

INCH-POUND

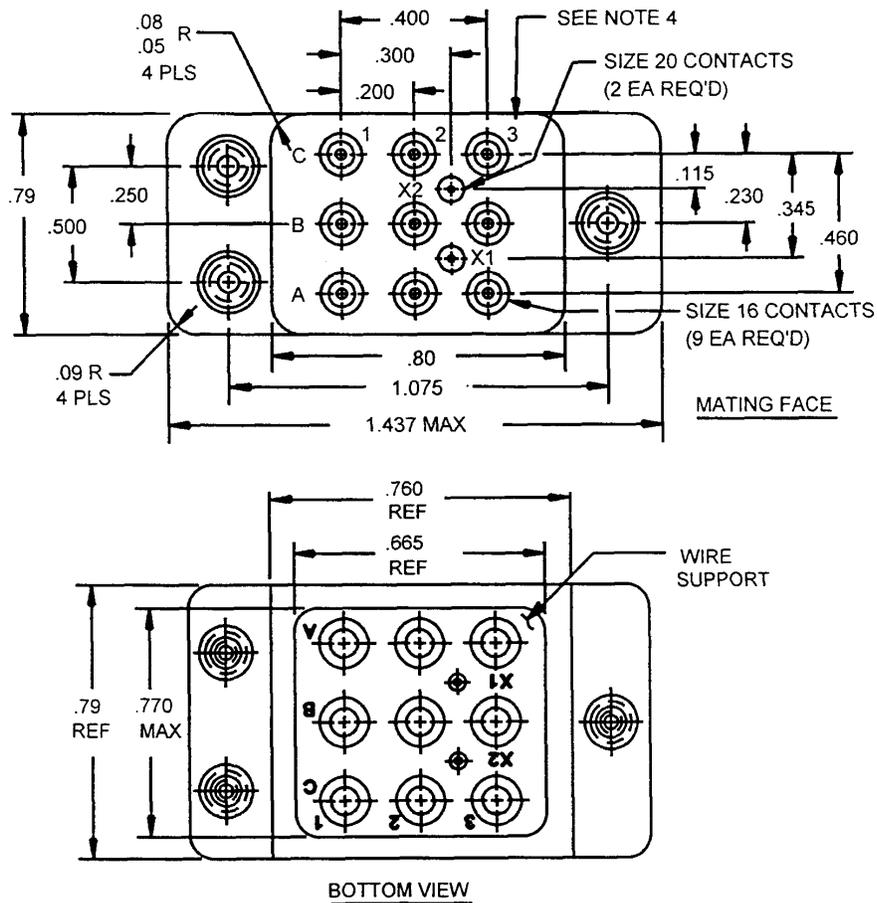
MIL-DTL-12883/46D  
18 February 2003  
SUPERSEDING  
MIL-PRF-12883/46C  
28 June 1996

DETAIL SPECIFICATION SHEET

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS, FOR RELAYS, 3-POLE, 10 AMPERES  
(MIL-PRF-6106 AND MIL-PRF- 83536)

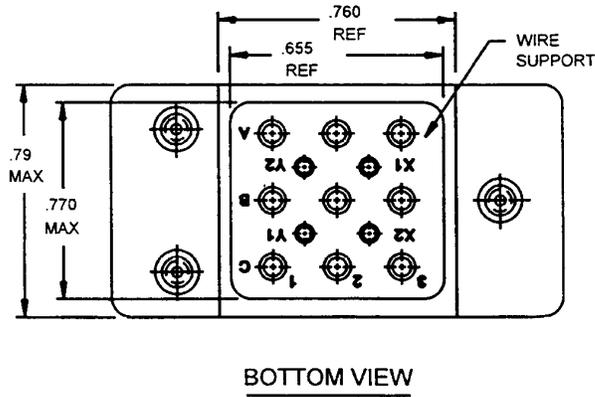
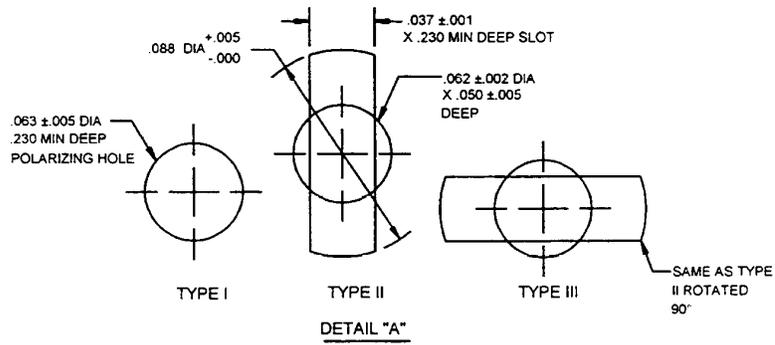
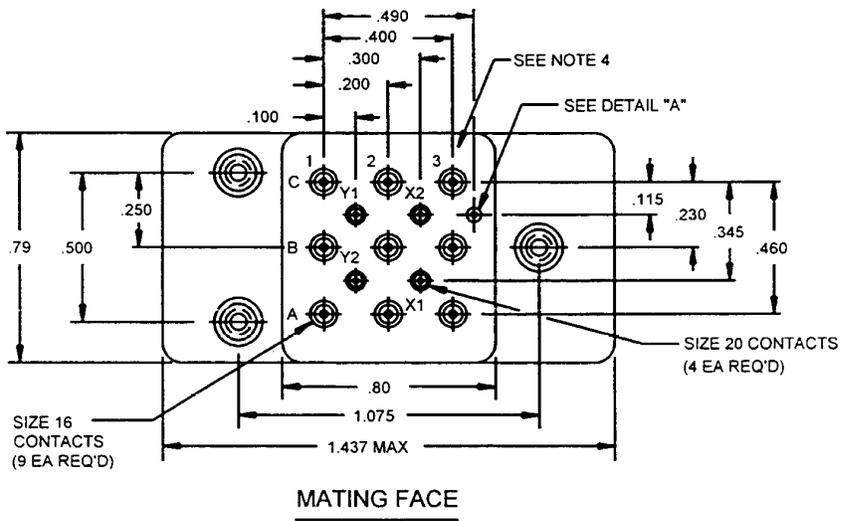
This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-12883.



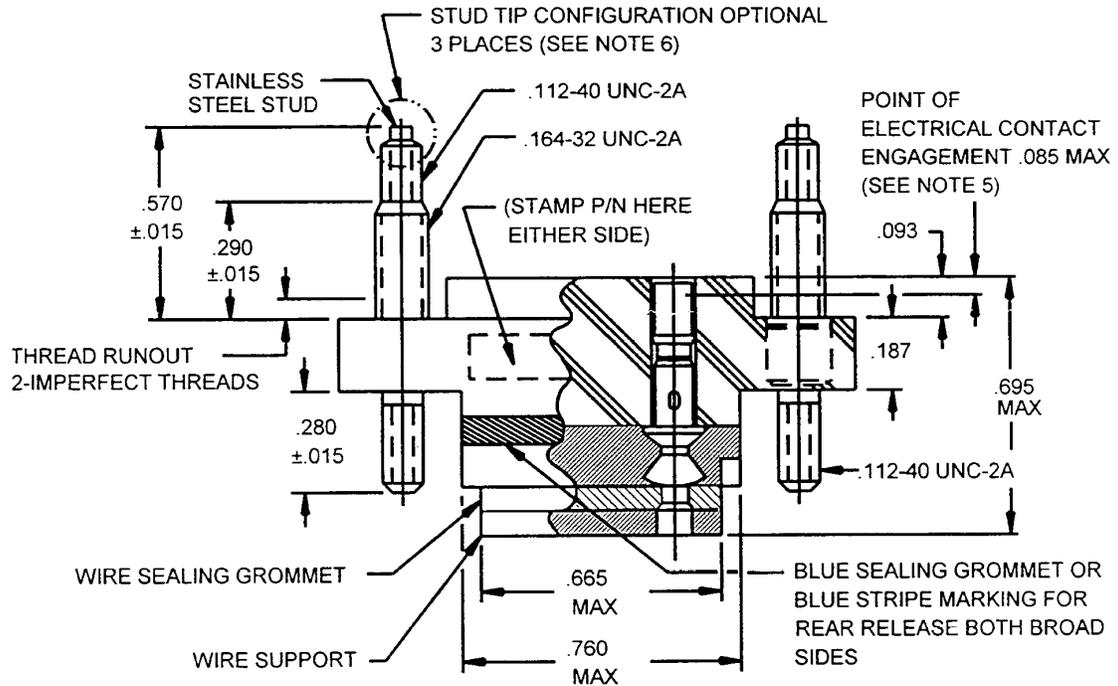
(-01)

FIGURE 1. Socket configurations.



(-01, -02, and -03)

FIGURE 1. Socket configurations – Continued.



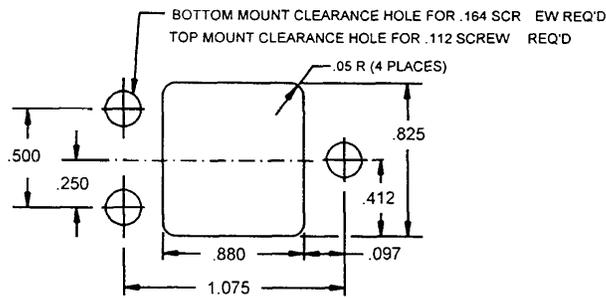
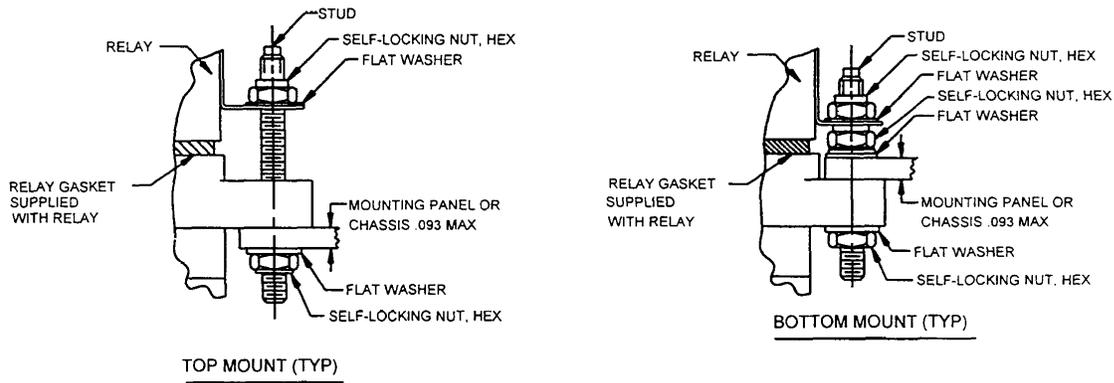
(-01, -02, -03, and -04)

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.085	2.16	.230	5.84	.570	14.48
.002	0.05	.088	2.24	.250	6.35	.655	16.64
.005	0.13	.09	2.3	.280	7.11	.665	16.89
.015	0.38	.093	2.36	.290	7.37	.695	17.65
.037	0.94	.100	2.54	.300	7.62	.760	19.30
.05	1.3	.112	2.84	.345	8.76	.770	19.56
.050	1.27	.115	2.92	.400	10.16	.79	20.1
.062	1.57	.164	4.17	.460	11.68	.80	20.3
.063	1.60	.187	4.75	.490	12.45	1.075	27.31
.08	2.0	.200	5.08	.500	12.70	1.437	36.50

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given 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. Marking shall be characters that are molded 0.35 inch (0.89 mm) minimum. Ink marking optional (see MIL-STD-1285).
5. Point of electrical contact engagement from mating face of socket insulator to the socket contact.
6. The configuration of the stud tip shall be optional provided it meets all the requirements of the specification.

FIGURE 3. Socket configurations – Continued.



TOP MOUNT (TYP)

Inches	mm
.05	1.3
.093	2.36
.097	2.46
.112	2.84
.164	4.17
.250	6.35
.412	10.46
.500	12.70
.825	20.96
.880	22.35
1.075	27.31

NOTES:

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

FIGURE 4. Socket mounting (hardware and panel).

REQUIREMENTS:

Qualification:

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

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

Contact: In accordance with MIL-C-39029/101 (see table I).

Grommet: Silicon rubber.

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

Design, construction and physical dimensions:

Design, construction and physical dimensions shall be as specified in figures 1, 2, 3, 4, and table I.

TABLE I. Dash number and characteristics.

Dash number	Contact size mating end wire barrel		Number of contacts	Contact designation	Mating relay <u>1/</u>	Polarization type
01	16 20	16 20	9 2	M39029/101-554 M39029/101-553	MIL-PRF-83536/21-019, /21-022, /22-022	None
02	16 20	16 20	9 4	M39029/101-554 M39029/101-553	M6106/40-002	I
03	16 20	16 20	9 4	M39029/101-554 M39029/101-553		II
04	16 20	16 20	9 4	M39029/101-554 M39029/101-553		III

1/ Reference MIL-PRF-83536 for supersession data on MIL-PRF-6106 relays.

Test gage: A mating relay in accordance with table I shall be used as a test gauge or mating connector.

Electrical:

Insulation resistance: 1,000 megohms minimum.

Dielectric withstanding voltage:

Test voltage at sea level shall be 1,250 V rms.

Test voltage at 80,000 feet (24.4 km) shall be 500 V rms.

Environmental:

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

Wire sealing: A resilient socket grommet is permanently bonded to the wire entry face of the socket so as to provide moisture sealing capabilities, over the following range of finished wire:

Contact	Wire diameter
M39029/101-553	.040 min-.083 max (1.02 min-2.11 max mm)
M39029/101-554	.053 min-.103 max (1.35 min-.103 max mm)

Mechanical:

Contacts: Contact shall be in accordance with table I. Contacts shall be crimp removable type, rear release and accept the following relay pins:

- a. Size 16: .0610 through .0630 inch (1.55 through 1.60 mm).
- b. Size 20: .039 through .041 inch (.099 through 1.04 mm).

Insertion and withdrawal force: The insertion and withdrawal forces shall be as specified in table II.

TABLE III. Insertion and withdrawal forces.

Condition	Test	M12883/46	
		-01	-02 through -04
Initial	Insertion force (max)	19.1 lbf (85 newton)	21.4 lbf (95.2 newton)
	Withdrawal force (min)	1.2 lbf (5.3 newton)	1.3 lbf (5.78 newton)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	23 lbf (102.3 newton)	25.8 lbf (114.8 newton)
	Withdrawal force (min)	.92 lbf (4.1 newton)	1.0 lbf (4.45 newton)
After vibration	Insertion force (max)	23 lbf (102.3 newton)	25.8 lbf (114.8 newton)
	Withdrawal force (min)	.92 lbf (4.1 newton)	.99 lbf (4.40 newton)

Durability: Shall be in accordance with MIL-DTL-12883.

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 of 201 of MIL-STD-202 may be applied during 10 Hz to 55 Hz band of the vibration frequency range.

Vibration (random): In accordance with MIL-STD-1344, method 2005, test condition V, letter G, with a test duration of 15 minutes. The mating relay shall be used as the test gage.

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

Torque: Relay sockets and hardware shall be subjected to testing torque as specified in table III.

Sockets shall be installed in mounting panel when test torque is applied. No physical damage will be permitted. Torque shall be maintained for a reasonable period of time to insure stud, socket, and associated hardware have not been damaged.

TABLE III. 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 ± .11
	+ 1	+ .11		
	-0	-0		
.164-32	20	2.20	15 ±1	1.70 ± .11
	+1	+ .1		
	-0	-0		

Socket, contact tools shall be in accordance with table IV.

TABLE IV. Contact tools.

Nomenclature	Part or Identifying Number (PIN)
Crimp tool	M22520/7-01
Positioner	M22520/7-12 and -13
Insertion and removal tool	M81969/16-01 and -02

Weight: The socket, hardware, and electrical contacts shall have a maximum weight of .055 pounds (25 grams).

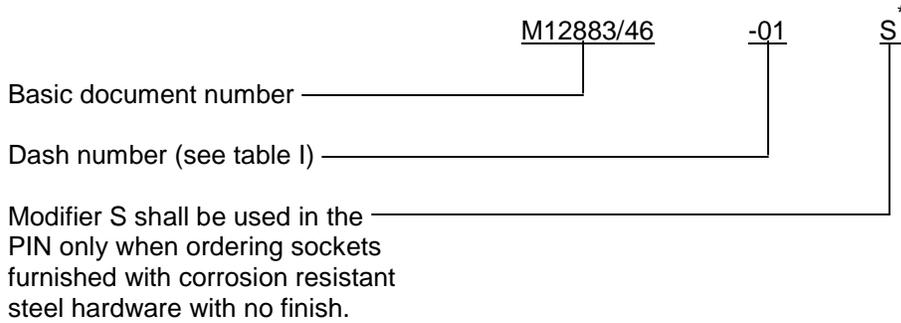
Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis (see figure 4), and shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket. The hardware shall provide the nominal .197-inch (5.00 mm) spacing between socket surface and relay mounting flange, regardless of mounting configuration.

Mounting hardware shall be supplied with the relay socket and shall consist of the following:

- Self locking nuts .112-40 (6 each) (.224 max dia x .176 max height).
- Flat washers .112 (6 each) (.220 max O.D. x .021 max thickness).
- Self locking nuts .164-32 (3 each) (.290 max dia x .190 max height).
- Flat washers .164 (3 each) (.290 max O.D. x .019 max thickness).

PIN: The PIN shall be marked on the socket body as shown in the example (see figure 3). The PIN shall consist of the basic number of this specification sheet and the dash number from table I.

Example:



\* For future acquisition of these sockets as of the effective date of revision B, 20 December 1989, 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.

Packaging: Hardware, socket insulator, and contacts shall be packaged in separate packages within a common container.

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

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

TABLE VI. Supersession and cross reference.

Active Government PIN	Superseded manufacturer PIN	
	CAGE 58982	CAGE 99699
M12883/46-01	RSE116747	SE310-1010
M12883/46-02	RSE116749	SEL-310-1011
M12883/46-03	RSE116751	SEL310-1012
M12883/46-04	RSE116753	SEL310-1013

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 5935-4344-11)

Review activities:

Army - AT, AV, CR4  
Navy - AS, CG, MC, OS, SH  
Air Force - 99