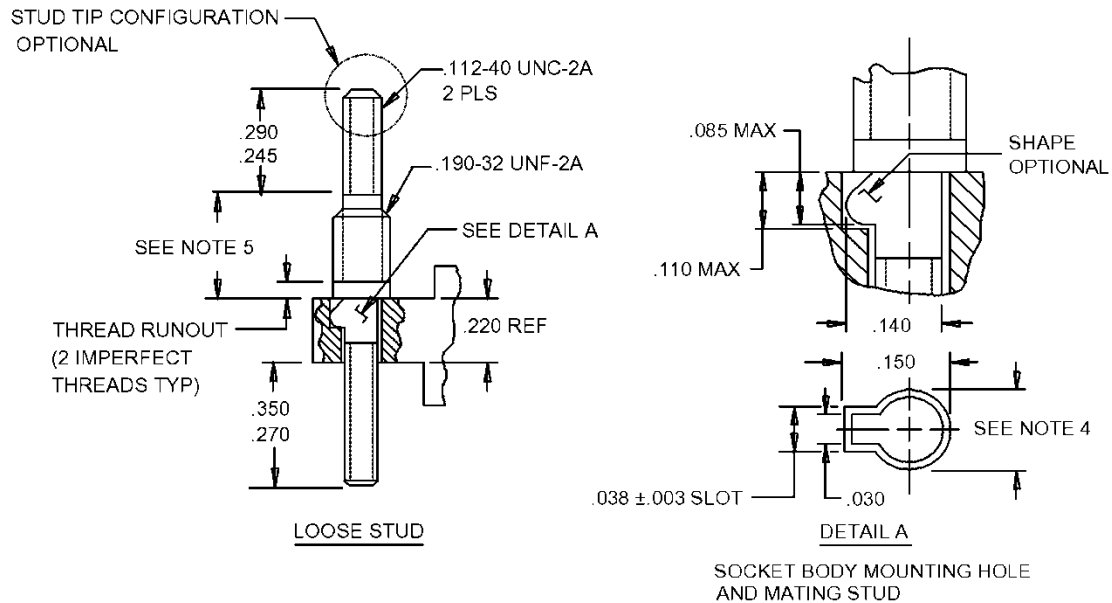
Inches	mm
.05	1.27
.093	2.36
.112	2.84
.125	3.18
.190	4.83
.220	5.59
.240	6.10
.270	6.86
.290	7.37
.350	8.89
.500	12.70
.555	14.10
.719	18.26
.800	20.32
1.000	25.40
1.110	28.19
1.437	36.50
1.600	40.64

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for general information only.
3. Unless otherwise specified, tolerances are $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.
4. Length from top of socket flange to base of .112-40 UNC-2A thread:
 - 10 and -11 length shall be $.318 \pm .010$ inch (8.08 $\pm$ 0.25 mm).
 - 04 and -05 length shall be $.290 \pm .010$ inch (7.37 $\pm$ 0.25 mm).

FIGURE 4. Studs fixed.

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Inches	mm	Inches	mm
.003	0.08	.150	3.81
.030	0.76	.190	4.83
.038	0.97	.220	5.59
.085	2.16	.245	6.22
.110	2.79	.270	6.86
.112	2.84	.290	7.37
.140	3.56	.350	8.89

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for general information only.
3. Unless otherwise specified, tolerances are $\pm .003$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.
4. The diameter for the loose stud mating hole in the socket body shall be:
 - 01, and -02, diameter shall be $.116 \pm .003$ inch (2.95 ± 0.08 mm).
 - 07, and -08, diameter shall be $.125 \pm .003$ inch (3.18 ± 0.08 mm).
5. Length from top of socket flange to base of .112-40 UNC-2A thread:
 - 01, -02, -04, -05 length shall be .290 inch (7.37 mm.).
 - 07, -08, -10, -11 length shall be .318 inch (8.08 mm).

FIGURE 5. Studs loose.

REQUIREMENTS:

Design and construction: See figures 1, 2, 4, 5, and table I.

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

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

Grommet: Silicone rubber.

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

Electrical:

Insulation resistance: 1000 megohms minimum. Test pin diameter, size 16, $.0625 \pm .0010$ inch (1.588 ± 0.025 mm).

Dielectric withstanding voltage:

Sea level: Test voltage, 1500 V rms. Test pin diameter, size 16, $.0625 \pm .0010$ inch (1.588 ± 0.025 mm).

High altitude 80,000 feet (24.4 km): Test voltage, 500 V rms. Test pin diameter, size 16, $.0625 \pm .0010$ inch (1.588 ± 0.025 mm). For purpose of this test an air pressure of 26 millibar (2.6 kilopascals), will be used to simulate an altitude of 80,000 feet (24.4 km).

Contacts: Contacts shall be removable crimp type in accordance with SAE-AS39029/92, SAE-AS39029/5 (see table I).

TABLE I. Dash numbers and configurations.

Dash number	Mounting style	Contact size		Number of contacts	Contact designation M39029	Mating relay M83536	Current type
		Mating end	Wire barrel				
01	Loose stud (figure 4)	16	16	20	/92-533	/25-002, /26-002	DC
02	Loose stud (figure 4)	16	16	20	/92-533	/27-002	AC
04	Fixed stud (figure 3)	16	16	20	/92-533	/25-002, /26-002	DC
05	Fixed stud (figure 3)	16	16	20	/92-533	/27-002	AC
07	Loose stud (figure 4)	16	16	20	/5-116	/25-002, /26-002	DC
08	Loose stud (figure 4)	16	16	20	/5-116	/27-002	AC
10	Fixed stud (figure 3)	16	16	20	/5-116	/25-002, /26-002	DC
11	Fixed stud (figure 3)	16	16	20	/5-116	/27-002	AC

Environmental:

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

Wire sealing: A resilient grommet is permanently bonded to the wire entry face of the socket as to

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provide moisture sealing capabilities of from .065 inch (1.65 mm) min diameter to .109 inch (2.27mm) max diameter insulated wire.

Mechanical:

Vibration (sinusoidal): In accordance with MIL-STD-202, method 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 method 201 of MIL-STD-202 may be applied during 10 Hz to 55 Hz band of the vibration frequency range.
- c. Qualified mating relay shall be 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 gauge.

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

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

TABLE II. Insertion and withdrawal force.

Condition	Inspection	Insertion force
Initial	Insertion force (max)	30 lbf (133 newton)
	Withdrawal force (min)	2.0 lbf (8.9 newton)
After 10 insertions and withdrawals; before vibration	Insertion force (max)	33 lbf (147 newton)
	Withdrawal force (min)	1.9 lbf (8.5 newton)
After vibration	Insertion force	33 lbf (147 newton)
	Withdrawal force (min)	1.9 lbf (8.5 newton)

Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis, and shall allow mounting and securing the relay to the socket without distributing the mounted socket or access to the wiring side of the socket (see figures 3 and 4). The hardware shall provide the nominal spacing between socket surface and relay mounting flange, regardless of the mounting configuration.

Supplied with relay socket:

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

8 each .112 flat washers (.224 max O.D. x .021 max thick).

4 each .190-32 self locking nuts (.330 max dia. X .190 max height).

4 each .190 flat washers (.360 max O.D. X .036 max thick).

4 each studs for loose mounting configuration only (see figure 4).

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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 3).

Contact installation tools: See table III.

TABLE III. Contact installation tools.

Nomenclature	Part or Identifying Number (PIN)	
Contact type	M39029/5-116	M39029/92-533
Crimp tool	M22520/1-01, /7-01	M22520/1-01, /7-01
Positioner	M22520/1-02, /7-03	M22520/1-02, /7-03
Insertion tool	M81969/8-07	M81969/8-07, /14-03
Removal tool		
Wired	M81969/14-03	M81969/8-08, /14-03
Unwired	M81969/30-06, /30-05	M81969/30-06, /30-05

Torque: Relay socket and hardware shall be subjected to torque testing as specified in table IV. Sockets shall be installed in mounting panel when test torque is applied. No visual evidence of 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).

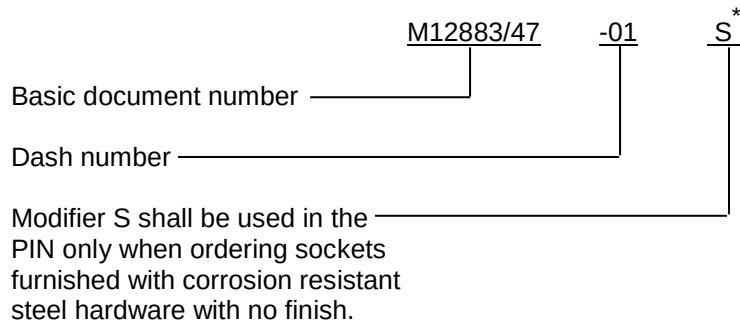
Thread size	Torque			
	Testing		Installation	
	Inch-pounds	Newton	Inch-pounds	Newton
.112-40	8 +1 -0	0.90 + 0.11 -0	4 ±1	0.45 ± 0.11
.190-32	24 +1 -0	2.71 + 0.11 -0	18 ±1	2.03 ± 0.11

Weight: .176 pound (79.8 grams) maximum weight of relay socket, all contacts and associated hardware.

PIN: The PIN shall be marked on the socket body as shown in the example (see figure 1). The PIN shall consist of the basic number of this specification sheet, the dash number from table I, and an optional modifier.

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Example:



* For future acquisition of these sockets as of the effective date of revision D, 20 December 1989, parts with an "S" modifier shall be corrosion resisting steel (CRS), and parts without an "S" modifier shall be cadmium chromate finish. No mixing.

Ordering data: Sockets without contacts may be ordered when so indicated (see MIL-DTL-12883). This applies only to the 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.

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

TABLE V. Supersession and cross reference.

Active Government PIN	Superseded PIN
	CAGE 58982
M12883/47-01	RSE116755
M12883/47-02	RSE116757
M12883/47-04	RSE116761
M12883/47-05	RSE116763
M12883/47-07	RSE116101
M12883/47-08	RSE116103
M12883/47-10	RSE116073
M12883/47-11	RSE116075

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.

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

MIL-STD-202
MIL-STD-1285
MIL-PRF-6106
MIL-PRF-83536
ASTM-D5204
ASTM-D5948
EIA-364-28
SAE-AS39029/5
SAE-AS39029/92

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 5935-2015-165)

Review activities:

Army - AR, AT
Navy - AS, MC, OS, SH

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>.