

INCH-POUND

MIL-DTL-12883/56A  
18 February 2003  
SUPERSEDING  
MIL-PRF-12883/56  
12 October 2000

DETAIL SPECIFICATION SHEET

SOCKET, PLUG-IN ELECTRONIC COMPONENTS,  
FOR RELAYS, 1-POLE, 10 AMPERES  
(MIL-PRF-83536/34 and /35)

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.

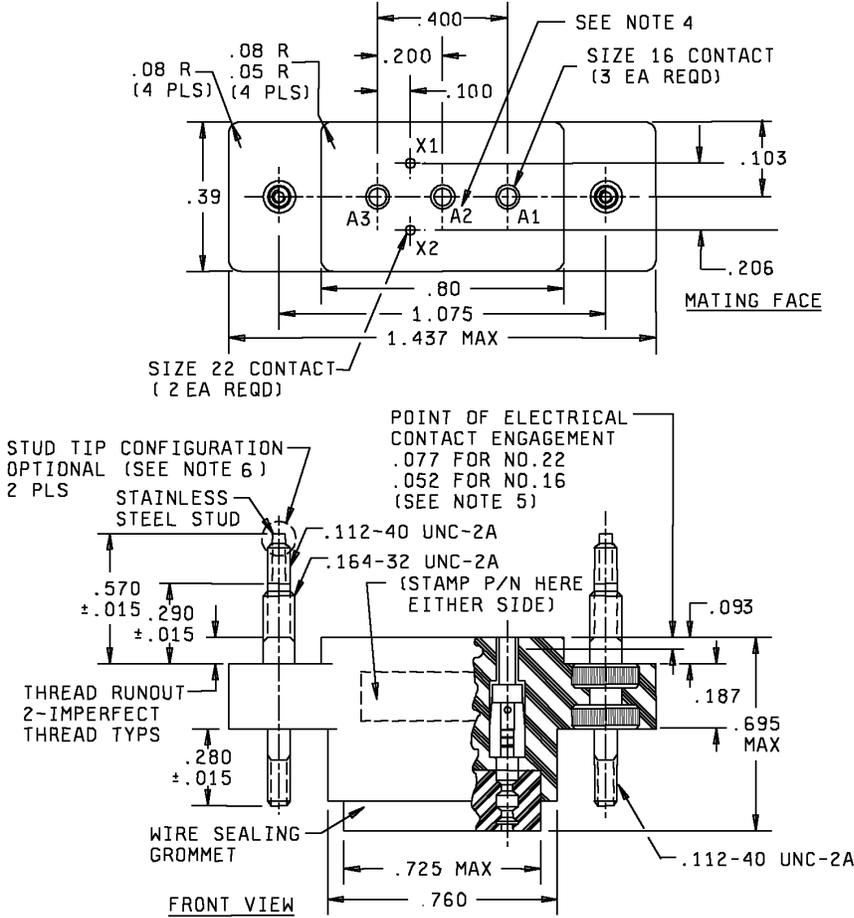
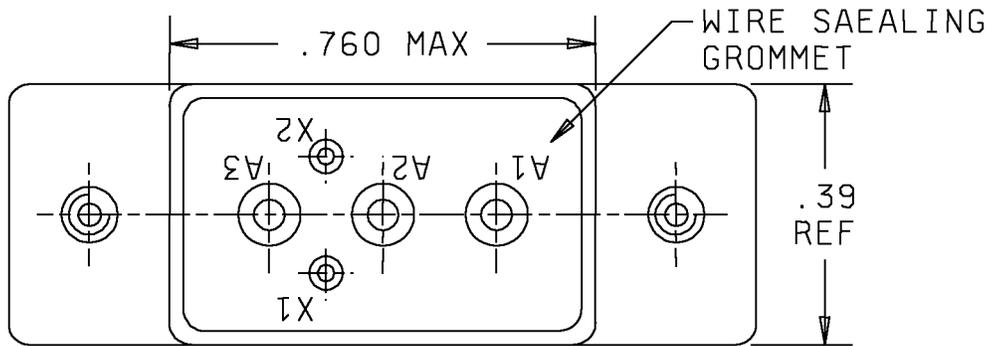


FIGURE 1. Socket configuration (-01).



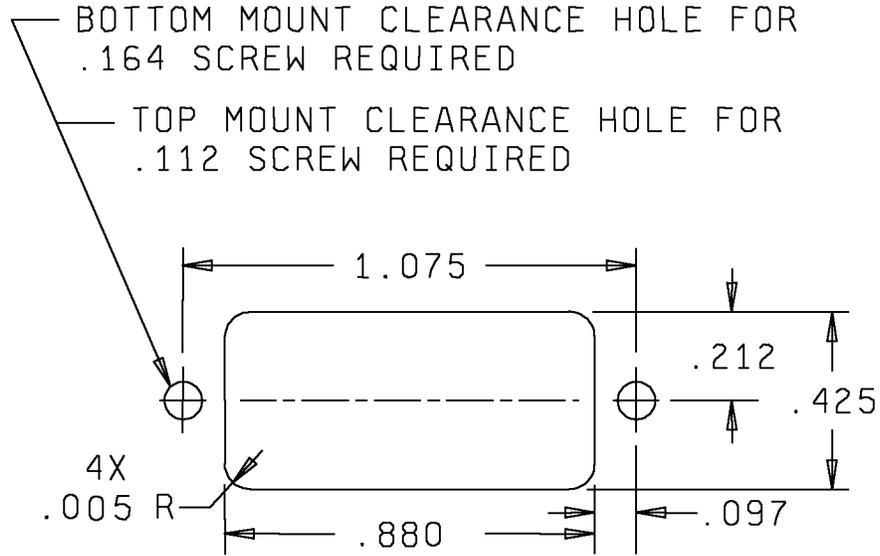
BOTTOM VIEW

Inches	mm	Inches	mm	Inches	mm
.015	0.38	.112	2.84	.400	10.16
.05	1.27	.164	4.17	.570	14.48
.052	1.32	.187	4.75	.695	17.65
.077	1.96	.200	5.08	.725	18.42
.08	2.03	.206	5.23	.760	19.30
.093	2.36	.280	7.11	.80	20.32
.100	2.45	.290	7.37	1.075	27.31
.103	2.62	.39	9.91	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, which are molded .035 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 1. Socket configuration (-01) - Continued.

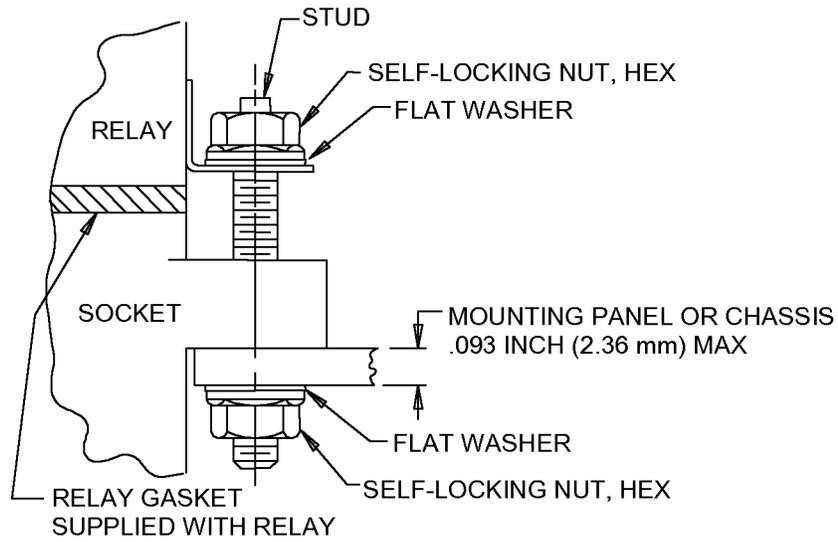


Inches	mm
.005	0.13
.097	2.46
.112	2.84
.164	4.16
.212	5.38
.425	10.79
.880	22.35
1.075	27.30

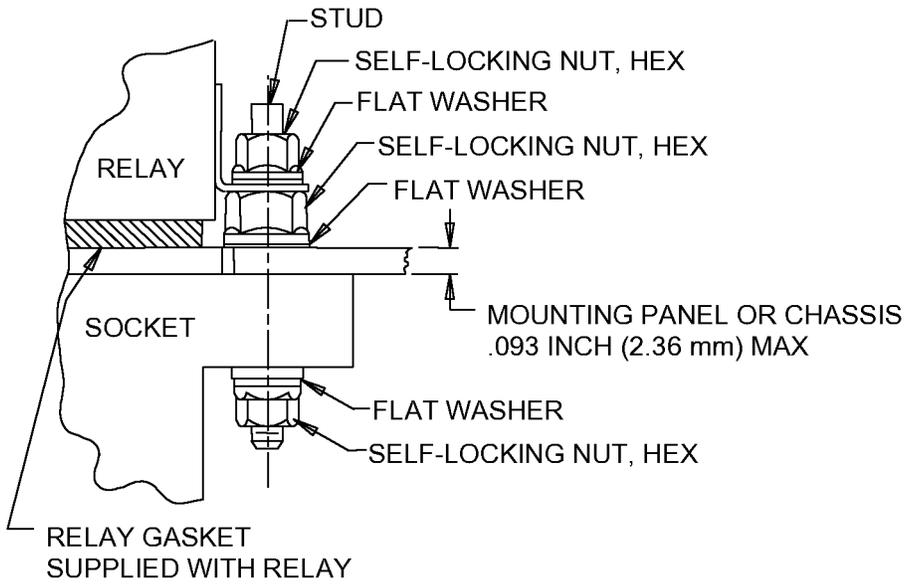
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FIGURE 2. Panel layout.



TOP MOUNT (TYP)



BOTTOM MOUNT (TYP)

FIGURE 3. Socket mounting hardware.

REQUIREMENTS:

Qualification:

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

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	16	9	M39029/101-554	MIL-PRF-83536/34, /35	None
	22	22	2	M39029/101-552		

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

Insulator and wire support: Diallyl phthalate or equivalent, 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 on figures 1, 2, 3, and in table I.

Performance:

Electrical:

Insulation resistance: 1000 megohms minimum.

Dielectric withstanding voltage:

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

Test voltage at 80,000 feet (24.38 km) shall be 500 V rms.

Environmental:

Temperature range: Operating temperature range shall be -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 22 wire (for coil contacts) and AWG size 16 wire (for load contacts).

Mechanical:

Contacts: Contact shall be in accordance with table I. Contacts shall be crimp removable type, rear release and accept relay pins size 16 (.0610 through .0630 inch (1.55 through 1.60 mm)) and size 22 (.030 through .032 inch (.076 through 0.81 mm)).

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

TABLE II. Insertion and withdrawal force.

Condition	Test	M12883/56-01
Initial	Insertion force (max)	19.1 lbf (85 N)
	Withdrawal force (min)	1.2 lbf (5.3 N)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	23 lbf (102.3 N)
	Withdrawal force (min)	.92 lbf (4.1 N)
After vibration	Insertion force (max)	23 lbf (102.3 N)
	Withdrawal force (min)	.92 lbf (4.1 N)

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

Vibration (sinusoidal): In accordance with MIL-STD-202, method 204, test condition G, the following details shall apply:

- a. The frequency range shall be varied logarithmically between the limits of 10 Hz and 3,000 Hz.
- b. The procedure of method 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 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 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-pound	Newton-meter	Inch-pound	Newton-meter
.112-40	8 + 1 - 0	0.90 + .11 - 0	4 ± 1	0.45 ± .11
.164-32	20 + 1 - 0	2.26 + .11 - 0	15 ± 1	1.70 ± .11

Socket, contact tools: Tools for crimping the electrical contacts, inserting and removing the contacts from the socket body is specified in table IV.

TABLE IV. Contact tools.

Nomenclature	Part or Identifying Number (PIN)
Crimp tool	M22520/7-01
Positioners	M22520/7-11 (for #22) M22520/7-13 (for #16)
Insertion and removal tool	M81969/16-04 or M81969/14-01 (for #22) M81969/16-02 (for #16)

Weight: The socket, hardware, and electrical contacts shall have a maximum weight of .033 pounds (15 grams).

Mounting hardware: The mounting hardware shall:

- a. Allow mounting the socket above or below the panel or chassis (see figure 3).
- b. Shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket.
- c. 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 (4 each) (.206 max dia x .176 max height).

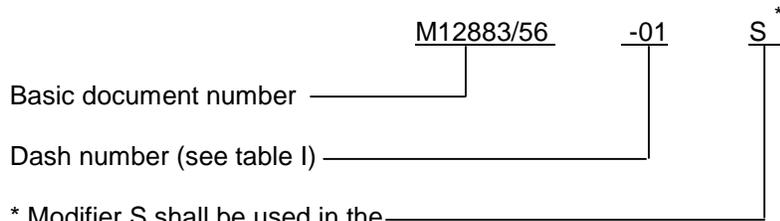
Flat washers .112 (4 each) (.224 max O.D. x .021 max thickness).

Self locking nuts .164-32 (2 each) (.290 max dia x .190 max height).

Flat washers .164 (2 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:



\* Modifier S shall be used in the PIN only when ordering sockets furnished with corrosion resistant steel hardware with no finish.

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

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

TABLE V. Supersession and cross reference.

Active Government PIN	Superseded manufacturers PIN
	CAGE F0219
M12883/56-01	S215-A4A-4-004

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:  
DLA - CC

(Project 5935-4344-21)

Review activities:

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