

DETAIL SPECIFICATION SHEET

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS, FOR RELAYS, FOR 2-POLE, 5 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.

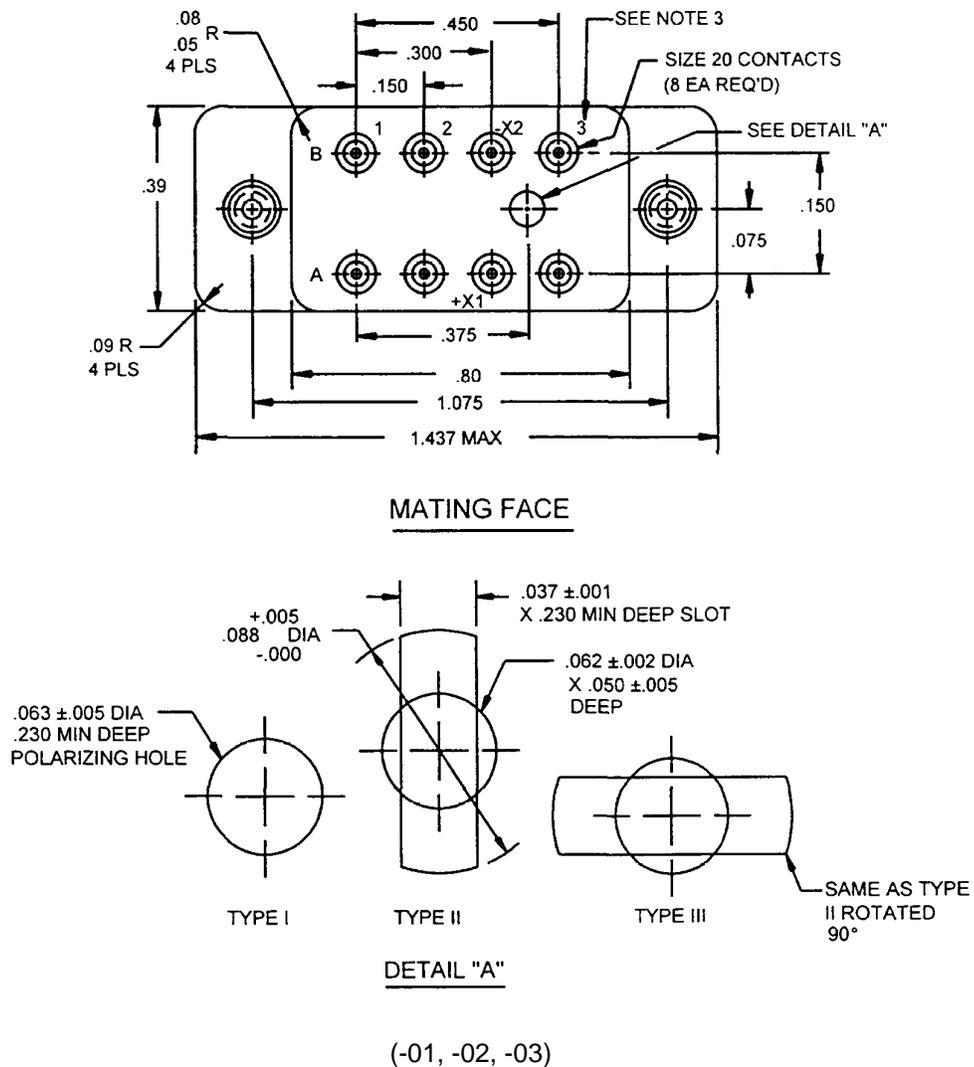
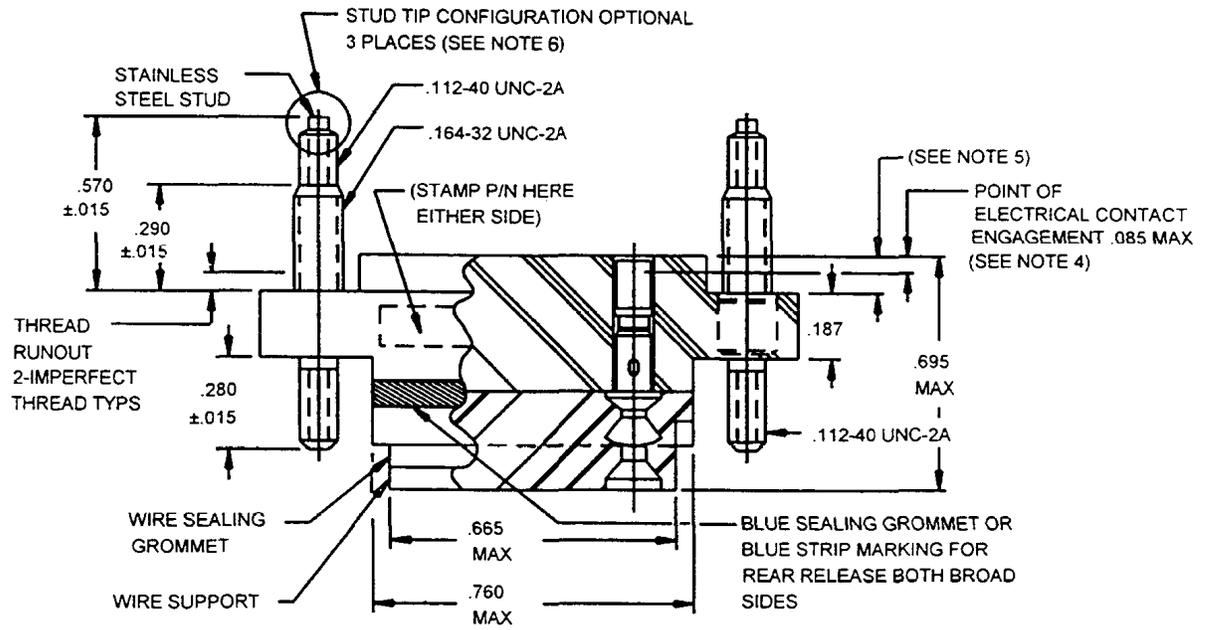
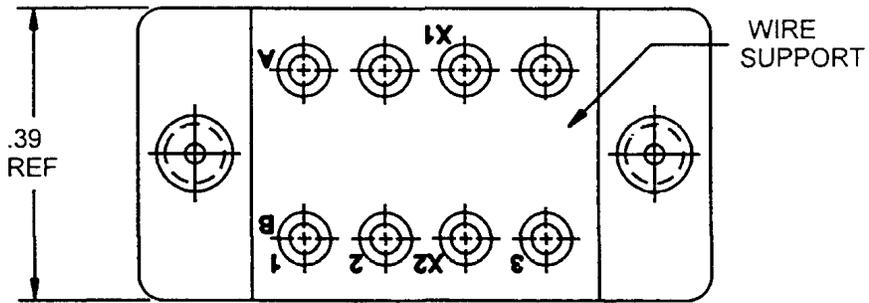


FIGURE 1. Socket configurations.



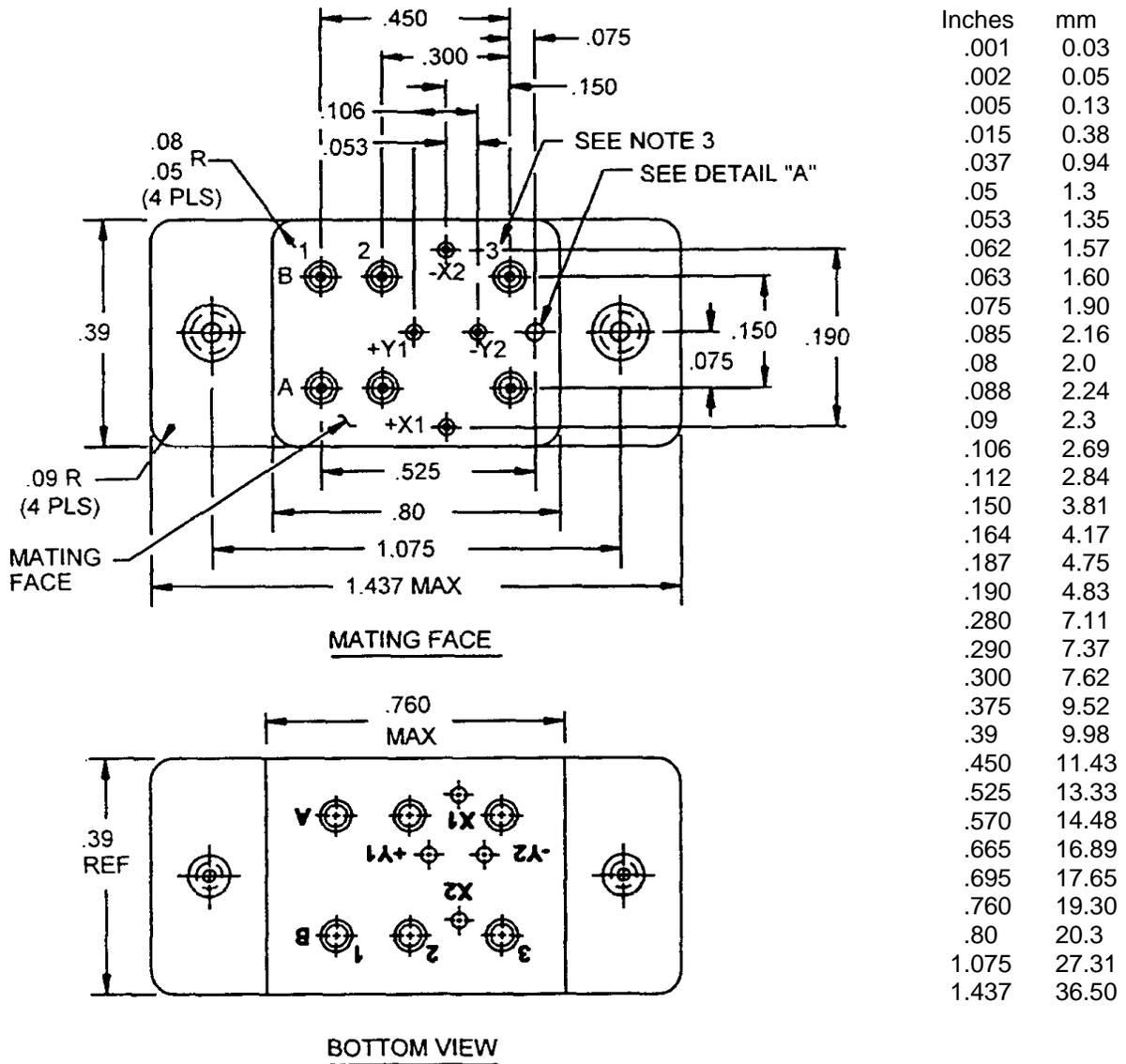
SIDE VIEW



BOTTOM VIEW

(-01, -02, and-03)

FIGURE 1. Socket configurations – Continued.



(-04, -05, and -06)

NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is  $\pm .005$  inch (0.13 mm) for three place decimals and  $\pm .01$  inch (0.25 mm) for two place decimals.
3. Marking shall be characters which are molded .035 inch (0.89 mm) minimum. Ink marking optional (see MIL-STD-1285).
4. Point of electrical contact engagement, from mating face of socket insulator to the socket contact.  
 -01 through -03, .093 inch (2.36 mm).  
 -04 through -06, .113 inch (2.87 mm).
5. Metric equivalents are given for general information only.
6. The configuration of the stud tip shall be optional provided it meets all requirements of this specification.

FIGURE 2. Socket configurations - Continued.



REQUIREMENTS:

Dimensions and configurations: See figures 1, 2, 3, and table I.

Insulator and wire support: Diallyl phthalate, in accordance with ASTM D5948, type SDG-F, 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 or blue color bands indicating rear release contacts.

Grommet: Silicon rubber.

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

Test gauge: 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:

Sea level: Test voltage: 1,000 V rms.

High altitude (80,000 feet (24.4 km)): Test voltage: 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
M39029/101-552	.030 min-.060 max (0.76 min-1.52 max mm)
M39029/101-553	.040 min-.083 max (1.02 min-2.11 max mm)

Mechanical:

Contacts: In accordance with MIL-C-39029/101 (see table I). Contacts shall be crimp removable type, rear release and accept relay the following pins:

Size 20 (0.39 through 0.41 inch (0.99 through 1.04 mm)).

Size 22 (.030 through 0.32 inch (0.76 through 0.81 mm)).

TABLE I. Dash numbers and configurations.

Dash number/socket configuration	Contact size mating end wire barrel		Number of contacts	Contact designation M39029/101	Mating relay	Polarization type
-01	20	20	8	-553	<u>1/</u> M83536/1-021, /1-024, /2-021, /2-024	I
-02	20	20	8	-553		II
-03	20	20	8	-553		III
-04	20	20	6	-553	M6106/38-002	None required
	22	22	4	-552		
-05	20	20	6	-553		II
	22	22	4	-552		
-06	20	20	6	-553		III
	22	22	4	-552		

1/ Reference M83536 for supersession data on M6106 relays.

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

TABLE III. Insertion and withdrawal forces.

Condition	Test	M12883/45	
		-01 through -03	-04 through -06
Initial	Insertion force (max)	9 lbf (40.0 newton)	10.0 lbf (44.5 newton)
	Withdrawal force (min)	.35 lbf (1.6 newton)	.44 lbf (2.0 newton)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	11.0 lbf (48.9 newton)	11.7 lbf (52.0 newton)
	Withdrawal force (min)	.30 lbf (1.3 newton)	.38 lbf (1.7 newton)
After vibration	Insertion force (max)	11 lbf (48.9 newton)	11.7 lbf (52.0)
	Withdrawal force (min)	.30 lbf (1.3 newton)	.38 lbf (1.7 newton)

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

Vibration (sinusoidal): In accordance with MIL-STD-202, method 204, test condition G, except as specified below:

- a. The frequency range shall be varied logarithmically between the limits of 10 and 3000 HZ.
- b. The procedure of method of 201 of MIL-STD-202 may be applied during 10-55 Hz band of the vibration frequency range.

Vibration (random): In accordance with MIL-STD-1344, method 2005, test condition V, letter G, with a 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-meter	Inch-pounds	Newton-meter
.112-40	8	0.90	4 ±1	0.45 ± .11
	+ 1	+ .11		
	-0	-0		
.164-32	20	2.26	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 (for size 20)	M22520/7-11 (for size 22)
Insertion/removal tool	M81969/16-01 (for size 20)	M81969/16-04 or M81969/14-01 (for size 22)

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

Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis (see figure 3), 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.

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).

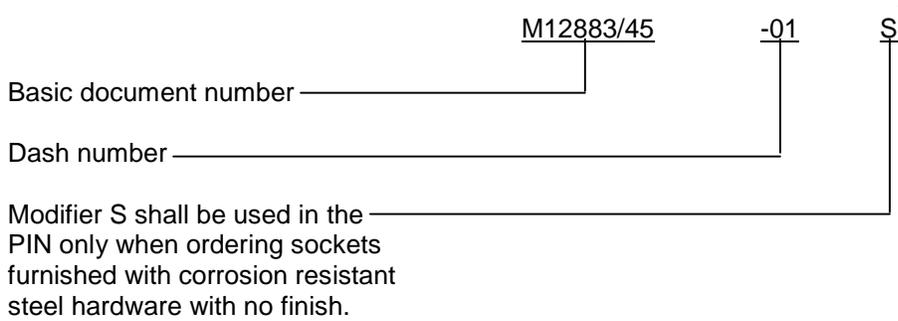
Flat washers .112 (4 each) (.224 max O.D. x .021 max thickness).

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

Flat washers .164 (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 1). 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.

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 (OEMs) 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).

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

TABLE VI. Supersession and cross reference.

Active Government PIN	Superseded manufacturer PIN	
	CAGE 58982	CAGE 99699
M12883/45-01	RSE120159	SE205-1010
M12883/45-02	RSE120161	SE205-1011
M12883/45-03	RSE120163	SE205-1012
M12883/45-04	RSE120165	TBD
M12883/45-05	RSE120167	TBD
M12883/45-06	RSE120169	TBD

CONCLUDING MATERIAL

Custodian:  
ARMY - CR  
Navy - EC  
Air Force – 11  
DLA – CC

Preparing activity:  
DLA – CC  
  
(Project 5935-4344-10)

Review activity:  
Army – AR, AT, AV, CR4  
Navy, AS, MC, OS, SH  
Air Force – 99